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CAPPING & SOIL MANAGEMENT PLAN

FOR

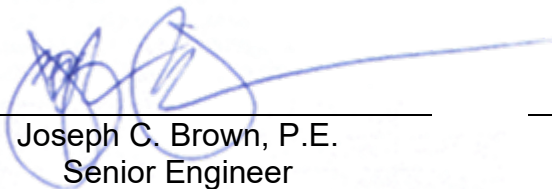
**BONITA ESTERO RAIL TRAIL
RAILS TO TRAILS CONVERSION
LEE COUNTY & COLLIER COUNTY, FLORIDA**

PREPARED FOR:

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October 15, 2026

CERTIFICATION PAGE

I, Joseph C. Brown, Florida P.E. No. 69821, employee of Taylor Environmental Consulting, LLC, certify that I currently hold an active license in the State of Florida and am competent through education and experience to provide the services contained in this report. Moreover, I certify that Taylor Environmental Consulting, LLC is a qualified business organization registered to provide engineering and geology services in the state of Florida.

In accordance with the provisions of Florida Statutes, Chapter 471, this **Capping & Soil Management Plan** has been prepared under my responsible charge and direct supervision. This work was performed in accordance with generally accepted professional engineering practices pursuant to Chapter 471 of the Florida Statutes and is in conformance with Chapter 62-780, Florida Administrative Code. The data, findings, recommendations, specifications or professional opinions were prepared solely for the use of Trust for Public Land, S&S Environmental Consultants, Village of Estero, City of Bonita Springs, Collier County, and the Florida Department of Environmental Protection. Taylor makes no other warranty, either expressed or implied, and is not responsible for the interpretation by others of these data.

Joseph C. Brown, P.E.
Florida License No. 69821

Date

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1.0 INTRODUCTION

Taylor Environmental Consulting, LLC (Taylor) was retained to prepare this Capping and Soil Management Plan (CSMP) to facilitate the planned redevelopment of the subject Seminole Gulf Railway (SGLR) right-of-way into a public multi-use trail. This plan is necessary to address the shallow soil impacts that rail corridors historically suffer from, in accordance with Florida Department of Environmental Protection (FDEP), SGLR, and County regulations.

The plan describes the type and extent of waste, material testing protocols, planned waste removal and handling procedures, and institutional containment of soils; and will be utilized to facilitate the planned design and construction of the public multi-use trail.

2.0 BACKGROUND

The subject property is an approximately 11.4 mile railroad right-of-way (ROW) that begins at Estero Parkway in Lee County, Florida and extends south to Railhead Scrub Preserve in Collier County, Florida. Based on information obtained from the property appraiser offices in both counties, the subject property is comprised of 16 parcels. The site location is depicted on **Figure 1, Site Location Map**. Site features are depicted on **Figure 2A, Estero Soil Sampling Location Map**; **Figure 2B, Bonita Springs Soil Sampling Location Map**; and **Figure 2C, Collier Soil Sampling Location Map**.

The original railroad, known as the Fort Myers Southern Railway, was constructed from 1922 to 1927. The railroad was used for freight and passengers linking with other rail lines. Subsequently, several mergers occurred and Seminole Gulf Railway, LP, acquired the property in November 1987. According to a notice submitted to the Federal Surface Transportation Board, use of the railway was discontinued in 2008.

In order to facilitate the purchase of the property for redevelopment into a rail trail, a Phase I Environmental Site Assessment (ESA) was completed in July 2026. The results indicated that there was a high likelihood for shallow chemical impacts (0 to 2 feet below ground surface) in the soil in the surrounding area, due to the property use as a railroad. As a result, this was identified as a Recognized Environmental Condition (REC) that required further investigation.

In September 2026, a limited-scope Phase II ESA was conducted based on the known site history and findings of the Phase I ESA. This limited-scope Phase II ESA was conducted in accordance with the CSX Minimum Sampling, Soil Management, and Capping Requirements for Rails-to-Trails Conversion of Rail Corridors. The Phase II ESA results indicated that soils beneath the railroad appear to have been impacted by historical operations. Specifically, arsenic and carcinogenic PAHs are present in soil at concentrations above their respective Chapter 62-777, Florida Administrative Code (FAC) Residential Direct Exposure Soil Cleanup Target Levels (DE-I SCTLs). Based on the results, additional soil sampling is warranted to delineate the extent of the soil impacts along the railroad corridor. Additionally, Alternative SCTLs will need to be established for recreational use of the trail and/or remedial action activities will be necessary to facilitate the redevelopment of the property into a trail. These activities may include removal of railroad ties, excavation and disposal of impacted soils, blending/reuse of impacted soils, and the use of fencing or capping of impacted soil with clean soil and/or asphalt to limit human exposure. This plan provides details of soil management procedures that will be necessary during the implementation of remedial action. A map depicting “capped” versus “uncapped” areas will be provided prior to commencement of construction activities.

3.0 CONTAMINANTS OF CONCERN

Based on the Phase II ESA results, the Contaminants of Concern (COCs) identified for this project include the following:

- **Arsenic:** Deposited via historical weed-control herbicide applications, railroad bed fill with coal ash or arsenic laced slag, and railroad ties dipped in arsenic.
- **Polycyclic Aromatic Hydrocarbons (PAHs):** Sourced from creosote-treated railroad ties, slag ballast, lubrication oil and diesel dripping from trains, and diesel exhaust/coal ash.

4.0 SOIL EXCAVATION, HANDLING, & DISPOSAL

Excavation activities are expected to occur at various times over the course of the property redevelopment process. The procedures outlined in the following sections should be followed to proper handling of the materials.

4.1 HEALTH & SAFETY

A site-specific Health and Safety Plan (HASP) will be developed for the remedial action activities at the site. The HASP will be specifically designed to address each aspect of remediation activities to be performed at the site and may include the material safety data sheets and other safety requirements and considerations for the excavated materials. All project personnel will be familiar with the HASP. All on-site project personnel will attend daily health and safety meetings and will sign the health and safety meeting log. The site-specific HASP will be kept on-site while conducting site activities. The HASP will include the following provisions:

- **Worker Safety Signage:** Per Section 403.7255, Florida Statutes and Rule 62-780.220(5), Florida Administrative Code (FAC), the Occupational Safety and Health Administration (OSHA) and FDEP required signage will be posted on fenced construction areas identifying construction zones and prohibiting public access.
- **Construction Area Fencing:** Areas where construction activities, equipment storage, and stock piling will be enclosed with a chain link fence.
- **Training:** Depending on the requirements of the planned work, contractors may be required to complete OSHA Hazardous Waste Operations (Hazwoper) training in accordance with 29 CFR 1910.

4.2 EROSION AND SEDIMENTATION CONTROL

Construction activities will involve disturbing soils and may include the clearing of vegetation. If not handled properly, these activities can result in soil erosion and the deposition of sediment to water bodies, wetlands, and other sensitive areas. Normally, vegetation stabilizes soil so that stormwater is less likely to pick up and transport it to downgradient locations. When vegetation is removed, soil is exposed and can be easily eroded. Runoff from construction sites is by far the largest source of sediment from areas under development. The following best management practices will be implemented to mitigate soil erosion and sedimentation:

- **Erosion Controls:** Place silt fences and sediment traps down-slope prior to starting any active earth movement.
- **Dust Control:** Continuous water-truck spraying is mandatory. Airborne soil particles pose an inhalation risk to any high-density public areas along the railway corridor. Additionally, dust carried off-site by the wind can impact nearby waterbodies due to direct deposition or transport by stormwater.
- **Inlet Protection:** Wrap all down-gradient stormwater grates and catch basins with filter fabric to prevent sediment from impacting local drainage networks.
- **Construction Exit:** Install a minimum 50-foot rattle-plate or crushed stone tracking pad at the Central Avenue construction egress point to prevent heavy machinery from tracking impacted mud onto public roadways.

The FDEP requires that a National Pollutant Discharge Elimination System (NPDES) Construction Generic Permit be obtained if greater than 1 acre of land will be disturbed.

4.3 FIELD SCREENING

Field screening is the rapid on-site testing of soil, water, or air to detect pollutants. In general, portable tools are utilized to quickly find out if toxic chemicals are present and ultimately aid in the determination of sample locations for final laboratory analysis to correlate with the screening results. This saves time and money and helps to inform workers about the site conditions. The following field screening procedures will be implemented for this project:

- **Visual Inspection:** Personnel must inspect all earthwork for dark staining, slag material, buried ties, or metallic debris.
- **Olefactory senses:** The human sense of smell can be used as a rapid preliminary tool to identify petroleum impacts in soil. The presence of creosote-stained soil may be exhibited by a smoky chemical smell similar to asphalt or mothballs.
- **XRF Screening:** Field crews may use X-Ray Fluorescence (XRF) analyzers to screen soil for heavy metal levels to segregate hot spots from lower-risk material.
- **PID Screening:** A Photoionization Detector (PID) will be used as needed to field screen for petroleum impacts. Because creosote mostly contains heavy, low-volatility chemicals, a PID struggles to detect it accurately in the field. However, a PID can detect the lighter, evaporating chemicals (like naphthalene and some lighter PAHs) that come off creosote.

Based on field screening results, to the extent practical, excavated soil/material will be classified as one of the following:

- No environmental concerns – material suitable for backfill;
- No environmental concerns – material not suitable as backfill due to nonenvironmental issues, e.g. trash and debris;
- Potential environmental concerns – possibly related to railroad operations.

4.4 STOCKPILE MANAGEMENT

Impacted site soils that are excavated will be temporarily stored and properly managed to prevent the spread of impacts to uncontaminated areas. The stockpiles may consist of impacted, blended, or clean soils. However, the site soil should be considered impacted until analytical data demonstrates otherwise. The following best management practices will be implemented to facilitate soil stockpile activities:

- **Linners:** Per Chapter 62-780.525, FAC, all excavated soil must be placed on an impervious liner (e.g., 10-mil or thicker polyethylene sheeting) and securely covered overnight with anchored, weatherproof tarps to prevent stormwater leaching and minimize dust/odors.
- **Runoff Barriers:** Construct continuous straw-wattle or sandbag berms tightly around the perimeter of the stockpiles.
- **Covers:** Securely anchor plastic sheeting over stockpiles at the end of each shift or prior to rainfall to suppress dust and prevent stormwater leaching.
- **Buffer Zones:** Maintain a minimum distance of 50 feet away from any stormwater manholes.

As outlined in Chapter 62-780.500(3)(a)10, FAC, stockpiles used for soil blending activities are considered temporary storage and must be removed within 60 days.

4.5 MATERIAL REUSE & DISPOSAL

Impacted rail soils cannot be reused as open surface topsoil. However, blending or reusing impacted soil is permitted **only** if the material is permanently encapsulated beneath the structural engineering controls detailed in Section 5.

If grading requirements necessitate removing excess soil from the site, the following protocols apply:

- **TCLP Testing:** Soils must undergo Toxicity Characteristic Leaching Procedure (TCLP) testing to determine if they classify as RCRA Hazardous Waste.
- **Non-Hazardous Disposal:** Soil with concentrations exceeding the Chapter 62-777, FAC Residential – Direct Exposure Soil Cleanup Target Levels (DE-II SCTLs) or alternative SCTLs but passing TCLP testing can be trucked to a permitted Subtitle D landfill facility, such as the Collier County Landfill and Lee/Hendry Regional Landfill.
- **Manifesting:** All out-bound loads must have formal waste manifests documenting total volume, carrier data, and the destination landfill.

Due to the procedure that will be used and the uncertainty of the size of some of the excavations, the total volume of waste to be removed cannot be adequately estimated.

5.0 ENGINEERING CONTROLS

Engineering Controls (ECs) for rails-to-trails projects are physical restrictions used to ensure public safety by preventing trail users from interacting with contaminated soil or groundwater. Rather than conducting the costly disposal of all impacted soils, this project utilizes ECs to protect trail users. Details for the engineering controls that will be utilized on this project are as follows:

- **Asphalt/Concrete Cap (Trail Tread):** The active bicycle/pedestrian lane must be sealed with a minimum of 2 inches of impervious asphalt with a 6-inch thick compacted limerock/limestone sub-base or 6 inches of impervious concrete laid over a 6-inch thick compacted limerock/limestone sub-base. This forms an impermeable barrier preventing exposure.
- **Clean Soil Cap (Shoulders/Flanks):** Green spaces, structural embankments, and unpaved trail shoulders require a minimum of 24 inches of certifiable clean fill (see below). The clean soil cap will be topped with a non-invasive, shallow-rooted native turf or shrubs to anchor soft caps without puncturing the underlying geotextile barrier. Deep-rooting trees that could breach the cap are prohibited.
- **Fencing:** Where necessary, permanent fencing will be utilized to limit access to contaminated areas. The fencing will be wooden split rail style and will be surrounded by shrubs. Excess soil generated during the installation of fence posts will be handled in accordance with Section 4.0 of this plan.
- **Warning Marker:** A high-visibility orange geosynthetic marker layer must be rolled out directly over the native impacted soil before placing clean topsoil fill to warn future utility excavators.
- **Clean Fill Verification:** All imported fill must be laboratory-tested and certified to be below the DE-II SCTLs outlined in Chapter 62-777, FAC or alternative SCTLs. The source of the imported fill at the locations where clean fill is placed should be documented.

5.1 WARNING SIGNS

Per Section 403.7255, Florida Statutes and Chapter 62-780.220(5), FAC, if the underlying soil contains levels that pose a potential public exposure risk if uncovered, the person responsible for site rehabilitation (PRSR) must erect physical warning signs. The signage requirements are as follows:

- **Placement:** Signs must be placed at all primary access points, trailheads, and every 100 feet around the perimeters where the clean soil cap begins.
- **Visibility:** Signs must be highly visible, weather-resistant, and securely mounted.
- **Language Requirements:** The signs must clearly state that the area contains underlying contaminated soil/hazardous substances, that the surface cap isolates it safely, and that digging, disturbing, or excavating the soil is strictly prohibited.

If FDEP indicates that the signage is not necessary for these types of projects then it will not be implemented.

5.2 MONITORING AND MAINTENANCE

To ensure the long-term effectiveness of the engineering controls and maintain compliance with FDEP conditional closure requirements, a formal annual inspection program must be implemented by Collier County, City of Bonita Springs, Village of Estero, or the designated managing entity. Details of the inspection program are provided in the subsequent sections.

5.2.1 INSPECTION SCHEDULE AND TRIGGERS

Visual inspections of the EC will be conducted with the following frequency:

- **Routine Inspection:** Visual inspections of the entire trail parcel must be conducted **at least once annually**, preferably prior to the onset of the Florida rainy season (May/June).
- **Event-Driven Inspection:** Extraordinary inspections must be triggered within **2 weeks** following any major storm event, hurricane, or suspected unauthorized utility excavation on the parcel.

5.2.2 INSPECTION PARAMETERS AND CHECKLISTS

The inspector must document the status of the following components using a standardized field log that includes the following items:

- **Impervious Cap (Trail Tread):** Check for structural failures such as deep alligator cracking, potholes, subsidence, frost/heat heaving, or root intrusions that expose underlying sub-base soils.
- **Clean Soil Cap (Shoulders & Slopes):** Inspect for erosion, washouts, or burrowing animal activity that reduces the required 24-inch clean soil buffer. Verify that no orange geotextile warning fabric is visible at the surface.
- **Vegetative Cover:** Confirm that sod and deep-rooting landscaping are intact to prevent wind and water erosion of the shoulders.

5.2.3 REPAIR & CORRECTIVE ACTION PROTOCOLS

If any cap deficiency or breach is identified during the annual inspection, corrective actions must be initiated within 30 days of identifying the damage. The repairs must be sufficient to ensure that the EC continues to operate effectively to prevent human exposure to the underlying soil. Corrective actions for any damage identified will be performed as follows:

- **Minor Asphalt/Concrete Damage:** Cracks wider than 1/4 inch must be cleaned and sealed with a commercial-grade rubberized asphalt sealant. Potholes must be excavated, squared off, and patched with hot-mix asphalt.
- **Erosion Washouts:** Affected areas must be backfilled immediately with certifiable clean fill (A-1 or A-3 material), compacted in 6-inch lifts to match adjacent grades, and re-stabilized with fresh sod or hydroseeding.

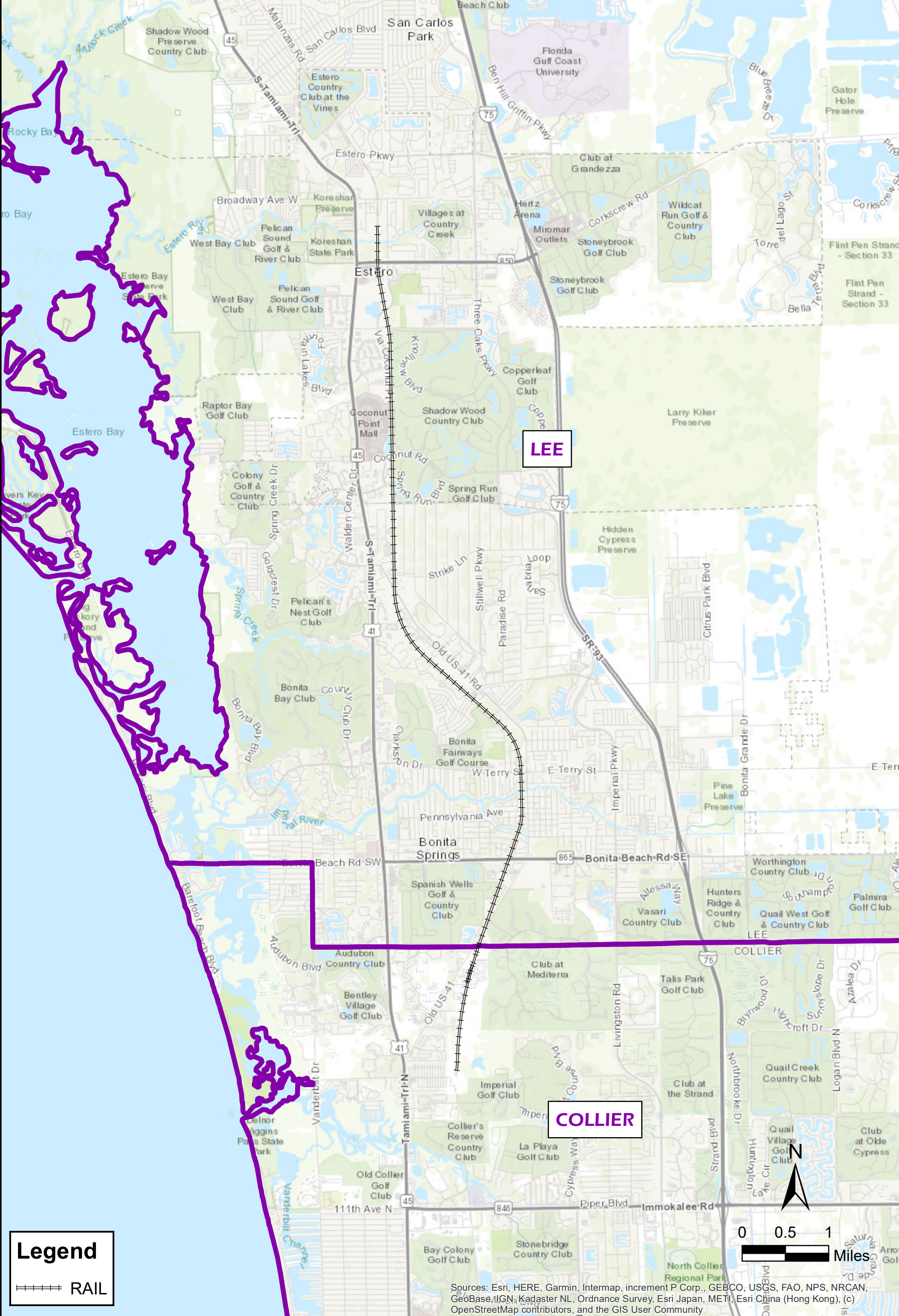
- **Utility Intrusion Management:** Any utility company requiring emergency excavation through the cap must be notified of the underlying contamination. They must replace the orange geotextile fabric and restore the exact engineered capping specifications (see above)

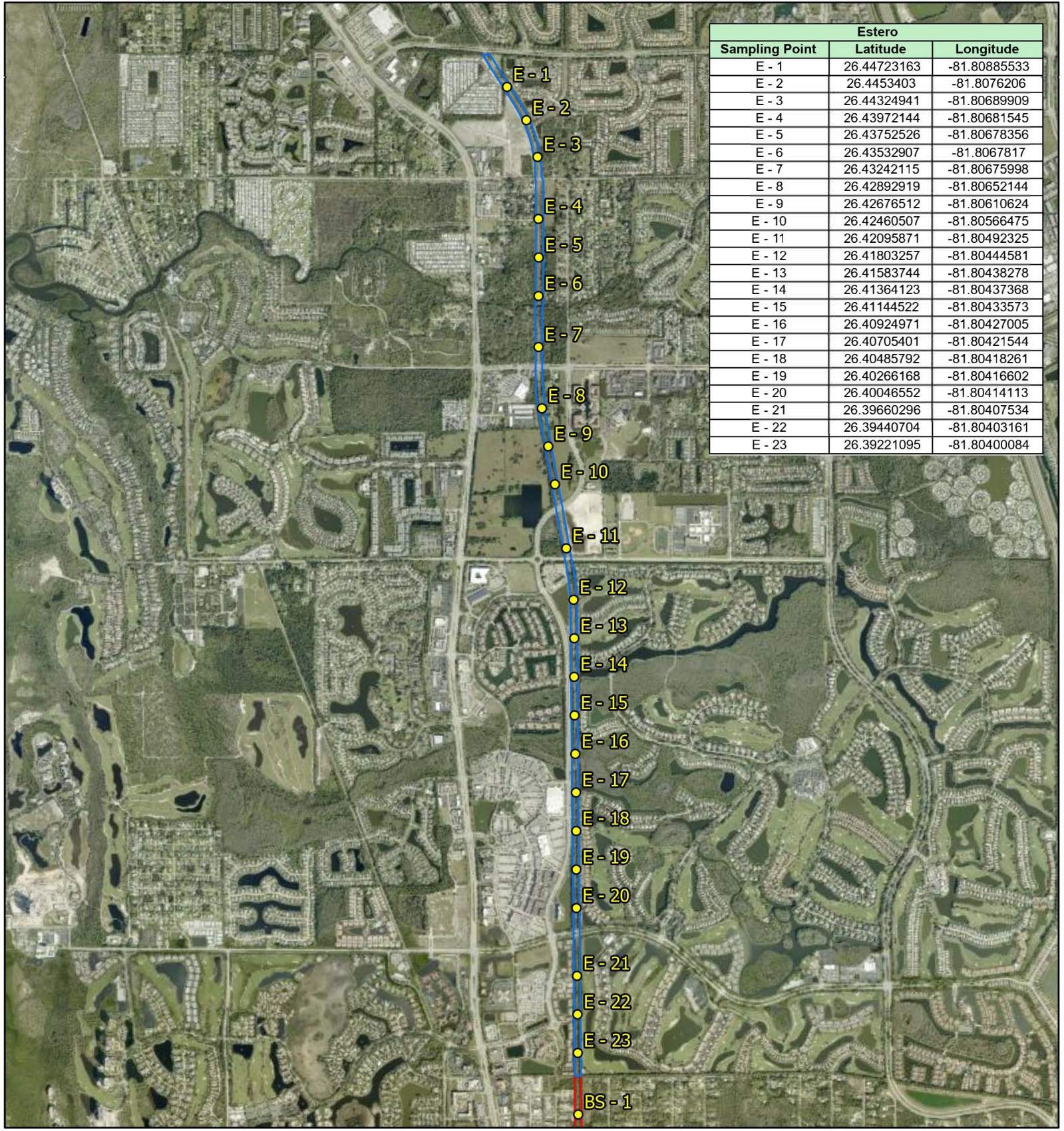
5.2.4 REPORTING AND RECORD KEEPING

An annual EC Inspection & Maintenance Report must be compiled, signed by a Florida Licensed Professional Engineer (PE) or Qualified Environmental Professional (QEP), and maintained in the County's permanent property files.

Other than failures of an EC constructed to prevent plume migration, there is no requirement for the FDEP be notified of inspections or submittal of inspection reports to FDEP. Since the EC for this project is being constructed to address soil impacts, notification and reporting to FDEP are not required. However, inspection documents must be maintained so that they can be provided when the FDEP conducts periodic audits. Per FDEP documents, these audits will be performed at least every 5 years.

FIGURES



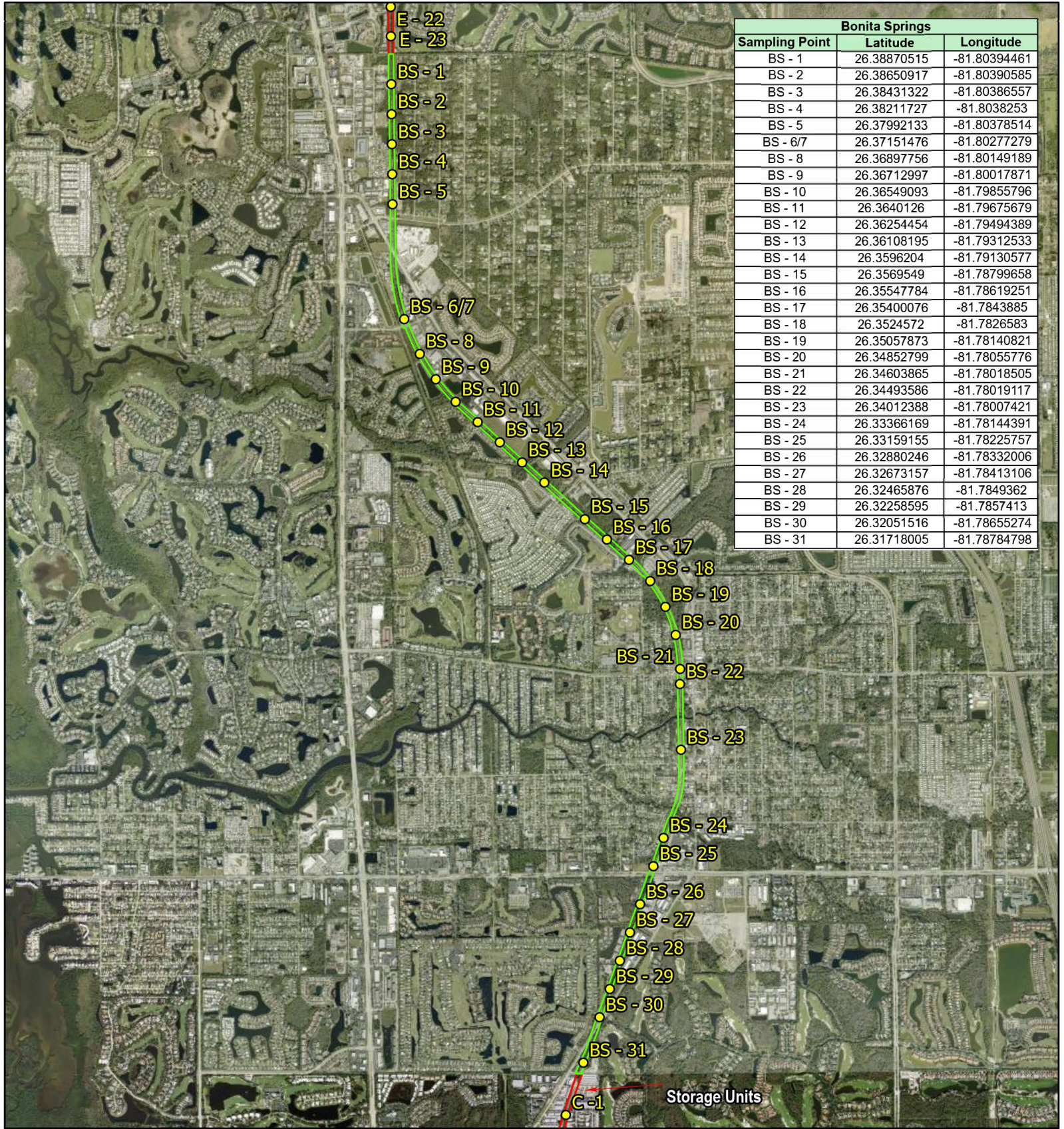


Estero		
Sampling Point	Latitude	Longitude
E - 1	26.44723163	-81.80885533
E - 2	26.4453403	-81.8076206
E - 3	26.44324941	-81.80689909
E - 4	26.43972144	-81.80681545
E - 5	26.43752526	-81.80678356
E - 6	26.43532907	-81.8067817
E - 7	26.43242115	-81.80675998
E - 8	26.42892919	-81.80652144
E - 9	26.42676512	-81.80610624
E - 10	26.42460507	-81.80566475
E - 11	26.42095871	-81.80492325
E - 12	26.41803257	-81.80444581
E - 13	26.41583744	-81.80438278
E - 14	26.41364123	-81.80437368
E - 15	26.41144522	-81.80433573
E - 16	26.40924971	-81.80427005
E - 17	26.40705401	-81.80421544
E - 18	26.40485792	-81.80418261
E - 19	26.40266168	-81.80416602
E - 20	26.40046552	-81.80414113
E - 21	26.39660296	-81.80407534
E - 22	26.39440704	-81.80403161
E - 23	26.39221095	-81.80400084



- Legend**
- Subject Property within Estero
 - Sampling Points

Figure 2A - Estero
Soil Sampling Location Map
Bonita Estero Rail-Trail (BERT)
Lee County, Florida



0 0.33 0.65
Miles

Legend

- Subject Property within Bonita Springs
- Sampling Points

**Figure 2B - Bonita Springs
Soil Sampling Location Map
Bonita Estero Rail-Trail (BERT)
Lee County, Florida**

Collier County		
Sampling Point	Latitude	Longitude
C - 1	26.31334745	-81.78924582
C - 2	26.31122414	-81.78985761
C - 3	26.30779291	-81.79077536
C - 4	26.30328256	-81.79160436
C - 5	26.30109956	-81.7918694
C - 6	26.29891114	-81.79206852
C - 7	26.29671674	-81.79216003

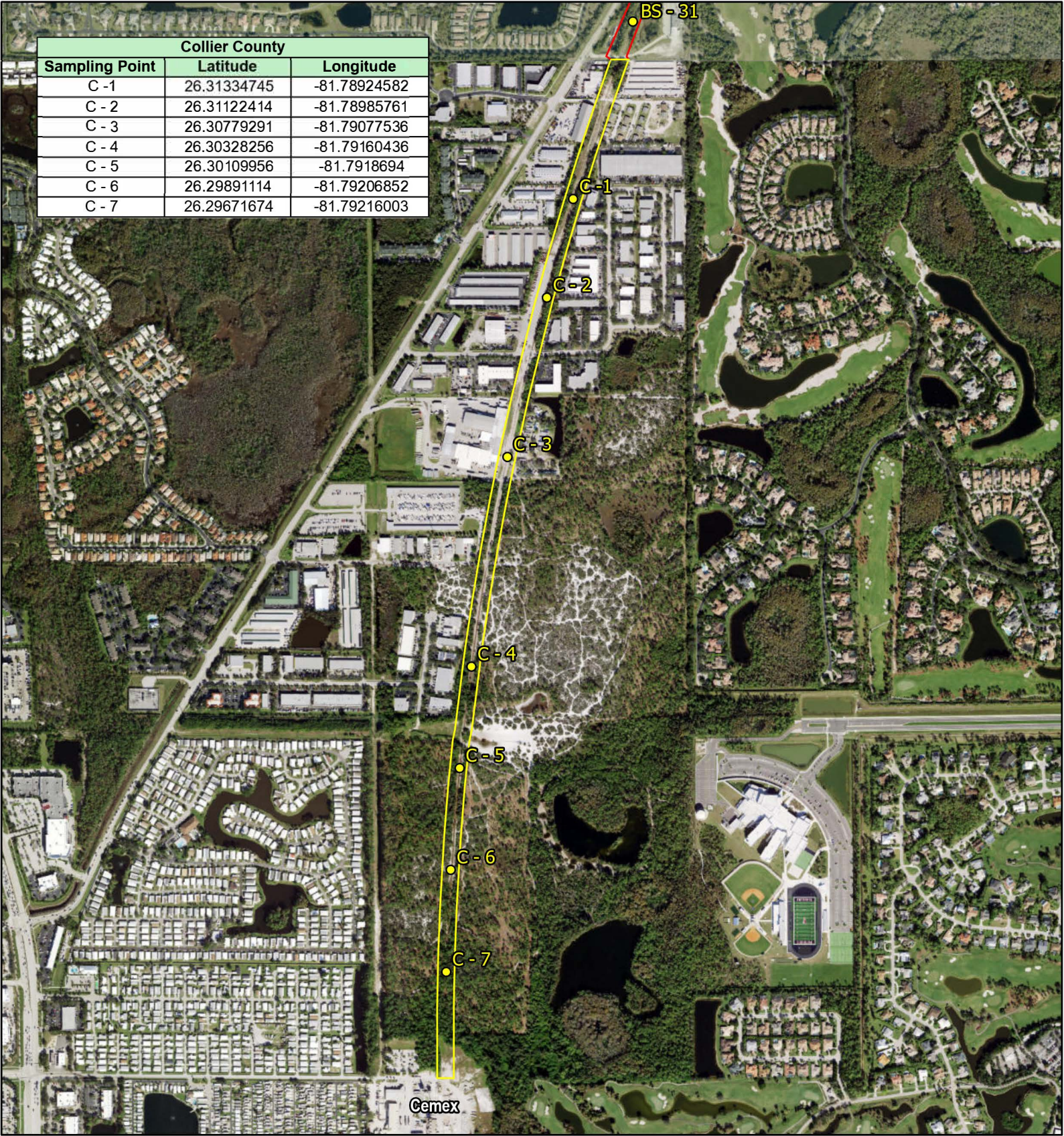


Figure 2C - Collier
Soil Sampling Location Map
Bonita Estero Rail-Trail (BERT)
 Collier County, Florida