

Enclosure 3

Non-Proprietary of Blue Energy's BE-POV-LCNRG-LIC-5000,
"Blue Energy Center - Port of Victoria Limited Work Authorization
Environmental Report", Revision 0



**BLUE
ENERGY**

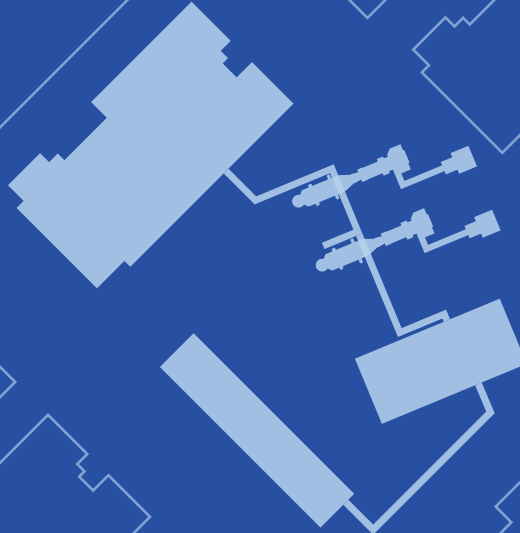


**Construction Permit Application Part 1
Blue Energy Center - Port of Victoria
Limited Work Authorization
Environmental Report**

Non-Proprietary

BE-POV-LCNRG-LIC-5000

Revision 0



**BLUE ENERGY CENTER - PORT OF VICTORIA PROJECT
LIMITED WORK AUTHORIZATION
ENVIRONMENTAL REPORT
Victoria County, Texas**

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List of Acronyms and Abbreviations

°C	degrees Celsius
°F	degrees Fahrenheit
AADT	annual average daily traffic
ac	acre
APE	area of potential effects
AQCR	Air Quality Control Region
AQS	Air Quality System
B.P.	Before Present
BECPV	Blue Energy Center – Port of Victoria
bgs	below ground surface
BMP	Best Management Practice
BOP	balance of plant
CAA	Clean Air Act
CB	Control Building
CCGT	combined cycle gas turbine
CFR	Code of Federal Regulations
cm	centimeters
CO	carbon monoxide
CO ₂ e	carbon dioxide equivalents
CPA	Construction Permit Application
CWA	Clean Water Act
CY	cubic yards
dB	decibels
dBA	A-weighted decibels
DOT	Department of Transportation
EIA	U.S. Energy Information Administration
EL	elevation (in feet, North American Vertical Datum of 1988)
EMF	electromagnetic field
EMST	Ecological Mapping System of Texas
EPCRA	Emergency Planning and Community Right-to-Know Act
ER	Environmental Report
ERCOT	Electric Reliability Council of Texas
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
ft	foot/feet
ft ³	cubic feet
GE	General Electric
GEIS	Generic Environmental Impact Statement
GHG	greenhouse gas
GIS	geographic information system
GIWW	Gulf Intracoastal Waterway
gpd	gallons per day – check Chapter 2
gpm	gallons per minute
GPS	Global Positioning System
GVH	GE Vernova Nuclear Energy Americas, LLC

HAP	hazardous air pollutant
HGB	Houston–Galveston–Brazoria
in.	inches
IPaC	Information for Planning and Consultation
km	kilometer
kV	kilovolt
LOC	location (sample)
LWA	Limited Work Authorization
m	meters
m ³	cubic meters
MBTA	Migratory Bird Treaty Act
mg/L	milligrams per liter
mi	miles
mL	milliliters
MT	metric tons
MWe	megawatt electric
NAAQS	National Ambient Air Quality Standards
NAICS	North American Industry Classification System
NAVD88	North American Vertical Datum of 1988
NECI	National Centers for Environmental Information
NELAP	National Environmental Laboratory Accreditation Program
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NLCD	National Land Cover Database
NO ₂	nitrogen dioxide
NOAA	National Oceanic Atmospheric Administration
NRC	U.S. Nuclear Regulatory Commission
NRCS	National Resources Conservation Service
NRHP	National Register of Historic Places
NWS	National Weather Service
OSHA	Occupational Health and Safety Administration
Pb	lead
PM ₁₀	Particulates less than 10 micrometers in diameter
PM _{2.5}	Particulates less than 2.5 micrometers in diameter
PPE	plant parameter envelop
PUCT	Public Utility Commission of Texas
RCRA	Resource Conservation and Recovery Act
RG	Regulatory Guide
ROI	region of influence
RPW	relatively permanent waters
RWB	Radioactive Waste Building
SAL	State Antiquities Landmark
SAP	Sampling and Analytical Plan
SB	Services Building
SF	square feet
SHPO	State Historic Preservation Officer
SMR	small modular reactor
SMR 1	first SMR to be constructed
SO ₂	sulfur dioxide
SPCC	Spill Prevention, Control, and Countermeasure

SPE	site parameter envelop
SSC	structures, systems and components
SWPPP	Stormwater Pollution Prevention Plan
TAC	Texas Administrative Code
TB	Turbine Building
TCEQ	Texas Commission on Environmental Quality
THC	Texas Historical Commission
THPO	Tribal Historic Preservation Officer
TPDES	Texas Pollutant Discharge Elimination System
TPWD	Texas Park and Wildlife Department
TSCA	Toxic Substance Control Act
TWC	Texas Water Code
TWDB	Texas Water Development Board
TxDOT	Texas Department of Transportation
ULSD	Ultra Low Sulfur Diesel
U.S.	United States
U.S.C.	United States Code
UPRR	Union Pacific Railroad
USACE	United States Army Corps of Engineers
USCB	United States Census Bureau
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
USNVC	U.S. National Vegetation Classification System
VCND	Victoria County Navigation District
WOTUS	waters of the United States

CHAPTER 1 – INTRODUCTION

This chapter presents an overview of the proposed Blue Energy Center – Port of Victoria (BECPV) project and Limited Work Authorization (LWA) request that is the subject of this Environmental Report (ER). This chapter also includes a brief description of the applicant's purpose and need, general plant description, status of permits and required consultations, and the underlying methodology of the report presentation.

The full BECPV project is being completed in multiple phases. Phase 1 of the project includes the construction of a combined-cycle gas turbine (CCGT) plant that will use two General Electric (GE) Vernova 7HA.02 gas turbines, each producing 384 megawatts (MW) of electrical power, paired with heat-recovery steam generators that convert exhaust heat into additional power. Though not in the scope of this LWA ER, the CCGT plant site would be cleared and grubbed; access roads, parking, and heavy haul roads would be installed; and the site would be (rough) graded. Phase 2 of the BECPV project would include the construction of the first of up to five BWRX-300 small modular reactor (SMR) plants designed by GE Vernova Nuclear Energy Americas, LLC (GVH) (SMR 1). The GVH BWRX-300 is a 300-megawatt electric (MWe) water-cooled SMR. The first SMR will be designated BECPV Nuclear Unit 1 (BECPV-N01).

Blue Energy, Global Inc. (Blue Energy), the applicant, is submitting its Construction Permit Application (CPA) BECPV-N01 in two parts, in accordance with Title 10 of the Code of Federal Regulations (CFR) Part 50 and 10 CFR 2.101(a)(9). Part 1 of the CPA includes the LWA application in accordance with 10 CFR 50.10(d). The LWA application scope of work includes installing piles for structures other than the reactor building and turbine buildings including the Control Building (CB), Radwaste Building (RWB), and Service Building (SB), and the adjacent crane pad for the Reactor Building construction. This scope also includes subsurface preparation and/or backfill needed for these activities. The turbine building piles and its foundation and foundations for other balance-of-plant (BOP) structures are addressed via an exemption request and will initially be used for the CCGT plant co-located at the BECPV site.

This LWA ER for CPA Part 1 is limited in scope. It applies only to the LWA work scope as well as all activities associated with the reactor building shaft excavation supports exemption (e.g., installation of diaphragm walls, subsurface preparation like grout injection and/or backfill, use of a concrete plug and/or dewatering), which is included in CPA Part 1 and subject to 10 CFR 50.12. Impacts associated with non-nuclear generation are outside the direct scope of the LWA ER and are addressed only as needed for context and cumulative impacts. Preconstruction activities specific to the LWA and excavation support exemption scope, such as use of temporary concrete and bentonite batch plants, are within the ER scope. The remainder of nuclear plant construction activities, as well as nuclear plant operation, the fuel cycle, and decommissioning are not in scope and will be addressed in the full ER included in CPA Part 2. Part 2 of the CPA will include the full ER and the full Preliminary Safety Analysis Report (PSAR).

This LWA ER also includes assessment of the cumulative impacts of the LWA construction activities along with the construction of the CCGT plant and BOP and fire protection structures, systems, and components (SSCs) (e.g., the Turbine Building (TB), steam turbine-generator, cooling towers). A bentonite mixing plant for slurry diaphragm wall construction will be located adjacent to the shaft, and a concrete batch plant is assumed be located on a temporary easement outside of the BECPV site. The access roads, electric transmission, water, natural gas, and other infrastructure built for the CCGT plant facilities are not within the scope of the LWA and are addressed in the LWA ER for cumulative impacts only, as necessary.

The BOP SSCs (including the TB and its pilings and foundation) are included in the exemption request from activities defined as construction in 10 CFR 50.10(a)(1) (a.k.a. the BOP resequencing exemption request) scope and are not addressed within the LWA ER scope, except when considering cumulative impacts. The portions of the fire protection system (FPS) required to protect the BOP SSCs and allow CCGT plant operation are included in the scope of the exemption request to allow installation of select fire-protection-related SSCs, and are not addressed within the LWA ER scope, except when considering cumulative impacts.

1.1 Plant Owners and Reactor Types

In accordance with the provisions of 10 CFR 50, Domestic Licensing of Production and Utilization Facilities, Blue Energy is providing this LWA ER in support of a United States (U.S.) Nuclear Regulatory Commission (NRC) LWA request for construction to support the development of a nuclear power station. Blue Energy, as the controlling applicant, and on the behalf of its subsidiary, Sister 1 LLC, the owner of the project, has the authority to act as the agent and sole point of contact for the NRC in all matters related to this LWA ER. Part 2 of the CPA will include the full ER for BECPV-N01.

The overall BECPV project includes the construction and operation of up to five GVH BWRX-300 SMR plants. SMR operation will be preceded by the construction and operation of two GE Vernova 7HA.02 natural gas-fired turbines and associated infrastructure at this same site. The CCGT plant is not within the jurisdiction of the NRC.

1.2 Description of the Proposed Action and the Purpose and Need

In accordance with 10 CFR 51.49(b), which describes the phased application for a LWA and construction permit, the ER for Part 1 of the CPA may be limited to a discussion of the activities proposed to be conducted under the LWA. If the scope of the ER for Part 1 of the CPA is so limited, as is the case for this LWA ER, then Part 2 of the CPA must include the information required by 10 CFR Part 51.50, as applicable. Therefore, the proposed action and purpose and need are limited to the proposed LWA.

1.2.1 Description of Proposed Action

The proposed action includes:

- Installing augered piles for structures other than the reactor building and turbine building;
- Installing an adjacent crane pad for the construction of the reactor building, in the event it is left in place as a permanent structure; and
- Subsurface preparation and backfilling needed for these activities.

The foundations for the buildings are not in the scope of the LWA. Approximate and anticipated dimensions for LWA components are included in Table 1.4-1.

The BECPV project is in an unincorporated area of Victoria County, Texas, east of the Victoria Barge Canal, approximately 1.5 miles (mi) west of Bloomington, approximately 9 mi south of the City of Victoria, and adjacent to and south of McCoy Road. The project parcels, shown in Figure 1.4-1, are owned by the Port of Victoria and leased to Blue Energy for project development. A layout and boundary map for the LWA limits of disturbance can be found in Figure 1.4-2.

Though not in the scope of this LWA ER, the site would be cleared, grubbed, and rough graded, and access roads, parking area, and heavy haul roads would be installed for construction of a CCGT plant. Portions of the site would also be reserved for laydown for construction of the

CCGT plant. The footprint of these activities is only considered when assessing cumulative impacts.

There would be no offsite transmission lines, pipeline corridors, rail spurs, or offsite road widenings planned for construction under the LWA scope of work. All LWA construction staging, laydown, earthwork, and building activities would occur entirely within the LWA limit of disturbance or in areas previously disturbed for construction of the CCGT plant.

1.2.2 Purpose and Need

Blue Energy is proposing to construct a SMR at its site at the Port of Victoria, Texas, designated as the BECPV. The proposed reactor is a BWRX-300, a boiling water SMR designed by GVH, with a nominal net electrical output of approximately 300 MWe. While Blue Energy anticipates potentially scaling the energy campus to additional units if regional demand warrants, this BECPV-N01 CPA is specific to the initial nuclear unit, which is located adjacent to a combined cycle gas turbine CCGT plant.

The BWRX-300 will utilize a BOP previously used by the CCGT plant. The natural gas generation plant will operate as a simple cycle plant until it is subsequently returned to combined cycle service following the addition of a second BOP to the site, such that the site operates over the long term as a hybrid energy campus combining nuclear and natural gas generation. This approach leverages site infrastructure that is developed for a natural gas plant, and allows for the more efficient deployment of new nuclear generation.

Once the BWRX-300 reaches commercial operation, its generation is expected to be delivered to the regional power grid as baseload capacity with signed industrial offtakers. The site is located within the Electric Reliability Council of Texas (ERCOT) interconnection. The plant will be located in the ERCOT South load zone, a region with a high concentration of variable renewable energy resources, including wind and solar. Beyond supplying the intended customer, the plant will provide a baseload resource capable of grid-forming services such as inertia, from which the zone's grid is expected to benefit substantially. The SMR design further allows the campus to scale incrementally, adding generation commensurate with regional power needs.

The purpose and need for the proposed BWRX-300 facility include the following:

- Provide firm, dependable baseload electricity to meet growing regional demand.
- Serve the intended customer and support the expanding industrial and data center load in the region, minimizing industrial impact on the regional grid, further bolstering the socioeconomics of the region.
- Provide grid-forming and reliability services, including inertia, to the ERCOT South load zone.
- Provide scalable generation, with a smaller regional footprint than a traditional large light water reactor, which can be expanded commensurate with regional needs and consistent with national energy goals.

The need for new sources of reliable baseload electricity in the region is driven in large part by the growth of power-intensive industry and data centers and is consistent with projections from the U.S. Department of Energy (DOE) and the U.S. Energy Information Administration (EIA) indicating increasing electricity demand in the coming decades. That demand growth reflects population growth, the electrification of industry and transportation, and the continued expansion of advanced manufacturing and data center infrastructure. Meeting this demand within the ERCOT South load zone, where variable renewable resources are heavily concentrated, calls

for dispatchable baseload generation that also contributes to grid stability. The BWRX-300 is designed to provide such a dependable source of baseload electricity while supporting continued regional economic development and enhancing grid resilience.

The proposed action is also consistent with national goals for the deployment of advanced nuclear technology, as articulated in the Accelerating Deployment of Versatile, Advanced Nuclear for Clean Energy Act of 2024 (ADVANCE Act). Relative to a traditional large light water reactor, the SMR requires a smaller regional footprint and allows generation to be added incrementally, providing a deployment pathway that can be scaled to match regional power needs over time.

The purpose and need for this specific LWA includes the following:

- The LWA allows Blue Energy to begin installation of piles adjacent to the nuclear island early, which is estimated to reduce overall project schedule by three to six months, and eliminates the cost associated with demobilizing and remobilizing the construction crew for pile installation that was already performing work for the BOP. This proposed action improves the overall economic viability of the successful development of BECPV-N01.
- The proposed LWA accelerates the deployment of advanced nuclear technology and, therefore, is also consistent with the intent of Executive Orders (EOs) associated with nuclear power, like those signed on May 23, 2025, and may also allow the regional grid to support data centers associated with artificial intelligence infrastructure, consistent with EO 14318 signed July 23, 2025. In addition to supporting the economic and national security of the United States, providing additional power to the region sooner helps protect American households and small business, and is consistent with the goals of the Ratepayer Protection Pledge that was announced by the White House on March 4, 2026.

1.3 Planned Activities and Schedules

This section includes details and timelines for LWA activities and non-LWA activities (i.e., CCGT plant, including the BOP and FPS, and site preparation). While the estimated start and end dates for construction associated with the LWA and shaft excavation scope are to be determined, the current schedule, as shown in Table 1.4-2, assumes shaft installation and piling are sequential.

1.4 Status of Compliance

In accordance with 10 CFR 51.45(d), *Status of Compliance*, the ER shall:

- “list all Federal permits, licenses, approvals and other entitlements that must be obtained in connection with the proposed action”;
- “describe the status of compliance with these requirements”; and
- “include a discussion of the status of compliance with applicable environmental quality standards and requirements including, but not limited to, applicable zoning and land use regulations, thermal and other water pollution limitations, or requirements which have been imposed by Federal, State, regional, and local agencies having responsibility for environmental protection.”

Permits, licenses, and approvals, collectively referred to as authorizations, for the LWA Project (Proposed Action) are obtained in accordance with applicable federal and state statutes and regulations. Authorizations align with the planned activities and associated schedule highlighted

in LWA ER Section 1.3. Certain authorizations are applicable to multiple phases; thus, the earliest phase the authorization is required has been identified. Additionally, certain authorizations require future modifications for subsequent phases; therefore, multiple phases are identified. Table 1.4-3 and Table 1.4-4 identify the jurisdictional agency, authority, name of permit or approval, applicable activities, and status of compliance for appropriate statutes.

Table 1.4-1. Estimated Dimensions and Volumes of LWA Components

LWA Component	Dimensions*	Minimum Volume of Concrete	Volume Assumptions
CB	30.6 m × 33.8 m	---	n/a
RWB	40.4 m × 23.4 m	---	n/a
SB	30.6 m × 28.8 m	---	n/a
Crane Pad for Reactor Building	60 m × 20 m × 0.91 m	1,000 m ³	No waste factor**
Piling Installations	18 in. diameter, 55 to 70 ft long	3,215 m ³	No waste factor**
Diaphragm Walls/ Excavated Shaft	Walls: 245 ft below grade, 48 in. or 60 in. thick Shaft: 140 ft diameter (inner)	17,420 m ³	Based on scaling 48 in. thick wall design to 60 in.

*Building dimension estimates based off the Preliminary Safety Analysis Report (PSAR) for the Clinch River Nuclear Site Construction Permit Application (Ref. 1). Building foundations are not within LWA scope.

** The total volumes discussed in Section 3.3.1 account for waste factors that add approximately 965 m³ to the total. Abbreviations: CB = Control Building; RWB = Radioactive Waste Building; SB = Services Building; n/a = not applicable; m = meters; m³ = cubic meters; in. = inches; ft = feet

Table 1.4-2. Schedule of Activities

Activity	Date*	Notes
LWA Activities (est. 12-18 months)		
Shaft Installation	Q4 2026 – Q4 2028	---
Piling Installation	Q4 2028 – Q1 2029	Some piling can be performed concurrently, but this is not yet incorporated into the schedule
Crane Pad Installation	2 to 3 months after piling installation	---
Non-LWA Activities (CCGT, BOP, and initial site preparation)		
Tree removal	Q1 2027 – Q2 2027	---
Clearing, grading, site development	Q2 2027 – Q3 2027	---
Subgrading	Q2 2027 – Q4 2027	---
Storm water management system	Q4 2027 – Q2 2028	---
CCGT and BOP piling installation	Q4 2027 – Q2 2028	---
CCGT and BOP construction	Cont. through Q2 2031	CCGT foundations and underground utilities installed through Q3 2029

*Dates subject to change based on official start date and accounting for potential construction delays. Abbreviations: BOP = balance of plant; CCGT = combined cycle gas turbines; Q = calendar quarter

Table 1.4-3. Permits and Approvals Required for Construction

Agency	Regulatory Authority	Permit or Approval	Activity Covered	Status
Federal				
U.S. Nuclear Regulatory Commission	10 CFR 51	Environmental Assessment or Environmental Impact Statement in accordance with NEPA	Site approval for LWA, construction and operation of a radiation facility.	Addressed in this LWA ER.
U.S. Nuclear Regulatory Commission	10 CFR 50.10	LWA	Site approval for LWA	Addressed in this LWA ER.
Federal Aviation Administration	14 CFR 77; 49 U.S.C. 49, Subtitle VII, Part A, subpart III, Chapter 447.	Notice of Proposed Construction or Alteration	Notice of erection of structures or use of cranes (>200 feet high) potentially impacting air navigation is required.	Licenses and permits would be applied for and received at the appropriate time.
State or Local				
Texas Commission on Environmental Quality	Federal CWA — 33 U.S.C. 26; TAC — Title 30, Part 1, Chapter 205, 279, 307, 308; TWC — Title 2, Chapter 26.	Section 401 – Water Quality Certification	Issuance of federal license or permit to conduct an activity that may result in discharges into “navigable waters” (includes wetlands considered “waters of the U.S.”). TCEQ would certify that any such discharge will comply with the applicable water quality standards.	Licenses and permits would be applied for and received at the appropriate time.
	Federal CAA (42 U.S.C. 85); TAC — Title 30, Part 1, Chapters 101, 111, 116.	Air Quality Construction Authorization (concrete batch plant)	This authorization covers construction of air emission sources: (a) concrete batch plant, and (b) sand blast facility and surfacing/coating facility. Authorization must be obtained before excavation for or construction of foundation or footings supporting air emitting facilities.	Licenses and permits would be applied for and received at the appropriate time.

Agency	Regulatory Authority	Permit or Approval	Activity Covered	Status
	Federal CWA (33 U.S.C. 26); TAC — Title 30, Part 1, Chapter 205; TWC — Title 2, Chapter 26.	TPDES General Permit for Stormwater Discharges Associated With Construction Activity	This permit is required for discharge of stormwater from site during construction, including discharge of stormwater, vehicle wash water, uncontaminated groundwater, construction dewatering effluent, or concrete batch plant runoff that impacts 5 acres or more. Authorization must be obtained before exposure of soils from activities such as clearing, grading, and excavating.	Licenses and permits would be applied for and received at the appropriate time.
Texas Commission on Environmental Quality (continued)	TAC Title 30, Part 1, Chapter 335; 42 U.S.C. 82, Subchapter III	Notice of Registration (offsite disposal)	Offsite disposal of industrial solid wastes consisting of earth and earth-like products, concrete, cured asphalt, rock, bricks, and land clearing debris.	Licenses and permits would be applied for and received at the appropriate time.
	TAC Title 30, Part 1, Chapter 335; 40 CFR, Chapter I, Subchapter I, Parts 260-270.	Notification of hazardous waste activity and Identification number	This notification is required for any industrial and hazardous waste (including Class 1 waste) generation, processing, storage, and disposal activities. It is also required to obtain identification number from TCEQ for these activities.	Licenses and permits would be applied for and received at the appropriate time.
	TAC Title 30, Part 1, Chapter 328	Waste Minimization and Recycling	This TCEQ rule requires the establishment of a waste reduction program.	Licenses and permits would be applied for and received at the appropriate time.
	TAC Title 30, Part 1, Chapter 334	Certificate of Annual Tank Registration	This registration is required for all aboveground storage tanks that are capable of being used for petroleum products and certain chemicals.	Licenses and permits would be applied for and received at the appropriate time.
	TAC Title 31, Part 2, Chapter 69, Subchapter H.	Marl, Sand, Gravel, Shell, or Mudshell Permit	This permit is required for the disturbance of sedimentary materials in public waters in Texas.	Licenses and permits would be applied for and received at the appropriate time.
	TAC Title 16, Part 2, Chapter 25; PUCT.	Registration for Exempt Wholesale Generator	An EWG must register with the PUCT as an EWG before beginning operation.	Licenses and permits would be applied for and received at the appropriate time.

Agency	Regulatory Authority	Permit or Approval	Activity Covered	Status
	TWC Title 2, Chapter 28	Groundwater Well Permit (new installation)	Permits are required for new groundwater well installation and operation.	Licenses and permits would be applied for and received at the appropriate time.

Abbreviations: NEPA = National Environmental Policy Act; CFR = Code of Federal Regulations; ER = Environmental Report; U.S.C. = United States Code; CWA = Clean Water Act; TAC = Texas Administrative Code; TWC = Texas Water Code; TCEQ = Texas Commission on Environmental Quality; CAA = Clean Air Act; TPDES = Texas Pollutant Discharge Elimination System; PUCT = Public Utility Commission of Texas; EWG = Exempt Wholesale Generator

Table 1.4-4. Consultations Required for Construction and Operation

Agency	Regulatory Authority	Required Consultation	Status
U.S. Fish and Wildlife Service	Endangered Species Act	Consultation regarding potential to adversely affect federal listed species and designated critical habitat (non-marine). Initial informal consultation may continue to formal consultation if action is likely to adversely affect listed species or critical habitat. The agency consultation is needed for its concurrence with no adverse impacts or proposed mitigation measures; cannot modify habitat of endangered or threatened species without authorization from USFWS, including clearing of vegetation or earth moving activities.	Consultations would be initiated at the appropriate time.
	16 U.S.C. 1536, Section 7		
	16 U.S.C. 35; 50 CFR 17.		
	Migratory Bird Treaty Act of 1918; 50 CFR 21; 16 U.S.C. Chapter 7.	Consultation regarding compliance with requirements of MBTA. The agency consultation is needed for its concurrence with no adverse impact or proposed mitigation measures on protected species and/or their nests.	Consultations would be initiated at the appropriate time.
State Historic Preservation Officer/Texas Historical Commission	36 CFR 800; TAC — Title 13, Part 2, Chapter 26.	Consultation regarding potential to adversely affect cultural resources. Consultation with the THC is necessary to ensure the cultural resources surveys are performed adequately in affected site areas and confirm site construction or operation would not affect protected cultural resources.	Consultations would be initiated at the appropriate time.
Texas Parks and Wildlife Department	TAC— Title 31, Part 2, Chapter 65; TAC — Title 31, Part 2, Chapter 69.	Consultation regarding potential to adversely impact state listed protected species. Consultation with TPWD is necessary to ensure the ecological surveys are performed adequately to cover all concerned protected species in the affected site areas and confirm no adverse impacts on state listed protected species and/or their habitat.	Consultations would be initiated at the appropriate time.

Abbreviations: USFWS = U.S. Fish and Wildlife Service; MBTA = Migratory Bird Treaty Act; THC = Texas Historical Commission; TPWD = Texas Parks and Wildlife Department

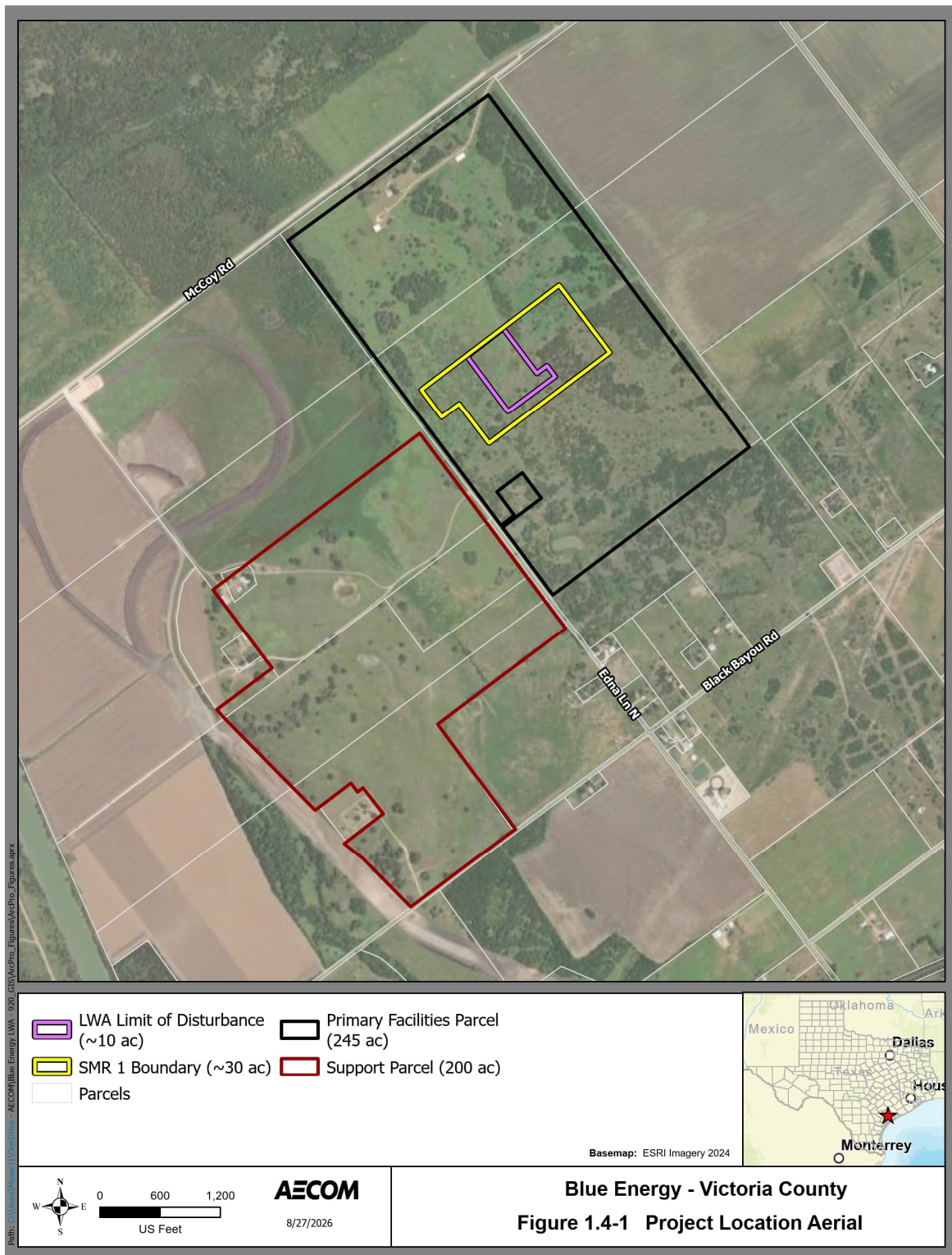


Figure 1.4-1. Project Location Aerial

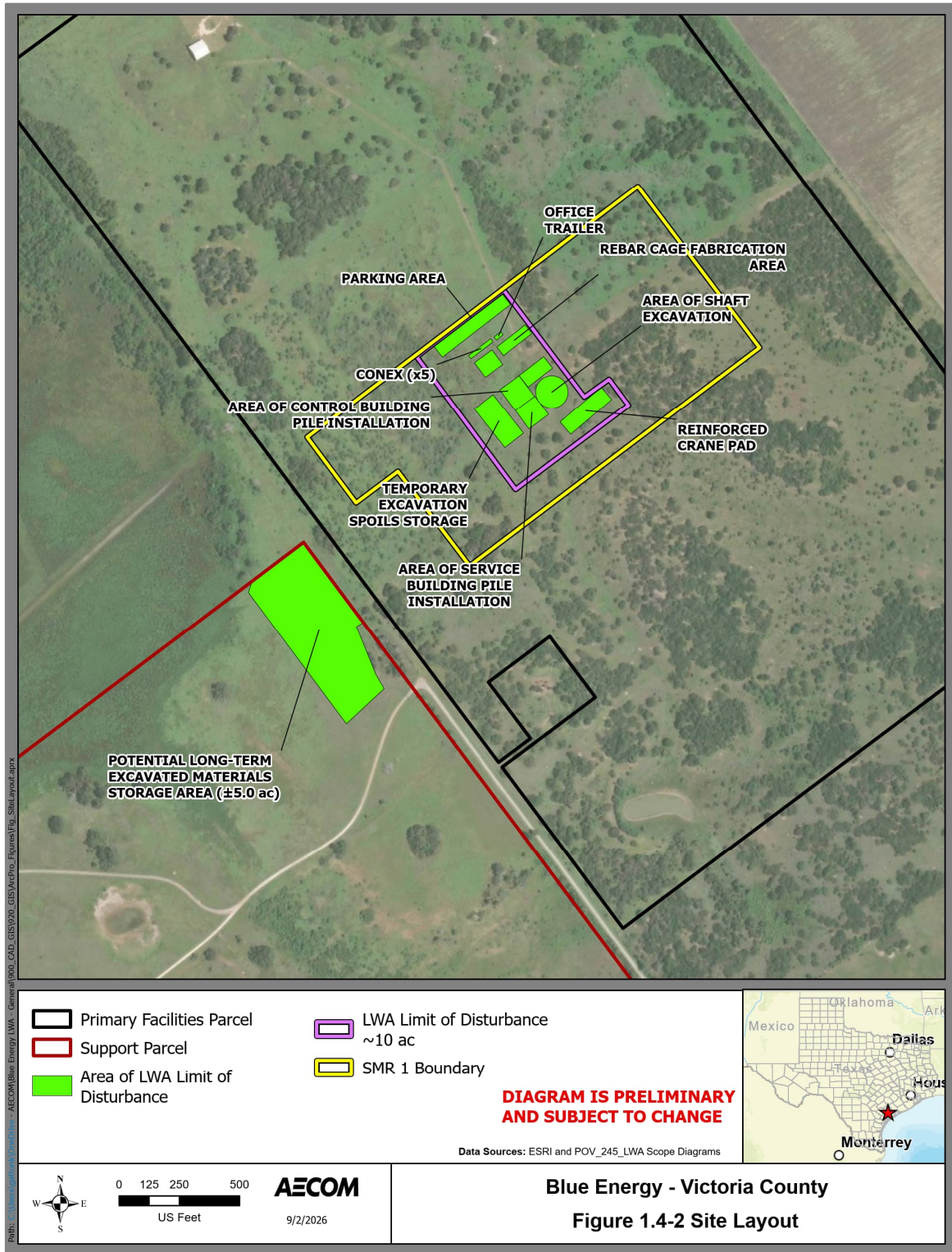


Figure 1.4-2. Site Layout and Boundary

CHAPTER 2 – THE PROPOSED SITE AND THE AFFECTED ENVIRONMENT

In accordance with Title 10 of the Code of Federal Regulations (CFR) Part 51, *Environmental Protection Regulations for Domestic Licensing and Related Regulatory Functions*, and in keeping with the guidance provided in NUREG-1555, *Standard Review Plans for Environmental Reviews for Nuclear Power Plants: Environmental Standard Review Plan*, Chapter 2 provides a description of environmental conditions at the Blue Energy Center – Port of Victoria (BECPV) Limited Work Authorization (LWA) limit of disturbance (LWA project site), vicinity, and region in sufficient detail to identify environmental resources that have the potential to be affected by construction.

Consistent with Regulatory Guide (RG) 4.2, Revision 4, *Preparation of Environmental Reports for Nuclear Power Stations*, this chapter provides detailed information or refers to supporting data sources with detailed information for each of the following RG 4.2 topical areas:

- Land Use – Section 2.1
- Water Resources – Section 2.2
- Ecological Resources – Section 2.3
- Socioeconomics – Section 2.4
- Historic and Cultural Resources – Section 2.5
- Air Resources – Section 2.6
- Nonradiological Health – Section 2.7
- Geology – Section 2.8
- Radiological Environmental and Radiological Monitoring – Not applicable to the LWA

While not a subject of RG 4.2, Revision 4, the geology of project site and region are described in Section 2.8. Likewise, according to NUREG-1555, the NRC is not obligated to perform an environmental review of the geology; instead, it should focus on the applicant's safety analysis report to identify any safety issues related to the site's geology. Consequently, the information in Section 2.8 is included solely to provide a comprehensive description of the affected environment. Furthermore, as geology is not discussed as a Category 1 or Category 2 issue in the NRC's *Generic Environmental Impact Statement for Licensing of New Nuclear Reactors* (New Reactor GEIS; NUREG-2249), it is not discussed in Chapter 4 of this LWA ER, which discusses the environmental impacts of constructing the proposed project. NUREG-2249 serves as a framework for preparing the ER as part of an application for a new nuclear reactor, or in this case, for an LWA application.

This chapter compiles information from site-specific studies and existing data sources, Geographic Information System (GIS) data, and publicly available reports. Additional information obtained through research of online agency resources, and other publicly available data sources is referenced within individual sections.

2.1 Land Use

This section describes, in general terms, the present and planned land use of the LWA project site, the 6-mile (mi) vicinity, and the 50-mi region. This section is divided into the following subsections:

- Site Location – Section 2.1.1
- Vicinity and Region – Section 2.1.2
- Transmission-Line Corridors and Other Offsite Areas – Section 2.1.3

2.1.1 Site Location

The LWA project site is located in an unincorporated area of Victoria County, Texas, east of the Victoria Barge Canal, approximately 1.5 mi west of Bloomington, and approximately 9 mi south of the City of Victoria. The city of Victoria is the largest community in the vicinity with an estimated population of 66,500 (Ref. 2). The regional population is discussed in Section 2.4.

The LWA project site is located within the larger 445-acre (ac) Blue Energy Center – Port of Victoria (BECPV) project site located east of the Victoria Barge Canal in the Coastal Prairies Physiographic Province (Ref. 3). The BECPV project site will incorporate the combined cycle gas turbine (CCGT) plant and up to five small modular reactors (SMR). The BECPV project site is comprised of two parcels – the 245-ac Primary Facilities Parcel and the 200-ac Support Parcel. The area designated for BECPV Nuclear Unit 1 (BECPV-N01) is approximately 30 ac within the Primary Facilities Parcel. The total area of the Limited Work Authorization (LWA) limit of disturbance is approximately 15 ac, consisting of approximately 10 ac within the 30-ac SMR 1 project boundary and approximately 5 ac within the Support Parcel (see Figure 1.4-1 and Figure 1.4-2).

Blue Energy has secured site control of the Primary Facilities Parcel and Support Parcel through a long-term ground lease. The parcels are under the ownership of the Victoria County Navigation District (VCND) in Victoria County, Texas. Blue Energy, through its affiliate entity, Brother 1 LLC, holds an executed exclusive Option Agreement with VCND (originally effective April 15, 2025, and subsequently amended) granting Blue Energy the right to enter into a long-term Ground Lease covering the LWA project site. The Ground Lease provides Blue Energy with the possession and control necessary to support development, construction, operation, maintenance, and decommissioning of the facility.

As shown in Figure 2.1-1, the BECPV-N01 is planned for the 245-ac Primary Facilities Parcel. The adjacent 200-ac Support Parcel will be used for construction support in future phases of the BECPV energy project. The Support Parcel is located north of Black Bayou Road and south of Edna Lane North.

Table 2.1-1 provides the coordinates of the projected center point of SMR 1 and the center point of the LWA project site. The distance and direction from the center point to the nearest population centers, nearby towns, and readily recognized landmarks within the region are discussed in Section 2.1.2.

Figure 2.1-2 provides distances from the boundary of the LWA limit of disturbance to the nearest resident (0.48 mi) and nearest residential area (0.45 mi). The nearest “residential area” is considered the collection of 8 rural residential properties along Edna Lane and Black Bayou Road (one property currently has no structures).

2.1.2 Vicinity and Region

Figure 2.1-3 provides both the 6-mi vicinity and 50-mi region radii relative to the center of LWA project site. The entire 50-mi region is within the state of Texas. The 6-mi vicinity includes Victoria County and a small portion of Calhoun County. The 50-mi region includes all or parts of Aransas, Bee, Calhoun, Colorado, Dewitt, Goliad, Jackson, Karnes, Lavaca, Matagorda, Refugio, San Patricio, Victoria, and Wharton Counties.

The topography of the site is relatively flat, generally sloping towards the west to the Victoria Barge Canal with elevations ranging from approximately 15 to 63 feet (ft) based on North American Vertical Datum of 1988 (NAVD88). A United States (U.S.) Geological Survey (USGS) topographic map illustrating the geographical context of the LWA project site is presented on Figure 2.1-4. Figure 2.1-5 provides the topography for the vicinity with elevation ranging from 10 ft to approximately 110 ft NAVD88 with a general sloping towards the west and south.

Regional transportation infrastructure includes highways, railroad lines, waterways, and utility corridors, and are depicted in Figure 2.1-6 for the vicinity and Figure 2.1-7 for the region. The LWA project site is located between McCoy Road and Black Bayou Road, and Edna Lane North runs between the two parcels. McCoy Road and Edna Lane will be the primary means of access to the 245-ac parcel. The Port of Victoria is planning to use an existing easement to extend Edna Lane northwest to Dupont Road and make this portion of the road a heavy haul road. This expansion is independent of this LWA project.

As shown in Figure 2.1-6, State Highway 185 is the main roadway from Victoria southeast to the Gulf coast of Texas and the only major roadway within the vicinity of the site. State Highway 87 runs from Galveston, Texas, along the coast then north to Timpson, Texas. State Highway 87 passes the site just outside of the 6-mi vicinity radius. U.S. Route 77 (also known as Interstate 35) is the largest roadway within the region as shown on Figure 2.1-7. U.S. Route 77 runs from Brownsville, Texas to Sioux City, Iowa. Route 77, along with U.S. Route 183/77A, U.S. Route 59, and State Highways 185 and 87 are expected to be the main highways for the LWA project construction vehicles.

Railways operated by BNSF and Union Pacific Railroad (UPRR) cross through the site, vicinity and region. UPRR connects across 23 states, and BNSF connects across 28 states. Both railways connect with the Port of Victoria. The closest railway is approximately 1 mi south of the LWA project site; however, there are plans to extend the railroad which would bring a spur along the southwestern boundary of the Support Parcel.

The Port of Victoria is owned and operated by the VCND and is located approximately 3.5 mi northwest of the LWA project site. The Port is central to all major Texas markets, offering direct access to the Gulf of America from the Victoria Barge Canal and is within two hours of Houston, Austin, San Antonio and Corpus Christi, Texas. The port has direct access through U.S. Route 59, U.S. Route 77, State Highway 87, and dual-rail access through BNSF and UPRR for transportation of goods throughout Texas and the United States, while barge access allows for the movement of raw materials and finished products (Ref. 4).

As depicted in Figure 2.1-6, a 138-kilovolt (kV) power transmission line lies north of LWA project site terminating in a substation approximately 0.6 mi from the site. A second substation is located approximately 0.3 mi southeast of the site, connecting to another 138-kV transmission line. A 345-kV transmission line is approximately 3.5 mi southeast. Several other transmission lines are located within the 50-mi region as shown on Figure 2.1-7.

2.1.2.1 Zoning

Land use for the site is not defined by ordinance. The unincorporated areas within Victoria County do not follow municipal zoning codes. Only subdivision platting is applicable outside city limits. Neither Texas cities nor counties have general zoning authority outside city limits (Ref. 5).

2.1.2.2 Principal Land Use

Principal land use designations within the site are characterized based on the USGS National Land Cover Database (NLCD). As shown in Figure 2.1-8 and Table 2.1-2, the site is primarily pastureland interspersed with unmaintained wooded areas. The Primary Facilities Parcel has a single small vacant residential area with a house, garage, and two barns.

As shown in Figure 2.1-9, and Table 2.1-3, approximately 6 percent of the 6-mi vicinity is developed. Pastureland and cultivated crops account for 54.5 percent of the land use. Industrial facilities are located approximately 1.25 mi north of the site boundary. Residential areas border the southern portion of the Support Parcel, with the closest residence 0.15 mi from the boundary. The nearest residential development is in Bloomington, located approximately 1.5 mi east of the site.

Figure 2.1-10 and Table 2.1-4 depict the 50-mi regional land use according to the NLCD, of which, 4.3 percent is developed. Pastureland and cultivated crops account for 44.5 percent of the land use. Special land uses within the region are described in Section 2.1.2.5.

2.1.2.3 Prime and Unique Farmlands

As shown in Figure 2.1-11 and Table 2.1-5, all of the LWA project site is considered prime farmland according to National Resources Conservation Service (NRCS). Prime farmland, as defined by the U.S. Department of Agriculture (USDA), has the best combination of physical and chemical characteristics for producing crops (Ref. 6). Separately from the prime farmland designation, the Support Parcel also contains almost 2 ac of farmland of state importance. This is farmland that does not meet the criteria for prime or unique farmland, but has been designated for agriculture by state law or local ordinance (Ref. 6).

Approximately 49.5 percent of the land within the 6-mi vicinity is also prime farmland, and 7.9 percent is considered farmland of statewide importance.

2.1.2.4 Agricultural and Forest Products

Agriculture is an important industry in Texas, with cattle as the largest commodity. However, there are no grazing allotments within the site vicinity or region. While the site is used as pasture, it is not considered part of a grazing allotment.

Crops are not grown on the LWA project site, and much of the region is uncultivated; however, as shown on Figure 2.1-12, corn, cotton, and sorghum are grown in the northeastern part of the vicinity. Within the region, the northeastern agricultural areas are predominately corn, while cotton and sorghum are the primary crops in the southwestern portion. Table 2.1-6 provides the agricultural crops produced in the region.

There are no forest products harvested or produced within the 50-mi region.

2.1.2.5 Special Land Uses

Under Title 16 of the United States Code (U.S.C.) Part 215, Subpart B, all uses of National Forest System lands, improvements, and resources, except those authorized by parts 223, 223 and 228, are designated as "special uses". Figure 2.1-13 depicts the special land use areas within the 50-mi region, which are as follows:

- *Aransas National Wildlife Refuge* – Established in 1937 for migratory waterfowl and other wildlife and encompasses more than 115,000 ac of diverse habitat along the Texas Gulf Coast. Recreation includes a 16-mi auto tour, fishing, observation towers, and several miles of walking trails (Ref. 7).
- *Matagorda Island Wildlife Management Area (WMA)* – Located on Matagorda Island, the WMA is 56,688 ac of the island and marshes in Espiritu Santo Bay. A lighthouse dating from 1852 still stands at the north end of the island. The WMA is open for camping, biking, hiking, wildlife viewing, and fishing and hunting activities (Ref. 8).
- *San Antonio Bay Unit* – As one of 50 WMAs operated by the Texas Parks and Wildlife Department (TPWD), it is part of the Guadalupe Delta WMA. The 818-ac area open for fishing, biking, hiking, and wildlife viewing activities (Ref. 9).
- *Goose Island State Park* – The park is 321.4 ac on St. Charles and Aransas bays. The Civilian Conservation Corps constructed the earliest park facilities in the 1930s. Recreational activities include camping, fishing, birding, paddling, and the Big Tree Landmark (Ref. 10).
- *Goliad State Park and Historic Site* – The park is 276 ac. In 1931, the state legislature accepted the main park complex from the city and county of Goliad. The site has several historical sites to tour, as well as hiking and biking trails. Camping, fishing, and paddling are also allowed at the park (Ref. 11).
- *Fannin Battleground State Historic Site* – The historic site is the location of a stone obelisk that honors the spot where Fannin surrendered. An interpretive exhibit, group pavilion, and picnic area are also on the 14-ac grounds (Ref. 12).
- *Lake Texana* – 9,727 ac. of open water for fishing and watersports. Lavaca-Navidad River Authority operates two park/campgrounds and several additional boat ramps on Lake Texana. The parks offer day use as well as overnight camping, boat ramps, and opportunities for shoreline fishing (Ref. 13).

There are no special land uses within the 6-mi vicinity of the LWA project site.

2.1.2.6 Raw Material Sources

No raw material resources are known or expected on the LWA project site. Figure 2.1-14 provides mine and quarry locations within the 50-mi region from the USGS Mineral Resource Data System. The region includes 20 active and historical producing mines and one quarry. The closest mine is the Biggs Pit and processing plant, approximately 3.75 mi northwest of the site. Sand and gravel are the major commodities of the mine. Of the 13 mines active in the region, 10 relate to construction, with eight producing sand and gravel and two producing crushed stone. In Aransas County, the Redfish Bay Deposit is a mineral formation producing limestone. In Fayette County, the Milwhite Syler Pit is a mineral extraction and mining locality producing bentonite, and in Calhoun County, the Parker Brothers Oyster Shell Dredge is mining calcium offshore. Also, in Calhoun County, the Point Comfort Refinery processes aluminum.

2.1.2.7 Coastal Zone Management Act Lands

The LWA project site is not located within Coastal Zone Management Act lands (see Figure 2.1-13).

2.1.2.8 Floodplains and Wetlands

Per the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) for Victoria County (Ref. 14), flood risks are illustrated in Figure 2.1-15. Portions of the Primary Facilities Parcel are classified as having a 1 percent annual chance flood hazard. Additional information on floodplains is provided in Section 2.2.

An investigation of potentially jurisdictional waters of the United States (WOTUS) was conducted in 2025 to identify and delineate water resources at the site that exhibit characteristics meeting the regulatory definition of WOTUS. These resources were then assessed for their potential to be considered jurisdictional WOTUS subject to regulation by the U.S. Army Corps of Engineers (USACE) Galveston District under authority of Section 404 of the Clean Water Act (CWA). During this investigation, no wetlands, wetland habitats, or jurisdictional features were identified at the site (Ref. 15).

2.1.2.9 Geology and Hydrology

Victoria County lies on the broad, gently seaward-sloping Texas Coastal Plain. This region represents the landward portion of the Gulf of America sedimentary basin, where thousands of feet of sediments have accumulated over millions of years as rivers transported sand, silt, clay, and gravel from central and western North America toward the Gulf. The county's geology is dominated by relatively young sedimentary deposits that were laid down by rivers, deltas, floodplains, and coastal processes during the late Cenozoic Era, particularly the Pleistocene and Holocene epochs (Ref. 16).

Victoria County overlies portions of the Gulf Coast aquifer system. Groundwater is primarily produced from sand-rich intervals within the coastal plain deposits and deeper Tertiary formations (Ref. 16). Common aquifer units include:

- Chicot Aquifer (shallow)
- Evangeline Aquifer (regional)
- Deeper Frio Formation sand bodies

2.1.3 Transmission-Line Corridors and Other Offsite Areas

There are no transmission-line corridors or offsite developments to be included in the LWA.

Table 2.1-1. Coordinates for Blue Energy Center - Port of Victoria Project

Center Point	Latitude	Longitude	State Plane Northing	State Plan Easting	UTM Zone Northing	UTM Zone Easting
LWA Project CenterPoint	-96.929487°W	28.648723°N	2632550.376	13425697.052	702369.84	3170821.73
SMR 1*	-96.929392°W	28.6479291°N	2632586.033	13425409.051	702380.65	3170733.91

*Coordinates are based on the preliminary design and are subject to change.

Abbreviations: LWA = Limited Work Authorization; SMR = small modular reactor; UTM = Universal Transverse Mercator

Table 2.1-2. Principal Land Use at the Support Parcel and Primary Facilities Parcel

Land Use	Acres	Percent
Primary Facilities Parcel		
Pasture/Hay	203.5	82.8
Scrub/Shrub	37.1	15.1
Woody Wetlands	2.8	1.2
Developed Open Space	1.6	0.6
Developed Low Intensity	0.7	0.3
Total	245.7	100
Support Parcel		
Pasture/Hay	186.2	93.1
Developed Open Space	5.5	2.8
Emergent Herbaceous Wetlands	5.4	2.7
Woody Wetlands	1.6	0.8
Developed Medium Intensity	0.7	0.3
Developed Low Intensity	0.3	0.2
Evergreen Forest	0.2	0.1
Cultivated Crops	0.01	0.0
Total	199.6	100

Table 2.1-3. Principal Land Use in the Port of Victoria 6-Mile Vicinity

Land Use	Acres	Percent
Pasture/Hay	24,250.76	33.5
Cultivated Crops	15,168.80	21.0
Woody Wetlands	10,412.49	14.4
Emergent Herbaceous Wetlands	9,124.96	12.6
Scrub/Shrub	6,094.86	8.4
Developed Open Space	1,806.64	2.4
Developed Low Intensity	1,713.35	2.4
Open Water	1,509.38	2.1
Mixed Forest	607.29	0.8
Developed Medium Intensity	598.65	0.8
Barren Land	359.12	0.5
Developed High Intensity	269.31	0.4
Evergreen Forest	187.67	0.3
Grassland/Herbaceous	179.10	0.3
Deciduous Forest	48.25	0.1
Total	77,330.63	100

Table 2.1-4. 50-Mile Regional Principal Land Use

Land Use	Acres	Percent
Pasture/Hay	1,661,248.2	33.1
Open Water	101,5261.1	20.2
Scrub/Shrub	734,960.8	14.6
Cultivated Crops	572,403.2	11.4
Emergent Herbaceous Wetlands	268,893.7	5.4
Mixed Forest	152,757.2	3.0
Woody Wetlands	145,705.5	2.9
Evergreen Forest	125,891.0	2.5
Developed Open Space	97,516.8	1.9
Developed Low Intensity	83,655.1	1.7
Deciduous Forest	68,990.6	1.4
Grassland/Herbaceous	4,8163.8	1.0
Developed Medium Intensity	26,525.9	0.5
Barren Land	15,374.4	0.3
Developed High Intensity	5,633.4	0.1
Total	5,022,980.4	100

Table 2.1-5. Prime and Unique Farmlands

Farmland	Support Parcel		Primary Facilities Parcel		6-Mile Vicinity	
	Acre	Percent	Acres	Percent	Acres	Percent
All areas are prime farmland	131.6	65.8	198.0	80.6	35,830.7	49.5
Farmland of statewide importance	0.0	0.0	1.9	0.8	5,676.2	7.9
Not prime farmland	68.4	34.2	45.7	18.6	30,823.8	42.6
Total	200.0	100	245.7	100	72,330.6	100

Table 2.1-6. 50-Mile Regional Crops

Crop	Acres	Percent
Uncultivated	4,474,814.52	89.02
Corn	261,707.11	5.21
Cotton	149,808.60	2.98
Sorghum	64,717.64	1.29
Rice	25,126.14	0.50
Fallow/Idle Cropland	18,194.86	0.36
Other Hay/Non-Alfalfa	11,761.69	0.23
Soybeans	5,356.32	0.11
Aquaculture	5,035.06	0.10
Sod/Grass Seed	2,978.01	0.06
Pecans	2,667.41	0.05
Spring Wheat	2,214.61	0.04
Peas	855.76	0.02
Wheat (Winter)	791.67	0.02
Double Crop Winter Wheat/Soybeans	191.07	0.004
Triticale	142.67	0.003
Oats	93.40	0.002
Herbs	91.72	0.002
Total	5,026,548.25	100

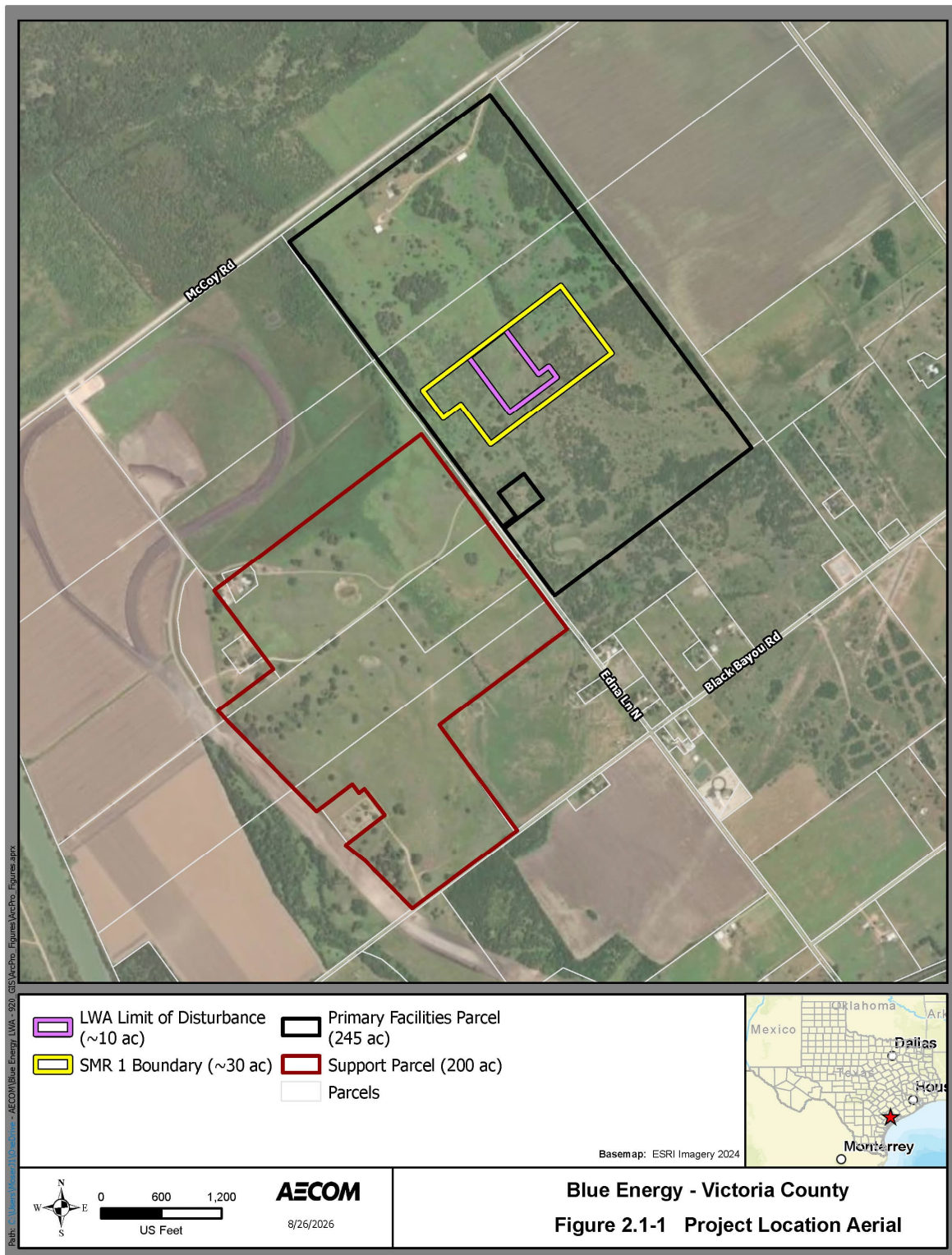


Figure 2.1-1. Area Boundaries

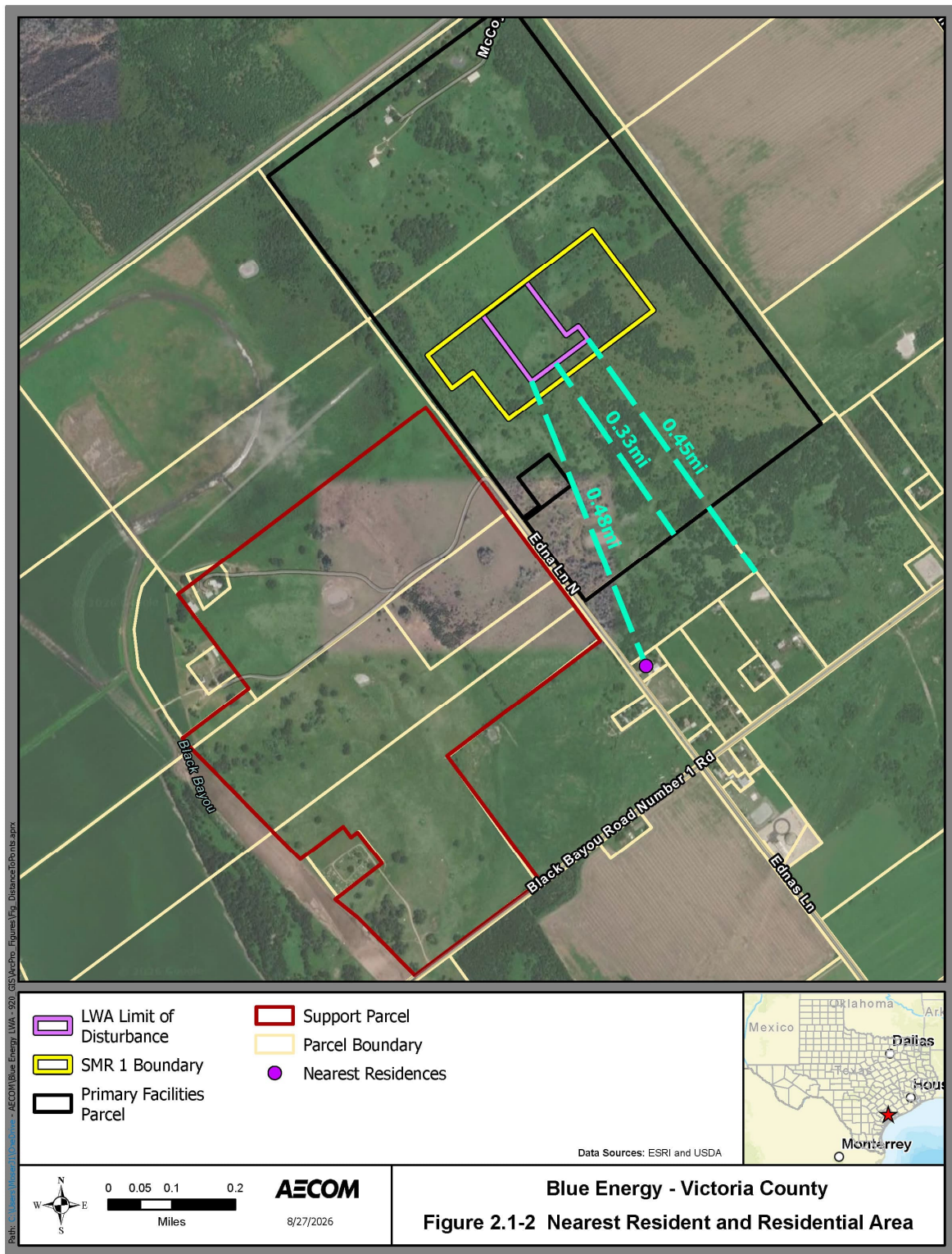


Figure 2.1-2. Nearest Resident and Residential Area

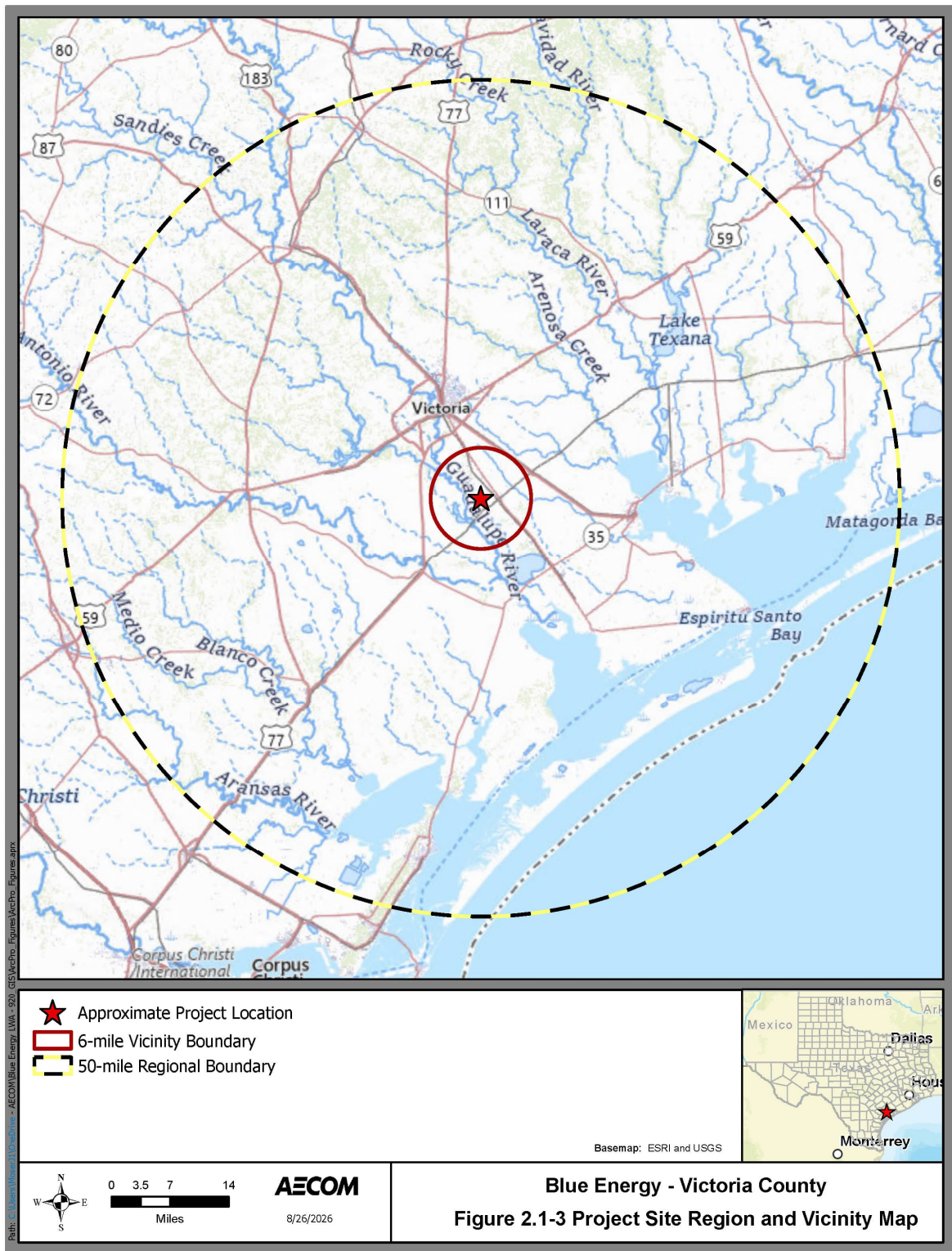


Figure 2.1-3. LWA Project Site Region and Vicinity Map

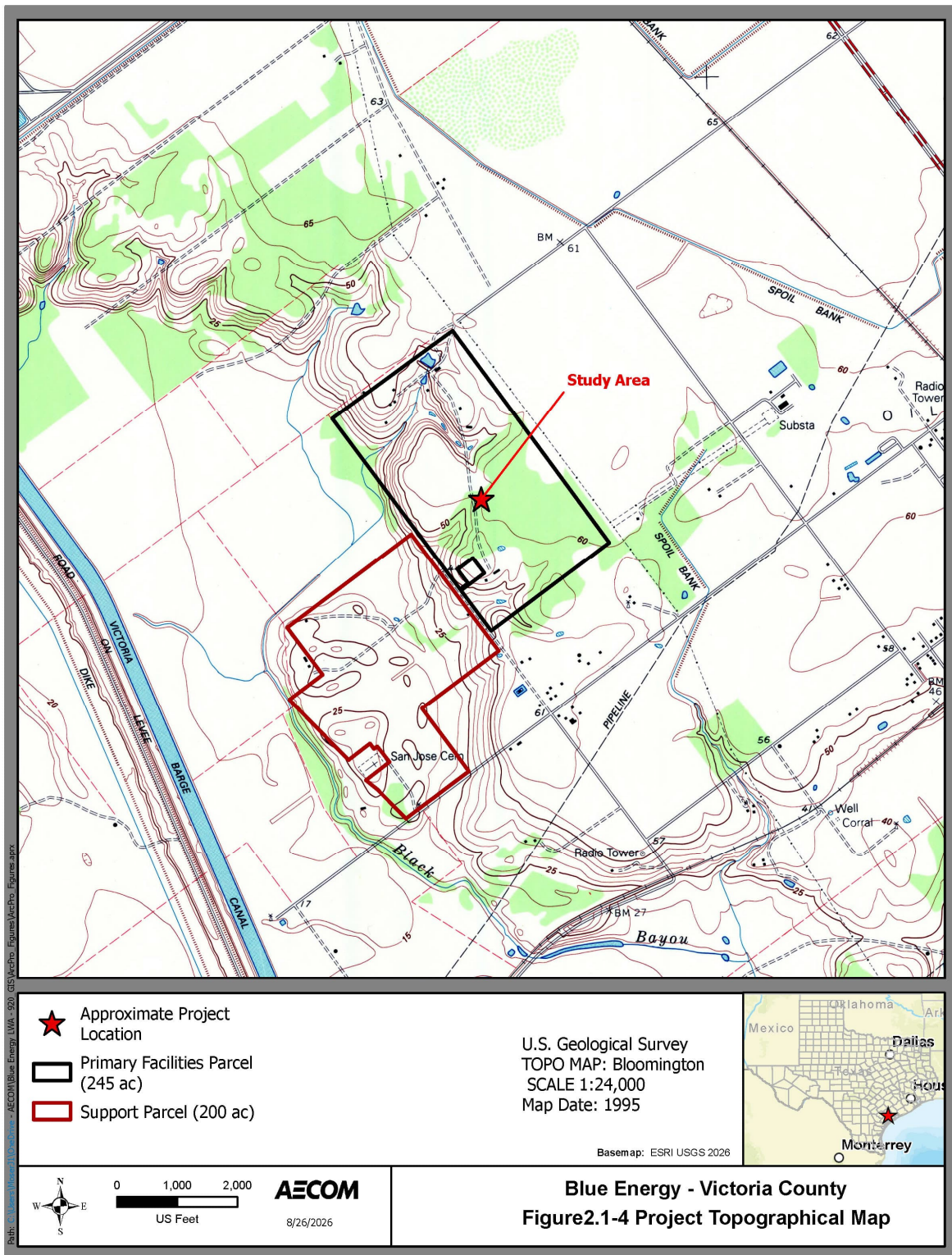


Figure 2.1-4. LWA Project Topographical Map

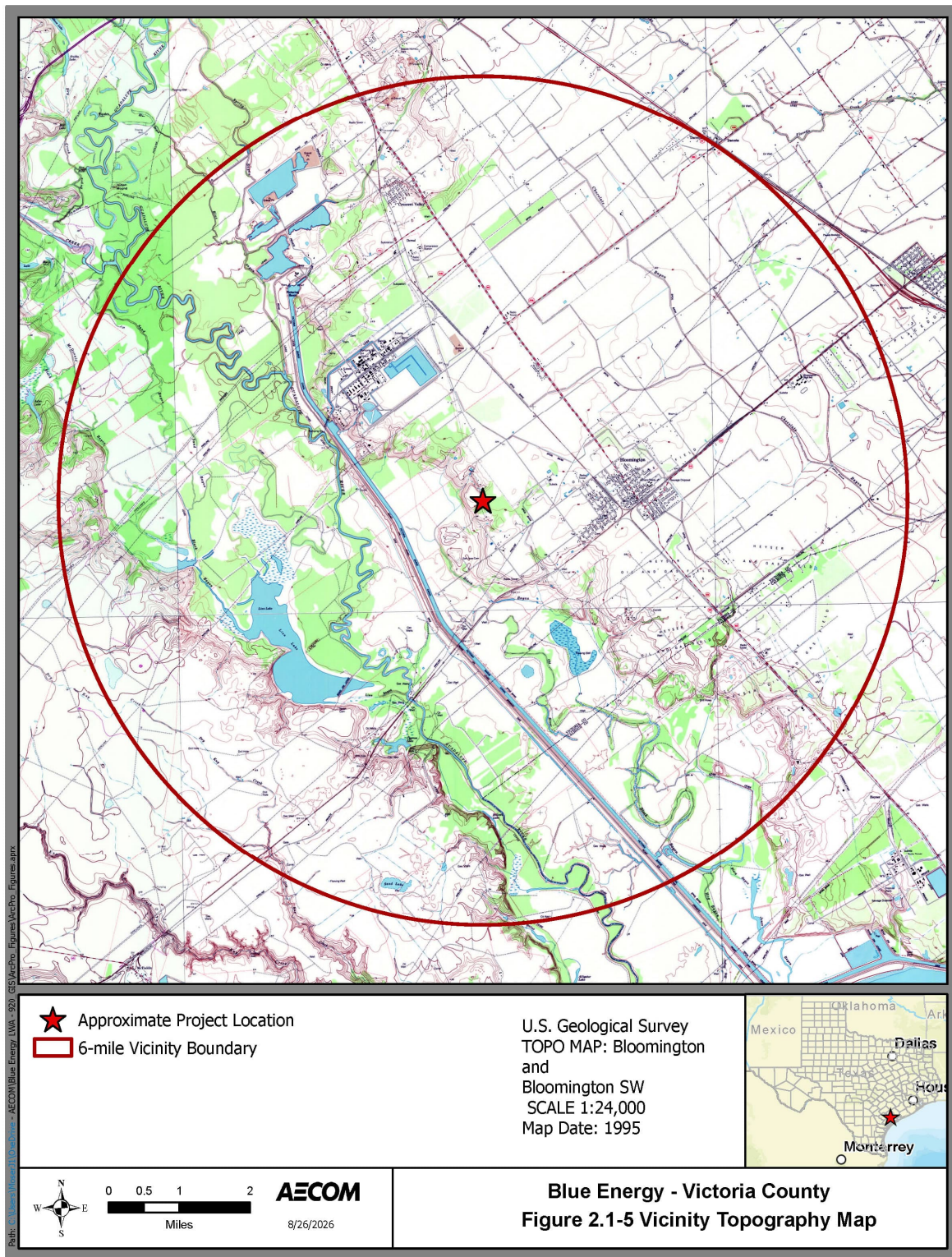


Figure 2.1-5. Vicinity Topography Map

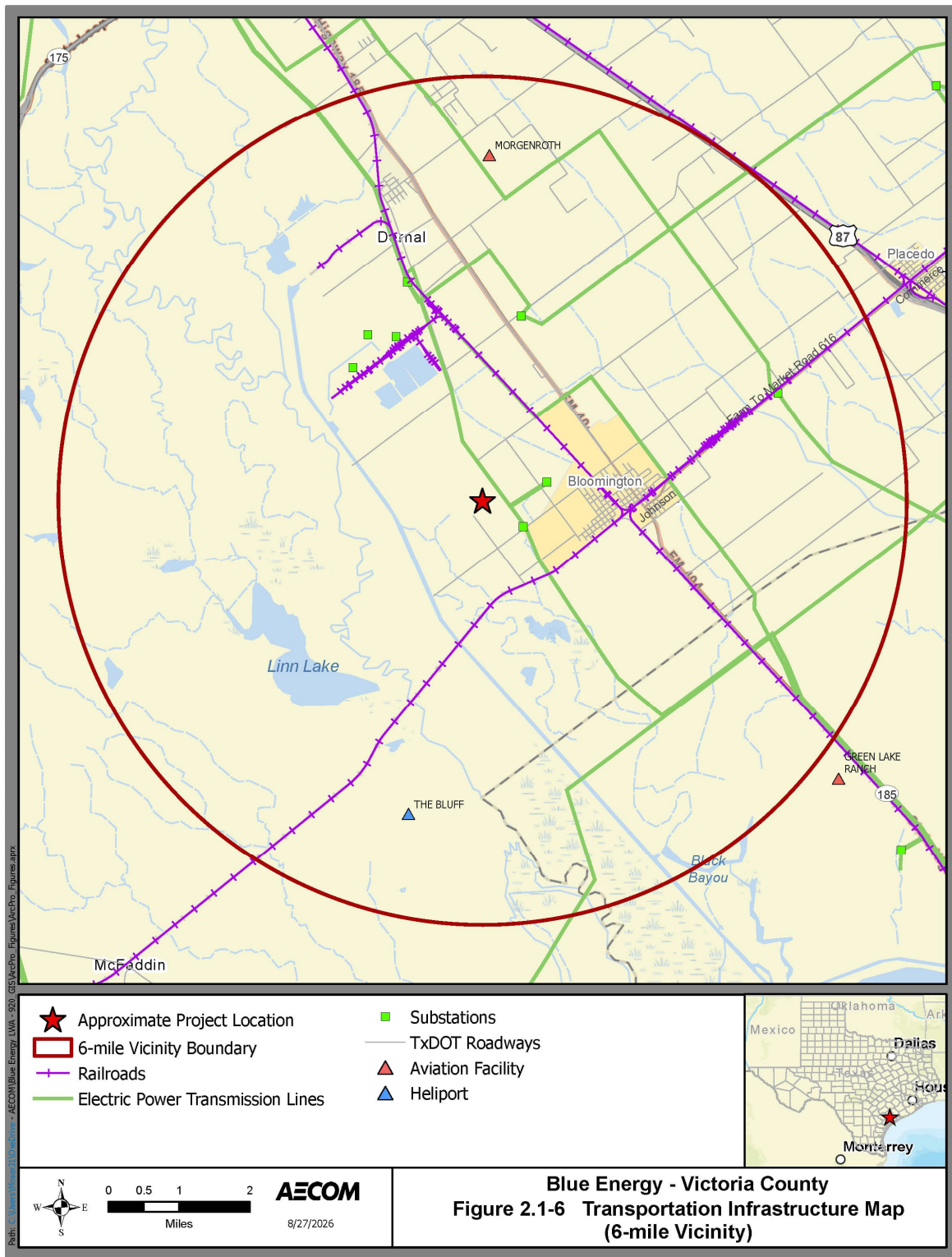


Figure 2.1-6. Transportation Infrastructure Map (6-mile Vicinity)

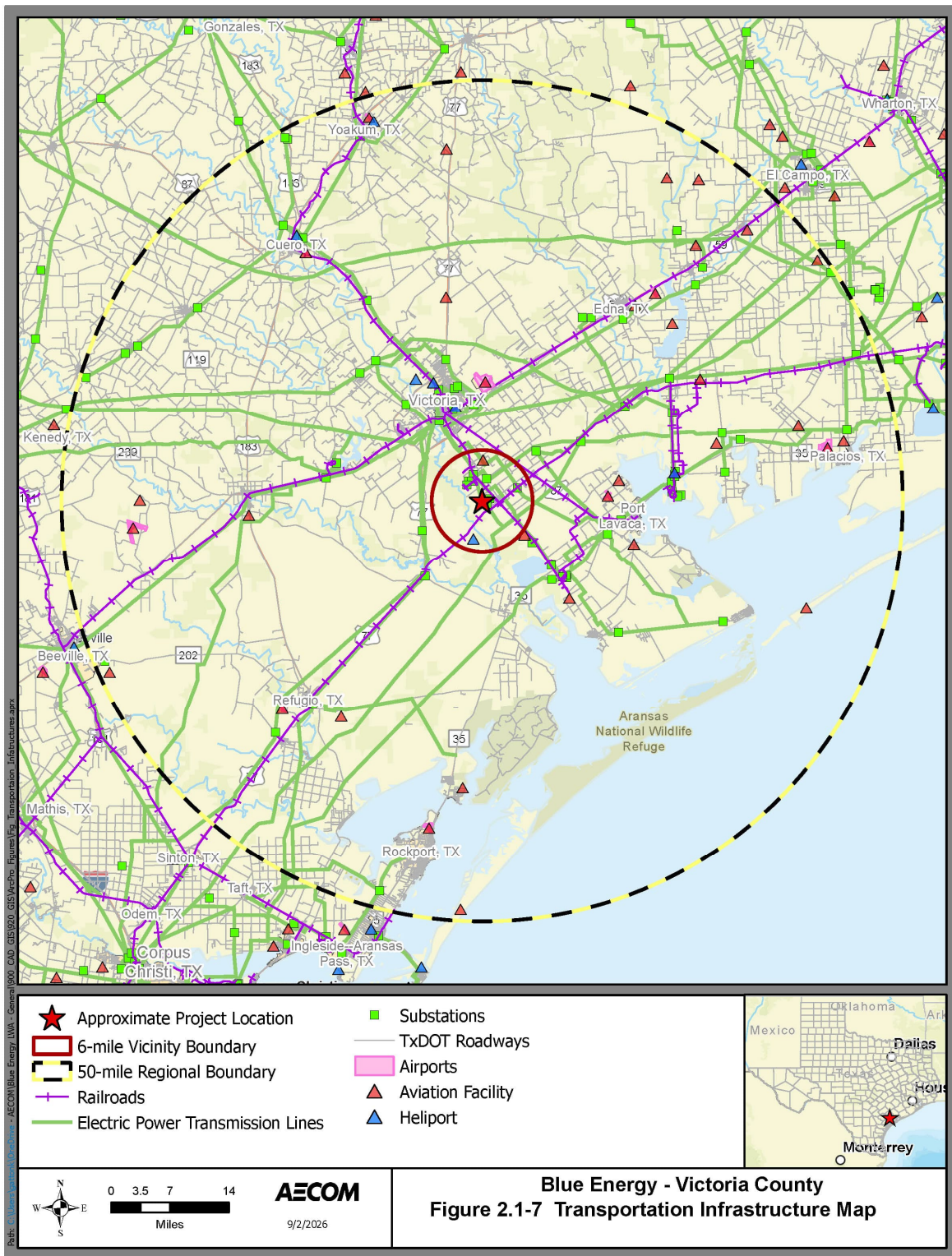


Figure 2.1-7. Transportation Infrastructure Map (50-mile Region)

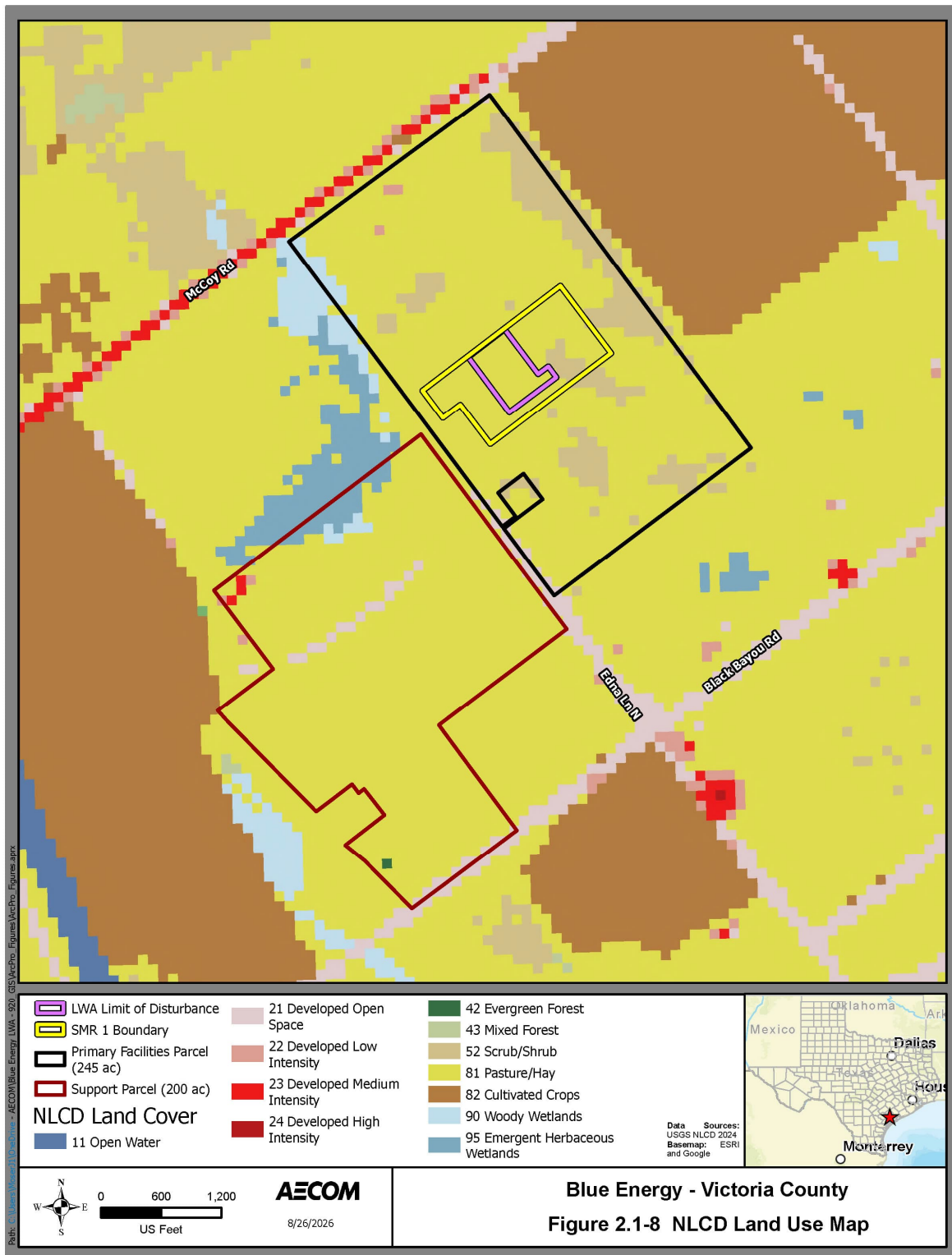


Figure 2.1-8. NLCD Land Use Map

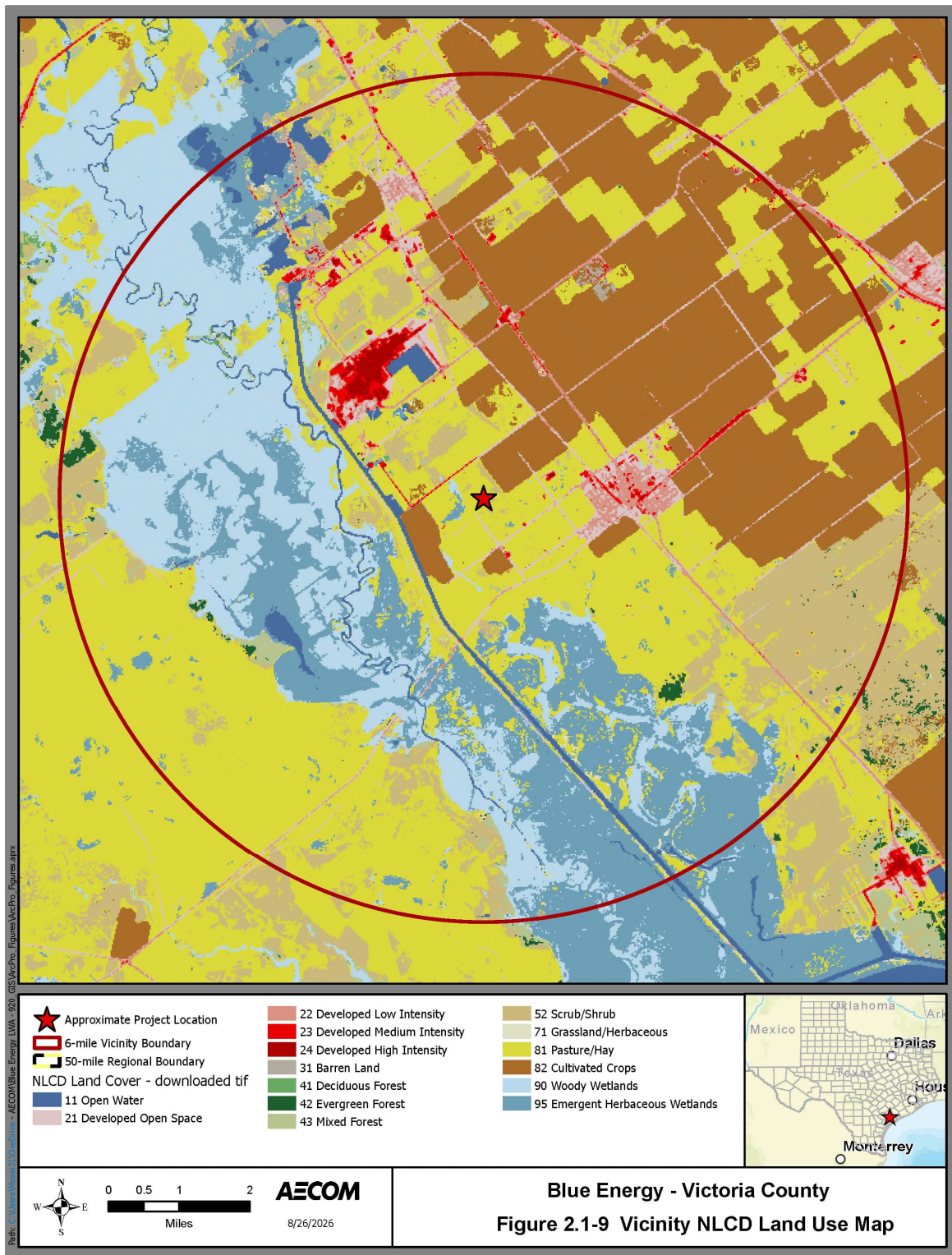


Figure 2.1-9. Vicinity NLCD Land Use Map

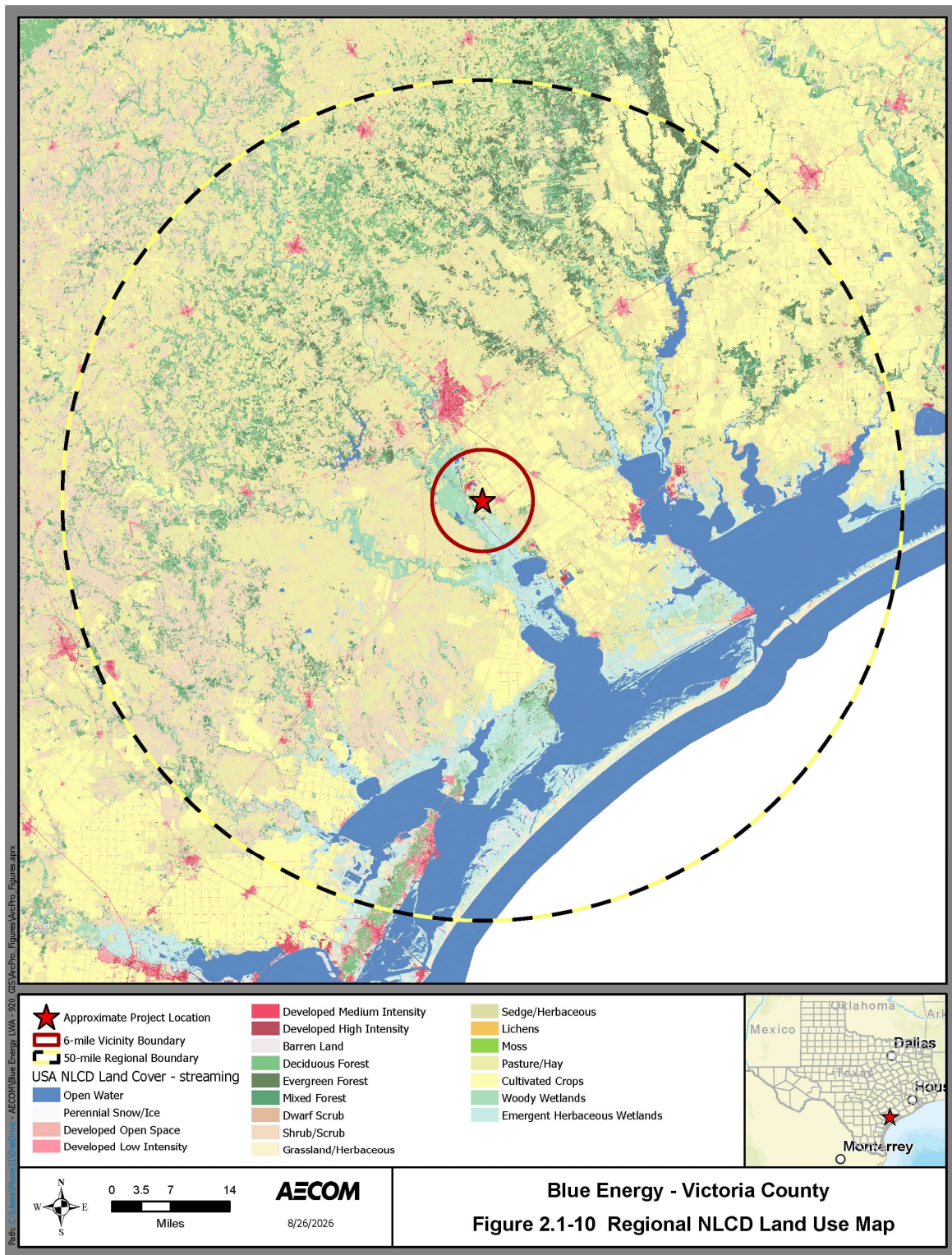
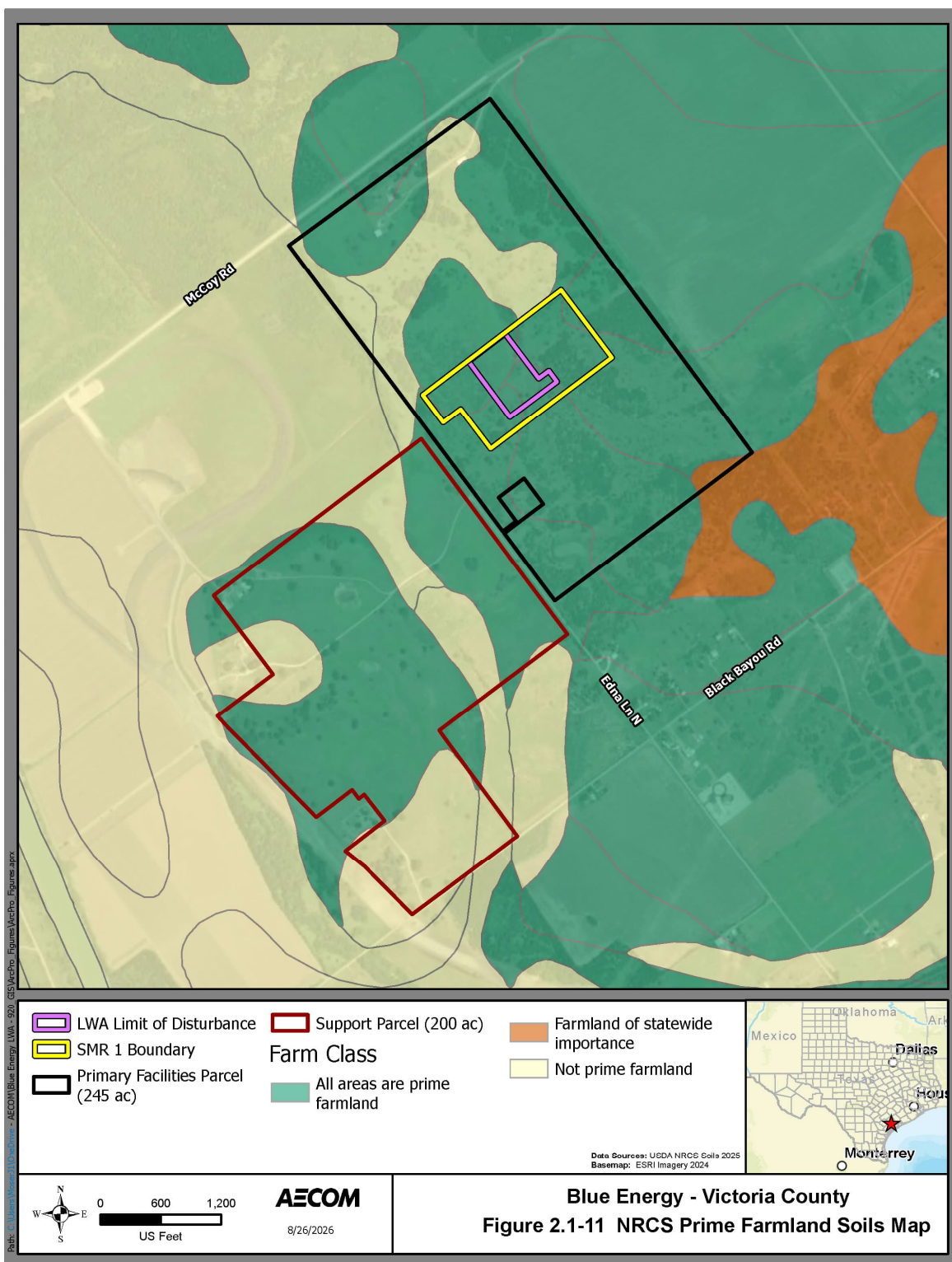


Figure 2.1-10. Regional NLCD Land Use Map



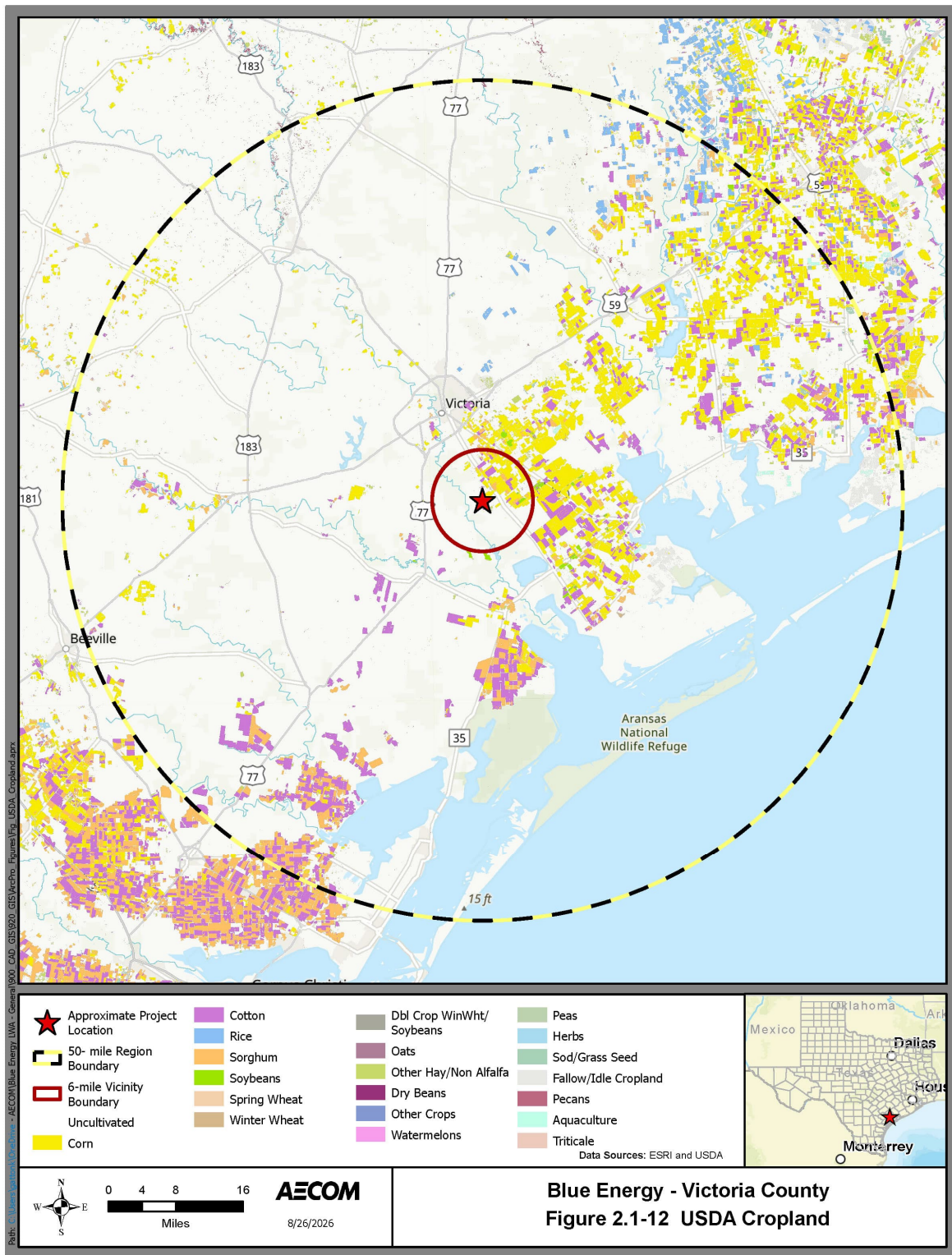


Figure 2.1-12. USDA Cropland

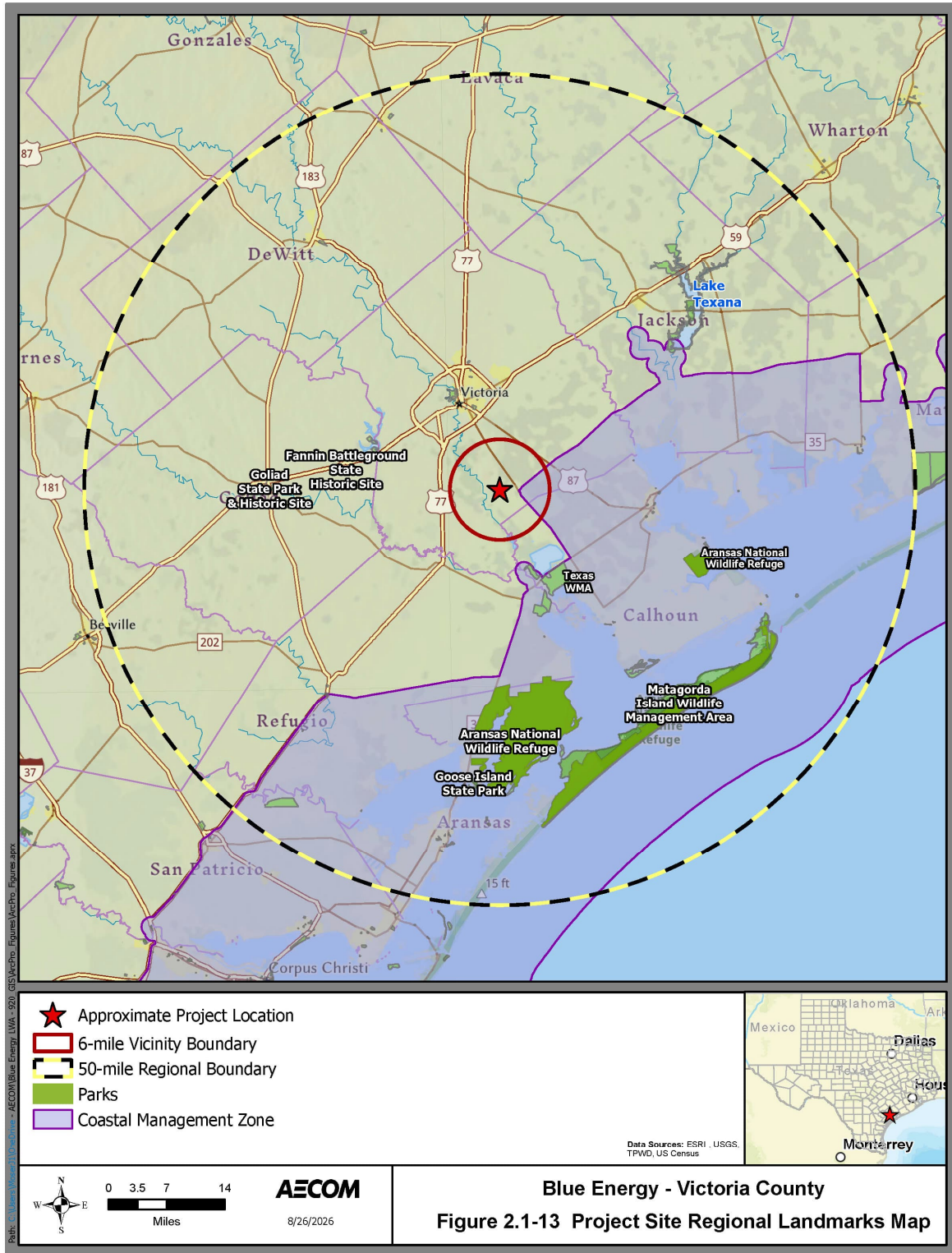


Figure 2.1-13. LWA Project Site Regional Landmarks Map

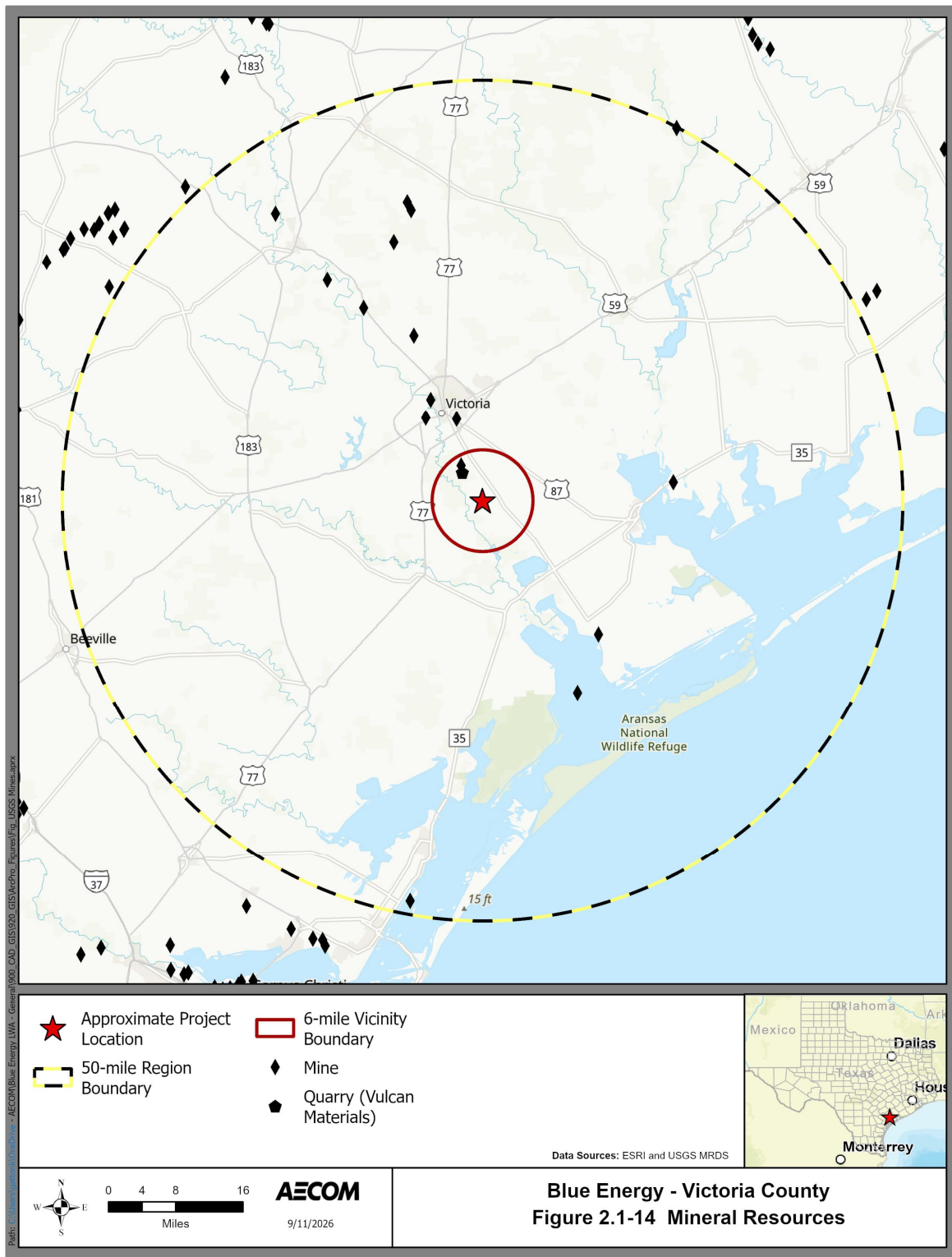


Figure 2.1-14. Mineral Recourses

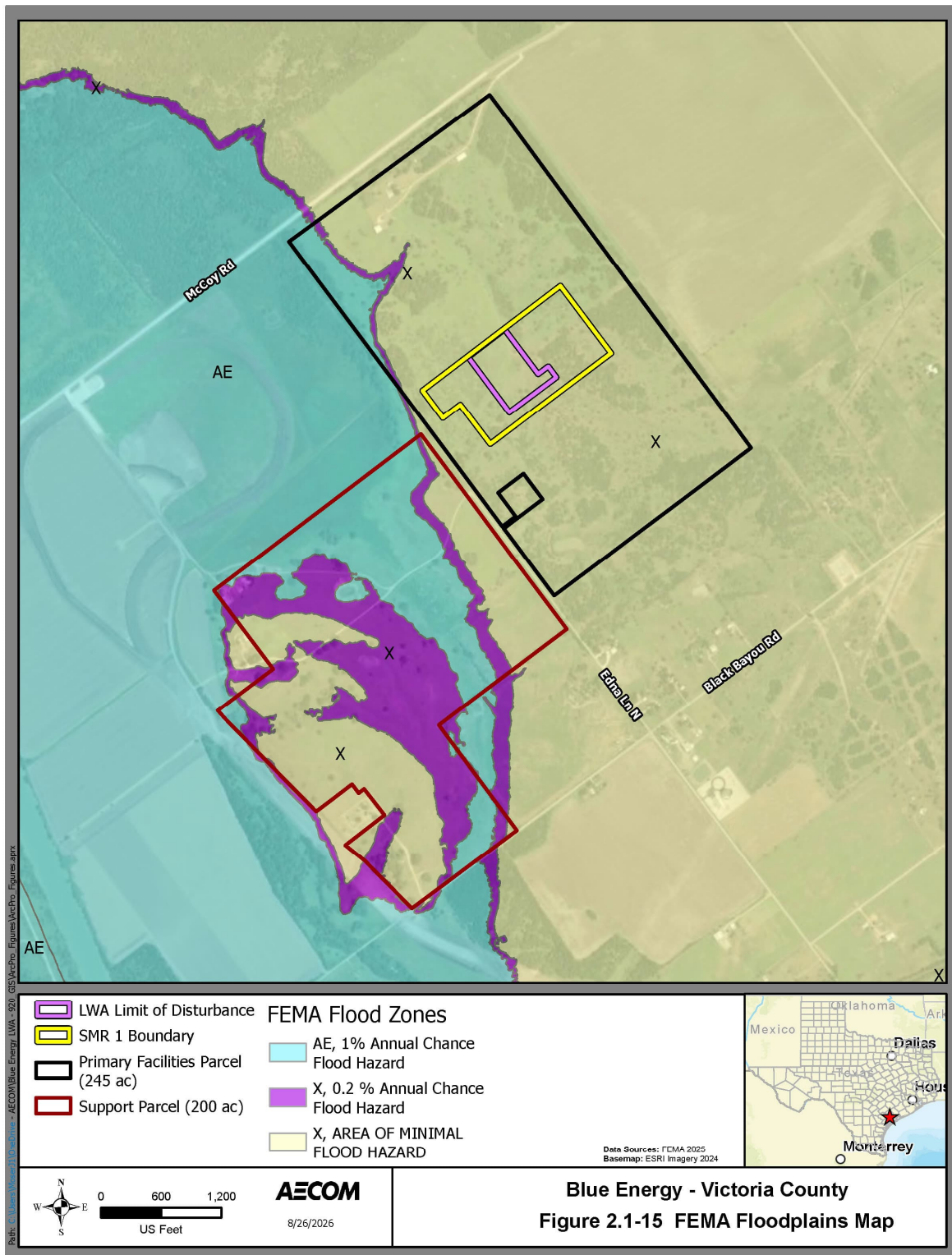


Figure 2.1-15. FEMA Floodplains Map

2.2 Water Resources

This section establishes the baseline physical, chemical, and biological water resource conditions for the LWA project site. These baseline characteristics provide the necessary benchmark to evaluate potential environmental consequences resulting from LWA-related construction.

2.2.1 Hydrology

2.2.1.1 Regional Surface-Water Setting

The LWA project is located in Victoria County, Texas, within the low-relief, low-gradient coastal plain of the Gulf Coastal Plain. It sits inside the Green Lake subwatershed (12-Digit Hydrologic Unit Code 121004030200) within the Lavaca-Guadalupe Coastal Basin.

The primary surface water features near the LWA project site include:

- Victoria Barge Canal (Segment 1701): Legally classified as a tidally influenced, brackish-to-saline man-made navigation channel. It links the Port of Victoria directly to the Gulf Intracoastal Waterway (GIWW). The channel relies on industrial wastewater effluents and regional stormwater runoff for its freshwater inputs rather than natural perennial river feeds.
- Black Bayou Drainage: Positioned immediately west and southwest of the LWA project site perimeter.

2.2.1.2 Site Drainage, Topography, and Subwatersheds

The BECPV energy project site is comprised of two parcels, a 200-ac southwest parcel (Support Parcel) and the 245-ac easternmost parcel (Primary Facilities Parcel), south of McCoy Road. The LWA activities will primarily occur within the Primary Facilities Parcel. As shown in Figure 2.1-4, the elevation within the Primary Facilities Parcel ranges from 15 to 63 ft NAVD88, generally sloping towards the Guadalupe River with northern and western portions exhibiting greater terrain variance. Site elevations across the LWA limit of disturbance footprint are relatively flat at an elevation of roughly 55 to 60 ft NAVD88 (Ref. 17).

Surface gradients slope downward slightly toward Black Bayou. Runoff is split across six individual local subwatersheds delineated using site survey data and USGS topography, as described in Table 2.2-1 and shown in Figure 2.2-1.

Drone reconnaissance conducted in 2026 confirmed that runoff is conveyed through an interconnected network of shallow overland flow paths, swales, roadside ditches, railroad-parallel drainage ditches, and visible culvert crossings. These conveyances direct runoff toward the mapped outlets in Figure 2.2-1, including Black Bayou and drainage features associated with Black Bayou Road, Edna Lane North, the new railroad corridor (located between the Primary Facilities and Support Parcels and the Victoria Barge Canal), and the adjacent canal system.

2.2.1.3 Floodplains and Floodways

As shown in Figure 2.1-15, the flood risks for the Support Parcel and the Primary Facilities Parcel are distinctly different. While the Support Parcel exhibits great variability in flood risk, the Primary Facilities Parcel, along with the primary LWA limit of disturbance, exhibits practically uniform flood risk. Per the FEMA FIRM for Victoria County (Ref. 14), flood risks for the Support Parcel and the Primary Facilities Parcel are distributed as follows:

- Support Parcel: With its proximity to the Black Bayou and Guadalupe River systems, this parcel includes Zone AE (1 percent annual chance flood hazard), Zone X-shaded (0.2 percent annual chance flood hazard), and Zone X-unshaded (Area of Minimal Flood Hazard).
- Primary Facilities Parcel (includes the LWA activities): While a small northwestern portion of this parcel is Zone AE and Zone X-shaded, with the vast majority of the parcel, including the LWA footprint, is rated Zone X-unshaded.

Coastal storm surge wave hazards do not track into the LWA development footprint; historical and projected base flood elevations remain below the inland terrain elevations (Ref. 14, Ref. 18).

2.2.1.4 Local Surface Water Features

No major natural surface waters occur on the LWA project site. Six small ponds (two perennial and four ephemeral) and one ephemeral drainage feature were identified during an investigation of potentially jurisdictional WOTUS conducted in March 2025 (Ref. 15). These features and the water feature listed below are shown in Figure 2.2-2 and Figure 2.2-3. Surface water drainage and watersheds are depicted in Figure 2.2-1 and were discussed in Section 2.2.1.2.

Feature BEA-OW5-EPH is an ephemeral freshwater drainage pathway measuring 265 ft long (~0.07 ac) within a non-wetland scrub-shrub habitat. It features a bank width of 3 ft and a bank height of 0.5 ft, carrying post-precipitation flow offsite toward Black Bayou. Field imagery verifies it remains dry during 85 percent of historical observations.

Features BEA-OW1-EP and BEA-OW4-EP are ephemeral ponds located near the northern boundary, measuring up to 0.25 ac when filled. They remain completely dry across roughly 30 percent of historical aerial imagery.

Feature BEB-OW2-EP is a small 0.15-ac ephemeral pond in the southern forested habitat that holds water strictly in response to immediate localized precipitation.

Features BEA-OW2-PP and BEB-OW1-PP are perennial man-made stock ponds excavated in non-wetland clay environments, measuring 0.18 ac and 0.59 ac, respectively. These features exhibit drastic surface area fluctuations based on seasonal climate trends.

2.2.1.5 Climate, Evaporation, and Hydrologic Variability

Texas Water Development Board (TWDB) historical data (1954–2024) indicates a significant net evaporative trend during late summer (Ref. 19). July and August experience the highest monthly net evaporation rates. Conversely, late autumn and winter exhibit negative net values due to steady rainfall and suppressed temperatures.

Applying the TWDB net evaporation data to the ponds, the annual average net evaporative loss from these features is 10.26 inches (in.). This annual water loss must be accounted for within the site's stormwater management or operational water allocation strategy.

The historical 10-year monthly mean precipitation peaks in June (6.36 in.), followed by May (5.45 in.) and September (5.18 in.) (Ref. 19, Ref. 20).

Vertical groundwater seepage loss from onsite surface water bodies is exceptionally low. This restriction is driven by regional Gulf Coast surficial soils, which are predominantly fine-grained, low-permeability clays that naturally bound downward migration.

2.2.1.6 Groundwater Hydrology

This section presents a description of the groundwater resources that could be affected by the LWA actions. Major surface geologic units near the LWA project site are shown on Figure 2.2-4. The regional aquifer system is shown on Figure 2.2-5. The physical and hydrologic groundwater resource characteristics of the site and region are summarized below.

Paralleling the coastline from Louisiana to Mexico, the Gulf Coast Aquifer underlies the region and spans 41,970 square miles. Deposited from the Miocene through the Holocene age, the Gulf Coast Aquifer consists of discontinuous gravel, sand, silt, and clay beds that dip and thicken towards the Gulf. As shown in Figure 2.2-6, the Gulf Coast Aquifer includes the Chicot, Evangeline, and Jasper aquifers with the Burkeville confining unit between the Evangeline and the Jasper aquifers and the Oligocene Catahoula tuff and sandstone at the base. Shallow salt domes intrude into the aquifer in the Houston Embayment (Ref. 21).

Sediments comprising the 430-mi Gulf Coast Aquifer were deposited in cyclic fluvial-deltaic to shallow-marine environments from the Miocene to the Pleistocene period. Natural subsidence of the Paleozoic basement rocks coupled with repeated sea-level change produced discontinuous beds of gravel, sand, silt, and clay on the coastal plains of the Gulf of America Basin; thus, producing the Gulf Coast Aquifer (Ref. 22).

Groundwater in the Gulf Aquifer is typically unconfined with freshwater thickness averaging 1,000 ft. However, the numerous interbedded silt/clay lenses locally confine groundwater in the Gulf Aquifer and thus, specific yield ranges from 0.05 to 0.005 percent instead of the 0.14 to 0.38 percent range typical of unconfined aquifers in sedimentary formations (Ref. 21).

Flow in the Gulf Aquifer is approximately 620,000 ac-ft per year with 84 percent discharging into streams. Direct groundwater flow between aquifers is limited, occurring along growth fault zones and at depth under pressure. A strong regional upward flow is exhibited with 1,400 ac-ft per year flowing from Jasper into the Burkeville confining unit, 6,000 ac-ft per year from Burkeville to the Evangeline aquifer, and 20,000 ac-ft per year from Evangeline to the Chicot aquifer. Groundwater also flows between the Gulf Coast Aquifer into the Brazos River Alluvium Aquifer (Ref. 21).

The Gulf Coast Aquifer outcrops in Victoria County a total of 889 square miles. In Victoria County, groundwater flow from the Gulf Coast Aquifer to surface water averages 78 cubic ft per second (Ref. 21).

The Gulf Coast Aquifer stores approximately 5.1 billion ac-ft of groundwater with recoverable storage estimated between 1.2 and 3.8 billion ac-ft (Ref. 21). Water quality in the Gulf Coast Aquifer varies with depth and locality, but is generally good. Wells become less productive to the south with increased salinity, arsenic, and radionuclides. Wells in this region of Victoria County produce fresh water with total dissolved solids generally between 1 to 1,000 milligrams per liter (mg/L) (Ref. 21).

2.2.2 Water Use

2.2.2.1 Existing Regional Surface Water Demands

Surface water allocations within a 50-mi (80 km) radius are governed by the State of Texas via formal water rights. The Guadalupe River Basin, under the regional jurisdiction of the Guadalupe-Blanco River Authority, serves as the primary regional point of diversion. It supplies municipal drinking water, heavy industrial manufacturing flows, and run-of-river agricultural water rights throughout Victoria County.

The Lavaca and San Antonio River basins provide vital municipal, domestic, and steam-electric power generation cooling supplies across south-central Texas. Freshwater inflows from these river systems maintain the salinity balances of San Antonio Bay and Lavaca Bay, supporting regional commercial and recreational saltwater tourism.

Before 2001, the City of Victoria sourced the majority of its water from groundwater wells. In 2001, a new surface water treatment plant was completed and the City began drawing most of its water from the Guadalupe River (Ref. 23). The surface water treatment plant was built with the capacity to facilitate over 20 million gallons a day (MGD), though the City's current average usage is between 9 and 12 MGD (Ref. 23). Raw water from the Guadalupe River is pumped into off-channel reservoirs, where it is stored before being conveyed to the treatment plant. This process keeps the water circulating and keeps the various reservoirs full for use during drier periods. The City also continues to pull a small amount of groundwater for use in its public water system. The groundwater supply is typically drawn in the summer up to 2 MGD (Ref. 23).

2.2.2.2 Site Construction-Water Source and Demand

The current LWA scope utilizes zero direct water withdrawals from the Victoria Barge Canal, Black Bayou, or onsite ponds. Water required to support construction activities, including concrete batching, bentonite wall slurry development, equipment washing, dust suppression, and sanitation would be supplied externally by the City of Victoria via contractor. Additionally, freshwater in the sediment basins, which will later become stormwater detention ponds, may be used for construction activities like dust control.

Onsite water during the LWA would be contractor-supplied municipal water. Tanker trucks would supply up to a total of 28,000 gallons per day (gpd) to meet LWA water needs.

2.2.2.3 Existing Regional Groundwater Quality and Well Extraction

Ambient water quality within the upper Gulf Coast Aquifer is generally good, exhibiting total dissolved solids concentrations safely between 1 and 1,000 mg/L within northern Victoria County. However, structural production capacity drops farther south, correlating with natural coastal gradients of increasing salinity, dissolved arsenic, and measurable background naturally occurring and anthropogenic radionuclides (Ref. 21).

2.2.3 Water Quality

2.2.3.1 Regulatory Classifications and Designated Uses

The principal classified receiving water for LWA activities is Victoria Barge Canal, Segment 1701, within the Lavaca-Guadalupe Coastal Basin. Segment 1701 is legally categorized by the state as a tidal stream. It is designated for High Aquatic Life Use and Noncontact Recreation (Ref. 24). The regulatory compliance metrics designated for Segment 1701 include:

- Dissolved Oxygen: Minimum of 4.0 mg/L.
- pH Range: 6.5 to 9.0 standard units.
- Maximum Temperature: 95 degrees Fahrenheit (°F; 35 degrees Celsius [°C]).
- Biological Indicator: Enterococci bacteria (the mandatory standard for tidally influenced coastal waters) (Ref. 24).

The water quality of any receiving waterbody will be maintained in accordance with Texas Pollutant Discharge Elimination System (TPDES) permit requirements.

2.2.3.2 CWA Section 303(d) Impairments and Existing Stressors

Review of the 2024 Texas Integrated Report confirms that the Victoria Barge Canal (Segment 1701) is not listed as a Category 5 impaired waterbody (Ref. 25). Periodic elevated spikes of chlorophyll-a exist in historical logs, reflecting brief nutrient cycles, but these do not constitute formal state regulatory impairments. Black Bayou remains an unclassified local inland waterbody (Ref. 25).

2.2.3.3 Historical Downstream Monitoring Data

Texas Commission on Environmental Quality (TCEQ) Surface Water Quality Monitoring Station 12536, located downstream in the Victoria Barge Canal/GIWW system (at approximately 28.518963, -96.804612), provides regional context for tidal and brackish conditions. Table 2.2-2 summarizes the ranges of water quality conditions downstream based on the baseline Sampling and Analytical Plan (SAP) (Ref. 20).

2.2.3.4 Onsite Baseline Surface Water Quality Sampling

AECOM Technical Services, Inc. (AECOM) conducted a baseline water quality assessment in 2026. AECOM's baseline program – details provided in report *Blue Energy Project - Environmental Site Assessment: Surface Water Quality* – was designed to characterize ambient surface-water conditions before construction. The SAP identified ten planned monitoring locations representing the Victoria Barge Canal, Black Bayou, and upper-, mid-, and lower-gradient surface-water features on the Primary Facilities Parcel and the Support Parcel.

Field implementation was adjusted based on actual hydrologic and access conditions encountered during each sampling event. Several inland locations did not contain sufficient water for sampling during the March 2026 event, while some of those locations contained standing water during the July 2026 event. Other planned locations could not be accessed safely or were outside the confirmed site investigation area. Where samples could not be collected, field conditions were documented using ground-level observations, Global Positioning System (GPS) coordinates, photographs, and drone imagery, as available. Table 2.2-3 summarizes the sampling and observational status of each location shown in Figure 2.2-7.

The field observations demonstrate temporal and spatial variability among the onsite surface-water features. Location (LOC)-5, LOC-9, and LOC-9-Dry did not contain sufficient water for sampling during the March event but contained sampleable standing water during the July 2026 event. In contrast, LOC-6 and LOC-8 remained dry during both field events. The Victoria Barge Canal locations and the lower-gradient pond or drainage locations generally retained water during both events, although access limitations prevented repeat sampling at some stations.

These observations indicate that several inland locations represent intermittent or seasonally ponded conditions rather than continuously flowing surface waters. Accordingly, analytical results should be interpreted together with antecedent rainfall, observed water depth and flow conditions, sampling accessibility, and the hydrologic condition of each location at the time of collection. The inability to collect a sample at a planned station does not necessarily indicate the permanent absence of surface water at that location.

The Event 1 analytical dataset includes samples from LOC-1, LOC-2, LOC-7, LOC-7D, and LOC-10. Event 2 sampling was conducted on July 21 and 22, 2026, and included samples from LOC-5, LOC-9, LOC-9-Dry, and LOC-10. Event 2 analytical results will be incorporated into the final AECOM baseline surface-water quality report when laboratory analysis and data validation are complete. The available water quality results characterize preconstruction background conditions and are summarized in Table 2.2-4.

Most evaluated constituents were either not detected or below the draft aquatic-life and human-health screening benchmarks. Arsenic, cadmium, chromium, mercury, nickel, selenium, nitrate, fluoride, and zinc generally met the selected criteria. The localized lead, copper, aluminum, and bacteria findings represent preconstruction baseline conditions and should not be attributed to the LWA action. Enterococci bacteria levels returned extreme counts across multiple onsite inland and tidal locations, logging counts of 1,986, greater than 2,419, and greater than 2,419 MPN/100 milliliters (mL) (Ref. 20). These figures reflect intensive background agricultural runoff, livestock operations, and native wildlife activity.

Potential background influences include agricultural runoff, wildlife or livestock, sediment interaction, naturally elevated metals, localized stagnant or low-flow conditions, tidal mixing, and salinity. Event 2 should be used to evaluate reproducibility, event-to-event variation, and whether apparent findings persist under different rainfall, temperature, and tidal conditions.

2.2.4 Water Monitoring

2.2.4.1 Monitoring Objectives and Design

The ambient baseline water monitoring program was executed via a dedicated SAP to record preconstruction spatial and temporal variability.

The SAP planned two sampling trips at 10 fixed locations (Table 2.2-5), with one duplicate and one blank per trip. Sampling was intended to capture seasonal and, where feasible, hydrologic variability. Additional sampling may be warranted if dry stations, access constraints, rainfall, or analytical variability prevent adequate characterization.

2.2.4.2 Field and Laboratory Methods

Field and laboratory protocols strictly conform to National Environmental Laboratory Accreditation Program (NELAP) certifications. Dissolved metals are isolated onsite using a 0.45-micron field filter via standard "clean-hand/dirty-hand" handling techniques. Samples are preserved as required, placed on ice near 4°C, shipped under chain of custody, and analyzed by NELAP-accredited laboratories. Field quality assurance/quality control requires rigorous field instrument calibration, the submission of at least one blind duplicate matrix sample per trip, and clean equipment blanks.

The analytical suite includes conventional parameters, solids, hardness and alkalinity, major ions, nutrients, dissolved metals, total iron, mercury, oil and grease, sulfide, biological oxygen demand, chemical oxygen demand, chlorophyll-a, total coliform, fecal coliform, and fecal streptococci. In accordance with early scoping directives, pesticides, polychlorinated biphenyls, volatile organic compounds, per- and polyfluoroalkyl substances, and baseline radiological parameters were excluded from the ambient SAP parameter suite. Their omission represents an intentional scope decision rather than evidence that these constituents are absent from the local ecosystem.

Table 2.2-1. Local Subwatersheds

Subwatershed	Draft Area	Preliminary Description	Confirmation
A	201 ac	Northern/upper contributing area	Drone reconnaissance confirmed the mapped outlet and the visible surface-drainage pathway from the northern contributing area to Black Bayou.
B	38 ac	Central/northern drainage area	Drone reconnaissance confirmed the mapped outlet near the central drainage convergence and its relationship to the tract boundary.
C	137 ac	Eastern/central contributing area	Drone reconnaissance confirmed the mapped outlet and the associated visible ditch closest to Edna Ln N.
D	154 ac	Central/southern drainage area	Drone reconnaissance confirmed the mapped outlet and the visible downstream drainage pathway toward the adjacent canal and drainage network, following new railroad boundary at Edna Ln N.
E	31 ac	Southern drainage area	Drone reconnaissance confirmed the southern outlet, the drainage pathway under Black Bayou Road, and the downstream receiving feature.
F	76 ac	Southeastern drainage area	Drone reconnaissance confirmed the southeastern outlet and the visible downstream conveyance from the southern portion to a ditch along the new railroad.

Note: The combined subwatershed acreage exceeds the project parcels because the delineation includes offsite contributing areas. Accordingly, the subwatershed areas are not reflective of the LWA project-site acreage.

Table 2.2-2. Baseline Downstream Water Quality Conditions

Parameter	Units	Minimum	Maximum
Dissolved oxygen	mg/L	5.0	10.3
pH	standard units	7.8	8.4
Temperature	°C	19.5	31.7
Specific conductance	µS/cm	6,510	27,800
Salinity	ppt	3.6	17.1
Chloride	mg/L	1,890	9,210
Sulfate	mg/L	282	1,250
Total Suspended Solids	mg/L	17	52
Total Organic Carbon	mg/L	3.59	9.0
Ammonia as Nitrogen	mg/L	0.029	0.36
Total Kjeldahl Nitrogen	mg/L	0.53	1.79
Nitrate + nitrite as Nitrogen	mg/L	<0.04	0.80
Total phosphorus	mg/L	0.11	0.348
Chlorophyll-a	µg/L	14.3	72.7
Enterococci	MPN/100 mL	<10	20

Table 2.2-3. Baseline Surface-Water Sampling and Observation Summary

Location	Description	Sample Trip 1	Sample Trip 2	Key Documentation / Observation
LOC-1	Victoria Barge Canal Inlet	Sampled on March 25, 2026.	Not sampled because of access limitations; water conditions documented by drone imagery.	Water was present during both events. Trip 2 documentation is observational, and site access prevented sample collection.
LOC-2	Victoria Barge Canal Outlet	Sampled on March 25, 2026.	Not sampled because of access limitations; shoreline conditions documented by drone imagery.	Water remained present during Trips 1 and 2.
LOC-3	Black Bayou Inlet	Not sampled	Not sampled	The planned location was outside the confirmed site investigation boundary and was not sampled during either event.
LOC-4	Black Bayou Outlet	Not sampled because sufficient water was not available.	Not sampled because of access limitations; the location was evaluated using drone imagery.	Trip 2 aerial imagery indicates localized standing water within the densely vegetated drainage or depression.
LOC-5	Upper Gradient 245-acre	Not sampled because sufficient water was not available.	Sampled on July 21, 2026.	The pond contained sufficient water for sampling during Trip 2, illustrating a change from the dry or insufficient-water condition encountered during Trip 1.
LOC-6	Mid-Gradient 245-acre	Not sampled because sufficient water was not available.	Not sampled because sufficient water was not available.	Location presented with no water during Trip 1 and Trip 2.
LOC-7	Lower Gradient 245-acre	Sampled on March 25, 2026.	Not sampled because of access limitations; pond conditions documented by drone imagery.	Standing water was present during both events.
LOC-8	Upper Gradient 200-acre	Not sampled because sufficient water was not available.	Not sampled because sufficient water was not available.	Location presented with no water during Trip 1 and Trip 2.
LOC-9	Mid Gradient 200-acre	Not sampled because sufficient water was not available.	Sampled on July 21, 2026.	Ground and aerial photographs document standing water during Trip 2, supporting seasonal and spatial variability among the LOC-9 features.
LOC-9-Dry	Mid Gradient 200-acre	Not sampled because sufficient water was not available.	Sampled on July 22, 2026.	Location presented with no water during Trip 1. Standing water was present and sampled during Trip 2. This location provides the clearest photographic example of temporal variability between the two field events.
LOC-10	Lower Gradient 200-acre	Sampled on March 25, 2026.	Sampled on July 22, 2026.	The drainage feature contained water during both sampling events.

Abbreviation: LOC = location (sample)

Note: LOC-7D and LOC-9D are duplicate samples, obtained from the same location and during the same sample trip. LOC-9 and LOC-9-Dry refer to two adjacent ponds, separated by Edna Lane.

Table 2.2-4. Baseline Surface Water Quality, Event 1

Station	Hydrologic Function	Preliminary Event 1 Finding	QA/Interpretive Need
LOC-1	Canal inlet / tidal	Lead 7.1 µg/L exceeded draft chronic saltwater and water-and-fish screening values; other selected metals generally met criteria	Verify criteria and human-health use assumptions
LOC-2	Canal outlet / tidal	Copper 4.8 µg/L exceeded draft chronic saltwater criterion; other selected metals generally met criteria	Confirm tidal stage and station relationship
LOC-7	Lower-gradient 245-ac	Aluminum exceeded freshwater acute criterion; lead 3.4 µg/L exceeded chronic and human health / water-and-fish benchmarks	Confirmed filtered water analysis
LOC-7D	Duplicate at LOC-7	Aluminum exceeded freshwater acute criterion; lead 3.7 µg/L exceeded chronic and human health / water-and-fish benchmarks	Duplicate shows good reproducibility
Multiple locations	Tidal and inland	Enterococci reported at 1,986, >2,419, >2,419, and 65.7 MPN/100 mL at selected stations	Confirm criterion and freshwater interpretation

Abbreviation: µg/L = micrograms per liter

Table 2.2-5. SAP Sampling Locations and Hydrologic Roles

Point	SAP Description	Approximate GPS Coordinates (°N, °W)	Hydrologic Role
1	Victoria Barge Canal inlet	28.644490, -96.948570	Tidal/near-field inlet
2	Victoria Barge Canal outlet	28.628420, -96.940700	Tidal/downstream
3	Black Bayou inlet	28.647117, -96.934167	Local upstream inflow <i>[outside site plan boundary]</i>
4	Black Bayou outlet	28.632211, -96.934871	Local downstream outflow
5	Upper-gradient 245-ac	28.653990, -96.931290	Ephemeral upper-gradient drainage/background
6	Mid-gradient 245-ac	28.648233, -96.929554	Ephemeral mid-gradient drainage
7	Lower-gradient 245-ac	28.643510, -96.928230	Perennial pond
8	Upper-gradient 200-ac	28.636802, -96.932906	Ephemeral upper-gradient drainage/background
9	Mid-gradient 200-ac	28.640220, -96.934620 28.642000, -96.934690 (alternative site)	Ephemeral mid-gradient drainage
10	Lower-gradient 200-ac	28.638712, -96.938713	Perennial, Black Bayou mid-point

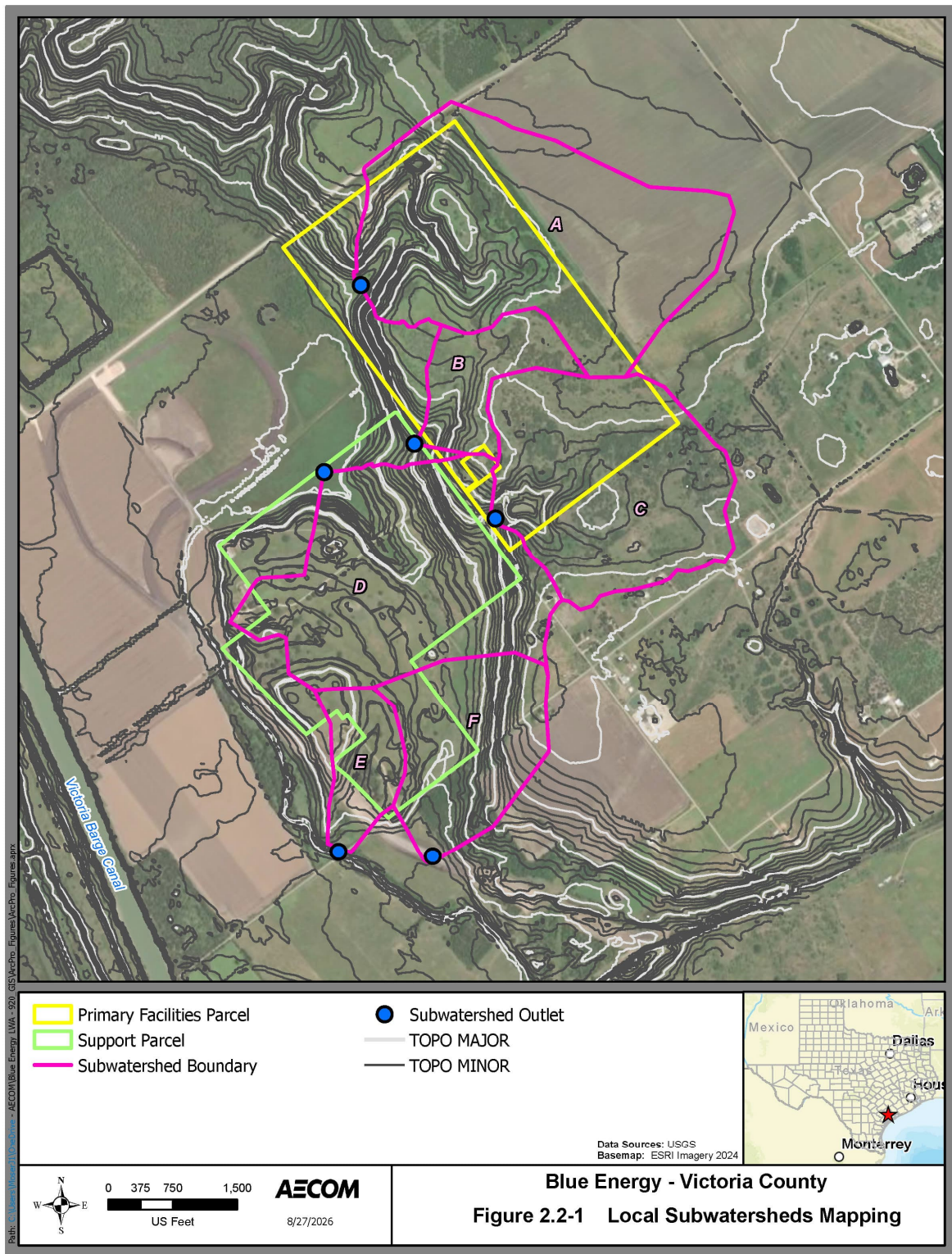


Figure 2.2-1. Local Subwatersheds Mapping

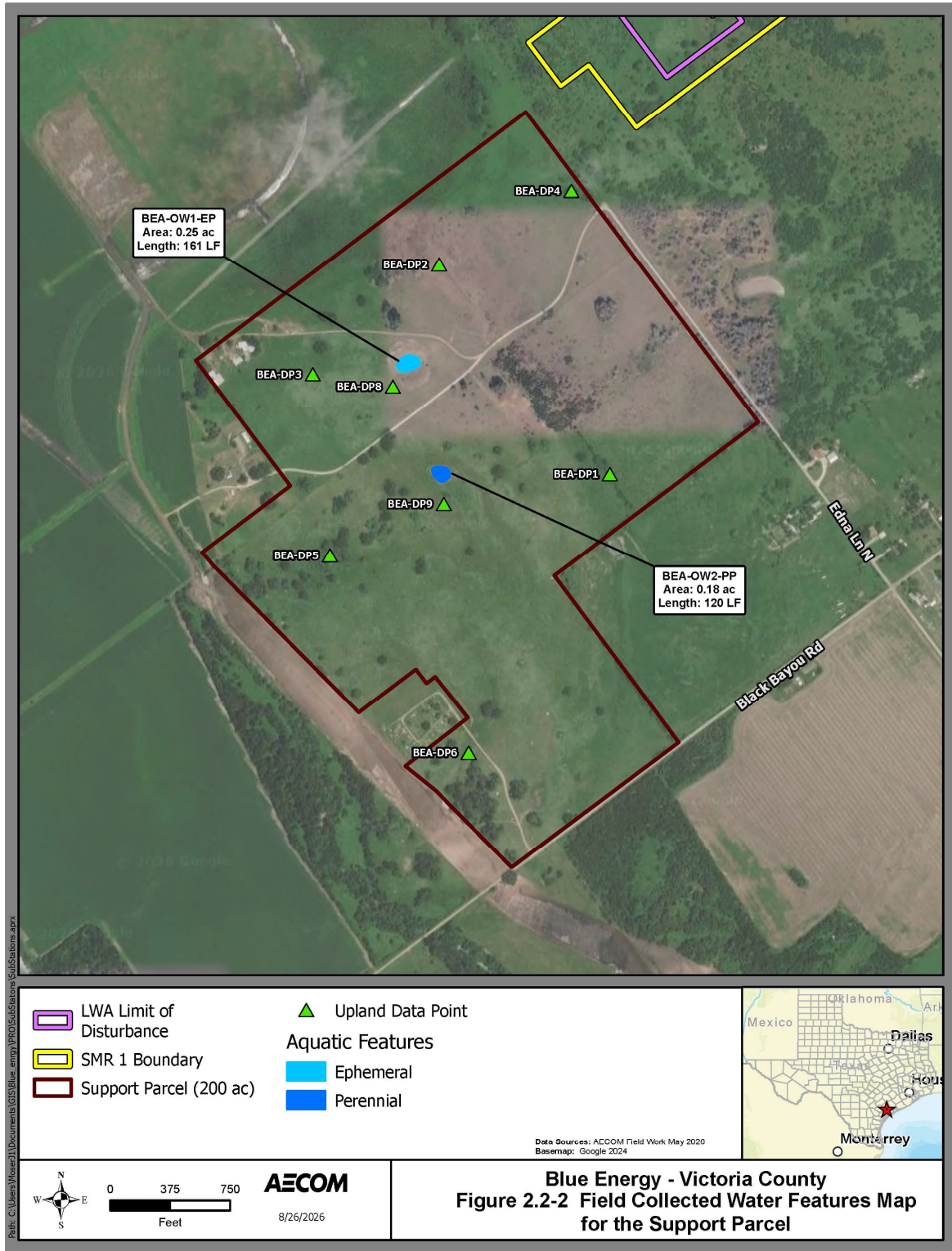


Figure 2.2-2. Field Collected Water Features Map for the Support Parcel

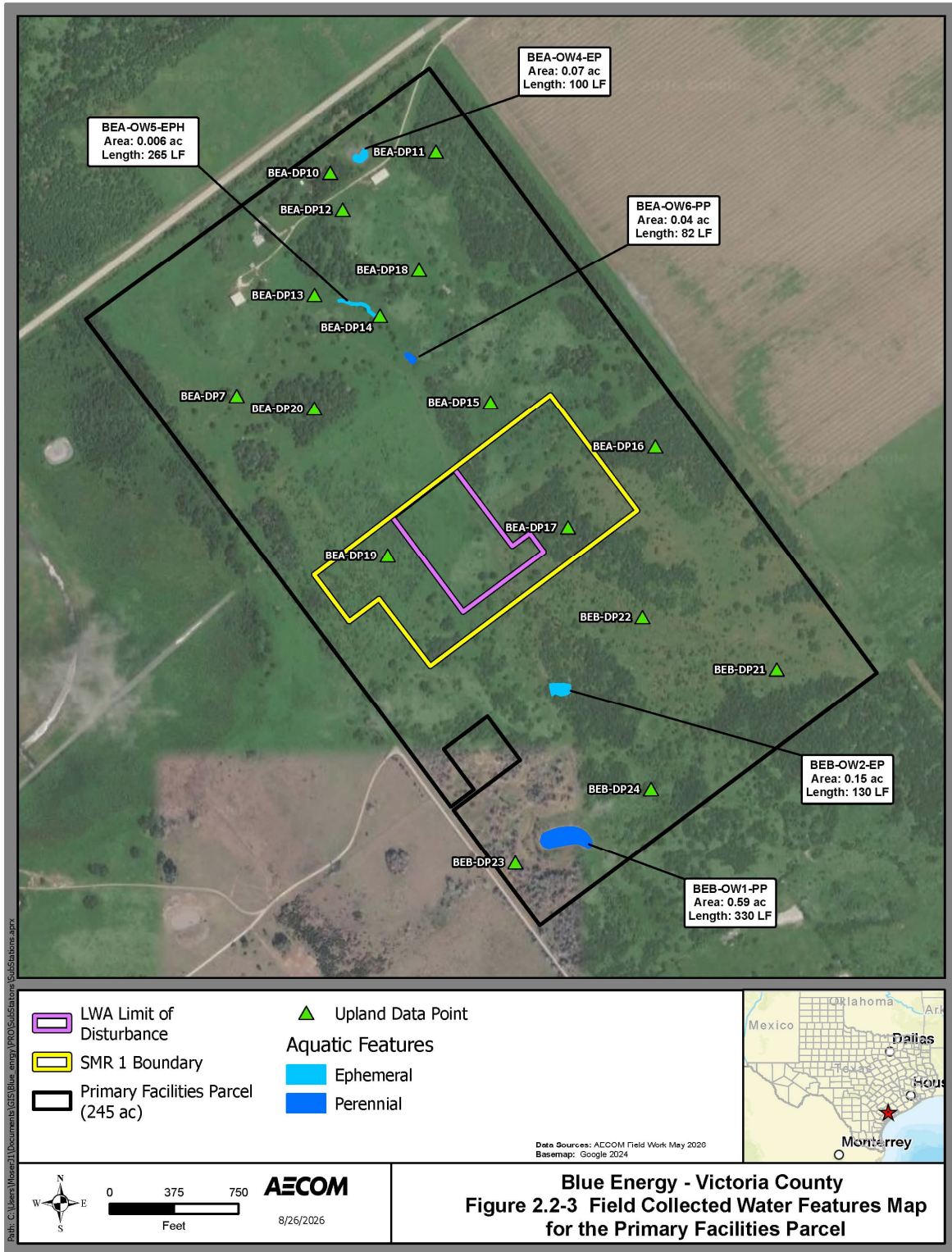


Figure 2.2-3. Field Collected Water Features Map for the Primary Facilities Parcel

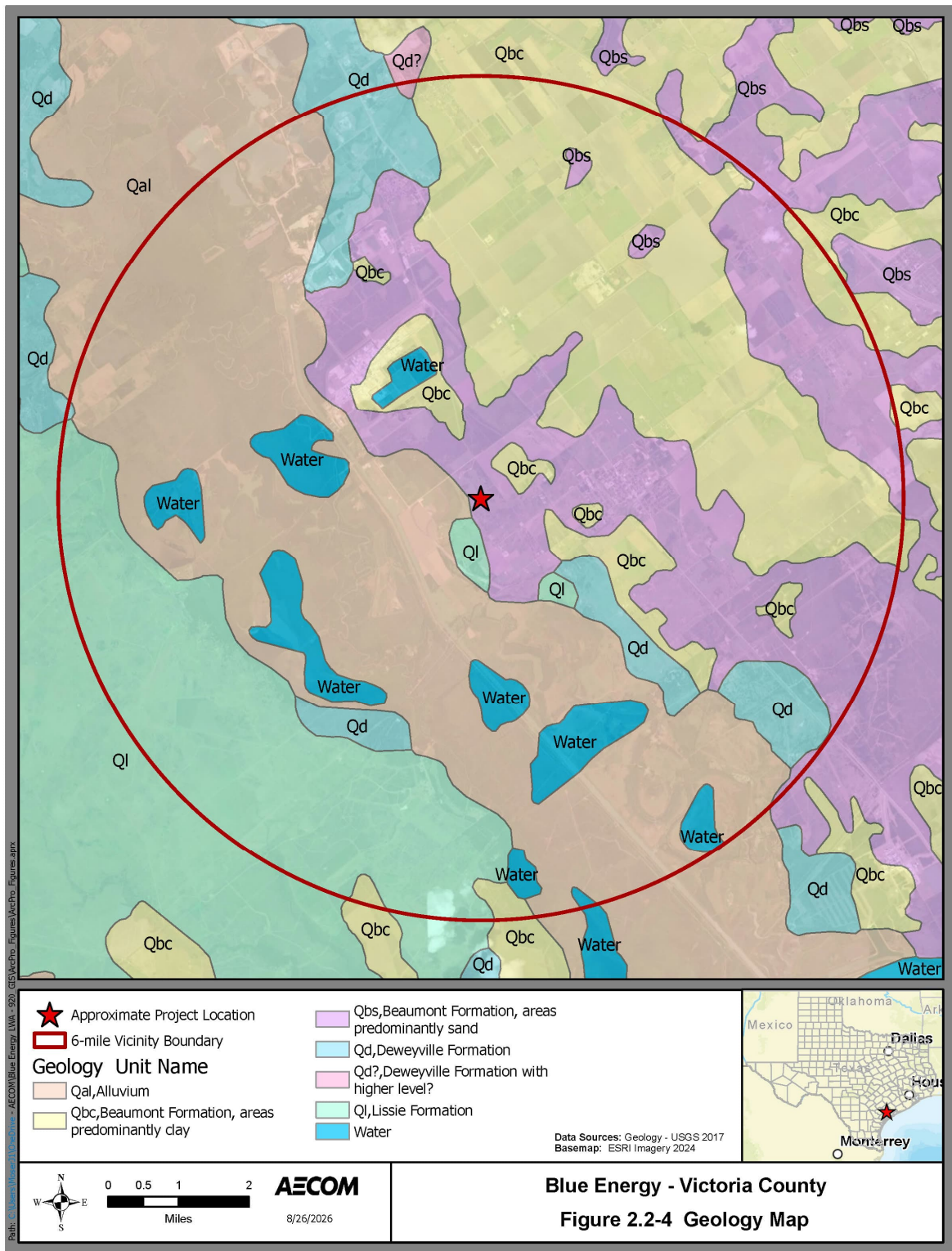


Figure 2.2-4. Geology Map

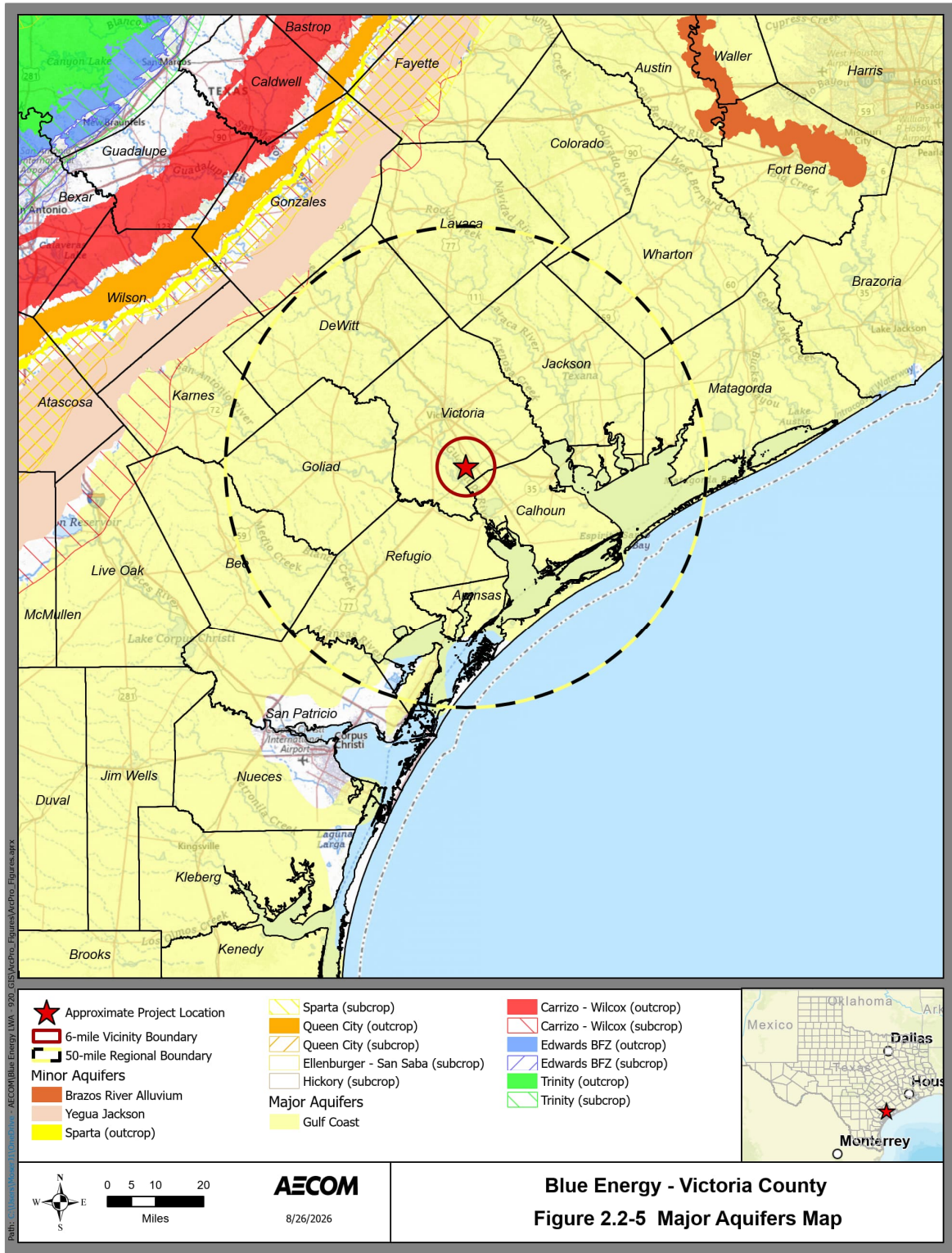


Figure 2.2-5. Major Aquifers Map

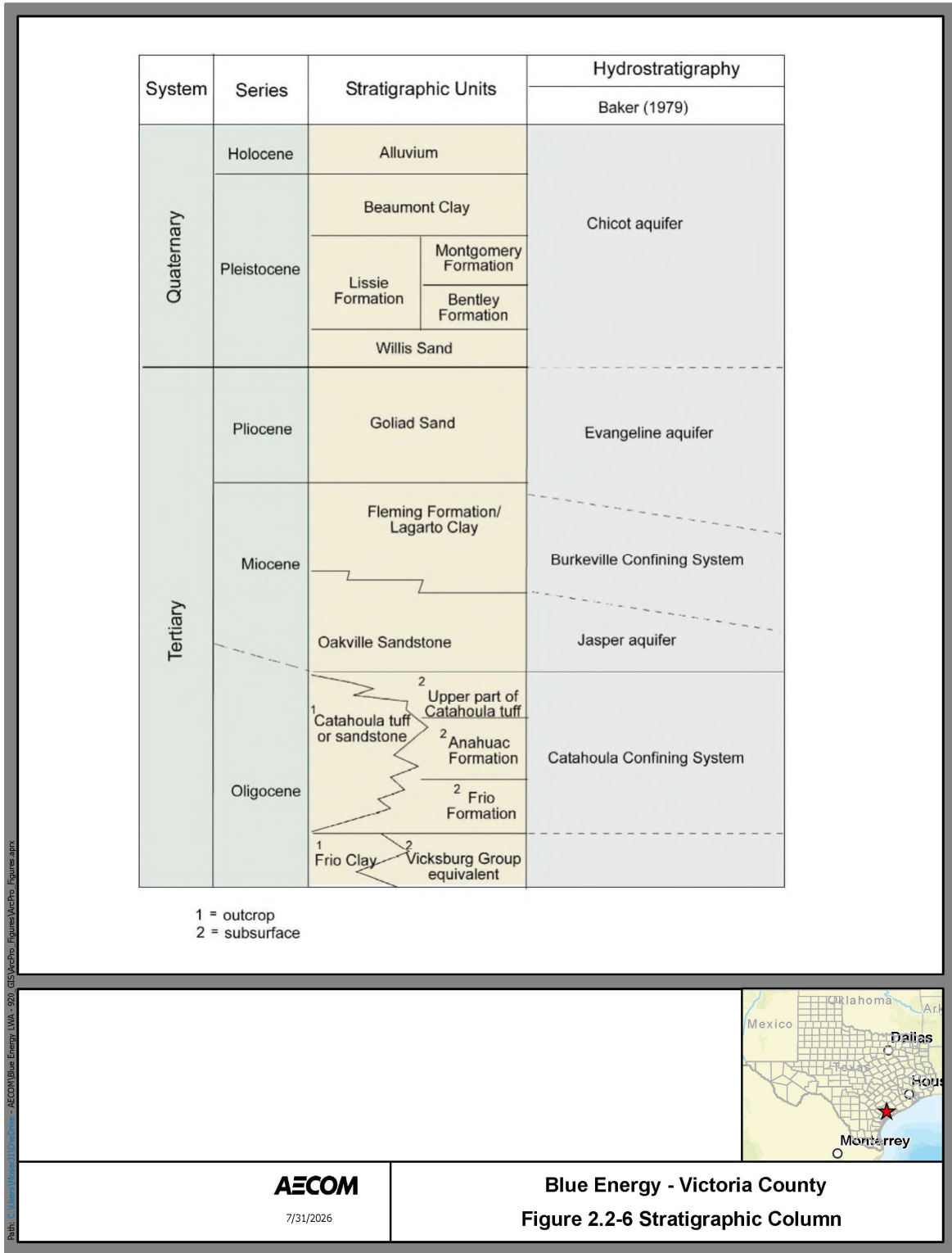


Figure 2.2-6. Stratigraphic Column

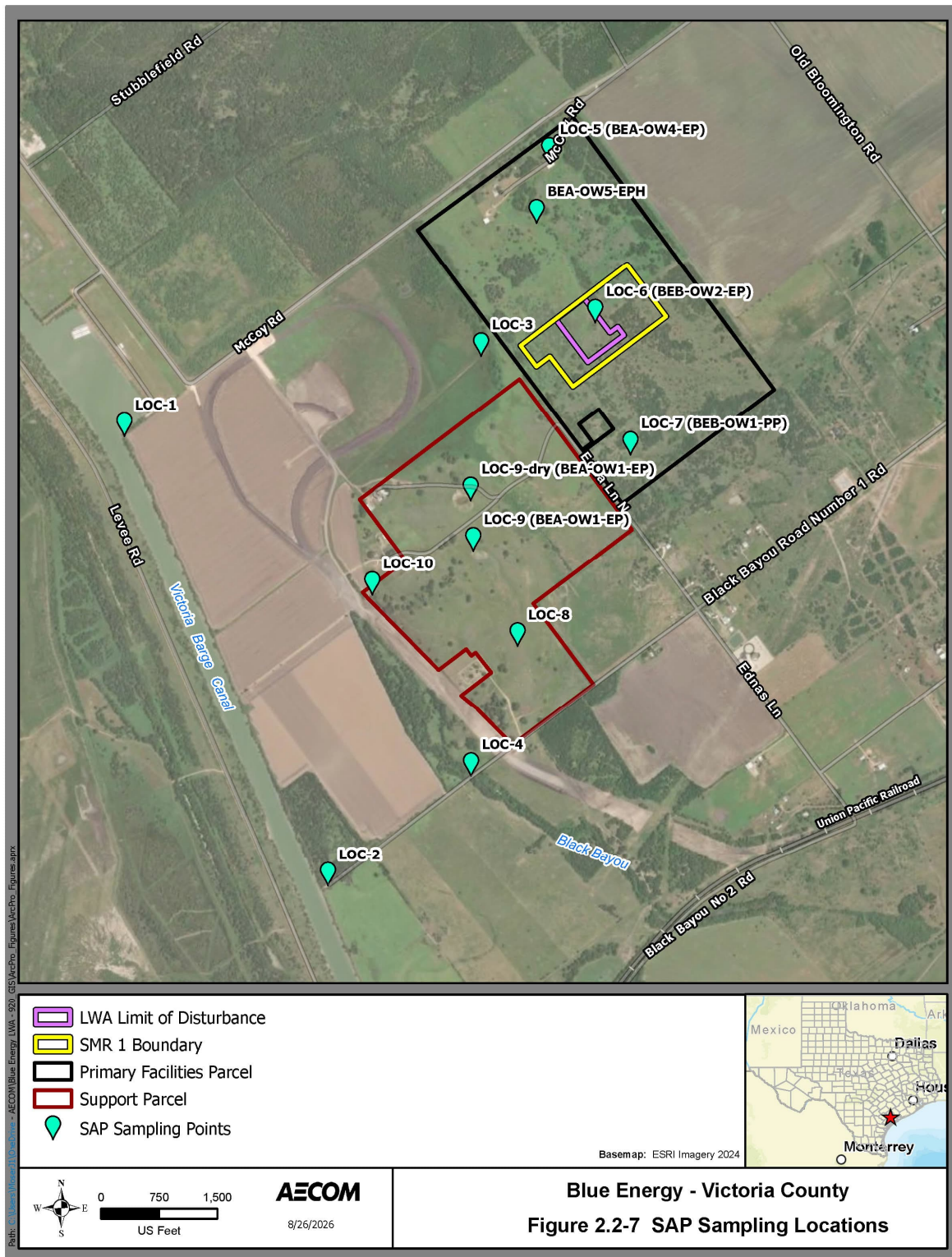


Figure 2.2-7. SAP Sampling Locations

2.3 Ecological Resources

This section describes the terrestrial, wetland, and aquatic ecology of the LWA project site and resources in the 6-mi vicinity and 50-mi region. Section 2.3.1 describes the potentially affected terrestrial resources, including wetlands, and Section 2.3.2 describes the potentially affected aquatic resources.

The following sections describe the existing habitats and representative vegetative communities within the LWA project site.

2.3.1 Terrestrial Ecology and Wetlands

2.3.1.1 Terrestrial Habitats

Ecoregions are geographic areas that are generally similar in terms of biotic, abiotic, terrestrial, and aquatic ecosystem components. Ecoregions serve as a spatial framework for the monitoring, research, and assessment of ecosystems and their components. The U.S. Environmental Protection Agency (USEPA) defines ecoregions in hierarchical levels from Level I through Level IV, increasing in detail as the level increases. The USEPA maintains the mapping of ecoregions (Ref. 26).

Texas is divided into 56 Level IV Ecoregions nested under 12 Level III Ecoregions. The LWA project site lies within Level III Ecoregion 34, Western Gulf Coastal Plain, and Level IV Ecoregions 34c, Floodplains and Low Terraces, and 34a, Northern Humid Gulf Coastal Prairies (Ref. 27). Covering primarily the Holocene floodplain and low terrace deposits, the Floodplains and Low Terraces ecoregion (34c) has bottomland forests characterized by pecan (*Carya illinoensis*), water oak (*Quercus nigra*), southern live oak (*Quercus virginiana*), and elm (*Ulmus americana*), with some baldcypress (*Taxodium distichum*) on larger streams. The Brazos and Colorado River floodplains are a broad expanse of alluvial sediments, while floodplains to the south are narrower. Soils include Vertisols, Mollisols, and Entisols. Large portions of floodplain forest have been removed, and land cover is now a mix of forest, cropland, and pasture. Quaternary-age deltaic sands, silts, and clays underlie much of the Northern Humid Gulf Coastal Prairies (34a). The original vegetation was mostly grasslands with a few clusters of oaks, known as oak mottes or maritime woodlands. Little bluestem (*Schizachyrium scoparium*), yellow Indiangrass (*Sorghastrum nutans*), brownseed paspalum (*Paspalum plicatulum*), gulf muhly (*Muhlenbergia capillaris*), and switchgrass (*Panicum virgatum*) were the dominant grassland species. Almost all coastal prairies have been converted to cropland, rangeland, pasture, or urban land uses. Soils are mostly fine-textured: clay, clay loam, or sandy clay loam. Annual precipitation varies from 37 in. in the southwest portion to 58 in. in the northeast.

According to the U.S. National Vegetation Classification System (USNVC) Ecosystems of the Conterminous U.S. and Adjacent Areas eight habitat types are mapped within the Support Parcel by the USNVC (Table 2.3-1 and Figure 2.3-1) (Ref. 28).

Table 2.3-2 and Figure 2.3-2 show the seven habitat types that were mapped within the Primary Facilities Parcel by the USNVC (Ref. 28).

According to the Ecological Mapping System of Texas (EMST) data mapped by the Texas Park and Wildlife Department (TPWD), eleven habitat types were mapped within the Support Parcel (Table 2.3-3 and Figure 2.3-3) (Ref. 29).

Table 2.3-4 and Figure 2.3-4 show the eight habitat types that were mapped within the Primary Facilities Parcel (Ref. 29).

During the field surveys conducted May 11 through May 13, 2026, AECOM biologist collected data on the existing habitat types and representative vegetative communities observed in the Support Parcel and the Primary Facilities Parcel. During these field surveys, three representative vegetative communities were documented within both parcels: herbaceous pasture [H], scrub-shrub [SS], and forested habitats [T].

The existing vegetative communities documented and mapped within the Support Parcel consist of herbaceous pasture and scrub-shrub communities (Ref. 30). Table 2.3-5 provides a summary of the vegetative communities along with the acreage and percentage for each community type mapped within the Support Parcel, while Figure 2.3-5 shows the mapped community types within the Support Parcel.

The herbaceous pasture vegetative communities observed within the Support Parcel is dominated by herbaceous vegetation with a few standing tree stems consisting of live oak throughout. These areas are frequently mowed and were being used for cattle grazing at the time of the field surveys.

The dominant vegetation observed within the representative herbaceous pasture vegetative communities represented by Vegetation Plots 2 and 3 consisted of sweet acacia (*Vachellia farnesiana*, [T]), live oak [T], honeylocust (*Gleditsia triacanthos* [SS]), sweet acacia [SS], green flatsedge (*Cyperus virens*, [H]), and silverleaf nightshade (*Solanum elaeagnifolium*, [H]).

The scrub-shrub vegetative communities observed within the Support Parcel is dominated by a mixture of sapling/shrub and herbaceous vegetative species with a few standing tree stems. These areas are not frequently mowed and were being used for cattle grazing at the time of the field surveys.

The dominant vegetation observed within the representative scrub-shrub vegetative communities represented by Vegetation Plot 1 consisted of live oak [T], honeylocust [T], sugarberry (*Celtis laevigata*, [T]), sweet acacia [SS], prairie broomweed (*Amphiachyris dracunculoides*, [H]), staggler daisy (*Calypocarpus vialis*, [H]), and Australian bluestem (*Bothriochloa blandhii*, [H]).

The existing vegetative communities documented and mapped within the Primary Facilities Parcel consist of herbaceous pasture, scrub-shrub, and forested vegetative communities (Ref. 30). Table 2.3-6 provides a summary of the vegetative communities along with the acreage and percentage for each community type mapped within the Primary Facilities Parcel, while Figure 2.3-6 shows the mapped community types within the Primary Facilities Parcel.

The herbaceous pasture vegetative communities observed within the Primary Facilities Parcel are dominated by herbaceous vegetation with a few standing tree stems consisting of live oak throughout. These areas are frequently mowed and were being used for cattle grazing at the time of the field surveys.

The dominant vegetation observed within the representative herbaceous pasture vegetative community within the Primary Facilities Parcel had the same vegetative species as observed within the herbaceous pasture plant community documented in the Support Parcel. The dominant vegetative species consisted of green flatsedge [H] and silverleaf nightshade [H].

The scrub-shrub vegetative communities observed within the Primary Facilities Parcel are dominated by a mixture of sapling/shrub and herbaceous vegetative species with a few standing tree stems. These areas are not frequently mowed and were being used for cattle grazing at the time of the field surveys.

The dominant vegetation observed within the representative scrub-shrub communities represented by Vegetation Plot 8 consisted of honey mesquite (*Prosopis glandulosa*, [T]), sweet acacia [T], honey mesquite [SS], sweet acacia [SS], and yellow bluestem (*Bothriochloa ischaemum*, [H]).

The forested vegetative communities observed within the Primary Facilities Parcel are dominated by a mixture of tree stems, sapling/shrub, and herbaceous vegetative species. These areas are not maintained and serve as cover, travel corridors, and nesting habitat for wildlife species.

The dominant vegetation observed within the representative forested communities represented by Vegetation Plots 4, 5, 6, and 7 consisted of sugarberry [T], honey mesquite [T], knockaway (*Ehretia anacua*, [T]), Chinaberry tree (*Melia azedarach*, [T]), sweet acacia [T], spiny hackberry (*Celtis pallida*, [SS]), sweet acacia [SS], staggler daisy [H], blue mistflower (*Conoclinium coelestinum*, [H]), crowpoison (*Nothoscordum bivalve*, [H]), Australian bluestem [H], and slender yellow woodsorrel (*Oxalis dillenii*, [H]).

2.3.1.2 Wetlands

As defined in 33 CFR Section 328.3, wetlands are those areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Types of wetlands generally include swamps, marshes, bogs, and similar areas. Wetlands and wetland fringe areas can also be found along the edges of many watercourses and impounded waters (both natural and man-made). Wetland habitat provides valuable public benefits, including flood storage, erosion control, water quality improvement, wildlife habitat, and recreational opportunities.

AECOM conducted an investigation of potentially jurisdictional WOTUS, including wetlands, for the LWA project site (Ref. 15). A literature search and field investigation were conducted for the LWA project, which included two separate areas (Support Parcel and Primary Facilities Parcel).

The purpose of the investigation was to identify and delineate water resources within the LWA project site that exhibit characteristics meeting the regulatory definition of WOTUS. These resources were then assessed for their potential to be considered jurisdictional WOTUS subject to regulation by the USACE Galveston District under jurisdiction of Section 404 of the CWA.

The wetland delineation was conducted in accordance with the 1987 Wetland Delineation Manual (Ref. 31) and subsequent Atlantic and Gulf Coastal Plain Regional Supplement (Ref. 32). The LWA project site boundary was loaded into a project specific GIS database which included USGS topographic maps (Ref. 33), USGS National Hydrography Dataset layers (Ref. 34), NRCS soil maps (Ref. 35), available aerial photography, and U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) data (Ref. 36). Prior to initiation of field work, available GIS databases were reviewed to evaluate the potential presence of hydrologic features such as identified streams and other water bodies, wetlands, and soil types that may indicate a potential for wetland habitat. The soils identified in the LWA project site were

compared to the NRCS Soil Data Access Hydric Soils List (Ref. 37) to determine their listed hydric status.

USFWS NWI maps and associated GIS data were reviewed to gather information on the potential location of areas that may exhibit characteristics of wetlands. The Support Parcel is mapped with six freshwater emergent wetlands and one freshwater pond (Figure 2.3-7).

The Primary Facilities Parcel is mapped with two freshwater emergent wetlands, one freshwater forested/shrub wetland, three riverine wetlands, and two freshwater ponds (Figure 2.3-8).

Following the preliminary database review, an onsite evaluation of the LWA project site was conducted to identify potential wetlands and other WOTUS features. A field survey of the LWA project site was conducted May 11 through May 15, 2026. Data points were established at representative vegetative community types within the LWA project site and wetland delineation data forms for the Atlantic and Gulf Coastal Plain Region (Ref. 32) were completed to document observed existing hydrology, vegetation, and soils. (Ref. 15)

Primary and secondary indicators of wetland hydrology were assessed at each established data point location and recorded. At least one primary or two secondary indicators of wetland hydrology must be observed in order to meet the required wetland hydrology criteria.

Plant species, abundance, and wetland indicator status were recorded at each observation point for each of the four vegetative strata: tree, sapling/shrub, herbaceous, and woody vine (Ref. 38, Ref. 32). The wetland indicator status for dominant vegetation consists of upland, facultative upland, facultative, facultative-wetland, and obligate plant species. At least one hydrophytic vegetation indicator must be observed to establish the dominance or prevalence of hydrophytic vegetation.

Soil profile observations were recorded at each data point between the surface and 16 in. (except where noted) and observed for field indicators of hydric soils (Ref. 39, Ref. 40). At least one field indicator of hydric soils must be observed to meet the hydric soil criteria. (Ref. 15)

All three criteria (wetland hydrology, hydrophytic vegetation, and hydric soils) must be present for a feature to qualify as a wetland. Each representative data point collected within the LWA project site was identified as "BEA" or "BEB" (for Biological Evaluation Team A or Team B). Each established non-wetland data point location was assigned the same "BE" designation as well as DP (data point) with a sequential numbered code (e.g., BEA-DP1). Water features were assigned the same BEA/BEB designation along with an "OW," for Other Waters, along with a sequential numbering code. Finally, these features were assigned a code based on the feature type (e.g., Ephemeral Pond [EP] (BEA-OW1-EP, etc.). Each corresponding non wetland data point was assigned the same BEA/BEB designation along with a sequential numbering code (e.g., BEA-DP01, etc.).

In accordance with the pre-2015 regulatory regime, the Supreme Court's decision in *Sackett v. USEPA*, and the March 12, 2025 memorandum from the U.S. Department of the Army, the USACE asserts jurisdiction over the following categories of water bodies: 1) traditionally navigable waters; 2) wetlands adjacent to traditionally navigable waters; 3) relatively permanent waters (RPW) (i.e., waters that typically flow year round or have continuous flow at least seasonally); 4) wetlands adjacent to RPWs; intrastate lakes and ponds; and 5) impoundments of waters. Adjacent means having a continuous surface connection in that they directly abut a RPW (e.g., they are not separated by uplands, a berm, dike, or similar feature) (Ref. 41, Ref. 26, Ref. 42).

The USACE's determination of a jurisdictional wetland is based on the wetland criteria of the 1987 Corps of Engineers Wetland Delineation Manual (Ref. 31), as amended by USACE memoranda dated August 23 and 27, 1991, and March 6, 1992; Questions and Answers to the 1987 Manual (October 7, 1991); and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Great Plains Region (Version 2.0, March 2010) (Ref. 32).

Field investigations were conducted on May 11 through 15, 2026. AECOM used an Arrow 100 GPS, capable of sub-meter accuracy, to collect geographically referenced features, such as ordinary high-water marks, wetland boundaries, and soil station data points. The field data was then transferred to GIS software (ESRI ArcGIS Pro) to analyze identified features, calculate areas and lengths, and generate figures. (Ref. 15)

During these field investigations no wetlands were identified within the Primary Facilities Parcel or Support Parcel (Figure 2.3-9 and Figure 2.3-10) (Ref. 15).

2.3.1.3 Wildlife

To document seasonal wildlife use of the LWA project site and the immediate vicinity, AECOM conducted an investigation of the existing wildlife community composition (Ref. 30).

The purpose of this investigation was to gather preliminary baseline information on the existing wildlife communities within the Support Parcel and the Primary Facilities Parcel. AECOM will conduct additional sampling events in August 2026 and again in winter 2026 to further define the habitats within the LWA project site.

Preliminary field investigations consisting of wildlife sampling were conducted on March 3 through March 5, 2026. AECOM biologists established seven 50-ft transects within representative habitat types for both parcels. Three transects were established within the Support Parcel and four transects were established in the Primary Facilities Parcel. Transect lines were collected with an Arrow 100 GPS. Figure 2.3-10 shows the locations of each sampling transect established within the LWA project site. (Ref. 30)

Installation of game cameras was conducted on March 3 through March 5, 2026. SpypointM game cameras were installed in six areas of representative habitat. Two cameras were installed in the Support Parcel and four within the Primary Facilities Parcel due to the more diverse habitat types documented in the Primary Facilities Parcel (Figure 2.3-10). The game cameras have night vision and record photos when activated by movement. It should be noted that smaller animals may not trigger the motion sensor of the game cameras. While the game cameras continue to record data, only photos from March 3 through May 16, 2026 were analyzed due to time constraints (Ref. 30).

As shown in Table 2.3-7, 88 species were definitively identified during wildlife transects, on game camera photos, or by incidental observation throughout the course of the wetland delineation and bat detector deployment.

Based on the preliminary results of the field surveys, AECOM biologists identified 88 species of wildlife within the LWA project site (Ref. 30). Of note are observations of a white-tailed hawk (*Geranoaetus albicaudatus*), which is state-listed as a threatened species in Texas, an American alligator (*Alligator mississippiensis*), which is federally listed as threatened due to similarity of appearance with the American crocodile (*Crocodylus acutus*), and a bald eagle (*Haliaeetus leucocephalus*), which is protected under the Bald and Golden Eagle Protection Act. Additionally, the bank swallow (*Riparia riparia*) was also identified, which is designated a

Species of Greatest Conservation Need by the TPWD. Two raptor nests were also observed; one was identified as a red-tailed hawk (*Buteo jamaicensis*) nest (Figure 2.3-10).

2.3.1.4 Important Species and Habitats

NRC guidance (NUREG 1555 and RG 4.2, Rev. 4, Preparation of Environmental Reports for Nuclear Power Stations) identifies important species as the following:

- Species that are federally listed as threatened or endangered;
- Species that are proposed for, or candidates for, federal listing; and
- Species with a state listing status or other state status due to rarity.

Field investigations were conducted in March and May 2026, to verify and characterize the general habitat and vegetation types within the LWA project site. A literature search/database review was conducted to identify federally and state-listed threatened and endangered species of concern with the potential to occur in the LWA project site. Species lists were accessed through the USFWS Information for Planning and Consultation (IPaC) tool and the TPWD's Rare, Threatened, and Endangered Species of Texas list for Victoria County (Ref. 43, Ref. 44). TPWD's Texas Natural Diversity Database was reviewed for element occurrence records of any rare and/or listed threatened and endangered species previously documented within or adjacent to the LWA project site.

Federal and state-listed threatened and endangered species with the potential to occur within the LWA project site are found in Table 2.3-8. If potentially suitable habitats for these species will be impacted by the LWA project, consultation with USFWS is recommended for these species. Species-specific surveys could be recommended by USFWS for listed threatened and endangered species with suitable habitat present in the LWA project site. Surveys for these species could be impacted by species specific time frames, such as breeding season, and seasonal surveys could be required at the discretion of USFWS. Coordination with these agencies may be necessary to comply with applicable federal and state regulations.

Based on the habitats present within the LWA project site, AECOM biologists determined there was potentially suitable habitat for two of the federally listed species. The proposed threatened Monarch butterfly (*Danaus plexippus*) and the proposed endangered tricolored bat (*Perimyotis subflavus*).

The monarch butterfly is currently federally proposed for listing as threatened by the USFWS. This species is a habitat generalist that can be found in prairies, pastures, open woodlands, scrub, roadside, urbanized areas, and other habitats that support nectar plants. Milkweed plants (*Asclepias* spp.) are required for reproduction (egg-laying and caterpillars), but any flowering plants that bear nectar may provide food for butterflies.

AECOM biologists determined that the pasturelands and roadside areas within the LWA project site may provide habitat for monarch butterflies (Figure 2.3-10). Milkweed was observed at the time of the May 2026 field visit (Ref. 30).

The monarch butterfly is a federally proposed threatened species, and consultation with USFWS is not required at this time. However, this species is anticipated to be federally listed during the life of the LWA project, and USFWS consultation is recommended.

The tricolored bat is federally proposed for listing as endangered by USFWS. Tricolored bats roost and hibernate in caves, mines, and abandoned cave-like structures, including bridges and culverts, during the winter. In the spring, summer, and fall, tricolored bats can be found in a

variety of wooded and forested habitats. This species roosts inside the foliage of live and recently dead trees, as well as in clumps of Spanish moss (*Tillandsia usneoides*). Tricolored bats are also known to roost throughout the year in anthropogenic structures, including bridges, culverts, and abandoned buildings (Ref. 45). Tricolored bats in Texas do not always hibernate; the LWA project site is located in the Northern Long Eared Bat/Tricolored Bat Year-round Active Zone 2 (Ref. 46).

AECOM biologists determined via desktop review that the trees and the disused barns within the LWA project site may provide roosting habitat for tricolored bats. Five habitat survey location points were selected within these wooded areas to assess the connectivity of wooded areas to larger forests. These areas were also assessed for bat habitat suitability with regards to representative vegetative community makeup and other features at the site. It was also determined that the trees and snags within the LWA project site have good connectivity to larger forested areas and to nearby water sources and may provide suitable habitat for tricolored bats. (Ref. 30)

From May 11 to May 28, 2026, AECOM biologists conducted an acoustic survey to evaluate presence or absence of tricolored bats within the LWA project site in accordance with the *USFWS Range-wide Indiana Bat and Northern Long-eared Bat Survey Guidelines* (Ref. 46), which includes presence-absence survey and habitat assessment guidelines for tricolored bats. Wildlife Acoustics SM4BAT FS acoustic bat detectors were deployed at five locations of suitable bat habitat and recorded high-frequency bat calls from dusk to dawn during the survey period. The collected data was analyzed to assess the presence or absence of tricolored bats and no tricolored bats were detected (Ref. 47).

Given that the tricolored bat is a federally proposed endangered species, consultation with USFWS is not required at this time. However, this species is anticipated to be federally listed during the life of the LWA project and USFWS consultation is recommended.

Based on the habitats present within the LWA project site, AECOM biologist determined there was potentially suitable habitat for four state-listed species, the state threatened swallow-tailed kite (*Elanoides forficatus*), the state threatened Texas horned lizard (*Phrynosoma cornutum*), the state threatened Texas tortoise (*Gopherus berlandieri*), and the state threatened white-tailed hawk.

The swallow-tailed kite is listed as threatened by TPWD. This species is found in lowland forested regions, especially swampy areas, ranging into open woodland; marshes, along rivers, lakes, and ponds; and nests high in tall trees in clearings or on forest woodland edges, usually in pine, cypress, or various deciduous trees.

AECOM biologists determined that the forested areas of the Support Parcel, with large live oaks in fairly close proximity to the Guadalupe River and the Victoria Barge canal, may provide habitat for this species (Ref. 30). It may be more likely to be present during migration periods. However, habitat for this species is not protected under state law. Only individuals are protected from take.

The Texas horned lizard is listed as threatened by TPWD. This species is found in open habitats with sparse vegetation, including grass, prairie, cactus, scattered brush, or scrubby trees. Its preferred soil may vary in texture from sandy to rocky. It is a burrowing species that hides in rodent burrows, under rocks, or in the soil. It occurs to 6,000 ft elevation.

AECOM biologists determined that sandy soils and scrubby areas of the LWA project site could provide suitable habitat for this species (Ref. 30). However, habitat for this species is not protected under state law. Only individuals are protected from take.

The Texas tortoise is listed as threatened by TPWD. This species is found in open scrub woods, arid brush, lomas, grass-cactus association, often in areas with sandy well-drained soils. When inactive, it occupies shallow depressions dug at base of bushes or cacti. Eggs are laid in nests dug in soil near or under bushes.

AECOM biologists determined that the sandy soils and scrubby areas of the LWA project site could provide suitable habitat for this species (Ref. 30). However, habitat for this species is not protected under state law. Only individuals are protected from take.

The white-tailed hawk is listed as threatened by TPWD. This species is found in coastal areas on prairies, cordgrass flats, and scrub-live oak, or further inland on prairies, mesquite and oak savannas, and mixed savanna-chaparral. It breeds from March through May 2026, building nests in dense shrubby vegetation in flat terrain.

AECOM biologists determined that the pastureland and forested areas of the LWA project site could provide suitable habitat for the white-tailed hawk (Ref. 30). In addition, during the field survey efforts an individual was observed within the LWA project site. However, habitat for this species is not protected under state law. Only individuals are protected from take.

2.3.2 Aquatic Ecology

This section focuses on the characterization of aquatic resources within the Study Area. Potentially affected aquatic resources include reservoirs, ponds, and streams. Wetlands and riparian habitats are discussed in conjunction with terrestrial ecology in Section 2.3.1. This section describes the ecological characteristics of the aquatic resources potentially affected by building and operational activities associated with the Blue Energy Project Seasonal aquatic ecological surveys were conducted in 2023-2024 to characterize aquatic ecosystems, focusing on the fish and benthic macroinvertebrate communities in waters onsite.

2.3.2.1 Aquatic Habitats

No potentially jurisdictional features were delineated or mapped within the LWA project site. Two potentially non-jurisdictional features were identified within the LWA project site.

Feature BEA-OW1-EP is a potentially non-jurisdictional ephemeral pond excavated in non-wetland habitat near the northern boundary of the Support Parcel (Figure 2.3-9). On May 12, 2026, BEA-OW2-PP was wet, measuring approximately 0.25-ac; the feature was dry during the previous visit in March 2026. Prior to the field investigations on May 11, 2026, the most recent rainfall recorded at the Bloomington, Texas weather station was 0.62 in. on May 10, 2026, and the total rainfall at this weather station for the month of May 2026 was 7.38 in. BEA-OW2-PP appeared dry in 30 percent of available historical aerial imagery from 2005, 2008, 2009, 2011, 2013, 2016, 2017, 2019, 2022, and 2023 (Ref. 15).

Feature BEA-OW2-PP is a potentially non-jurisdictional, perennial man-made stock pond, excavated in non-wetland habitat near the center of the Support Parcel (Figure 2.3-9). While this feature was wet in all available historical aerial imagery from 2005, 2008, 2009, 2011, 2013, 2016, 2017, 2019, 2022, and 2023, the size of the feature varied dramatically, presumably in response to weather conditions. At the time of the May 2026 field visit, the featured measured approximately 0.18 ac (Ref. 15).

Based on field investigations, historical imagery, and rainfall data, BEA-OW1-EP and BEA-OW2-PP appear to have been constructed to drain the pastureland and to water livestock within the Support Parcel and fill with water only in response to precipitation. Therefore, these features are potentially non-jurisdictional per USACE WOTUS classification.

No potentially jurisdictional features were delineated or mapped within the LWA project site. Five potentially non-jurisdictional features were delineated and mapped within the Primary Facilities Parcel.

Feature BEB-OW1-PP is a potentially non-jurisdictional perennial man-made pond excavated in non-wetland forested/scrub-shrub habitat near the southern boundary of the Primary Facilities Parcel (Figure 2.3-9). At the time of the May 2026 field visit, this feature measured approximately 0.59 ac. Based on field investigations, historical imagery, and rainfall data, this feature appears to have been constructed between 2005 and 2008 to drain the surrounding scrub/forested area and water livestock within the Primary Facilities Parcel. Therefore, this feature is potentially non-jurisdictional per USACE WOTUS classification.

Feature BEB-OW2-EP is a potentially non-jurisdictional, approximately 0.15-ac. ephemeral, man-made pond excavated in non-wetland forested habitat in the southern half of the Primary Facilities Parcel (Figure 2.3-9). On May 12, 2026, BEB-OW2-EP was wet; the feature was dry at the time of the March 2026 field visit. Based on field investigations and rainfall data, BEB-OW2-EP appears to drain the surrounding forested habitat within the Primary Facilities Parcel and only fill with water in response to precipitation. Therefore, BEB-OW2-EP can be considered a non-RPW and potentially non-jurisdictional per USACE WOTUS classification.

Feature BEA-OW4-EP is a potentially non-jurisdictional, approximately 0.07-ac. ephemeral pond located in non-wetland forested habitat near the northern boundary of the Primary Facilities Parcel (Figure 2.3-9). On May 12, 2026, BEA-OW4-EP was wet; however, the feature was dry at the time of the March 2026 field visit and appeared dry in 30 percent of available historical aerial imagery; the size of the feature also varied dramatically, presumably in response to weather conditions (Ref. 15). Based on field investigations, aerial imagery, and rainfall data, BEA-OW4-EP appears to drain the surrounding area within the Primary Facilities Parcel and only fill with water in response to precipitation. Therefore, BEA-OW4-EP can be considered a non-RPW and potentially non-jurisdictional per USACE WOTUS classification.

Feature BEA-OW5-EPH is a potentially non-jurisdictional ephemeral drainage feature, measuring approximately 0.07 ac and 265 ft long, located in non-wetland scrub-shrub habitat in the northern half of the Primary Facilities Parcel (Figure 2.3-9). This feature flows toward the northwest and a bank height of 0.5 in. and a bank width of approximately 3 ft. On May 12, 2026, BEA-OW5-EPH was dry; the feature also appeared dry in 85 percent of available historical aerial imagery (Ref. 15). Based on field investigations, aerial imagery, and rainfall data, BEA-OW5-EPH appears to drain the surrounding area within the Primary Facilities Parcel and only experience water flow in response to precipitation. Therefore, BEA-OW5-EPH can be considered a non-RPW and potentially non-jurisdictional per USACE WOTUS classification.

Feature BEA-OW6-PP is a potentially non-jurisdictional perennial pond located in non-wetland habitat in the northern half of the Primary Facilities Parcel. This feature may have been created by alterations to the localized hydrology at the time of the road construction to the west. At the time of the May 2026 field visit, the feature measured approximately 0.04 ac. This feature appeared dry in 30 percent of available historical aerial imagery since 2005. This feature

appears to drain the surrounding area and roadway and to fill with water only in response to precipitation.

2.3.2.2 Aquatic Organisms

One American Alligator was observed within pond BEB-OW1-PP. American Alligators are federally listed as Similarity of Appearance, Threatened due to their similar appearance to the federally threatened American Crocodile. American Alligators are highly mobile, and this individual was more than likely just passing through the LWA project site on its way to a larger body of water. There are no significant water features onsite that will provide year-round quality habitat for any aquatic species of state or federal concern.

2.3.2.3 Important Species and Habitats

One aquatic species of concern, the American Alligator was identified within the LWA project site. However, based on the quality of aquatic resources within the LWA project site, AECOM biologists have provisionally determined there is not suitable habitat for any other aquatic species of concern.

Federal and state-listed threatened and endangered species with the potential to occur within the LWA project site are found in Table 2.3-7.

Table 2.3-1. USNVC Ecosystems Mapped within the Support Parcel

Name	Acres*	Percent (%)
Agriculture - Other	0.22	0.1
Agriculture – Pasture or Hay	186.12	92.7
Agriculture – Row Crop	8.45	4.4
Developed	2.67	1
Developed Vegetation	1.56	0.8
Southeastern Ruderal Meadow & Shrubland	0.67	0.3
Texas Post Oak Savanna & Woodland	1.33	0.7
Total:	201.02	100

* Acreages were rounded based on based on the dataset used.
Source: (Ref. 28)

Table 2.3-2. USNVC Ecosystems Mapped within the Primary Facilities Parcel

Name	Acres*	Percent (%)
Agriculture - Other	0.45	0.1
Agriculture – Pasture or Hay	224.59	92.2
Agriculture – Row Crop	8.67	3
Developed	1.33	0.5
Developed - Vegetation	2.22	0.9
Southeastern Great Plains Floodplain Forest	0.67	0.3
Texas Post Oak Savanna & Woodland	8.01	3
Total:	245.94	100

* Acreages were rounded based on the dataset used.
Source: (Ref. 28)

Table 2.3-3. TPWD EMST Habitat Types Mapped within the Support Parcel

Name	Acres*	Percent (%)
Coastal Bend: Floodplain Deciduous Shrubland	1.33	0.7
Coastal Bend: Floodplain Grassland	28.42	14.2
Coastal Bend: Floodplain Hardwood Forest	0.24	0.1
Coastal Bend: Floodplain Herbaceous Wetland	0.32	0.2
Coastal Bend: Floodplain Live Oak - Hardwood Forest	2.21	1.1
Coastal Plain: Terrace Sandyland Grassland	35.20	17.6
Gulf Coast: Coastal Prairie	128.22	64.1
Native Invasive: Deciduous Woodland	1.23	0.6
Native Invasive: Mesquite Shrubland	2.55	1.3
Post Oak Savanna: Post Oak - Live Oak Motte and Woodland	0.09	<0.0
Urban Low Intensity	0.15	0.1
Total:	199.95	100

Source: (Ref. 29)

* Acreages were rounded based on the dataset used.

Table 2.3-4. TPWD EMST Habitat Types Mapped within the Primary Facilities Parcel

Name	Acres*	Percent (%)
Coastal Bend: Floodplain Live Oak Forest	6.50	2.6
Gulf Coast: Coastal Prairie	50.41	20.5
Gulf Coast: Coastal Prairie Pondshore	5.59	2.3
Native Invasive: Deciduous Woodland	88.28	35.9
Native Invasive: Mesquite Shrubland	76.10	31.0
Post Oak Savanna: Live Oak Motte and Woodland	15.99	6.5
Post Oak Savanna: Post Oak Motte and Woodland	1.93	0.8
Row Crops	0.89	0.4
Total:	245.69	100

* Acreages were rounded based on the dataset used.
Source: (Ref. 29)

Table 2.3-5. Support Parcel Mapped Habitat Types

Name	Acres	Percent (%)
Herbaceous Pasture	187.77	94
Scrub-Shrub Habitat	12.18	6
Total:	199.95	100

Source: (Ref. 30)

Table 2.3-6. Primary Facilities Parcel Mapped Habitat Types

Name	Acres	Percent (%)
Herbaceous Pasture	65.38	27
Scrub-Shrub Habitat	113.56	46
Forested Habitat	66.74	27
Total:	245.68	100

Source: (Ref. 30)

Table 2.3-7. Identified Wildlife Species

Species Common Name	Species Scientific Name	Habitat Description	Incidental Observation	Game Camera Observation	Transect Observation
Amphibians					
Bronze frog	<i>Lithobates clamitans clamitans</i>	Prefer shallow streams, ponds, marshes, springs, and swamps with plenty of vegetation.	X		
Green tree frog	<i>Dryophytes cinereus</i>	Live in open canopy forests with permanent water sources and abundant vegetation.	X		
Birds					
Cattle Egret	<i>Bubulcus ibis</i>	Live in open fields, farm pastures, and wetlands, near livestock like cows and horses.		X	
American Crow	<i>Corvus brachyrhynchos</i>	Live in a wide range of semi-open spaces across North America, including farmlands, open fields, golf courses, city parks, and woodland edges.		X	
American Redstart	<i>Setophaga ruticilla</i>	During the breeding season, inhabits open-canopy, mostly deciduous forests, second growth, and forest edges. During migration, stops over in dense shrubby habitats.	X		
American Robin	<i>Turdus migratorius</i>	Cities, towns, lawns, farmland, forests; in winter, berry-bearing trees.			X
Bald Eagle	<i>Haliaeetus leucocephalus</i>	Prefer area near large water bodies such as seacoasts, coastal estuaries and inland lakes and rivers.			X
Bank Swallow	<i>Riparia riparia</i>	Nests in small to large colonies in soft banks or bluffs along rivers, streams, and coastal areas. In winter they are seen mainly in open habitats with large bodies of water and grasslands, savannas, or agricultural areas.	X		
Barn Owl	<i>Tyto furcata</i>	Prefer lowlands with sparse trees, including grasslands, agricultural fields, marshes, and pastures, avoiding heavily forested regions and high altitudes	X		
Black Vulture	<i>Coragyps atratus</i>	Prefer an open habitat and avoid dense forests as much as possible. Such habitats include lowlands with adjacent highlands, open fields, desert terrain, garbage dumps, and urban or rural centers.	X	X	
Black-bellied Whistling-Duck	<i>Dendrocygna autumnalis</i>	Inhabits freshwater swamps, marshes and costal lagoons.	X	X	
Blackburnian Warbler	<i>Setophaga fusca</i>	Inhabits deciduous and coniferous forests during the summer. Prefers coniferous forests but will be found in spruce trees or hemlock in deciduous forests.	X		
Black-capped Chickadee	<i>Poecile atricapillus</i>	Found in deciduous and mixed deciduous-evergreen forests, especially near forest edges.		X	

Species Common Name	Species Scientific Name	Habitat Description	Incidental Observation	Game Camera Observation	Transect Observation
Blue-gray Gnatcatcher	<i>Poliophtila caerulea</i>	Enjoys a wide range of woodland habitats, from shrublands to mature forests. Some of their habitats include floodplain forests, lakeside habitats, pinyon-juniper woodlands, and arid, subtropical shrubbery.	X		X
Bronzed Cowbird	<i>Molothrus aeneus</i>	Tends to be found in farmland, brush, and feedlots.	X		
Brown-crested Flycatcher	<i>Myiarchus tyrannulus</i>	In Texas, mostly in dry woodlands and groves of taller trees along streams and rivers.	X		
Brown-headed Cowbird	<i>Molothrus ater</i>	Farms, fields, prairies, wood edges, river groves. Favors open or semi-open country at all seasons. In winter often concentrates in farmland, pastures, or cattle feedlots. More widespread in breeding season, in grassland, brushy country, forest edges, even desert, but tends to avoid dense unbroken forest.	X		
Carolina Chickadee	<i>Poecile carolinensis</i>	Temperate forests, preferably those bordering clearings or near waterways. Forest types inhabited include swamp, hardwood, and mixed pine forests.	X		
Carolina Wren	<i>Thryothorus ludovicianus</i>	Inhabits a wide variety of habitat types from brushy clearcuts to wooded swamps. Moist woodlands are a preferred habitat type, and moderate to dense shrub or brushy cover is an important habitat requirement.	X		X
Cassin's kingbird	<i>Tyrannus vociferans</i>	Semi-open high country, pine-oak mountains, groves. Nests in open pine forest, pinyon-juniper woodland, oak woodland, and streamside trees; at lower elevation may nest in groves of eucalyptus. During migration and winter can be found in more open habitats.			X
Chestnut-sided Warbler	<i>Setophaga pensylvanica</i>	During the breeding season (spring-summer), can be found in northern hardwood and mixed forests	X		
Common Grackle	<i>Quiscalus quiscula</i>	Found in open areas with scattered trees (preferably coniferous), including around human habitation. They can also be found in farmlands, orchards and swamps.	X		X
Common Ground Dove	<i>Columbina passerina</i>	Generally found in arid, early-successional, open woodlands and shrub habitats. Also found near human occupied areas such as irrigated agricultural fields and less dense residential areas.	X		
Common Nighthawk	<i>Chordeiles minor</i>	Breeding habitats include coastal dunes and beaches, woodland clearings, grasslands, savannas, sagebrush plains, and open forests. They have been seen migrating across wetlands, farmland, river valleys, open woodlands, and coastal dunes.	X		

Species Common Name	Species Scientific Name	Habitat Description	Incidental Observation	Game Camera Observation	Transect Observation
Common Yellowthroat	<i>Geothlypis trichas</i>	Occupies non-forested areas low to the ground in briers, damp brushy places, weeds or grasses along country roads or agricultural environments. Also found in cattails, bulrushes, sedges, and willows by streamsides, swamps, freshwater, and salt-water marshes.	X		
Couch's Kingbird	<i>Tyrannus couchii</i>	Nests and winters in wooded areas with plenty of edges and openings, including suburbs, wooded stream edges, taller thorn forest, fruit groves, and agricultural areas with tall trees.		X	
Crested Caracara	<i>Caracara cheriway</i>	Typical habitats are either comprised of dry prairie with some wetter areas or agricultural environments.	X	X	X
Dickcissel	<i>Spiza americana</i>	Grassland-obligate birds. During the breeding season, they inhabit prairies, hayfields, and agricultural lands featuring dense, moderate-to-tall vegetation and elevated perches	X		
Downy woodpecker	<i>Dryobates pubescens</i>	Forests, woodlots, willows, river groves, orchards, shade trees. Found in wide variety of habitats, from wilderness areas to second-growth woods to suburban yards but generally favors deciduous trees. In far north and in mountains (areas dominated by conifers), restricted to groves of deciduous trees such as aspens or willows.			X
Eastern Kingbird	<i>Tyrannus tyrannus</i>	Found in open, savanna-like habitats, often near water. Suitable habitats include parks, riparian forests, large burned areas or blowouts in forests, golf courses, and suburban and urban areas.	X	X	
Eastern Phoebe	<i>Sayornis phoebe</i>	Commonly found at the borders of woodlands near sources of freshwater, such as ponds and streams.	X		
Eastern Wood- Pewee	<i>Contopus virens</i>	Inhabits multiple types of forest types in eastern North America. This can include both coniferous and deciduous forests as well as orchards, roadside trees, and other urban savannas.	X		
Golden-fronted Woodpecker	<i>Melanerpes aurifrons</i>	Most commonly found in riparian woodlands; also, arid tropical scrubs and semi-arid to arid brushlands, or savannas.	X		
Gray Catbird	<i>Dumetella carolinensis</i>	Live in dense thickets of shrubs and vines within woodlands and are occasionally found in residential areas. They are also found around some forest edges and clearings, along roadsides, fencerows, abandoned farmland and streamsides.	X		X
Great Blue Heron	<i>Ardea herodias</i>	Always live near sources of water, including rivers, lake edges, marshes, saltwater seacoasts, and swamps. Nesting requires tall trees near water.	X	X	
Great-tailed Grackle	<i>Quiscalus mexicanus</i>	Found in a variety of habitats, including groves, thickets, farms, towns, city parks, mangroves, and marshes.	X		

Species Common Name	Species Scientific Name	Habitat Description	Incidental Observation	Game Camera Observation	Transect Observation
Ladder-backed Woodpecker	<i>Dryobates scalaris</i>	Wooded canyons, cottonwood groves, pine and pine oak woodlands, desert scrub, and desert grassland dominated by mesquite.	X		
Laughing Gull	<i>Leucophaeus atricilla</i>	Salt marshes, coastal bays, piers, beaches, ocean. Generally found only in coastal regions, especially common around beaches and salt marshes, but also ranging several miles inland to rivers, fields, dumps.			X
Least Flycatcher	<i>Empidonax minimus</i>	Live in semi-open deciduous and mixed forests, aspen groves, orchards, and shade trees.	X		
Lesser Yellowlegs	<i>Tringa flavipes</i>	Ness in open and edge boreal forest habitats, usually near wetlands; during migration and winter they are found in inland (spring and fall migration) and coastal (fall migration) wetland habitats of all kinds.	X		
Little Blue Heron	<i>Egretta caerulea</i>	Prefer freshwater areas such as ponds, lakes, marshes, swamps, and lagoons, but also sometimes occupy flooded and dry grasslands, or marine coastlines	X		
Long-billed Thrasher	<i>Toxostoma longirostre</i>	Dense brushlands, thorny scrub, thickets, hedges, and riparian woodlands of South Texas and eastern Mexico			X
Magnolia Warbler	<i>Setophaga magnolia</i>	Found in damp coniferous forests, which include trees like pine, red maple, spruce, hemlocks, and balsam firs.	X		
Mississippi Kite	<i>Ictinia mississippiensis</i>	Prefer large tracts of forest near to open habitat such as pastures or agricultural fields.	X		
Mourning Dove	<i>Zenaida macroura</i>	Most abundant in agricultural and suburban areas where humans have created large areas of suitable habitat.	X		X
Northern Cardinal	<i>Cardinalis cardinalis</i>	Preference for the edges of woods, hedgerows, and vegetation around houses. Prefers to nest in dense thickets.	X	X	X
Northern House Wren	<i>Troglodytes aedon</i>	Open woods, thickets, towns, and gardens. Breeds in a wide variety of semi-open habitats, including suburbs, orchards, woodlots, open forest, streamside groves, mountain pine-oak woods, and many others.			X
Northern Mockingbird	<i>Mimus polyglottos</i>	Prefer open areas and forest edges. Commonly found in residential areas, farmlands, roadsides, city parks, open grassy areas with thickets and brushy deserts.	X		X
Northern rough- winged swallow	<i>Stelgidopteryx serripennis</i>	Near streams, lakes, riverbanks, also arroyos in dry country. Widespread in any kind of open country, but most commonly near water			X
Orchard Oriole	<i>Icterus spurius</i>	May be found in narrow riparian zones, floodplains, or marshes	X		
Osprey	<i>Pandion haliaetus</i>	Able to live almost anywhere where there are safe nest sites and shallow water with abundant fish.			X

Species Common Name	Species Scientific Name	Habitat Description	Incidental Observation	Game Camera Observation	Transect Observation
Painted Bunting	<i>Passerina ciris</i>	The eastern population's breeding habitat consists of scrub communities and the margins of maritime hammocks.	X		
Purple Martin	<i>Progne subis</i>	Prefer open spaces that are situated close to any water source.	X		
Red Winged Blackbird	<i>Agelaius phoeniceus</i>	Roosts and breeds in a variety of habitats but tend to prefer wetlands. On drier ground, open fields (often in agricultural areas) and lightly wooded deciduous forests. In winter, most often found in open fields and croplands.			X
Red-bellied Woodpecker	<i>Melanerpes carolinus</i>	Commonly associated with mature hardwood forests, they also thrive in mixed pine-hardwood forests, mesic pine flatwoods, heavily timbered bottomlands, swampy woods, and riparian forests.	X		
Red-eyed Vireo	<i>Vireo olivaceus</i>	Prefer to breed in deciduous or mixed forest with dense canopy cover. During the non-breeding season, red-eyed vireos prefer rain forests, second growth forests, plantations and forest edge habitats.	X		
Red-tailed Hawk	<i>Buteo jamaicensis</i>	Habitats are typically open areas with scattered, elevated perches, and include scrub desert, plains and montane grasslands, agricultural fields, pastures, urban parks, patchy coniferous and deciduous woodlands, and tropical rainforests.	X		
Roseate Spoonbill	<i>Ajaia ajaja</i>	Usually found in marsh like areas, especially mangrove swamps and mud flats.		X	
Scissor-tailed Flycatcher	<i>Tyrannus forficatus</i>	Live in open and semi-open country, such as savannas, grasslands, pastures, and agricultural fields	X		
Snowy Egret	<i>Egretta thula</i>	Nests in colonies on thick vegetation in isolated places—such as barrier islands, dredge-spoil islands, salt marsh islands, swamps, and marshes. During the breeding season, feeds in estuaries, saltmarshes, tidal channels, shallow bays, and mangroves. Winters in mangroves, saltwater lagoons, freshwater swamps, grassy ponds, temporary pools, and forage on beaches, shallow reefs, and wet fields.		X	
Spotted Sandpiper	<i>Actitis macularius</i>	Prefer shores of streams, lakes, ponds, and rivers	X		
Swainson's Thrush	<i>Catharus ustulatus</i>	Live in a wide variety of habitats including desert habitats, rainforests, and upland hardwood forests.	X		
Tufted Titmouse	<i>Baeolophus bicolor</i>	Woodlands, shade trees, groves. Mostly in deciduous forest with tall trees, sometimes in mixed forest.			X
Turkey Vulture	<i>Cathartes aura</i>	Inhabits a variety of open and semi-open areas, including subtropical forests, shrublands, pastures, and deserts.	X	X	X

Species Common Name	Species Scientific Name	Habitat Description	Incidental Observation	Game Camera Observation	Transect Observation
White-eyed Vireo	<i>Vireo griseus</i>	Prefer brushy habitats defined by a dense understory layer and generally located near a water source. They often inhabit abandoned agricultural fields	X		X
White-tailed Hawk	<i>Geranoaetus albicaudatus</i>	Usually found in open grassy areas or agricultural fields with scattered bushes	X		
Wilson's Warbler	<i>Cardellina pusilla</i>	Nests mostly in bushy shrubs and in the undergrowth of the tundra.	X		
Yellow Warbler	<i>Setophaga aestiva</i>	Larger yards that have small trees or are near streams may provide nesting habitat for these birds.	X	X	
Yellow-billed Cuckoo	<i>Coccyzus americanus</i>	Live in open woodlands with thick low brush and nearby water. It prefers damp thickets, overgrown orchards, and willow groves near streams or rivers	X	X	
Arthropods					
Ant Lion	family <i>Myrmeleontidae</i>	Warm, dry places across the world, most often hiding as larvae in fine sand, loose dust, or under sheltered structures.			X
Cabbage White	<i>Pieris rapae</i>	Live in open, sunny, and disturbed areas worldwide.			X
Red-Paper Wasp	<i>Polistes</i> sp.	Found in woodlands, forests, urban areas, and suburban neighborhoods.			X
Robber Fly	<i>Ospreocerus aeacus</i>	Open grasslands, prairies, and arid plains			X
Texas Leaf-Cutter Ant	<i>Atta texana</i>	Nests in well-drained, sandy or loamy soil.			X
Wolf Spider	family <i>Lycosidae</i>	Found on the ground almost everywhere in the world.			X
Mammals					
Bobcat	<i>Lynx rufus</i>	Live in a wide variety of habitats, including boreal coniferous and mixed forests in the north, bottomland hardwood forests and coastal swamps in the southeast, and desert and scrublands in the southwest.		X	
Coyote	<i>Canis latrans</i>	Use a wide range of habitats including forests, grasslands, deserts, and swamps.		X	X
Eastern Gray Squirrel	<i>Sciurus carolinensis</i>	Deciduous and mixed forests, urban parks, and suburban backyards across eastern North America and parts of Europe.		X	
Feral Hog	<i>Sus scrofa</i> × <i>Sus domesticus</i>	Live in a wide range of habitats across the globe, most notably forests, swamps, and grasslands		X	
Gray Fox	<i>Urocyon cinereoargenteus</i>	Primarily inhabits dense or sparse deciduous, mixed-woods, and coniferous forests as well as marshes. They prefer denning in brushy or wooded regions.		X	
Nine-Banded Armadillo	<i>Dasypus novemcinctus</i>	Live in forests, scrublands, and grasslands with soft, loose soil for digging burrows and a nearby water source.		X	

Species Common Name	Species Scientific Name	Habitat Description	Incidental Observation	Game Camera Observation	Transect Observation
Raccoon	<i>Procyon lotor</i>	Live in forests near water, marshes, and urban neighborhoods.		X	
Virginia Opossum	<i>Didelphis virginiana</i>	Occupy a variety of habitats, ranging from deserts to wet meadows, but prefer living in woodlands and thickets near a source of water.		X	
White-Tailed Deer	<i>Odocoileus virginianus</i>	Live in a variety of habitats, including woodlands, swamps, farmlands, brushy areas, and cactus and thornbrush deserts	X	X	X
Reptiles					
American Alligator	<i>Alligator mississippiensis</i>	Prefer fresh-water wetlands like swamps, marshes, rivers, and bayous, but can also live in mild salt or brackish water.	X	X	
Coachwhip	<i>Masticophis flagellum</i>	Inhabit sites that are dry, open terrain; can be found in deserts, prairies, scrublands, juniper-grasslands, woodlands, thorn-forests, farmlands, creek valleys, chaparral, and, occasionally, swamplands.	X	X	
Eastern Diamondback Rattlesnake	<i>Crotalus adamanteus</i>	Prefer scrublands, coastal forests, barrier islands and pine and wiregrass flatwoods. Can be found in slightly more moist areas, such as wet prairies or savannas and around the borders of wetlands.			X
Pond Slider	<i>Trachemys scripta</i>	Found in waterbodies that hold water year-round, like ponds, lakes, rivers, swamps, lagoons, and streams. They also can live in vernal/seasonal farm ponds.	X	X	

Table 2.3-8. Terrestrial Federal and State Listed Species with the Potential to Occur within the Project Site

Common Name	Scientific Name	Listing Status		Habitat Requirements / Species Description	Suitable Habitat within the Study Area	Federal Effect Determination	State Impact Determination
		Federal	State				
Attwater's greater prairie-chicken	<i>Tympanuchus cupido attwateri</i>	Endangered*	Endangered	Open prairies of mostly thick grass one to three feet tall; sandhill country with bunch grass, sage, and shinnery oak. From near sea level to 200 feet along coastal plain on upper two-thirds of Texas coast; males form communal display flocks during late winter-early spring; booming grounds important; breeding February-July.	This extremely rare species is extirpated from Victoria County. While suitable habitat exists, this species would not be found in the Study Areas.	No Impact	No Impact
Black Rail	<i>Laterallus jamaicensis</i>	Threatened	Threatened	Salt, brackish, and freshwater marshes, pond borders, wet meadows, and grassy swamps; nests in or along edge of marsh, sometimes on damp ground, but usually on mat of previous years dead grasses; nests usually hidden in marsh grass.	The Study Areas do not include the coastal marsh habitat required for this species.	No Impact	No Impact
Interior Least Tern	<i>Sternula antillarum athalassos</i>	Not Listed	Endangered	Sand beaches, flats, bays, inlets, lagoons, islands. Subspecies is listed only when inland (more than 50 mi from a coastline); nests along sand and gravel bars within braided streams, rivers; also known to nest on man-made structures (inland beaches, wastewater treatment plants, gravel mines, etc.).	The Study Areas are located approximately 25 mi inland and do not include riparian areas with the rocky substrate preferred by this species.	Not Applicable	No Impact
Monarch butterfly	<i>Danaus plexippus</i>	Proposed Threatened	Not Listed	This species is a habitat generalist that can be found in prairies, pastures, open woodlands, scrub, roadside, and other habitats that include nectar plants, including urbanized areas. Milkweed is required for reproduction.	The pasturelands of the Study Areas could provide suitable habitat for this species. Milkweed was observed at the time of the May 2026 field visit.	May Affect	Not Applicable

Common Name	Scientific Name	Listing Status		Habitat Requirements / Species Description	Suitable Habitat within the Study Area	Federal Effect Determination	State Impact Determination
		Federal	State				
Piping Plover	<i>Charadrius melodus</i>	Threatened	Threatened	Beaches, sandflats, and dunes along Gulf Coast beaches and adjacent offshore islands. Also spoil islands in the Intracoastal Waterway.	The Study Areas do not include the coastal habitat required for this species.	No Effect	No Impact
Reddish Egret	<i>Egretta rufescens</i>	Not Listed	Threatened	Resident of the Texas Gulf Coast; brackish marshes and shallow salt ponds and tidal flats; nests on ground or in trees or bushes, on dry coastal islands in brushy thickets of yucca and prickly pear.	The Study Areas do not include the coastal habitat required for this species.	Not Applicable	No Impact
Rufa Red Knot	<i>Calidris canutus rufa</i>	Threatened	Threatened	Primarily seacoasts, on tidal flats and beaches, herbaceous wetlands, and tidal flats/shores. Bolivar Flats in Galveston County, sandy beaches on Mustang Island, few on outer coastal and barrier beaches, tidal mudflats, and salt marshes.	The Study Areas do not include the coastal habitat required for this species.	No Effect	No Impact
Swallow-Tailed Kite	<i>Elanoides forficatus</i>	Not Listed	Threatened	Lowland forested regions, especially swampy areas, ranging into open woodland; marshes, along rivers, lakes, and ponds; nests high in tall tree in clearing or on forest woodland edge, usually in pine, cypress, or various deciduous trees.	The forested areas of the Study Areas could provide suitable habitat for this species.	Not Applicable	May impact
Texas Horned Lizard	<i>Phrynosoma cornutum</i>	Not Listed	Threatened	Terrestrial: Open habitats with sparse vegetation, including grass, prairie, cactus, scattered brush, or scrubby trees; soil may vary in texture from sandy to rocky; burrows into soil, enters rodent burrows, or hides under rock when inactive.	The sandy soils and scrubby areas of the Study Areas could provide suitable habitat for this species.	Not Applicable	May impact
Texas Tortoise	<i>Gopherus berlandieri</i>	Not Listed	Threatened	Terrestrial: Open scrub woods, arid brush, lomas, grass-cactus association; often in areas with sandy well-drained soils.	The sandy soils and scrubby areas of the Study Areas could provide suitable habitat for this species.	Not Applicable	May Impact

Common Name	Scientific Name	Listing Status		Habitat Requirements / Species Description	Suitable Habitat within the Study Area	Federal Effect Determination	State Impact Determination
		Federal	State				
Tricolored Bat	<i>Perimyotis subflavus</i>	Proposed Endangered	Not Listed	This species roosts in leaf clusters on live or dead trees and is also known to roost in Spanish moss. Caves, mines, bridges, culverts, and tunnels are also less commonly used as roosts.	The wooded areas of the Study Areas could provide suitable habitat for this species.	May Affect	Not Applicable
White-Faced Ibis	<i>Plegadis chihi</i>	Not Listed	Threatened	Prefers freshwater marshes, sloughs, and irrigated rice fields, but will attend brackish and saltwater habitats; currently confined to near-coastal rookeries in so-called hog-wallow prairies. Nests in marshes, in low trees, on the ground in bulrushes or reeds, or on floating mats.	The Study Areas do not include the wet habitat required for this species.	Not Applicable	No Impact
White-Nosed Coati	<i>Nasua narica</i>	Not Listed	Threatened	Woodlands, riparian corridors, and canyons. Most individuals in Texas probably transients from Mexico; diurnal and crepuscular; very sociable; forages on ground and in trees; omnivorous; may be susceptible to hunting, trapping, and pet trade	While woodland areas are present within the Study Areas, there are no element of occurrence records for this species in the vicinity and its presence is extremely unlikely.	Not Applicable	No Impact
White-Tailed Hawk	<i>Buteo albicaudatus</i>	Not Listed	Threatened	Near coast on prairies, cordgrass flats, and scrub-live oak; further inland on prairies, mesquite and oak savannas, and mixed savanna-chaparral.	The pastureland and scrubby areas of the Study Areas could provide suitable habitat for this species.	Not Applicable	May Impact
Whooping Crane	<i>Grus americana</i>	Endangered*	Endangered	Small ponds, marshes, and flooded grain fields for both roosting and foraging. Potential migrant via plains throughout most of state to coast; winters in coastal marshes of Aransas, Calhoun, and Refugio counties.	The small stock ponds and ephemeral pools found within the Study Areas are extremely unlikely to provide suitable habitat for this species.	No Effect	No Impact

Common Name	Scientific Name	Listing Status		Habitat Requirements / Species Description	Suitable Habitat within the Study Area	Federal Effect Determination	State Impact Determination
		Federal	State				
Wood Stork	<i>Mycteria americana</i>	Not Listed	Threatened	Prefers to nest in large tracts of baldcypress (<i>Taxodium distichum</i>) or red mangrove (<i>Rhizophora mangle</i>); forages in prairie ponds, flooded pastures or fields, ditches, and other shallow standing water, including salt-water; usually roosts communally in tall snags, sometimes in association with other wading birds (i.e. active heronries); breeds in Mexico and birds move into Gulf States in search of mud flats and other wetlands, even those associated with forested areas.	The small stock ponds and ephemeral pools found within the Study Areas are extremely unlikely to provide suitable habitat for this species.	Not Applicable	No Impact
Yellow-Billed Cuckoo	<i>Coccyzus americanus</i>	Threatened	Not Listed	In Texas, the populations of concern are found breeding in riparian areas in the Trans Pecos (known as part of the Western Distinct Population Segment). It is the Western population segment that is on the ESA threatened list and includes the Texas counties Brewster, Culberson, El Paso, Hudspeth, Jeff Davis, and Presidio.	The Study Areas are not located within the counties where this species is listed.	No Effect	Not Applicable

* This federally listed species was included on the TPWD's Rare, Threatened, and Endangered Species of Texas species list but not the IPaC species list.
Source: (Ref. 43, Ref. 44)

Table 2.3-9. Aquatic Federal and State Listed Species with the Potential to Occur within the Project Site

Common Name	Scientific Name	Listing Status*		Habitat Requirements / Species Description	Suitable Habitat within the Study Area	Federal Effect Determination	State Impact Determination
		Federal	State				
Cagle's Map Turtle	<i>Graptemys caglei</i>	Not Listed	Threatened	Aquatic: shallow water with swift to moderate flow and gravel or cobble bottom, connected by deeper pools with a slower flow rate and a silt or mud bottom; gravel bar riffles and transition areas between riffles and pools especially important in providing insect prey items; nests on gently sloping sand banks within ca. 30 feet of water's edge.	The Study Areas do not include streams with the substrate or flow regime required by this species.	Not Applicable	No Impact
False Spike	<i>Fusconaia mitchelli</i>	Endangered*	Endangered	Occurs in small streams to medium-size rivers in habitats such as riffles and runs with flowing water. Is often found in stable substrates of sand, gravel, and cobble.	The Study Areas do not include streams with flow regime required by this species.	No Effect	No Impact
Guadalupe Darter	<i>Percina apristis</i>	Not Listed	Threatened	Endemic to the Guadalupe River Basin; Found in riffles; most common under or around boulders in the main current; seems to prefer moderately turbid water.	The Study Areas do not include streams with the substrate or flow regime required by this species.	Not Applicable	No Impact
Guadalupe Orb	<i>Cyclonaias necki</i>	Endangered*	Endangered	Species' distribution is limited to the Guadalupe River basin. Occurs in both mainstem and tributary habitats. Often found in substrates composed of sand, gravel, and cobble, including mud-silt or gravel-filled cracks in bedrock slabs. Considered intolerant of reservoirs.	The Study Areas are not located within the Guadalupe River basin.	No Effect	No Impact

* This federally listed species was included on the RTEST species list but not the IPaC species list.
Source: (Ref. 43, Ref. 44)

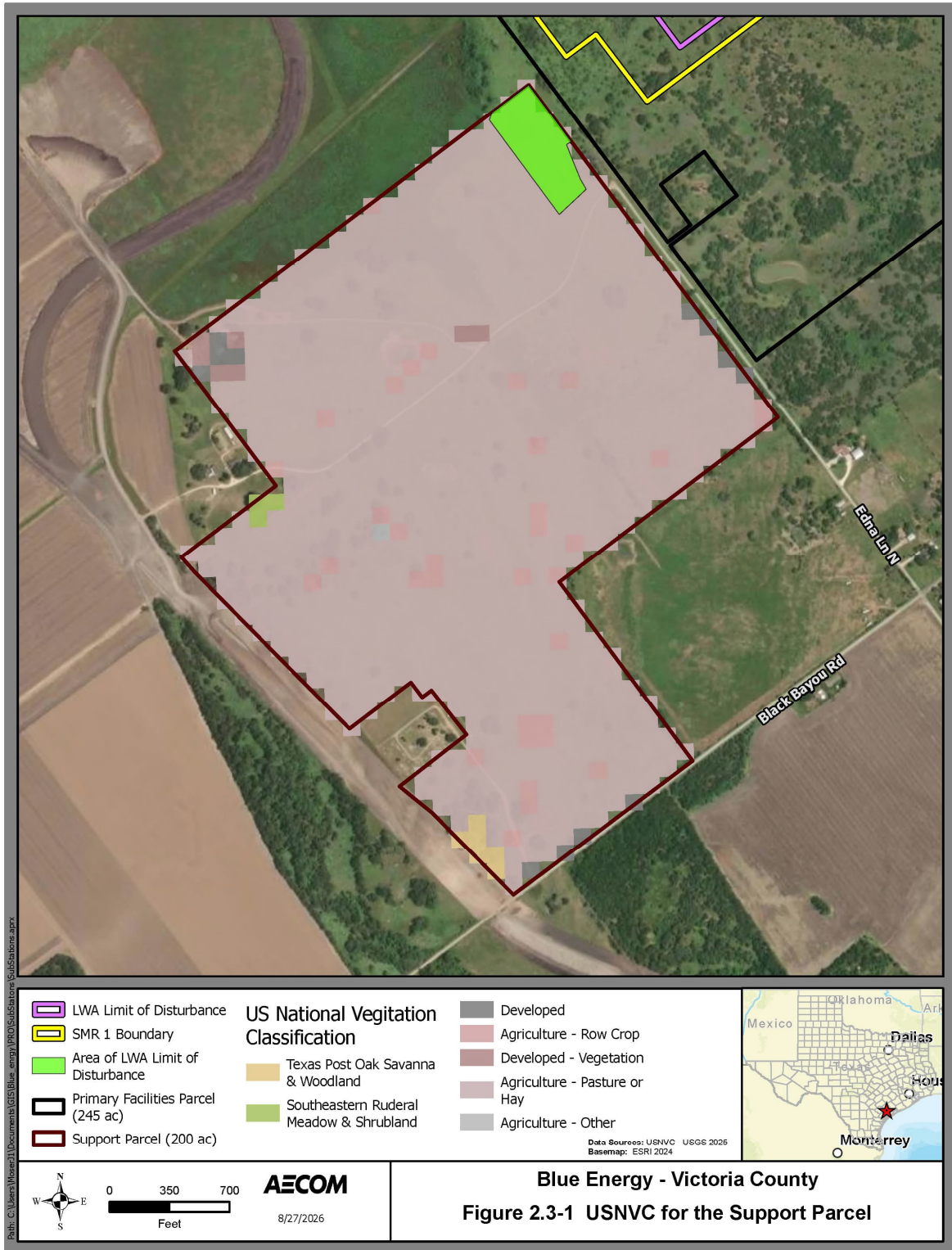


Figure 2.3-1. USNVC for the Support Parcel

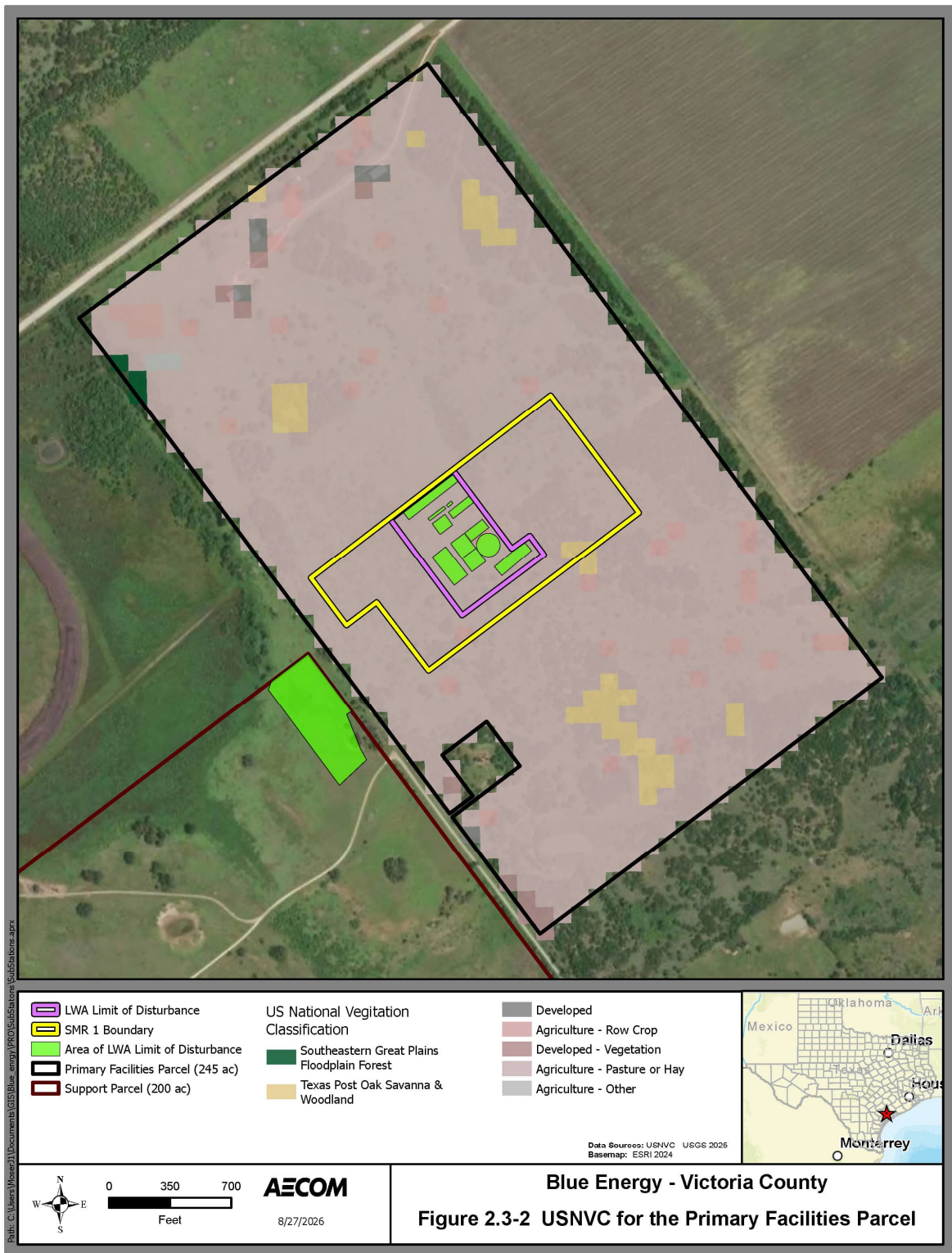


Figure 2.3-2. USNVC for the Primary Facilities Parcel

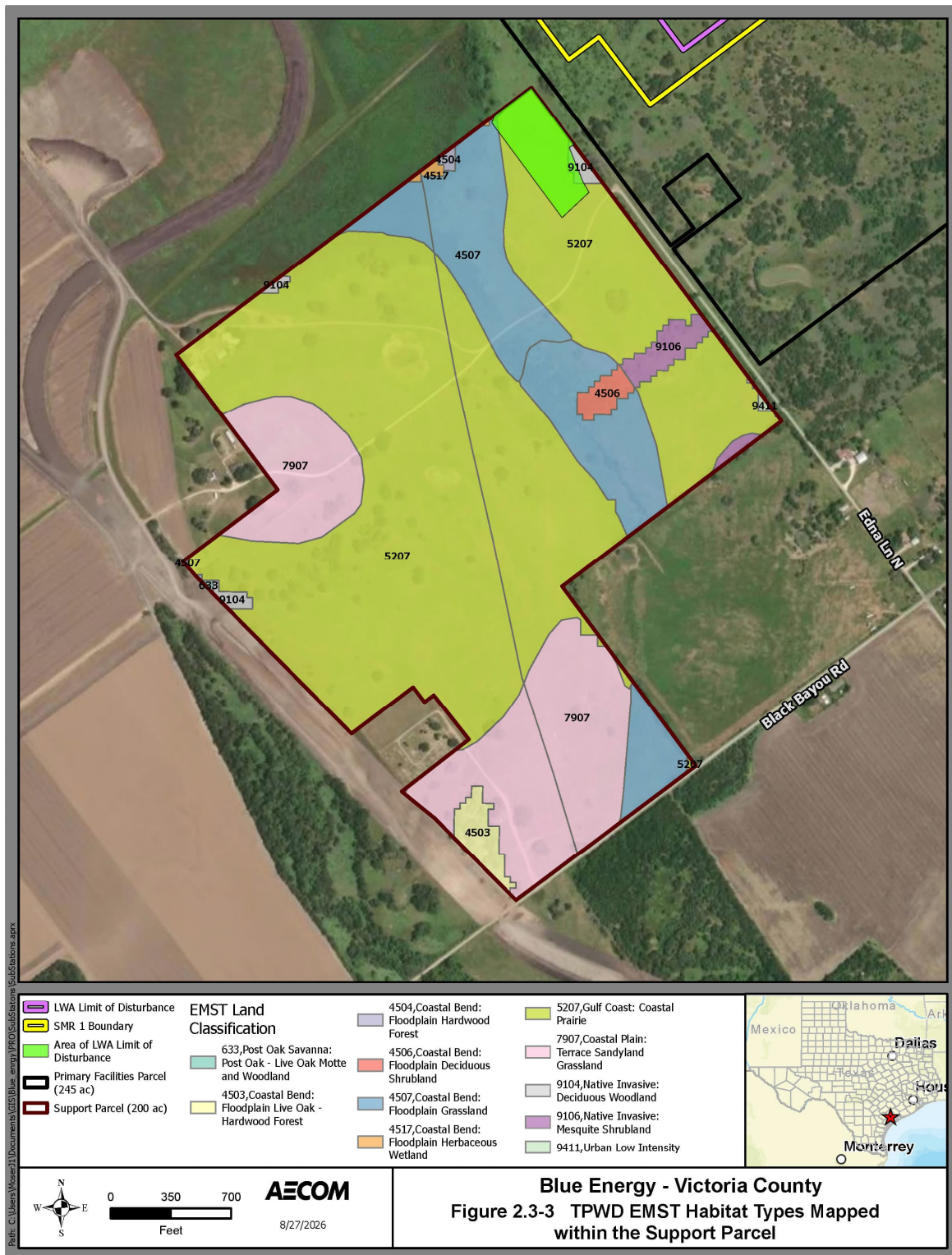


Figure 2.3-3. TPWD EMST Habitat Types Mapped within the Support Parcel

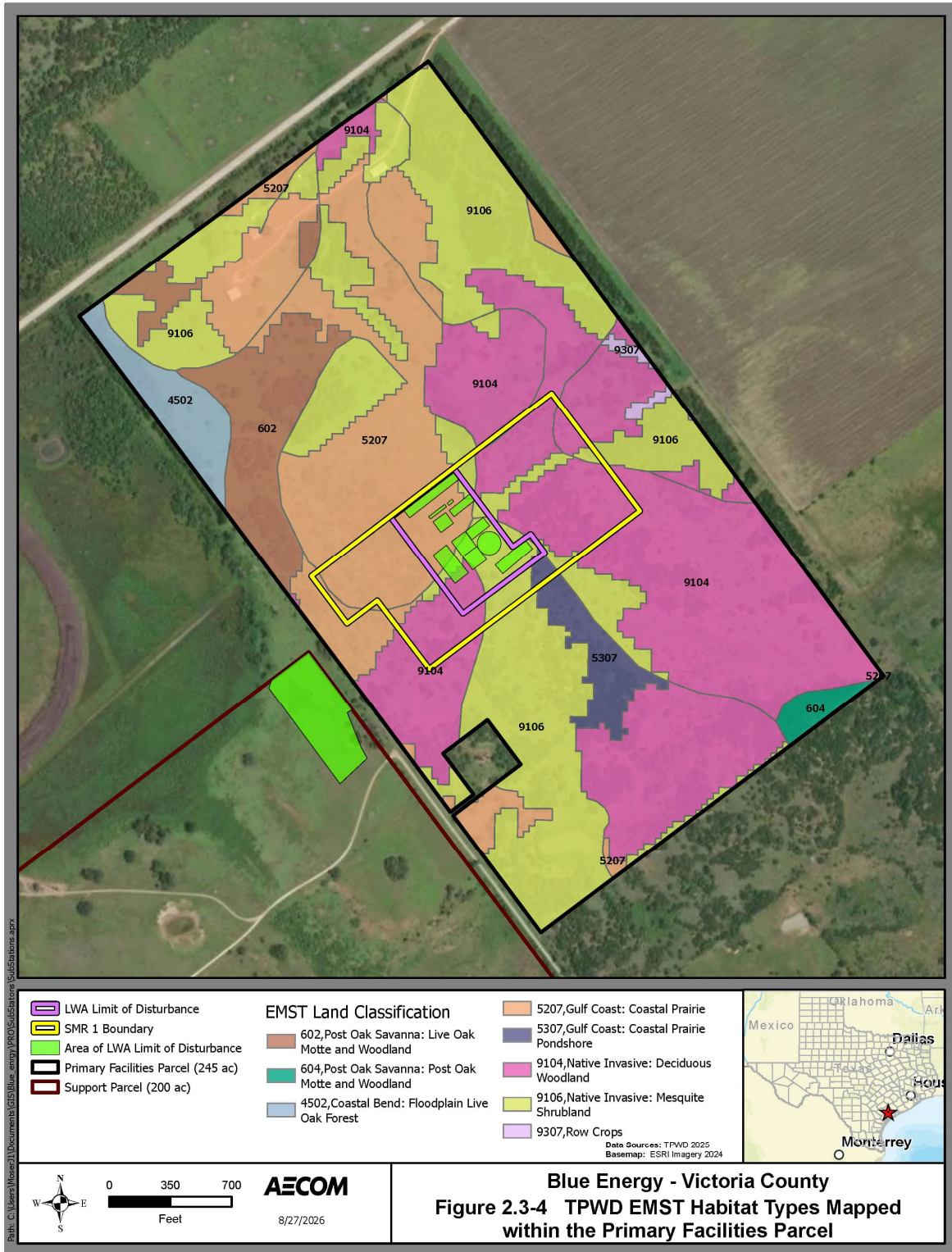


Figure 2.3-4. TPWD EMST Habitat Types Mapped within the Primary Facilities Parcel

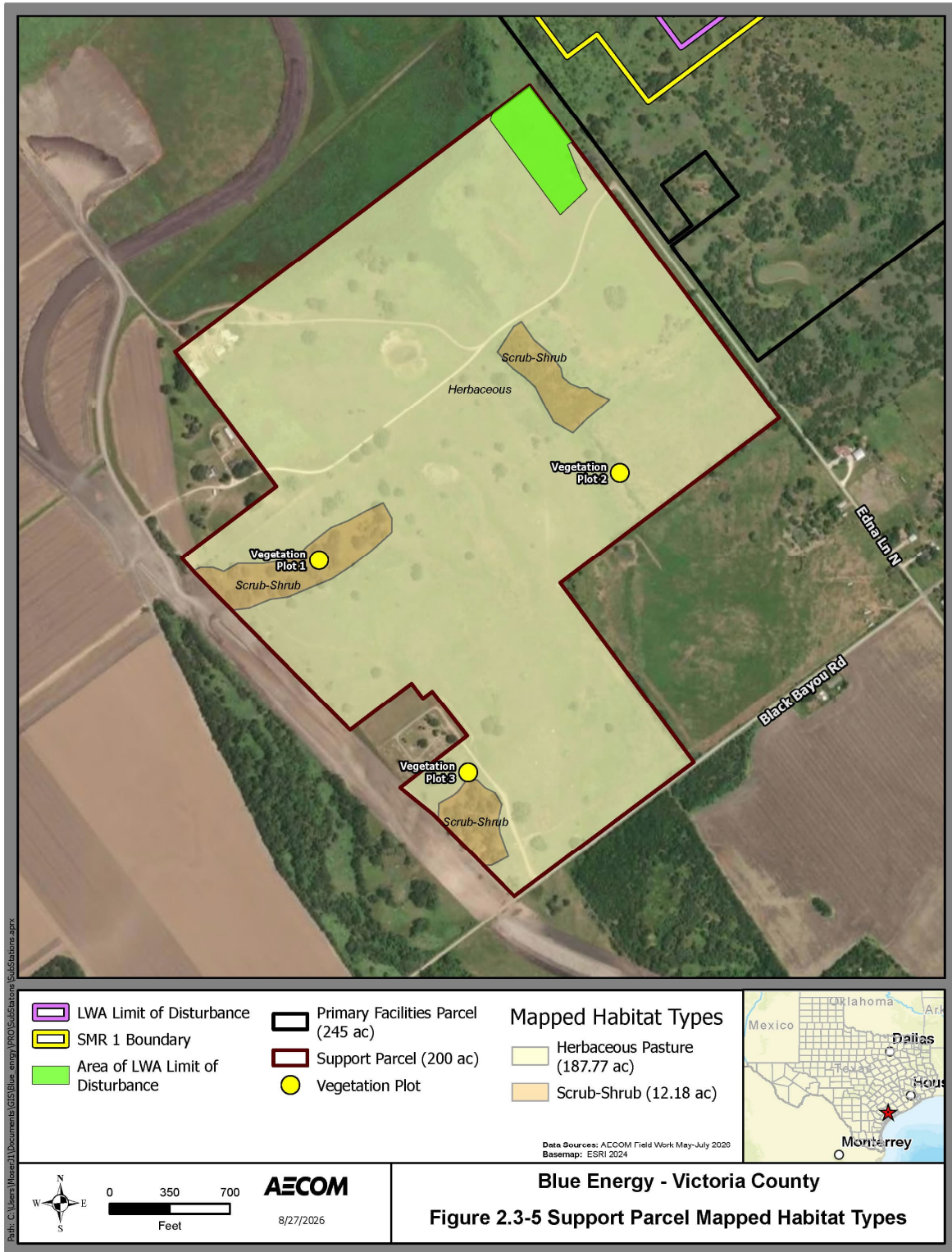


Figure 2.3-5. Support Parcel Mapped Habitat Types

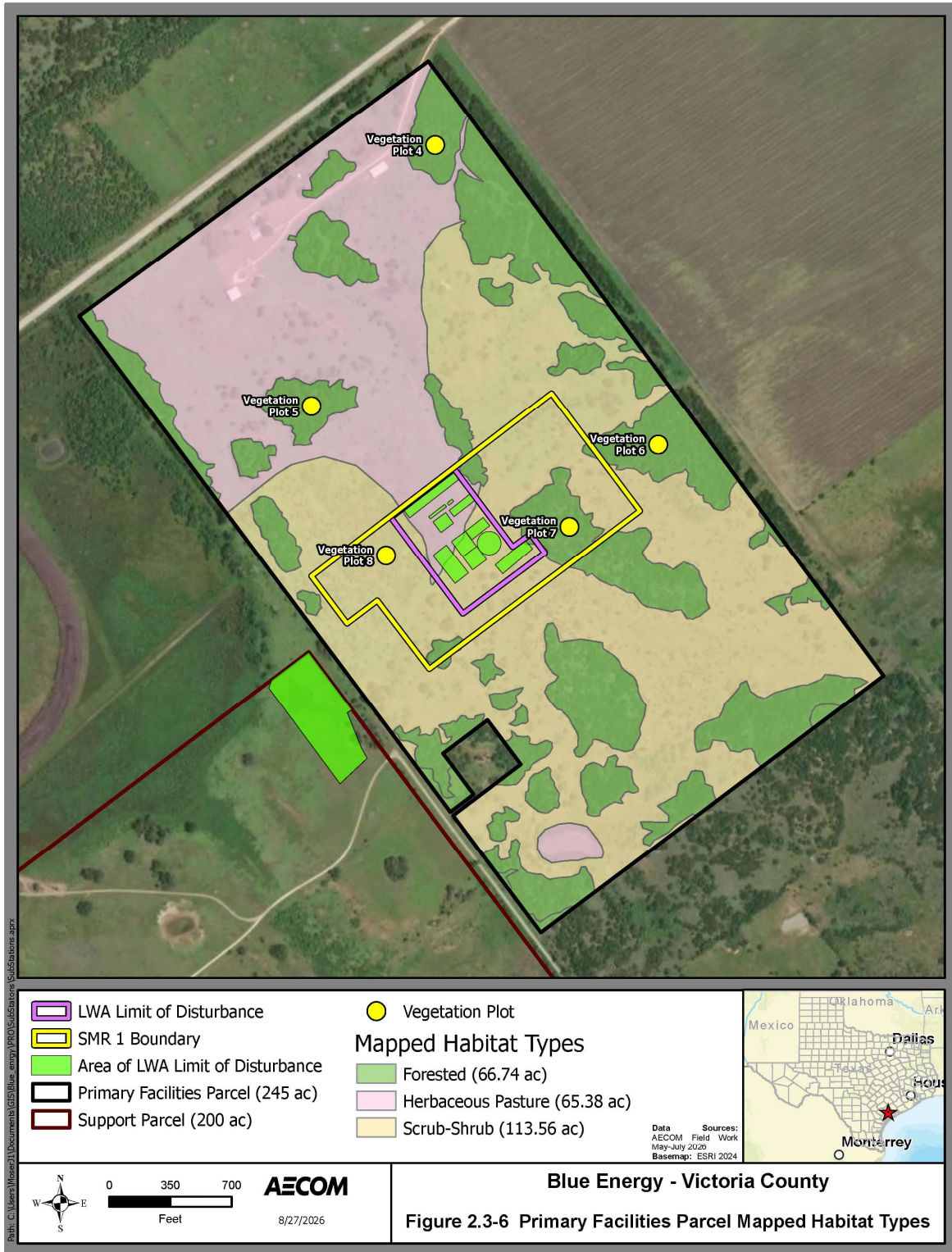


Figure 2.3-6. Primary Facilities Parcel Mapped Habitat Types

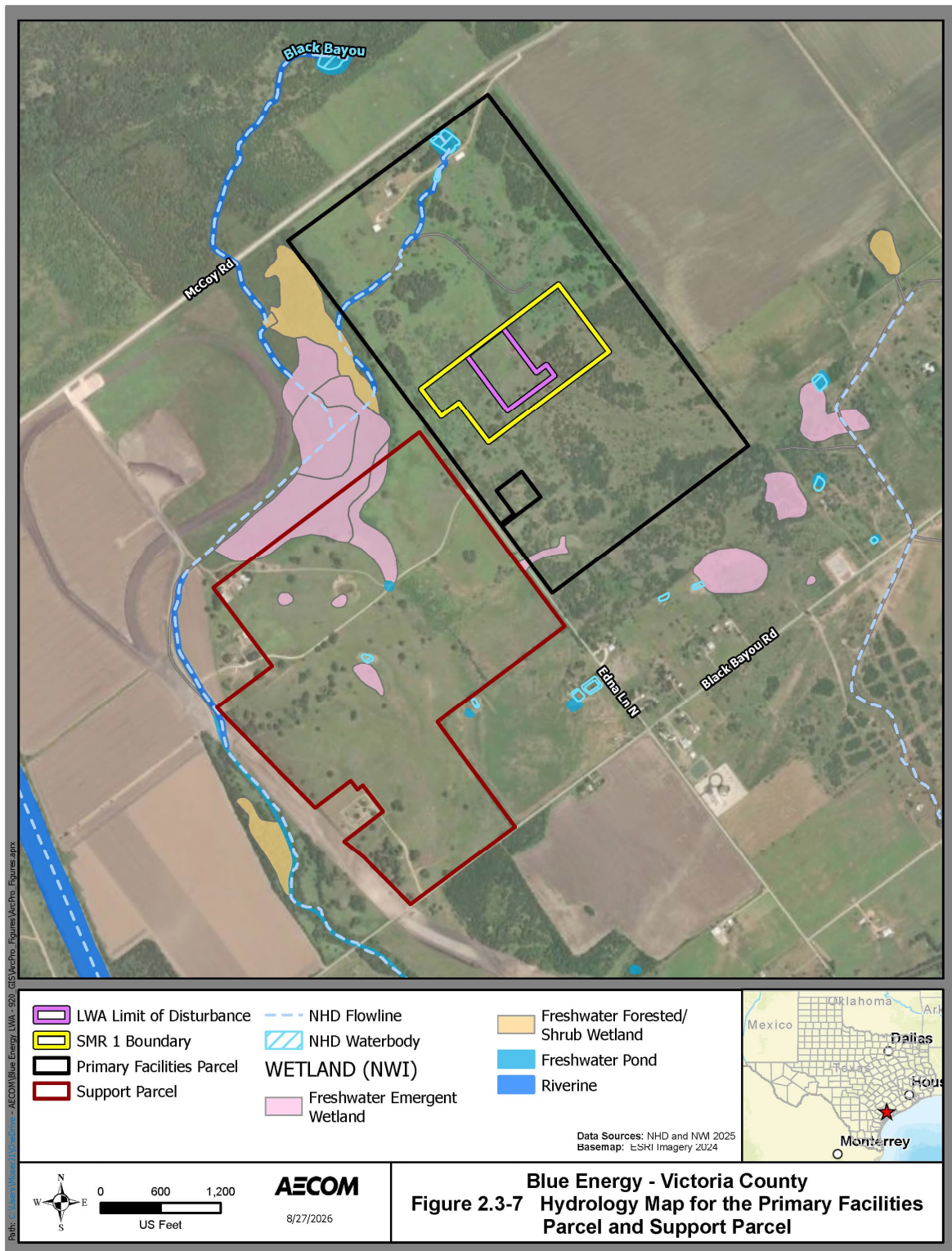


Figure 2.3-7. Hydrology Map for the Primary Facilities Parcel and Support Parcel

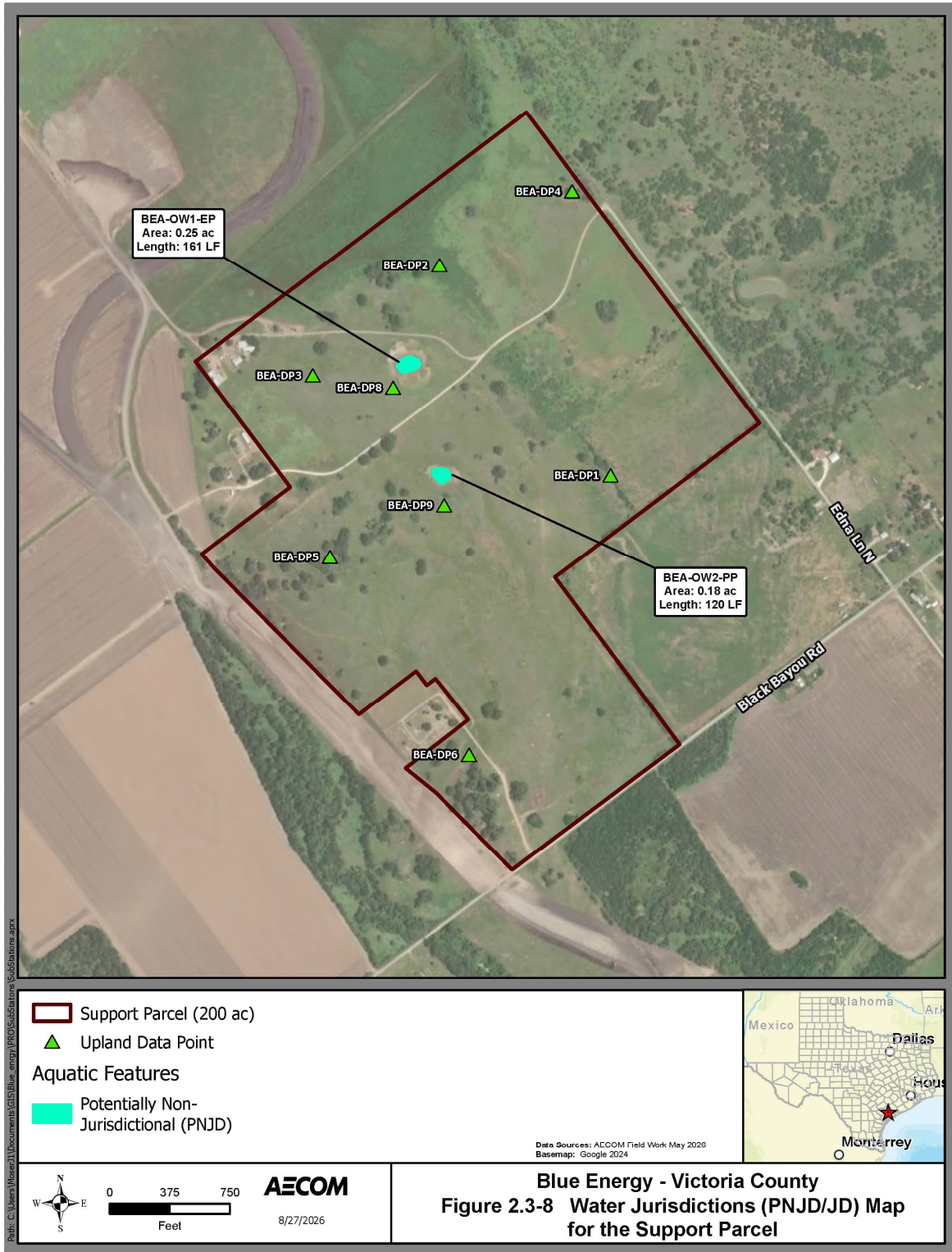


Figure 2.3-8. Aquatic Features for the Support Parcel

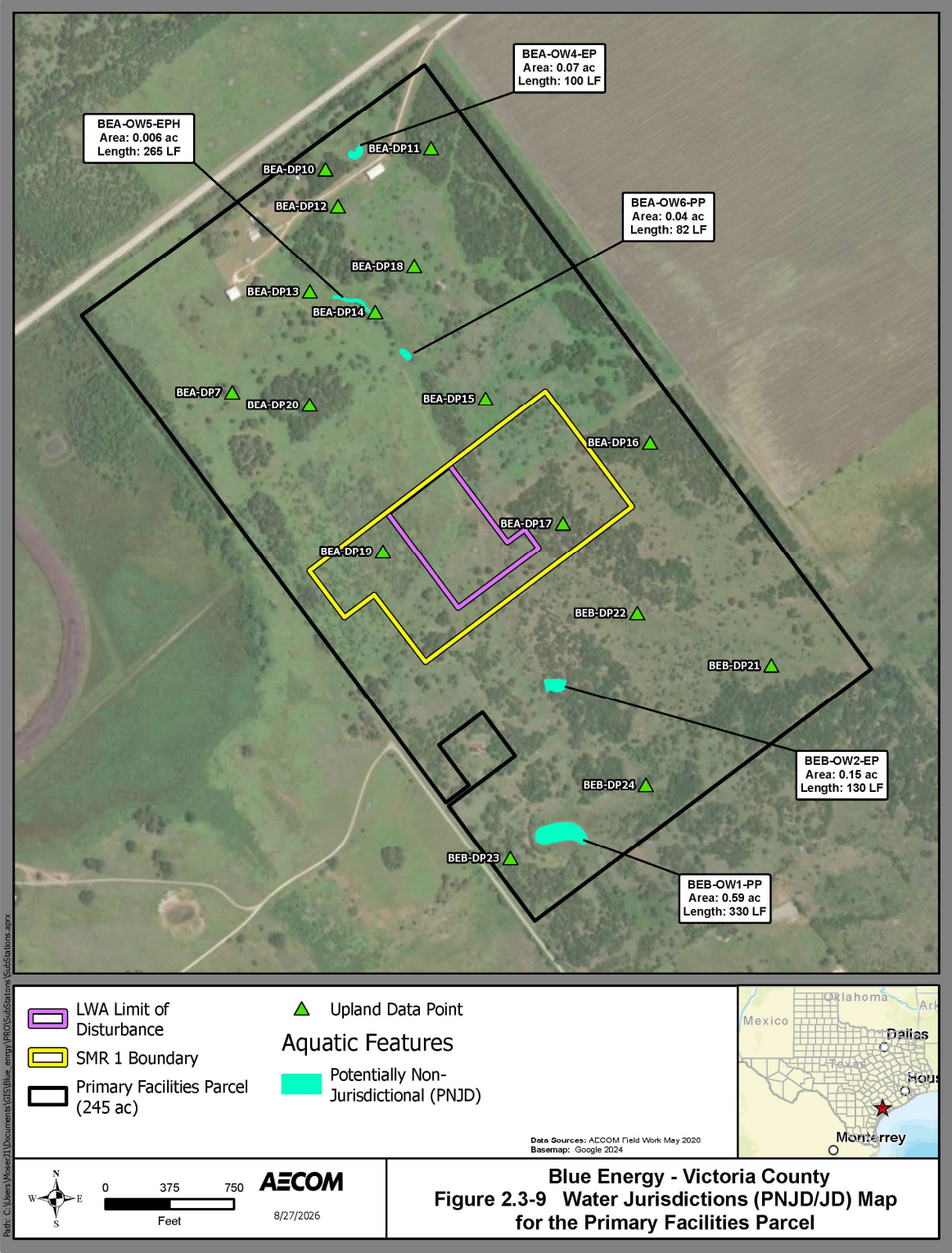


Figure 2.3-9. Aquatic Features for the Primary Facilities Parcel

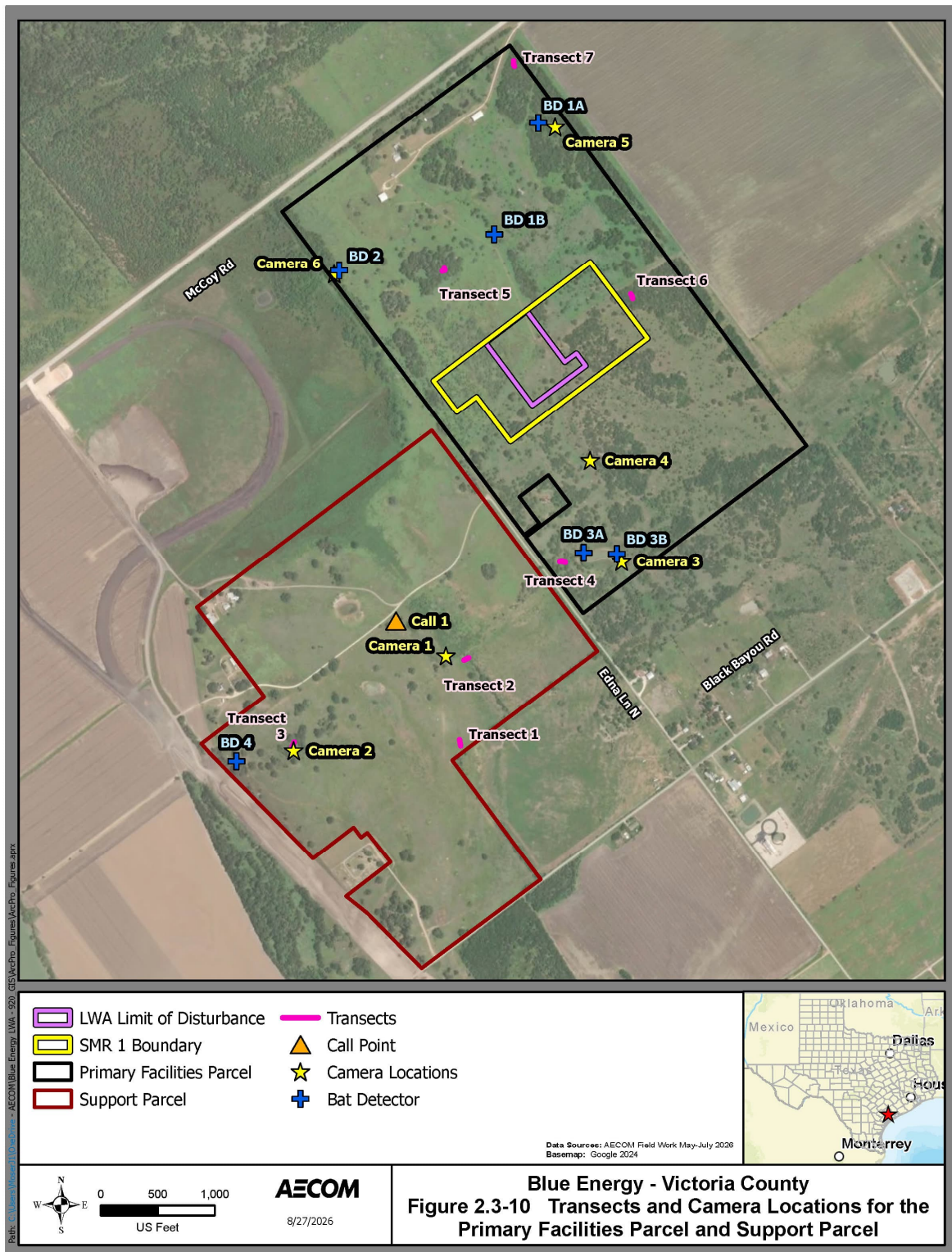


Figure 2.3-10. Transects and Camera Locations on the Project Site

2.4 Socioeconomics

This section characterizes the current socioeconomic conditions within the region of influence (ROI) surrounding the site and provides a basis for assessing potential socioeconomic effects of LWA construction. The socioeconomic characterization addresses demographics (resident and transient population growth rates, race and ethnicity), community characteristics (the economy, housing availability, public services, local transportation), and tax payment information.

Socioeconomic characterization is presented on a spatial and temporal (demography) basis. The nature and extent of socioeconomic characterization is consistent with Section 3.12 of the NRC's *Generic Environmental Impact Statement for Licensing of New Nuclear Reactors (New Reactor GEIS; NUREG-2249)*.

2.4.1 Demography

2.4.1.1 Resident Population

2.4.1.1.1 Communities in the Region of Influence

The ROI is identified as Victoria County, which encompasses the LWA project site, and surrounding counties Calhoun, Dewitt, Goliad, Jackson, Lavaca, and Refugio. As illustrated in Figure 2.1-3, the ROI includes the city of Victoria located within Victoria County. This is the geographic area from which the facility will draw its workforce. The ROI is defined by the areas where the construction workers and their families are most likely to reside, and spend their wages, salary, and benefits on goods and services, which affect the socioeconomic environment in the region.

Table 2.4-1 provides the historic resident population for the ROI counties and the municipality (Victoria City) located within. Between 2000 and 2020, the population increased 8.6 percent and 8.4 percent in Victoria County and Victoria City, respectively. During the same period, the surrounding counties of Goliad, Jackson and Lavaca grew 1.2 percent, 4.1 percent and 5.9 percent respectively. The surrounding counties of Calhoun, DeWitt, and Refugio decreased 2.6 percent, 3.6 percent and 13.9 percent respectively (Ref. 48, Ref. 49, Ref. 50).

The closest metropolitan areas include Corpus Christi, Texas, (approximately 65 mi southwest of the site; population: 317,863; located in Nueces County) and San Antonio, Texas (approximately 109 mi west of the site; population: 1,434,625; located in Bexar County) (Ref. 50).

2.4.1.1.2 Growth Projection in the Region of Influence

Table 2.4-1 provides projected population in Victoria County, and surrounding counties through 2030 as predicted by the Texas Demographic Center. Population in Victoria County, the most populous of the ROI counties, is expected to increase 2.9 percent from 91,319 in 2020 to 93,972 in 2030. Projections for Victoria City are not available. Population changes in surrounding ROI counties range from a decrease of 5.3 percent (Calhoun) to an increase of 6.4 percent (Lavaca) (Ref. 51).

2.4.1.1.3 Transient Population within 5 Miles

Transient populations are temporary or seasonal populations residing in the area, such as in lodging accommodations, dormitories or classrooms on a college campus. In the decennial 2020 census, college students who live in college/university student housing were counted at the student housing rather than at their parents' or guardians' home (Ref. 52). According to the 2020 decennial census, 243 students (representing 20.0 percent of the transient population)

lived in college or university student housing in Victoria county. Out of town students attending Texas A&M University – Victoria, Victoria College and University of Houston – Victoria share student housing options in Victoria. None of the other surrounding counties in the ROI contained student populations living in student housing (Ref. 53, Ref. 54).

2.4.1.1.4 Race and Ethnicity in the Region of Influence

Race and ethnicity data were gathered using 2020 decennial U.S. Census Bureau (USCB) data. As shown in Table 2.4-2, the aggregate minority population in Victoria County and Victoria City was 56.9 percent and 63.4 percent, respectively. Minority populations in surrounding counties ranged from 28.4 percent (Lavaca) to 58.4 percent (Calhoun). The largest minority groups within Victoria County included Hispanic and Latino (47.0 percent) and Black or African American (5.7 percent) (Ref. 50). As shown in Table 2.4-3, during the same time, the nation and the state had minority population of 42.2 percent and 60.3 percent, respectively. The largest minority groups in the nation and state included Hispanic/Latino (18.7 percent and 39.3 percent, respectively) and Black or African American (12.1 percent and 11.8 percent, respectively (Ref. 50).

2.4.2 Community Characteristics

Community characteristics refer to socioeconomic attributes of the local economy, local housing statistics, public services, infrastructure including major transportation, facilities, and tax payment information. The data presented reflects the community characteristics within the ROI.

2.4.2.1 Economy

The economy of the ROI is evaluated by examining per capita and household income, division of the labor force, unemployment rates, and poverty rates. Data was provided by USCB.

2.4.2.1.1 Income (Population and Household)

As provided in Table 2.4-4, per capita income in Victoria County was \$29,424 in 2020, less than the nation (\$35,384) and the state (\$32,177). Median household income in Victoria County was \$58,959, less than the nation (\$64,994) and the state (\$63,826). Per capita income in surrounding ROI counties ranged from \$25,701 (Jackson) to \$31,241 (Lavaca). Median household income in surrounding ROI counties ranged from \$50,000 (Goliad) to \$58,243 (Jackson) (Ref. 55).

2.4.2.1.2 Labor Force and Unemployment

Table 2.4-5 provides unemployment rates and the number of individuals in the labor force. Victoria County had the largest civilian labor force (44,516 people) of all ROI counties. The unemployment rate in the Victoria County was 5.2 percent in 2020, less than the nation (5.4 percent) and the state (5.2 percent). The unemployment rate decreased to 4.4 percent in Victoria County in 2024. Unemployment rates in surrounding ROI counties ranged from 3.3 percent (Lavaca) to 6.3 percent (Refugio) in 2020. In 2024, unemployment rates in surrounding ROI counties ranged from 3.1 percent (Lavaca) to 7.4 percent (Calhoun) in 2020 (Ref. 55, Ref. 56).

Table 2.4-6 provides the total number of people employed as well as the types of employment. In 2020 educational services, and health care and social assistance comprised the dominant industry category in Victoria (24.5 percent) as compared to the nation (23.3 percent) and the state (21.8 percent). Educational services, and health care and social assistance also comprised the dominant industry in surrounding ROI counties (Ref. 55).

2.4.2.1.3 Poverty Rates

The analysis for low-income populations in the ROI followed the Council on Environmental Quality guidance for identifying low-income populations. Information was derived from the 2016-2020 American Community Survey 5-Year Estimates because these data were not available in the 2020 decennial census. Table 2.4-7 provides the results of the low-income population analysis within the ROI. In 2020, the percentage of individuals with income less than the poverty level was 15.7 percent in Victoria County, which was more than the nation (12.8 percent) and the state (14.2 percent). Poverty rates in surrounding ROI counties ranged from 9.0 percent (Lavaca) to 17.9 percent (DeWitt) (Ref. 57).

The percentage of families with income less than the poverty level was 12.0 percent in Victoria County, greater than the nation (8.9 percent) but less than the state (11.0 percent). Poverty rates in the surrounding ROI counties ranged from 6.3 percent (Goliad) to DeWitt (13.8) (Ref. 57).

2.4.2.2 Housing

As provided in Table 2.4-8, the total number of housing units in Victoria County in 2020 was 37,264 of which 32,520 were occupied units and 4,744 were vacant units. The rental vacancy rate in Victoria County was 13.2 percent, greater than the nation (5.8 percent) and the state (7.8 percent). Rental vacancy rates in surrounding ROI counties range from 0.0 percent (Refugio) to 18.8 percent (Jackson). The median home value was \$152,900 in Victoria County, which was less than the nation (\$229,800) and the state (\$187,200). Median home values in surrounding ROI counties ranged from \$85,500 (Refugio) to \$171,000 (Lavaca) (Ref. 58).

As provided in Table 2.4-8, the total number of housing units in Victoria County in 2020 was 37,264 of which 32,520 were occupied units and 4,744 were vacant units. The rental vacancy rate in Victoria County was 13.2 percent, greater than the nation (5.8 percent) and the state (7.8 percent). Rental vacancy rates in surrounding ROI counties range from 0.0 percent (Refugio) to 18.8 percent (Jackson).

In 2020, there were 4,744 vacant housing units in Victoria County (Table 2.4-8). The amount of housing availability within the ROI is greater than the total estimated demand for housing due to construction labor (45 construction workers) likely available in the ROI labor force. Thus, workers may not need to relocate to the ROI to support construction needs. However, should construction require some workers temporarily relocation, there would likely be an adequate supply of vacant housing to accommodate the requirements of new workers or families who may choose to relocate to the site for temporary or permanent housing.

2.4.2.3 Education

Victoria county includes 31 public and 11 private schools. Public schools within the county include:

- Title 1 schools - public schools that receive federal financial assistance from Title I, Part A of the Elementary and Secondary Education Act because a large percentage of children are from low-income families. Victoria County has 29 Title I schools.
- Regular public schools - public schools that receive the largest source of funding from state government aid, local contributions (primarily property and school taxes), along with a small amount of federal funding. Victoria County has 20 regular public schools.

- Magnet schools - public schools that receive government funding; mandated by the district school board but have a specific instructional theme, curriculum, or instruction method. Victoria County has seven magnet schools.
- Alternative schools – public schools that receive government funding but offer nontraditional curriculums for gifted students, children with special needs, students who have fallen off educationally or wish to explore a less rigid system of learning. Victoria County has four alternative schools.

According to the National Center for Education Statistics (NCES) data (Ref. 59, Ref. 60), during the 2024-2025 school year, Victoria County public schools had a student enrollment of 14,160 students and employed approximately 987 teachers, with a resulting student-teacher ratio for public schools of 14.34 students per teacher. These data include prekindergarten students and teachers. Table 2.4-9 provides details of the individual schools located in the county.

Private schools comprise elementary and secondary schools that do not receive government financial support. Parents of private school students pay for their children to attend the school. The region has 11 private schools (Table 2.4-9). During the 2024-2025 school year, private schools had a total student enrollment of 2,471 and employed approximately 146 teachers according to NCES data (Ref. 59, Ref. 60), resulting in a student-teacher ratio of 16.82.

Postsecondary education in Victoria County includes two colleges offering undergraduate degrees and two trade schools. These institutions are detailed in Table 2.4-10.

The State of Texas imposes limitations on class sizes. Prekindergarten classrooms are capped at 22 students. Kindergarten to fourth grade classrooms cannot have more than 22 students in one class; however, district exceptions can be made for 12-week periods. Fifth to twelfth grade teachers must average at or under 20 students per class across the district, but there is no defined cap for a single secondary classroom (Ref. 61). As shown on Table 2.4-9, student-to-teacher ratios for the public schools within Victoria County are 17.1 to 1 or lower, with the average across public schools being 14.3 to 1. This ratio is similar better than those of the private schools in Victoria County where the highest ratio is 18.3 to 1 with an average ratio of 16.8 to 1.

2.4.2.4 Transportation and Traffic

The LWA project site is west of the town of Bloomington; it is in a relatively rural area and contains no major roads. The LWA project site is surrounded by roads on three sides, with no official road closest to the canal. Black Bayou Road No 1 borders the southern side, Old Bloomington Road on the east side, and McCoy Road to the north, which leads to Fleet Avenue that gives access to shipping on the canal. Edna Lane North runs up through the center of the site and property from Black Bayou Road No 1. There are several unnamed roads also within the property which likely give access to houses near the site.

The Texas Department of Transportation (TxDOT) keeps track of annual average daily traffic (AADT) counts for roads throughout the state. This number represents the average number of cars that travel on roads any given day. No AADT data exists for any of the roads directly surrounding or within the site; however, Old Bloomington Road North is connected to McCoy Road, which is the nearest reading to the site, and has an AADT of 208 for 2025 (Ref. 62). Old Bloomington Road North also allows access to the port site on the canal, making traffic on the road 38 percent truck traffic volume (Ref. 63). The TxDOT 5-Year Statewide AADT Traffic Counts, taken last in 2022, did have some AADT data closer to the site, on possibly more

representative roads. To the northwest of the site, DuPont Road, which crosses the canal had an AADT of 33. Black Bayou Rd No 1, to the east, had an AADT of 1,491 near the town of Bloomington. Black Bayou Rd No 2, to the south, had an AADT of 34 for one portion closer to Bloomington, and an AADT of 4 closer to the canal (Ref. 64).

Other AADT readings are in more populated or more well-traveled areas away from the site. For example, State Highway 185, which is part of the Texas Highway Freight Network, cuts through the center of Bloomington, with several traffic stations which in 2025 had an AADT between 4,175 and 5,576 in town, and an AADT of 10,715 to the north of town where the highway has more lanes, although this number is higher than average with an AADT of only 6,814 in 2024 (Ref. 62).

Some roadway improvements and repaving are taking place or set to take place in Bloomington within the next 4 years, and 1 in more than 10 years, but no projects are planned directly adjacent to the site (Ref. 65). No other projects are planned within the area that would increase the traffic.

In terms of other non-roadway infrastructure, the Union Pacific Railroad (66) runs to the south of the LWA project site, parallel to Black Bayou Rd No 2. The Port of Victoria to the north is the closest inland seaport, roughly 3.5 mi away.

Figure 2.4-1 depicts the transportation infrastructure map for the LWA project site and vicinity.

2.4.2.5 Visual Resources

Visual resources are a combination of physical, biological, and man-made features that give an area its visual and aesthetic quality. A viewshed is a geographic area that is visible from a given location. The landscape surrounding the LWA project site is relatively flat and consists of pastureland with unmaintained wooded areas. As provided in Figure 1.2-1 and 1.2-2, the LWA project site is set far back from major roads so the LWA construction area would not be highly visible. The only structure to be constructed under the LWA that may be permanent would be the concrete crane pad. Temporary structures include Conex boxes, an office trailer, concrete and bentonite batch plants and equipment. The tallest equipment is expected on site are two crawler cranes which are expected to be less than 120 ft tall.

The closest recreational areas to the LWA Project site are located within Bloomington and Victoria, TX and the LWA Project site is well beyond the viewshed of these areas. Additionally, the construction area would be set back from major roadways. There are no sensitive land uses such as federal, state, or local parks; wildlife refuges; conservation lands; Wild and Scenic Rivers; Natural Heritage Rivers; or Class I Federal areas within the 6-mi vicinity of the LWA project site that would be degraded by views of the LWA project site.

The excavation soil stockpile will be visible from Edna Lane. A view of the proposed location of the stockpile on the northeastern Support Parcel from corner of Edna Lane as it turns to the southwest is provided as Figure 2.4-2. The view from the same location to the northwest onto the Primary Facilities Parcel is shown in Figure 2.4-3. Figure 2.4-4 provides a view of from the nearest resident northwest down Edna Lane.

Table 2.4-1. Historic and Projected Population and Growth Rates of ROI County and Municipalities

Location	2000	2010	2020	Projected 2030	Percent Change 2000 – 2010	Percent Change 2010 - 2020	Percent Change 2000 - 2020	Percent Change 2020 - 2030
Calhoun County, TX	20,647	21,381	20,106	19,034	3.6	-6.0	-2.6	-5.3
DeWitt County, TX	20,013	20,097	19,284	20,492	0.4	-4.0	-3.6	6.3
Goliad County, TX	6,928	7,210	7,012	7,115	4.1	-2.7	1.2	1.5
Jackson County, TX	14,391	14,075	14,988	16,035	-2.2	6.5	4.1	7.0
Lavaca County, TX	19,210	19,263	20,337	21,637	0.3	5.6	5.9	6.4
Refugio County, TX	7,828	7,383	6,741	6,528	-5.7	-8.7	-13.9	-3.2
Victoria County, TX	84,088	86,793	91,319	93,972	3.2	5.2	8.6	2.9
Victoria City, TX	60,463	62,592	65,534	N/A	3.5	4.7	8.4	N/A

Source: (Ref. 48, Ref. 49, Ref. 50, Ref. 51)

Abbreviation: N/A = not applicable

Table 2.4-2: Demographic (Race and Ethnicity) Characteristics of ROI County and Municipalities in 2020

Racial/Ethnic	Calhoun County, TX		DeWitt County, TX		Goliad County, TX		Jackson County, TX		Lavaca County, TX		Refugio County, TX		Victoria County, TX		Victoria City, TX	
	Pop.	%	Pop.	%	Pop.	%	Pop.	%	Pop.	%	Pop.	%	Pop.	%	Pop.	%
Total Population	20,106	--	19,824	--	7,012	--	14,988	--	20,337	--	6,741	--	91,319	--	65,534	--
White	8,374	41.6	10,854	54.8	4,246	60.6	8,510	56.8	14,564	71.6	2,864	42.5	39,330	43.1	23,953	36.6
Aggregate Minority	11732	58.4	8970	45.2	2766	39.4	6478	43.2	5773	28.4	3877	57.5	51989	56.9	41581	63.4
Black or African American	361	1.8	1,557	7.9	235	3.4	937	6.3	1,173	5.8	400	5.9	5,230	5.7	4,655	7.1
American Indian and Alaska Native	34	0.2	32	0.2	18	0.3	36	0.2	30	0.1	18	0.3	214	0.2	158	0.2
Asian	1,112	5.5	70	0.4	24	0.3	158	1.1	74	0.4	27	0.4	1,391	1.5	1,337	2.0
Native Hawaiian and Other Pacific Islander	0	0.0	2	0.0	0	0.0	5	0.0	5	0.0	0	0.0	35	0.0	27	0.0
Other Race	56	0.3	35	0.2	16	0.2	102	0.7	31	0.2	12	0.2	232	0.3	163	0.2
Two or More Races	311	1.5	384	1.9	185	2.6	411	2.7	524	2.6	114	1.7	1,956	2.1	1,303	2.0
Hispanic or Latino	9,858	49.0	6,890	34.8	2,288	32.6	4,829	32.2	3,936	19.4	3,306	49.0	42,931	47.0	33,938	51.8

Source: (Ref. 50)

Abbreviations: Pop = population; % = percent

Table 2.4-3: Demographic (Race and Ethnicity) Characteristics of State of Texas and United States in 2020

Racial/Ethnic	Texas		United States	
	Population	Percent	Population	Percent
Total Population	29,145,505	--	331,449,281	--
White	11,584,597	39.7	191,697,647	57.8
Aggregate Minority	17560908	60.3	139751634	42.2
Black or African American	3,444,712	11.8	39,940,338	12.1
American Indian and Alaska Native	85,425	0.3	2,251,699	0.7
Asian	1,561,518	5.4	19,618,719	5.9
Native Hawaiian and Other Pacific Islander	27,857	0.1	622,018	0.2
Other Race	113,584	0.4	1,689,833	0.5
Two or More Races	886,095	3.0	13,548,983	4.1
Hispanic or Latino	11,441,717	39.3	62,080,044	18.7

Source: (Ref. 50)

Table 2.4-4: Median Household and Per Capita Income Levels in ROI Counties

	Calhoun County, TX	DeWitt County, TX	Goliad County, TX	Jackson County, TX	Lavaca County, TX	Refugio County, TX	Victoria County, TX	Victoria City, TX	Texas	United States
Median Household Income (dollars)	57,170	53,815	50,000	58,243	54,211	51,054	58,959	56,332	63,826	64,994
Per Capita Income (dollars)	28,653	27,359	30,038	25,701	31,241	24,893	29,424	28,731	32,177	35,384

Source: (Ref. 55)

Table 2.4-5: Civilian Labor Force and Unemployment Rates

	Calhoun County, TX	DeWitt County, TX	Goliad County, TX	Jackson County, TX	Lavaca County, TX	Refugio County, TX	Victoria County, TX	Victoria City, TX	Texas	United States
Civilian Labor Force	10,669	7,914	3,190	6,467	9,369	3,049	44,516	33,037	14,214,242	164,759,496
Unemployment Rate (percent)	4.3	6.7	4.2	4.8	3.3	6.3	5.2	5.3	5.3	5.4

Source: (Ref. 55)

Table 2.4-6: Employment by Industry

INDUSTRY	Calhoun County, TX		DeWitt County, TX		Goliad County, TX		Jackson County, TX		Lavaca County, TX	
	Total	Percent	Total	Percent	Total	Percent	Total	Percent	Total	Percent
Civilian employed population 16 years and over	10,210		7,380		3,055		6,157		9,058	
Agriculture, forestry, fishing and hunting, and mining	581	5.70	1,083	14.70	488	16.00	658	10.70	881	9.70
Construction	1,020	10.00	717	9.70	286	9.40	781	12.70	796	8.80
Manufacturing	2,596	25.40	614	8.30	291	9.50	728	11.80	1,531	16.90
Wholesale trade	238	2.30	193	2.60	76	2.50	138	2.20	255	2.80
Retail trade	674	6.60	714	9.70	249	8.20	649	10.50	761	8.40
Transportation and warehousing, and utilities	121	1.20	557	7.50	175	5.70	488	7.90	412	4.50
Information	71	0.70	14	0.20	37	1.20	76	1.20	52	0.60
Finance and insurance, and real estate and rental and leasing	366	3.60	288	3.90	162	5.30	186	3.00	533	5.90
Professional, scientific, and management, and administrative and waste management services	654	6.40	323	4.40	184	6.00	441	7.20	449	5.00
Educational services, health care and social assistance	2,213	21.70	1,632	22.10	742	24.30	1,314	21.30	2,210	24.40
Arts, entertainment, recreation, and accommodation and food services	559	5.50	481	6.50	197	6.40	269	4.40	422	4.70
Other services, except public administration	477	4.70	451	6.10	88	2.90	168	2.70	457	5.00
Public administration	640	6.30	313	4.20	80	2.60	261	4.20	299	3.30

Source: (Ref. 55)

Table 2.4-6. Employment by Industry (continued)

INDUSTRY	Refugio County, TX		Victoria County, TX		Texas		United States	
	Total	Percent	Total	Percent	Total	Percent	Total	Percent
Civilian employed population 16 years and over	2,856		42,209		13,461,358		155,888,980	
Agriculture, forestry, fishing and hunting, and mining	373	13.10	2,002	4.70	382,157	2.80	2,658,413	1.70
Construction	363	12.70	3,528	8.40	1,162,805	8.60	10,416,196	6.70
Manufacturing	112	3.90	4,275	10.10	1,136,354	8.40	15,617,461	10.00
Wholesale trade	68	2.40	1,540	3.60	376,139	2.80	3,971,773	2.50
Retail trade	350	12.30	5,570	13.20	1,511,963	11.20	17,195,083	11.00
Transportation and warehousing, and utilities	139	4.90	1,828	4.30	808,075	6.00	8,576,862	5.50
Information	18	0.60	560	1.30	227,404	1.70	3,066,743	2.00
Finance and insurance, and real estate and rental and leasing	118	4.10	2,059	4.90	911,531	6.80	10,319,201	6.60
Professional, scientific, and management, and administrative and waste management services	122	4.30	3,183	7.50	1,576,600	11.70	18,312,454	11.70
Educational services, health care and social assistance	683	23.90	10,329	24.50	2,932,061	21.80	36,315,080	23.30
Arts, entertainment, recreation, and accommodation and food services	219	7.70	3,922	9.30	1,212,944	9.00	14,651,909	9.40
Other services, except public administration	87	3.00	2,157	5.10	680,503	5.10	7,516,616	4.80
Public administration	204	7.10	1,256	3.00	542,822	4.00	7,271,189	4.70

Source: (Ref. 55)

Table 2.4-7: Percent of Individuals and Families Living Below the Census Poverty Threshold in ROI County and Municipalities

	Calhoun County, TX	DeWitt County, TX	Goliad County, TX	Jackson County, TX	Lavaca County, TX	Refugio County, TX	Victoria County, TX	Victoria City, TX	Texas	United States
Percentage of Individuals whose 12-month Income was below Poverty Level	10.1	17.9	12.0	13.8	9.0	15.3	15.7	17.8	14.2	12.8
Percentage of Families whose 12-month Income was below Poverty Level	7.4	13.8	6.3	10.5	7.0	11.9	12.0	13.8	11.0	8.9

Source: (Ref. 57)

Table 2.4-8: Housing

	Calhoun County, TX	DeWitt County, TX	Goliad County, TX	Jackson County, TX	Lavaca County, TX	Refugio County, TX	Victoria County, TX	Victoria City, TX	Texas	United States
Total housing units	12,091	9,253	3,780	6,737	10,495	3,725	37,264	27,185	11,112,975	138,432,751
Occupied housing units	8,027	6,823	2,840	4,924	7,904	2,566	32,520	23,724	9,906,070	122,354,219
Vacant housing units	4,064	2,430	940	1,813	2,591	1,159	4,744	3,461	1,206,905	16,078,532
Homeowner vacancy rate (percent)	1.5	1.7	0.9	1.5	1	0.3	1.6	2	1.4	1.4
Rental vacancy rate (percent)	12	9.8	5	18.8	12.2	0	13.2	14	7.8	5.8

Source: (Ref. 58)

Table 2.4-9. Public and Private Schools in Victoria County

School Name	City	School Type	Grade Span	Students	Teachers	Student: Teacher Ratio
Aloe Elementary*	Victoria	Public	PK-5	378	27	14.01
Bloomington Elementary*	Bloomington	Public	3-6	223	13	16.79
Bloomington High School*	Bloomington	Public	9-12	227	19	11.85
Bloomington Junior High*	Bloomington	Public	7-8	135	10	13.71
C.O. Chandler Elementary*	Victoria	Public	PK-5	456	33	13.92
Crain Elementary*	Victoria	Public	PK-5	561	33	17.11
Dudley Elementary*	Victoria	Public	PK-5	453	32	14.18
Early Childhood Center at F.W. Gross*	Victoria	Magnet	PK	170	11	14.91
Ella Schorlemmer Elementary*	Victoria	Public	PK-5	459	29	15.91
Harold Cade Middle School*	Victoria	Public	6-8	730	46	15.93
Hopkins Elementary*	Victoria	Magnet	PK-5	439	29	15.05
Howell Middle School*	Victoria	Public	6-8	716	53	13.54
Industrial Elementary West	Inez	Public	PK-5	290	17	16.67
Martin De Leon Elementary*	Victoria	Public	PK-5	531	34	15.72
Mission Valley Elementary*	Victoria	Public	PK-5	239	18	13.5
Nursery Elementary	Victoria	Public	PK-7	156	12	13
O'Connor Elementary*	Victoria	Magnet	PK-5	440	27	16.14
Patti Welder Middle School*	Victoria	Magnet	6-8	566	46	12.26
Placedo Elementary*	Placedo	Public	PK-2	210	13	16.15
Pri Daep*	Victoria	Alternative	5	10	2	5
Rodolfo Torres Elementary*	Victoria	Public	PK-5	381	27	13.97
Rowland Elementary*	Victoria	Magnet	PK-5	452	28	15.99
Secondary Daep*	Victoria	Alternative	6-12	98	8	12.71
Sheilds Elementary*	Victoria	Magnet	PK-5	409	28	14.75
Smith STEM Academy*	Victoria	Magnet	PK-5	447	29	15.16
STEM Middle*	Victoria	Public	6-8	641	51	12.67
Vickers Elementary*	Victoria	Public	PK-5	510	33	15.53
Victoria East High School*	Victoria	Public	9-12	1861	132	14.12
Victoria Regional Juvenile Justice Center*	Victoria	Alternative	6-12	35	6	6.34
Victoria West High School*	Victoria	Public	9-12	1723	126	13.68
VISD Success Academy*	Victoria	Alternative	9-12	214	16	13.21
Crossroads Christian School	Victoria	Private	4-12	106	8	13.25
Faith Academy	Victoria	Private	PK-12	253	16	14.06
Faith Academy	Victoria	Private	PK-12	255	16	14.19
Methodist Day School	Victoria	Private	PK-KG	92	1	18.33
Nazareth Academy Catholic School	Victoria	Private	PK-8	353	19	16.36
Northside Baptist School	Victoria	Private	PK-6	107	6	10.33
Our Lady of Victory School	Victoria	Private	PK-8	510	34	12.74
St. Joseph High School	Victoria	Private	9-12	305		
The Vine School	Victoria	Private	Ungraded	72	13	5.53
Trinity Episcopal School	Victoria	Private	PK-8	305	26	9.84
Victoria Christian School	Victoria	Private	PK-12	113	9	8.19

* Indicates Title 1 school

Abbreviations: KG = kindergarten; PK = pre-kindergarten

Sources: (Ref. 59, Ref. 60)

Table 2.4-10. Postsecondary Institutions in Victoria County

Institution	City	Type	Students	Teachers	Student-Teacher Ratio
Texas A&M University - Victoria	Victoria	4-year, Public not for profit	3586	239	15
Victoria Beauty & Barber College	Victoria	< 2-year, Private for-profit	73	6	14
Victoria College	Victoria	2-year, Public not for profit	3276	205	16
Manuel and Theresa's School of Hair Design-Victoria	Victoria	< 2-year, Private for-profit	18	2	25

Source: (Ref. 66, Ref. 67, Ref. 68, Ref. 69)



Figure 2.4-2. View of Support Parcel from Edna Lane



Figure 2.4-3. View of Primary Facilities Parcel from Edna Lane



Figure 2.4-4. View Toward Primary Facilities Parcel Down Edna Lane from Nearest Residence

2.5 Historic and Cultural Resources

Cultural resources are the remains of past human activities and include prehistoric and historic era archaeological sites, historic districts, and buildings, as well as any site structure or object that may be considered eligible for listing on the National Register of Historic Places (NRHP). Cultural resources also include traditional cultural properties important to a living community of people for maintaining their culture. Cultural resources are deemed to be significant if they have been determined eligible for, or are listed in, the NRHP. Historic property is a cultural resource that is eligible for, or listed in, the NRHP.

The National Environmental Policy Act (NEPA; 42 U.S.C. 4321 et seq.) requires Federal agencies to take into account the potential effects of their actions on the cultural environment. The National Historic Preservation Act of 1966 (NHPA; 54 U.S.C. 300101 et seq.) requires Federal agencies to consider the impacts of their undertakings on historic properties and consult with the appropriate State Historic Preservation Officer (SHPO), the Texas Historical Commission (THC), Tribal Historic Preservation Officer (THPO) or Indian Tribes on a government-to-government basis, and other parties with an interest in the effects of the undertaking, including local governments and the public, as applicable. Section 106 of the NHPA, and implementing regulations at 36 CFR Part 800, "Protection of Historic Properties," is used as a guide for providing cultural resource information in this LWA ER.

The area of potential effects (APE) for archaeological resources for the entire BECPV energy project, which include the LWA Project area, is defined by the total spatial limits of potential ground disturbing activities, including any permanent and temporary easements, staging areas, utility relocations, and project-specific locations that may be subsequently identified. This definition is in accordance with 36 CFR 800.16(d).

Detailed LWA project design plans for the proposed construction are currently being developed; therefore, the horizontal and vertical impacts are currently unknown, and the entirety of the combined 445-ac greater project area is considered the archaeological resources APE (Figure 2.5-1).

The aboveground historic resources APE considers effects from ground disturbing activities and potential visual, vibratory, and auditory effects the LWA project could have on aboveground historic resources. Due to the nature of the LWA project, the potential for effects to aboveground historic resources within, and adjacent to, the archaeological APE is anticipated. Therefore, the APE for aboveground historic resources consists of parcels crossed by a 600-ft (182.9-meter [m]) buffer surrounding the footprint of the archaeological APE (Figure 2.5-1).

2.5.1 Cultural Background

Victoria County falls within the Central and Southern Archaeological Region as defined by Mercado-Allinger et al. (Ref. 70). This analytical region contains over 2,000 archaeological sites spanning the entirety of Texas' cultural history, which is geographically subdivided as part of the Southern Coastal Corridor Archaeological Region. Three broad precontact stages for the region have been established, including the Paleoindian, Archaic, and Late Precontact/Ceramic stages (Ref. 71), as well as the protohistoric and notable post-contact historic stages. Each of these stages is discussed briefly below.

2.5.1.1 Paleoindian (15,500-8000 years Before Present)

The precontact Paleoindian stage is considered the first human occupation of the North American continent. The River Spur site (41VT112) in Victoria County revealed Paleoindian deposits from surface collections and test excavations. Diagnostic Paleoindian assemblages

were identified at the Berger Bluff site (41GD30), along the Guadalupe River in Goliad County (Ref. 70). Despite this early presence, pre-Clovis peoples are poorly defined due to a lack of recorded data (Ref. 72). The decline of Clovis cultures coincides with the abrupt onset of the Younger Dryas cooling period (12,900 to 11,700 Before Present [B.P.]). The Folsom period represents the cultural tradition following the Clovis tradition and the continuation of the Younger Dryas. There are a number of sites throughout the state of Texas with Folsom elements; however, Folsom is not well represented in the region of the LWA project. A single diagnostic Folsom projectile point was recovered from excavations at 41WH19 in Wharton County, Texas, associated stratigraphically with charcoal deposits dating to 9920 ± 530 B.P. (Ref. 73).

2.5.1.2 Archaic (8000 to 1500 B.P.)

During the overall Archaic period, foraging and gathering became an increasingly important part of subsistence, with groups following a seasonal migration round to exploit plant and animal resources (Ref. 71, Ref. 74, Ref. 75). Sites containing archaeological evidence appear to be more common in inland areas, which have yielded ground stone tools for plant processing. In contrast, site density appears to have been lower along the coastal plain margins (Ref. 76). Key archaeological material traits of the Archaic Stage include notched and stemmed triangular points, ground and polished stone artifacts, extensive settlements, and identifiable mortuary practices (Ref. 77). Significant Early Archaic assemblages have been identified at Sites 41JK24 (Jackson County, Texas), located along the banks of the Lavaca River (Ref. 78), and 41WH19 (Wharton County, Texas), located along the east bank of the West Bernard River (Ref. 79). Site 41NU266 (Nueces County, Texas), was occupied throughout the Middle and Late Archaic (Ref. 78). A significant Late Archaic site within the Southern Coastal Corridor includes Site 41GV53 (Galveston County, Texas), along the bank of Clear Creek (Ref. 78).

2.5.1.3 Late Precontact / Ceramic (1500 to 300 B.P.)

During the Late Precontact/Ceramic stage, pottery was introduced into the Southern Coastal Corridor. The settlement systems established during the Ceramic period were likely in place during subsequent European contact. During the Ceramic Period, shell midden recoveries (i.e., otoliths and oyster valves) suggest that coastal populations were positioned along the bays and estuaries of the mainland coastal zone for the spring and summer (Ref. 71, Ref. 80) and the coastal barrier islands were occupied during the fall and winter (Ref. 78).

2.5.1.4 Protohistoric/Historic

Expeditions into present day Texas began due to political struggles between the major European powers of the sixteenth century, internal colonial conflicts, and the potential gold and silver that was assumed to await the explorers. During this time was the establishment of Fort St. Louis by the French, probably on Garcitas Creek in what is now Victoria County. There is some contention as to the precise location of Fort St. Louis, but it may have been the county's first settlement. The Fort was eventually abandoned due to a multitude of factors. Eventually in the 1690s, the Spanish began to establish missions and presidios at strategic river entrances into interior Texas and prevent future foreign intrusions (Ref. 81). In 1722 Nuestra Señora de Loreto Presidio and Nuestra Señora del Espíritu Santo de Zúñiga Mission (La Bahía) was the first Spanish settlement in what is now Victoria County (Ref. 82).

2.5.1.5 Historic Development of Victoria County

From the late seventeenth century to 1824, Victoria County was the site of some individual settlements. In 1824 Nuestra Señora de Guadalupe de Jesús Victoria was established, and colonization of the area began in earnest. The county was one of the original 23 counties established by the First Congress of the Republic of Texas in 1836, and its modern boundaries were established in 1846 (Ref. 82).

Until the 1930s, Victoria County had a primarily agrarian economy, mostly focused on cattle, horses, and cotton. Slave labor allowed a significant uptick in the number of acres cultivated between 1850 and 1860, but the emancipation of the county's enslaved persons forced a change in economy, with more focus on cattle and manufacturing of bricks, gravel, and sand, with much less reliance on cotton. The county also became an even larger transportation hub for the surrounding agricultural areas. By 1882, Victoria County was along the first cross-country railroad system, and in 1911 it constructed one of the first all-weather graveled road systems in Texas (Ref. 82).

Commercial farming did not begin in earnest in the county until the 1890s, when knowledge of cultivating prairie soils began to grow. Cotton became a staple again, and the county began significant production of corn, honey, and fruits- especially grapes. Poultry production increased, but cattle remained the economic focus of the county. By 1930, Victoria County had more cattle than any other county in Texas (Ref. 82).

The first commercial oil and gas wells in the county were struck in 1930, but the industry was slow to develop until after The Great Depression. Since World War II manufacturing has grown in the county, as well as the retail and service industries. A DuPont plant was established in 1949 and contributed significant growth to the county. Victoria County's transportation system continued to grow when the county was connected to the GIWW in 1967 (Ref. 82).

By 1983, the county was 74 percent urban. Cattle remained a top economic contributor; however, along with the oil and gas industry. In the early twenty-first century, petrochemical plants, petroleum production, agriculture, and tourism were the main contributors to the local economy (Ref. 82).

2.5.1.6 Historic Development of Victoria, Texas and Bloomington, Texas

The city of Victoria is approximately 7 mi northwest of the LWA project. Victoria was officially incorporated in 1839, the first property taxes were assessed in 1843, and the post office and city newspaper were established in 1846. Despite a widespread cholera epidemic in 1846 Victoria continued to grow as the port of Indianola brought thousands of immigrants along with goods to the area. By 1860, Victoria had nearly 2,000 residents and was a major hub of the region. By 1890 the city was part of the Gulf, Western Texas and Pacific Railway and the New York, Texas and Mexican Railway and had a 3-mi highway. From 1910 to 1920 the city's population grew 62.2 percent, to 5,957, and from 1950 to 1980 the population rose from approximately 16,000 to over 55,000. By 1960 Victoria had a regional airport and is today located along the GIWW (Ref. 83).

In addition to being a transportation hub, Victoria, like the rest of the county, has long been dependent on stock raising and ranching for economic growth. As the area grew, however, banks, cultural events centers, and other commercial enterprises became more important to the city. Today Victoria derives business income from oil, agribusiness, tourism, manufacturing, petrochemicals, and recreation. The area had 62 plants in 1982 and today serves as the medical center for a seven-county area (Ref. 83). Victoria, the county's government seat, is the county's largest city with an estimated population of about 66,000 (Ref. 84).

The town of Bloomington is located adjacent to the east of the LWA project. Established as a station for the St. Louis, Brownsville and Mexico Railway in 1906, it has grown to be the second principal city in Victoria County. The post office was established in 1907, and the town was officially laid out in 1910. Bloomington was incorporated in 1913 and by then it was also an important crossroads for the railroads. The first school was established in 1919. The population was 600 in 1925. Oil was discovered in the immediate area in 1947, increasing the assets of

Bloomington by adding to the previously long-term economic industries of agriculture and ranching, which included those led by the Traylor and Welder ranches in the community. By 1960, the population had nearly tripled to about 1,750, although the number of businesses had declined due to Bloomington's proximity to Victoria and the ease of highway access to the larger town. The population in 1980 and 1990 was approximately 1,850, but by 2000 it had grown to about 2,550 (Ref. 85).

2.5.2 Cultural Resources at the Site and in the Vicinity

AECOM conducted an intensive cultural resources survey in support of Blue Energy's application requirements for the Construction Permit Application submitted to the NRC, Section 106 of the NHPA and its implementing regulations, and Title 13 Part 2, Chapter 26 of the Texas Administrative Code (TAC). The cultural resources investigation was conducted to identify archaeological and aboveground historic resources within the LWA project's associated APEs and to assess their eligibility for inclusion in the NRHP based on the criteria set forth in National Register Bulletin 15, *How to Apply the National Register Criteria for Evaluation* (Ref. 86) and for designation as a State Antiquities Landmark (SAL) as provided for in 13 TAC 26.16(a)(1)(C). The intensive cultural resources survey of the greater project area was conducted from April 27, 2026, through May 4, 2026. The survey was completed in compliance with Section 106 and the Antiquities Code of Texas under Archeology Permit No. 32840, issued on April 16, 2026, to Shelley Hartsfield, Principal Investigator.

Intensive archaeological investigations were performed for the greater project's combined 445-ac archaeological APE, requiring 256 person hours to complete. Pedestrian visual inspection and the excavation of 251 judgmentally positioned shovel tests, including 70 delineation shovel tests, were conducted throughout the parcel boundaries, at three previously recorded archaeological site locations, three newly identified archaeological site locations, and three isolated find locations within the 445 ac.

The three previously recorded archaeological sites identified and revisited within the LWA project archaeological APE during the current investigation consisted of sites 41VT178, 41VT179, and 41VT180. Site 41VT178 is a previously recorded multi-component site consisting of a precontact chert shatter fragment and early to mid-twentieth century surface scatter of bricks and brick fragments, and subsurface artifact scatter of ceramics, glass, wire nails, bone, and shell. Site 41VT179 is a previously recorded late nineteenth to early twentieth century site consisting of a moderately dense surface artifact scatter that included sheet metal, colorless glass shards, limestone blocks, and concrete fragments. Site 41VT180 is a previously recorded precontact site consisting of a precontact surface and subsurface artifact scatter of lithic debitage, a core, burned clay, and a possible fragment of fire-cracked rock. These sites were evaluated in 2018, and all were recommended as not eligible for listing in the NRHP or merit designation as a SAL. The current site assessments indicate the original recommendations for archaeological sites 41VT178, 41VT179, and 41VT180 are considered accurate.

Three previously undocumented archaeological sites were identified during the intensive level archaeological survey: a precontact subsurface lithic scatter, a precontact habitation site, and a precontact subsurface lithic scatter exhibiting an historic dumpsite component. Site 41VT192 consists of a 0.39-ac. area of a diffuse subsurface lithic scatter; Site 41VT193 encompasses 4.23 ac of a relatively undisturbed precontact habitation site and subsurface lithic scatter; and Site 41VT194 is a 1.33-ac precontact subsurface lithic scatter with an isolated area in the northeastern extent of the site containing subsurface historic-age cultural materials. Sites 41VT192 and 41VT194 are recommended as not eligible for listing in the NRHP or designated as SALs. No further investigations are recommended for these two sites. Eligibility for listing in

the NRHP or designation as an SAL remains undetermined for Site 41VT193 pending additional investigations (Table 2.5-1).

Two historic cemeteries are located immediately adjacent to, and surrounded by, the archaeological APE. The San Jose Cemetery is surrounded to the northwest, northeast, and southeast by the Support Parcel. The Traylor Family Cemetery / Traylor Graveyard is a small family cemetery located within a 0.1-ac fenced area within the southwestern portion of the Primary Facilities Parcel.

The investigation for the aboveground historic resources identified three locations (Resource HR001 through Resource HR003) within parcels crossed by the aboveground historic resources APE. The three locations contain single-family dwellings, with one being converted into office space. The resources were documented with digital photography, noting materials and architectural details. The three aboveground historic resources lack historic significance and/or integrity and are recommended Not Eligible for listing in the NRHP.

2.5.3 Consultation

Consultation is the responsibility of the Federal agency, and the NRC is required to take the lead on consulting with the THC, THPO, Indian Tribes (on a government-to-government basis), and interested parties as outlined in 36 CFR Part 800; consultation is not the responsibility of Blue Energy. Blue Energy should engage with these parties to gather sufficient information pertinent to the NHPA Section 106 review process to assist the NRC in the timely completion of its NHPA Section 106 compliance requirements. The ER should contain a summary of initial outreach efforts to date, including the process used to identify Indian Tribes and potential interested parties about the proposed project, evaluate the significance of the cultural resources, and assess any effects the proposed project may have on them. For areas not surveyed (e.g., areas too disturbed or devoid of potential cultural resources), proper documentation, a basis for exclusion, and concurrence on survey methodology from the THC should be provided.

The Draft Cultural Resources Report is currently in the process of review and will be submitted to THC once finalized. This will initiate consultation regarding the LWA project and cultural resource investigations associated with land selected and their results. Copies of the reports and all correspondence with the THC, THPO, Indian Tribes, or members of the public with whom Blue Energy and its contractor AECOM engaged with to gather information about cultural resources within the APE will be included in Appendices of this LWA ER.

Table 2.5-1. Summary of NRHP/SAL Eligibility Recommendations

Site Trinomial	Site Size (acre)	Temporal Association / Site Type	NRHP Eligibility	SAL Designation	Recommendation
41VT178	0.29	Precontact / artifact scatter Early 20th century / brick and artifact scatter	Not eligible (2018)	Not eligible (2018)	No further work
41VT179	0.17	Late 19th to early 20th century / artifact scatter	Not eligible (2018)	Not eligible (2018)	No further work
41VT180	1.36	Precontact / habitation site; artifact scatter	Not eligible (2018)	Not eligible (2018)	No further work
41VT192	0.39	Precontact / subsurface lithic scatter	Not eligible	Not eligible	No further work
41VT193	4.23	Precontact / habitation site; artifact scatter	Undetermined	Undetermined	Eligibility remains undetermined pending additional investigations
41VT194	1.33	Precontact / habitation site; artifact scatter Early to mid-20th century / artifact scatter	Not eligible	Not eligible	No further work

Source: (Ref. 87)

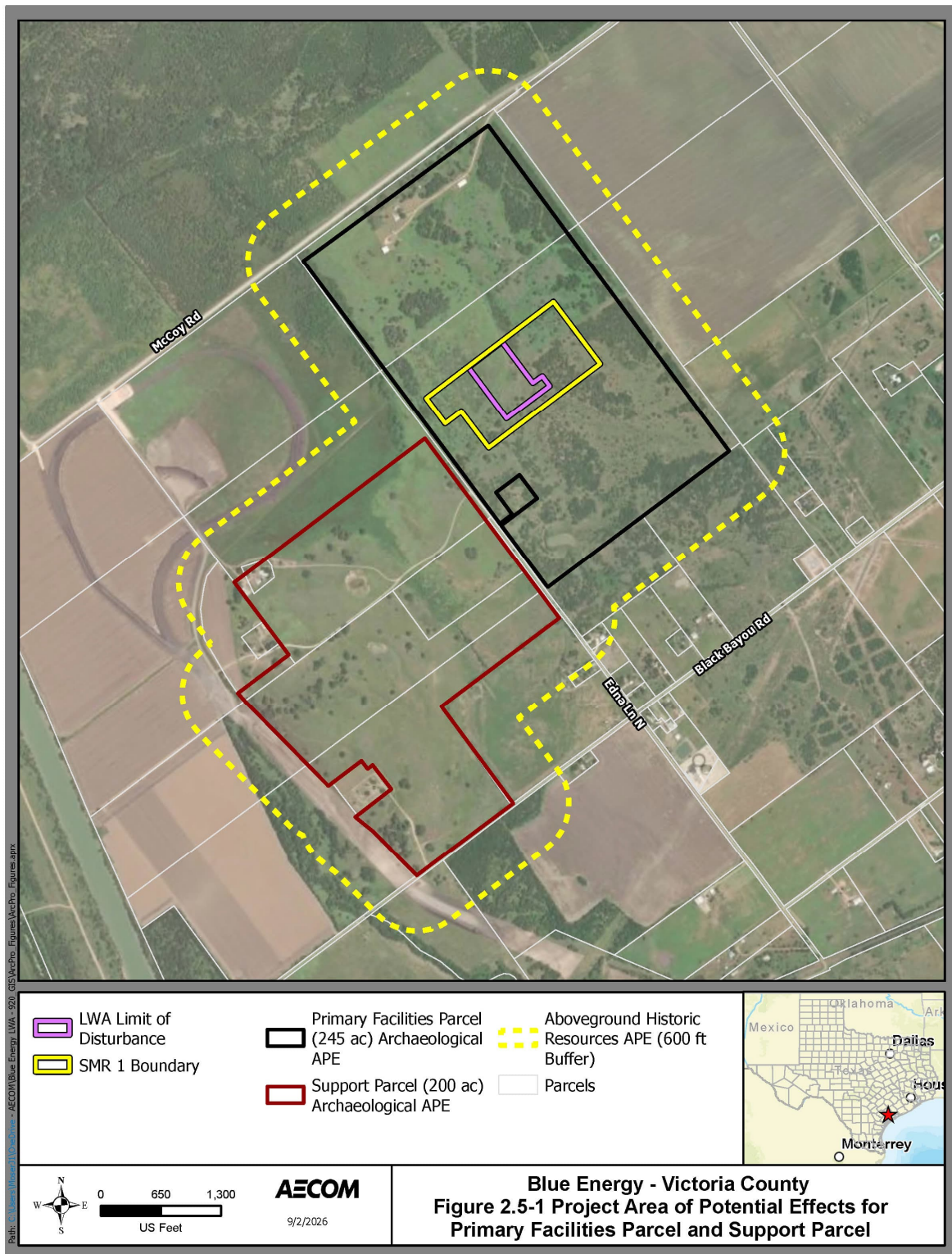


Figure 2.5-1. Greater Project Area of Potential Effects

2.6 Air Resources

This section describes climatology, meteorology, and air quality in the region surrounding the LWA project site. Section 2.6.1 describes characteristics of the local and regional climate, Section 2.6.2 discusses air quality, Section 2.6.3 describes air dispersion and the air quality of the site and surrounding region, and Section 2.6.4 provides information about pre-operational meteorological monitoring at the site.

The LWA project site is located in Victoria County, Texas, within the Gulf Coastal Plain approximately 35 to 40 mi inland from the Gulf of America. The regional climate is classified as humid subtropical and is characterized by hot, humid summers, mild winters, abundant atmospheric moisture, and frequent convective precipitation. Regional meteorological conditions are primarily influenced by maritime tropical air masses from the Gulf of America, periodic continental polar air masses associated with winter cold fronts, and occasional tropical cyclones affecting the Texas Gulf Coast. Prevailing winds are generally from the south and southeast, reflecting persistent Gulf airflow and seasonal sea-breeze influences (Ref. 88).

Because onsite meteorological data are not currently available, regional climate characterization was developed using representative long-term monitoring stations consistent with NRC guidance.

The primary representative climate monitoring station for the site is Victoria Regional Airport (KVCT/WBAN 12912), located at 28.86245° N latitude and 96.9301° W longitude, with an elevation of approximately 111 ft (33.7 m) above mean sea level. As shown on Figure 2.6-1, the station is situated approximately 14 mi north of the site and has a period of record extending from November 1941 to the present, providing a long-term and reliable dataset for climatological analyses (Ref. 89). Additional climate and meteorological information for the area is available from the National Weather Service Corpus Christi Forecast Office, the National Oceanic and Atmospheric Administration (NOAA) National Centers for Environmental Information (NCEI), NOAA Climate Normals (1991–2020), and NOWData climate databases.

Baseline ambient air quality conditions may be characterized by using data from nearby USEPA and TCEQ monitoring stations. Available monitoring data indicates that air quality in Victoria County is generally good, with ozone typically representing the pollutant of greatest concern due to regional transport and photochemical formation. Monitoring data for criteria pollutants and hazardous air pollutants (HAPs) are available through USEPA's Air Quality System database and AirData resources.

Victoria County is designated Attainment/Unclassifiable for all current National Ambient Air Quality Standards (NAAQS). According to TCEQ and USEPA designation records:

- Ozone (2015 8-hour standard, 0.070 parts per million): Attainment/Unclassifiable.
- Particulates less than 2.5 micrometers in diameter (PM_{2.5}; Annual and 24-hour standards): Unclassifiable/Attainment.
- Particulates less than 10 micrometers in diameter (PM₁₀): Unclassifiable/Attainment.
- Sulfur Dioxide (SO₂): Attainment/Unclassifiable.
- Nitrogen Dioxide (NO₂): Unclassifiable/Attainment.
- Carbon Monoxide (CO): Unclassifiable/Attainment.
- Lead (Pb): Unclassifiable/Attainment.

Victoria County is not included within any USEPA-designated nonattainment area for the current ozone, particulate matter, SO₂, NO₂, CO, or Pb. The county has maintained attainment or unclassifiable status under the 1997, 2008, and 2015 ozone standards (Ref. 90, Ref. 91).

2.6.1 Climate

The LWA project site is located within the service area of the National Weather Service (NWS) Corpus Christi Weather Forecast Office. Regional climatological characterization is developed using long-term observations from Victoria Regional Airport (KVCT/WBAN 12912). The Victoria Regional Airport serves as the primary source of regional climate data because it provides NOAA climate normals, Local Climatological Data, temperature, precipitation, humidity, visibility, and wind observations. NOAA's Climate Data Online database identifies the station as the official long-term climatological station for the Victoria area and provides the basis for determining 30-year climate normals (Ref. 92). The Victoria Regional Airport station is considered representative of site meteorology because the station and the LWA project site are located within the same Gulf Coastal Plain physiographic province. Terrain across the region is generally flat with minimal topographic relief, and both locations are influenced by the Gulf of America through similar marine airflow patterns, humidity regimes, frontal passages, and tropical weather systems. No major terrain barriers exist between the site and the observing station that would significantly alter regional wind patterns or synoptic-scale meteorological conditions (Ref. 93).

Additional regional climate information is available from the NWS Corpus Christi Forecast Office and NOAA NCEI, which maintain climate summaries, severe weather databases, and climatological statistics applicable to the Texas Gulf Coast region (Ref. 93).

The site is located within the humid subtropical climatic zone of the Texas Gulf Coastal Plain. The Gulf of America serves as the dominant moisture source, producing relatively high humidity throughout the year and frequent convective precipitation during the warm season (Ref. 88). The regional climate reflects interactions among several major air-mass types:

- Maritime Tropical (mT) air originating over the Gulf of America dominates much of the year and produces warm, humid conditions.
- Continental Tropical (cT) air from northern Mexico occasionally affects the area during summer, contributing to periods of elevated temperatures and reduced precipitation.
- Continental Polar (cP) air periodically reaches the region during winter through southward-moving cold fronts.
- Modified Arctic air masses occasionally produce extreme cold conditions and freezing temperatures during winter outbreaks (Ref. 88).

Regional weather patterns are controlled by the seasonal migration of high- and low-pressure systems, frontal boundaries, and tropical weather systems. During much of the warm season, the western extension of the Bermuda High promotes persistent southeasterly flow from the Gulf of America. During winter, frequent frontal systems associated with mid-latitude cyclones produce abrupt changes in temperature, wind direction, and humidity. Tropical cyclones originating within the Gulf of America periodically affect the region (Ref. 88). Surface winds are predominantly from the south and southeast during spring, summer, and early autumn. Following cold frontal passages during winter, winds commonly shift to northerly and northwesterly directions. The predominance of southeasterly flow reflects the strong influence of Gulf moisture transport and regional pressure gradients (Ref. 88).

The site lies sufficiently close to the Gulf Coast where sea-breeze circulation frequently penetrates inland. During warm months, daytime heating of the land relative to coastal waters strengthens onshore flow, resulting in enhanced southeasterly winds and increased atmospheric mixing. Valley-flow circulations are absent because of the relatively flat topography of the Coastal Plain (Ref. 94, Ref. 95).

The LWA project site is located within the Texas Gulf Coastal Plain, which is characterized by broad expanses of gently sloping terrain and low topographic relief. Elevations in the vicinity generally range between approximately 20 and 150 ft above mean sea level. Land use is dominated by agricultural operations, rangeland, grasslands, and scattered woodland areas (Ref. 88, Ref. 96).

Within the 50-mi region surrounding the LWA project site, prominent physiographic features include the Guadalupe River basin, the Lavaca River watershed, numerous coastal drainage systems, and the Matagorda Bay estuarine complex. No mountain ranges, escarpments, or major terrain barriers exist within this radius that would significantly modify regional airflow patterns (Ref. 88).

2.6.1.1.1 Wind

Long-term observations from Victoria Regional Airport indicate a prevailing wind regime dominated by southerly and southeasterly winds for most of the year. Strongest average winds generally occur during spring as pressure gradients strengthen across south Texas and the Gulf Coast. During winter, northerly winds become common immediately following frontal passages (Table 2.6-1 and Figures 2.6-2 through 2.6-13) (Ref. 95, Ref. 94).

The predominance of southeasterly winds is consistent with regional Gulf Coast climatology and the influence of maritime tropical air masses. Seasonal variability reflects alternating periods of Gulf return flow and post-frontal northerly flow.

Onsite monitoring data summarizing wind speed classes, atmospheric stability categories, and directional frequency distributions; monthly and annual wind roses; were not available nor necessary for the evaluation for this LWA ER.

2.6.1.1.2 Temperature

The Victoria County region experiences warm temperatures throughout most of the year. Summer temperatures commonly exceed 90°F, with maximum temperatures frequently reaching the middle to upper 90s during July and August (Table 2.6-2). Winter temperatures are generally mild, although freezing temperatures may occur during Arctic outbreaks (Ref. 94, Ref. 88).

Average annual temperatures for the Victoria area are generally in the low 70s, reflecting strong Gulf influence and relatively low seasonal temperature variability compared with inland portions of Texas (Ref. 88, Ref. 93).

2.6.1.1.3 Humidity

Humidity remains elevated throughout much of the year because of the site's proximity to the Gulf of America. Dewpoint temperatures during late spring, summer, and early autumn frequently exceed 70°F and may occasionally approach the upper 70s (Ref. 94). Relative humidity during morning hours commonly exceeds 80 percent and may exceed 90 percent under favorable conditions (Ref. 94).

These conditions contribute to high heat-index values, frequent fog formation, and substantial atmospheric moisture content. High humidity persists even during periods of limited precipitation due to continuous moisture advection from the Gulf (Ref. 94, Ref. 88).

2.6.1.1.4 Precipitation

Annual precipitation across the Victoria region generally ranges from approximately 35 to 45 in., although substantial interannual variability occurs due to tropical cyclones, droughts, and convective storm activity. As shown in Table 2.6-3 and Table 2.6-4, the wettest periods typically occur during spring and during the late summer and early autumn tropical cyclone season (Ref. 88, Ref. 93).

Heavy precipitation events may occur because of tropical storms, hurricanes, mesoscale convective systems, and slow-moving frontal boundaries. These events can produce significant short-duration rainfall accumulations and localized flooding (Ref. 88).

Future precipitation projections contain greater uncertainty; however, federal assessments consistently project an increase in the frequency and intensity of extreme precipitation events. Higher temperatures are expected to increase evapotranspiration and drought intensity during dry periods (Ref. 88).

2.6.1.1.5 Snow

Snowfall is uncommon in the region. As shown in Table 2.6-5 and Table 2.6-6, measurable snow occurs only during infrequent Arctic outbreaks, and annual snowfall averages are typically negligible (Ref. 88).

Atmospheric icing is relatively uncommon because subfreezing temperatures occur infrequently. However, freezing rain and glaze ice may occasionally occur during rare Arctic air outbreaks. As shown in Table 2.6-7, such events are generally short-lived but may impact future facility operations and transportation infrastructure (Ref. 88).

2.6.1.1.6 Fog

The combination of high humidity, light nocturnal winds, and radiational cooling supports periodic fog formation across the region. As shown in Table 2.6-8, dense fog events occur most frequently during winter and spring when atmospheric moisture content is high and wind speeds are low. Visibility reductions below 0.25 mi may occur during these events and can affect transportation and facility operations (Ref. 88, Ref. 93).

2.6.1.1.7 Mixing

The site's atmospheric stability characteristics are expected to be typical of coastal plain environments influenced by strong diurnal heating and Gulf moisture. Daytime periods are generally neutral to unstable because solar heating promotes turbulent mixing. Nighttime periods are commonly stable because of radiational cooling near the surface (Ref. 94, Ref. 88).

Strongly stable conditions may develop on clear, calm nights, particularly following frontal passages. Neutral conditions are most common during overcast or windy periods. Quantitative atmospheric stability summaries require onsite meteorological tower measurements (Ref. 88).

Mixing heights across the Texas Gulf Coastal Plain vary seasonally and diurnally. Afternoon summertime mixing heights often exceed 3,280 ft (1,000 m) because of strong solar heating and vigorous convective mixing. Winter mixing heights are generally lower because of weaker surface heating and more frequent stable conditions (Ref. 88).

Nocturnal radiation inversions occur frequently during clear weather and light-wind conditions. These inversions generally form after sunset and dissipate after sunrise as surface heating restores vertical mixing. Inversion persistence and intensity are greatest during winter and under high-pressure systems (Ref. 88).

2.6.1.1.8 Tornado

Tornadoes occur periodically across south Texas and may be associated with severe thunderstorms or tropical cyclones. Waterspouts may develop over nearby bays and coastal waters and occasionally move inland ([Table 2.6-7](#)) (Ref. 88).

2.6.1.1.9 Thunderstorm

As shown in Table 2.6-9, thunderstorms are frequent, particularly during spring and summer. Development mechanisms include sea-breeze interactions, frontal boundaries, and Gulf moisture convergence. These storms can produce heavy rainfall, lightning, strong winds, and localized flooding (Table 2.6-7) (Ref. 88, Ref. 94).

The region experiences frequent cloud-to-ground lightning because of abundant warm-season convective activity and elevated atmospheric moisture (Ref. 88).

Severe thunderstorms occasionally produce damaging wind gusts and hail. Hail occurrence is less frequent than in northern portions of Texas but remains an important consideration in facility design and hazard evaluations. (Table 2.6-7) (Ref. 88).

NOAA and federal climate assessments indicate that Texas has warmed by approximately 1.5°F since the beginning of the twentieth century. Additional warming and increases in extreme heat events are projected throughout the twenty-first century (Ref. 88).

2.6.1.1.10 Hurricane

The site is located within the western Gulf Coast hurricane impact region. Tropical cyclones periodically affect the region through extreme rainfall, high winds, storm surge impacts along coastal areas, and secondary tornado development. Historic hurricane activity along the Texas coast demonstrates that the region remains vulnerable throughout the June through November Atlantic hurricane season (Ref. 88).

The strongest hurricanes affecting Texas are projected to become more intense, and hurricane-related rainfall rates are expected to increase. In addition, sea-level rise along the Texas coast is expected to increase coastal flooding and storm-surge vulnerability over the duration of potential facility operations (Ref. 88, Ref. 93).

For a licensing period extending several decades, climate change considerations most relevant to the proposed facility include increased ambient temperatures, changing precipitation extremes, more intense tropical cyclone rainfall, and increasing coastal flood risk associated with sea-level rise (Ref. 88, Ref. 93).

2.6.2 Air Quality

The LWA project site is located in Victoria County, Texas, within the Corpus Christi–Victoria Intrastate Air Quality Control Region (AQCR 214) established under 40 CFR §81.136. The AQCR includes Victoria County and the surrounding counties of Aransas, Bee, Brooks, Calhoun, DeWitt, Duval, Goliad, Gonzales, Jackson, Jim Wells, Kenedy, Kleberg, Lavaca, Live Oak, McMullen, Nueces, Refugio, and San Patricio. The AQCR was established for air quality planning and implementation of the Clean Air Act (CAA) (Ref. 97, Ref. 98).

The LWA project site is located in a predominantly rural portion of the Texas Gulf Coastal Plain. Air quality in the vicinity is influenced by a combination of agricultural operations, oil and gas activities, transportation emissions, industrial facilities in Victoria and Corpus Christi, naturally occurring biogenic emissions, and regional transport from the Gulf Coast urban-industrial corridor. Because the site is located away from major metropolitan areas, baseline air quality conditions are generally representative of rural Gulf Coast environments, although ozone formation can be affected by regional transport of precursor pollutants from larger emission centers (Ref. 91).

Because the site is located within AQCR 214, any construction and operational emissions associated with the proposed facility must be evaluated within the context of regional air quality planning requirements, Prevention of Significant Deterioration regulations, New Source Review permitting requirements, and applicable TCEQ air permitting programs (Ref. 90, Ref. 91).

Victoria County is currently designated attainment/unclassifiable or unclassifiable/attainment for all criteria pollutants regulated under the NAAQS. TCEQ identifies Victoria County as attainment for:

- Ozone (2015 8-hour standard)
- NO₂
- SO₂
- CO
- PM_{2.5}
- PM₁₀
- Pb

USEPA designated Victoria County attainment/unclassifiable for the 2015 ozone standard effective January 16, 2018, and attainment/unclassifiable for the 2008 ozone standard effective July 20, 2012 (Ref. 90, Ref. 91).

Counties surrounding Victoria County include:

- Calhoun County
- Jackson County
- Goliad County
- DeWitt County
- Lavaca County
- Refugio County

These counties are generally designated attainment or attainment/unclassifiable for all currently regulated criteria pollutants (Ref. 90, Ref. 91).

The nearest major nonattainment area is the Houston–Galveston–Brazoria (HGB) ozone nonattainment area, located northeast of the site. As of 2026, portions of the HGB region are designated:

- Serious Nonattainment for the 2015 8-hour ozone standard.
- Severe Nonattainment for the 2008 8-hour ozone standard (Ref. 91).

The HGB area includes:

- Brazoria County

- Chambers County
- Fort Bend County
- Galveston County
- Harris County
- Montgomery County
- Liberty County
- Waller County (for the 2008 standard)

Although Victoria County is not part of the HGB nonattainment area, ozone transport from the Houston industrial corridor may contribute to regional ozone concentrations during certain meteorological conditions (Ref. 91).

The CAA Regional Haze Program provides enhanced visibility protection for designated Mandatory Federal Class I Areas identified under 40 CFR Part 81, Subpart D. These areas include national parks and wilderness areas where air quality and visibility are considered important values.

No Mandatory Federal Class I Areas are in the immediate vicinity of Victoria County. The nearest Class I areas are in western Texas and include:

- Guadalupe Mountains National Park Wilderness Area (385 mi)
- Big Bend National Park (385 mi)
- Big Bend Wilderness Area (525 mi)

These protected areas are several hundred miles west of the proposed site. Consequently, routine operational emissions from the proposed facility are not expected to cause significant visibility impacts at nearby Class I Areas.

The Intergovernmental Panel on Climate Change, USEPA, and other federal agencies recognize carbon dioxide, methane, nitrous oxide, and fluorinated gases as the principal anthropogenic greenhouse gases (GHGs) contributing to climate change. Greenhouse-gas emissions are generally expressed as carbon dioxide equivalents (CO₂e) to account for the differing global warming potentials of individual gases (Ref. 99, Ref. 100).

USEPA annually compiles the Inventory of U.S. Greenhouse Gas Emissions and Sinks, which provides estimates of GHG emissions by sector and state. National GHG emissions arise primarily from transportation, electric power generation, industry, agriculture, and buildings (Ref. 99). USEPA uses these inventories as the basis for evaluating national emissions trends and reduction efforts.

Texas is the largest energy-producing state in the nation and is also one of the largest GHG emitting states because of its substantial industrial, transportation, petrochemical, refining, and electric power sectors. In 2025, TCEQ completed the first statewide GHG inventory under the USEPA Climate Pollution Reduction Grants program. The inventory estimated Texas emissions at approximately 873.1 million metric tons of CO₂e in 2021, with industry, transportation, and electric generation representing the largest sources (Ref. 100).

Texas has developed a Comprehensive Roadmap to Reduce Emissions, which identifies voluntary emission-reduction measures focused on:

- Industrial decarbonization.
- Carbon capture technologies.

- Methane reduction.
- Improved energy efficiency.
- Advanced nuclear energy deployment.
- Transportation electrification (Ref. 100).

Unlike some states, Texas does not currently have a statewide statutory GHG reduction mandate; however, TCEQ's Climate Pollution Reduction Grants planning process identifies potential reductions and emissions-management strategies (Ref. 100).

2.6.3 Atmospheric Dispersion

Atmospheric dispersion analyses are performed to evaluate potential radiological impacts associated with both routine plant operations and postulated design-basis accidents. These analyses provide estimates of atmospheric transport, diffusion, and deposition of airborne materials and are used to develop "chi over Q" atmospheric dispersion factors (X/Q) and "D over Q" deposition factors (D/Q) for locations surrounding the proposed facility. However, as there are no radiological emissions associated with the scope of the LWA, such evaluations are not necessary for this LWA ER.

2.6.4 Meteorological Monitoring

Meteorological monitoring would not be implemented for the LWA project; however, a meteorological monitoring program would be established to collect site-specific data necessary to characterize local meteorology, atmospheric dispersion conditions, and environmental transport processes at the proposed BECPV facility located in Victoria County, Texas. The program would be developed in accordance with RG 1.23, which provides guidance for collecting meteorological data to support reactor licensing, safety analyses, atmospheric dispersion modeling, environmental reviews, and emergency planning activities (Ref. 101).

Table 2.6-1. Mean Wind Speeds and Prevailing Wind Direction Recorded at the Victoria NWS Station (KVCT)

Month	Mean Wind Speed (mph)*	Prevailing Wind Direction (in tens of degrees)**
January	9.6	22
February	10.3	22
March	10.8	20
April	11.2	18
May	10.6	17
June	9.3	16
July	8.4	16
August	7.9	15
September	7.7	16
October	8.3	18
November	8.9	21
December	9.1	23
Annual	9.3	19

Source: (Ref. 92), Victoria, TX (KVCT)

* Period of Record: 1984-2026

** Period of Record: 1953-1995

Table 2.6-2. Normal Maximum and Minimum Temperatures

Month	Normal Maximum (deg F)	Normal Minimum (deg F)
January	87	17
February	91	13
March	94	21
April	98	36
May	99	45
June	109	61
July	104	62
August	109	62
September	111	48
October	99	32
November	93	27
December	87	17
Annual	111	13

Source: (Ref. 92)

Note: 30-year Normals: 1996-2026

Table 2.6-3. Normal Precipitation Observed at the Victoria NWS Station (KVCT)

Month	Normal Precipitation (in.)
January	2.76
February	1.61
March	2.84
April	2.54
May	5.30
June	4.33
July	3.65
August	2.98
September	4.54
October	3.70
November	3.07
December	1.83
Annual Normal	39.13
Annual Normal Average	3.26

Source: (Ref. 92)

Note: 30-year Normals: 1996-2026

Table 2.6-4. Maximum Precipitation Recorded at the Victoria NWS Station (KVCT)

Month	Maximum Monthly Precipitation (in.)
January	7.76
February	9.08
March	11.61
April	11.7
May	20.28
June	13.5
July	20.34
August	16.94
September	19.05
October	12.44
November	16.14
December	6.97
Annual	165.81

Source: (Ref. 92)

Note: Period of Record: 1953-2026

Table 2.6-5. Normal Snowfall Recorded at the Victoria NWS Station (KVCT)

Month	Normal Snowfall (in.)
January	0
February	0
March	0
April	0
May	0
June	0
July	0
August	0
September	0
October	0
November	0
December	0
Annual	0

Source: (Ref. 92)

Note: 30-year Normals: 1996-2026

Table 2.6-6. Maximum Snowfall Recorded at the Victoria NWS Station (KVCT)

Month	Maximum Monthly Snowfall (in.)
January	2.1
February	3.3
March	0
April	0
May	0
June	0
July	0
August	0
September	0
October	0
November	0.2
December	0
Annual	5.6

Source: (Ref. 92)

Note: Period of Record: 1953-2026

Table 2.6-7. Severe Weather Phenomena Observed at the Victoria NWS Station (KVCT)

Event Type	Event Days*	Frequency (days/year)**
Blowing Dust/Sand	0	1.6
Blowing Spray	0	5.7
Duststorm/Sandstorm	0	1.3
Fog	275	187.5
Freezing Fog	0	0.2
Freezing Rain	0	0.4
Glaze/Ice	1	0.8
Ground Fog	0	0.2
Hail	0	3.7
Haze or Smoke	87	45.5
Heavy Fog	68	37.7
High/Damaging Winds	0	0.8
Ice Fog	0	<0.1
Ice Pellets/Sleet	1	0.4
Mist	0	50.6
Rain	0	101.3
Thunder	61	49.2
Thunderstorm with Hail	0	0.2
Tornado/Funnel Cloud	0	<0.1
Volcanic Ash	0	<0.1

Source: (Ref. 92)

* Period of Record: 2025

** Period of Record: 1941-2026

Table 2.6-8. Number of Heavy Fog Days Observed at the Victoria NWS Station (KVCT)

Month	Heavy Fog Days
January	6.9
February	6.1
March	5.9
April	3.8
May	2.8
June	1.8
July	2.3
August	2.1
September	2.4
October	4.7
November	7.1
December	7.4
Annual	53.2

Source: (Ref. 92)

Note: Period of Record: 1965-2026

Table 2.6-9. Average Thunderstorm Days Observed at the Victoria NWS Station (KVCT)

Month	Average Thunderstorm Days
January	2.3
February	2.3
March	3.3
April	3.7
May	6.4
June	7.1
July	7.8
August	9.5
September	7.8
October	3.7
November	2.6
December	1.8
Annual	58.3

Source: (Ref. 92)

Note: Period of Record: 1953-2026

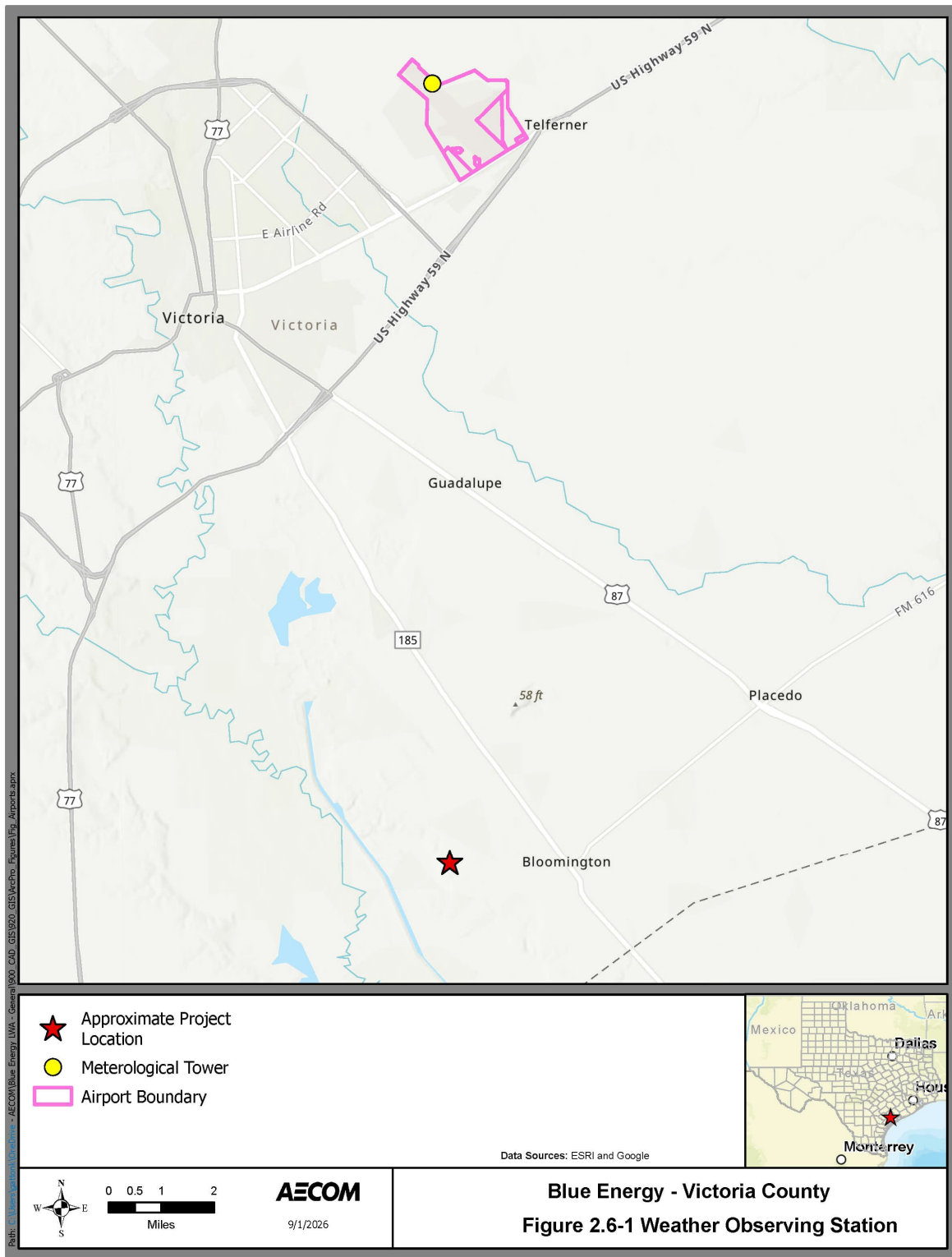
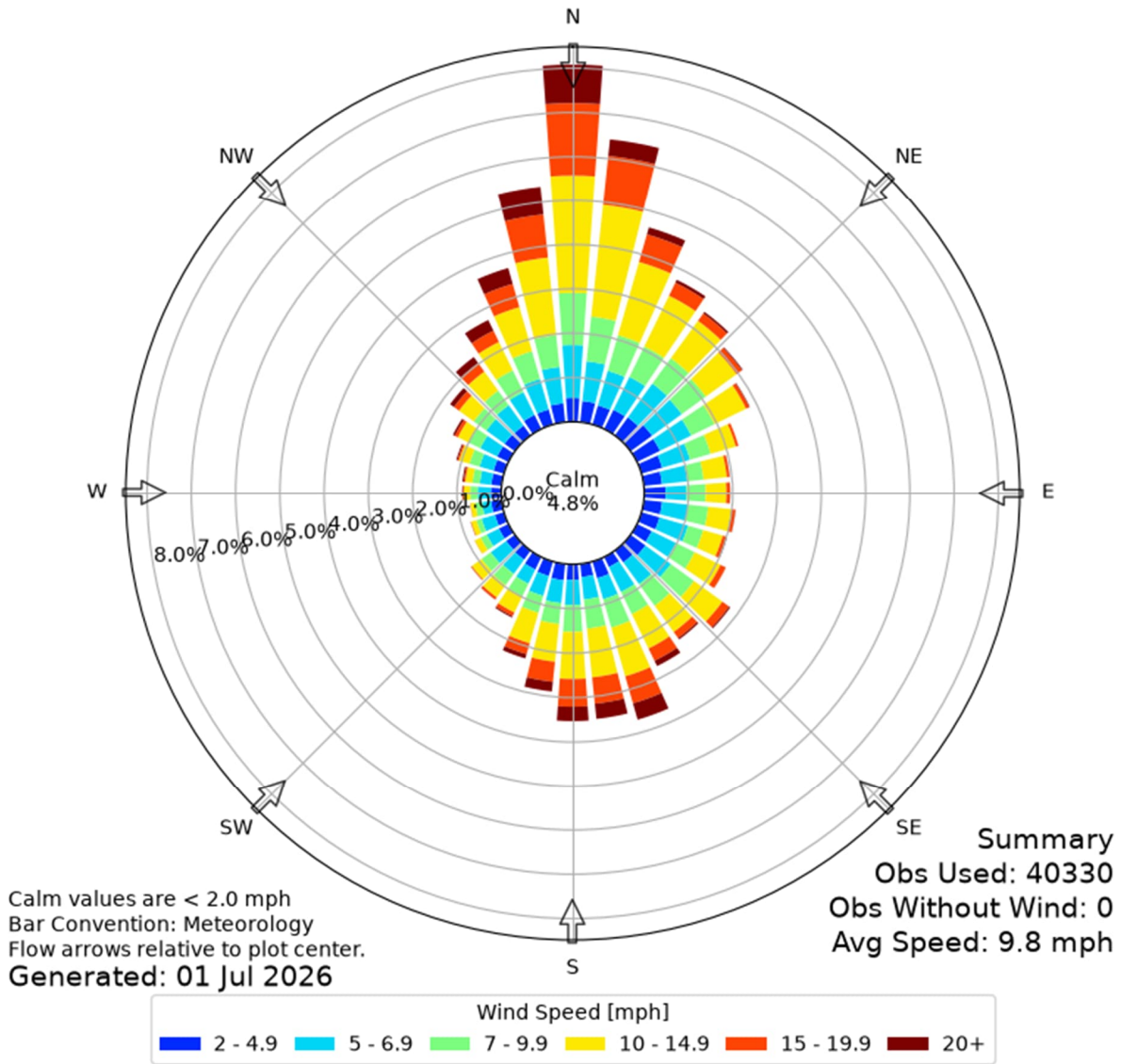


Figure 2.6-1. Weather Observing Station Locations



Windrose Plot for [VCT] VICTORIA REGIONAL
 Obs Between: 01 Jan 1970 03:00 AM - 31 Jan 2026 11:51 PM America/Chicago
 ↳ constraints: Jan

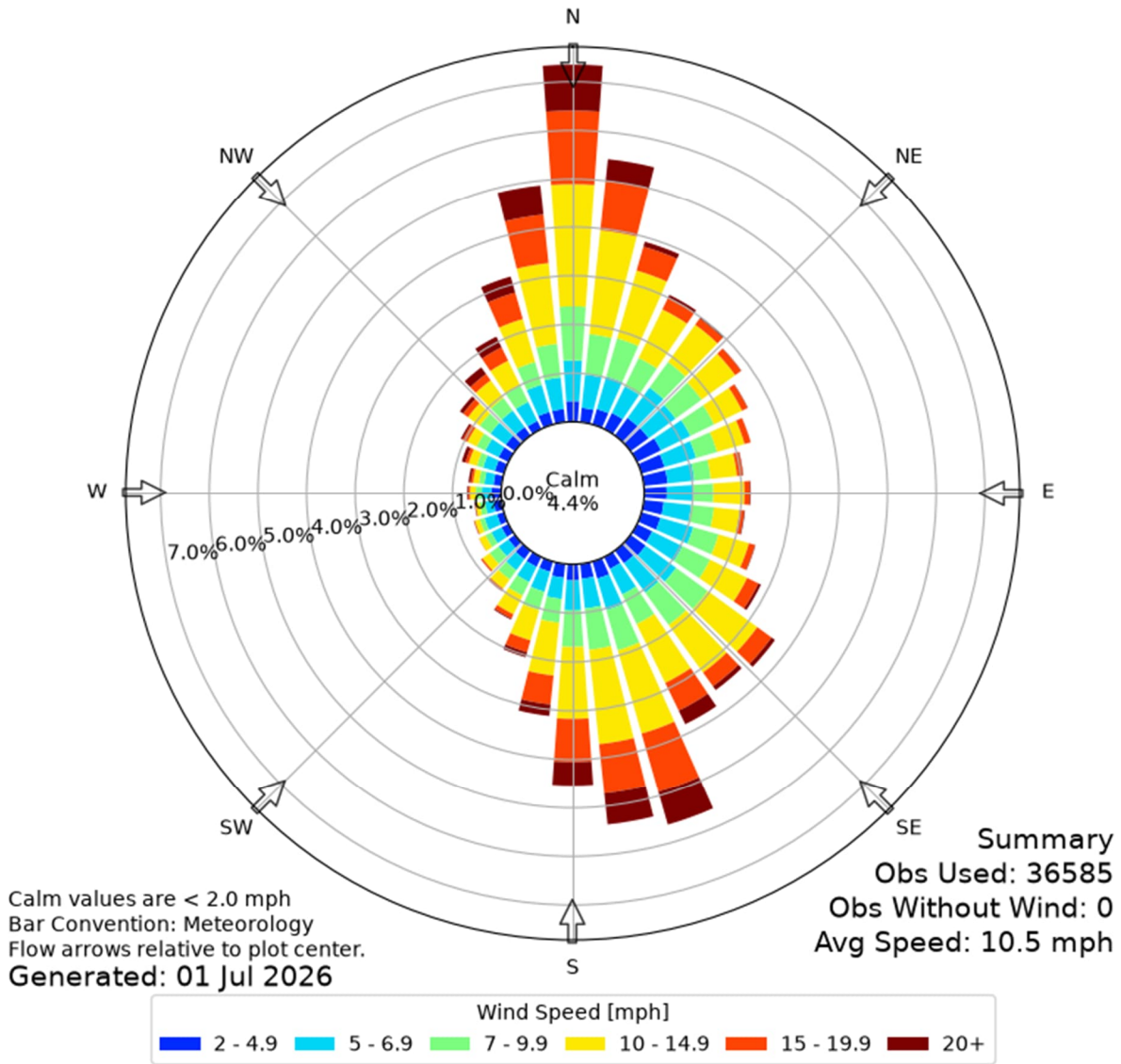


Source: (Ref. 102).

Figure 2.6-2. January Wind Rose — Victoria Regional Airport (KVCT) (1970-2026)



Windrose Plot for [VCT] VICTORIA REGIONAL
 Obs Between: 01 Feb 1970 12:00 AM - 28 Feb 2026 08:51 PM America/Chicago
 ↳ constraints: Feb

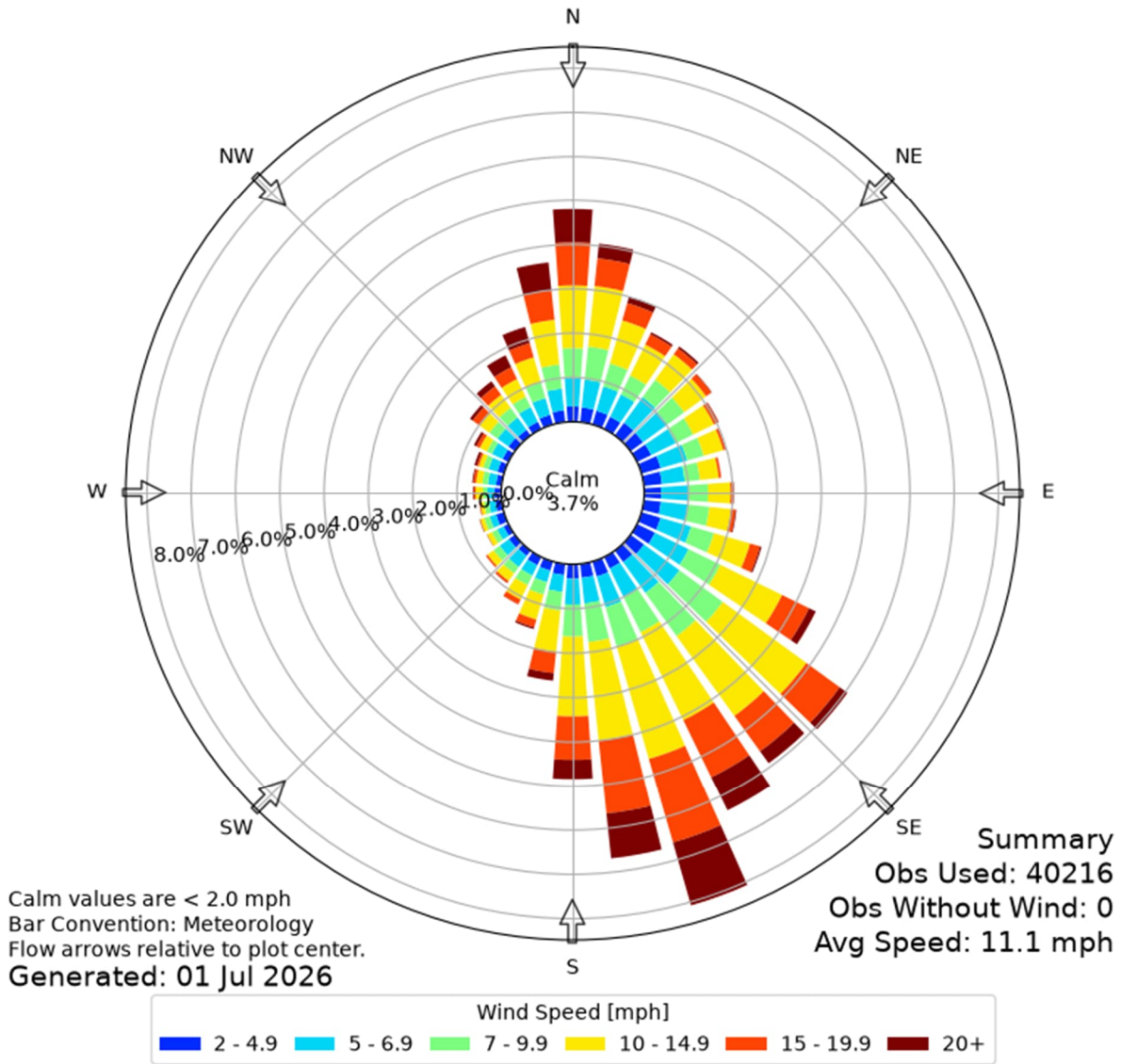


Source: (Ref. 102).

Figure 2.6-3. February Wind Rose — Victoria Regional Airport (KVCT) (1970-2026)



Windrose Plot for [VCT] VICTORIA REGIONAL
Obs Between: 01 Mar 1970 12:00 AM - 31 Mar 2026 11:51 PM America/Chicago
↳ constraints: Mar

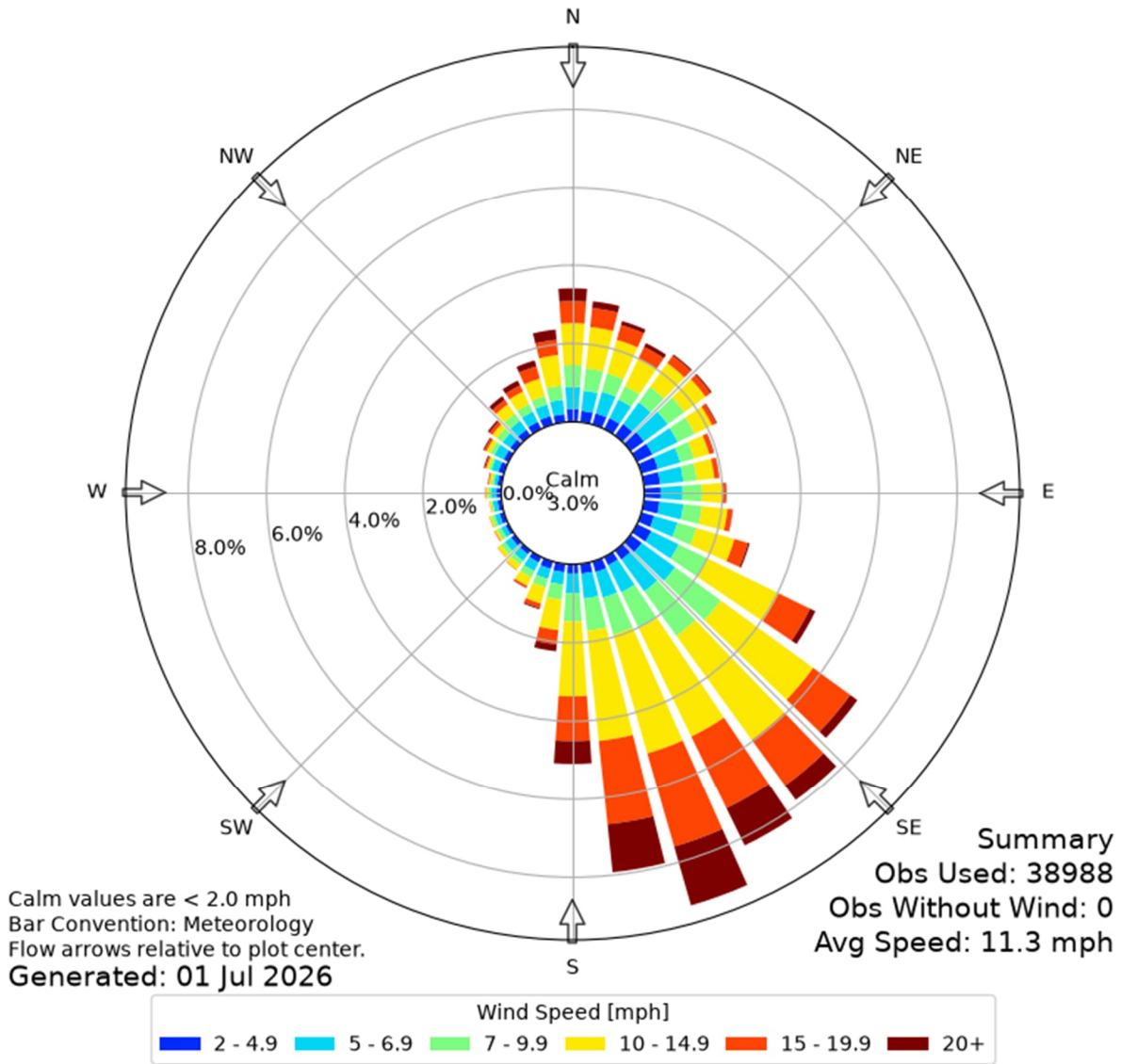


Source: (Ref. 102).

Figure 2.6-4. March Wind Rose — Victoria Regional Airport (KVCT) (1970-2026)



Windrose Plot for [VCT] VICTORIA REGIONAL
Obs Between: 01 Apr 1970 12:00 AM - 30 Apr 2026 11:51 PM America/Chicago
↳ constraints: Apr

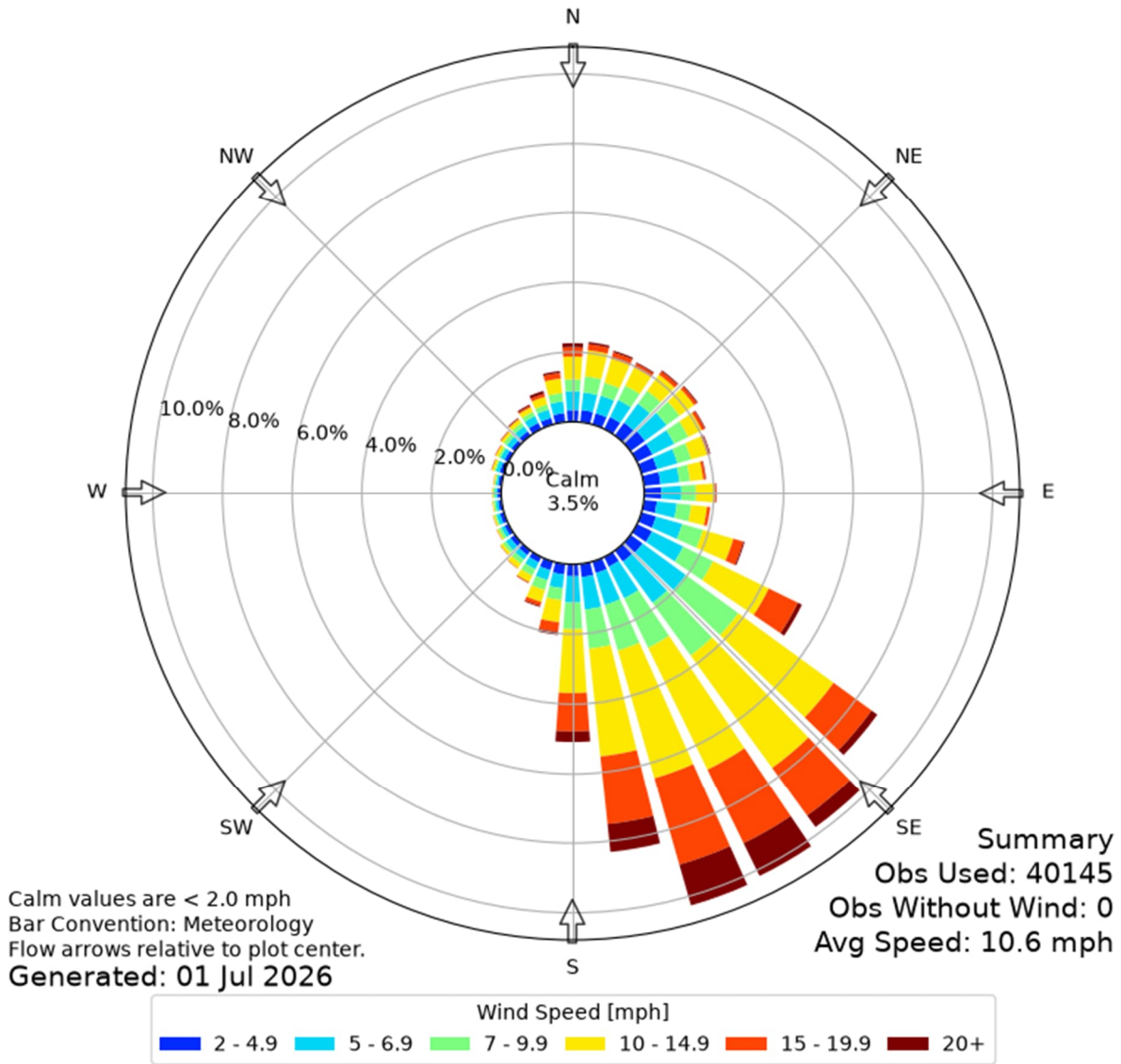


Source: (Ref. 102).

Figure 2.6-5. April Wind Rose — Victoria Regional Airport (KVCT) (1970-2026)



Windrose Plot for [VCT] VICTORIA REGIONAL
Obs Between: 01 May 1970 01:00 AM - 31 May 2026 11:51 PM America/Chicago
↳ constraints: May

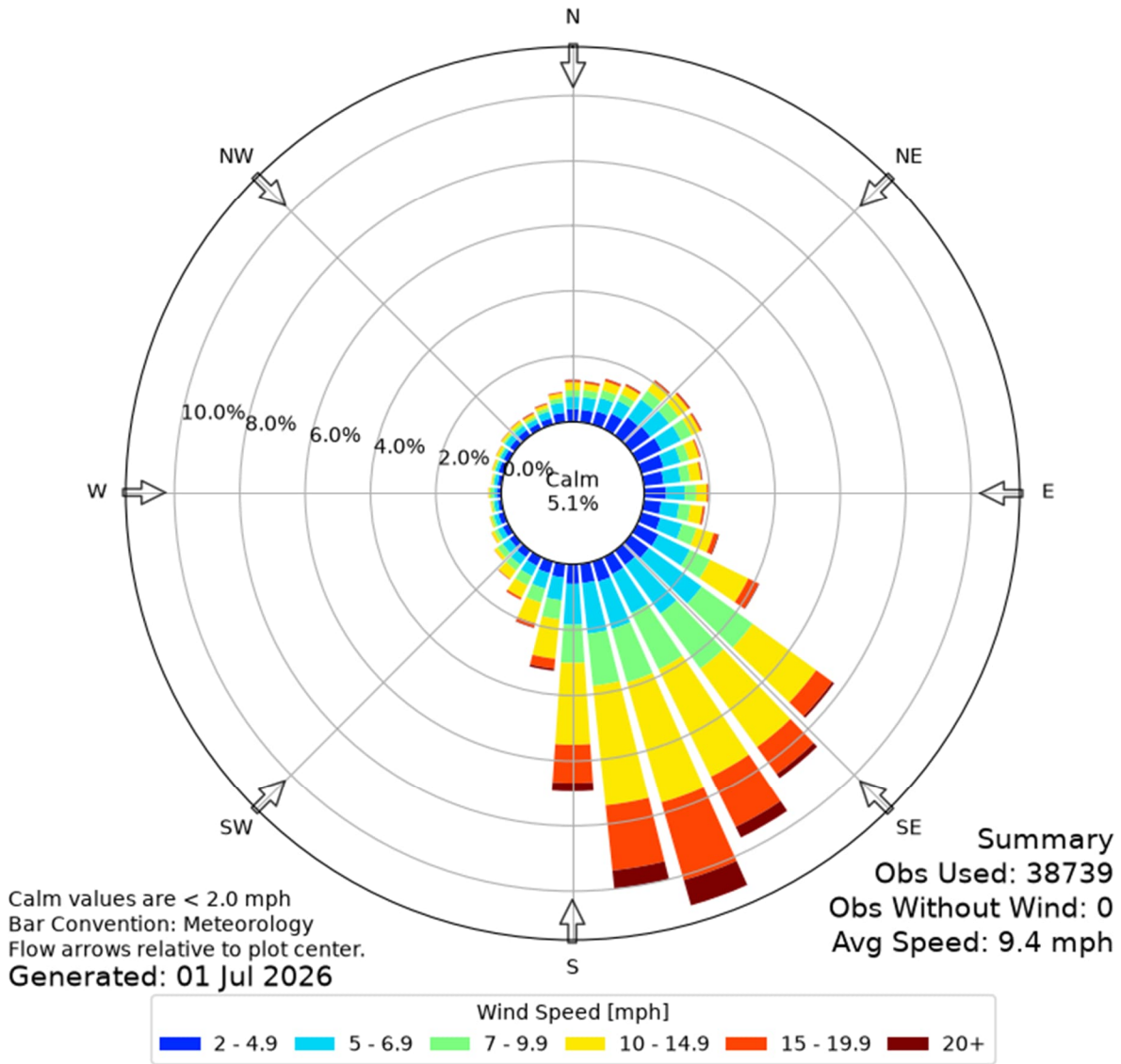


Source: (Ref. 102).

Figure 2.6-6. May Wind Rose — Victoria Regional Airport (KVCT) (1970-2026)



Windrose Plot for [VCT] VICTORIA REGIONAL
 Obs Between: 01 Jun 1970 01:00 AM - 30 Jun 2026 11:51 PM America/Chicago
 ↳ constraints: Jun

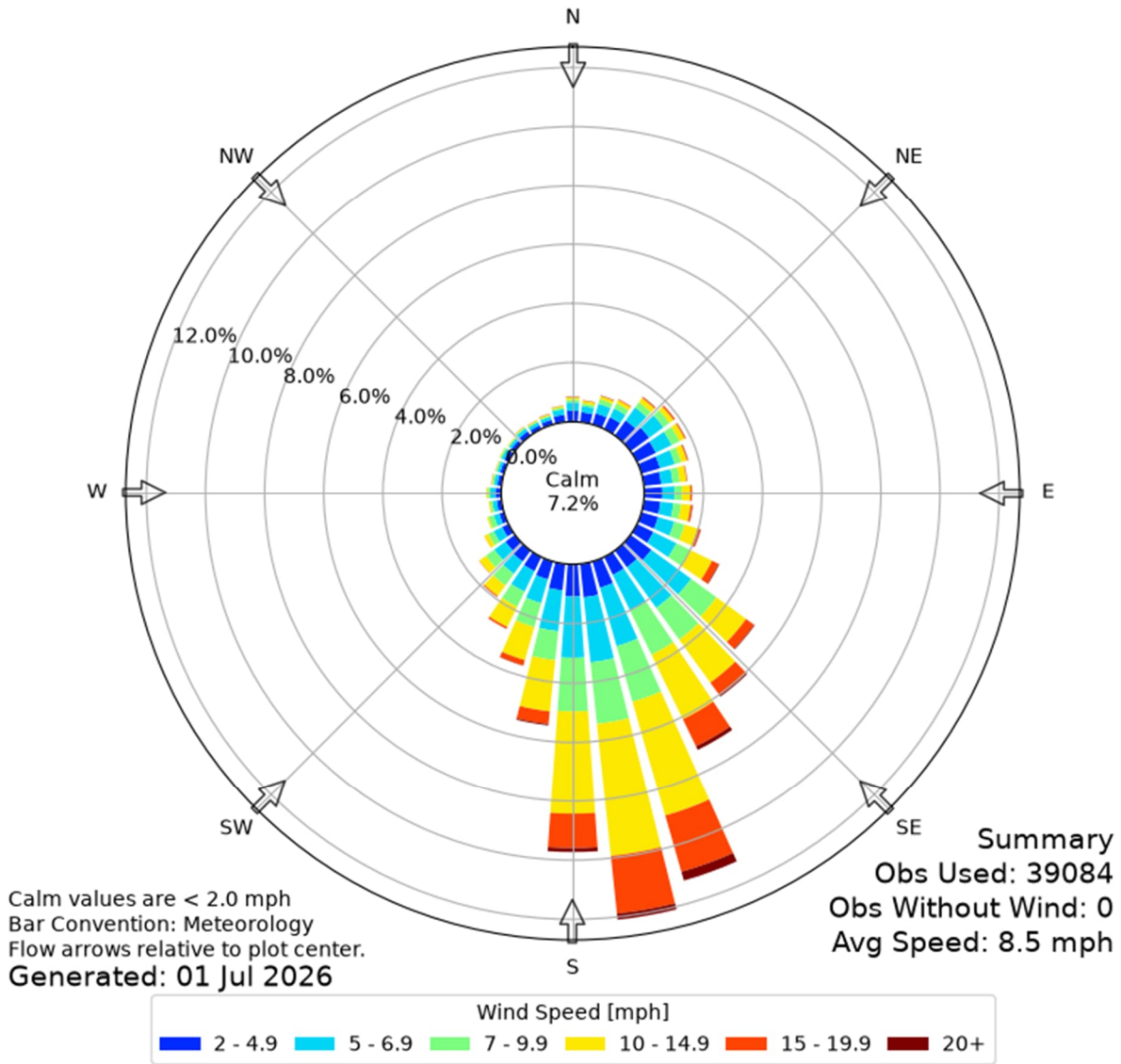


Source: (Ref. 102).

Figure 2.6-7. June Wind Rose — Victoria Regional Airport (KVCT) (1970-2026)



Windrose Plot for [VCT] VICTORIA REGIONAL
Obs Between: 01 Jul 1970 01:00 AM - 01 Jul 2026 04:51 AM America/Chicago
↳ constraints: Jul

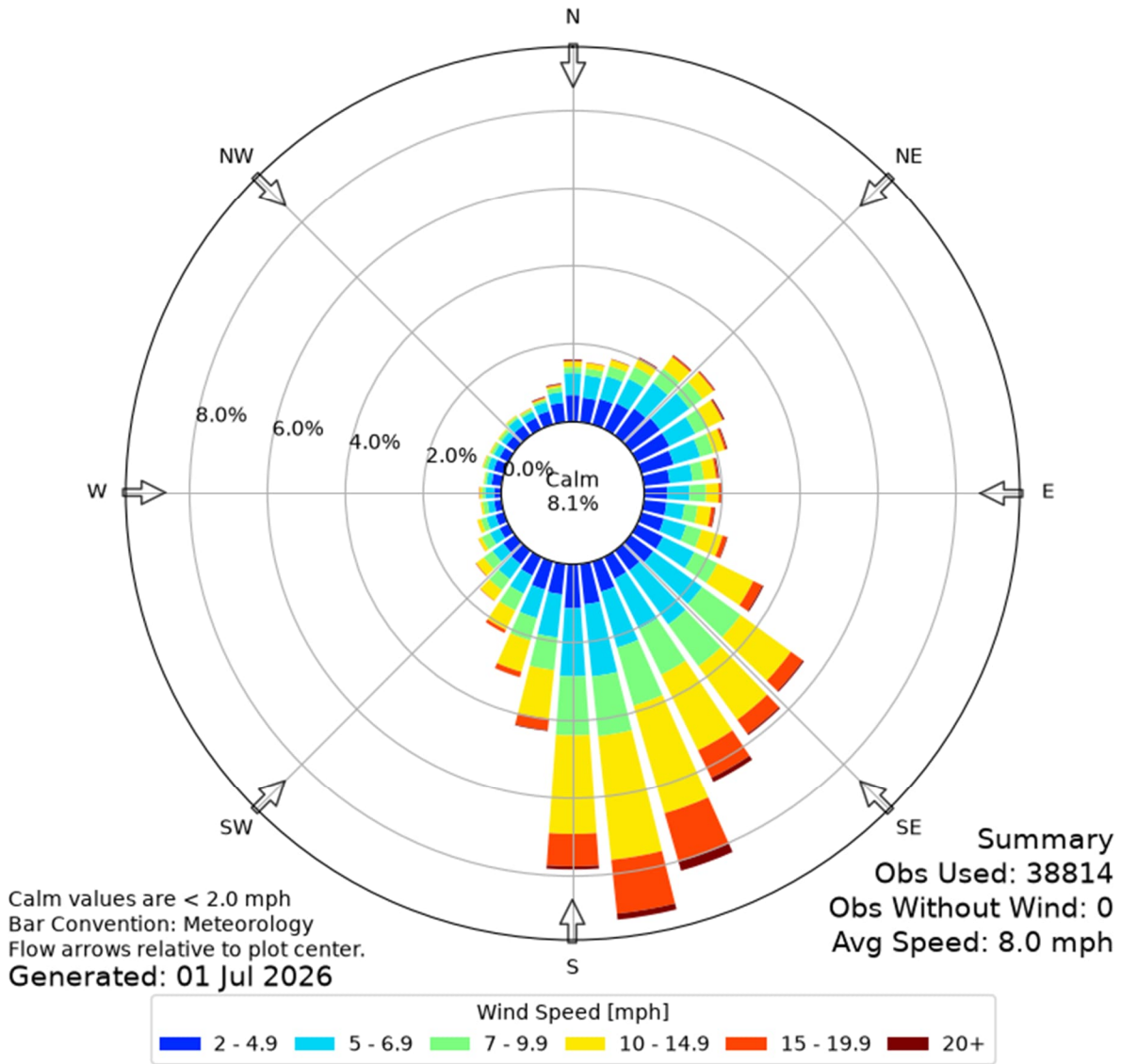


Source: (Ref. 102).

Figure 2.6-8. July Wind Rose — Victoria Regional Airport (KVCT) (1970-2026)



Windrose Plot for [VCT] VICTORIA REGIONAL
Obs Between: 01 Aug 1970 01:00 AM - 31 Aug 2025 11:51 PM America/Chicago
↳ constraints: Aug

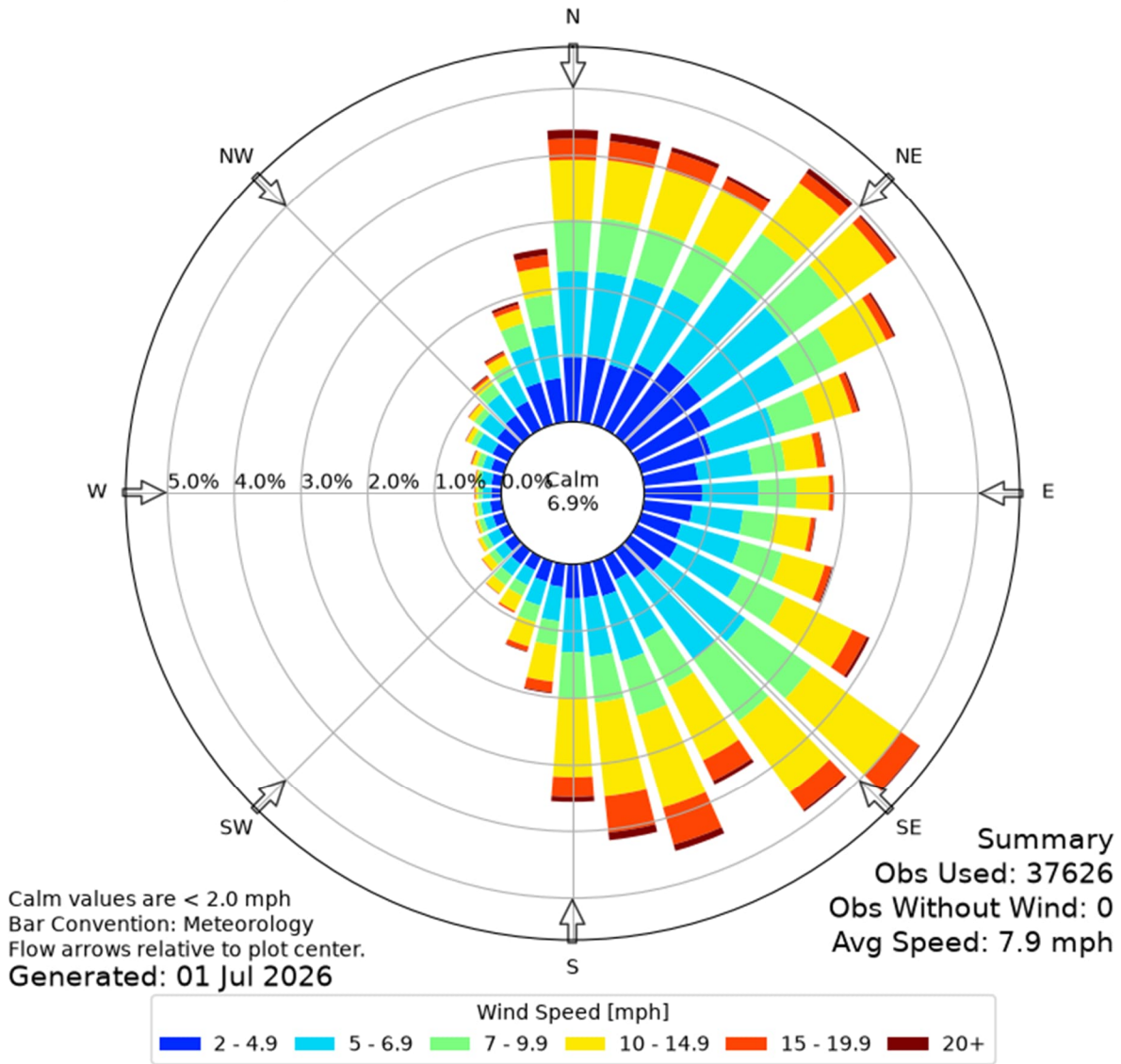


Source: (Ref. 102).

Figure 2.6-9. August Wind Rose — Victoria Regional Airport (KVCT) (1970-2025)



Windrose Plot for [VCT] VICTORIA REGIONAL
Obs Between: 01 Sep 1970 01:00 AM - 30 Sep 2025 11:51 PM America/Chicago
↳ constraints: Sep

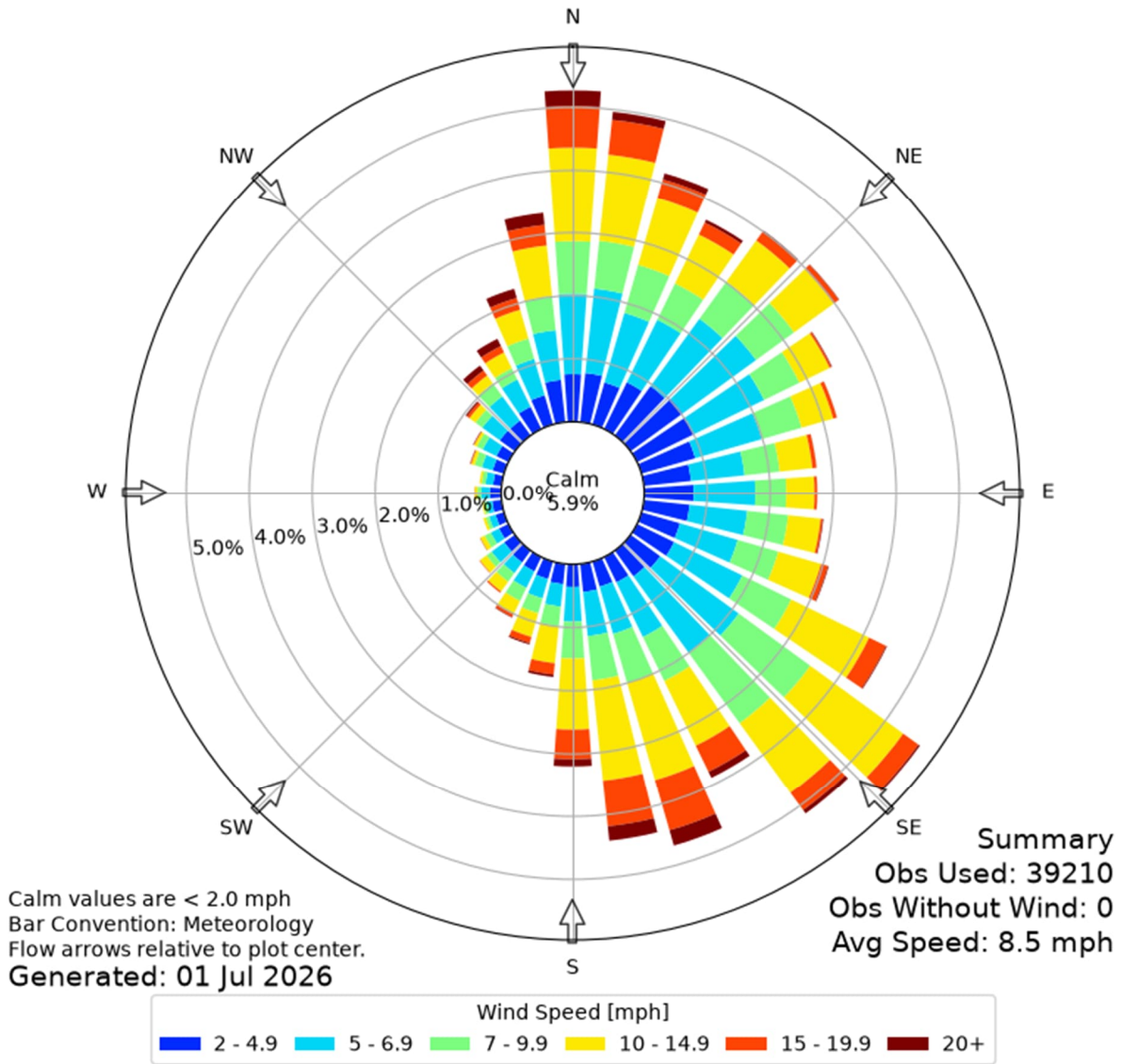


Source: (Ref. 102).

Figure 2.6-10. September Wind Rose — Victoria Regional Airport (KVCT) (1970-2025)



Windrose Plot for [VCT] VICTORIA REGIONAL
Obs Between: 01 Oct 1970 01:00 AM - 31 Oct 2025 11:51 PM America/Chicago
↳ constraints: Oct

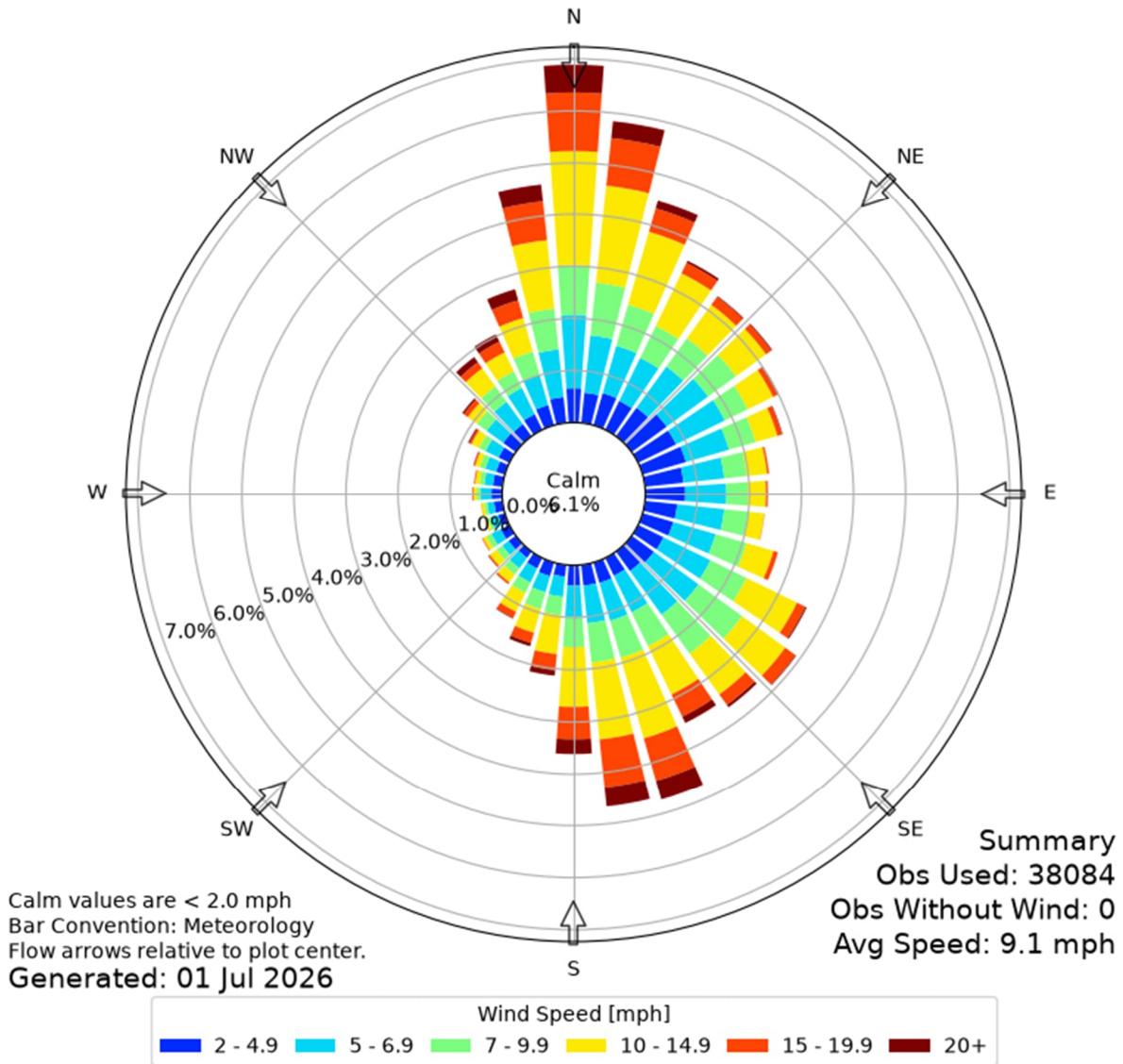


Source: (Ref. 102).

Figure 2.6-11. October Wind Rose — Victoria Regional Airport (KVCT) (1970-2025)



Windrose Plot for [VCT] VICTORIA REGIONAL
Obs Between: 01 Nov 1970 12:00 AM - 30 Nov 2025 11:51 PM America/Chicago
↳ constraints: Nov

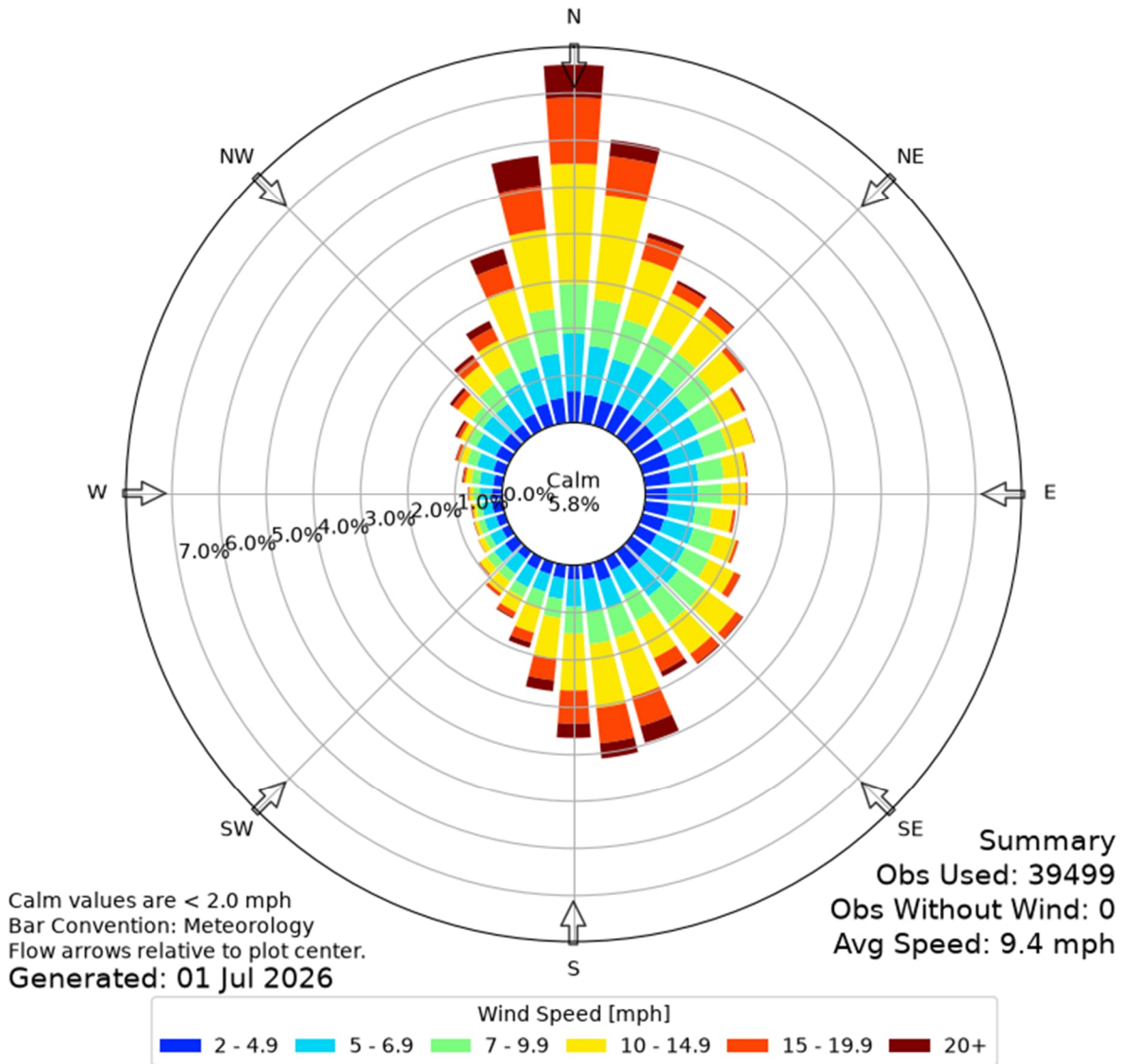


Source: (Ref. 102).

Figure 2.6-12. November Wind Rose — Victoria Regional Airport (KVCT) (1970-2025)



Windrose Plot for [VCT] VICTORIA REGIONAL
Obs Between: 01 Dec 1970 12:00 AM - 31 Dec 2025 11:51 PM America/Chicago
↳ constraints: Dec



Source: (Ref. 102).

Figure 2.6-13. December Wind Rose — Victoria Regional Airport (KVCT) (1970-2025)

2.7 Nonradiological Health

This section describes aspects of the affected environment at the site and within the vicinity of the site associated with nonradiological human health. This includes the identification of people or groups that could be vulnerable to nonradiological health impacts including public health, etiological agents, transportation activities, noise and electromagnetic fields. This section provides the basis for evaluation of impacts on human health from building and operating the LWA project.

2.7.1 Public and Occupational Health

This section describes public and occupational health at the site and within the vicinity associated with occupational injuries, exposure to hazardous chemicals, and etiological agents (i.e., disease-causing microorganisms). Workplace hazards can be grouped into physical hazards, physical agents, chemical agents, biological agents, and psychosocial issues. The public can also be exposed to hazards including etiological agents, chemical contaminants, transportation, and noise levels. Occupational hazards would be managed in accordance with applicable federal, Texas, and local laws and regulations, and permit requirements.

2.7.1.1 Regulations

Several federal and state regulations pertain to potential impacts to both public and occupational health and the environment at the site and within the vicinity and region of the LWA project. The LWA project is an independent commercial undertaking and complies with environmental, health and safety requirements promulgated by the NRC, Occupational Health and Safety Administration (OSHA), USEPA and TCEQ.

Federal Regulations

The CAA, 42 U.S.C. §7401 et seq. (1970), as amended, is the comprehensive federal law to protect and enhance the quality of the nation's air resources to promote public health and welfare and the productive capacity of its population. The USEPA works with federal, state, and tribal regulatory entities to monitor and ensure compliance with the CAA, while TCEQ implements authority.

The CWA, 33 U.S.C. §1251 et seq., establishes the basic structure for regulating discharges of pollutants into WOTUS and regulating quality standards for surface waters. The CWA is the primary federal statute governing the restoration and maintenance of the chemical, physical, and biological integrity of the nation's water. USEPA works with federal, state, and tribal regulatory entities to monitor and ensure compliance with the CWA, while TCEQ implements authority.

Several integrated regulatory standards, programs, and plans established by the CWA apply to the LWA project.

- National Pollutant Discharge Elimination System (NPDES) - establishes an effluent permit system for point source discharges of pollutants into waters of the U.S.
- Water Quality Management - establishes policies and program requirements for water quality planning, management, and implementation under multiple sections of the CWA.

The Resource Conservation and Recovery Act (RCRA), 42 U.S.C. 6901 et seq. (1976), as amended, provides USEPA the authority to control hazardous waste from cradle to grave including the generation, transportation, treatment, storage, and disposal (Subtitle C) along with regulations for non-hazardous solid waste including solids, liquids, and gases (Subtitle D).

RCRA establishes the framework for a national system encompassing hazardous waste, used oil, universal wastes, mixed wastes, land disposal, permitting program, underground storage tanks, and solid waste to protect human health and the environment. The USEPA works with federal, state, and tribal regulatory partners to monitor and ensure compliance with RCRA while TDEQ implements authority with respect to RCRA with USEPA oversight.

The Emergency Planning and Community Right-to-Know Act (EPCRA), 42 U.S.C. 11001 et seq. (1986), is authorized by Title III of the Superfund Amendments and Reauthorization Act and was enacted to help local communities protect public health, safety, and the environment from chemical hazard emergencies. Industries are required to report on the storage, use, and release of hazardous substances to federal, state, and local governments. Per USEPA, EPCRA has four major focus areas.

- Sections 302 and 303 concentrate on emergency planning. Section 302 requires notification when extremely hazardous substances are present at facilities in quantities at or above the threshold planning quantity established in the EPCRA regulations. Section 303 outlines the required elements of the plans and requires local emergency planning committees to develop initial emergency response plans with annual updates.
- Section 304 requires facilities to immediately report accidental releases of certain chemicals to state and local authorities. Facilities must immediately report accidental releases of extremely hazardous substances and hazardous substances as defined under Comprehensive Environmental Response, Compensation, and Liability Act.
- Sections 311 and 312 focus on hazardous chemical storage reporting requirements. Section 311 requires facilities to submit a Safety Data Sheet to the State Emergency Response Commissions, State Emergency Planning Committees, and local fire department for each hazardous chemical, as defined by OSHA, that are handled or stored. Section 312 requires the same facilities to submit a Tier I or Tier II hazardous chemical inventory form to the same recipients to identify the amount, location, and potential hazards of each chemical onsite at the facility during the year.
- Section 313 established the Toxics Release Inventory, which is a publicly available database containing information on the quantities of certain toxic chemicals released annually to air, water, and land, or otherwise managed as waste by industrial and federal facilities. The information is used to support informed decision-making by communities, government agencies, companies, and others.

Transport of hazardous and radioactive materials, substances, and wastes are governed by U.S. Department of Transportation (DOT), NRC, and USEPA regulations. These regulations include:

- 49 CFR 100-178 - Transportation of Hazardous Materials, Oil Transportation, and Hazardous Materials Regulations are regulated by DOT.
- 40 CFR 262 - Standards Applicable to Generators of Hazardous Waste are regulated by EPA.

The Toxic Substance Control Act (TSCA), 15 U.S.C. 2601 et seq. (1976), authorizes the USEPA to require reporting, record keeping and testing requirements, and restrictions relating to chemical substances and mixtures. The production, importation, use, and disposal of specific chemicals, including asbestos, polychlorinated biphenyls, lead-based paint,

chlorofluorocarbons, dioxins, hexavalent chromium, and radon is addressed by TSCA. TCEQ implements authority and ensures compliance with statutes and regulations with respect to TSCA.

The Occupational Safety and Health Act, 29 U.S.C. 651 et seq. (1970), authorized the federal government to set and enforce safety and health standards for workers. The Act is administered and enforced by OSHA. While OSHA and USEPA both are mandated to reduce exposures to toxic substances, OSHA's jurisdiction is limited to safety and health conditions that exist in the workplace environment. Specific standards informing employers what must be done to achieve a safe and healthful working environment are established by OSHA regulations in 29 CFR.

The Noise Control Act, 42 U.S.C. 4901 et seq. (1972), is an established national policy to promote an environment free from noise that jeopardizes public health and welfare. The USEPA is authorized to issue noise emission standards, coordinate federal research in noise control, and provide information to the public regarding noise emissions and reduction. The primary responsibility for controlling noise remains with state and local governments.

The LWA project would comply with applicable federal regulations.

State Regulations

TCEQ was created under Title 30 of the TAC to implement the powers and duties of the commission under the Texas Water Code, the Texas Health and Safety Code, and other laws; to establish the general policies of the commission; and to set forth procedures to be followed in agency proceedings. TCEQ enforces state and federal environmental regulations and administers the associated permits.

The LWA project would comply with applicable state regulations.

2.7.1.2 Vulnerable Populations to Nonradiological Health Impacts

Within a 6-mi of the site the population that may be vulnerable to nonradiological health impacts such as noise, fugitive dust, and gaseous emissions resulting from construction and operations activities and are listed below in order of most vulnerable to least vulnerable:

- Construction workers and onsite personnel working at the site
- People living near the site
- Transient populations (i.e., temporary employees, recreational visitors, tourists)

As shown in Figure 2.7-2 and Figure 2.7-2, the primary sensitive receptors are residences located southeast of the project site. The nearest residence is approximately 0.48 mi from the LWA boundary of disturbance. Other sensitive receptors within the vicinity of the LWA project site include the several large homesteads, and the town of Bloomington, TX (nearest residential area) which has one elementary school, part of the Bloomington Independent School District. Other schools that are part of the Bloomington Independent School District include a middle and high school, which located between Bloomington and Placedo, TX, and second elementary school located in Placedo. Placedo is located about 6.8 mi northeast of the LWA project site. Potential health impacts from the LWA project construction activities to vulnerable populations are described in Section 4.7.

2.7.1.3 Occupational Injuries

In general, occupational health risks for workers and onsite personnel engaged in activities related to building and operating nuclear power plants would be predominantly occupational injuries (e.g., falls, electric shock, asphyxiation) or occupational illnesses. Recent Bureau of

Labor Statistics data, which lists incidence rates of nonfatal occupational injuries and illnesses by industry, were reviewed to estimate relevant occupational injury rates to provide a context for analysis of potential project impacts. The incidence rate is defined as the number of recordable cases per 100 full-time equivalent workers. The two industry sector classifications that are relevant to the site include Construction followed by Utilities for the operational stage, however for this LWA ER only the construction classification would be primarily discussed.

During construction, the site is classified under the North American Industry Classification System (NAICS) as part of the Construction sector (NAICS 23), specifically within the Power and Communication Line and related Structures Construction Industry sector (NAICS 23713). This sector includes businesses primarily focused on constructing power lines and towers, power plants, radio, television, and telecommunications transmitting/receiving towers. In 2024, the national incidence rate of injury and illness cases for NAICS 23 was 2.2 per 100 full-time workers (Ref. 103), while Texas reported a lower incidence rate of 1.3 (Ref. 104). In terms of work-related fatalities, the Construction sector recorded 1,064 fatalities nationwide in 2024 (Ref. 105), compared to 128 fatalities in Texas (Ref. 106).

The national occupational injury and illness rate for the electric generation industry was lower than all other industry categories as shown in Table 2.7-1. The 2024 fatal injury rates by state of incident and industry (Ref. 107) was used to extract data for Texas, used in Table 2.7-1.

2.7.1.4 Chemical Hazards

The USEPA Facility Registry Service is a centrally managed database that identifies facilities or sites subject to environmental regulation. The information regarding these facilities is sourced from various USEPA programs, including the Assessment, Cleanup, and Redevelopment Exchange System, the Superfund Enterprise Management System, and the Toxics Release Inventory System. USEPA provides users with the capability to search multiple environmental databases for facility information, including those contained within the Facility Registry Service. Additionally, the USEPA's Enforcement and Compliance History Online tool, available within Envirofacts, allows users to access integrated site-specific compliance data from a variety of USEPA data systems compiled in one location.

A search was conducted within a 1-mi radius of the LWA project site center point using Facility Registry Service GIS data from the Assessment, Cleanup, and Redevelopment Exchange System, Superfund Enterprise Management System, and Toxics Release Inventory System databases. This search aimed to identify current and existing issues involving hazardous chemicals on or near the LWA project site, including brownfields, Superfund sites, and toxic releases. The results indicate that no toxic release sites, Superfund sites, or brownfields are located within a 1-mi radius of the project site center point (Ref. 108).

2.7.1.5 Etiological Agents

The analysis of disease-causing microorganisms (etiological agents) within the State of Texas focused on the occurrence of various pathogens considered notifiable based on the TAC, Title 25, Part 1, Chapter 97, *Communicable Diseases*. Data from the Texas Department of State Health Services and the Center for Disease Control was reviewed to ascertain the average number of cases of reported disease in Texas from 2013 through 2022 (Ref. 109). The findings for the average number of cases are illustrated in Figure 2.7-1.

The predominant pathogens identified in Texas are salmonella (*Salmonellosis*) and campylobacter (*Campylobacteriosis*). Salmonella is primarily transmitted through contaminated food, and Campylobacter is primarily caused by consuming raw or undercooked poultry. Both pathogens

can be spread by consuming contaminated food, drinking untreated water and by touching infected animals (Ref. 110, Ref. 111).

2.7.2 Noise

Noise is characterized as unwanted sound, as defined by the USEPA's Protective Noise Levels (Ref. 112). In the context of safeguarding public health and welfare, noise is understood to have adverse effects on both individuals and the environment. It is recognized as a contributing factor to hearing loss, interference with daily activities at home and in the workplace, and various other negative impacts on human health and well-being. While hearing loss is the most quantifiable health hazard associated with noise, research has also linked noise exposure to a range of physiological and psychological issues.

Ambient noise, or background noise, is defined as the combination of sounds from multiple sources that are perceived simultaneously. Noise levels are typically quantified in decibels (dB), with A-weighted decibels (dBA) representing the relative loudness of sounds as perceived by the human ear. According to the Baseline Noise Condition in Victoria, Texas, conducted in 2026, the natural environment at the LWA project site is characterized by relatively low ambient noise levels, ranging between 43 and 54 dBA (Ref. 113).

The LWA project site is within a predominantly rural area and is relatively flat, with little change in elevation or presence of dense vegetation that would affect the propagation of sound across the property. Additional details regarding land uses on an in the vicinity of the LWA project site are described in Section 2.1. Noise-sensitive receptors typically include residences, recreational areas and public buildings or other developed sites where frequent public use occurs. The nearest offsite noise-sensitive receptor in proximity to the LWA project site is a residence located approximately 0.48 mi from the boundary of the LWA limit of disturbance, as indicated in Figure 2.7-2 and Figure 2.1-2. There are no schools or other public buildings in a 2-mi radius of the LWA project site that would be vulnerable to noise impacts from the site. The nearest church is located approximately 1.8 mi from the LWA project site, and the nearest recreation area is outside of the 6-mi vicinity of the LWA project site.

2.7.2.1 Ambient Noise Survey

Baseline noise monitoring was conducted between July 18 and July 20, 2026, at several locations surrounding the LWA project site (Figure 2.7-3). Monitoring location descriptions are provided in AECOM's *Baseline Noise Condition in Victoria, Texas* (Ref. 113).

The 24-hour monitoring results show a broader range of ambient noise over a 24-hour period. While, the time-of-day dataset indicates generally moderate sound levels, with L_{eq} values typically in the mid-40s to low-50s dBA across AM, midday, PM, and nighttime periods, and an overall range of 40.7 to 55.4 dBA. In general, weekend measurements were frequently higher than weekday measurements during the AM and PM periods at several locations suggesting increased intermittent activity during weekends.

Collectively, the ambient noise survey indicates a baseline environment that is generally moderate during discrete daytime and nighttime periods, with intermittent higher sound levels evident in the 24-hour measurements, reflected in L_{dn} values ranging from approximately 59 to 65 dBA depending on receptor type and day type. Ambient noise monitoring results for each location are summarized in Table 2.7-2 and Table 2.7-3.

2.7.2.2 Sound Level Regulations

There are no municipal, county, or state-level regulations that establish quantitative noise level limits applicable to the LWA project site. At the federal level, the USEPA provides broad

guidelines for environmental noise levels. USEPA recommends that outdoor noise levels should not exceed a day-night average sound level (L_{dn}) of 55 dBA. This level is considered sufficient to protect the public from the effects of broadband environmental noise in typical outdoor and residential areas. It is important to note that this recommendation is not a regulatory requirement but rather a conservative guideline designed to protect the most sensitive segments of the population, with an additional margin of safety (Ref. 112).

2.7.3 Transportation Safety

From the roadway safety perspective, TxDOT collects and analyzes a wide variety of traffic safety data, including crash statistics. Overall, between 2024 and 2025, the State of Texas experienced a decrease in the number of motor vehicle traffic fatalities. The 2025 death toll of 3,769 was a decrease of 9.38 percent from the 4,159 deaths recorded in 2024 (Ref. 114). Fatalities in 2024 traffic crashes in rural areas of the state accounted for 50.12 percent of the state's traffic fatalities. There were 2,080 deaths in rural traffic crashes for 2024. Overall traffic deaths in Texas dropped by 8 percent in 2025, totaling 3,809 fatalities (Ref. 115).

Texas Highway 185, Texas Highway 35, U.S. Highway 59, McCoy Road, and Edna Lane are the main roads providing access to the LWA project site. Texas Highway 185, McCoy Road, and Edna Lane are shown in the general vicinity map in Figure 2.7-4. There were no crashes on McCoy Road and one angle property damage only crash along Edna Lane. There were two angle injury crashes along Black Bayou Road No 1 and Table 2.7-5 below show the summary of the crash severity and type respectively.

Crash rates for these roads and intersections in the vicinity of the LWA project site are shown in Table 2.7-6. The location of the roadway segments and intersections analyzed are shown in Figure 2.7-5. Crash rates, which represent the number of crashes per million vehicle miles traveled, were calculated using the University of Florida Transportation Institute Highway Safety Software. Crash rates include all types of crashes (property damage, injury and fatalities) and are an effective tool to measure the relative safety at a particular location.

2.7.4 Electromagnetic Fields

An electromagnetic field (EMF) consists of coupled electric and magnetic components produced by the motion of electric charge. EMFs have measurable electromagnetic energy, typically expressed as electric field strength in volts per meter (V/m) or kilovolts per meter (kV/m). Common sources of EMF include high-voltage power lines, wireless devices, and household appliances; field strength generally decreases rapidly with increasing distance from the source.

According to the World Health Organization, electric fields result from differences in voltage. As such, higher voltages produce stronger electric fields. Magnetic fields are generated when electric current flows, therefore higher currents produce stronger magnetic fields (Ref. 116). An electric field may be present even when no current is flowing. When current flows, magnetic field strength varies with power consumption, while electric field strength remains relatively constant for a given voltage. The World Health Organization further notes that all populations are exposed to EMF to varying degrees and that exposure levels have increased as technology use has expanded. Electrical fields can be shielded by objects such as trees, buildings, and vehicles. Magnetic fields, however, penetrate most materials, but their strength decreases with increasing distance from the source.

EMF strength near transmission infrastructure depends on factors such as current, line design, and distance from the line, with most EMF energy dissipating within the transmission right-of-way. Residual field levels typically decline to near-background conditions at short distances beyond the right-of-way or from energized equipment. Electric and magnetic fields can induce

small voltages and currents in the human body; however, directly beneath a high-voltage transmission line, these induced currents are generally far below thresholds associated with shock or other electrical effects (Ref. 115).

Given the scope of the activities planned under the LWA, impacts from EMFs to the public and occupational health are not assessed as part of the LWA ER.

2.7.5 Waste Management

Victoria County has a relatively well-developed solid waste management system centered on the City of Victoria's Environmental Services Department and the Victoria Landfill (operated by Republic Services). Municipal solid waste is collected through regular curbside garbage, recycling, and yard waste programs within the City of Victoria, while the county relies on the Victoria Landfill located along FM 1686 for disposal of municipal, construction, demolition, yard, and other approved waste streams (Ref. 117, Ref. 118, Ref. 119).

The neighboring counties generally rely on transfer stations and regional recycling centers rather than large municipal landfills. Jackson County, immediately northeast of Victoria County, operates the Jackson County Transfer Station and Recycling Center near Ganado. The facility serves as the county's primary solid waste handling location, receiving municipal waste for transfer to permitted disposal facilities while also providing public recycling services. The transfer station maintains restrictions on hazardous materials and other prohibited wastes, which must be managed through specialized disposal channels (Ref. 120).

To the southeast, Calhoun County operates a county recycling center and waste disposal facility in Port Lavaca. The county's waste management infrastructure includes a recycling center, citizen drop-off services, and collection sites for recyclable materials. Recycling programs accept paper, cardboard, aluminum, steel cans, and selected plastics, while various wastes such as chemicals, paints, and other hazardous materials are prohibited from routine disposal operations. The county's system relies heavily on public drop-off facilities and recycling programs funded in part through TCEQ grants, reflecting the rural and coastal nature of the region (Ref. 121).

Goliad County, located to the west, employs a more localized transfer station model for municipal solid waste management. County residents can utilize the county transfer station for household waste, brush, construction debris, and selected bulky items, while hazardous wastes such as paints, chemicals, pesticides, herbicides, batteries, and medical wastes are specifically excluded from acceptance (Ref. 122).

Table 2.7-1. Summary of Occupational 2024 Incidence Rates for Selected Industries

Nonfatal Occupational Injuries and Illnesses (Recordable Cases per 100 Full-Time Workers)		
Industry Category	National Average	Texas Average
Construction	2.2	1.3
Nuclear Electric Power Generation	0.2	"_"
Professional and Business Services	1.0	0.8
Fatal Occupational Injuries (Recordable Cases per 100,000 Full-Time Workers)		
Construction	9.2**	9.5****
Nuclear Electric Power Generation *	~0.0 to 0.1***	"_"
Professional and Business Services	"_"	2.8

* No data were provided for Nuclear Electric Power Generation, instead the number of cases used were for Electric Power Generation.

** Fatal work injury rate for the U.S. construction industry (Ref. 123, Ref. 124).

*** Number of fatalities (national) reported for Electric Power Generation in 2024 was 5 (Ref. 125).

**** Fatal injury rates by state of incident and industry, all ownerships, 2024 (Ref. 107).

Table 2.7-2. Measured 24-hour Ambient Noise Levels

Receptor	Location	Leq(1) (dBA)		Ldn (dBA)	
		Weekday	Weekend	Weekday	Weekend
R1	Adjacent to 1416 Black Bayou Rd, Victoria, TX 77905	43.5-68.3	45.3-62.9	59.2	62.4
R2	Adjacent to 2157 Black Bayou Rd, Victoria, TX 77905	48.1-65.8	46.9-59.2	65.3	61.0

Leq(1): constant sound level in a 1-hour period

Ldn: the day-night sound level

Table 2.7-3. Measured Short Term Ambient Noise Levels at Additional Sites

Receptor	Location	AM Leq(1) (dBA)		Midday Leq(1) (dBA)		PM Leq(1) (dBA)		Nighttime Leq(1) (dBA)	
		WD	WE	WD	WE	WD	WE	WD	WE
M1	171 Edna Ln N, Bloomington, TX 77951	49.2	51.4	50	49.4	46.7	51.9	51.5	52.6
M2	2157 Black Bayou Rd, Victoria, TX 77905	46.3	52.0	40.7	43.5	45.8	49.4	55.4	53.2
M3	2100 Black Bayou Rd, Victoria, TX 77905	50.9	51.9	41.8	49.2	42.8	50.7	48.8	50.8
M4	396 Edna Ln N, Victoria, TX 77905	44.4	46.5	54.7	50.4	45.8	48.5	50.8	53.8

Leq(1): constant sound level in a 1-hour period

Abbreviations: WD = weekday; WE = weekend

Table 2.7-4. Crash Severity Summary

Roads	AADT (2025)	Total Crashes	Injury Crashes	Fatal Crashes	Property Damage Crashes	2024 Crashes	2025 Crashes
US Highway 59	20,053	484	154	14	316	239	245
Texas Highway 35	3,350	422	180	9	233	236	186
Texas Highway 185	10,715	178	62	1	115	85	93
Overall	34,118	5,235	1,837	65	3,333	2,649	2,586

Table 2.7-5. Crash Type Summary

Roads	Angle Crashes	Rear End Crashes	Sideswipe Crashes	Head On Crashes	Other Crashes	Daytime Crashes	Nighttime Crashes
US Highway 59	303	75	91	13	2	278	206
Texas Highway 35	271	83	46	22	0	257	150
Texas Highway 185	133	23	15	5	2	101	77
Overall	3,794	799	457	140	45	3,209	1989

Table 2.7-6. Crash Rate Summary

Roads	AADT (2025)	Existing Crash Rate (100 MVM)	2025 Texas Statewide Crash Rate (100 MVM)
US Highway 59	20,053	77.86	--
Texas Highway 35	3,350	91.88	--
Texas Highway 185	10,715	51.71	--
Overall	34,118	--	197.03*

*Sources: (Ref. 114, Ref. 126)

Abbreviation: MVM = million vehicles per mile

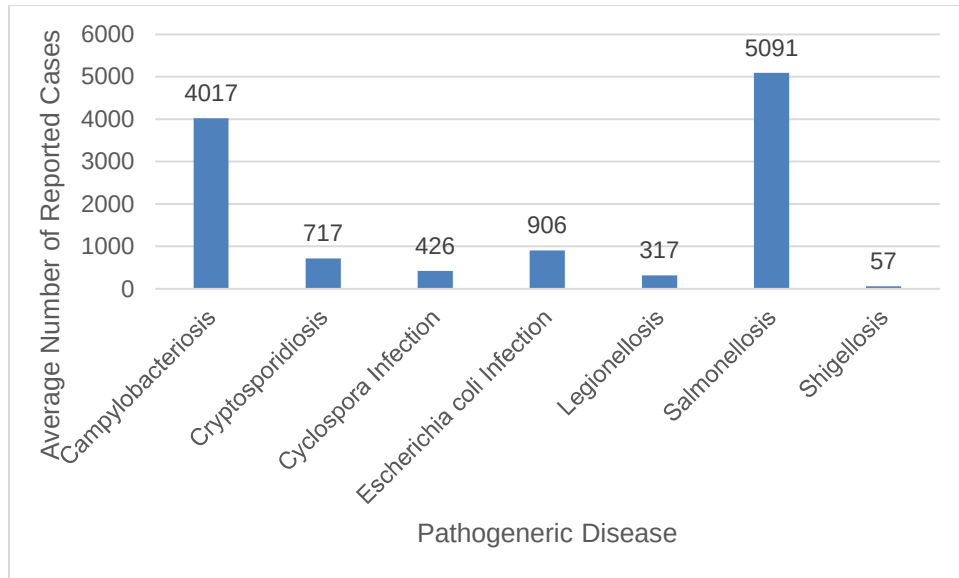


Figure 2.7-1. Pathogenic Disease Reported in Texas from 2013 - 2022

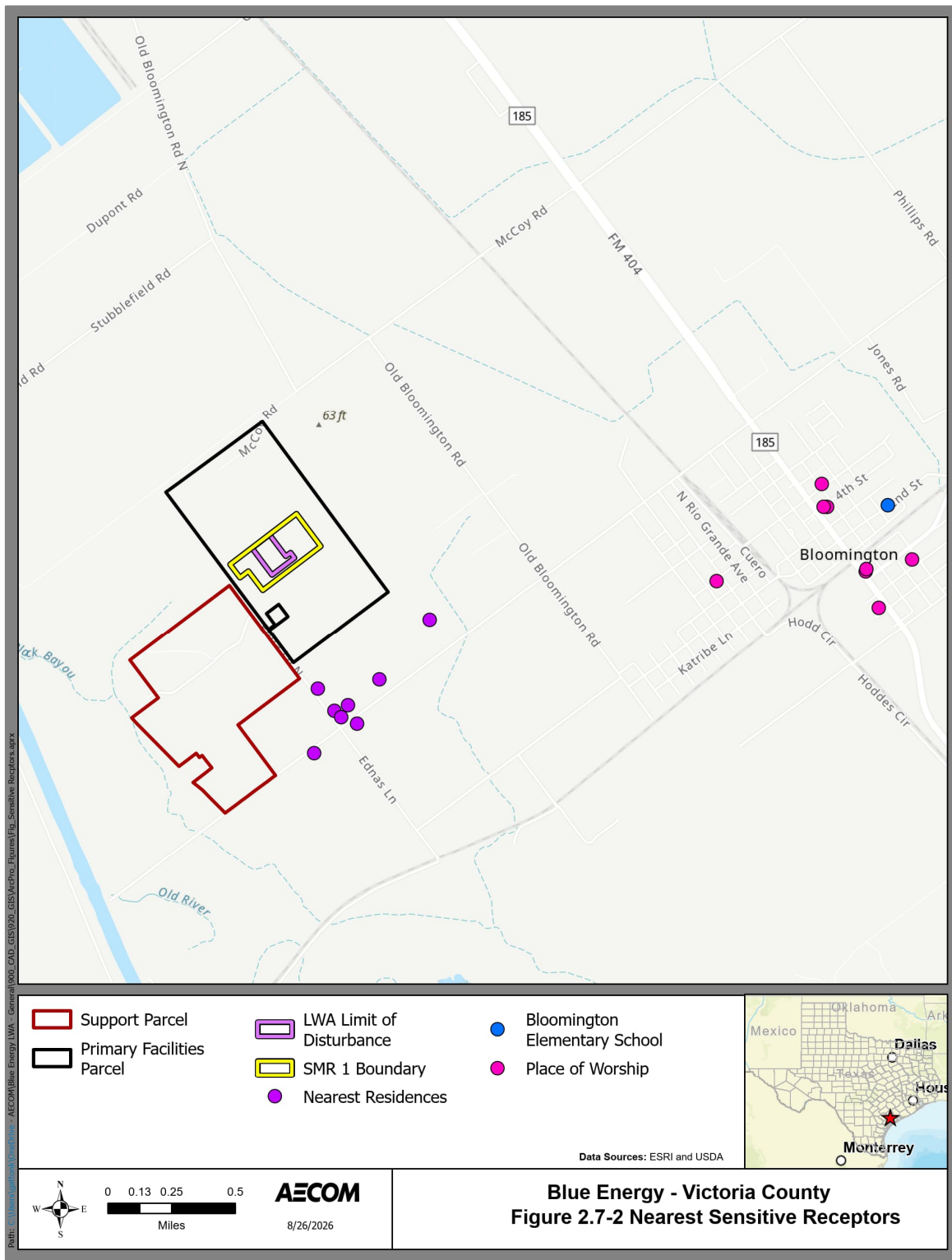


Figure 2.7-2. Nearest Sensitive Receptors

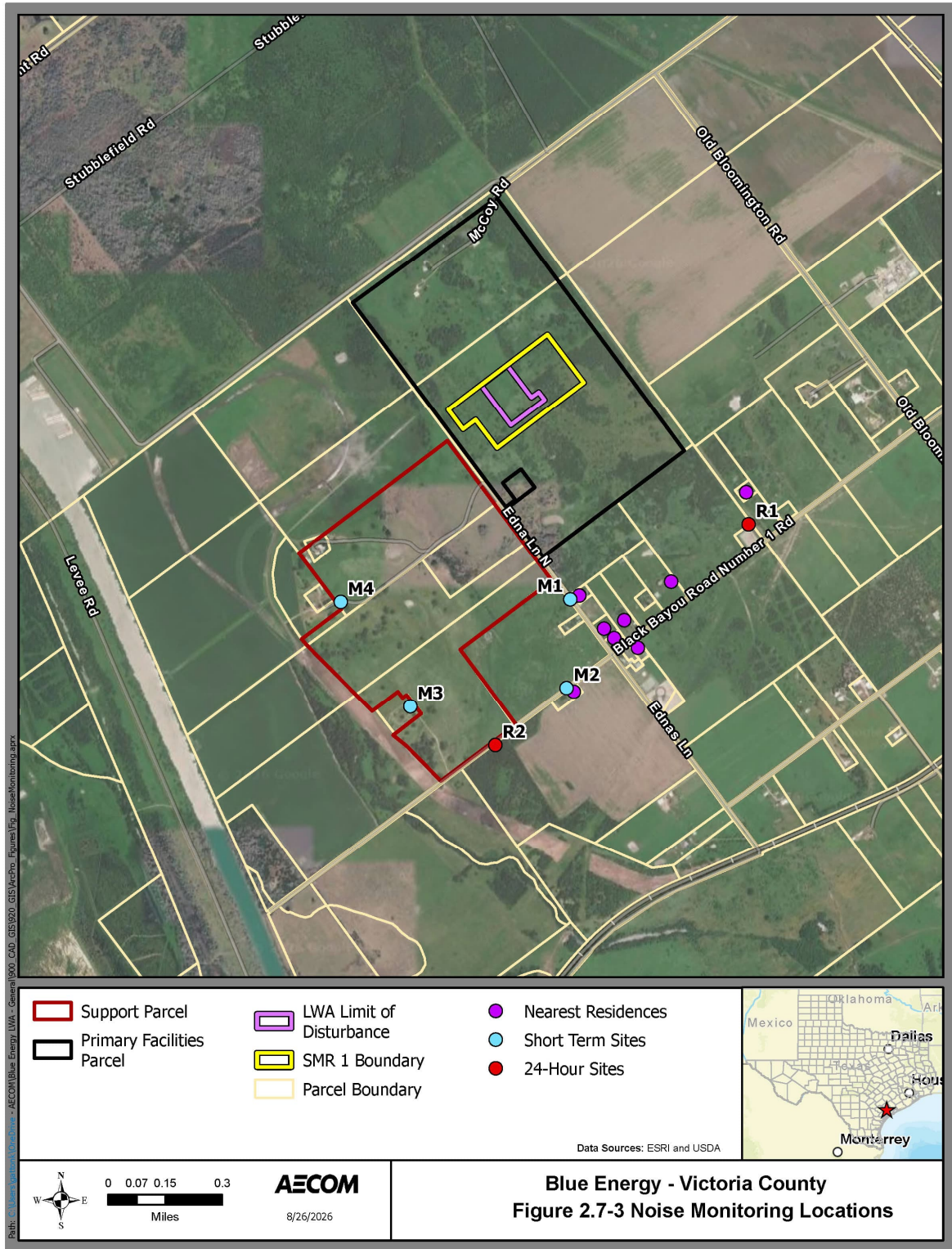


Figure 2.7-3. Noise Monitoring Locations

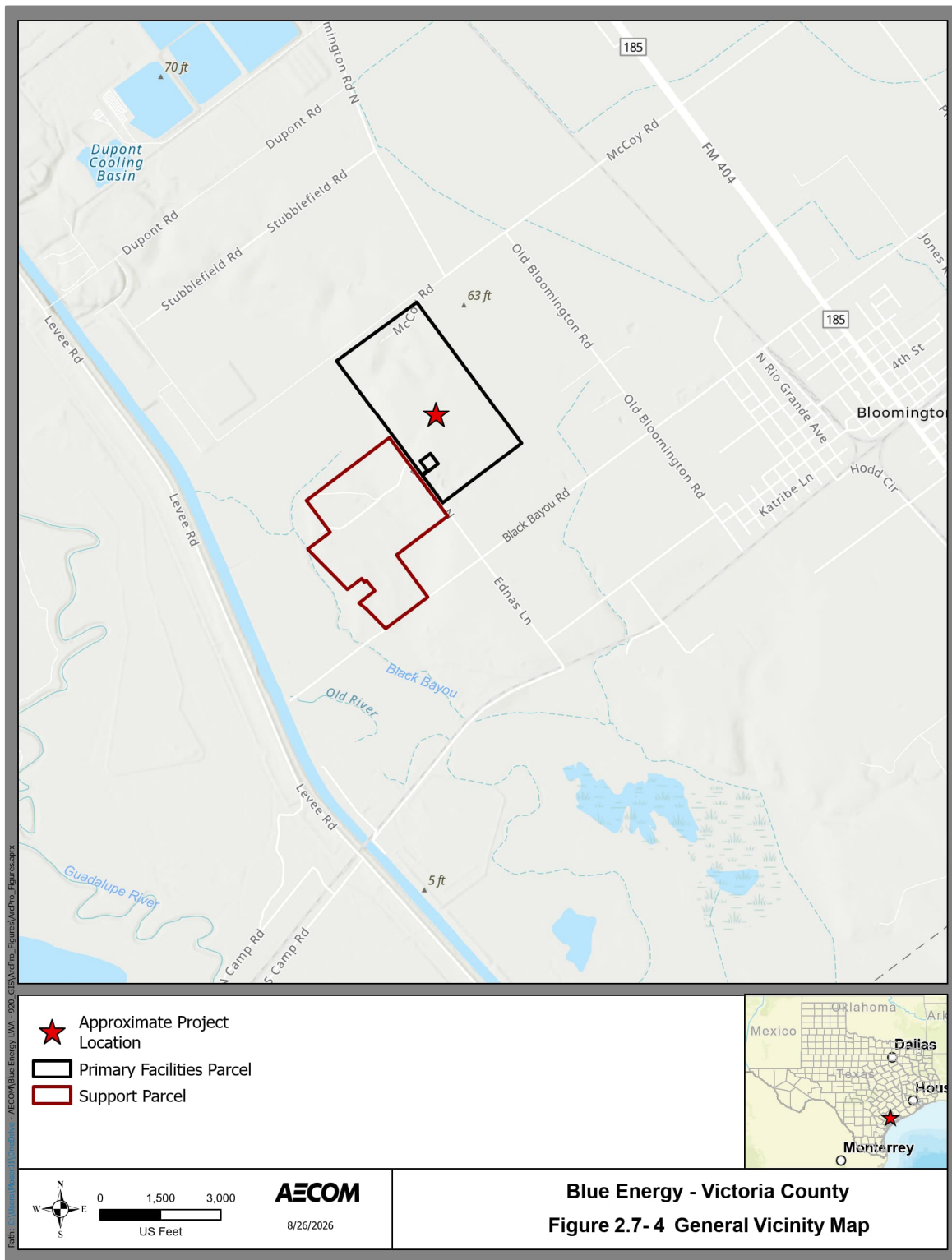


Figure 2.7-4. General Vicinity Map

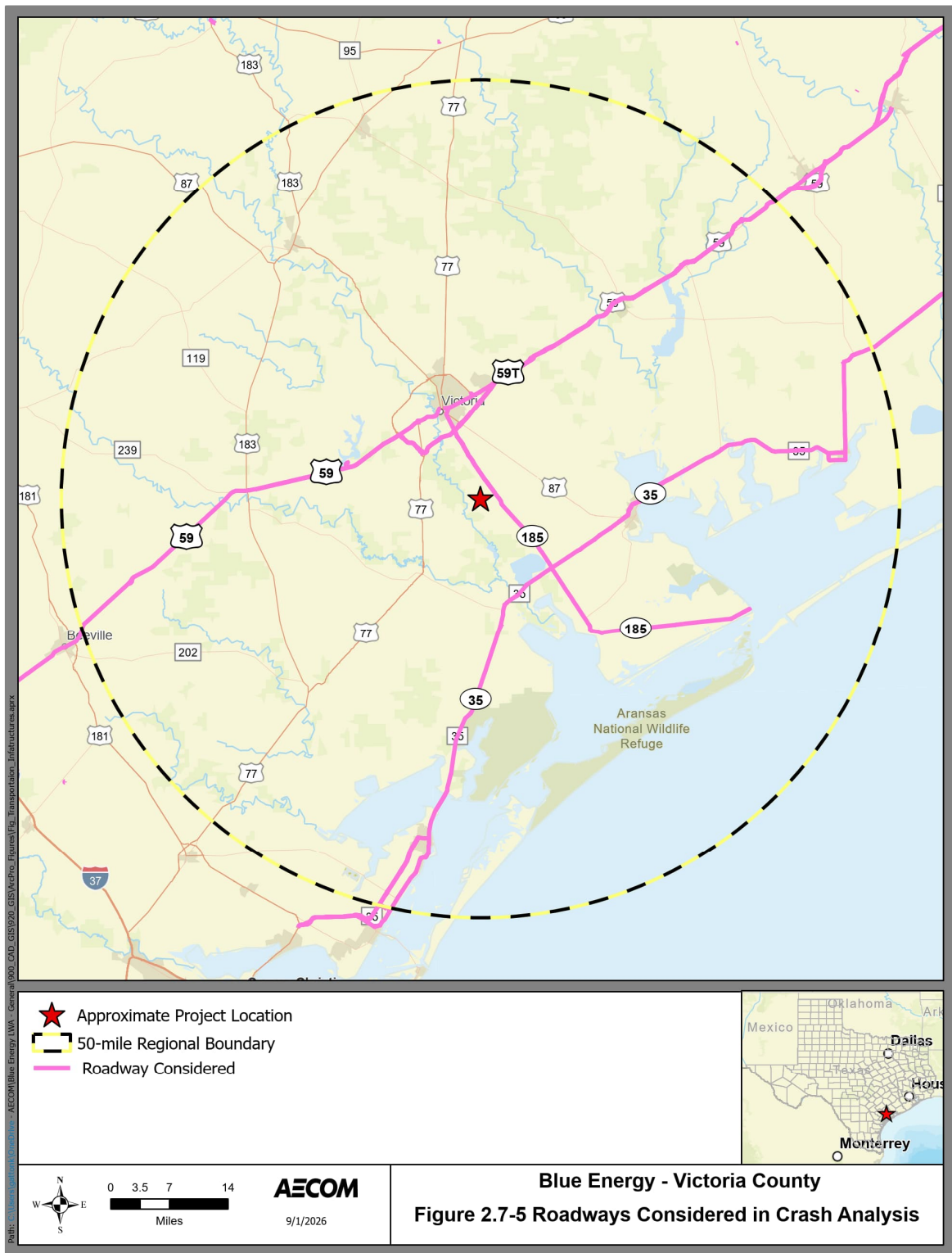


Figure 2.7-5. Roadways Considered in Crash Analysis

2.8 Geology

This section summarizes geologic conditions at the proposed BECPV site in Victoria County, Texas, emphasizing information most relevant to the LWA request. Section 2.8.1 describes the physiographic setting of the site near-region; Section 2.8.2 summarizes regional and site stratigraphy; and Section 2.8.3 identifies geologic conditions relevant to the proposed LWA excavation activities.

2.8.1 Physiography

The BECPV site lies in the Coastal Prairies subprovince of the Gulf Coastal Plains physiographic province. In Victoria County, this physiography is expressed as a broad, gently undulating plain built largely of alluvial and deltaic sediments (sand, silt, and clay) attributed to meandering of the Guadalupe and Colorado/Brazos fluvial systems (Ref. 127). Relief across Victoria County is subdued, with elevations generally ranging from less than 50 ft above mean sea level near the river bottoms in more southerly areas to around 200 ft along drainage divides in the north.

The site occupies a relatively low-relief upland terrace of the Guadalupe River, roughly 1.8 mi east-northeast of the active river channel and 1.2 mi east-northeast of the Victoria Barge Canal (Figure 2.8-1). Figures 2.8-2 and 2.8-3 show pre-canalization and recent ground-surface elevations and drainage patterns in the vicinity of the BECPV site. In addition to barge canal excavation, agricultural grading and mixed-use land development have modified natural drainage across much of the site and surrounding areas. ER Section 2.2.1.2 provides further information on site and near-region topography, surface drainage, and floodplains.

2.8.2 Stratigraphy

2.8.2.1 Regional and Site Vicinity Geology

Figure 2.8-4 presents the geologic setting within a 25-mi radius of the project site. This portion of the Coastal Prairies subprovince is underlain by a succession of fluvial and deltaic deposits that includes, from oldest to youngest, the Willis Sand, Lissie, and Beaumont formations (Ref. 128). Mapping data from the State Geological Survey of Texas (i.e., the Bureau of Economic Geology) indicate that surficial deposits present in the specific vicinity of the project site are sediments belonging to the Pleistocene-age Beaumont Formation, or possibly the younger (latest Pleistocene or Holocene) Deweyville Formation (Figure 2.8-5) (Ref. 129). The Deweyville Formation is a relatively thin unit of sand, silt, clay, and gravel deposited in relict stream meanders preserved adjacent to the main channels of the ancestral Guadalupe River (Ref. 128). The older Beaumont Formation represents a thicker fluvial sediment unit formed as a series of cross-cutting and/or superimposed stream channels, point bars, natural levees, overbank deposits, crevasse splay deposits, and floodplain or delta-plain deposits. Interbedded sands, silts, clays, and gravels of the Beaumont Formation are largely indistinguishable from the Deweyville Formation.

Beaumont strata are underlain by floodplain and deltaic sand, silt, and clay deposits ascribed to the Lissie Formation (Ref. 130). Beneath the Lissie Formation, the Pliocene-aged Willis Sand consists predominantly of sand and gravelly sand. The Willis Sand locally overlies or interfingers with the Miocene Goliad Formation. At locations where the Willis Sand is absent, the Lissie Formation may rest unconformably on the Goliad Formation.

Regional cross-sections and structural contour maps developed by Baker (Ref. 131) and Young et al. (Ref. 132, Ref. 133, Ref. 134) suggest that the Pleistocene-age Beaumont Formation and Lissie Formation deposits may reach thicknesses of 200 feet and 400 feet, respectively, in

Victoria and surrounding counties (Figures 2.8-6 and 2.8-7). Similarly, information developed for the Early Site Permit application for the nearby Victoria County Station nuclear power plant (submitted by Exelon Nuclear Texas Holdings, LLC; Exelon, hereinafter) places the base of the Beaumont Formation at approximately 100 to 200 ft below ground surface (bgs) and indicates a combined Beaumont-Lissie thickness of approximately 400 ft (Ref. 135). However, earlier work by Marvin (1962) suggests approximate maximum thicknesses of 600 ft each for the Beaumont and Lissie formations. Structural maps by Hosman (Ref. 136) estimate the top of the underlying Pliocene sequence at less than 1,000 feet below ground surface in Victoria County (Figure 2.8-8).

The Goliad Formation and successive older deposits of Miocene to Oligocene age extend to approximately 8,400 ft bgs. Below this depth, Paleogene sediment packages have an estimated base depth of approximately 20,000 ft bgs (Ref. 130, Ref. 136). These Paleogene sediments are underlain by Mesozoic bedrock and Proterozoic basement rock, the latter occurring approximately 41,000 ft bgs (Ref. 137).

In Victoria County, surficial alluvium and interbedded sands, silts, and clays of the Beaumont Formation, Lissie Formation, and Willis Sand Formation form a major hydrostratigraphic unit identified as the Chicot Aquifer (Ref. 133). The underlying Goliad Formation subsequently forms the so-named Evangeline Aquifer. Collectively, the Chicot and Evangeline aquifers represent the uppermost units of the regional Gulf Coast Aquifer. ER Section 2.2.1.6 provides further detail on the Gulf Coast Aquifer and site-specific hydrogeologic conditions.

2.8.2.2 Site Stratigraphy

Initial site investigations included borings and wells at twenty-five non-overlapping locations. Materials encountered during initial site investigations consist of fine- to coarse-grained alluvial sediments representing the range of Unified Soil Classification System soil groups. Broad intervals dominated by either fine- or coarse-grained materials can be readily correlated across the site, with localized changes in layer thickness and lithologic composition. Individual units commonly grade from sand or gravel into silty or clayey sand and, locally, into silt or clay. These gradational relationships are consistent with deposition in a meandering river system.

Organic clayey topsoil is generally present to depths of approximately 1 to 5 ft bgs but locally extends to depths of approximately 10 ft bgs. The topsoil is underlain by a sandy interval, generally 10 to 20 ft thick. A laterally extensive, predominantly fine-grained interval occurs below the near-surface sands, generally between roughly 20 and 60 ft bgs (elevation [EL] 40 to 0 ft). This interval consists principally of lean clay to fat clay, but contains discontinuous silt, sandy clay, and sand lenses.

The upper fine-grained interval is underlain by a predominantly coarse-grained interval generally extending from 60 to 110 ft bgs (EL 0 to -50 ft). This interval consists primarily of sand and gravel, with localized interbeds of silt, clay, and silty or clayey sand. A gravel-dominated zone is commonly present near depths of approximately 90 to 100 ft bgs (EL -30 to -60 ft).

In turn, a predominantly fine-grained unit occurs across much of the project site, at depths of approximately 110 to 130 ft bgs (EL -50 to -70 ft). This unit commonly consists of lean, fat, or sandy clay, but in some locations, is represented only by increased fines content in sands (grading to silty or clayey sand) or is absent altogether.

Sand and gravel again predominate between approximately 130 and 150 ft bgs (EL -70 to -90 ft). Another clayey unit, generally about 10 ft thick, occurs at depths between about 150 and 160 ft bgs (EL -90 to -100 ft). This fine-grained interval appears to be more consistently present near

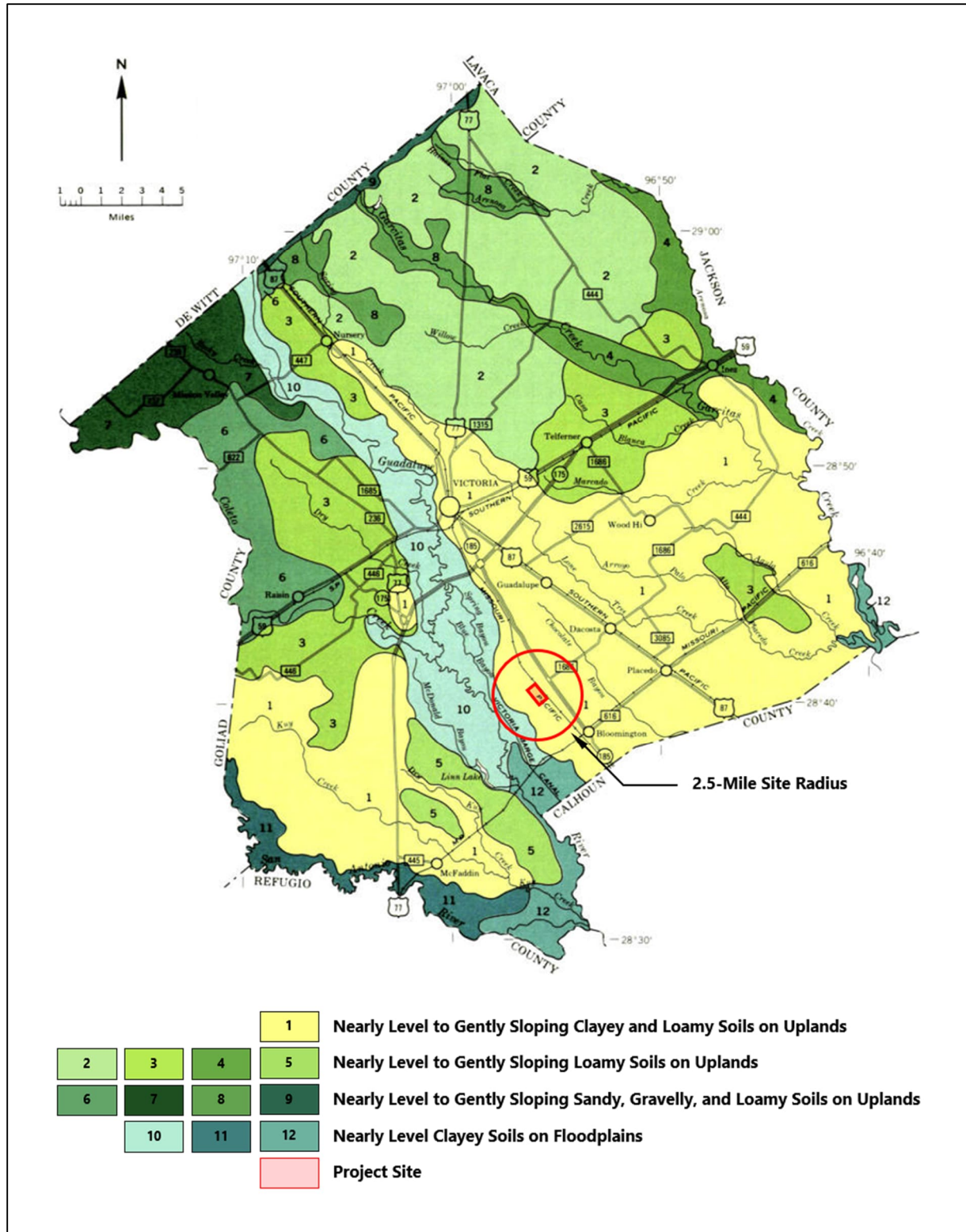
the center of the BECPV site but is absent or discontinuous in some other areas. Another coarse-grained interval, approximately 40 ft thick, generally occurs between depths of approximately 150 and 200 ft bgs (-90 and -140 ft).

Below approximately 200 ft bgs (EL -140 ft), alternating fine- and coarse-grained intervals continue through the maximum intrusive investigation depth of approximately 600 ft bgs (EL -540 ft).

2.8.3 Geologic Conditions Relevant to LWA Activities

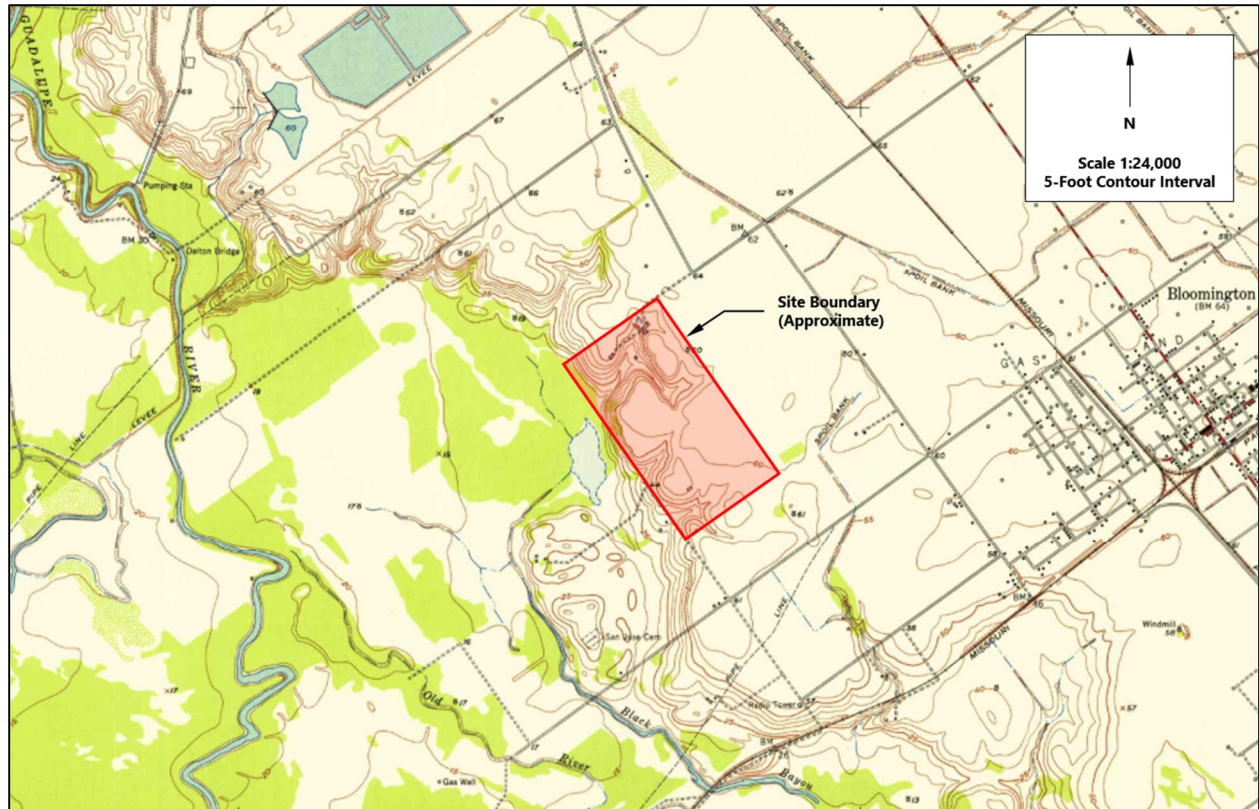
LWA activities, as introduced in ER Chapter 1 and described in greater detail in Chapter 3, will include construction of a reinforced-concrete diaphragm wall around the perimeter of the proposed circular reactor building shaft, followed by staged excavation of the soils within the wall. The up to approximately 140-ft-diameter shaft will extend to EL -90 ft, approximately 140 ft below the proposed rough plant grade. Shaft construction will therefore extend through the shallow fine-grained and coarse-grained intervals described previously in ER Section 2.8.2.2. Associated activities will include temporary groundwater control during excavation, handling and disposition of excavated materials, and placement and compaction of engineered fill, as needed.

These activities will locally disturb geologic materials within the construction footprint but will not alter regional or site geologic structure, affect bedrock or mineral resources, or disturb unique geologic features. Accordingly, no significant impacts to geology are anticipated, and no separate evaluation of impacts to geologic conditions is provided in Chapter 4 of this ER. Instead, construction-related matters associated with excavated materials, fill placement, erosion control, and groundwater management are evaluated and presented as components of the applicable environmental resource areas within ER Chapter 4.



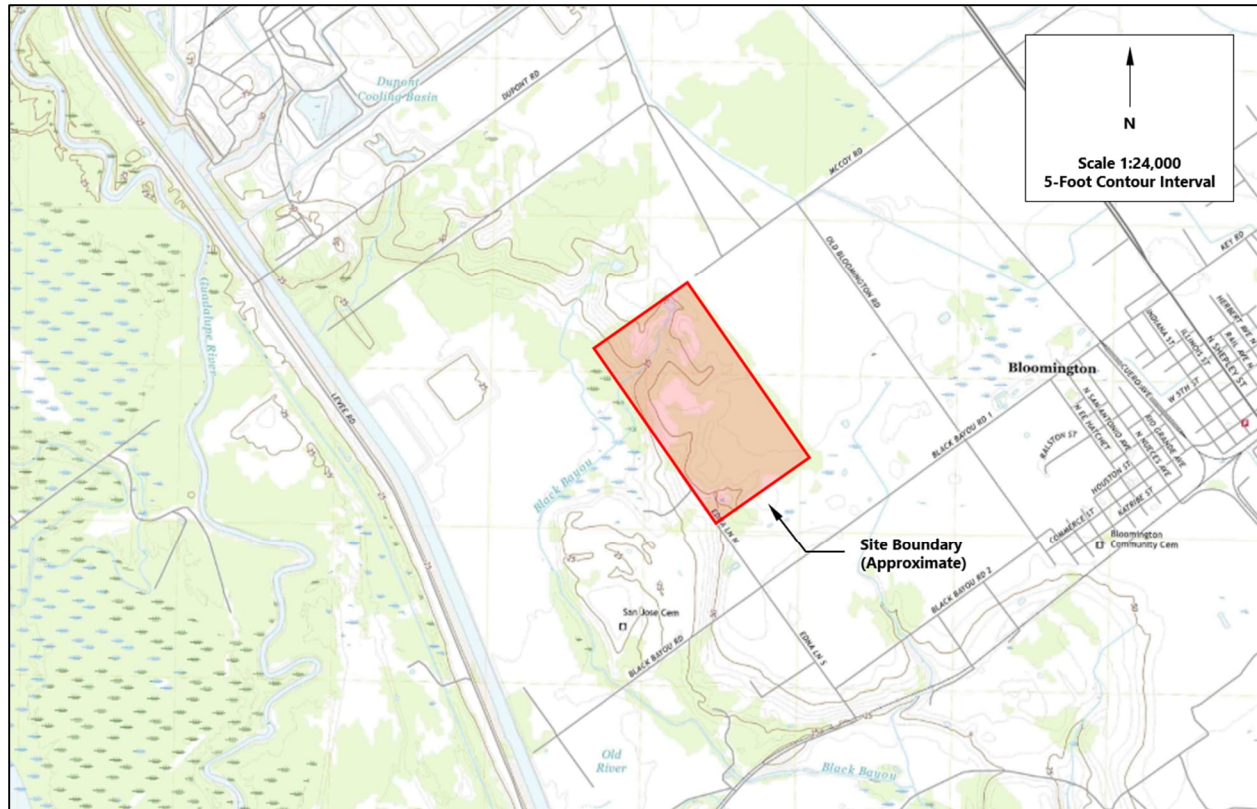
Source: Modified from (Ref. 138)

Figure 2.8-1. General Soil Map of Victoria County, Texas



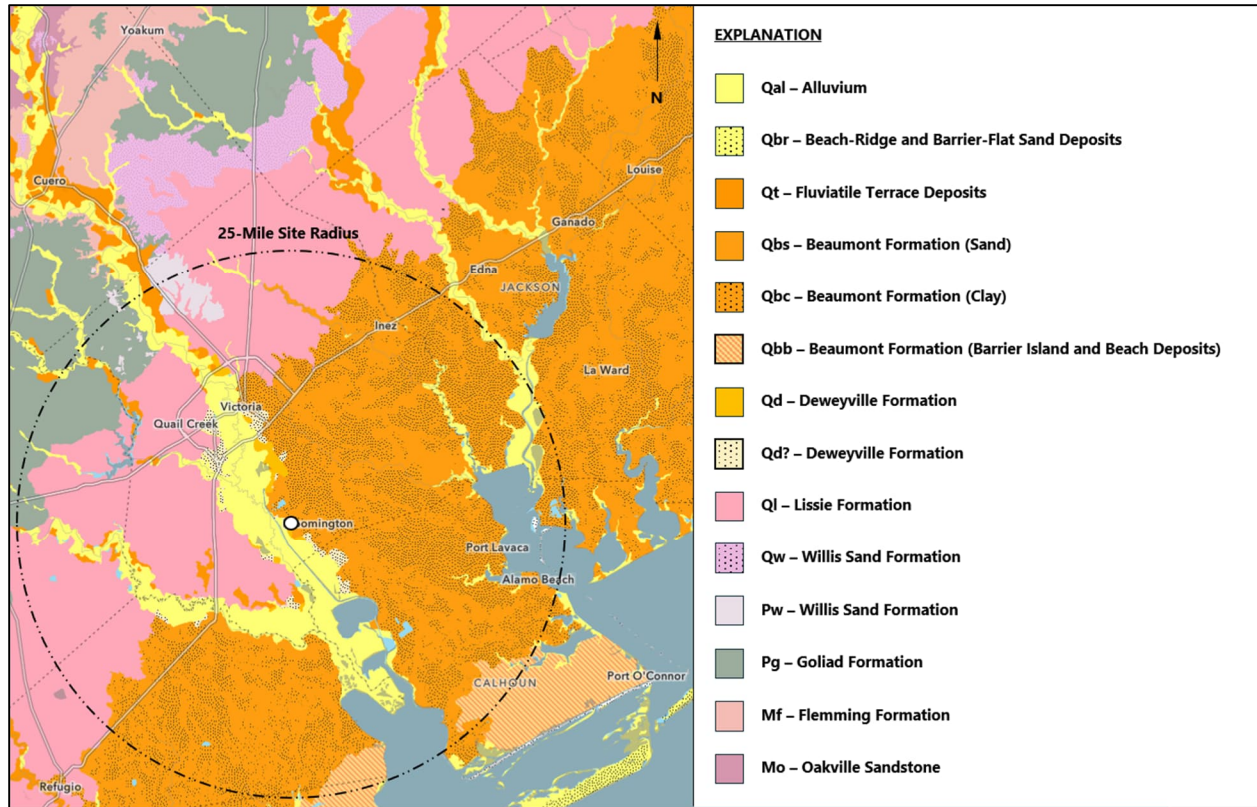
Source: (Ref. 139)

Figure 2.8-2. Pre-Canalization Site Area Topography, Based on 1946/47 Imagery and 1951 Plane-Table Surveys



Source: (Ref. 140)

Figure 2.8-3. Post-Canalization Site Area Topography, Based on 2016 Imagery and 2019 Elevation Data



Source: After (Ref. 141)

Figure 2.8-4. Geologic Map of the 25-Mile Site Radius

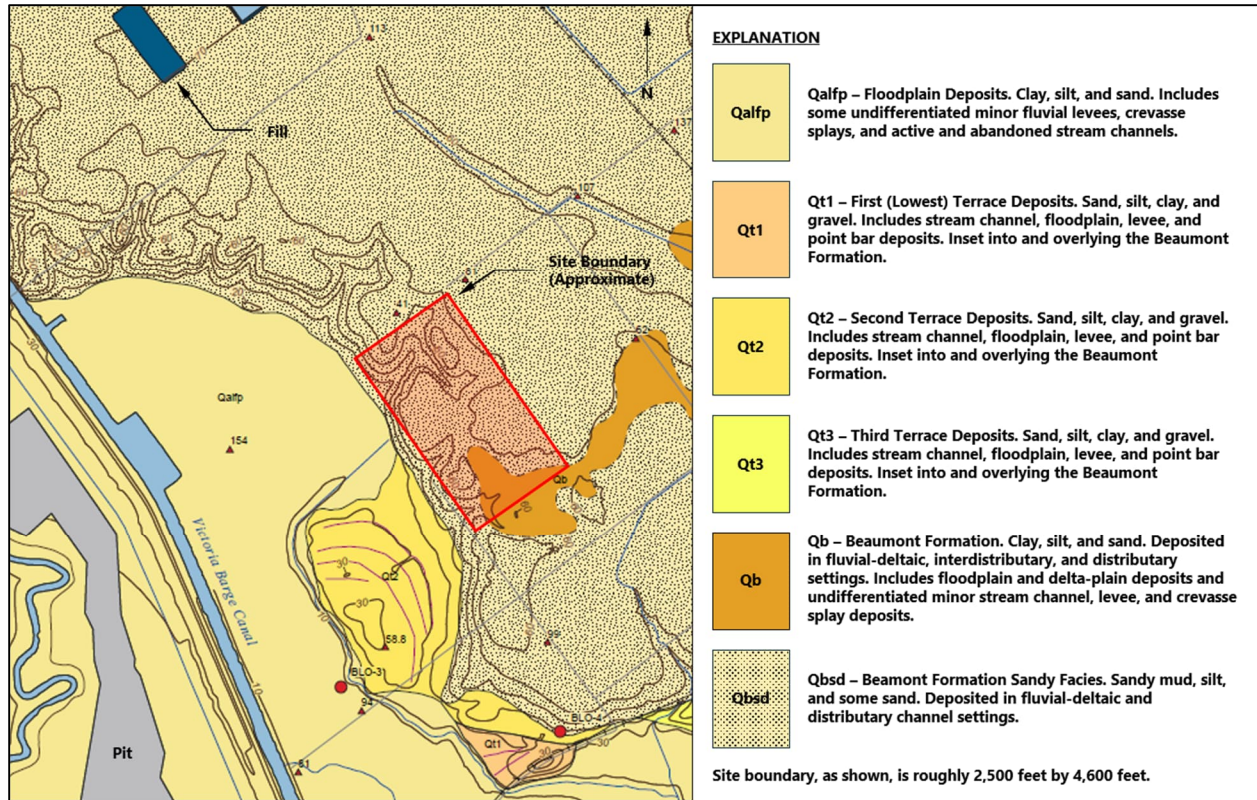
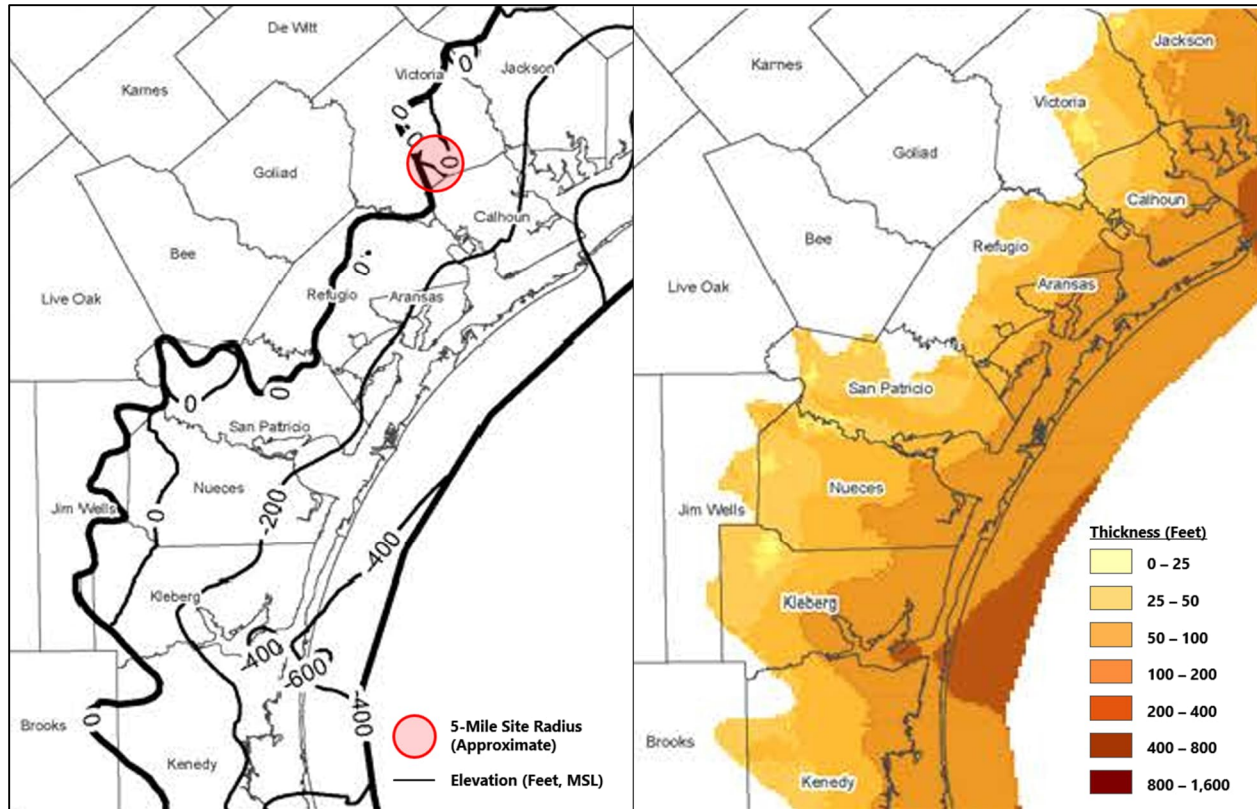
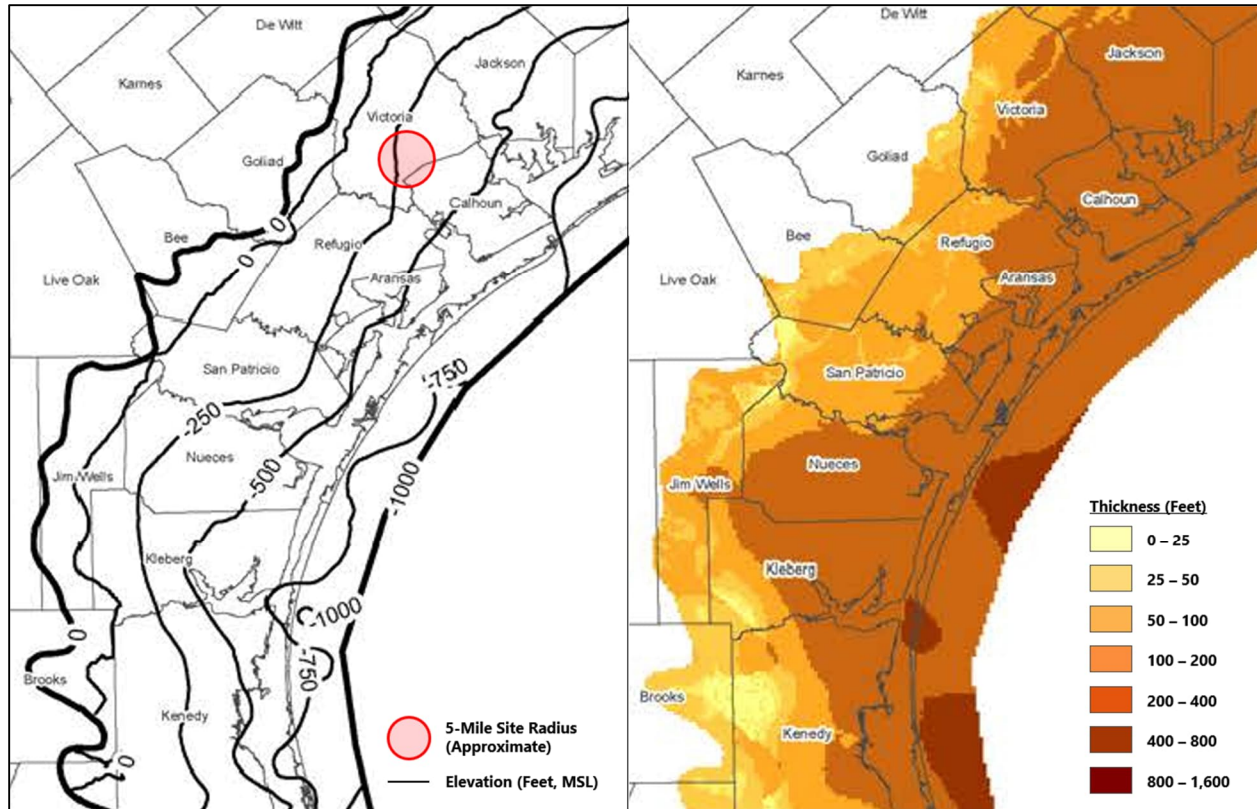


Figure 2.8-5. Geologic Map of the LWA Project Site



Source: Modified from (Ref. 133)

Figure 2.8-6. Base Elevation (Left) and Thickness (Right) of the Beaumont Formation



Source: Modified from (Ref. 133)

Figure 2.8-7. Base Elevation (Left) and Thickness (Right) of the Lissie Formation

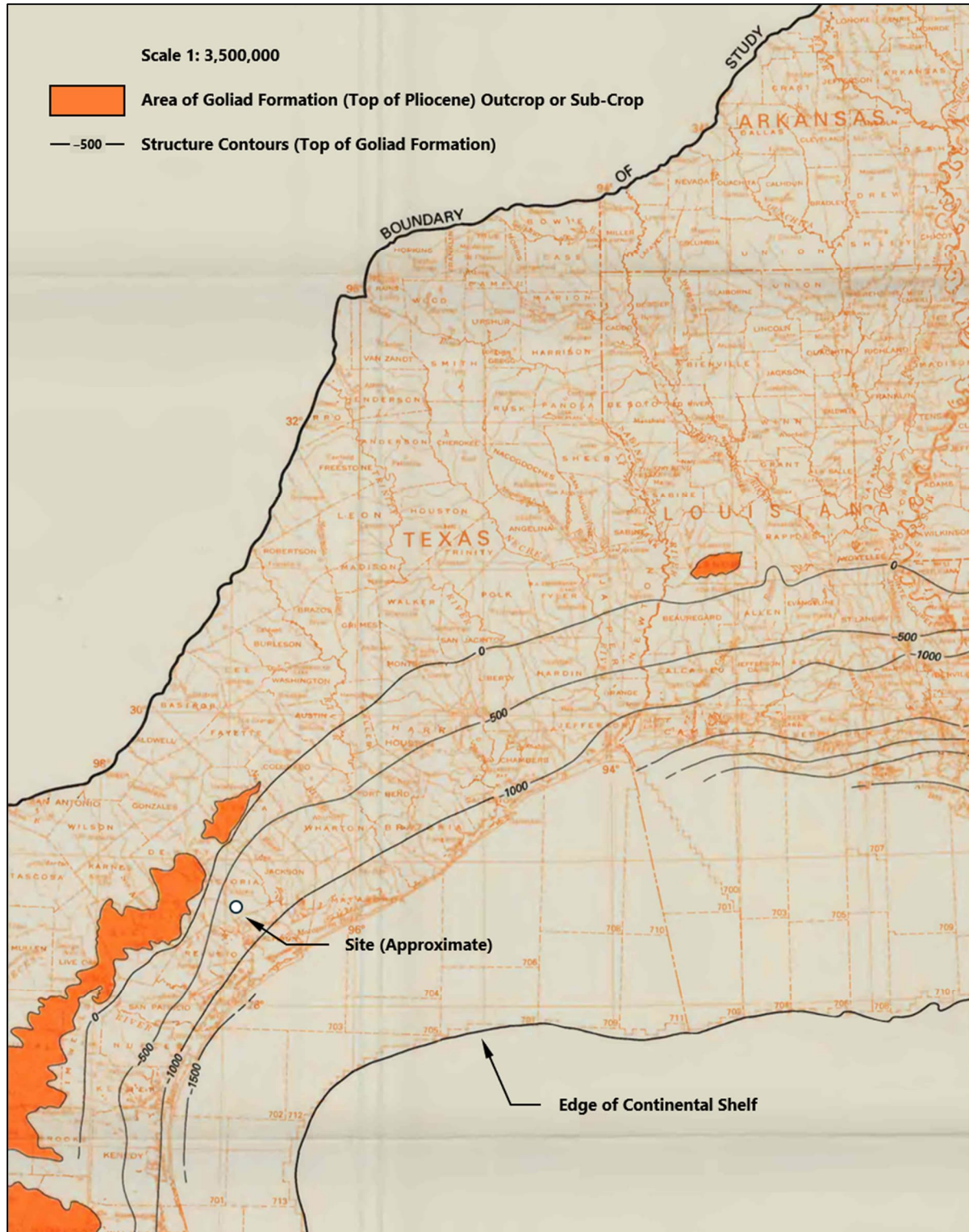


Figure 2.8-8. Map Showing the Elevation of the Top of Pliocene Deposits in the Site Region

2.9 Radiological Environment and Radiological Monitoring

This section is not applicable to the LWA.

CHAPTER 3 – SITE LAYOUT AND PROJECT DESCRIPTION

As specified in 10 Code of Federal Regulations (CFR) 51.45(b), this Environmental Report (ER) contains a description of the proposed action with sufficient information to describe the Blue Energy Center – Port of Victoria (BECPV) Limited Work Authorization (LWA) project site layout, design, and the activities required to execute the scope of the construction activities authorized by the LWA.

3.1 External Appearance of LWA Project

The LWA project site is mostly rural and undeveloped, with some previously disturbed areas. An aerial view of the current site is included in Figure 1.4-1. Representative photos of the LWA project are included as Figure 3.1-1 through Figure 3.1-4.

The LWA project would ultimately employ Blue Energy's gas to nuclear strategy (i.e., gas-to-nuclear strategy), which allows a nuclear steam turbine island to initially be constructed and energized with exhaust heat of combustion turbines. This strategy allows a nuclear project to produce energy earlier in the development and protects the LWA project against potential delays in construction in equipment specific to the nuclear island equipment (reactor, containment, etc.). This strategy creates a slightly different layout than would normally be seen on a purely nuclear plant site, especially as the reactor building is not part of the initial construction. However, this LWA ER covers only the construction activities authorized by the LWA.

The preliminary layout for work included in the LWA and shaft supports exemption is in Figure 1.4-2, which includes a reinforced crane pad, shaft excavation area, pile installation areas for the radwaste, service, and control buildings, temporary excavation spoils storage, parking area, five conex diesel generators, bentonite plant, office trailer, and rebar cage fabrication area. All shaded areas of the figure indicate areas that will be disturbed prior to initiating the LWA construction scope. These disturbances will be associated with the construction of the combined cycle gas turbine (CCGT) plant (BECPV Phase 1). The acreage of area to remain undisturbed is approximate and subject to actual topographic slopes on site.

The LWA limit of disturbance is inclusive of space required for supporting construction equipment, power supplies, and laydown of materials, as well as worker support facilities (includes lavatories, parking, and other welfare facilities). This puts the LWA limits of disturbance area at about 7.7 acres (ac).

Table 3.1-1 details the permanent land disturbances. No LWA land disturbances are considered temporary.

Equipment, power supply, and materials space would be commensurate with the phasing of civil activities within the LWA area. Parking included in the LWA limit of disturbance would be commensurate with the phasing of civil activities within the LWA area. The crane pad may be a temporary structure and would also support turbine building activities. Spoils excavated due to civil activities would be temporarily held in the LWA area of disturbance and relocated to the 200-ac Support Parcel. The temporary bentonite mixing plant will be located adjacent to the shaft. The temporary concrete batch plant provides concrete for all construction activities. It is required for the CCGT construction and would also be utilized for LWA construction. The concrete batch plant will be located along McCoy Road such that concrete trucks would need to travel McCoy Road (possibly using the future heavy haul road for Edna Lane) to access the Primary Facilities Parcel.

Site drainage would be directed to south and southwest of the LWA project to detention pond areas. Roadways to the south lease line would receive culverts and/or other adequate and required drainage infrastructure to direct runoff to natural drainage areas.

The LWA project limit of disturbance is set far back from any major roads and most of it would not be highly visible. The tallest equipment (two crawler cranes) on site to support LWA work scope (piling installation and shaft excavation) are expected to be less than 120 feet (ft) tall, so there should be minimal visual impact during construction activities authorized the LWA. Additional information on potential visual disturbance is described in Section 2.4.2.5. Associated facilities would not be built until a later date and are not included in the external appearance and plant layout of the LWA. However, these facilities may be used in future work on the site.

Based on the preliminary site layout, the following dedicated work areas are estimated for diaphragm wall installation:

- Slurry tanks: up to 14,000 square feet (SF)
- Slurry plant, desander and spoils pit area: approximately 6,000 SF
- Cage Fabrication area: approximately 8,000 SF

This results in a dedicated laydown/site support area of up to approximately 28,000 SF (0.6 ac). The total disturbed area would be larger when the shaft footprint, service crane travel areas, and concrete trucks travel areas are included.

The entire Primary Facilities Parcel would have trees/brush removed as part of the initial site preparation for the CCGT and balance of plant (BOP) scope of work for Phase 1. The site would also be cleared, grubbed, and rough graded, except for approximately 54.75 ac. that is reserved for small modular reactor (SMR) Units 2 through 5 (Phase 3). Based on preliminary site characterization, it is assumed a minimum of 3.5 ft. needs to be cut to remove organics/topsoil. More detailed estimates of cut/fill will be estimated as part of the rough grading plan and can be addressed in the full ER for the Construction Permit Application (CPA), as necessary.

Table 3.1-1. Land Disturbance Associated with LWA Activities

Habitat Type	Permanent Acres
Scrub-Shrub	2.1
Forested	0.01
Herbaceous Pasture	13.6
Total	15.7



Figure 3.1-1. Ground Level Photo Looking West Across the Primary Facilities Parcel from the Eastern Corner



Figure 3.1-2. Ground Level Photo Looking North across the Primary Facilities Parcel from the Western Area of the Site



Figure 3.1-3. Ground Level Photo Looking North from near the center of the Support Parcel



Figure 3.1-4. Ground Level Photo Looking North across the Support Parcel from the Western Portion of the Site

3.2 Proposed Plant Structures, Systems and Components

This section is not applicable to the LWA.

3.3 Building Activities

Building activities, methods, and durations influence the environmental impacts of the LWA project. The sequence, type, and duration of activities needed for the LWA activities and indicate the sequencing and estimated duration of activities are described in this section.

Clearing, grading and site development would take place first, outside of the LWA, currently planned for Q2/Q3 of 2027. The current schedule assumes shaft installation and nuclear island piling are sequential. With shaft, piling, and crane pad installation occurring from Q4 2027 through Q2 2029, a total of approximately 18 months are anticipated for LWA activities. All dates are tentative as they are subject to construction delays.

The average number of workers engaged in construction activities defined under the LWA is estimated at 45.

3.3.1 Construction Activities

The LWA project shaft construction area footprint for piling, shaft excavation, and crane pad is approximately 1.4 ac. Additional areas would be required for construction support (laydown, batch plant, etc.). The area required for rebar cages would be minimized by using just-in-time delivery of pre-tied cages. Additionally, this area may also be used for rebar for the Turbine Building (TB), which is not in the LWA scope. However, for an initial estimate, another 6.3 ac is assumed to be required for construction support and laydown for a minimum total area of 7.7 ac of disturbed area for the LWA Proposed Action, which has been rounded to an estimated 10 ac with an additional 5 ac reserved for excavated material.

Shaft construction would occur first, with diaphragm wall installation occurring first and estimated to take up to 27 weeks, with an additional 8 weeks needed for equipment mobilization and demobilization, and 16 weeks needed for mass excavation. An additional 6 weeks would be required for concrete plug installation (bottom slab), but it is currently assumed that a plug is not required.

Approximately 1,000 piles are required (384 for the crane pad (70 ft deep with 4x diameter spacing), and 629 piles total for the CB, RWB, and SB (60-ft deep with 5x diameter spacing) for the purpose of estimating the volume of concrete. The total amount of concrete required for the piles in the LWA scope would be in the range of 4,230 to 5,920 CY (depending on waste factor). The volume for the foundation slab for the crane pad would be 1,320 to 1,470 CY (depending on waste factor). The volume of concrete required for the diaphragm walls, assuming the worst-case 60-in thick wall design, would be approximately 22,785 CY. After accounting for reinforcing steel (e.g., rebar), a reasonable estimate for total amount of grout/concrete required for piles, the crane pad, and the diaphragm walls would be 29,500 CY.

The construction worker schedule is yet to be determined, but the shaft construction schedule currently assumes two 8- to 10-hour shifts per day for 5 days each week for 43 weeks. The shaft construction workforce will be 20 to 23 workers for each shift on average, and occasionally up to 25 workers for certain activities. Conduent pile construction would require 10 to 15 workers working one shift per day. The average workforce on site per day (including both shifts) would be approximately 45 workers over the 43-week duration. The maximum peak workforce would be approximately 65 workers during cage installation and concrete placement.

Major equipment is expected to include a Hydromill carrier and cutter, Clamshell carrier and a grab, two crawler cranes, desander and continuous mixer, slurry tanks and pumps, generator, centrifuge/dewatering units. Similar equipment may be used, and final equipment would be confirmed prior to mobilization. Typical major equipment is listed below:

- Hydromill: Bauer MC 128 Carrier with a Bauer BC-40 Cutter
- Desander: Bauer MAT BE 600
- Clamshell Grab: Bauer MC 96 Carrier with a Stein Bucket
- Concrete Mixer: MAT SKC-30-C Continuous Mixer
- Service Crane: 2 x Crawler Crane (275-ton, 110-ton)

All major equipment and construction materials are expected to be transported to the site by road. Large equipment such as Hydromill, service cranes, and clamshell would be transported into multiple loads and would be assembled onsite. Reinforcing steel, bentonite, fuel and concrete would also be delivered by truck. No rail or barge transportation is anticipated.

For preliminary planning, there is assumed use of one diesel generator (approximately 1,200-1,399 kilovolt-amperes at 600 volts) to power the desander and centrifuge systems. In addition to bentonite and concrete, approximately 800 gallons of diesel fuel per day are estimated for operations (i.e. service crane, generator, excavator, pumps, Hydromill, clamshell) not including concrete and bentonite batch plants, delivery trucks, haul trucks. Actual fuel consumption would vary depending on the final equipment and schedule.

Crushed stone or gravel would be needed temporarily to improve ground conditions and additional temporary crane pads (or a stone working surface) would need to be installed to allow for construction activities. The amount of material and associated number of shipments would be estimated as part of the rough grading plan and will be addressed in the full ER for CPA Part 2, as necessary. Where possible, materials would be transported via the barge canal or rail. However, it can be initially assumed that 653,975 cubic yards (CY) of engineered fill would be brought in from offsite from a local quarry via truck for initial site preparation, which is not considered to be part of the LWA ER scope.

All water for the site would be trucked from Victoria to the project site for construction, sanitary, and potable uses.

3.3.2 Excavated Material, Waste, and Fill

Soil excavated as part of the LWA (i.e., shaft excavation and piling installation) would be stored onsite (either on the Primary Facilities Parcel or the Support Parcel to the southeast) and would be reused if possible. The final location of excavated material is yet to be determined. The long-term plan is to put unsuitable soil on the Support Parcel and seed it.

Pre-trenching is not anticipated across the full shaft footprint, but limited excavation would be required for guide wall installation and pre-excavation of the individual diaphragm wall panels. However, a work platform suitable for supporting the equipment would be required. The only in-ground support structures to be abandoned in place in is to be the diaphragm wall.

For diaphragm wall installation the conceptual design is a 140-ft inner diameter shaft, 245-ft deep from top of working platform. Diaphragm wall panels would be installed from within the shaft. For diaphragm wall installation, water would be required for bentonite mixing, slurry processing, and equipment cleaning. An onsite centrifuge system adjacent to the de-sanding equipment would be utilized to separate solids and liquids from the slurry during production and during final slurry disposal. The spoils (separated solids) would be discharged back towards the

onsite spoils management pit. The resulting process water would be treated prior to discharge or disposed offsite. Desander plant, slurry storage tanks, cage fabrication areas, service crane access areas, and concrete truck routes tend to be remained fixed for the entirety of installation. Any concurrent adjacent work would be coordinated based on the final scope and site logistics.

The amount of soil excavated for shaft installation is conservatively estimated to be approximately 2,000,000 cubic feet (ft³) or approximately 57,000 cubic meters (m³). (based on estimates from the Clinch River CPA) The outer diameter of the reactor building is approximately 121 ft and the shaft is assumed to be up to 40 m deep. Additional space needs to be allotted construction (e.g., to allow welding of DP-SC walls). Therefore, an additional 16 ft of depth is assumed for conservatism and to account for any potential over excavation. The current shaft design inner diameter is 140 ft. Therefore, $V_{\text{shaft excavation}} = \pi \times (140 \text{ ft} / 2)^2 \times 131 \text{ ft} = 2,016,587 \text{ ft}^3$ or 74,688 CY. The walls will either be 4 ft or 5 ft. thick. It is assumed the walls are 5 ft thick for these estimates. To account for the diaphragm walls, an additional 39,134 CY of spoils is estimated (this includes an allowance of 15 percent for overbreak) so that the total volume is approximately 114,000 CY. A bulking factor of 25 percent was recommended for these spoils. Assuming a standard dump truck has a capacity of 13.1 CY for clay/sand/soil this would require approximately 10,900 truckloads.

For the LWA scope, it was conservatively estimated that the volume of the piles required for buildings adjacent to the nuclear island (i.e., the reactor building) would be 4,778 CY. If a similar overbreak factor (15 percent) and bulking factor (25 percent) are applied, then an additional 525 truckloads would be required. Therefore, the total number of 13.1-CY truck loads would be approximately 11,500.

The total amount of excavated material to be used as fill material onsite is currently unknown. Until detailed estimates of cut/fill are available, a rough order of magnitude estimate is 174,000 shipments based on the following assumptions:

- A standard dump truck has a capacity of 10 m³ for clay/sand/soil;
- 5 ft. of soil is removed across all of the graded area (i.e., 245 ac – 54.75 ac (undisturbed area) = 187.25 ac x 5 ft ≈ 1.51M CY;
- This value is then increased by a factor of 1.5 to account for bulking (i.e., swell of 50 percent);
- The volume of cleared/grubbed organic materials is ignored; and
- Results are rounded up to the nearest thousand.

The proposed disposal sites for unused organic material is assumed to be the Victoria County Landfill in Bloomington, TX operated by Republic Services. As discussed, the unused organic material will be removed as part of the initial clearing, grubbing, and rough grading for the CCGT plant (BECPV Project Phase 1), and is not considered to be part of the LWA scope. All excavated material related to LWA construction activities would be retained onsite (i.e., the Support Parcel or the Primary Facilities Parcel).

Although engineered backfill and grout injection are not currently expected to be required to support shaft construction or pile installation, the LWA scope described in this LWA ER includes the potential for fill/backfill and ground improvement if required. This is included in the scopes so that if it is determined backfill or subsurface preparation is required at a later date, additional exemptions/LWAs would not be required.

3.3.3 Excavation and Dewatering

No drain/weep holes are expected, however, there is potential for dewatering of trapped water during excavation or long-term depressurization of the shaft prior to the installation of the reactor building. In the event of long-term dewatering, the installed system should be self-sufficiently operational. There would be no other groundwater withdrawals to support LWA construction.

Construction of the deep reactor building shaft as part of LWA construction activities would require active groundwater control. Perimeter diaphragm walls would be installed in conjunction with an underlying thick clay aquitard to isolate the safety-related nuclear island, necessitating deep dewatering operations. Diaphragm walls would be in place prior to the dewatering required for shaft construction.

A hydromill would be used for diaphragm wall installation, along with additional specialized equipment such as bucket grabs, clamshells, and desanders. Design for the excavated shaft in-ground supports (diaphragm walls) is to be determined, but estimated dimensions are included in Table 1-1. Dewatering and/or pressure relief wells would be required during excavation and to maintain the shaft after excavation is completed. Blue Energy may also consider alternative designs, such as use of a concrete plug, in order to minimize or eliminate the need for continuous dewatering. Additional groundwater data is currently being gathered in order to inform the conceptual shaft design and associated dewatering plan. Waterproofing using membranes or coatings would also take place. For all equipment in use onsite to support the LWA project, the tallest equipment would be cranes, which would measure less than 120 ft, creating minimal visual impact.

Periodic or continuous dewatering is not expected to be required for the open excavation as seepage through the diaphragm walls and the aquitard is not anticipated, based on current site characterization data. If excessive seepage were to occur, the need for a plug or different waterproofing systems would be reevaluated and the shaft would be modified, as necessary. Additionally, a sensitivity was performed that conservatively assumed a constant seepage of 33.2 gpm and corresponding dewatering rate for a year, at which point, after the cessation of pumping, groundwater levels quickly rebounded and showed substantial recovery.

Active Dewatering Flow Rates: The only expected groundwater withdrawal would be associated with the dewatering that is required for shaft construction, specifically the groundwater within the soil that will be excavated inside the cylinder formed by the diaphragm walls with the thick clay aquitard at the bottom. Based on preliminary groundwater modeling, the initial gravity drainage and confined storage release are estimated to remove approximately 2.30 million gallons from the enclosure.

Dewatering Rate and Duration: At a conservative long-term rate of 50 gallons per minute (gpm), shaft cylinder dewatering requires approximately 1 month (well within the estimated 16-week or greater excavation schedule). Higher initial pumping rates may be employed during initial excavation stages but they will have no impact on groundwater outside the confined soil column. For example, at an initial pump rate of 228.6 gpm, it would only take about a week to dewater the shaft cylinder. The annual average pump rate during the LWA duration would therefore be less than 4.5 gpm.

3.3.4 Best Management Practices for Construction

Best Management Practices (BMP) for erosion, sediment control, pollution control, and stormwater management will be used during LWA construction activities.

Heavy equipment operations necessitate the storage and handling of hazardous fluids, including diesel fuel, gasoline, hydraulic fluids, turbine lubricants, form-release agents, and concrete curing chemicals. Inadvertent leaks or unmitigated industrial spills present a direct threat to adjacent soils, shallow perched groundwater, and downstream drainages. Blue Energy would mitigate chemical risks by implementing BMPs and an Integrated Pollution Prevention Plan / Spill Prevention, Control, and Countermeasure (SPCC) Plan prior to staging chemical volumes:

- *Secondary Containment:* All bulk fuel storage tanks, chemical drums, and hazardous fluid lockers would be positioned inside fluid-impervious secondary containment structures engineered to hold 110 percent or more of the largest single tank volume.
- *Designated Fueling Zones:* Equipment refueling and maintenance maneuvers would be restricted to designated, stabilized impervious pads positioned with appropriate setbacks from drainage swales, ponds, or ditches.
- *Zero Subsurface Infiltration:* The site infrastructure contains no planned or engineered discharges of industrial wastewater or stormwater to the subsurface via active infiltration basins or injection wells, completely eliminating deep subgrade contaminant pathways.

The construction of augered piles, reinforced concrete foundation slabs (the crane pad), and deep diaphragm walls requires large volumes of concrete and engineered bentonite slurry. Uncontrolled releases of these alkaline compounds present severe structural hazards to local aquatic life due to extreme high-pH characteristics and high suspended solids concentrations. To eliminate cementitious material transport to unclassified watercourses, the following containment controls are mandatory:

- *Closed-Loop Bentonite Recovery:* The onsite bentonite batch plant will run as a closed-loop system, continually recovering and recycling slurry media adjacent to the excavation shaft.
- *Washout Isolation:* All concrete truck mixer washout, grout pumping residuals, and tool cleaning fluids will be directed into fully contained, impervious onsite washout structures. High-pH water accumulated within these traps would be periodically pumped out and hauled to an authorized facility; no direct discharge to land, subgrade soils, or stormwater networks is permitted.

LWA-related construction activities will comply with applicable state and federal air permits. Additionally, to minimize fugitive dust emissions, Blue Energy would implement BMPs consistent with United States (U.S.) Environmental Protection Agency (USEPA) AP-42 guidance and applicable Texas Commission on Environmental Quality (TCEQ) permit requirements. Measures may include:

- Watering exposed soils and haul roads.
- Temporary stabilization of disturbed soils.
- Seeding or revegetation of inactive construction areas.
- Covering trucks transporting dusty materials.
- Limiting vehicle speeds on unpaved surfaces.
- Prompt restoration of disturbed areas.

3.3.5 Construction Noise

Construction activities under the LWA scope of work would result in temporary increases and fluctuations in ambient noise levels in and around the LWA project site. The magnitude of these

changes depends on the number and type of equipment in use at any given time. Applicable federal, state, and local regulations governing noise from construction activities are discussed in Section 2.7. Existing (background) noise conditions and the locations of noise-sensitive human-receptor locations and their respective distances to the LWA project site are also detailed in Section 2.7.2.

Noise associated with construction activities (LWA and shaft construction and redress) would primarily be generated by the operation of heavy construction equipment and vehicles and by stationary equipment used to support construction. Typical sources include internal combustion engine equipment (e.g. heavy trucks, graders, generators), impact equipment (e.g., jackhammers and pneumatic tools), and stationary equipment (e.g., pumps, generators, and air compressors). Representative noise levels measured at a reference distance of 50 ft from earthmoving equipment generally range from about 73 to 96 A-weighted decibels (dBA), while engine-powered materials-handling equipment (e.g., concrete mixers, cranes) typically ranges from approximately 75 to 90 dBA at 50 ft (Ref. 142). Stationary equipment, such as pumps, electric power generators, generally produces noise levels of approximately 70 to 80 dBA at 50 ft., with pumps typically at the low end of this range. Noise levels for conventional pile driving are more variable due to differences in pile type, size, and installation conditions; however, peak levels are commonly on the order of approximately 100 dBA (or higher) at 50 ft. Accordingly, the upper end of the range for equipment-generated noise at 50 ft may approach approximately 101 dBA for non-impact equipment and approximately 110 dBA for impact equipment, depending on the specific equipment and activity (Ref. 112).

While Table 7.3 of the U.S. Federal Highway Administration Highway Construction Noise Handbook (Ref. 142) lists some equipment with maximum noise levels above 85 dBA at 50 ft, most equipment has maximum levels of 85 dBA or less at that distance. Use of equipment that can exceed 85 dBA at 50 ft—such as the clamshell shovel—would be limited during LWA construction activities. Exceedance of 85 dBA at 50 ft would be brief.

As shown in Table 3.3-1, attenuated noise levels from construction equipment used on the LWA project site range from 80-85 A-weighted decibels (dBA) at 50 ft (15 m) from the noise source. At a distance of 98 ft (30 m) from the noise source, these noise levels decrease to below 80 dBA. The noise level at which birds and small mammals are startled or frightened is 80 to 85 dBA (Ref. 143). At the boundary of the Primary Facilities Parcel, 0.33 mi from the LWA limit of disturbance (see Figure 2.1-1), the noise level from the loudest pieces of construction equipment would be less than 65 dBA.

Equipment noise characteristics are influenced by the type of equipment, equipment age, model-specific design, maintenance condition, and the operation being performed. In general, newer equipment designs may be quieter than older models due to improvements such as enhanced mufflers, refinements in fan design, and improved hydraulic systems. The LWA project would therefore minimize noise through implementation of BMPs and project controls, including equipment maintenance, phased equipment use, and sequencing of activities to reduce simultaneous operation of high-noise equipment where practicable. Noise modeling may be used, as needed, to evaluate anticipated sound levels at the site boundary and at identified noise-sensitive receptors and to inform equipment placement, scheduling, and the use of temporary or permanent attenuation features such as noise buffers, barriers, or vegetation.

The LWA project would comply with State and local noise-abatement laws and ordinances. If the project is unable to meet these requirements, Blue Energy would pursue a variance or an exception with the State or local regulator or mitigate the noise sufficient to satisfy the regulator.

3.3.6 Construction Safety

Construction activities would involve occupational health and safety risks to workers. These risks may include exposure to airborne contaminants from close contact with exhaust, dust, pre-construction-supported chemicals (in the form of fumes, fibers, liquids, mist, gases or vapors), as well as exposure to plant toxins, insects, and other biological hazards. Additionally, health risks may include accidents related to struck-by and caught-in/between incidents, slips, trips, and falls, heat or cold stress, noise, electric shock, and repetitive motion injuries

During LWA and shaft construction activities, all applicable federal, state, local or Tribal regulatory limits and permit conditions for chemical hazards, biological hazards, and physical hazards would be followed. Additionally, BMPs and mitigation measures for nonradiological public and occupational health would be used. Mitigation measures would be implemented to protect the occupational health and safety of workers and the public. These measures include phased execution of pre-construction support activities, phased use of equipment, routine equipment maintenance, and dust control practices such as watering and stabilizing unpaved roads and soil stockpiles. Potential chemical, biological, and physical occupational hazards would be minimized through strict compliance with applicable Occupational Safety and Health Administration (OSHA), and state safety requirements, including the standards and procedures set forth in 29 CFR 1910, Occupational Safety and Health Standards, and the Texas Health and Safety Code. In addition, potential health effects associated with hazardous substance exposure would be reduced through compliance with 29 CFR 1926, Safety and Health Regulations for Construction, and through implementation of OSHA permissible exposure limits for gases, vapors, fumes, dusts, and mists. Onsite risks to construction personnel would be further mitigated through required training and the use of appropriate personal protective equipment to reduce the potential for harmful exposures. Prior to initiation of any construction activities, a site-specific Health and Safety Plan would be developed and implemented to establish project-specific goals, procedures, responsibilities, and the overall safety culture for work conducted at the LWA project site.

Occupational workers would be exposed to EMFs during the use of any electronic tool or equipment. However, the staff has determined that nonradiological public and occupational health impacts from EMFs during construction are uncertain. Studies of 60 hertz electromagnetic fields have not uncovered consistent evidence linking harmful effects with field exposures.

3.3.7 Waste Management

3.3.7.1 Solid Waste

Solid waste generated as part of the tree clearing effort is anticipated to primarily consist of wood waste, stumps, and other organic or natural materials. Some asphalt and concrete debris may also be generated during the grading process. Excavation under the construction activities is also expected to result in establishment and management of temporary spoils areas. Spoils are anticipated to be redeposited onsite for grading, filling, leveling, and creating berms per construction plans. Spoils from LWA excavations on the Primary Facilities Parcel would be stored on the adjacent Support Parcel. Appropriate controls for soil erosion and fugitive dust controls are planned to be implemented.

Nonhazardous solid waste and recyclables would be managed onsite in compliance with applicable federal, state, and local requirements and standards. Solid waste would be transported offsite for disposal in permitted local or regional solid waste facilities. General construction waste and personal waste generated by staff (e.g., breakroom waste) would include general waste similar to municipal waste (e.g., paper, wood, shipping materials, and

miscellaneous waste); metal waste from steel installation, piping, and other metal construction materials; waste from equipment maintenance performed onsite. Scrap metal and other recyclables are expected to be shipped offsite for recycling in appropriately permitted facilities. It is expected that volumes of wastes and recyclable materials (e.g., scrap metal) would be similar to other construction projects of similar size.

Solid sanitary waste and construction waste would be disposed of as at the Republic Waste Victoria County Landfill (also known historically as Victoria Landfill, Permit No. 1522B). This landfill has a remaining permitted disposal capacity of approximately 40 million CY following a major landfill expansion approved in 2023. The site encompasses about 515 acres, with a permitted waste footprint of roughly 360 acres (Ref. 144). Reported waste acceptance is about 129,000 tons per year (Ref. 145).

Hazardous waste and materials (e.g., used oils and grease) would be stored at a designated location onsite in accordance with applicable regulatory requirements before being transferred to a permitted disposal unit. The LWA project is anticipated to be a Resource Conservation and Recovery Act (RCRA) small quantity generator and all applicable requirements would be followed.

Solid waste generation would be minimized through storage of excavation spoils on the Support Parcel and recycling when practical. Management of solid wastes would comply with all applicable federal, state, and local requirements and standards.

No solid radioactive waste would be generated as part of the LWA construction activities.

3.3.7.2 Liquid Waste

The LWA project is expected to generate several types of liquid waste during the construction activities. Major sources are anticipated to include groundwater from de-watering activities, process water from bentonite slurry generation and reclamation, stormwater, sanitary waste, and wastewater from testing and maintenance activities. Land clearing would be conducted under a TCEQ-issued Texas Pollutant Discharge Elimination System (TPDES) permit and Stormwater Pollution Prevention Plan (SWPPP) General Permit TXR150000 for construction activities.

Excavation is anticipated to require dewatering, particularly of the shaft excavation. The water removed from dewatering is often sediment-laden, and can contain other pollutants, all of which needs to be properly treated prior to discharge. Discharges from dewatering activities, including discharges from dewatering of trenches and excavations, are prohibited, unless managed by appropriate controls to address sediment and prevent erosion as defined in Part III.F.7 of the Texas General Permit.

A project-specific SWPPP would be prepared prior to construction. The SWPPP addresses controls to prevent contamination of stormwater runoff. Inspections and any deficiencies or corrective actions would be documented. The SWPPP would be updated as site conditions change to be effective in preventing stormwater pollution. Blue Energy would also prepare an SPCC for the LWA project area. The plan would include hazardous material and fuel spill control measures and procedures.

No liquid radioactive waste would be generated as part of the LWA construction activities.

3.3.8 Transportation

Whenever practical, Blue Energy plans to have equipment and materials transported to the project area by barge or rail to local transfer points and then moved by truck to the project site.

All other equipment would be transported by truck via highway to Texas State Highway 185 and then via McCoy Road or Black Bayou Road and Edna Lane to the site.

The primary access routes to the LWA project site are McCoy Road and Edna Lane, with Texas State Highway 185 serving as the main corridor for heavy-load and truck access to the Port of Victoria industrial navigation district. Highway 185 would be the principal highway utilized for transporting equipment and materials to the site. Specifically, transportation activities would involve trucks traveling along Highway 185 and then onto McCoy Road or Black Bayou Road.

Highway 185 between U.S. Highway 59 and McCoy Road is designated as a special heavy-load corridor in Victoria, Texas, under Texas Transportation Code Section 623.099. This designation facilitates the transport of heavier or oversized industrial loads under specific state-issued permits or regional port authority guidelines, allowing such loads to bypass standard weight penalties, and as a result optimizing logistics and minimizing potential disruptions.

Blue Energy has no plans to use or widen existing rights-of-way to accommodate LWA project activities. However, the Port of Victoria is planning to use an existing easement to extend Edna Lane to Dupont Road (crossing McCoy Road) and make this new portion of the road a heavy haul road. This is independent of the LWA, but the road may be used by Blue Energy after it is constructed.

For the LWA activities, all work would be performed on the 245-ac Primary Facilities Parcel. It is anticipated that the spoils from the shaft excavation and other excavations would be relocated from the Primary Facilities Parcel to the 200-ac Support Parcel. To do so, trucks would need to cross the extended portion of Edna Lane (if extended by the Port of Victoria). Excavation and transport of spoils could involve up to 11,500 truckloads starting as soon as month 3 of the LWA project (February 2028) and continuing for the next 9 to 15 months (i.e., until the LWA scope is completed or all the spoils have been transported). Redress would require spoils to be returned to the shaft and other excavated areas. However, the movement of soils across Edna Lane would not affect its level of service.

Miles traveled by the workforce and construction vehicles would increase the potential number of crashes involving injuries and fatalities. Estimated workforce traffic-related accidents, injuries, and fatalities for construction activities are shown in Table 2.7-4. Table 2.7-4 includes data from 2025, which is the most current data set available for both annual average daily traffic and accident, injury, and fatality data specific to the roadways of concern for the LWA project site. Calculations are conservative and the number of trips is based on the following assumptions.

- Based on contractor input, the shaft construction would be performed in two shifts, five days per week (Monday – Friday). This assumes 8-hour work shifts. For LWA piling, crews will be working one ten to twelve-hour shift per day and 5 to 6 days per week.
- The average number of workers engaged in construction activities defined under the LWA and shaft construction work scopes is estimated at 45 with a maximum peak of 65 workers per day, resulting in approximately 90 to 130 round trips per day. Some workers may carpool, resulting in less than an additional 90 vehicles average (less than 130 peak) commuting on the roads between project site and the principal cities.
- It is anticipated there will be approximately 24 deliveries per day of equipment, materials, and supplies, amounting to a total of 48 round trips. These are broken down further below:

- o Up to seven 4,000-gallon capacity standard water truckloads are required per day for LWA and shaft construction activities (e.g., concrete production, slurry production). After the diaphragm wall is installed, one 4,000-gallon truckload is required.
- o Sixteen standard tandem dump truckloads per day are required to deliver aggregate for concrete production during the LWA.
- o Six truckloads per week of rebar (e.g., prefabricated cages) and other construction materials (e.g., cases for piles) are needed for the LWA.
- o One dump truck is required at least once per week for waste removal.
- o Up to one truckload of bentonite powder (28 short tons) per day.
- o Up to one truck is required per day to remove wastewater (from slurry reuse) during the LWA.
- o One large fuel truck is needed per week for the overall Project, including LWA scope, to refill one 20,000-gallon tank for Ultra-Low Sulfur Diesel (ULSD) No. 2 (Off-Road Dyed Diesel) and the large cranes. A fuel truck would also be used to refill one 5,000-gallon tank for ULSD No. 2 Diesel for the minimal on-road vehicles and equipment. A separate 1,000-gallon gasoline tank would be refilled by the supplier on a weekly basis. A small fuel truck would transfer the fuel to the onsite equipment that uses gasoline.
- o Two trucks would be required for spoils removal per day (16 cycles per day per truck). Or, up to four trucks per day to maximize traffic and minimize duration. This totals up to 11,500 truckloads of spoils for the LWA.
- Some CCGT plant construction activities will be taking place concurrently with the LWA. Therefore, the following also must be considered for cumulative impacts:
 - o Ten 4,000-gallon capacity standard water truckloads per day for concrete production during CCGT construction activities.
 - o One additional 4,000-gallon capacity water truckloads per day for miscellaneous needs (e.g., dust control, washing vehicles).
 - o 100 standard tandem dump truckloads per day of aggregate for concrete production for CCGT construction activities.
 - o Ten truckloads of rebar and other construction material per day for the CCGT construction activities.
 - o Five 30,000-lbs capacity standard dump trucks for waste removal for all CCGT construction activities.
 - o 1,000 truck trips per month at 15 CY per truck capacity for cut and fill materials associated with CCGT construction activities (following initial site preparation) with less than 15,000 CY of borrowed material each month

3.3.9 Summary of Measures and Controls to Limit Adverse Impacts During Construction Activities

This section summarizes potential adverse environmental impacts from LWA construction activities discussed in previous sections of this chapter and the associated measures and controls designed to limit or eliminate those impacts. Many of these measures and controls are planned to be incorporated directly into construction plans and activities. Requirements of construction permits such as construction BMPs are expected to be implemented through site procedures. Durations of monitoring activities are planned to follow permit requirements. Site construction is anticipated to adhere to permit conditions, BMPs, and recommendations to minimize potential impacts to the human environment. Table 3.3-2 summarizes these measures and controls for each resource area.

Table 3.3-1. Noise from LWA Construction

Construction Equipment	Noise Level (dB) (Distance in Miles)							
					0.15	0.23	0.30	0.45
	Noise Level (dB) (Distance in Feet)							
	50	100	200	400	792	1200	1584	2400
Clamshell Shovel/Hydromill	93	87	81	75	69	66	63	58
Auger Drill Rig	85	79	73	67	61	58	55	50
Dozer	85	79	73	67	61	58	55	50
Excavator	85	79	73	67	61	58	55	50
Concrete Mix Truck	85	79	73	67	61	58	55	50
Dump Truck	84	78	72	66	60	57	54	49
Slurry Trenching Machine	82	76	70	64	58	55	52	47
Backhoe	80	74	68	62	56	53	50	45
Soil Mix Drill Rig	80	74	68	62	56	53	50	45

Table 3.3-2. Summary of Measures and Controls to Limit Adverse Impacts during Construction Activities

Impact Category	Planned Measures and Controls During Construction
Land Use Impacts	
Site and Vicinity	• Adhere to project-specific plans (i.e., SWPPP) to control water runoff and erosion) • Limit land disturbance to the smallest area necessary • Stabilize and contour permanently disturbed locations in accordance with design specifications. • Restore temporarily affected areas after building is complete using native or noninvasive plant species. • Return temporarily disturbed lands to former uses upon completion of construction • Maximize the use of onsite materials • Manage lifecycle of chemicals and wastes generated during building and pollution prevention initiatives (e.g., SPCC plan) to mitigate the impact • Restrict soil stockpiling and reuse in designated areas on the LWA project site. • Adhere to project-specific plans (e.g., equipment and material staging, spoils disposition, traffic flow, and designated avoidance areas)
Offsite Areas	• Dispose of construction-related debris generated during building activities in an existing licensed facility.
Water-Related Impacts	
Hydrologic Alterations	• Use a stormwater management system that complies with regulatory requirements for site design. • Comply with TCEQ Construction General Permit that requires a SWPPP and identification of BMPs and controls for stormwater pollution
Water Use	• Manage site water use per project-specific plans (e.g., dust control water, batch plant water, washouts)
Water Quality	• Adhere to project-specific plans (e.g., SWPPP, SPCC) to control water runoff, erosion, and spills
Hydrologic Alteration of Groundwater	• No mitigation measures or controls needed
Groundwater Use Impacts	• No planned use of groundwater; therefore, no mitigation measures or controls needed
Groundwater Quality Impacts	• Comply with TPDES general permit to discharge water from groundwater dewatering associated with building activities. • Establish and implement a SPCC Plan for construction practices.
Ecological Impacts	
Terrestrial Ecosystems	• Minimize area to be disturbed (e.g., removal of vegetative habitat) • Restore temporarily affected areas with native or non-invasive plant species. • Adhere to project-specific plans (e.g., stage equipment in designated areas, use designated roadways, and avoid sensitive areas)

Impact Category	Planned Measures and Controls During Construction
Aquatic Ecosystems	• Adhere to project-specific plans (e.g., SWPPP, SPCC) • Manage site water use per project-specific plans (e.g., dust control water, batch plant water, washouts)
Socioeconomic Impacts	• Adhere to project-specific plans (e.g., traffic control, dust control measures, emission reduction techniques, HSE, worker training, noise protection, controlled substance management protocol, equipment preventative maintenance protocol) • Increased tax revenues as a result of this construction project may support community • Return public roads, signs, and markings to preexisting conditions or better
Historic and Cultural Resources	• Avoid disturbance to recommended eligible NHPA sites • Adhere to project-specific plans (e.g., stage equipment in designated areas, use designated roadways, and avoid sensitive areas) • Adhere to inadvertent discovery protocol
Air Resources	• Adhere to project-specific plans (e.g., traffic control, dust control measures, emission reduction techniques, noise protection, onsite vehicle use, HSE, worker training, noise protection) • Adhere to equipment preventative maintenance protocol • Emissions from the building phase comply with TCEQ and U.S. Environmental Protection Agency requirements and are managed through the use of a mitigation plan and/or permits
Nonradiological Health	• Adhere to project-specific plans (e.g., HSE, worker training, noise protection, dust control, onsite vehicle use, controlled substance management protocol, defined onsite traffic pattern and limit speeds, equipment use and idling limits, blasting schedule) • Adhere to equipment preventative maintenance protocol • Limit personal vehicle use onsite and encourage ride share • Adhere to NRC, OSHA, and state safety standards and provisions for worker safety
Nonradioactive Waste	• Adhere to project-specific plans (e.g., waste management, waste segregation, disposal at certified facilities, recycle, HSE, worker training, noise protection, dust control, onsite vehicle use, stormwater management)

Abbreviations: HSE = Health Safety and Environment; OSHA = Occupational Health and Safety Administration; TCEQ = Texas Commission on Environmental Quality; SWPPP = Stormwater Pollution Prevention Plan; SPCC = Spill Prevention, Control, and Countermeasure; TPDES = Texas Pollutant Discharge Elimination System; NRC = U.S. Nuclear Regulatory Commission

3.4 Redress

Site redress is the process of restoring a site following activities performed under an LWA if the proposed nuclear facility is not subsequently licensed or constructed. Redress activities may include stabilization and regrading of disturbed areas, removal of temporary facilities and construction infrastructure, management or removal of excavated materials, restoration of drainage patterns and erosion controls, revegetation, and other measures necessary to return the site to an aesthetically acceptable and environmentally stable condition. Site redress activities would be characterized by sustained operation of heavy construction equipment associated with material handling, hauling, and grading. These activities would generate temporary increases in noise, dust, truck traffic, and localized ground disturbance.

The LWA project site redress plan is provided as Enclosure 7 of CPA Part 1.

3.5 Operational Activities

This section is not applicable to an LWA application.

CHAPTER 4 – ENVIRONMENTAL IMPACTS FROM CONSTRUCTION OF THE PROPOSED PROJECT

Chapter 4 presents the potential environmental impacts of construction activities associated with the Blue Energy Center Port of Victoria (BECPV) Limited Work Authorization (LWA) project (project). These impacts are applicable to LWA construction and potential redress.

As defined in 10 Code of Federal Regulations (CFR) 50.10(a), construction includes activities to install structures, systems, and components related to safety, security, fire protection, or onsite emergency facilities. Preconstruction includes site exploration, preparation for construction (e.g., clearing, grading, establishment of temporary roads and construction power), excavation, and erection of temporary construction support buildings. Discussions related to preconstruction activities are included in the LWA application Environmental Report (ER) as needed to discuss cumulative impacts.

As described in Section 1.3, of this LWA ER, LWA related construction will mainly occur over a period of approximately 12 to 18 months; however, LWA construction activities and preconstruction activities can continue into work authorized by the future Construction Permit. The Construction Permit authorized construction is expected to take approximately 25 to 31 months after the U.S. Nuclear Regulatory Commission's (NRC) issuance of the Construction Permit.

NUREG-2249, *Generic Environmental Impact Statement for Licensing of New Nuclear Reactors (New Reactor GEIS)*, is used in support of the environmental impact evaluations presented in this chapter. NUREG-2249 provides a framework that supports preparation of the LWA ER as part of an application for a new nuclear reactor, or in the case of this LWA ER, an LWA application. Appendix A provides a NUREG-2249 Reliance Matrix for construction-related issues. The order of issue presented in the Reliance Matrix is consistent with Table 1-1 of NUREG-2249.

Developed under the National Environmental Policy Act (NEPA), NUREG-2249 evaluates the environmental impacts associated with the construction, operation, and decommissioning of new nuclear reactors and identifies those impacts that can be addressed generically across a broad range of reactor technologies and site conditions. A key feature of NUREG-2249 is the classification of environmental issues into Category 1 and Category 2 issues. Category 1 issues are those for which the NRC has determined that environmental impacts are sufficiently understood and applicable on a generic basis, provided the proposed project falls within the plant and site parameter envelopes evaluated in the New Reactor GEIS. For these issues, an applicant may reference the generic findings in NUREG-2249 and generally does not need to provide additional site-specific analysis beyond demonstrating that the project is bounded by the assumptions of the GEIS. In contrast, Category 2 issues are those that require project-specific evaluation because the significance of the environmental impact depends on the characteristics of the proposed site, reactor design, or surrounding environment. This LWA ER therefore focuses its detailed analyses on Category 2 issues while appropriately incorporating the generic conclusions for Category 1 issues after demonstrating that the Category 1 assumptions are consistent with the proposed LWA activities.

This chapter is organized into the following sections consistent with the outline of Regulatory Guide (RG) 4.2, Rev. 4:

- Land-Use – Section 4.1
- Water Resources (Surface Water and Groundwater) – Section 4.2
- Ecological Resources – Section 4.3
- Socioeconomics – Section 4.4
- Historic and Cultural Resources – Section 4.5
- Air Resources – Section 4.6
- Nonradiological Health – Section 4.7
- Radiological Health – Section 4.8
- Nonradioactive Waste Management – Section 4.9

Potential impacts of Category 1 and Category 2 issues are assigned a significance level to each resource consistent with the criteria established in 10 CFR 51, Appendix B, Table B-1, Footnote 3. Unless the impact is identified as beneficial, the impact is adverse. In the case of SMALL, the impact may be negligible. The definitions of significance are:

- **SMALL:** Environmental effects are not detectable or are so minor that they neither destabilize nor noticeably alter any important attribute of the resource. For the purposes of assessing radiological impacts, the NRC has concluded that those impacts that do not exceed permissible levels in the NRC's regulations are considered SMALL.
- **MODERATE:** Environmental effects are sufficient to alter noticeably, but not to destabilize important attributes of the resource.
- **LARGE:** Environmental effects are clearly noticeable and are sufficient to destabilize important attributes of the resource.

In addition, this chapter presents ways to avoid, minimize, or mitigate adverse impacts of construction activities.

Chapter 4 should be used in conjunction with Appendix B, Values and Assumptions Table. This table provides the resource-related assumptions and plant parameter envelop (PPE) and site parameter envelope (SPE) values presented in RG 4.2, Rev. 4 that bound NUREG-2249 Category 1 issues. The Appendix B Values and Assumptions Table also presents the assumptions and values applicable to the LWA project with references to applicable LWA ER figures, tables, and sections that demonstrate compliance with the RG 4.2, Rev. 4 assumptions or PPE/SPE values.

Assumptions or PPE/SPE values that are not met by the LWA project are highlighted in bold text in the Appendix B Values and Assumptions Table. Also, as required by NUREG-2249, where assumptions or PPE/SPE values are not met for Category 1 issues, the issue(s)/resource area(s) are assessed in detail in the following sections. These issues are also addressed in the New and Significant Information Memo provided in Appendix C.

4.1 Land Use

Land Use is a Category 1 New Reactor GEIS issue. Specific Category 1 Land Use issues applicable to the LWA construction activities as provided in Appendix A are:

- Onsite Land Use
- Offsite Land Use
- Impacts on Prime and Unique Farmland
- Coastal Zone and Compliance with the Coastal Zone Management Act

RG 4.2, Rev. 4 assumptions and PPE/SPE values supporting the SMALL impact determination for the Category 1 issues list above are provided in Appendix B. Appendix B also demonstrates compliance with the assumptions and PPE/SPE values as provided in the flowing sections of the Appendix B table:

- *Site Size and Location*
- *Permanent Footprint Disturbance*
- *Temporary Footprint of Disturbance*

Appendix B demonstrates compliance with the assumptions and PPE/SPE values except for the distance of the LWA project to the nearest residential area (see *Site Size and Location* section of Appendix B table) and the use of prime farmland (see *Permanent Footprint Disturbance* section of Appendix B table). Consistent with the requirements of NUREG-2249 and RG 4.2, Rev. 2, these issues in assessed in the following sections.

4.1.1 Onsite Impacts

The home of the nearest resident is approximately 0.48 miles (mi) from the perimeter of the LWA limit of disturbance and the distance to the center of the nearest residential area is approximately 0.45 mi (see Figure 2.1-2). This assumes that the nearest “residential area” would be defined as the collection of 8 rural residential properties along Edna Lane and Black Bayou Road (one property currently has no structures). The total area of these properties is approximately 30 acres (ac) resulting in residential density of 3.75 residences per ac (including the non-occupied property). The nearest residential area with a higher residential density (approximately 0.4 residents per ac) is along Old Bloomington Road about 1.5 mi east on the southwestern edge of Brookfield, Texas.

As the perimeter of the limit of disturbance for LWA construction are slightly less than 0.5 mi from the rearrest residential property and the density of residences is low, impacts from LWA construction would be SMALL.

4.1.2 Impacts to Prime or Unique Farmland

As indicated in Section 2.1.2.3, prime farmlands and farmlands of statewide importance are present within the site boundary, and approximately 49.5 percent of the surrounding vicinity is designated as Prime Farmland (Table 2.1-5). In accordance with the requirements of the Farmland Protection Policy Act, Blue Energy, LLC will coordinate with the U.S. Department of Agriculture's Natural Resources Conservation Services (NRCS) regarding impacts to prime and unique farmlands.

Potential mitigative measures for impacts to agricultural land include avoidance, minimization, and restoration. In addition, depending upon the final design, the volume of borrow material may be lessened, which may correspondingly reduce the area of agricultural land needed for construction. Potential restoration measures may also be considered for lands temporarily used

for building by integrating appropriate land reclamation practices. However, for the purposes of this report, all impacted land on the LWA project site is assumed to be permanently disturbed.

However, given the small amount to farmland that will be lost to the LWA construction activities when compared to the more than 5,600 ac of prime farmland in the 6-mi vicinity of the LWA project site, the less than 15 ac of lost prime farmland for the LWA construction (less than 0.2 percent), the impact is considered SMALL.

4.1.3 Summary

As summarized in Table 4.1-1 and described in Appendix B and the previous sections, the land use impacts from construction activities associated with the LWA are consistent with most of the NUREG-2249 Category 1 assumptions, except for the distance to the nearest residential area and the loss of prime farmland. However, given that the low population in the nearest residential area, the distance to the nearest residential area which is just under 0.5 mi, and the small percent of prime farmland lost in the vicinity of the project, and all other land use impact from the LWA are consistent with the Category 1 assumptions, the overall impacts of the LWA to land use would be SMALL. Similarly, any potential redress impact would be SMALL as the farmland would already be lost and the same nearby population would be impacted.

Table 4.1-1. LWA Compliance with NUREG-2249 General Bounding Criteria for Land Use

Category 1 Issues	Assumptions and Generic Basis	LWA Construction Project Conditions	Applicable Figure, Table, or LWA ER Section
Onsite Land Use	The site size is 100 ac or less.	Approximately 15 ac of total land disturbance.	Figure 1.4-2
	The permanent footprint of disturbance includes 30 ac or less of vegetated lands, and the temporary footprint of disturbance includes no more than an additional 20 ac or less of vegetated lands.	The nearest residential area is less than 0.5 mi from the LWA limit of disturbance.	Section 2.1.1
	The proposed project complies with the site's zoning and is consistent with any relevant land use plans or comprehensive plans.	There are no zoning restrictions applicable to the project site.	Section 2.1.2
	The site would not be situated closer than 0.5 mi to existing residential areas or 1.0 mi to sensitive land uses such as federal, state, or local parks; wildlife refuges; conservation lands; Wild and Scenic Rivers; or Natural Heritage Rivers.	Other sensitive land uses are in Bloomington, TX, more than 1 mi from the LWA limit of disturbance in Bloomington, TX.	Section 3.3.1
	The site does not have a history of past industrial use capable of leaving a legacy of contamination requiring cleanup to protect human health and the environment.	The site has historically been used for agricultural purposes. As it does not have a history of past industrial use capable of leaving a legacy of contamination.	Section 3.3.4
	The total wetland loss from use of the site, including use of any offsite ROWs, would be no more than 0.5 ac.	There are no wetlands identified within the LWA limit of disturbance.	
	BMPs for erosion, sediment control, and stormwater management would be used.	BMPs for erosion, sediment control, and stormwater management would be implemented during LWA construction activities.	
Offsite Land Use	N/A	LWA construction activities would comply with mitigation measures established through zoning ordinances, local building permits, site use permits, or other land use authorizations are not applicable to the project site.	
		There will be no offsite LWA construction	Figure 1.4-1 Section 3.3.1
Impacts to Farmland	The site size is 100 ac or less.	Approximately 15 ac of total land disturbance.	Figure 1.4-2
	The site does not contain any prime or unique farmland	The LWA limit of disturbance does contain prime farmland	Section 2.1.2.3 Figure 2.1-11 Table 2.1-5

Category 1 Issues		Assumptions and Generic Basis	LWA Construction Project Conditions	Applicable Figure, Table, or LWA ER Section
Coastal Zone	N/A		LWA project site is not located within Coastal Zone Management Act lands	Figure 2.1-13

Abbreviations: ROWs = rights-of-way; BMP = Best Management Practice; N/A = not applicable

4.2 Water Resources

Water Resources is a Category 1 New Reactor GEIS issue. Specific Category 1 Water Resources issues applicable to the LWA construction activities as provided in Appendix A are:

- Surface Water Use Conflicts During Construction
- Groundwater Use Conflicts due to Excavation Dewatering
- Groundwater Use Conflicts due to Construction-Related Groundwater Withdrawals
- Water Quality Degradation due to Construction-Related Discharges
- Water Quality Degradation due to Inadvertent Spills during Construction
- Water Quality Degradation due to Groundwater Withdrawal
- Water Quality Degradation due to Offshore or In-Water Construction Activities

RG 4.2, Rev. 4 assumptions and PPE/SPE values supporting the SMALL impact determination for the Category 1 issues list above are provided in Appendix B. Appendix B also demonstrates compliance with the assumptions and PPE/SPE values as provided in the flowing sections of the Appendix B table:

- *Intake and Discharge*
- *Total Plant Water Demand*
- *Municipal Water Availability*
- *Surface Water Availability*
- *Municipal Systems' Available Capacity to Receive and Treat Effluent*
- *Groundwater Withdrawal for Plant Uses*
- *Groundwater Withdrawal for Excavation or Foundation Dewatering*
- *Groundwater Quality*

As the LWA construction impacts are consistent with the Appendix B assumptions and PPE/SPE values, no Category 1 issues are evaluated in this section.

Table 4.2-1 provides a summary of primary water resource assumptions and generic basis for Category 1 determination, and LWA construction project conditions. As presented in the table and supported by Appendix B, the water resource impacts from construction activities associated with the LWA are consistent with the NUREG-2249 Category 1 assumptions and values. Therefore, the overall impact of the LWA on water resources would be SMALL. Similarly, any potential redress impact would be SMALL as impacts would continue to be minimized by applying BMPs and no new water resources would be impacted.

Table 4.2-1. LWA Compliance with NUREG-2249 General Bounding Criteria for Water Resources

Category 1 Issues	Assumptions and Generic Basis	LWA Construction Project Conditions	Applicable Figure, Table, or LWA ER Section
Surface Water Use Conflicts during Construction	Total plant water demand is less than or equal to a daily average of 6,000 gpm	Onsite water during the LWA would be contractor-supplied municipal water. Tanker trucks would supply a total of 28,000 gallons per day (gpd) to meet LWA water needs.	Section 2.2.2.2
Groundwater Use Conflicts due to Excavation Dewatering	The dewatering rate would be less than or equal to 50 gpm. Dewatering results in negligible drawdown at the site boundary.	The dewatering rate would be less than or equal to 50 gpm and dewatering will have no impact at the site boundary.	Section 2.2.2.2 Section 3.3.3
Groundwater Use Conflicts due to Construction-Related Groundwater Withdrawals	N/A	There would be no groundwater withdrawals for LWA construction.	Section 2.2.2.2 Section 3.3.3
Water Quality Degradation due to Construction-Related Discharges	The permanent footprint of disturbance includes 30 ac or less of vegetated lands, and the temporary footprint of disturbance includes no more than an additional 20 ac or less of vegetated land. Adherence to requirements in NPDES permits issued by the USEPA or State permitting program, and any other applicable permits. The long-term groundwater dewatering withdrawal rate is less than or equal to 50 gpm. There are no planned discharges to the subsurface (by infiltration or injection), including stormwater discharge.	Approximately 15 ac of total land disturbance. The dewatering rate would be less than or equal to 50 gpm and dewatering will have no impact at the site boundary. The water quality of any receiving waterbody will be maintained in accordance with TPDES permit requirements.	Figure 1.4-2 Section 3.3.3 Section 3.3.4

Category 1 Issues	Assumptions and Generic Basis	LWA Construction Project Conditions	Applicable Figure, Table, or LWA ER Section
Water Quality Degradation due to Inadvertent Spills during Construction	The site size is 100 ac or less. The permanent footprint of disturbance includes 30 ac or less of vegetated lands, and the temporary footprint of disturbance includes no more than an additional 20 ac or less of vegetated land. Applicable requirements and guidance on spill prevention and control are followed, including the relevant BMPs and Integrated Pollution Prevention Plan.	Approximately 15 ac of total land disturbance. BMPs would be implemented and an Integrated Pollution Prevention Plan / SPCC Plan would be prepared.	Figure 1.4-2 Section 3.3.4
Water Quality Degradation due to Groundwater Withdrawal	The dewatering rate would be less than or equal to 50 gpm. Dewatering results in negligible drawdown at the site boundary.	The dewatering rate would be less than or equal to 50 gpm and dewatering will have no impact at the site boundary.	Section 3.3.3
Water Quality Degradation due to Offshore or In-Water Construction Activities	N/A	No in-water structures are planned, and no work would occur in or immediately adjacent to open waterbodies	Figure 1.2-2 Section 1.2.1
Water Use Conflict Due to Plant Municipal Water Demand	The amount available from municipal water systems exceeds the amount of municipal water required by the project.	Onsite water during the LWA would be contractor-supplied municipal water. Tanker trucks would supply a total of 28,000 gpd. The surface water treatment plant was built with the capacity to facilitate over 20 MGD, though the City's current average usage is between 9 and 12 MGD.	Section 2.2.2.1
Degradation of Water Quality from Plant Effluent Discharges to Municipal Systems	The available capacity of the municipal systems to treat effluent exceeds the expected amount of project effluent.	The surface water treatment plant was built with the capacity to facilitate over 20 MGD, though the City's current average usage is between 9 and 12 MGD.	Section 2.2.2.1

Abbreviations: gpm = gallons per minute; gpd = gallons per day; MGD = million gallons per day; NPDES = National Pollutant Discharge Elimination System; USEPA = United States Environmental Protection Agency; TPDES = Texas Pollutant Discharge Elimination System; SPCC = Spill Prevention, Control, and Countermeasure

4.3 Ecological Resources

4.3.1 Terrestrial Ecosystem and Wetland Impacts

Terrestrial Ecology is a Category 1 issue in NUREG-2249 excluding Important Species and Habitats – Resources Regulated under the Endangered Species Act of 1973 (ESA) which is a Category 2 issue. Specific Category 1 Terrestrial Ecology issues applicable to the LWA construction activities as provided in Appendix A are:

- Permanent and Temporary Loss, Conversion, Fragmentation, and Degradation of Habitats
- Permanent and Temporary Loss and Degradation of Wetlands
- Effects of Building Noise on Wildlife
- Effects of Vehicular Collisions on Wildlife
- Bird Collisions and Injury from Structures and Transmission Lines
- Important Species and Habitats – Other Important Species and Habitats

RG 4.2, Rev. 4 assumptions and PPE/SPE values supporting the SMALL impact determination for the Category 1 issues list above are provided in Appendix B. Appendix B also demonstrates compliance with the assumptions and PPE/SPE values as provided in the flowing sections of the Appendix B table:

- *Permanent Footprint Disturbances*
- *Managing Building Height and Structure*
- *Wildlife-Related Noise Generation*

As the LWA construction impacts are consistent with the Appendix B assumptions and PPE/SPE values, no Category 1 issues are evaluated in this section. The lone Category 2 issue, Important Species and Habitats – Resources Regulated under the Endangered Species Act of 1973, is evaluated below.

4.3.1.1 Important Habitats

As noted in Section 2.3.1.4, there are no designated critical habitats, state or federally managed natural areas, or sensitive ecological communities within the LWA project site. Therefore, no direct or indirect impacts to these habitat types would occur from the LWA project construction activities and there are no potential Category 2 habitat impacts that require site-specific analysis.

4.3.1.2 Important Terrestrial Species

As noted in Section 2.3.1.4, listed and proposed species with potential regional occurrence include:

- Tricolored Bat (*Perimyotis subflavus*): Proposed federally Endangered under the ESA.
- Monarch Butterfly (*Danaus plexippus*): Proposed federally Threatened under the ESA.
- State-Threatened Species: Swallow-tailed kite (*Elanoides forficatus*), Texas horned lizard (*Phrynosoma cornutum*), Texas tortoise (*Gopherus berlandieri*), and white-tailed hawk (*Buteo albicaudatus*).

Both the tricolored bat and monarch butterfly are anticipated to receive final federal listing decisions during the life of the LWA project; therefore, proactive technical assistance and conference with the U.S. Fish and Wildlife Service (USFWS) is recommended. To minimize potential impacts to state-threatened species, formal coordination with the Texas Parks and Wildlife Department (TPWD) would occur prior to ground-disturbing activities. Implementing

standard species-specific BMPs such as pre-clearing surveys, tortoise relocation outside active work areas, and milkweed/nest avoidance measures would ensure that impacts to protected terrestrial species remain SMALL.

4.3.1.3 Summary of Impacts to Terrestrial Ecology and Wetlands

There are no important habitats or wetland present within the LWA project area. Overall impacts to Important Species and Habitats – Resources Regulated under the Endangered Species Act of 1973 from building activities at the LWA project site (Category 2 Issue) would be SMALL.

Table 4.3-1 provides a summary of terrestrial ecosystem and wetland assumptions and generic basis for Category 1 determination, and LWA construction project conditions. As presented in the table and described in the previous sections, the terrestrial resource impacts from construction activities associated with the LWA are consistent with the consistent with the NUREG-2249 Category 1 assumptions and values. Therefore, the overall impact of the LWA to terrestrial ecosystem and wetland impacts would be SMALL.

Blue Energy will communicate with State natural resource or conservation agencies regarding wildlife and plants and implement mitigation recommendations of those agencies.

4.3.2 Aquatic Ecosystems

Aquatic Ecology is a Category 1 issue in NUREG-2249 excluding Important Species Resources Regulated under the ESA and Magnuson-Stevens Fishery Conservation and Management Act which is a Category 2 issue. Specific Category 1 Aquatic Ecology issues applicable to the LWA construction activities as provided in Appendix A are:

- Runoff and Sedimentation from Construction Areas
- Dredging and Filling Aquatic Habitats to Build Intake and Discharge Structures
- Building Transmission Lines, Pipelines, and Access Roads across Surface Water Bodies
- Important species and habitats – Other Important Species and Habitats

RG 4.2, Rev. 4 assumptions and PPE/SPE values supporting the SMALL impact determination for the Category 1 issues list above are provided in Appendix B. Appendix B also demonstrates compliance with the assumptions and PPE/SPE values as provided in the flowing sections of the Appendix B table:

- *Permanent Footprint Disturbances*
- *Impacts on Aquatic Biota*

As the LWA construction impacts are consistent with the Appendix B assumptions and PPE/SPE values, no Category 1 issues are evaluated in this section. The lone Category 2 issue, Important Species Resources Regulated under the ESA and Magnuson-Stevens Fishery Conservation and Management Act, is evaluated below.

4.3.2.1 Important Aquatic Species and Habitats

The NUREG-2249 designates Important Species and Habitats – Resources Regulated under the ESA and Magnuson-Stevens Fishery Conservation and Management Act as a Category 2 Issue while other Important Species and Habitats are designated as a Category 1 Issue. There are three perennial-constructed isolated ponds, one ephemeral stream drainage, and one ephemeral pond. These features provide limited habitat for common aquatic species and do not constitute high-quality habitat or important/protected aquatic habitats.

4.3.2.1.1 Important Species

As discussed in Section 2.3.2.3, the aquatic habitat within the LWA project site has low suitability to support any of the federally or state-listed aquatic species with the potential to occur in the LWA project area. However, one American Alligator was observed onsite. Due to the mobile nature of this species and the low-quality habitat provided by pond feature BEB-OW1-PP, AECOM has provisionally determined that construction activities that would impact feature BEB-OW1-PP are not likely to adversely affect individual American alligators. For the other important aquatic species, there would not be any impact due to a lack of habitat present within the LWA project area. Impacts to these species and their habitats outside of the LWA project site would be minimized using appropriate construction BMPs.

4.3.2.1.2 Important Aquatic Habitats

Because no jurisdictional aquatic features are present within the LWA project area, building activities would not impact important aquatic habitats. Impacts to these habitats outside of the LWA project area would be minimized using appropriate construction BMPs. Downstream habitats would be protected via TPDES stormwater compliance.

4.3.2.2 Summary of Impacts to Aquatic Ecology

There are no important aquatic habitats or listed aquatic species present within the LWA project area. Overall impacts to aquatic ecology from building activities at the LWA project site (Category 2 Issue) would be SMALL.

Table 4.3-2 provides a summary of aquatic ecosystems, the NUREG-2249 for Category 1 determination, and LWA construction project conditions. As presented in the table and described in the previous sections, the aquatic ecosystem impacts from construction activities associated with the LWA are consistent with the NUREG-2249 Category 1 assumptions. Therefore, the overall impact of the LWA to aquatic ecosystems would be SMALL. Similarly, any potential redress impact would be SMALL as impacts would continue to be minimized by applying BMPs and no new ecological resources would be impacted.

Table 4.3-1. LWA Compliance with NUREG-2249 General Bounding Criteria for Terrestrial Ecology and Wetlands

Category 1 Issues	Assumptions and Generic Basis	LWA Construction Project Conditions	Applicable Figure, Table, or LWA ER Section
Permanent and temporary loss, conversion, fragmentation and degradation of habitats	The permanent footprint of disturbance would include 30 ac or less of vegetated lands, and the temporary footprint of disturbance would include no more than an additional 20 ac or less of vegetated lands.	Approximately 15 ac of total land disturbance.	Figure 1.4-2
		Temporarily disturbed lands would be revegetated.	Section 1.2.1
		The LWA construction does not include offsite construction for roads or ROWs.	Section 2.3.1.1
			Section 3.3.4
	Temporarily disturbed lands would be revegetated using regionally indigenous vegetation once the lands are no longer needed to support building activities.	The LWA limit of disturbance would contain no ecologically sensitive features.	
	New offsite ROWs for transmission lines, pipelines, or access roads would be no more than 100 ft in width and total no more than 1 mi in length.	BMPs would be used for erosion, sediment control, and stormwater management.	
Permanent and temporary loss, temporary loss and degradation of wetlands	The footprint of disturbance (permanent and temporary) would contain no ecologically sensitive features such as floodplains, shorelines, riparian vegetation, late-successional vegetation, land specifically designated for conservation, or habitat known to be potentially suitable for one or more federal or state threatened or endangered species.		
	Effort will be demonstrated to minimize fragmentation of terrestrial habitats by using existing ROWs, or widening existing ROWs, to the extent practicable.		
	BMPs would be used for erosion, sediment control, and stormwater management.		
	Total wetland impacts from use of the site and any offsite ROWs would be no more than 0.5 ac.	There are no wetlands identified within the LWA limit of disturbance.	Section 2.3.1.2 Figure 2.3-7
Effects of Building Noise on Wildlife	Construction noise would not exceed 85 dBA 50 ft. from the source.	Construction noise would not exceed 85 dBA 50 ft. from the source.	Section 2.7.2 Section 3.3.5 Table 3.3-1

Category 1 Issues	Assumptions and Generic Basis	LWA Construction Project Conditions	Applicable Figure, Table, or LWA ER Section
Effects of Vehicular residences pers on Wildlife	The LWA project site is less than 100 ac. The permanent footprint of disturbance would include 30 ac. or less of vegetated lands, and the temporary footprint of disturbance would include no more than an additional 20 ac. or less of vegetated lands. There would be no decreases in the LOS designation for affected roadways. Consultation with federal and state wildlife agencies will be completed and mitigation actions recommended by those agencies to reduce potential for vehicular injury to wildlife will be implemented.	Approximately 15 ac of total land disturbance. The LOS for affected roadways does not change. Consultation with federal and state wildlife agencies would be completed and mitigation actions recommended by those agencies to reduce potential for vehicular injury to wildlife would be implemented.	Figure 1.4-2
Bird Collision and Injury from Structures and Transmission Lines	The LWA project site size would be 100 ac. or less. New offsite ROWs for transmission lines, pipelines, or access roads would be no more than 100 ft in width and total no more than 1 mi in length. No transmission line structures (poles or towers) would be more than 100 ft in height.	Approximately 15 ac of total land disturbance. The LWA construction does not include offsite construction for roads, ROWs, or transmission line structure.	Figure 1.4-2 Section 1.2.1
Important Species and Habitats – Other Important Species and Habitats	Applicants would communicate with State natural resource or conservation agencies regarding wildlife and plants and implement mitigation recommendation of those agencies.	While there are no designated critical habitats, state or federally managed natural areas, or sensitive ecological communities within the LWA limit of disturbance and larger 445 ac-controlled area, Blue Energy would communicate with State natural resource or conservation agencies regarding wildlife and plants and implement mitigation recommendation of those agencies.	Section 2.3.1 Table 2.3-8

Abbreviations: ROWs = rights-of-way; LOS = level of service; dBA = A-weighted decibels

Table 4.3-2. LWA Compliance with NUREG-2249 General Bounding Criteria for Aquatic Ecology

Category 1 Issues	Assumptions and Generic Basis	LWA Construction Project Conditions	Applicable Figure, Table, or LWA ER Section
Runoff and Sedimentation from Construction Areas	BMPs would be used for erosion and sediment control. Temporarily disturbed lands would be revegetated using regionally indigenous vegetation once the lands are no longer needed to support building activities.	Following the site plan and all applicable permits and regulations, BMPs will be implemented for erosion and sediment control and temporarily disturbed lands will be revegetated using indigenous vegetation after all construction activity is complete.	Section 3.3.4
Dredging and Filling Aquatic Habitats to Build Intake and Discharge Structures	N/A	There would be no construction of intake or discharge structures under the LWA.	Section 1.2.1
Building Transmission Lines, Pipelines, and Access Roads across Surface Water Bodies	N/A	There would be no construction of transmission lines, pipelines, or access roads under the LWA.	Section 1.2.1
Important species and habitats – Other Important Species and Habitats	Applicants would communicate with State natural resource or conservation agencies regarding aquatic fish, wildlife, and plants and implement mitigation recommendation of those agencies.	The aquatic habitat within the LWA limit of disturbance and larger 445 ac-controlled area has low suitability to support any of the federally or state-listed aquatic species. Blue Energy would communicate with State natural resource or conservation agencies regarding aquatic habitat and implement mitigation recommendation of those agencies.	Section 2.3.2 Table 2.3-9

Abbreviations: BMPs = Best Management Practices; N/A = Not Applicable

4.4 Socioeconomics

Socioeconomics is a Category 1 New Reactor GEIS issue. Specific Category 1 Socioeconomics issues applicable to the LWA construction activities as provided in Appendix A are:

- Community Services and Infrastructure
- Economic Impacts
- Tax Revenue Impacts
- Visual Impacts at the Site and Vicinity

RG 4.2, Rev. 4 assumptions and PPE/SPE values supporting the SMALL impact determination for the Category 1 issues list above are provided in Appendix B. Appendix B also demonstrates compliance with the assumptions and PPE/SPE values as provided in the flowing sections of the Appendix B table:

- *Site Employment*
- *Community Services and Infrastructure*
- *Tax Revenue*

Appendix B demonstrates compliance with the assumptions and PPE/SPE values except for the distance of the LWA project to the nearest residential area which is an assumption for the Visual Impacts Category 1 determination (see *Site Size and Location* section of Appendix B table). Consistent with the requirements of NUREG-2249 and RG 4.2, Rev. 2, Visual Impacts are assessed in the following section.

4.4.1 Visual Impacts

The closest recreational areas to the LWA project site are located within the cities of Bloomington and Victoria and the LWA project site well beyond the viewshed of these areas. Additionally, the LWA project construction area would be set back from major roadways. There are no sensitive land uses such as federal, state, or local parks; wildlife refuges; conservation lands; Wild and Scenic Rivers; Natural Heritage Rivers; or Class I Federal areas within the 6-mi vicinity of the LWA project site that would potentially be degraded by views of the LWA project site.

Visual characteristics of the areas within the viewshed are expected to be minimally impacted because of the remoteness of the site away from most roads and residential properties. The LWA LWA project site will be shielded from the nearest residential area by vegetation located on an approximately 650-ft wide vacant parcel located between the Primary Facilities Parcel and the residential properties along Edna Lane and Black Bayou Road.

The excavation soil stockpile will be visible from Edna Lane. A view of the proposed location of the stockpile on the northeastern Support Parcel from corner of Edna Lane as it turns to the southwest is provided as Figure 2.4-2. The view from the same location to the northwest onto the Primary Facilities Parcel is shown in Figure 2.4-3. Figure 2.4-4 provides a view of from the nearest resident northwest down Edna Lane.

Visitors to the Traylor Family Cemetery / Traylor Graveyard accessed via Edna Lane. LWA construction activities may create short-term visual impacts, but the tallest equipment is expected onsite would be crawler cranes which are expected to be less than 120 ft tall. All permanent structures constructed under the LWA will be underground or close to ground level.

The potential visual impacts from construction would be SMALL due to the limited height of permanent structures, location of the site, and lack of any sensitive land uses in the region.

4.4.2 Summary

Table 4.4-1 provides a summary of primary water resource assumptions and generic basis for Category 1 determination, and LWA construction project conditions. As presented in the table and supported by Appendix B, the socioeconomic impacts from construction activities associated with the LWA are consistent with the NUREG-2249 Category 1 assumptions and values. Therefore, the overall impact of the LWA on socioeconomics would be SMALL. Similarly, any potential redress impact would be SMALL as a similar workforce would be involved in the redress and the economic impact would continue to be beneficial.

Table 4.44-1. LWA Compliance with NUREG-2249 General Bounding Criteria for Socioeconomics

Category 1 Issues	Assumptions and Generic Basis	LWA Construction Project Conditions	Applicable Figure, Table, or LWA ER Section
Community Services and Infrastructure	The housing vacancy rate in the affected economic region does not change by more than 5 percent, or at least 5 percent of the housing stock remains available after accounting for in-migrating construction workers. Student: teacher ratios do not exceed mandated levels after including the school age children of the in-migrating families.	Housing availability exceeds the estimated demand. Student: teacher ratios are far below mandated levels and, with the limited incoming estimated workforce of 45 workers, the number of potential students is unlikely to represent a noticeable change.	Section 2.4.2.2 Section 2.4.2.3 Table 2.4-1 Table 2.4-8 Table 2.4-10
Economic Impacts	The economic impacts of construction and operation of a new nuclear reactor are expected to be beneficial; therefore, this is a Category 1 issue	Economic impacts would be beneficial.	Section 2.4.2
Tax Revenue Impacts	The tax revenue impacts of construction and operation of a new nuclear reactor are expected to be beneficial; therefore, this is a Category 1 issue.	Tax revenue would increase, resulting in a beneficial impact	Section 2.4.2
Visual Impacts from Transmission Lines	N/A	There would be no construction of transmission lines under the LWA.	Section 1.2.1
Visual Impacts at the Site and Vicinity	The site size is 100 ac or less. The site would not be situated closer than 0.5 mi to existing residential areas or 1 mi to sensitive land uses such as Federal, State, or local parks; wildlife refuges; conservation lands; Wild and Scenic Rivers; or Natural Heritage Rivers. The maximum proposed building and structure height is no more than 50 ft, except that the maximum height is 200 ft for proposed meteorological towers and 100 ft for transmission line poles/towers and mechanical draft cooling towers. The proposed project structures would not be visible from Federal or State parks or wilderness areas designated as Class I under Section 162 of the CAA or as a Wild and Scenic River, a Natural Heritage River, or a river of similar State designation.	Approximately 15 ac of total land disturbance. The nearest residential area is less than 0.5 mi from the LWA limit of disturbance. There are no sensitive land uses such as Federal, State, or local parks; wildlife refuges; conservation lands; Wild and Scenic Rivers; or Natural Heritage Rivers within 1 mi of the LWA area of disturbance. There are no proposed buildings/structures in the LWA that would exceed 50 ft. The tallest equipment expected on site are two crawler cranes which are expected to be less than 120 ft tall and would not be visible from Federal or State parks or wilderness areas designated as Class I under Section 162 of the CAA or as a Wild and Scenic River, a Natural Heritage River, or a river of similar State designation	Figure 1.4-2 Figure 2.1-2 Section 2.4.2.5

4.5 Historic and Cultural Resources

NUREG-2249 does not identify any specific sites for NRC licensing actions that would trigger National Historic Preservation Act (NHPA) Section 106 consultation requirements that are normally conducted during project-specific licensing reviews. Because the analysis requires project-specific information, the impact of construction on historic and cultural resources is a Category 2 issue and requires site-specific analysis.

Cultural resources found in the direct and indirect area of potential effect (APE) are listed in Section 2.5 and in the *Cultural Resources Survey for the Proposed Blue Energy Port of Victoria Project Report* (Ref. 87).

Due to the proposed LWA project being conducted on land owned by the Victoria County Navigation District and operated by the Port of Victoria, political subdivisions of the State of Texas, the LWA project also falls within the purview of the Antiquities Code of Texas (Texas Natural Resource Code, Title 9, Chapter 191). The Antiquities Code requires the Texas Historical Commission (THC) to review any actions that have the potential to disturb precontact or historic archaeological sites within the public domain of the State of Texas. Regulations pertaining to the code can be found within Title 13 Part 2, Chapter 26 of the Texas Administrative Code (TAC), Rules of Practice and Procedure. Compliance with both the NHPA and the Antiquities Code of Texas involves consultation with the THC to assess the LWA project's potential effects on any significant cultural resources that may be present, and to determine any necessary mitigation measures. The *Cultural Resources Survey for the Proposed Blue Energy Port of Victoria Project Report* was submitted to THC in August 2026.

Based on the results of AECOM's cultural resources survey, as well as description of ground disturbing activities provided in Section 3.3, AECOM recommends the LWA project should have No Effect, direct or indirect, on historic properties or cultural resources that merit designation as State Antiquities Landmark, and no further cultural resources investigations are warranted if Site 41VT193 is avoided during the design and subsequent construction of the LWA project. In the event Site 41VT193 cannot be avoided, additional review and investigations are recommended. Neither cemetery found adjacent to, or surrounded by, the archaeological APE will be affected by the LWA project, although any construction activity within 75 ft of either cemetery would require additional consultation with the THC.

If previously undiscovered precontact sites are found during construction, all work in the immediate area of the discovery must be ceased until an archaeologist meeting the Secretary of the Interior's *Professional Qualification Standards* is able to evaluate the integrity potential and research value of any finds. In the event future design changes are implemented, additional review and investigations may be warranted.

If any precontact or historic human remains or unmarked burials are encountered at any point during construction, the area of the remains should be avoided until a qualified person, as defined by §711.0105(a) under the Texas Health and Safety Code, can determine the status of the remains. Any area determined to contain the intentional burial of the remains is considered a cemetery under current Texas law. Cemeteries are protected under provisions of the Texas Health and Safety Code in Chapters 711-715 (Title 13, Part 2, Chapter 22 of the TAC), and in Section 28.03(f) of the Penal Code. All cemeteries are protected and cannot be disturbed. The Texas Penal Code provides that intentional damage or destruction inflicted on a human burial site is a state jail felony. If a cemetery is identified in the LWA project APE, all work in the area of the discovery must cease, and the THC must be notified by contacting the Archeology

Division at (512) 463-6096. Following consultation with the THC, a treatment or avoidance plan would be developed and implemented.

As the LWA-related construction activities should have No Effect, direct or indirect, on historic properties or cultural resources that merit designation as State Antiquities Landmark and mitigation measures will be in place to address any new discoveries during construction, the impacts from the LWA on historical and cultural resources would be SMALL. Similarly, any potential redress impact would be SMALL as there would be no new land disturbances.

4.6 Air Resources

Air Quality is a Category 1 New Reactor GEIS issue. Specific Category 1 Air Quality issues applicable to the LWA construction activities as provided in Appendix A are:

- Emissions of Criteria Pollutants and Dust During Construction
- Greenhouse Gas Emissions During Construction

RG 4.2, Rev. 4 assumptions and PPE/SPE values supporting the SMALL impact determination for the Category 1 issues list above are provided in Appendix B. Appendix B also demonstrates compliance with the assumptions and PPE/SPE values as provided in the flowing sections of the Appendix B table:

- *Greenhouse Gas (GHG) Emissions*
- *Criteria Pollutant and Hazardous Air Pollutant Emissions*

As the LWA construction impacts are consistent with the Appendix B assumptions and PPE/SPE values, no Category 1 issues are evaluated in this section.

4.6.1 Greenhouse Gas Emissions During Construction

GHGs emitted by equipment and vehicles during the 97-year GHG life-cycle period would be less than 2,534,000 metric tons (MT) of carbon dioxide equivalents (CO₂e).

GHG emissions associated with the LWA project would occur during construction. GHG emissions are expressed as CO₂e, which account for the global warming potential of individual GHGs (Ref. 99).

Under the New Reactor GEIS evaluation methodology, lifecycle GHG emissions are considered SMALL if emissions over the 97-year project life do not exceed 2,534,000 MT CO₂e. This lifecycle threshold includes emissions associated with:

- Construction equipment operations,
- Construction workforce transportation,
- Plant operations,
- Uranium fuel cycle activities,
- Operational workforce transportation, and
- Decommissioning activities.

Of the lifecycle activities listed above, only construction equipment operations and construction workforce transportation are applicable to the LWA project. Consequently, operational GHG emissions would be substantially lower than emissions associated with the construction of a 1,000-megawatt electric (MWe) reference nuclear power plant described in Appendix H of NUREG-2249.

Table 4.6-1 provides the estimated lifecycle GHG emissions for the 1,000-MWe reference reactor described in NUREG-2249 Appendix H. A conservative estimate for GHG emissions from the LWA project related construction applying a scaling factor of 0.3 for the construction of a 300 MWe reactor is also provided in Table 4.6-1. To account for potential redress of LWA project construction activities, a scaling factor of 0.3 is conservatively applied to decommissioning emissions. Therefore, as provided in Table 4.6-1, the GHG emissions from the LWA project related construction activities and potential redress are bound by a total of 6,488 MT CO₂e, well below the 2,534,000 MT CO₂e Category 1 threshold.

4.6.2 Summary

Table 4.6-2 provides a summary of primary air quality assumptions and generic basis for Category 1 determination, and LWA construction project conditions. As presented in the table and supported by Appendix B, the air quality impacts from construction activities associated with the LWA are consistent with the NUREG-2249 Category 1 assumptions and values. Therefore, the overall impact of the LWA on air quality would be SMALL. Similarly, any potential redress impact would be SMALL as BMPs would be implemented during redress to minimize impacts to air quality. The projected GHG emissions described in Section 4.6.1 also consider redress.

Table 4.6-1. NUREG-2249 Nuclear Plant Life Cycle GHG Footprint

Source	Average Emissions per Year ^a (MT CO ₂ e)	LWA Scaling Factor ^b	LWA Construction Years ^c	LWA Emissions (MT CO ₂ e)
Construction equipment	5572	0.3	1.5	2508
Construction workforce	6143	0.3	1.5	2765
Plant operations	4525	N/A	N/A	N/A
Operations workforce	3400	N/A	N/A	N/A
Uranium fuel cycle	13500	N/A	N/A	N/A
Fuel and waste transportation	350	N/A	N/A	N/A
Decommissioning equipment	1900	0.3	1.5 ^d	855
Decommissioning workforce	800	0.3	1.5	360
Safe Storage workforce	250	N/A	N/A	N/A
Total GHG emissions				6,488

^a NUREG-2249 Table H-4 Total Emissions divided by Activity Duration

^b Based on the comparison of the 1,000 MWe NUREG-2249 Appendix H reference plant and a 300 MWe small modular reactor

^c As provided in Table 1.4-2.

^d Redress time assumed equivalent to construction time.

N/A – Not applicable to LWA activities.

Table 4.6-2. LWA Compliance with NUREG-2249 General Bounding Criteria for Air Quality

Category 1 Issues	Assumptions and Generic Basis	LWA Construction Project Conditions	Applicable Figure, Table, or LWA ER Section
Emissions of Criteria Pollutants and Dust During Construction	The site is less than 100 ac.	Approximately 15 ac of total land disturbance.	Figure 1.4-2
	Permanent disturbance is 30 ac or less of vegetated land.	No new offsite ROWa are to be constructed under the LWA.	Section 2.6.2
	Temporary disturbance is limited to an additional 20 ac or less of vegetated land.	Victoria County is classified as attainment/unclassifiable for all criteria pollutants.	Section 3.3.4
	Any new offsite ROW construction is limited to less than 1 mi and a maximum width of 100 ft.	No Mandatory Class I areas are within 1 mi of the LWA limit of disturbance.	
	Criteria pollutants during construction are less than the de minimis levels for a site in a nonattainment area or the site is located in an attainment area.	LOS determinations will not change from LOS A.	
	The site is not located within 1 mi of a Mandatory Federal Class I Area.	BMPs would be implemented construction activities will comply with all state and federal permits.	
	LOS determinations do not change.		
	BMPs for dust control would be implemented.		
Greenhouse Gas Emissions During Construction	GHGs emitted by equipment and vehicles during the 97-year GHG life-cycle period would be equal to or less than 2,534,000 MT of CO ₂ e.	Lifecycle greenhouse gas emissions are not expected to be greater than 6,488 MT of CO ₂ e, well below the NRC screening threshold.	Section 4.6.1 Table 4.6-1

Abbreviations: ROW = right-of-way; LOS = level of service; BMP = Best Management Practice; NRC = U.S. Nuclear Regulatory Commission; GHG = greenhouse gas; MT = metric tons; CO₂e = carbon dioxide equivalent

4.7 Nonradiological Health

Nonradiological Health encompasses both Nonradiological Environment and Noise which as both Category 1 issues in NUREG-2249. Specific Category 1 Nonradiological Health issues applicable to the LWA construction activities as provided in Appendix A are:

- Building Impacts of Chemical, Biological, and Physical Nonradiological Hazards
- Construction-related Noise

RG 4.2, Rev. 4 assumptions and PPE/SPE values supporting the SMALL impact determination for the Category 1 issues list above are provided in Appendix B. Appendix B also demonstrates compliance with the assumptions and PPE/SPE values as provided in the flowing sections of the Appendix B table:

- *Nonradiological Environmental Hazards*
- *Human-Related Noise Generation*

As the LWA construction impacts are consistent with the Appendix B assumptions and PPE/SPE values, no Category 1 issues are evaluated in this section.

4.7.1 Summary

Table 4.7-1 provides a summary of primary water resource assumptions and generic basis for Category 1 determination, and LWA construction project conditions. As presented in the table and supported by Appendix B, the nonradiological health impacts from construction activities associated with the LWA are consistent with the NUREG-2249 Category 1 assumptions and values. Therefore, the overall impact of the LWA on nonradiological health would be SMALL. Similarly, any potential redress impact on nonradiological health would be SMALL.

Table 4.7-1. LWA Compliance with NUREG-2249 General Bounding Criteria for Nonradiological Health

Category 1 Issues	Assumptions and Generic Basis	LWA Construction Project Conditions	Applicable Figure, Table, or LWA ER Section
Construction Impacts of Chemical, Biological, and Physical Nonradiological Hazards	All applicable federal, state, local or Tribal regulatory limits and permit conditions for chemical hazards, biological hazards, and physical hazards would be followed. BMPs and mitigation measures for nonradiological public and occupational health would be used.	Blue Energy would comply with applicable regulations and implement BMPs during execution of the LWA construction.	Section 2.7 Section 3.3.6
Noise	The noise level would be no more than 65 dBA at site boundary. BMPs, such as modeling, foliage planting, construction of noise buffers, and the timing of construction and/or operation activities would be implemented.	Noise levels during construction would be no more than 65 dBA at site boundary (edge of the Primary Facilities Parcel is 0.33 mi from the LWA limit of disturbance). If the 65 dBA threshold cannot be met, BMP would be implemented to mitigate noise levels.	Section 2.7.2 Section 3.3.5 Table 3.3-1

Abbreviations: BMP = best management practice; dBA = A-weighted decibels

4.8 Radiological Health

This section is not applicable to the LWA.

4.9 Nonradiological Waste Management

Nonradiological Waste Management is a Category 1 issues in NUREG-2249. Specific Category 1 Nonradiological Waste Management issues applicable to the LWA construction activities as provided in Appendix A are:

- Construction Nonradiological Waste

RG 4.2, Rev. 4 assumptions and PPE/SPE values supporting the SMALL impact determination for the Category 1 issues list above are provided in Appendix B. Appendix B also demonstrates compliance with the assumptions and PPE/SPE values as provided in the flowing sections of the Appendix B table:

- *Nonradiological Waste Management*

As the LWA construction impacts are consistent with the Appendix B assumptions and PPE/SPE values, no Category 1 issues are evaluated in this section.

Table 4.9-1 provides a summary of primary nonradiological waste management assumptions and generic basis for Category 1 determination, and LWA construction project conditions. As presented in the table and supported by Appendix B, the socioeconomic impacts from construction activities associated with the LWA are consistent with the NUREG-2249 Category 1 assumptions and values. Therefore, the overall impact of the LWA on socioeconomics would be SMALL. Similarly, as redress would likely generate less waste than LWA activities, impact on nonradiological waste management from redress would be SMALL.

Table 4.9-1. LWA Compliance with NUREG-2249 General Bounding Criteria for Nonradiological Waste Management

Category 1 Issues	Assumptions and Generic Basis	LWA Construction Project Conditions	Applicable Figure, Table, or LWA ER Section
Construction Nonradiological Waste	The applicant must meet all the applicable permit conditions, regulations, and BMPs related to solid, liquid, and gaseous waste management. For hazardous waste generation, applicants must meet conformity with hazardous waste quantity generation levels in accordance with RCRA. For sanitary waste, applicants must dispose of sanitary waste in a permitted process. For mitigation measures, the applicant would perform mitigation measures to the extent practicable, such as recycling, process improvements, or the use of a less hazardous substance.	Blue Energy would comply with applicable regulations and implement BMPs during execution of the LWA construction.	Section 3.3.7

Abbreviations: BMP = best management practice; RCRA = Resource Conservation and Recovery Act

CHAPTER 5 – ENVIRONMENTAL IMPACTS FROM OPERATION OF THE PROPOSED PLANT

This chapter is not applicable to an LWA application.

CHAPTER 6 – FUEL CYCLE, TRANSPORTATION, AND DECOMMISSIONING IMPACTS

This chapter is not applicable to an LWA application.

CHAPTER 7 – CUMULATIVE IMPACTS

This Chapter presents the resource impact area of each environmental resource type for the Blue Energy Center Port of Victoria (BECPV) Limited Work Authorization (LWA) project as described in Chapters 1 through 4; identifies federal, state, local, or other activities within the defined resource impact areas that could contribute to cumulative impacts on the environmental resource types; assesses those cumulative impacts for significance, and suggests mitigation efforts, where applicable, to address cumulative impacts.

The United States (U.S.) Nuclear Regulatory Commission (NRC) regulations in Title 10 of the Code of Federal Regulations (CFR) Part 51 implementing the National Environmental Policy Act of 1969 (NEPA), as amended (42 United States Code Section 4321 et seq.), require the NRC to consider the cumulative impacts of proposals under its review (10 CFR 51.71(d)). Cumulative impacts may result when the environmental effects associated with the proposed action are overlaid or added to temporary or permanent effects associated with past, present, and reasonably foreseeable future actions.

In NUREG-2249, the NRC concluded that evaluating cumulative effects without knowing specific site locations or the time frame for evaluating reasonably foreseeable actions is not possible generically. Therefore, the cumulative effects of the proposed action (i.e., LWA construction) must be considered on a project-specific basis. Because environmental effects depend on regional resource characteristics, the resource-specific impacts of the proposed project, and the cumulative significance of other factors affecting the resource, this is a Category 2 issue and must be evaluated.

This chapter is divided into two sections:

- Past, Present, and Reasonably Foreseeable Future Activities – Section 7.1
- Impact Assessment – Section 7.2

Impacts are analyzed and assigned a significance level of potential impact to each resource (i.e., SMALL, MODERATE, or LARGE) consistent with the criteria that the NRC established in 10 CFR Part 51, Appendix B, Table B-1, Footnote 3. Unless the impact is identified as beneficial, the impact is considered adverse. In the case of “SMALL,” the impact may be negligible. The definitions of significance are as follows:

- **SMALL:** Environmental effects are not detectable or are so minor that they neither destabilize nor noticeably alter important attribute of the resource. For the purpose of assessing radiological impacts, the NRC has concluded that those impacts that do not exceed permissible levels in the NRC’s regulations are considered SMALL.
- **MODERATE:** Environmental effects are sufficient to alter noticeably, but not to destabilize important attributes of the resource.
- **LARGE:** Environmental effects are clearly noticeable and are sufficient to destabilize important attributes of the resource.

7.1 Past, Present, and Reasonably Foreseeable Future Projects

Cumulative impacts result when the effects of a proposed action are added to or interact with other past, present, and reasonably foreseeable future effects on the same resources. Actions that have a timing that is “past” or “present” inherently have environmental impacts that are

integrated into the base condition for each of the resources described in Chapter 2. However, these actions are included in this subsection to provide for a more complete description of the overall impact of past actions on the environment. Reasonably foreseeable future projects are those future actions that have been identified as having a likely or reasonable certainty to occur. Reasonably foreseeable future projects are not applicable to the LWA, but they will be assessed in the Environmental Report (ER) for the Construction Permit Application (CPA) for small modular reactor (SMR) 1.

The reasonable certainty of these actions is based on the availability of existing plans for the proposed action, published permit applications, established funding, or reasonable extensions of current trends. Although such actions are likely to happen, they are still subject to some uncertainty. Actions that are not reasonably foreseeable are those based on speculation or conjecture or are actions that have only been discussed on a conceptual basis and are not considered in this chapter.

To identify past, present projects, the area of impact is first considered. The area of impact for each resource area, as well as the relevant sections of this LWA ER describing the resource and assessing the environmental impacts, are presented in Table 7.1-1.

Table 7.1-2 identifies relevant past and present projects and other actions within the LWA project region of interest (ROI). The analysis of potential cumulative impacts is based on publicly available information about existing and proposed projects and general knowledge of the conditions in the region.

The activities listed in Table 7.1-2 have the potential to impact the resource types listed in Table 7.1-1 within the greater ROI defined as within a 50-mi radius of the LWA project site and they are included in the cumulative impact assessment. Additional activities identified have been screened out because their potential environmental resource impacts are outside of the ROI defined for the LWA project.

Table 7.1-1. Region of Interest by Specific Resource

Resource	Resource Impact Area	Relevant Environmental Report Sections
Land Use	LWA project site and vicinity (6-mi radius from the LWA project site)	Section 2.1 Section 4.1
Surface Water	LWA project site, river sub basin of East San Antonio Bay and watershed of Black Bayou-Green Lake. ROI based on watershed connectivity.	Section 2.2 Section 3.3.4 Section 4.2
Groundwater	LWA project site and vicinity (6-mi radius from the LWA project site), ROI based on aquifers evident at LWA project site and vicinity (Gulf Coast aquifer).	Section 2.2 Section 3.3.4 Section 4.2
Terrestrial Ecology	LWA project site and vicinity (6-mi radius from the LWA project site). ROI based on potential for direct and indirect effects.	Section 2.3 Section 4.3
Aquatic Ecology	LWA project site and Primary Facilities Parcel and Support Parcel of approximately 245 and 200 ac respectively.	Section 2.3 Section 4.3
Socioeconomics	Region defined as 7 counties within 50-mi radius of LWA project region (Calhoun, Jackson, Victoria, Dewitt, Goliad, Lavaca, and Refugio Counties)	Section 2.4 Section 4.4
Historic and Cultural Resources	The resource impact area for the cumulative analysis would be the same APE described in Chapter 2.0.	Section 2.5 Section 4.5
Air Quality	Victoria County	Section 2.6 Section 3.3.4 Section 4.6
Non-radiological Health	Noise –6-mi vicinity Public and Occupational health –6-mi vicinity Transportation of Construction Materials – the area that has the potential to increase risks at any location within a 50-mi region	Section 2.7 Section 3.3.5 Section 3.3.6 Section 4.7
Nonradioactive Waste Management	The resource impact area is considered to be the area that has the potential to increase risks at any location within a 50-mi radius of the LWA project site.	Section 2.9 Section 3.3.7 Section 4.9

Abbreviations: ROI = region of influence; APE = area of potential effect

Table 7.1-2. Past, Present, and Reasonably Foreseeable Projects and Other Actions Considered in the Cumulative Analysis

Activity Name	Summary of Activity	Location	Status
Nuclear Projects			
Long Mott Generating Station	Long Mott is a 320 MWe nuclear plant with 4 SMRs producing roughly 80 MWe each	Approximately 13 mi SE in Port Lavaca, TX	Proposed. In process of regulatory review and planned to become operational in the early 2030s. (Ref. 146)
Other Energy Projects			
Coletto Creek Power Station	650 MWe single unit coal-fired electrical generating facility on roughly 8,000 ac in Fannin, Texas.	Approximately 18 mi NW in Fannin, TX	Operational and Proposed. Scheduled to close in 2027 and be repowered as a gas-fueled plant (Ref. 147, Ref. 148)
Natural Gas-Fired Electric Power Plants	Twelve natural gas-fired plants, with a combined generative capacity of over 2000 MWe.	Throughout the 50-mi ROI	Operational. (Ref. 149)
Battery Storage Power Plants	Two existing battery storage power plants – Loop 463 and TX2 Port Lavaca – with a combined generative capacity of roughly 20 MWe.	Loop 463 – Approximately 15 mi NW TX2 Port Lavaca – Approximately 13 mi SE	Operational. (Ref. 149)
Petroleum Power Plants	Two existing petroleum power plants – Seadrift Coke and CG PS Victoria WWTP – with a combined generative capacity of roughly 9 MWe	CG PS Victoria WWTP – Approximately 11 mi NW Seadrift Coke – Approximately 12 mi SE	Operational. (Ref. 149)
Oriana Solar	Solar facility producing 232 MW of energy	Approximately 19 mi N in Victoria, TX	Operational. Facility commenced commercial operations in September 2025. (Ref. 150)
Crossroads Wind Farm	Wind farm with a capacity of 277 MWe	Approximately 10 mi SE in Victoria County	Proposed. Facility expected to begin commercial operations in June 2027. (Ref. 151)
Blue Energy CCGT	Two natural gas-fired plants, with a combined capacity of approximately 768 MW	Adjacent to the LWA project site	Projected to be operational in 2031.
Industrial			
Seadrift Operations	Material manufacturing complex and energy cogeneration facility spanning 4700 ac.	Approximately 12 mi SE	Operational. (Ref. 152)

Activity Name	Summary of Activity	Location	Status
Dow Seadrift Cogeneration Plant	Closure of the cogeneration plant at SDO to replace with nuclear energy.	Approximately 12 mi SE	Proposed. (Ref. 153)
Formosa Plastics Corp. USA	Petrochemical manufacturing complex on 2,500 ac in Point Comfort.	Approximately 23 mi E in Point Comfort, TX	Operational. (Ref. 154)
First Ammonia	Green ammonia production facility powered by renewable energy on 115 ac.	Approximately 4 mi NW at the Port of Victoria	In progress. Construction planned to begin in 2026 with operations beginning in 2029. (Ref. 155)
INEOS Nitriles Green Lake	Petrochemical manufacturing and power generation complex on 4,000 ac in Victoria, TX.	Approximately 8 mi SE in Port Lavaca, TX	Operational. (Ref. 156)
Transportation Projects			
Texas Logistics Center Rail Services Expansion	Railcar service and storage infrastructure improvements at the Port of Victoria's Texas Logistics Center	Approximately 4 mi NW at the Port of Victoria	In Progress. (Ref. 157)
Bridging the Gulf – Creating Opportunity on the Victoria Barge Canal	Bridge replacement project over the Victoria Barge Canal.	Approximately 2 mi SW	In progress. Estimated completion by December 31, 2028. (Ref. 158)
Port and Ship Channel Improvement Projects			
Regional Port Development Projects	Port of Victoria, Port of West Calhoun, and Calhoun Port Authority. Various capital improvement projects.	Throughout the 50-mi ROI	Operational. Projects included in the 2024 — 2025 Port Capital Investment Report. (Ref. 159)
MSC Improvement Project	The MSC is a federal deep-draft waterway in Calhoun and Matagorda counties. Plans include deepening and widening of the channel and adding a turning basin.	Approximately 23 mi E and SE in Matagorda and Calhoun Counties, TX	Proposed. Final Integrated Validation Report / Supplemental Environmental Impact Statement published June 2026. (Ref. 160, Ref. 161)
Transmission Line/Substations			
Transmission Line Projects	The Electric Reliability Council of Texas identifies projects consisting of rebuilding, reconductoring, and upgrading existing transmission lines and substations in order to increase reliability	Within the 50-mi region of the Project site.	Ongoing and proposed. Several projects are ongoing. Over 180 projects have been proposed in the area. (Ref. 162)
Parks and Aquaculture Facilities			
Aransas National Wildlife Refuge	Implement a land acquisition process to expand Aransas NWR by roughly 95,000 ac.	Approximately 25 mi SW in Austwell, TX	Operational. The USFWS proposes to expand the conservation land acquisition boundary in Aransas NWR as part of the future Land Protection Plan. (Ref. 163)

Activity Name	Summary of Activity	Location	Status
Other Actions/Projects			
New Alkoxylation Unit Project	Union Carbide Corporation Alkoxylation Plant Construction and Infrastructure Expansion.	Approximately 17 mi SE in Seadrift, TX	In Progress. Construction expected completion by June 2025. (Ref. 164)
Port Lavaca Reservoir Expansion	LNRA plans to construct a dam and reservoir and associated diversion reach to impound water on the Lavaca River.	Approximately 23 mi E in Point Comfort, TX	Proposed. LNRA filed a draft water use permit July 10, 2020. (Ref. 165)
Lynas Rare Earths Processing Facility	Construct and operate a 66-ac manufacturing plant to process heavy rare earth elements on a 149-ac site.	Approximately 13 mi SE in Seadrift, TX	In Progress. (Ref. 166)
Recycle Waste Transfer Station	Expansion of existing public recycle waste transfer station in Calhoun County.	Approximately 14 mi SE in Port Lavaca, TX	Operational. Opened on December 4, 2025. (Ref. 154)

Abbreviations: STP = South Texas Project; MWe = megawatt electric; NE = northeast; WWTP = Wastewater Treatment Plant; N = north; NW = northwest; SW = southwest; SDO = Seadrift Operations; TX = Texas; NWR = National Wildlife Refuge; MSC = Matagorda Ship Channel; TxDOT = Texas Department of Transportation; CCGT = combined cycle gas turbine; USFWS = U.S. Fish and Wildlife Service; ROI = region of influence; SE = southeast; E = east; LNRA = Lavaca-Navidad River Authority

7.2 Impact Assessment

Chapter 4.0 concludes that LWA related construction would result in SMALL adverse impacts associated with each resource area. Impacts to land use, water resources, ecological resources, historic and cultural resources, air quality, non-radiological health, and waste management are expected to be SMALL. Socioeconomic impacts during construction would be beneficial because of temporary employment and economic activity generated by the LWA project.

This cumulative impact assessment evaluates the potential for LWA-related and shaft support exemption-related activities to have a noticeable contribution to broader environmental impacts when considered in combination with other past and present actions listed in Table 7.1-2, including those undertaken by Blue Energy in support of concurrent combined cycle gas turbine (CCGT) construction activities, prior CCGT plant site preparation, and balance-of-plant and fire-protection-related exemption activities required for the CCGT plant. Consistent with Council on Environmental Quality and NRC cumulative effects guidance, cumulative impacts are assessed as the incremental effects of the proposed action when added to the effects of other activities affecting the same environmental resources.

The Victoria County area is characterized by a diverse industrial and energy economy that includes electric generation facilities, petrochemical manufacturing complexes, port facilities, navigation infrastructure, transportation corridors, transmission networks, and expanding renewable energy development. The cumulative effects analysis considered the Long Mott Generating Station; the Coleto Creek Power Station repowering project; natural gas, battery storage, petroleum, solar, and wind generation facilities; petrochemical and manufacturing facilities including Formosa Plastics, INEOS Nitriles Green Lake, and Seadrift Operations; the First Ammonia green ammonia production facility; transportation, rail, transmission, and port infrastructure projects; water supply projects; and regional industrial expansions.

7.2.1 Blue Energy Center – Port of Victoria CCGT Activities

The LWA project would be located within an existing agricultural setting with significant industrial development located to the northwest. Due to the small size of the LWA-related and shaft support exemption-related construction as described in Chapter 2, it would not constitute significantly to the overall level of industrial activity anticipated within the 50-mi ROI. Therefore, cumulative impacts are expected to be affected more significantly by regional energy, industrial, transportation, and infrastructure development rather than by the LWA project itself and balance-of-plant (BOP) systems. The cumulative impacts of the LWA and shaft construction, which is assessed in detail in Chapter 4 of this LWA Environmental Report (ER), added to the impacts of the overlapping construction activities for the CCGT plant are considered in this section.

CCGT plant construction activities will affect an area significantly larger than the LWA limit of disturbance. Specifically, 190-acres of the 245-acre Primary Facilities Parcel will undergo tree and brush clearing, grubbing, and rough grading. This clearing will include the roughly 10-acre LWA limit of disturbance.

The CCGT plant site preparation phase will also involve the construction of access roads, parking areas, heavy haul roads, and site drainage, as detailed in ER Section 3.1. Site preparation will also include placement of site perimeter fencing, and other support facilities like offices trailers, common areas for temporary fuel storage and waste storage and an additional approximate four acres within a temporary construction support area northwest of the 245-acre Primary Facilities Parcel will be used for two concrete temporary concrete batch plants. Some

LWA preconstruction activities occur concurrently with completion of the site preparation for the CCGT plant. For example, while site drainage is being completed on the remainder of the 245-acre parcel, additional trailers and a bentonite plant will be installed within the LWA limit of disturbance. Additionally, some LWA preconstruction activities will take place on the 200-acre Support Parcel, which includes approximately 5 acres designated for the storage of excavation spoils generated from LWA activities.

Importantly, CCGT construction activities will avoid disturbing 55 acres reserved for future SMR units within the 245-acre Primary Facilities Parcel, as well as the Traylor Family and San Jose cemeteries, maintaining a 100-foot buffer around each cemetery.

CCGT plant construction activities that will occur prior to or that will overlap the LWA and shaft construction include piling installation, construction of foundations, installation of underground utilities, erection of tanks, and construction of the CCGT plant administration and maintenance buildings. The average workforce for the CCGT and BOP activities during this period is estimated to be approximately 175 workers.

Because the CCGT construction activities would be more widespread than the LWA and reactor building shaft construction, the negative environmental impacts would be, at a minimum, proportionally greater than the LWA construction activities based on the area of land disturbance. Because both projects would occur within the same general area and overlap, the potential for cumulative effects on environmental resources are evaluated for impacts evaluated in Chapter 4 that are considered most likely to have a negative impact on the local environment.

7.2.1.1 Air Quality

With respect to air quality, both projects would each result in temporary emissions associated with construction equipment, vehicle traffic, and land-disturbing activities. In addition, the CCGT plant construction would include operation of a temporary concrete batch plant, which would generate emissions from material handling, truck traffic, and concrete production activities, as well as the potential for fugitive dust from the storage and transfer of aggregate and cement materials. While the concrete batch plant will also support LWA activities, its primary purpose is to support the CCGT plant construction, and it will be constructed and operated for the CCGT plant construction even if the LWA is not granted by the NRC. All emissions would be localized and short-term in nature. When considered cumulatively, construction-related emissions from both projects could result in a temporary increase in criteria pollutants and dust generation within the project vicinity. However, implementation of applicable permitting requirements, industry-standard dust suppression measures, and equipment emission controls that would minimize impacts for the LWA and reactor building shaft construction would also be implemented by Blue Energy for the CCGT plant construction. Given the limited footprint and construction scope of LWA and shaft construction, the cumulative effect on regional air quality would not be expected to be significant.

7.2.1.2 Noise

Noise impacts from both projects would primarily occur during construction and would be associated with operation of heavy equipment, construction vehicles, and site development activities. To the extent that construction activities overlap, temporary increases in ambient noise levels could occur within and immediately adjacent to the project site. These effects would be intermittent, localized, and limited to the duration of construction activities. Once LWA and shaft construction is complete, the contribution of these activities to cumulative noise conditions would be minimal, and any operational noise associated with the CCGT plant would be

addressed through applicable design and regulatory requirements. Therefore, cumulative noise impacts are expected to be minor and not significant.

7.2.1.3 Land Use

Both the LWA construction and the CCGT plant construction would contribute to the conversion of prime farmland within the 445-acre project site. Because the projects would occur on the same property, the total acreage converted from agricultural use would represent the cumulative loss attributable to Blue Energy's planned development activities. While this conversion would result in a permanent reduction in the amount of prime farmland available for agricultural production within the project boundaries, the affected acreage represents a relatively small portion of the surrounding agricultural land base in the 6-mile vicinity of the site and the greater 50-mile region. Accordingly, the cumulative impact on regional agricultural resources would be limited.

7.2.1.4 Terrestrial Ecology

No cumulative impacts to wetlands are anticipated because neither construction project would affect jurisdictional wetlands. Similarly, both projects would affect generally common vegetation communities and wildlife species that are not considered ecologically sensitive, protected, or otherwise of particular conservation importance. Habitat disturbance associated with the projects would occur within previously identified areas of suitable habitat, and the nature of the impacts would be substantially similar to those previously described for the LWA project. Consequently, while the projects would collectively contribute to habitat modification within the project site, cumulative effects on ecological resources are not expected to be significant due to the absence of sensitive habitats, special-status species, or other unique ecological features.

7.2.1.5 Water Resources

As outlined in ER Sections 2.2 and 4.2, the LWA will have minimal impact on water resources. Although site preparation and CCGT plant construction will have similar types of demands and impacts, the scale of these impacts will be proportionate to the number of disturbed acres. The primary water demands during construction will be for dust control and concrete production. Approximately 72,000 gallons of water per day would be required for overall construction use (i.e., CCGT facility construction, including BOP and FPS, and LWA and shaft construction scope). Similar to the LWA construction, all water will be transported to the site using tanker trucks. To minimize potential impacts to water resources during construction, best management practices will be implemented, and all activities will comply with relevant water-related permits.

7.2.1.6 Summary of Cumulative Impacts for Site Preparation and CCGT Plant Construction

Overall, when the impacts of the LWA project are considered together with those of the larger site preparation and CCGT plant construction, the cumulative effects would be primarily associated with temporary construction-related air quality and noise impacts and the permanent conversion of some prime farmland. Additionally, the workforce required to support the CCGT plant construction tasks will be larger than the approximately 45-person workforce for the LWA. However, the smaller LWA workforce will add to both beneficial and negative socioeconomic impacts. Therefore, because the LWA project would disturb only a small portion of the overall 245-acre project site, the workforce would be small compared to the greater BECPV project, and because there would be no cumulative impacts to wetlands, ecologically sensitive resources, or culturally sensitive resources, the additional effects of the LWA project on environmental resources impacted by the CCGT plant construction would not result in significant adverse cumulative environmental impacts and the impacts would remain SMALL.

7.2.2 Blue Energy Center – Port of Victoria Exemption Activities

In accordance with the provisions of 10 CFR 50.12, Specific Exemptions, Blue Energy, is submitting a request for an exemption from the requirements of 10 CFR 50.10, License required; limited work authorization, specifically activities defined as construction in 10 CFR 50.10(a)(1) that require applicants to submit a construction permit application (CPA) prior to driving piles, subsurface preparation, placing backfill, concrete, or permanent retaining walls within an excavation, installation of foundations, or in-place assembly, erection, fabrication, or testing, of those structures, systems and components relied upon to mitigate accidents or transients or used in plant emergency operating procedures and whose failure could cause a reactor scram or actuation of a safety-related system. For its exemption request, Blue Energy focuses on BECPV-N01 BOP systems, structures, and components (SSCs) that it justifies would not meet the definition of construction (e.g., the steam turbine generator, the cooling towers) that are required to operate the gas plant in combined-cycle mode. BOP SSCs that meet the definition of preconstruction activities (e.g., the turbine building and its foundation and piles) do not need prior NRC approval prior to construction and can be built as part of the CCGT plant, as discussed in Section 7.2.1, but still need to be considered as part of the cumulative impacts. The greater BECPV project's gas-to-nuclear strategy depends on constructing certain BOP SSCs before issuance of the construction permit. Absent the requested exemptions, these activities would fall within the definition of construction in 10 CFR 50.10(a)(1) and could not be authorized until the construction permit is issued. The exemptions support proceeding with a limited subset of non-safety-related and "non-seismic" SSCs by demonstrating that any indirect effects on safety-related SSCs are negligible and do not undermine the underlying intent of the definition of construction in the regulations.

Additionally, Blue Energy is submitting a request for an exemption from 10 CFR 50.10(c) to allow installation of select fire-protection-related SSCs. to allow the installation of the portions of the fire protection system (FPS) needed to protect the BOP SSCs that will support CCGT plant operations before the Project transitions to nuclear operations. The scope of the exemption request includes: the firewater tanks, the fire pump enclosure, the underground firewater loop and hydrants in the yard, and the fire barrier, suppression, and detection systems associated with the BOP, such as fire-rated doors, penetrations seals, standpipes and hose stations, fire extinguishers, smoke detectors, and alarms in the Turbine Building and ancillary buildings (e.g., warehouses, office buildings, or other temporary buildings needed for construction support). The FPS is required to allow the CCGT plant to operate. Both the BOP SSCs and the FPS will be considered part of the CCGT plant initially and not be within the jurisdiction of the NRC until transition to the SMR.

The activities authorized by these exemptions primarily occur within the area of the CCGT plant and BECPV-N01 turbine building activities and all occur on the Primary Facilities Parcel, which will have been cleared, grubbed, and rough graded as part of early site preparation for the CCGT plant. The exemption-related activities are expected to involve no ground disturbance beyond that already performed as part of the CCGT activities for the BOP.

For the exemption-related BOP SSCs, most of the activities will be bounded by site preparation and CCGT construction (i.e., installation of piles for the turbine building, the foundation for the turbine building, the buried circulating water piping, installation of underground utilities, and installation of minor foundations for tanks and other equipment located outdoors, and erection of outdoor tanks). Future construction activities allowed by the exemption would include installation of the cooling towers and all equipment within the turbine building, allowing subsequent operation of the BOP as part of the CCGT plant.

For the FPS, the SSCs installed will also be within the area disturbed for CCGT plant construction and the LWA activities. The FPS is considered an underground utility, so the FPS underground loop would be installed concurrently with the other utilities for the CCGT plant. Similarly, foundations for the pump enclosure and fire-water tanks would be installed as part of CCGT construction, concurrent with LWA activities. Finally, the fire-water tanks would be erected concurrently with LWA activities. Future activities involve installation of the prefabricated pump enclosure skid on its pad and final connections, as well as installation of all fire barriers, suppression, and detection systems internal to the turbine building and ancillary buildings (like the admin building).

The environmental impacts of the exemption-related construction will be similar to or less than those that will be observed during the CCGT plant construction as described in Section 7.2.1. However, less of the exemption-related construction will overlap the LWA construction. Some activities that are expected to overlap include installation of the FPS underground piping and firewater tanks. Therefore, the additional impacts of the additional effects of the LWA construction on environmental resources impacted by the construction of exempt SSCs (i.e., BOP SSCs and FPS required for CCGT operation) would not result in significant adverse cumulative environmental impacts and the impacts would remain SMALL. Therefore, the impact of the LWA and shaft construction and the exemption-related activities that occur concurrently with the LWA would result in a negligible change to the cumulative impacts for the region of interest (i.e., would not change the impact level as compared to the baseline), as shown in Table 7.2-1.

However, while the LWA does not significantly contribute to the impacts of the overall BECPV project, when considered collectively, the impacts of the overall BECPV project on the resources discussed in Section 7.2.1 prior to construction of BECPV-N01 under a future construction permit may be SMALL to MODERATE, potentially having noticeable, but not destabilizing impacts within the vicinity of the project.

7.2.3 Other Energy and Industrial Development

Multiple large-scale energy projects are planned, under construction, or operating within the ROI. These include the proposed Long Mott Generating Station (nuclear), operation of existing natural gas-fired generation facilities, battery storage facilities, petroleum-fired generating units, the Oriana Solar facility, the proposed Crossroads Wind Farm, and the proposed First Ammonia green ammonia facility. Additional industrial growth is anticipated through continued operation and expansion of Seadrift Operations, Formosa Plastics Corporation USA, INEOS Nitriles Green Lake, and other industrial developments associated with the Texas Logistics Center.

Construction related to the LWA project would overlap with portions of these ongoing and future offsite developments. Potential cumulative effects could include temporary increases in regional construction employment, demand for construction materials, traffic, and equipment usage. However, the proposed LWA construction activities require substantially fewer workers, materials, land disturbance, and utility demands than the major industrial and energy projects within the ROI. Because the construction activities would not generate electricity, consume substantial process water, or produce significant air emissions, construction would not be expected to significantly change regional industrial, utility, or environmental conditions. However, regional development would continue to convert and intensify land uses within the ROI with permanent conversion of primary agricultural land to more industrial uses. Therefore, while the LWA construction activities would have a minor contribution, the cumulative impacts associated with past, present, and future regional industrial growth are expected to be MODERATE.

7.2.4 Transportation

Several transportation and logistics projects have the potential to overlap temporally with construction of the proposed facilities. These projects include implementation of the Strategic Corridor System Plan, the Bridging the Gulf bridge replacement project over the Victoria Barge Canal, expansion of rail services at the Texas Logistics Center, regional port development projects, improvements to the Matagorda Ship Channel, and upgrades to transmission infrastructure.

These activities are expected to generate temporary construction traffic, equipment transport, and increased freight movement that have the potential to overlap with commuting and material deliveries associated with the Proposed Action. However, the anticipated workforce and material requirements would be substantially smaller than those associated with regional transportation, port, rail, and utility infrastructure projects. As discussed in Section 4.4, construction traffic impacts associated with the LWA project would be temporary and localized and are anticipated to be SMALL. Therefore, the LWA project would not considerably alter regional transportation patterns and would result in only negligible cumulative traffic impacts when combined with other foreseeable projects within the 50-mi ROI.

The Texas Logistics Center Rail Services Expansion and rail infrastructure projects are intended to support anticipated industrial and energy-sector growth within Victoria County, increasing freight movement capacity and providing logistical benefits to future industrial facilities within the region. Although temporary increases in traffic volume, heavy truck movement, and construction noise could occur, these effects would be temporary and dispersed throughout the ROI. Therefore, cumulative transportation-related impacts are expected to remain SMALL.

7.2.5 Water Resources

Several regional projects could influence water resources, including the proposed Port Lavaca Reservoir Expansion, industrial developments at the Port of Victoria, green ammonia production facilities, and continued operation of major industrial complexes.

The LWA-related construction activities would require only modest water use and limited operational water demand compared to major industrial, power generation, and manufacturing facilities in the region. No substantial withdrawals from regional surface water or groundwater sources are anticipated. Similarly, runoff and sedimentation from construction would be relatively minor compared to existing municipal and industrial discharges and would be controlled via LWA project BMPs.

As a result, impacts from the proposed facilities to aquatic resources are limited and would make an insignificant contribution to cumulative impacts on regional water supply, groundwater resources, surface waters, or wastewater infrastructure. As such, cumulative impacts are expected to remain consistent with the Section 4.2 determination of SMALL impacts.

7.2.6 Ecological Resources

The ROI contains a variety of ecological resources, including coastal habitats, wetlands, agricultural lands, undeveloped properties, and conservation areas such as the Aransas National Wildlife Refuge. Future projects, including industrial expansion, renewable energy developments, transportation projects, port improvements, and transmission upgrades, have the potential to result in incremental habitat disturbance and fragmentation.

The LWA-related construction activities would be within a relatively small footprint in a setting disturbed by industrial and agricultural activities. As described in Section 2.3, plant communities found throughout the LWA project site are common and well represented throughout the

regional vicinity. Wildlife communities exhibit low diversity and are dominated by common urban and agricultural species. Large areas of contiguous, similar habitat are adjacent to the site; as such, more mobile species would likely disperse to these adjacent habitats during land clearing. However, smaller, less mobile species (such as insects, small mammals, reptiles, and amphibians) may be displaced or suffer localized mortalities during building activities, clearing and grading. The loss of these individual organisms will not adversely affect regional species' populations. Additionally, direct impacts to wildlife and offsite jurisdictional wetlands and downstream aquatic habitats would be minimized through the implementation of appropriate BMPs and erosion controls. Therefore, impacts to ecological resources are anticipated to be SMALL. Although cumulative habitat losses may occur regionally as development continues, the Proposed Action would represent only a minor contribution to those impacts.

7.2.7 Socioeconomics

Numerous projects within the ROI, including Long Mott Generating Station, First Ammonia, Crossroads Wind Farm, the Texas Logistics Center expansion, rail infrastructure improvements, port development projects, and industrial manufacturing expansions, are expected to generate employment opportunities, tax revenues, and economic growth.

The Proposed Action would contribute additional temporary construction employment and economic benefits. However, staffing requirements for the LWA-related construction activities would be modest compared to other regional industrial and energy projects.

Given the scale of economic activity already occurring within the region, the Proposed Action would contribute only a small incremental socioeconomic benefit. In combination with other planned developments, cumulative socioeconomic impacts are anticipated to remain SMALL and beneficial.

7.2.8 Air Quality, Noise, and Public Health

Regional air quality is affected primarily by industrial sources, power generation facilities, transportation networks, petrochemical manufacturing operations, and maritime activities. Construction emissions associated with the LWA project would occur concurrently with emissions from other foreseeable projects, including the adjacent Blue Energy Combined Cycle Natural Gas plant and other regional industrial expansion, transportation improvements, and energy developments.

Construction emissions from the Proposed Action would be temporary and localized. Emissions would be minimal because the LWA project facilities are 30 ac. or less and would comply with applicable state and federal air permits. Consequently, cumulative air quality impacts would remain SMALL.

Construction noise associated with the Proposed Action could overlap with construction activity associated with transportation, industrial, and energy projects throughout the ROI but impacts would be temporary and localized. Therefore, with adherence to applicable federal, state, and local requirements and implementation of the controls and BMPs described in Section 4.7.2, cumulative noise associated with LWA project activities are expected to remain SMALL.

The Proposed Action would have mitigation measures implemented to protect the occupational health and safety of workers and the public. As discussed in Section 4.7.1, strict compliance with applicable Occupational Safety and Health Administration, and state safety requirements, including the standards and procedures set forth in *29 CFR 1910, Occupational Safety and Health Standards*, and the Texas Health and Safety Code would provide protection of public and occupational health. As a result, cumulative health impacts are expected to be SMALL.

7.2.9 Waste Management

The LWA project would generate nonradioactive wastes similar to those generated by other industrial and commercial construction projects in the 50-mi ROI. As discussed in Section 4.9, nonradioactive waste would be managed in accordance with applicable federal, state, and local requirements, with recyclable materials segregated and transferred to appropriate recycling facilities where practicable. Solid waste would be transported to permitted disposal facilities, and liquid wastes would be managed in accordance with applicable permit conditions and site-specific management plans.

Construction activities associated with multiple projects could result in temporary increases in demand for regional landfill capacity, recycling facilities, wastewater handling systems, and waste transportation services. However, the nonradioactive waste volumes associated with the LWA project would be relatively small compared to those generated by the larger industrial and energy developments occurring within the ROI. Furthermore, waste minimization practices would reduce the potential for adverse impacts to land, water resources, or public health. Because adequate regional waste management facilities currently exist and additional industrial projects would be required to comply with applicable waste management regulations, cumulative impacts associated with nonradioactive waste management are expected to remain SMALL.

7.2.10 Cumulative Impact Conclusion

The Victoria region is experiencing continued growth driven by energy development, petrochemical manufacturing, transportation infrastructure improvements, port expansion, renewable energy projects, and emerging clean-energy industries. Major foreseeable actions include the Long Mott Small Modular Reactor project, First Ammonia facility, Crossroads Wind Farm, Coletto Creek repowering project, Texas Logistics Center rail expansion, regional port improvements, and various industrial manufacturing developments.

The proposed LWA and shaft construction would represent a comparatively small component of this broader development pattern. Construction impacts would be temporary and localized. Although the LWA project would incrementally contribute to cumulative effects on land use, traffic, air quality, socioeconomic conditions, and industrial activity, these contributions would be small relative to existing and reasonably foreseeable future projects within the ROI.

Therefore, the incremental impacts of the Proposed Action, when added to other past, present, and reasonably foreseeable future actions, are not expected to result in significant cumulative adverse impacts on environmental resources within the Victoria, Texas region. Conversely, cumulative socioeconomic impacts would be expected to be beneficial due to continued investment, employment opportunities, and infrastructure improvements associated with regional development.

Table 7.2-1 summarizes the cumulative impacts of the LWA project with past, present, and reasonably foreseeable future activities for the resource types and defined resource areas presented in this chapter.

Table 7.2-1. Cumulative Analysis Summary

Resource Category	Description of Baseline Impacts	Baseline Impact Level	Baseline + LWA Impact Level
Land Use	Regional development continues to convert and intensify land uses within the ROI and are aligned with permanent conversion of land to more industrial uses.	MODERATE	MODERATE
Surface Water	Industrial growth and water infrastructure projects have increased demands on surface water supplies and contribute to runoff generation; however, projects are controlled by applicable permits, mitigation measures, and project BMPs.	SMALL	SMALL
Ground Water	Industrial and manufacturing developments within the ROI may have increased demands on ground water supplies; however, withdrawals are restricted by water use management regulations.	SMALL	SMALL
Terrestrial Ecology	Regional development results in incremental habitat loss and fragmentation, but the ROI is generally in areas of previously disturbed and fragmented habitat.	SMALL	SMALL
Aquatic Ecology	Impacts to wetlands and aquatic habitats are minimized through permits, BMPs, and erosion controls, resulting in only minor regional aquatic resource impacts.	SMALL	SMALL
Socioeconomics	Activities have increased employment and economic activity adding to ongoing regional economic growth.	SMALL	SMALL
Historical and Cultural Resources	Existing historical and cultural resources are generally known within the region, within the LWA ROI, and documented by SHPO; applicable resource protection requirements minimize impacts during ground disturbing activities.	SMALL	SMALL
Air Quality	Construction emissions are temporary and localized, while new long-term emission sources are subject to regulatory and permitting controls.	SMALL	SMALL
Non-radiological Health	Temporary increases in construction traffic, equipment operation, and noise occur as projects occur concurrently with others; however, compliance with safety requirements and BMPs minimizes risks to workers and the public.	SMALL	SMALL
Non-radioactive Waste Management	Nonradioactive waste volumes are managed through existing permitted waste management facilities and programs.	SMALL	SMALL

CHAPTER 8 – NEED FOR POWER

This chapter is not applicable to an LWA application.

CHAPTER 9 – ENVIRONMENTAL IMPACTS OF ALTERNATIVES

This chapter describes the alternatives to the Proposed Action, under the provisions of 10 Code of Federal Regulations (CFR) 50.10(d) and 10 CFR 2.101(a)(9), construction activities at the proposed Blue Energy Center Port of Victoria (BECPV) Nuclear Unit 1 Limited Work Authorization (LWA) project site. Details within this chapter support the evaluation of impacts of the no action alternative as specified by Section 102(2)(C)(iii) of the National Environmental Policy Act (NEPA).

9.1 No-Action Alternative

Under the no-action alternative, the U.S. Nuclear Regulatory Commission (NRC) would not issue Blue Energy an LWA for proposed activities described in Section 1.2. The no-action alternative would result in a major delay and potentially jeopardize the later phases of the nuclear energy project. As described in Section 1.2, the nuclear energy project is needed to:

- Provide firm, dependable baseload electricity to meet growing regional demand;
- Serve the intended customer and support the expanding industrial and data center load in the region, minimizing industrial impact on the regional grid, further bolstering the socioeconomics of the region;
- Provide grid-forming and reliability services, including inertia, to the Electric Reliability Council of Texas (ERCOT) South load zone; and
- Provide scalable generation, with a smaller regional footprint than a traditional large light water reactor, that can be expanded commensurate with regional needs and consistent with national energy goals.

Under the no-action alternative, LWA activities would not proceed prior to issuance of the Construction Permit, and the purpose and need for the LWA, to maintain the planned schedule for LWA-scoped activities, would not be met. Given the limited scope of the LWA, there is no partial alternative that would allow the schedule to move forward as planned; deferring any subset of LWA-scoped work until after the Construction Permit would likewise fail to meet the purpose and need. Accordingly, the no-action alternative does not meet the purpose and need for the LWA.

9.2 Energy Alternatives

This section is not applicable to a Limited Work Authorization application.

9.3 Site-Selection Process

This section is not applicable to a Limited Work Authorization application.

9.4 System Alternatives

This section is not applicable to a Limited Work Authorization application.

CHAPTER 10 – CONCLUSIONS

This chapter summarizes the potential environmental impacts, unavoidable adverse environmental effects, relationship with productivity, irreversible and irretrievable commitment of resources, and alternatives of the Proposed Action to issue the Limited Work Authorization (LWA) for the Blue Energy Center Port of Victoria (BECPV) project. This chapter also summarizes the concurrence with environmental impact category determinations provided in the U.S. Nuclear Regulatory Commission (NRC) NUREG-2249, *Generic Environmental Impact Statement for Licensing of New Nuclear Reactors (New Reactor GEIS)*.

10.1 Impacts of the Proposed Action

The Proposed Action (LWA-related construction) calls for the installing of augered piles for the several buildings adjacent to the future reactor building, installing an adjacent crane pad for construction, and this LWA ER also addresses the exemption scope for installing diaphragm walls to support the deep shaft excavation for the reactor building, and subsurface preparation and backfilling needed for these activities. The actions of the LWA serve to prepare the site and act as initial scope of work for Phase 2 of the overall project which would include the construction the site's first GVH BWRX-300 small modular reactor (SMR). Phase 1 of the overall project includes the construction and operation of two GE Vernova 7HA.02 natural gas-fired turbines and associated infrastructure. Land clearing and construction activities associated with Phase 1 of the overall project will occur prior to the LWA construction for the first SMR plant. The specific construction activities for Phase 1 are only addressed as cumulative impacts to the LWA construction.

As discussed previously, the BECPV site is located in an unincorporated area of Victoria County, Texas. The limit of disturbance for the LWA project is approximately 15 acres (ac): approximately 10 ac within the 245-ac Primary Facilities Parcel and approximately 5 ac within the 200-ac Support Parcel. SMR 1 is planned for 30 ac within the Primary Facilities Parcel. The project site is approximately 1.5 miles (mi) west of Bloomington and approximately 9 mi south of the City of Victoria.

The LWA and shaft support exemption construction footprint for piling, shaft excavation, and crane pad is approximately 1.4 ac. with another 6.3 ac assumed for construction support and laydown for a minimum total area of 7.7 ac of disturbed area for the LWA project, which has been rounded to an estimated 10 ac. on the Primary Facilities Parcel with an additional approximate 5 ac reserved for storage of excavated material on the Support Parcel.

Both the Primary Facilities Parcel and the Support Parcel are owned by the Port of Victoria and leased to Blue Energy for project development. The Ground Lease provides Blue Energy with the possession and control necessary to support development, construction, operation, maintenance, and decommissioning of the facility. The site is primarily pastureland interspersed with unmaintained wooded areas.

Land use impacts from LWA construction activities result primarily from the localized disturbance and the permanent conversion of designated prime farmland. However, given the amount of prime farmland in the 6-mi vicinity and 50-mi region of influence (ROI), the impact would not be noticeable and would not destabilize the availability of prime farmland. Additionally, mitigation measures would be enacted to minimize impacts. However, due to the permanent conversion of agricultural land soils, overall impacts to land use from construction activities are categorized as SMALL. As all LWA construction staging, laydown, earthwork, and

building activities would occur entirely within the site boundary, offsite land use impacts from construction activities would also be SMALL.

This physical footprint for the LWA alters natural surface hydraulics via subsurface soil compaction, which suppresses localized infiltration capacity; the expansion of temporary and permanent impervious surfaces across laydown areas, staging yards, concrete batch plants, and access routes; and the implementation of structural drainage alterations. However, no direct surface water withdrawals are planned for the LWA. Water demand and water use for the LWA fall below the New Reactor GEIS Category 1 bounding criteria, as do dewatering requirements. Some impacts may fall outside the bounding criteria related to water resources; however, mitigation and minimization measures would compensate for these impacts. Therefore, overall, impacts to surface water, hydraulics, groundwater, water use, and water quality would be SMALL.

There are no designated critical habitats, state or federally managed natural areas, or sensitive ecological communities within the LWA project area. As noted in Section 2.3.1.4, several listed and proposed protected species have the potential to occur in the area. Terrestrial impacts would be minor, localized primarily to cultivated agricultural land. Given best management practices (BMPs), coordination with the Texas Park and Wildlife Department (TPWD) and the U. S. Fish and Wildlife Service (USFWS), impacts to terrestrial species would be minimized so as not to affect regional populations. There are no important aquatic habitats or listed aquatic species present within the LWA project area. Therefore, overall impacts to terrestrial and aquatic wildlife are consistent with the New Reactor GEIS Category 1 designation and the impacts from the LWA would be SMALL.

Community services, infrastructure, traffic, and taxes are not likely to change due to the actions outlined in the LWA, aside from possible beneficial impacts as they relate to income and job opportunities. Therefore, the socioeconomic impacts are consistent with the New Reactor GEIS Category 1 designation and the impacts from the LWA would be SMALL or beneficial.

Based on the results of AECOM's cultural resources survey, and the description of ground disturbing activities, the LWA project should have No Effect, direct or indirect, on historic properties or cultural resources that merit special designations so long as identified sites are avoided during the design and subsequent construction of the LWA project. Therefore, impacts on cultural resources, a New Reactor GEIS Category 2 issue, would be SMALL.

Victoria County is designated attainment/unclassifiable for all criteria pollutants, the site is not located near a Mandatory Federal Class I Area, construction disturbance is limited, and BMPs for fugitive dust control would be implemented. Compliance with applicable federal, state, and local air permitting requirements, combined with the relatively small emissions expected from LWA activities, supports a conclusion that impacts to air quality, including criteria pollutants, hazardous air pollutants, fugitive dust, and greenhouse gases are consistent with the New Reactor GEIS Category 1 designation and the impacts from the LWA would be SMALL.

Given adherence to applicable federal and state regulations and implementation of the mitigation measures, nonradiological occupational health and safety impacts associated with the LWA scope would be SMALL. Activities supported under the LWA project would result in temporary increases and fluctuations in ambient noise levels in and around the LWA project site. However, the magnitude of these changes are consistent with New Reactor GEIS Category 1 designation, and therefore, impacts related to noise are anticipated to be SMALL. The increased number of vehicles on surrounding roadways during the LWA activities at the LWA project site would not increase road capacity that exceeds current levels of service and would

result in minor increases in crash rates relative to total vehicle miles traveled. Therefore, the impacts of increased traffic associated with the LWA activities are anticipated to be SMALL.

10.2 Unavoidable Adverse Environmental Effects

LWA construction impacts are described in detail in Chapter 4 and summarized in LWA ER Section 10.1. As required by 10 Code of Federal Regulation (CFR) 51.45(b)(2), an Environmental Report (ER) shall discuss "Any adverse environmental effects which cannot be avoided should the proposal be implemented." Unavoidable adverse environmental impacts are those impacts of the NRC action, that cannot be avoided in the use of the site and associated offsite facilities.

This section presents the construction adverse impacts and lists measures and controls that reduce or eliminate impacts and unavoidable adverse impact after mitigation. Mitigation measures include BMPs, measures, methods, procedures, practices, or industry standards used to adhere to environmental regulations to reduce or prevent pollution and environmental impacts. Mitigation measures are implemented through project-specific plans and procedures developed for preconstruction and construction activities that account for environmental regulations and site characteristics.

Adverse environmental effects of the LWA, are summarized in Table 10.2-1. Mitigation measures provided in Table 10.2-1 are taken from Section 4.10 and Table 4.10-1.

Table 10.2-1. LWA-related Unavoidable Adverse Environmental Impacts

Resource Area	Adverse Impact	Mitigation Measure	Unavoidable Adverse Impact after Mitigation
Land Use Category 1 Issue	The total area to be disturbed during LWA construction activities is approximately 7.7 ac including permanent structures and construction laydown areas. Loss of less than 10 ac of prime farmland, which is less than 0.2 percent of prime farmland in the 6-mi vicinity of the LWA project site. Regional development will continue to convert and intensify land uses within the 50-mi ROI and are aligned with permanent conversion of land to more industrial uses.	Onsite Adhere to project-specific plans (i.e., SWPPP) to control water runoff and erosion) Limit land disturbance to the smallest area necessary Stabilize and contour permanently disturbed locations in accordance with design specifications. Restore temporarily affected areas after construction is complete using native or noninvasive plant species. Return temporarily disturbed lands to former uses upon completion of construction. Maximize the use of onsite materials. Manage lifecycle of chemicals and wastes generated during building and pollution prevention initiatives (e.g., SPCC plan) to mitigate the impact Restrict soil stockpiling and reuse to designated areas on the LWA project site. Adhere to other project-specific plans (e.g., equipment and material staging, spoils disposition, traffic flow, and designated avoidance areas) Offsite Dispose of construction-related debris generated during building activities in an existing permitted facilities.	LWA construction is the initial scope of work in preparation for the construction of the sites first SMR's safety-related facilities and construction areas will be permanently or temporarily disturbed. The LWA does not authorize construction of permanent safety-related structures. Blue Energy has prepared a Redress Plan to restore the site in the event a Construction Permit for the first SMR is not issued. Given BMPs for erosion, sediment control, and stormwater management that will be used during LWA construction activities, risk of pollution or contamination is decreased and land area may be used for other purposes after life of plant is complete. Overall impacts would be SMALL.

Resource Area	Adverse Impact	Mitigation Measure	Unavoidable Adverse Impact after Mitigation
Water Resources Category 1 Issue	LWA construction requires an average of 28,000 gpd via municipal water sources. Groundwater withdrawal is limited to dewatering within the soil column of the reactor shaft cylinder. Total dewatering extraction is estimated at approximately 676,000 ft³ (~5.06 million gallons). At a conservative long-term rate of 50 gpm, shaft cylinder dewatering requires approximately 10 weeks. Higher initial pumping rates may be employed during initial excavation stages. Inadvertent leaks or unmitigated industrial spills present a direct threat to adjacent soils, shallow perched groundwater, and downstream drainages. Uncontrolled releases of concrete and engineered bentonite slurry (alkaline compounds) present structural hazards to local aquatic life due to extreme high-pH characteristics and high suspended solids concentrations.	Hydrologic Alterations – Use a stormwater management system that complies with regulatory requirements for site design; Comply with TPDES Construction General Permit that requires a SWPPP and identification of BMPs and controls for stormwater pollution. Runoff controls will be formalized within a site-specific SWPPP and Site Grading Plan utilizing multi-tier BMPs. Water Use – Manage site water use per project-specific plans (e.g., dust control water, batch plant water, washouts). Water Quality – Adhere to project-specific plans (e.g., SWPPP, SPCC) to control water runoff, erosion, and spills. BMPs and mitigation efforts include: perimeter defenses, stabilized transitions, retention and clarification, designated fueling zones, zero subsurface infiltration, closed-loop bentonite recovery, and washout isolation. Hydrologic Alteration of Groundwater – No mitigation measures or controls needed. Groundwater Use Impacts – No planned use of groundwater; therefore, no mitigation measures or controls needed. Groundwater Quality Impacts – Comply with TPDES general permit to discharge water from groundwater dewatering associated with building activities; Establish and implement a SPCC Plan for construction practices.	Because continuous impermeable diaphragm walls and a thick clay aquitard are fully installed prior to pumping, dewatering results in negligible to zero groundwater level drawdown at the site property boundary, preserving surrounding wetland water levels and local hydroperiods. Because of the limited size of the construction area, lack of surface features and the use of BMPs and an SPCC Plan to control impacts from inadvertent spills during construction, the LWA impacts on water resources would be SMALL.

Resource Area	Adverse Impact	Mitigation Measure	Unavoidable Adverse Impact after Mitigation
Ecological Resources	LWA activities will result in the permanent conversion of 1.39 ac of land: 0.68 ac of herbaceous pasture, 0.7 ac of scrub-shrub, and 0.01 ac of forested land cover.	Terrestrial Ecosystems – Minimize area to be disturbed (e.g., removal of vegetative habitat)	Temporarily affected areas will be restored following construction by re-establishing native vegetation and installing temporary and permanent soil stabilization controls.
Category 1 Issue		Restore temporarily affected areas with native or non-invasive plant species.	
Category 2 Issue (for Important Species and Habitats under the ESA)	There would be 14.92 ac of temporary impacts: 12.94 ac herbaceous pasture and 1.98 ac of scrub-shrub.	Adhere to project-specific plans (e.g., stage equipment in designated areas, use designated roadways, and avoid sensitive areas).	Runoff and stormwater protections will decrease impacts to any water features offsite.
	No jurisdictional wetlands or Waters of the U.S. subject to Section 404 of the Clean Water Act are present within the primary Study Area, but downstream impacts may occur from runoff.	Minimize the number and duration of open trenches.	BMPs will minimize direct mortalities, and individual losses of species will not affect regional populations.
	Less mobile species may be displaced or suffer localized mortality during clearing and grading.	Cover open trenches and/or installing escape ramps as necessary overnight.	Overall impacts would be SMALL .
	Birds flying near the site may risk collision with tall equipment or flying toward lighting apparatuses.	Inspect open trenches prior to backfilling to safely relocate any trapped animals.	
	Wildlife near active construction areas may be startled, move away from the construction activities, and temporarily avoid feeding or sheltering in nearby habitat.	Enforce strict adherence to slow speed limits of 25 mph or less to prevent vehicle-wildlife collisions.	
	Federally-listed and state-listed protected species may occur in the area.	Conduct pre-construction surveys for active nests if vegetation clearing occurs during the general bird nesting season and appropriate establish avoidance buffers will be established as needed.	
	Few to no adverse impacts to aquatic species due to lack of habitat.	Minimize nighttime lighting, using down-shielded fixtures, and installing full-cutoff luminaires to prevent light emission above the horizontal plane.	
		Formal coordination with the TPWD and implementing standard species-specific BMPs such as pre-clearing surveys, tortoise relocation outside active work areas, and milkweed/nest avoidance measures.	
		Aquatic Ecosystems – Adhere to project-specific plans (e.g., SWPPP, SPCC).	
		Manage site water use per project-specific plans (e.g., dust control water, batch plant water, washouts).	

Resource Area	Adverse Impact	Mitigation Measure	Unavoidable Adverse Impact after Mitigation
Socioeconomics Category 1 Issue	Activities are expected to increase employment and economic activity adding to ongoing regional economic growth. The housing vacancy rate, community services and infrastructure, transportation systems and traffic, economic, and tax revenue impacts are not expected to change significantly or will be beneficial.	Adhere to project-specific plans (e.g., traffic control, dust control measures, emission reduction techniques, HSE, worker training, noise protection, controlled substance management protocol, equipment preventative maintenance protocol) Increased tax revenues as a result of this construction project may support community Return public roads, signs, and markings to preexisting conditions or better Mitigation measures may include implementation of traffic flow management, management of shift-change timing, and encouragement of ride-sharing and use of public transportation options, such that LOS values can be maintained with the increased volumes.	If, during the project-specific environmental review, the NRC staff determines a detailed analysis of economic costs and benefits is needed for analysis of the range of alternatives considered or relevant to mitigation, the NRC staff may require further information from Blue Energy. The impacts from the LWA would be SMALL to beneficial.
Historical and Cultural Resources Category 2 Issue	Existing historical and cultural resources are generally known within the ROI and documented by SHPO; applicable resource protection requirements minimize impacts during ground disturbing activities.	Avoid disturbance to recommended eligible NHPA sites Adhere to project-specific plans (e.g., stage equipment in designated areas, use designated roadways, and avoid sensitive areas) Adhere to inadvertent discovery protocol	With avoidance measure, it has been determined that no adverse effects to historic properties or cultural resources would occur. Overall impacts would be SMALL.

Resource Area	Adverse Impact	Mitigation Measure	Unavoidable Adverse Impact after Mitigation
Air Resources Category 1 Issue	Construction activities would result in temporary emissions of criteria pollutants from construction equipment, worker vehicles, and standby power equipment.	Adhere to project-specific plans (e.g., traffic control, dust control measures, emission reduction techniques, noise protection, onsite vehicle use, HSE, worker training, noise protection)	Compliance with permit conditions, including emissions limitations, equipment certifications, and emission-control requirements, would minimize potential impacts on ambient air quality.
	Fugitive dust emissions may also occur from clearing, grading, excavation, road construction, and equipment movement.	Adhere to equipment preventative maintenance protocol	Because the proposed facility is a nuclear generating facility, routine electricity production would occur without direct combustion of fossil fuels. Consequently, operational GHG emissions would be lower.
	GHG emissions would occur during construction, operation, fuel-cycle activities, transportation, maintenance activities, and eventual decommissioning.	Emissions from the building phase comply with state and USEPA requirements and are managed through the use of a mitigation plan and/or permits.	
		Conduct construction activities under applicable federal, state and local air quality permits.	Compliance with applicable federal, state, and local air permitting requirements, combined with the relatively small emissions expected from construction and operation, supports a conclusion that impacts to air quality, including criteria pollutants, hazardous air pollutants, fugitive dust, and GHG, would be SMALL .
		Minimize fugitive dust emissions through implementation of BMPs consistent with USEPA AP-42 guidance and applicable permit requirements, including: watering exposed soils and haul roads; temporary stabilization of disturbed soils; seeding or revegetation of inactive construction areas; covering trucks transporting dusty materials; limiting vehicle speeds on unpaved surfaces; and prompt restoration of disturbed areas.	
		Change of operations from natural gas to nuclear.	

Resource Area	Adverse Impact	Mitigation Measure	Unavoidable Adverse Impact after Mitigation
Non-radiological Health and Safety (includes noise and transportation)	Pre-construction supported activities involve risks to workers including exposure to airborne contaminants, as well as exposure to plant toxins, insects, and other biological hazards.	Adhere to project-specific plans (e.g., HSE, worker training, noise protection, dust control, onsite vehicle use, controlled substance management protocol, defined onsite traffic pattern and limit speeds, equipment use and idling limits, blasting schedule)	Based on adherence to applicable federal and state regulations and implementation of mitigation measures, nonradiological occupational health and safety impacts associated with activities under the LWA scope are anticipated to be SMALL .
Category 1 Issue	Health risks may include accidents related to struck-by and caught-in/between incidents, slips, trips, and falls, heat or cold stress, noise, electric shock, and repetitive motion injuries.	Adhere to equipment preventative maintenance protocol	
	LWA activities would result in temporary increases and fluctuations in ambient noise levels in and around the project site, primarily generated by the operation of heavy construction equipment and vehicles, and by stationary equipment used to support construction.	Limit personal vehicle use onsite and encourage ride share	
	Additional deliveries and worker presence increases local traffic.	Adhere to NRC, OSHA, and state safety standards and provisions for worker safety	
		Controlled access to the site and limited to authorized workers and authorized visitors.	
		Visitors to the project site required to complete basic safety training, provided with appropriate safety equipment, PPE, escorted onsite, and required to follow site health and safety precautions.	
		Phased execution of pre-construction support activities, phased use of equipment, routine equipment maintenance, and dust control practices and stabilizing unpaved roads and soil stockpiles.	
		Noise BMPs include using newer, quieter equipment, equipment maintenance, phased equipment use, and sequencing of activities to reduce simultaneous operation of high-noise equipment where practicable. Noise modeling may be used to inform equipment placement, scheduling, and the use of temporary or permanent attenuation features such as noise buffers, berms, barriers, or vegetation. May also limit driving speeds, use of engine brakes, and slamming of tailgates.	
		Transport equipment and materials to the site by barge or rail whenever practical.	

Resource Area	Adverse Impact	Mitigation Measure	Unavoidable Adverse Impact after Mitigation
Nonradioactive Waste Category 1 Issue	LWA project-generated nonradioactive waste volumes would be managed through existing permitted waste management facilities and programs. Volumes are anticipated to be similar to those of comparably sized projects.	Adhere to project-specific plans (e.g., waste management, waste segregation, disposal at certified facilities, recycle, HSE, worker training, noise protection, dust control, onsite vehicle use, stormwater management). Hazardous waste and materials to be stored at a designated location onsite in accordance with applicable regulatory requirements before being transferred to a permitted disposal unit. Dredge spoils disposed of in accordance with Texas regulations, in compliance with federal and state laws, and in compliance with the dredge permit conditions. Solid waste generation minimized through recycling as practical. All the applicable permit conditions, regulations, and BMPs related to solid, liquid, and gaseous waste management will be met. Hazardous waste generation will conform with hazardous waste quantity generation levels in accordance with RCRA. Sanitary waste will be disposed in a permitted process.	Impacts from nonradioactive solid wastes generated during building activities is anticipated to be SMALL, and mitigation does not appear to be warranted. Mitigation measures will be performed to the extent practicable, such as recycling, process improvements, or the use of a less hazardous substance.

Abbreviations: SWPPP = Stormwater Pollution Prevention Plan; SMR = small modular reactor; SPCC = Spill Prevention, Control, and Countermeasure; BMP = best management practice; TPDES = Texas Pollutant Discharge Elimination System; gpm = gallons per minute; ft³ = cubic feet; ESA = Endangered Species Act; TPWD = Texas Parks and Wildlife Department; NRC = U.S. Nuclear Regulatory Commission; ROI = region of influence; SHPO = State Historic Preservation Officer; HSE = Health Safety and Environment; GHG = greenhouse gas; USEPA = U.S. Environmental Protection Agency; OSHA = Occupational Health and Safety Administration; RCRA = Resource Conservation and Recovery Act

10.3 Relationship between Local Short-Term Use of the Environment and Long-Term Productivity

As required by 10 CFR 51.45(b)(4), this section of the LWA ER discusses the “relationship between local and short-term uses of man’s environment and the maintenance and enhancement of long-term productivity.” It provides analysis and consideration of the short-term environmental and socioeconomic impacts arising from LWA project activities. All LWA project activities are considered local and short-term uses of the BECPV site. Additional short-term and long-term uses will be presented in the Construction Permit Application. The long-term use of the site starts with the conclusion of the proposed facility through decommissioning. As such, all impacts previously identified are not repeated here. Short-term construction and operation impacts also typically discussed here are not applicable to the LWA project.

LWA project activities are expected to require the short-term use of environmental resources and the human environment, including land, water, construction materials, energy, and labor. Preconstruction activities may include clearing and grading, installation of access roads and laydown areas, excavation for parts of the LWA project, construction of drainage systems, and other site preparation tasks. These activities are anticipated to precede the start of construction in earnest but involve similar environmental disturbances.

Construction activities are anticipated to result in the permanent conversion of the land at the site to industrial use. This conversion represents a long-term loss of the land’s ability to support alternative productive uses, mostly agriculture. Site grading and excavation are expected to permanently alter the surface profile and may modify local hydrology, soil characteristics, and vegetative cover. These impacts are considered irreversible in the context of long-term land productivity. Construction is also anticipated to generate temporary increases in noise, traffic, and air emissions, which could reduce the productivity of adjacent undeveloped land for purposes such as wildlife habitat or public access.

Mitigation measures, including BMPs for erosion and sediment control, stormwater runoff management, and revegetation of temporary disturbance areas, are expected to be implemented to minimize offsite effects and preserve the long-term productivity of surrounding land. In areas not occupied by permanent plant structures or infrastructure, land disturbed during construction could potentially be reclaimed for future use following project completion or decommissioning.

While LWA project activities involve short-term environmental use and long-term land conversion within the LWA project footprint, the overall impact on regional productivity is expected to be limited and localized. Both the short- and long-term benefits of the LWA project include the production of electricity, first in the form of natural gas, and then in the form of carbon-free nuclear power. These uses would not impact the productivity of the land where the site is located but instead impact overall human productivity in the region, leading to better and more reliable energy services as the area grows.

10.4 Irreversible and Irretrievable Commitments of Resources

As specified by 10 CFR 51.45(b)(5), this LWA ER discusses, “Any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented.” The term “irreversible commitments of resources” refers to environmental resources that would be irreparably changed by the building and/or operation activities authorized by the NRC or U.S. Army Corps of Engineers (USACE; if a cooperating agency) permit and licensing decisions, where the environmental resources could not be restored at

some later time to the resource's state before the relevant activities. The term "irretrievable commitments of resources" refers to materials that would be used for or consumed by the new units in such a way they could not, by practical means, be recycled or restored for other uses.

For the LWA project, the irreversible commitments of resources and materials are presented in Table 10.4-1. Given the anticipated quantity of irretrievable resources consumed during the LWA project activities, the impact on their availability is SMALL. For the LWA project, the irretrievable commitments of resources and materials are limited to water, energy, construction materials, and waste disposal lands. Resources or commitments of resources in all other areas may be recovered in some form, and therefore irreversible commitments are not expected in those resource areas.

LWA project activities consume water for activities such as short-term construction use in dust suppression and concrete mixing, and, if needed, fire protection. Onsite water during the LWA project would be contractor-supplied municipal water. Tanker trucks would supply a total of 28,000 gallons per day to meet the LWA project's water needs. Brackish water from deep in the Gulf Coast Aquifer would be supplied using wells on Port of Victoria land. The Victoria County Navigation District has water rights to brackish water in the Port of Victoria area. This water supply is established and consistent with the necessary permissions, permits, licenses, and other regulatory approvals. Total dewatering extraction is estimated at approximately 5.06 million gallons. The projected volumes of water consumed are SMALL relative to the source aquifer capacity and regional, national, or global consumption.

Nonrenewable energy in the form of fossil fuels used for heavy machinery and electricity would be consumed during LWA project activities. Vehicles transporting workers and materials to a from the site would number about 24 deliveries per day and 45 workers per day. Additionally, heavy machinery would be used requiring gas or other electric power. The projected amounts of energy consumed are SMALL relative to national or global consumption of these energy sources.

During execution of the LWA project, excavation spoils would be stockpiled on the Support Parcel and other waste would be collected for final disposal at the appropriate offsite permitted facilities. These wastes are nonradiological and include non-hazardous solid waste, construction waste, such as steel, aggregate, and concrete, hazardous waste, and used oils and lubricants. The projected volumes of these waste sources are SMALL relative to national or global production of these materials and consumption of disposal lands.

Table 10.4-1. LWA-related Irreversible Commitments of Resources and Materials

Resource Area	Irreversible resource or material	Impact
Land Use	Undeveloped land changed to industrial use Excavated soil and rock used in construction and fill Landscape changes	Some land area resource commitments reversible through restoration, if necessary. Other land use discussed in waste management.
Water Resources	Water consumed	Irreversible use of resources water resources. Temporary increase in demand on municipal water supply.
Ecological Resources	Possible habitat acreage removed Biota temporarily reduced/eliminated; no threatened or endangered species on site Wildlife disturbance	No irreversible use of resources. Some resource commitments reversible through restoration, if necessary.
Socioeconomics	Increased use of community infrastructure Increased tax revenues	No irreversible use of resources. Resource commitments reversible following short-term use.
Historical and Cultural Resources	Known resources avoided Changes to the character of the property (i.e., use, setting, and physical features)	No irreversible use of resources. Resource commitments reversible following short-term use.
Air Resources	Temporary localized increases in air emissions	No irreversible use of resources. Resource commitments reversible following short-term use.
Non-radiological Health and Safety	Temporary increases to ambient noise, emissions, and traffic	No irreversible use of resources. Resource commitments reversible following short-term use.
Waste Management	Onsite temporary disposal Offsite waste treatment/disposal (i.e., sanitary, solid, construction) at permitted facilities	Irreversible impacts including land committed to waste disposal, construction waste that cannot be recycled, and waste from producing energy.

10.5 Alternatives to the Proposed Action

As specified by 10 CFR 51.45(b)(3), this section of the LWA ER discusses alternatives to the proposed action. The only alternative to be discussed for the LWA project is the no-action alternative, which was detailed in the Chapter 9 analysis of the alternatives to the Proposed Action.

Section 9.1 describes the no-action alternative and the implications associated with suspension of construction and pre-construction activities and subsequent delay of commercial operation. Under the no-action alternative, LWA activities would not proceed prior to issuance of the Construction Permit, and the purpose and need for the LWA, to maintain the planned schedule for LWA-scoped activities, would not be met. Given the limited scope of the LWA, there is no partial alternative that would allow the schedule to move forward as planned; deferring any subset of LWA-scoped work until after the Construction Permit would likewise fail to meet the purpose and need. Accordingly, the no-action alternative does not meet the purpose and need for the LWA.

10.6 Benefits and Costs

This section is not applicable to an LWA application.

CHAPTER 11 – REFERENCES

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Appendix A – NUREG-2249 Reliance Matrix

Appendix A
Construction-related Issues Discussed in the New Reactor GEIS (NUREG-2249)
GEIS Reference Matrix

Issue	New Reactor GEIS Section	Category	LWA ER Section
Land Use - Construction			
Onsite Land Use	3.1.2.1.1	1	2.1.1 3.3 4.1.1
Offsite Land Use	3.1.2.1.2	1	2.1.2 Table 4.1-1
Impacts to Prime and Unique Farmland	3.1.2.1.3	1	2.1.2.3 4.1.2
Coastal Zone and Compliance with the Coastal Zone Management Act	3.1.2.1.4	1	2.1.2.7 Table 4.1-1
Visual Impacts - Construction			
Visual Impacts - Site and Vicinity	3.2.2.1.1	1	2.4.2.3 4.4.1
Visual Impacts from Transmission Lines	3.2.2.1.2	1	Table 4.4-1
Air Quality - Construction			
Emissions of Criteria Pollutants and Dust During Construction	3.3.2.1.1	1	2.6.2 3.3.4 Table 4.6-2
Greenhouse Gas Emissions During Construction	3.3.2.1.2	1	2.6.2 4.6.1 Table 4.6-1
Water Resource - Construction			
Surface Water Use Conflicts during Construction	3.4.2.1.1	1	2.2.2 3.3.1 Table 4.2-1
Groundwater Use Conflicts due to Excavation Dewatering	3.4.2.1.2	1	2.2.2 3.3.3 Table 4.2-1
Groundwater Use Conflicts due to Construction-Related Groundwater	3.4.2.1.3	1	2.2.2 3.3.1 Table 4.2-1
Water Quality Degradation due to Construction-Related Discharges	3.4.2.1.4	1	2.2.3 3.3.4 Table 4.2-1
Water Quality Degradation due to Inadvertent Spills during Construction	3.4.2.1.5	1	2.2.3 3.3.4 Table 4.2-1

Issue	New Reactor GEIS Section	Category	LWA ER Section
Water Quality Degradation due to Groundwater Withdrawal	3.4.2.1.6	1	Table 4.2-1
Water Quality Degradation due to Offshore or In-Water Construction Activities	3.4.2.1.7	1	Table 4.2-1
Water Use Conflict Due to Plant Municipal Water Demand	3.4.2.1.8	1	2.2.2 3.1.1 Table 4.2-1
Degradation of Water Quality from Plant Effluent Discharges to Municipal Systems	3.4.2.1.9	1	2.2.2 3.1.4 Table 4.2-1
Terrestrial Ecology - Construction			
Permanent and Temporary Loss, Conversion, Fragmentation, and Degradation of Habitats	3.5.2.1.1	1	2.3.1.1 4.3.1.1
Permanent and Temporary Loss and Degradation of Wetlands	3.5.2.1.2	1	2.3.1.2 4.3.1.3
Effects of Building Noise on Wildlife	3.5.2.1.3	1	Table 4.3-1
Effects of Vehicular Collisions on Wildlife	3.5.2.1.4	1	Table 4.3-1
Bird Collisions and Injury from Structures and Transmission Lines	3.5.2.1.5	1	Table 4.3-1
Important Species and Habitats – Resources Regulated under the Endangered Species Act of 1973	3.5.2.1.6	2	2.3.1.4 4.3.1.2
Important Species and Habitats – Other Important Species and Habitats	3.5.2.1.6	1	2.3.1.4 4.3.1.2
Aquatic Ecology - Construction			
Runoff and Sedimentation from Construction Areas	3.6.2.1.1	1	2.3.2.1 Table 4.3-1
Dredging and Filling Aquatic Habitats to Build Intake and Discharge Structures	3.6.2.1.2	1	Table 4.3-1
Building Transmission Lines, Pipelines, and Access Roads Across Surface Waterbodies	3.6.2.1.3	1	Table 4.3-1
Important Species and Habitats – Resources Regulated under the ESA and Magnuson-Stevens Fishery Conservation and Management Act	3.6.2.1.4	2	2.3.2.3 4.3.2.1
Important species and habitats – Other Important Species and Habitats	3.6.2.1.4	1	2.3.2.3 4.3.2.1
Historic and Cultural Resources - Construction			
Construction Impacts on Historic and Cultural Resources	3.7.2	2	2.5 4.5

Issue	New Reactor GEIS Section	Category	LWA ER Section
Radiological Environment - Construction			
Radiological Dose to Construction Workers	3.8.1.2.1	1	N/A
Nonradiological Environment - Construction			
Building Impacts of Chemical, Biological, and Physical Nonradiological Hazards	3.8.2.2.1	1	2.7.1 Table 4.7-1
Building Impacts of EMFs	3.8.2.2.1	N/A	2.7.4
Noise - Construction			
Construction-Related Noise	3.9.2.1	1	2.7.2 Table 4.7-1
Nonradiological Waste Management - Construction			
Construction Nonradiological Waste	3.10.2.2.1	1	2.7.5 Table 4.9-1
Socioeconomics - Construction			
Community Services and Infrastructure	3.12.2.1.1	1	2.4.2 Table 4.4-1
Transportation Systems and Traffic	3.12.2.1.2	1	2.4.2 Table 4.4-1
Economic Impacts	3.12.2.1.3	1	2.4.2 Table 4.4-1
Tax Revenue Impacts	3.12.2.1.4	1	2.4.2 Table 4.4-1
Decommissioning			
Decommissioning Impacts (generically addressed issues in NUREG-0586)	3.16.2	1	N/A
Decommissioning Impacts (site-specific and/or conditionally site-specific issues in NUREG-0586)	3.16.2	2	N/A
Issues Applying Across All Resources			
Climate Change Impacts on Environmental Resources	1.3.3.2.2	2	N/A
Cumulative Impacts	1.3.3.2.2	2	Chapter 7
Non-Resource Related Issues			
Purpose and Need	1.3.3.2.3	2	1.2.2
Need for Power	1.3.3.2.3	2	N/A
Site Alternatives	1.3.3.2.3	2	N/A
Energy Alternatives	1.3.3.2.3	2	N/A
System Design Alternatives	1.3.3.2.3	2	N/A

N/A – Not applicable to the LWA-related construction; no impacts

Appendix B – Values and Assumptions Table

Appendix B

Demonstration of Values or Assumptions from Regulatory Guide 4.2, Rev. 4

Values and Assumptions

PPE/SPE Values and Assumptions	LWA Project Values or Compliance Statements	Applicable Figure, Table, or LWA ER Section
Site Size and Location		
100 ac.	Limit of LWA disturbance is approximately 15 ac.	Figure 1.4-1 Figure 1.4-2 Section 2.1.1
Complies with applicable zoning	There are no zoning restrictions for the LWA project site.	Section 2.1.2.1
Consistent with the objectives of any relevant land use plans	The LWA project is consistent with other relevant land use plans for the development of the region.	Section 2.1.2.1
Complies with the Coastal Zone Management Act (CZMA, 16 U.S.C. 1451 et seq.) and the Farmland Protection Policy Act (FPPA, 7 U.S.C. 4201 et seq.), if applicable	LWA project site is not in a coastal region. In accordance with the requirements of the Farmland Protection Policy Act, Blue Energy will coordinate with the U.S. Department of Agriculture's Natural Resources Conservation Services regarding impacts to prime and unique farmlands.	Section 2.1.2.3 Section 2.1.2.7 Figure 2.1-11 Figure 2.1-13
Completed structures would not be sited within 1 mi (1.6 km) of and would not be visible from Federal or State parks or wilderness areas, areas designated as Class I under Section 162 of the Clean Air Act (42 U.S.C. 7401 et seq.), or a Wild and Scenic River (Wild and Scenic River Act (16 U.S.C. 1271 et seq.), or a National Heritage River, or a river of similar State designation.	No structures will be within 1 mi (1.6 km) of and would not be visible from these sensitive areas.	Figure 2.7-1 Figure 2.1-13
No existing residential areas within 0.5 mi of site	The property boundaries of the nearest resident and rural residential area are less than 0.5 mi. See New and Significant Information Memorandum.	Figure 2.1-2 Section 2.1.1 Section 4.1.1
Permanent Footprint Disturbance		
30 ac (12 hectare) of vegetated lands	Limit of LWA disturbance is approximately 15 ac.	Figure 1.4-1
Counts only land that supports vegetation as of project baseline	Limit of LWA disturbance is approximately 15 ac.	Figure 1.4-1

PPE/SPE Values and Assumptions	LWA Project Values or Compliance Statements	Applicable Figure, Table, or LWA ER Section
No prime or unique farmland, or other farmland of statewide or local importance	Entire of LWA disturbance is prime farmland. See New and Significant Information Memorandum.	Figure 2.1-11 Table 2.1-5 Section 4.1.2
No floodplains, surface-water features, riparian habitat, late successional vegetation, or dedicated conservation land	No wetlands, wetland habitats, or jurisdictional features were identified at the site.	Section 2.1.2.8 Figure 2.1-15
No more than 0.5 ac (0.2 hectare) of wetlands in permanent or temporary disturbance on the site or ROWs	No wetlands, wetland habitats, or jurisdictional features were identified at the site.	Section 2.1.2.8 Figure 2.1-15
The site and ROWs do not have a history of past industrial use capable of leaving a legacy of contamination requiring cleanup to protect human health or the environment.	The historical use of the property has been agriculture.	Section 2.1.1
No Individual Permits required under Section 404 of the CWA	No Individual Permits would be required under Section 404 of the CWA for the LWA.	N/A
Use of best management practices (BMPs) for soil erosion, sediment control, and stormwater management	BMPs for soil erosion, sediment control, and stormwater management will be used.	Section 3.3.4
Implementation of mitigation specified in CWA permits	No Individual Permits would be required under Section 404 of the CWA for the LWA.	N/A
Habitat is not known to be potentially suitable for one or more Federal or State threatened or endangered species.	There is potentially suitable habitat for two of the federally listed species: the proposed threatened Monarch butterfly and the proposed endangered tricolored bat.	Section 2.3.1.4 Section 2.3.2.3
Temporary Footprint of Disturbance		
Additional 20 ac (8 hectare) of vegetated land, and others	All disturbances for the LWA will be considered permanent. However, in the event site redress is necessary, the site will be restored in accordance with the Site Redress Plan. As all disturbances for the LWA will be considered permanent, other PPE/SPE values and assumptions listed in RG 4.2, Rev. 4, Table C-1-1 under Temporary Footprint Disturbance are not applicable	Section 2.1.1

PPE/SPE Values and Assumptions	LWA Project Values or Compliance Statements	Applicable Figure, Table, or LWA ER Section
Managing Building Height and Structure		
50 ft (15.24 m), except 200 ft (60.96 m) for meteorological towers and transmission towers and 100 feet for mechanical draft cooling towers	There will be no vertical construction as part of the LWA; the maximum height of a temporary feature (cranes) will be 120 ft.	Section 2.4.2.5
None of the structures would be built within or be visible from Federal or State parks or wilderness areas, other areas designated as Class I under Section 162 of the Clean Air Act (42 U.S.C. 7472(a)), or designated Wild and Scenic Rivers	All such sensitive lands are greater than 6 mi from the LWA Limits of Disturbance and they will not be impacted.	Figure 2.1-13
No transmission poles or towers over 100 ft	There would be no transmission poles or towers erected as part of the LWA.	N/A
Intake and Discharge		
Adhere to the best available technology requirements of CWA 316(b)	There would be no intake structures constructed as part of the LWA.	N/A
Operated in compliance with CWA Section 316(b) and 40 CFR 125.83, including compliance with monitoring and recordkeeping requirements in 40 CFR 125.87 and 40 CFR 125.88, respectively	There would be no intake structures constructed as part of the LWA.	N/A
Best available technologies are employed in the design and operation of intake and discharge structures to minimize alterations due to scouring, sediment transport, increased turbidity, and erosion	There would be no intake or discharge structures constructed as part of the LWA.	N/A
Adherence to requirements in National Pollutant Discharge Elimination System (NPDES) permits issued by the U.S. Environmental Protection Agency (EPA) or a given State	To satisfy state and federal water quality criteria, Blue Energy would operate under a formal TPDES Construction General Permit.	Table 4.1-3 Table 4.2-1
In-Water Structures		
There would be no in-water structures constructed or operated, or in-water work associated with the LWA.	N/A	N/A
Cooling Towers		
There would be no cooling towers constructed or operated associated with the LWA.	N/A	N/A

PPE/SPE Values and Assumptions	LWA Project Values or Compliance Statements	Applicable Figure, Table, or LWA ER Section
Other Cooling Feature		
There would be no other cooling features constructed or operated associated with the LWA.	N/A	N/A
Copper Alloy Tubes		
There would be use of copper alloy tubes associated with the LWA.	N/A	N/A
Criteria Pollutant and Hazardous Air Pollutant Emissions		
Criteria pollutants emitted from vehicles and standby power equipment during construction and operations are less than Clean Air Act de minimis levels set by the EPA if located in a nonattainment or maintenance area.	Victoria County is designated Attainment/Unclassifiable for all current National Ambient Air Quality Standards (NAAQS)	Section 2.6
Hazardous Air Pollutant (HAP) emissions will be within regulatory limits.	Compliance with applicable federal, state, and local air permitting requirements, combined with the relatively small emissions expected from LWA activities, supports a conclusion that impacts to air quality, including criteria pollutants, hazardous air pollutants, and fugitive dust, and greenhouse gases will be low.	Section 2.6
Construction and operation activities meet the permitting requirements of applicable State and local agencies.	Compliance with applicable federal, state, and local air permitting requirements, combined with the relatively small emissions expected from LWA activities, supports a conclusion that impacts to air quality, including criteria pollutants, hazardous air pollutants, and fugitive dust, and greenhouse gases will be low.	Table 4.1-3 Section 3.3.4
Use of BMPs for dust control	BMPs would be used for dust control during LWA construction	Section 3.3.4
Greenhouse Gas (GHG) Emissions		
New reactor construction and operation, including uranium fuel cycle activities, transportation of fuel and waste, and decommissioning will emit no more than 2,534,000 MT CO ₂ (e) for the lifespan of the project of 97 years.	The GHG emissions from LWA related construction activities and potential redress would be bound by a total of 6,488 MT CO ₂ (e)	Section 4.6.1 Table 4.6-1
Cooling System Air Quality		
There would be no cooling system operated associated with the LWA.	N/A	N/A

PPE/SPE Values and Assumptions	LWA Project Values or Compliance Statements	Applicable Figure, Table, or LWA ER Section
Ozone and NOx Emissions		
There would be no transmission poles or towers erected as part of the LWA.	N/A	N/A
Total Plant Water Demand		
Total plant water demand is less than or equal to a daily average of 6,000 gpm	Onsite water during the LWA would be contractor-supplied municipal water. Tanker trucks would supply a total of 28,000 gallons per day (gpd) to meet LWA water needs.	Section 2.2.2.2 Table 4.2-1
Municipal Water Availability		
The amount available from municipal water systems exceeds the amount of municipal water required by the plant	The surface water treatment plant was built with the capacity to facilitate over 20 million gallons a day (MGD), though the City's current average usage is between 9 and 12 MGD.	Section 2.2.2.1 Table 4.2-1
Surface-Water Availability – Flowing		
There would be no flowing surface water withdrawals for cooling water as part of the LWA.	N/A	N/A
Surface-Water Availability – Non-Flowing		
There would be no non-flowing surface water withdrawals for cooling water as part of the LWA.	N/A	N/A
Municipal Systems' Available Capacity to Receive and Treat Effluents		
The available capacity of the municipal systems to treat effluent exceeds the expected amount of plant effluent.	The surface water treatment plant was built with the capacity to facilitate over 20 MGD, though the City's current average usage is between 9 and 12 MGD.	Section 2.2.2.1 Table 4.2-1
Groundwater Withdrawal for Plant Uses		
There would be no groundwater withdrawals for plant use as part of the LWA.	There would be no groundwater withdrawals for plant use as part of the LWA.	N/A
Groundwater Withdrawal for Excavation or Foundation Dewatering		
The dewatering rate would be less than or equal to 50 gpm.	The long-term dewatering rate would be less than or equal to 50 gpm. Periodic or continuous dewatering is not expected to be required.	Section 3.3.3 Table 4.2-1

PPE/SPE Values and Assumptions	LWA Project Values or Compliance Statements	Applicable Figure, Table, or LWA ER Section
Dewatering results in negligible drawdown at the site boundary.	Dewatering will take place within a confined soil column and is not expected to have impacts at the site boundary. Periodic or continuous dewatering is not expected to be required for the open excavation as seepage through the diaphragm walls and the aquitard is not anticipated. Drawdown at the boundary of the Primary Facilities Parcel would be negligible.	Section 3.3.3 Table 4.2-1
Dewatering discharge has minimal effects on the quality of the receiving waterbody (e.g., as demonstrated by conformance with NPDES permit requirements).	The water quality of any receiving waterbody will be maintained in accordance with Texas Pollutant Discharge Elimination System (TPDES) permit requirements.	Section 2.2.3.1 Section 3.3.4
Changes in wetland water levels and hydroperiod resulting from dewatering are within historical annual or seasonal fluctuations.	Dewatering will take place within a confined soil column and is not expected to have impacts at the site boundary. There are no wetlands onsite.	Section 3.3.3 Table 4.2-1
Groundwater Quality		
The plant is outside the recharge area for any EPA-designated Sole Source Aquifer or any aquifer designated to have special protection by a State, Tribal, or regional authority	Victoria County is outside the boundary of EPA Sole Source Aquifers and other aquifers that receive enhanced regulatory protection from a state, tribal, or federal program.	Section 2.2.1.6
The plant is outside the wellhead protection area or designated contributing area for any public water-supply well.	The LWA project limit of disturbance is outside the wellhead protection area or designated contributing area for any public water-supply well.	Section 2.2.2.1
No planned plant discharges to the subsurface (by infiltration or injection), including stormwater discharge	There would be no discharges to groundwater as part of LWA construction.	Section 3.3.7.2
Applicable requirements and guidance on spill prevention and control are followed, including the relevant BMPs and Integrated Pollution Prevention Plan.	The LWA project would comply with required permits and applicable BMPs.	Section 3.3.7.2
A groundwater protection program conforming to NEI 07-07 is established and followed.	N/A	N/A
Impacts on Aquatic Biota		
Adherence to regulatory limits in 40 CFR 125.84	N/A (these will be no intake structures)	N/A
Adherence to requirements in NPDES permits issued by the EPA or a given State	The LWA project would comply with required permits and applicable BMPs.	Section 2.2.3.1 Section 3.3.7.2

PPE/SPE Values and Assumptions	LWA Project Values or Compliance Statements	Applicable Figure, Table, or LWA ER Section
Radiological and Environmental Hazards		
There would be no radiological hazards induced as part of the LWA.	N/A	N/A
Nonradiological Environmental Hazards		
The applicant must adhere to all applicable Federal, State, local, or Tribal regulatory limits and permit conditions for chemical hazards, biological hazards, and physical hazards from a proposed nuclear reactor	The LWA project would comply with required permits and applicable BMPs.	Section 3.3.6
The applicant will follow nonradiological public and occupational health BMPs and mitigation measures, as appropriate, to govern building and operations-related activities.	The LWA project would comply with required permits and applicable BMPs.	Section 3.3.4 Section 3.3.6
Wildlife-Related Noise Generation		
85 dBA 50 ft (15.24 m) from the source	While noise may exceed 85 dBA 50 ft from the source, these disturbances will be brief and noise to dissipate to less than 65 dBA before reaching beyond the boundary of the 245-ac. Primary Facilities Parcel.	Section 3.3.5 Table 3.3-1
Human-Related Noise Generation		
65 dBA at site boundary	Noise may exceed 85 dBA 50 ft from the source and dissipate to less than 65 dBA before reaching beyond the boundary of the 245-ac. Primary Facilities Parcel (at 0.33 mi from the LWA limit of disturbance to the boundary of the Primary Facilities Parcel in the direction of the nearest residence).	Section 3.3.5 Figure 2.1-2 Table 3.3-1
Project will comply with State and local noise-abatement laws and ordinances, or the applicant will pursue a variance or an exception with the State or local regulator or will be able to mitigate the noise sufficient to satisfy the regulator.	The LWA project would comply with required permits and applicable BMPs.	Section 3.3.5
Project will implement BMPs, including modeling, foliage planting, construction of noise buffers, and the timing of construction and/or operation activities.	The LWA project would comply with required permits and applicable BMPs.	Section 3.3.5

PPE/SPE Values and Assumptions	LWA Project Values or Compliance Statements	Applicable Figure, Table, or LWA ER Section
Radiological Waste Management		
There would be no radiological waste generated as part of the LWA.	N/A	N/A
Nonradiological Waste Management		
Applicants must meet all applicable permit conditions, regulations, and BMPs related to solid, liquid, and gaseous nonradiological waste management.	The LWA project would comply with required permits and applicable BMPs.	Section 3.3.7
Perform mitigation measures, to the extent practicable, such as recycling, process improvements, or using a less hazardous substance.	The LWA project would comply with required permits and applicable BMPs.	Section 3.3.7
Postulated Accidents		
There would be no postulated accidents that need to be evaluated as part of the LWA.	N/A	N/A
Site Employment		
The peak project-related in-migrating workforce, including families, does not exceed established local planning and growth projections for infrastructure and service demands.	The average number of workers engaged in construction activities defined under the LWA is estimated at 45. This number of workers would not place a significant demand on services.	Section 3.3
Community Services and Infrastructure		
Housing vacancy rate in the affected economic region does not change by more than 5 percent, or at least 5 percent of the housing stock remains available.	Limited added number of workers (45) would not have a measurable impact (< 0.1 percent of the population of Victoria County).	Section 2.4.2.2 Table 2.4-1 Table 2.4-8
Student:Teacher ratios in the affected economic region do not change by more than 5 percent (e.g., 1 child per class of 20).	Limited added number of workers (45) would not have a measurable impact (< 0.1 percent of the population of Victoria County).	Section 2.4.2.3 Table 2.4-1 Table 2.4-10
Assumes housing and education resources would be the only ones where noticeable impacts might occur	N/A	N/A
Transportation Systems and Traffic		
The Level of Service (LOS) determination for affected roadways does not change.	LOS on roads around the LWA project site is current level A and will remain Level A based on added LWA-related vehicular traffic.	3.3.8

PPE/SPE Values and Assumptions	LWA Project Values or Compliance Statements	Applicable Figure, Table, or LWA ER Section
<i>Tax Revenue</i>		
Tax revenues are beneficial and considered Category 1 issues that do not require detailed analysis.	N/A	N/A
<i>Fuel Cycle</i>		
The uranium fuel cycle would not be applicable to the LWA.	N/A	N/A
<i>Transportation of Unirradiated Fuel</i>		
The transportation of unirradiated fuel would not be applicable to the LWA.	N/A	N/A
<i>Transportation of Radioactive Waste</i>		
The transportation radioactive waste would not be applicable to the LWA.	N/A	N/A
<i>Transportation of Irradiated Fuel</i>		
The transportation of irradiated fuel would not be applicable to the LWA.	N/A	N/A
<i>Decommissioning</i>		
The decommissioning of the future SMR would not be applicable to the LWA.	N/A	N/A
<i>Operational Life of the Plant</i>		
The operation of the future SMR would not be applicable to the LWA.	N/A	N/A

N/A – Not applicable to the LWA project.

Appendix C – New and Significant Information Screening Memo



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September 15, 2026

To: Mr. Ed Miller
Director, Environment & Permitting
Blue Energy, LLC
4445 Willard Avenue
Suite 525
Chevy Chase, Maryland, 20815

From: Mr. Kevin Taylor
Project Manager
AECOM Technical Services, Inc.

**RE: New and Significant Information Review, Blue Energy Center – Port of Victoria
Limited Work Authorization**

The U.S. Nuclear Regulatory Commission's (NRC) Generic Environmental Impact Statement for Licensing of New Nuclear Reactors (New Reactor GEIS; NUREG-2249) evaluates the potential environmental impacts associated with 119 issues relevant to the construction and operation of a new nuclear reactor. Of these, 39 issues relate to construction, 2 apply across both construction and operation, and 5 are non-resource-related. Of the 39 construction-related issues, 8 do not apply to the construction activities associated with Blue Energy's Limited Work Authorization (LWA) application in support of the development of the Blue Energy Center – Port of Victoria, Texas. Of the 5 non-resource-related issues, only 2 apply to the LWA.

Of the 39 construction-related issues, 36 are Category 1 issues. This total includes issues for which potential environmental impacts have been generically determined to be SMALL and adverse, provided the project is bounded by the applicable plant parameter envelope (PPE) and site parameter envelope (SPE) values and assumptions, as well as issues for which impacts are beneficial. The remaining three construction-related Category 2 issues require application-specific analysis that considers site-specific conditions.

However, the NRC's basis for determining SMALL impacts for each Category 1 issue is contingent on the proposed reactor project meeting the PPE and SPE values identified for that issue. If the project does not meet those values for a Category 1 issue, or if new and significant impacts are identified, then a project-specific analysis must be prepared for that issue, similar to the approach used for Category 2 issues.

In the context of the New Reactor GEIS and the NRC's "new and significant information" review, a "new" impact is an impact, condition, or piece of information that was not evaluated, anticipated, or bounded by the GEIS assumptions and findings when the generic determination was made. For a new nuclear reactor or LWA construction project, an impact would generally be considered new if:

- It involves an environmental effect that was not analyzed in the GEIS;
- It results from site-specific conditions that fall outside the SPE or PPE used in the GEIS;
- It arises from new scientific information, changed environmental conditions, or newly identified resources that were unavailable during preparation of the GEIS; or
- It represents a previously unrecognized impact pathway or cause-and-effect relationship.

The scope of the LWA construction does not introduce any new potential impacts that were not analyzed in the New Reactor GEIS; there are new scientific information, changed environmental conditions, or newly identified resources that were unavailable during preparation of the GEIS; and the LWA scope does not represent a previously unrecognized impact pathway or cause-and-effect relationship. However, there are two SPE parameters/assumptions associated with Category 1 issues that the proposed LWA does not meet and, subsequently, a project-specific analysis has been provided in the LWA Environmental Report (ER).

The two non-conforming SPE assumptions are:

- No existing residential areas within 0.5 miles (mi) of site
- No loss of prime or unique farmland, or other farmland of statewide or local importance

These two non-conforming assumptions are discussed further below.

No existing residential areas within 0.5 mi of site

Blue Energy has determined that the home of the nearest resident is approximately 0.48 mi from the perimeter of the LWA Limit of Disturbance. However, the distance to the nearest residential property is 0.45 mi. This assumes that the nearest "residential area" would be defined as the collection of 8 rural residential properties along Edna Lane and Black Bayou Road. The total area of these properties is approximately 30 acres (ac.); resulting in residential density of 3.75 residences per ac. The nearest residential area with a higher residential density is approximately 1.5 mi east on the southwestern edge of Bloomington, Texas.

The non-conforming assumption associated with the nearest residential area applies to the Onsite Land Use and Visual Impacts in Site and Vicinity construction-related Category 1 Issues. Blue Energy has provided site-specific assessments of the following resources on the nearest residential area in the LWA ER and determined that the impacts will remain SMALL as determined in the New Reactor GEIS:

- Visual impacts (LWA ER Section 4.4.1)
- Air Quality (LWA ER Section 4.6)
- Noise (LWA ER Section 3.3.5)

As described in the GEIS, SMALL environmental effects are either not detectable or are so minor that they will neither destabilize nor noticeably alter any important attribute of the resource.

No loss of prime or unique farmland, or other farmland of statewide or local importance

Blue Energy has determined that the entire LWA Limit of Disturbance (approximately 15 ac.) will be on land designated as prime farmland. This impact is assessed in Section 4.1.2 of the LWA ER. This amount to farmland that will be lost to the LWA Limit of Disturbance is less than 0.3 percent when compared to the more than 5,600 ac. of prime farmland within the 6-mile vicinity of the LWA site. This loss for prime farmland is considered so minor that it will neither destabilize nor noticeably alter any important attribute of the resource. Therefore, Blue Energy has determined that the impact will remain SMALL as determined in the New Reactor GEIS.