

2. ALTERNATIVE ANALYSIS OF ONSHORE PIPELINE ROUTES

Port Dolphin's gas transmission pipeline (hereafter referred to as “the pipeline”) would include an onshore pipeline section to transport natural gas from Port Manatee to interconnection facilities with the Gulfstream and Tampa Electric Company (TECO) systems to be located east of Port Manatee. The **Deepwater Port Application, Volume II**, identified a Preferred Onshore Route (**Figure 2-1**). This route was selected and studied in detail, which included archaeological, engineering, wetland, land use, and other environmental mapping. Subsequent discussions with Port Manatee, land owners along the Original Preferred Onshore Route, and the Federal Energy Regulatory Commission (FERC), as well as interventions filed to the Port Dolphin FERC filing, led to further evaluation of alternative pipeline routes and selection of a Revised Preferred Onshore Route.

2.1 Rationale and Methodology

As discussed in **Section 1**, re-route alternatives for a portion of the offshore pipeline route were necessary to avoid traversing the Terra Ceia Aquatic Preserve. During evaluation of the offshore routes, several alternatives were examined for onshore routes from each pipeline landing location (i.e., Port Manatee’s north and south areas). Ultimately, offshore Alternative A was selected; therefore, only onshore routes from its landing location (Port Manatee’s south area) were evaluated.

After Port Dolphin submitted its USCG **Deepwater Port Application** and FERC **Application for Certificate of Public Convenience and Necessity and Related Authorizations**, several entities filed interventions to the onshore pipeline routing proposed, including the following:

- HRK Holdings LLC – The Original Preferred Onshore Route would traverse areas (former Piney Point) that would present groundwater contamination issues;
- Florida Power & Light Company (FPL) – The Original Preferred Onshore Route would utilize areas within FPL’s existing right-of-way (ROW) that are slated for future expansion of FPL’s power distribution capabilities, and construction activities within such an ROW would face technical limitations and challenges; and
- Taylor Woodrow – The Original Preferred Onshore Route would impact a large wetland located on property owned by Taylor Woodrow.

Port Dolphin’s goal was to identify alternatives and select a revised pipeline route that would address all issues raised in the above-mentioned interventions and meet its own technical and environmental criteria, as well as consider more detailed criteria identified in discussions with property owners (including Port Manatee, FPL, JJC-Port Manatee LLC, Buckeye Industrial Limited, and the Mock family).

Figure 2-1
Onshore Original Preferred Route

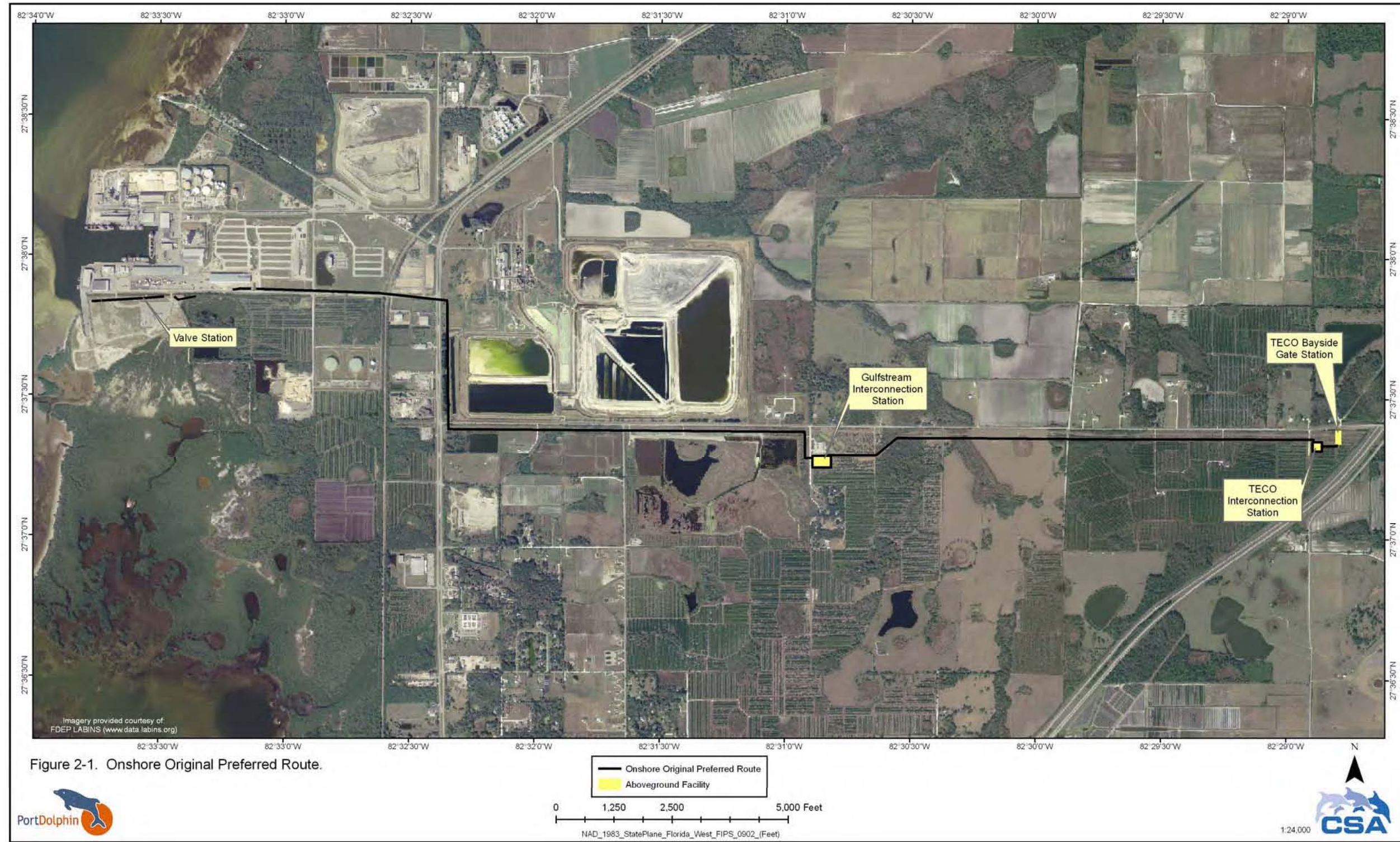


Figure 2-1. Onshore Original Preferred Route.

During the development of alternatives, analysis of desktop data was performed and included review of aerial photographs, mapping of NWI wetlands, and identification of existing utilities. Port Dolphin used a three-step approach for evaluating onshore pipeline route alternatives. The selection of the location of the interconnection station to connect with both Gulfstream's pipeline and TECO's Bayside pipeline was the initial step in the process. Next, alternative routes from Port Manatee were identified and evaluated. Finally, routing alternatives through Port Manatee were developed in consultation with Port Manatee managers. Once the alternatives were developed, numerous desktop analyses and field work were conducted, and discussions with property owners were held to evaluate the alternatives and develop the final route. This work included performing walkdown of the alternative routes with representatives from engineering, environmental, and surveying disciplines.

2.2 Potential Alternatives

The *Port Dolphin* gas transmission line would transport natural gas to onshore facilities for interconnection with the Gulfstream and TECO systems in Manatee County, Florida. From there, the natural gas would be available to serve residential, commercial, industrial, and electrical generation customers primarily in Florida and the southeastern United States. In order to connect with the Gulfstream and TECO systems, interconnection facilities are required. Previously, two interconnection facilities, one for Gulfstream and one for TECO, were located approximately 3.6 miles (5.7 kilometers) (Gulfstream) and 5.8 miles (9.2 kilometers) (TECO) inland from the bulkhead at Port Manatee. Subsequent to the original filing of the *Port Dolphin* application for a deepwater port license in May and June 2007, several issues arose that caused the locations of the *Port Dolphin* interconnections to the Gulfstream pipeline and TECO to be changed.

Interconnection with Gulfstream's Pipeline – During detail negotiations with the landowner of the property (Gene's Citrus Ranch) where Port Dolphin had first selected to place the Gulfstream pipeline interconnection station, it was determined that the landowner had several family-related issues and future land use options that would complicate the placement of the facilities on their property. Port Dolphin immediately began the search for alternative parcels of land in the immediate vicinity of the original site and has successfully negotiated an option agreement to place the Gulfstream interconnection station facilities on a parcel of land located within several hundred feet north of the original site. The new location is positioned in an industrial area of Manatee County and immediately to the east of Gulfstream's pressure reduction station on Buckeye Road. The location has excellent access to a major county road and existing utilities.

Interconnection with TECO's Proposed Bayside Pipeline – The original rationale for placement of the TECO interconnection station was that it should be located adjacent to a planned (future) TECO facility that would be the beginning of their Bayside pipeline system (which would be initially fed by the Gulfstream pipeline). After Port Dolphin had filed the original application with the USCG and FERC, Port Dolphin learned that TECO relocated their planned facilities further west to a site located south of Buckeye Road and west of Oneil Road, in the vicinity of Gulfstream's pressure reduction station. Due to this change and the subsequent re-route of TECO's Bayside pipeline, Port Dolphin now proposes to locate the Gulfstream and TECO interconnection station facilities on the same parcel of land described above for the Gulfstream

interconnection station. Port Dolphin has successfully negotiated an option agreement for this parcel of land to be large enough to safely and effectively accommodate both interconnections. The new location is positioned in an industrial area of Manatee County and immediately to the east of Gulfstream's pressure reduction station on Buckeye Road. The location has excellent access to a major county road and existing utilities.

The relocation of both interconnection stations does not affect the ability of *Port Dolphin* to deliver the planned quantity and quality of natural gas at the pressures required by both the Gulfstream pipeline and TECO's proposed Bayside pipeline.

The following subsections present the onshore route alternatives evaluated for selecting the Revised Onshore Pipeline Route between Port Manatee and the new proposed locations for interconnecting with the Gulfstream and TECO Bayside pipelines.

2.2.1 Route Alternatives from Port Manatee's Southeast Area to Interconnection Station

Several onshore alternatives (I – V) were developed for pipeline routing from Port Manatee's southeast area to the proposed location for interconnections (**Figure 2-2**).

Alternative I – This alternative would shift the N-S segment of the pipeline route along US 41 west from the Original Preferred Onshore Route to lie closer to the edge of US 41 and out of the way of ongoing activities on the HRK Holdings LLC property. This alternative would then go under Buckeye Road and connect with Alternative V to head east to the proposed interconnection station (**Figure 2-2**).

Alternative II – This alternative would move the N-S segment of the pipeline route to the west side of US 41 along the utility corridor. This alternative would then cross under US 41 and connect with Alternative V to head east to the proposed interconnection station (**Figure 2-2**).

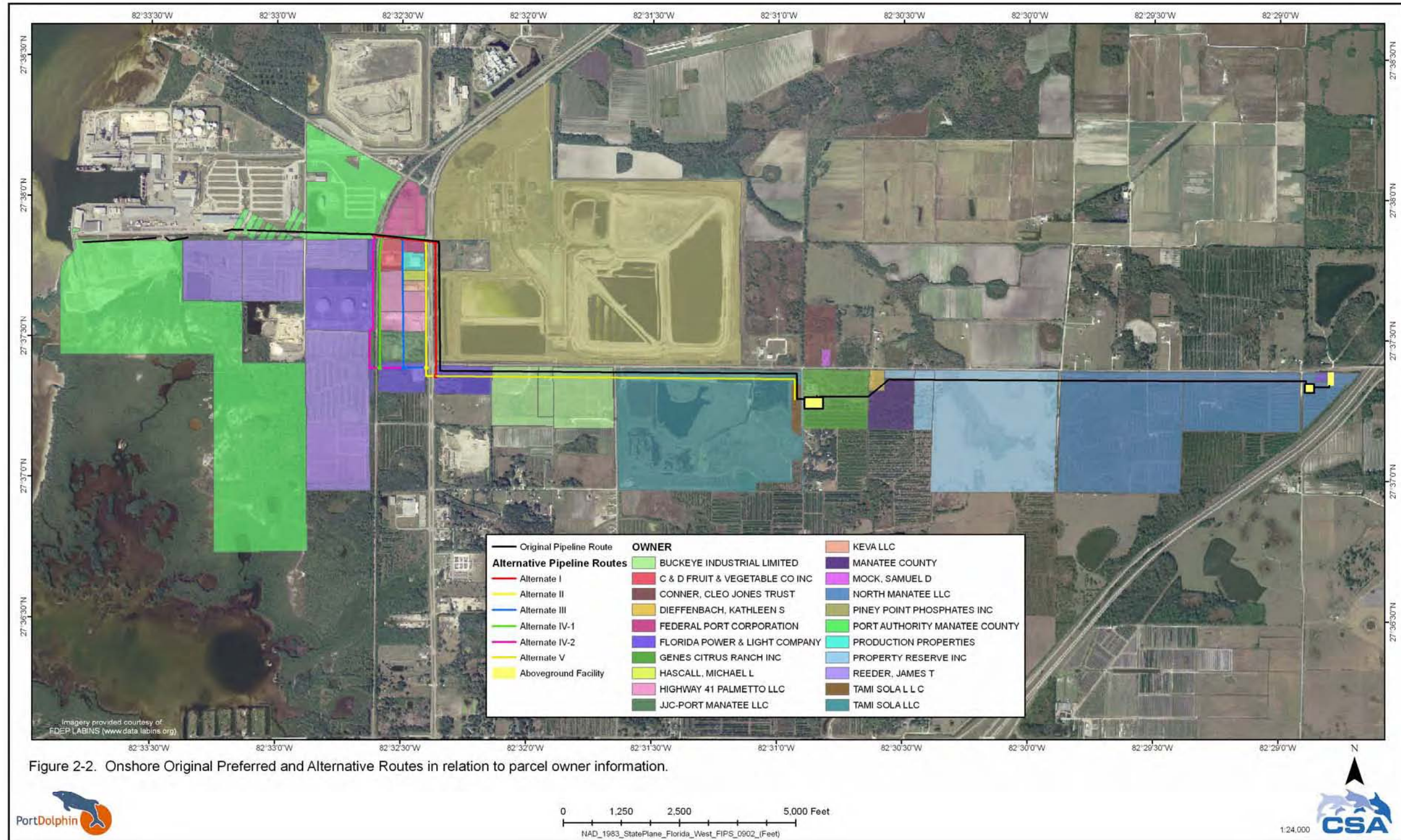
Alternative III – This alternative would provide a N-S segment that would turn south between the railroad tracks and US 41 along the eastern boundary of the C&D Fruit and Vegetable property, and would continue south until turning east to connect with Alternative V and head east to the proposed interconnection station (**Figure 2-2**).

Alternative IV-1 – This alternative would provide a N-S segment that would traverse the east side of the railroad tracks as it heads south from South Dock Street, and would then turn east to connect with Alternative V and head east to the proposed interconnection station (**Figure 2-2**).

Alternative IV-2 – This alternative would provide a N-S segment that would traverse the west side of the railroad tracks as it heads south from South Dock Street, and would then turn east to connect with Alternative V and head east to the proposed interconnection station (**Figure 2-2**).

Alternative V – Due to concerns raised by FPL, this alternative would move the E-W segment along Buckeye Road south from the Original Preferred Onshore Route out of the FPL ROW (**Figure 2-2**).

Figure 2-2
Onshore Original Preferred and Alternative Routes in Relation to Parcel Owner Information



2.2.2 Route Alternatives Through Port Manatee

Based on discussions with the Port Manatee managers who expressed their interest to minimize potential obstructions to future Port development plans, the Port requested that Port Dolphin adjust its routing through Port Manatee by placing the pipeline in the south conveyance ditch located on the south side of South Dock Street. Based on those discussions, two route alternatives, a Northern Route and a Southern Route, were developed for consideration for traversing the Port Manatee property (**Figures 2-3 and 2-4**).

Northern Route – This alternative route would start at the HDD 1 entrance, just east of the Gulfstream valve station, and run east a short distance before turning north to become centered on a conveyance ditch located on the south side of South Dock Street. The routing would then follow the conveyance ditch eastward until just west of Reeder Road, where the routing would turn north across South Dock Street and then turn east to continue along the north side of South Dock Street. This route would stay on the north side of South Dock Street until it turned south just west of the railroad tracks (**Figure 2-3**).

Southern Route – This alternative route would start at the HDD 1 entrance, just east of the Gulfstream valve station, and run east a short distance before turning north to become centered on a conveyance ditch located on the south side of South Dock Street. The routing would then follow the conveyance ditch eastward until it turned south just west of the railroad tracks (**Figure 2-4**).

2.3 Key Criteria

2.3.1 Alternatives from Port Manatee's Southeast Area to the Interconnection Station

Key criteria utilized in this step of the alternative analysis for the route from Port Manatee's southeast area to the interconnection station are listed below.

Initial Screening Criteria:

- Engineering/construction feasibility; and
- Avoid potential groundwater/soil contaminated areas.

Evaluation Criteria:

- Minimize the number of property owners;
- Maintain required safe distances from existing utilities in area;
- Minimize impacts to existing land use and operations of facilities on properties crossed; and
- Minimize impacts to wetlands.

Figure 2-3c
Port Manatee Northern Route (Sheet 3 of 3)

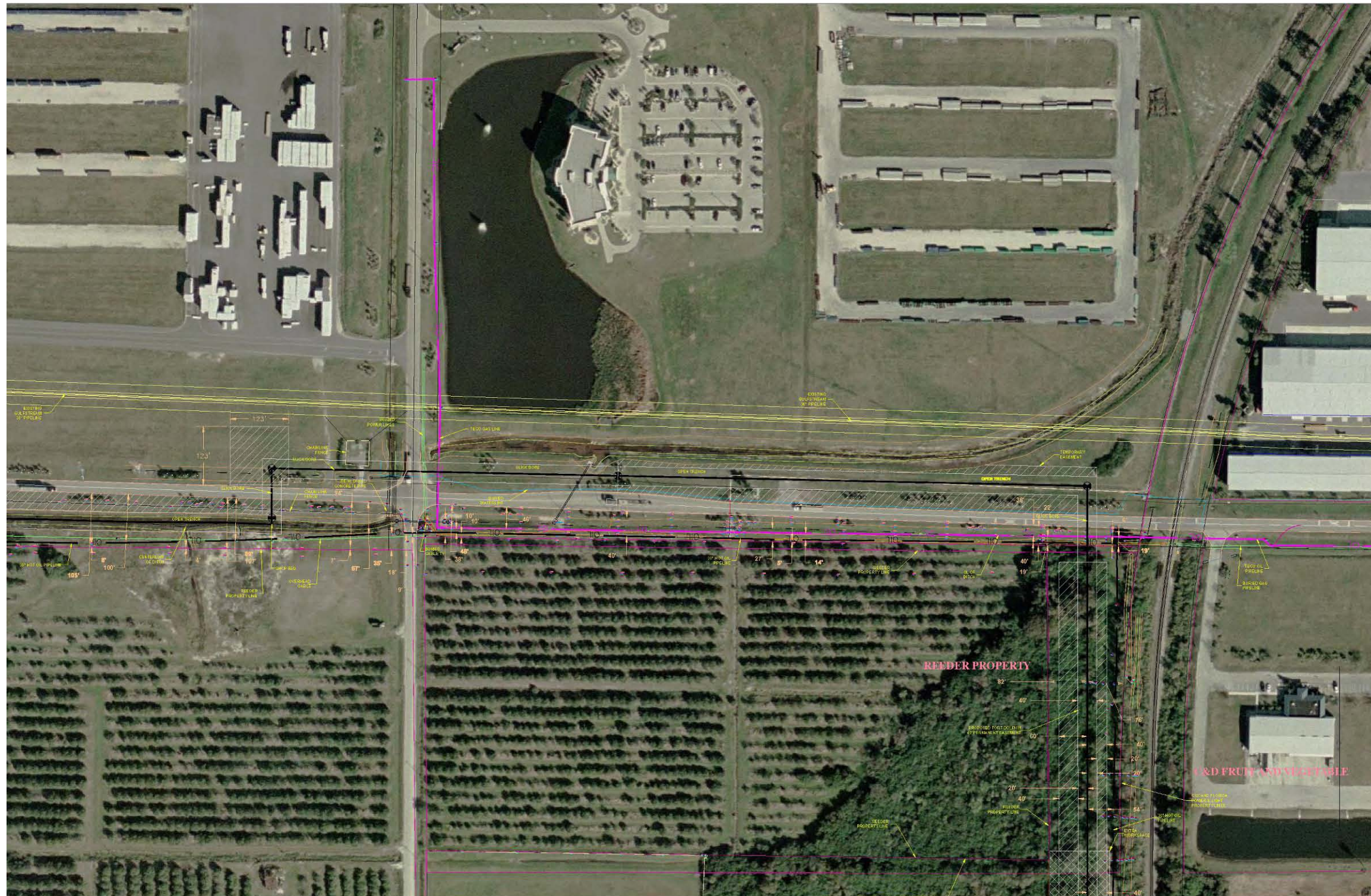


Figure 2-4a
Port Manatee Southern Route (Sheet 1 of 3)

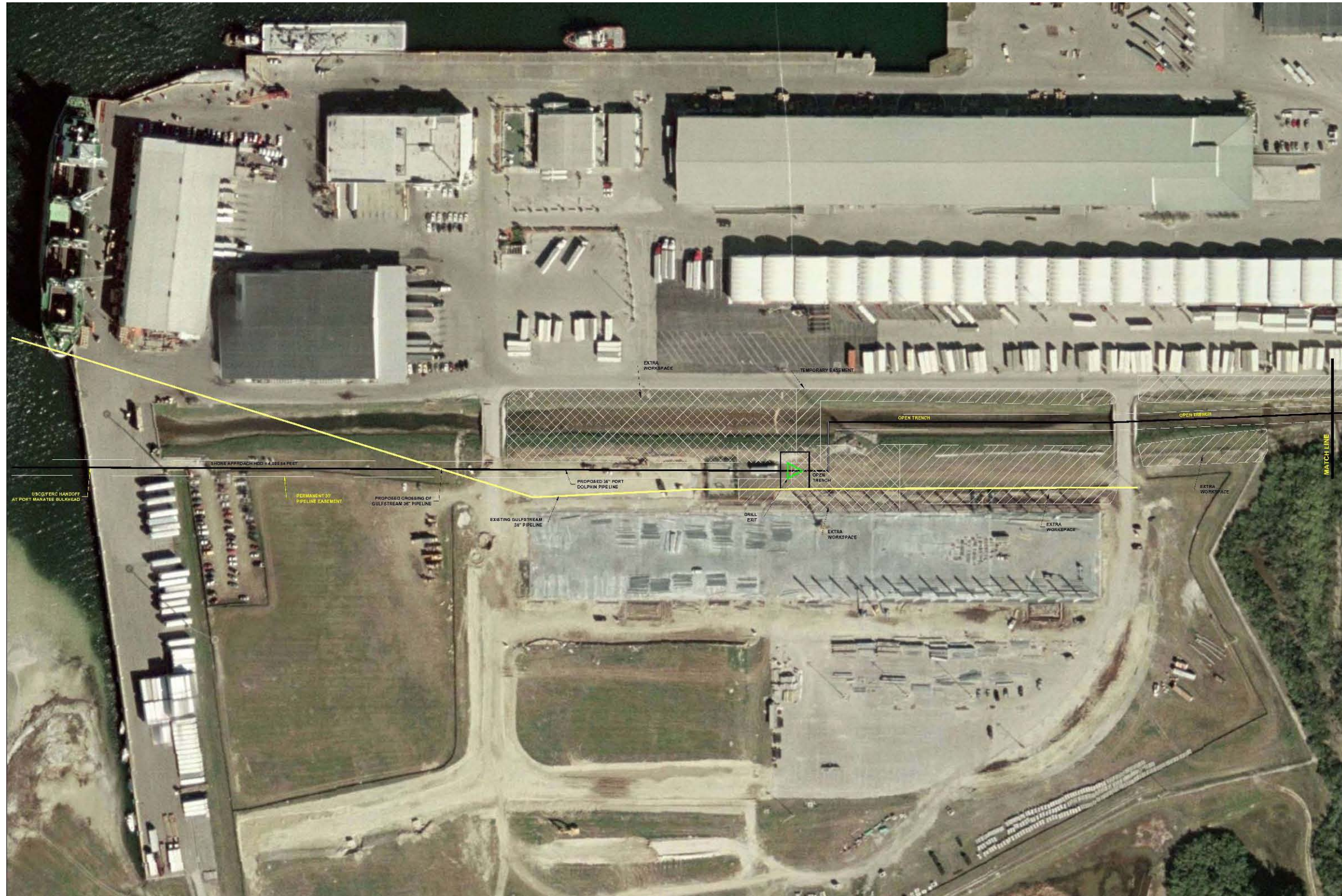


Figure 2-4b
Port Manatee Southern Route (Sheet 2 of 3)



Figure 2-4c
Port Manatee Southern Route (Sheet 3 of 3)



2.3.2 Alternatives Through Port Manatee

Key criteria utilized in this step of the alternative analysis for the route through Port Manatee are listed below.

- Minimize impacts to Port Manatee existing operations;
- Minimize impacts to lands that are identified for future Port expansion; and
- Maintain required safe distances from existing utilities in the area.

2.4 Analysis of Alternatives

This section presents Port Dolphin's analysis of onshore pipeline route alternatives.

2.4.1 Evaluation of Route Alternatives from Port Manatee's Southeast Area to the Interconnection Station

The six route alternatives were first evaluated against the screening criteria. Only alternatives that passed the initial screening criteria were further evaluated.

2.4.1.1 Initial Screening

1. **Engineering/construction feasibility** – Site walkdowns of the route alternatives were performed to determine if the routes selected during desktop work could be engineered/constructed, based on field observations and constraints. *Scoring: Constructable or not constructable.*

Analysis – Alternative II would not be constructable because the distance from buildings along US 41 to the edge of pavement would be less than the required 100-foot construction easement. A new building was being constructed over a portion of the Alternative III route. All other route alternatives were considered constructable.

2. **Avoid potential groundwater/soil contaminated areas** – Based on the intervention filed by HRK Holdings LLC, the former Piney Point property has undergone extensive remediation of contamination created by previous phosphate mining activities at the site. According to HRK Holdings LLC, construction activities at this site could result in potential disturbance of existing contamination, costly clean-up efforts, and storm water control issues. *Scoring: Avoids HRK Holdings LLC property or does not.*

Analysis – Alternative I would not avoid the HRK Holdings LLC property; and therefore, would likely impact areas with groundwater and/or soil contamination. All other alternatives would avoid the HRK Holdings LLC property. Alternative V is located south of existing contaminated groundwater that accidentally migrated south from the former Piney Point facility in 2005.

2.4.1.2 Initial Screening Results

Alternatives I, II, and III did not pass the initial screening criteria and therefore were removed from further evaluation. **Table 2-1** provides a summary of the screening results.

2.4.1.3 Evaluation

- 3. Minimize the number of property owners** – Although the pipeline can be constructed through a variety of parcels, preference must be given to alternatives that minimize the number of property owners to be dealt with for obtaining land access and negotiating ROW agreements. *Scoring: Fewer landowners is preferable.*

Analysis – Alternative IV-1 would traverse five property parcels and involve four property owners (C&D Fruit and Vegetable, Highway 41 Palmetto LLC, JJC Port Manatee LLC, and FPL). Alternative IV-2 would traverse four property parcels and involve two property owners, FPL and JJC Port Manatee LLC. Alternative V would traverse three property parcels and involve three property owners (FPL, Buckeye Industrial Limited, and Tami Sola LLC) (**Figure 2-2**).

- 4. Minimize impacts to existing land use and operations of facilities on properties crossed** – Although the pipeline can be installed in a variety of ways (i.e., HDD, open trench), there will be impacts to the land parcels traversed by the pipeline, including a construction ROW required during installation and a permanent easement that precludes construction of buildings. Project activities potentially could impact the existing properties and ongoing facility operations. *Scoring: Using lands without existing facilities minimizes operational impacts, and traversing parcels as near to property boundaries as possible is preferred over traversing the center of parcels.*

Analysis – Alternative IV-1 would traverse the entrance of the C&D Fruit and Vegetable business, which would be disruptive to the ongoing activities of the business. In addition, it would traverse the west side of the Highway 41 Palmetto LLC and JJC Port Manatee LLC properties, both of which contain ongoing business operations that would be impacted by the required 100-foot construction ROW. Even if an HDD were to be used to traverse some of the properties, the HDD pullback string would present an additional set of impacts to traffic on South Dock Street, which would not be allowed by Port Manatee. This alternative would also traverse an FPL facility but would use an existing oil pipeline ROW, therefore minimizing operational impacts. Alternative IV-2 would traverse the edge of an FPL tank farm and use an existing utility corridor that contains electrical lines and an FPL oil pipeline. This alternative would also traverse an FPL facility but would use an existing oil pipeline ROW, therefore minimizing operational impacts. Alternative V would traverse predominantly open lands for its entire distance. A portion of the Alternative V route would traverse the northern edge of farming fields located on Buckeye Industrial Limited property (**Figure 2-2**).



Table 2-1
Summary of Criteria Evaluation from Port Manatee to the Interconnection Station

	Alternative I	Alternative II	Alternative III	Alternative IV-1	Alternative IV-2	Alternative V
INITIAL SCREENING CRITERIA						
Engineering/construction feasibility	Constructable	Not constructable	Not constructable	Constructable	Constructable	Constructable
Avoid potential groundwater/soil contaminated areas	Does not avoid	Avoids	Avoids	Avoids	Avoids	Avoids
CARRIED FORWARD FOR EVALUATION?	No	No	No	Yes	Yes	Yes
EVALUATION CRITERIA						
Minimize the number of property owners	Not evaluated	Not evaluated	Not evaluated	4 Owners	2 Owners	3 Owners
Minimize impacts to existing land use and operations of facilities on properties crossed	Not evaluated	Not evaluated	Not evaluated	No	Yes	Yes
Minimize impacts to National Wetlands Inventory-mapped wetlands	Not evaluated	Not evaluated	Not evaluated	2 Wetlands	2 Wetlands	2 Wetlands

- 5. Minimize Impacts to Wetlands** – Based on mapping of National Wetland Inventory (NWI) data, wetlands were evaluated along the route alternatives. *Scoring: Less wetlands are preferable, and potential impacts to herbaceous wetlands are preferred over potential impacts to forested wetlands (if any).*

Analysis – Alternative IV-1 would traverse one freshwater emergent wetland and one freshwater forested/shrub wetland. Alternative IV-2 would traverse two freshwater forested/shrub wetlands. Alternative V would traverse one freshwater pond and one freshwater emergent wetland (**Figure 2-5**).

2.4.1.4 Evaluation Results

Based on this evaluation, which is summarized in **Table 2-1, Alternative IV-2** for the N-S segment and **Alternative V** for the E-W segment best meet the technical and environmental requirements for *Port Dolphin* and therefore were selected as the preferred routing of the pipeline from Port Manatee’s Southeast Area to the proposed interconnection station.

2.4.2 Evaluation of Route Alternatives Through Port Manatee

The two route alternatives were directly evaluated against the applicable evaluation criteria.

2.4.2.1 Evaluation

- 1. Minimize impacts to Port Manatee existing operations** – South Dock Street is a main access road to Port Manatee operations, and traffic access cannot be disrupted by *Port Dolphin* construction activities. In addition, existing facilities and operations (i.e., warehouse access and existing utilities) cannot be impacted by *Port Dolphin* construction activities. *Scoring: Routing that minimizes current operations at the Port is favorable.*

Analysis – The Northern Route would not impact South Dock Street or existing facilities or operations. The Southern Route could potentially impact South Dock Street with the work space requirements, however, since the Port has plans to widen South Dock Street to the north, this route is considered acceptable. In addition, the Southern Route does not impact existing facilities or operations.

- 2. Minimize impacts to lands that are identified for future Port expansion** – The Port has significant future development plans for expansion of existing facilities and new facilities. The pipeline cannot impact the future development plans of the Port. *Scoring: Routing that minimizes impacts to lands identified for future Port expansion is favorable.*

Figure 2-5
Onshore Alternative Pipeline Routes and National Wetlands Inventory (NWI) Data

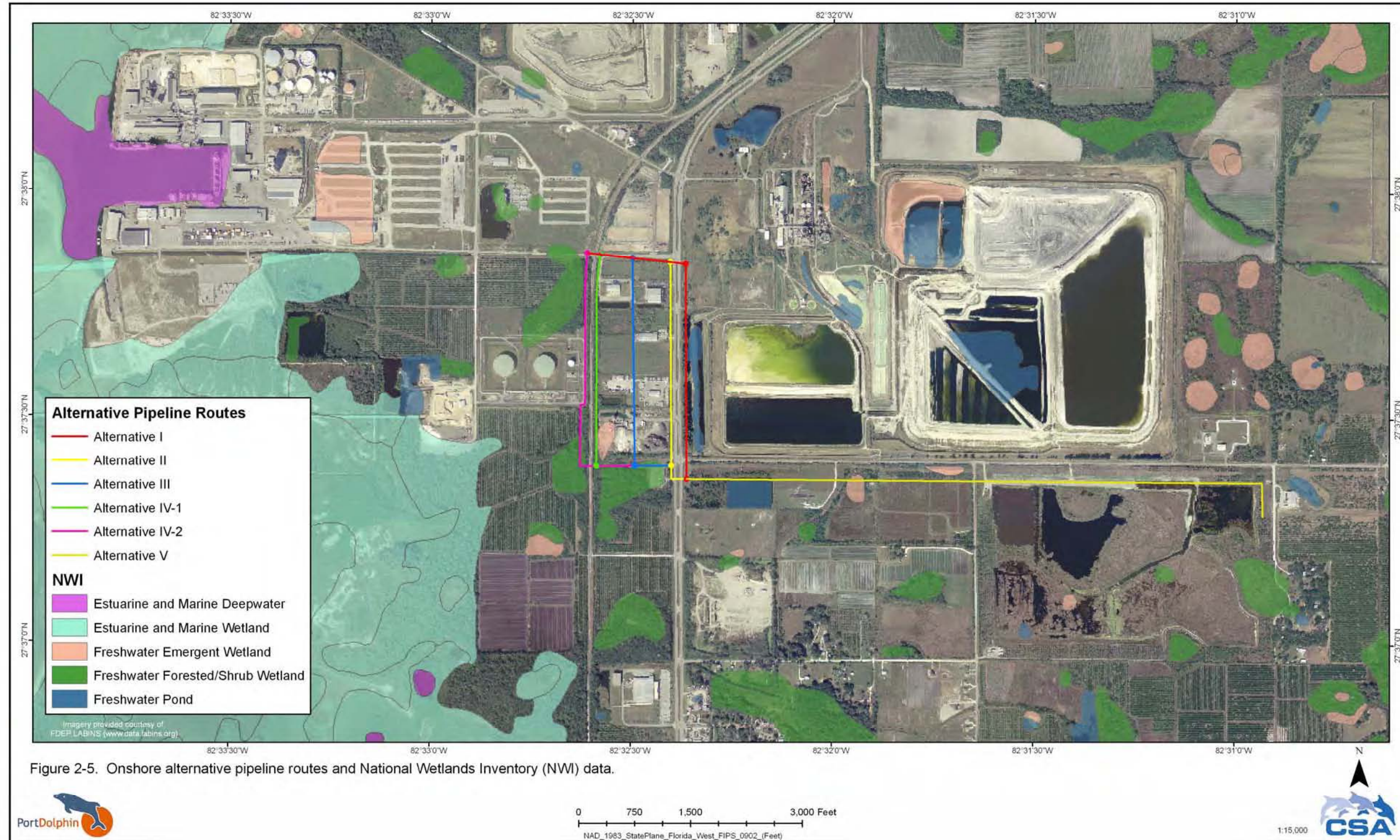


Figure 2-5. Onshore alternative pipeline routes and National Wetlands Inventory (NWI) data.

Analysis – The Northern Route through Port Manatee would create several conflicts for future Port development plans. The pipeline would create a 30-foot permanent easement or no-build zone through lands that the Port intends to develop in the future. Port Manatee has plans to construct a dredge spoils slurry pipeline from the bulkhead to the former Piney Point property along the north side of South Dock Street. The Port also has plans to widen South Dock Street to the north, and the Northern Route could affect the road widening project. Furthermore, the Southern Route would be located predominantly in the southern conveyance ditch, which is not slated for future development.

- 3. Maintain required safe distances from existing utilities in area** – There are many existing utilities that are located throughout the Port. The pipeline must be routed to ensure that existing utility easements are respected and that the pipeline can be installed safely with respect to existing utilities. *Scoring: Routing that maintains a safe distance from existing utilities is favorable.*

2.4.2.2 Evaluation Results

Based on this evaluation, which is summarized in **Table 2-2**, the Southern Alternative best meets the technical requirements for *Port Dolphin* and, therefore, was selected as the preferred routing of the pipeline through Port Manatee.

Table 2-2
Summary of Criteria Evaluation from Port Manatee to the Interconnection Station

Evaluation Criteria	Northern Route	Southern Route
Minimize impacts to Port Manatee existing operations	No impact	Limited impact
Minimize impacts to lands that are identified for future Port expansion	Multiple impacts	No impact
Maintain required safe distances from existing utilities in the area	Safe distances maintained	Safe distances maintained

2.5 Discussion

2.5.1 Route Alternatives from Port Manatee's Southeast Area to the Interconnection Station

Alternative I did not pass one of the screening criteria (i.e., Avoid potential groundwater/soil contaminated areas) because it traverses the HRK Holdings LLC property, which is the former Piney Point facility; therefore, this alternative was not further evaluated.

Alternative II did not pass one of the screening criteria (i.e., Engineering/construction feasibility) because there is not sufficient space between the existing buildings along the west side of US 41 and the road for the required 100-foot construction ROW; therefore, this alternative was not further evaluated.

Alternative III did not pass one of the screening criteria (i.e., Engineering/construction feasibility) because a new building is being constructed on the Federal Port Corporation Property that prohibits the pipeline from being constructed along this route; therefore, this alternative was not further evaluated.

Alternative IV-1 provides a N-S segment and involves traversing the east side of the railroad tracks. This alternative is constructable and avoids potential contaminated groundwater and soils. However, it would involve obtaining land access and ROW agreements from four property owners and would create impacts to existing businesses along the route during the construction activities. In addition, the route would cross two NWI-mapped wetlands.

Alternative IV-2 would traverse the west side of the railroad tracks to provide a N-S segment. This alternative is constructable and also avoids potential contaminated groundwater and soil. This route would involve acquiring access and ROW agreements from two property owners and would not impact any ongoing businesses along the route. This route would cross two NWI-mapped wetlands.

Alternative V provides the E-W segment of the pipeline and moves the route south from the Original Preferred Onshore Route. This route would involve obtaining access and ROW agreements from three property owners and would not impact any ongoing facility operations along the route. This route would cross two NWI-mapped wetlands.

Alternative V is located just south of existing contaminated groundwater that migrated south from the former Piney Point facility in 2005. An inspection by FDEP revealed that some gypsum from a stack located south in Piney Point was inadvertently deposited in a seepage collection ditch. The water level along a portion of the ditch rose and temporarily reversed the hydraulic gradient away from the ditch, causing a groundwater plume to migrate south towards Buckeye Road (Ardaman & Associates, Inc. 2007). This area of contamination is being monitored, and since the groundwater flow direction is towards the former Piney Point facility (away from the *Port Dolphin* pipeline route), it is anticipated that groundwater quality will improve over time as a result of dispersion and flushing of the contaminant back towards the former Piney Point facility. Port Dolphin's current construction plan (see **Section 4**) includes a methodology for installing the pipeline in this area while maintaining existing groundwater quality. Port Dolphin will investigate the groundwater issue in this area and adjust installation methods (if necessary). Therefore, this alternative was carried through the evaluation.

Based on this evaluation, which was summarized in **Table 2-1**, **Alternative IV-2** for the N-S segment and **Alternative V** for the E-W segment were selected as the preferred routing of the pipeline from Port Manatee to the interconnection station that best meets the technical and environmental requirements for *Port Dolphin*.

2.5.2 Route Alternatives Through Port Manatee

The **Northern Route** splits from the Southern Route just west of Reeder Road, where it moves to the north side of South Dock Street into areas that the Port has slated for future development. These areas would be impacted by the 30-foot permanent easement centered on the pipeline, which would preclude construction of buildings and have to be maintained clear of facilities. Although the Northern Route does not impact existing operations, the Port is planning to widen South Dock Street to the north and this route could impact that future widening plan. In addition, the routing to the north side of South Dock Street would create space conflicts with a new dredge spoils slurry pipeline to be constructed from the bulkhead to the former Piney Point property along the north side of South Dock Street. The Northern Route maintains safe distance from existing utilities and respects existing easements.

The **Southern Route** places the pipeline in the south conveyance ditch all the way to where it turns south off of Port property. This area is not slated for future development. However, this conveyance ditch is both tidally-influenced and creates a hydraulic connection for the mangroves located along a portion of the south side of the conveyance ditch with tidal waters of Tampa Bay, as well as providing water management for rain water from portions of the Port and water management from the Port's Dredged Materials Disposal Site. The water management functions of this south conveyance ditch must be maintained during the construction activities. This alternative could impact South Dock Street with the work space requirements. However, since the Port has plans to widen South Dock Street to the north, this route is considered acceptable. The Southern Route maintains safe distance from existing utilities and respects existing easements.

Based on this evaluation, the **Southern Route** was selected as the preferred routing of the pipeline through Port Manatee that best meets the technical and operational requirements as well as future Port development plans. The potential impact to South Dock Street from this alternative can be mitigated during the construction activities (i.e., through traffic management measures such as temporary by-passes), and the minimization of impacts to future Port development plans was the key criteria. In addition, Port Dolphin is committed to providing the functions of the south conveyance ditch during the project construction activities (see **Section 4, Construction Plan**).

2.6 Conclusions

Once the preferred routing was determined by the above evaluation process, detailed discussions were initiated with various property owners along the route (i.e., Port Manatee and FPL). Based on these discussions, several minor modifications were made to the selected route and/or its construction plan. Key requirements for the N-S and E-W Segments identified during these discussions are listed below:

N-S Segment:

- FPL required that the *Port Dolphin* pipeline maintain a minimum distance of 50 feet from their existing oil pipeline that runs N-S along the west side of the railroad tracks;
- FPL required that the *Port Dolphin* pipeline HDD under the tank farm; and
- FPL required that the *Port Dolphin* pipeline traverse to the south of the substation along the southern boundary of the property on the west side of US 41.

E-W Segment:

- FPL required that the *Port Dolphin* pipeline traverse the southern boundary of the property on the east side of US 41, on the south side of the pond, and along the east side of the pond to minimize impacts to land development potential.

Based on these additional requirements, the final routing was adjusted and is illustrated in **Figure 2-6**. Land access agreements were negotiated and are in place with all property owners along the Revised Preferred Onshore Route, with the exception of the Tami Sola LLC property. Once access agreements were obtained, cultural resources, wetland, land, and utility surveys were performed along the final route.

Figure 2-6
Onshore Revised Preferred Route

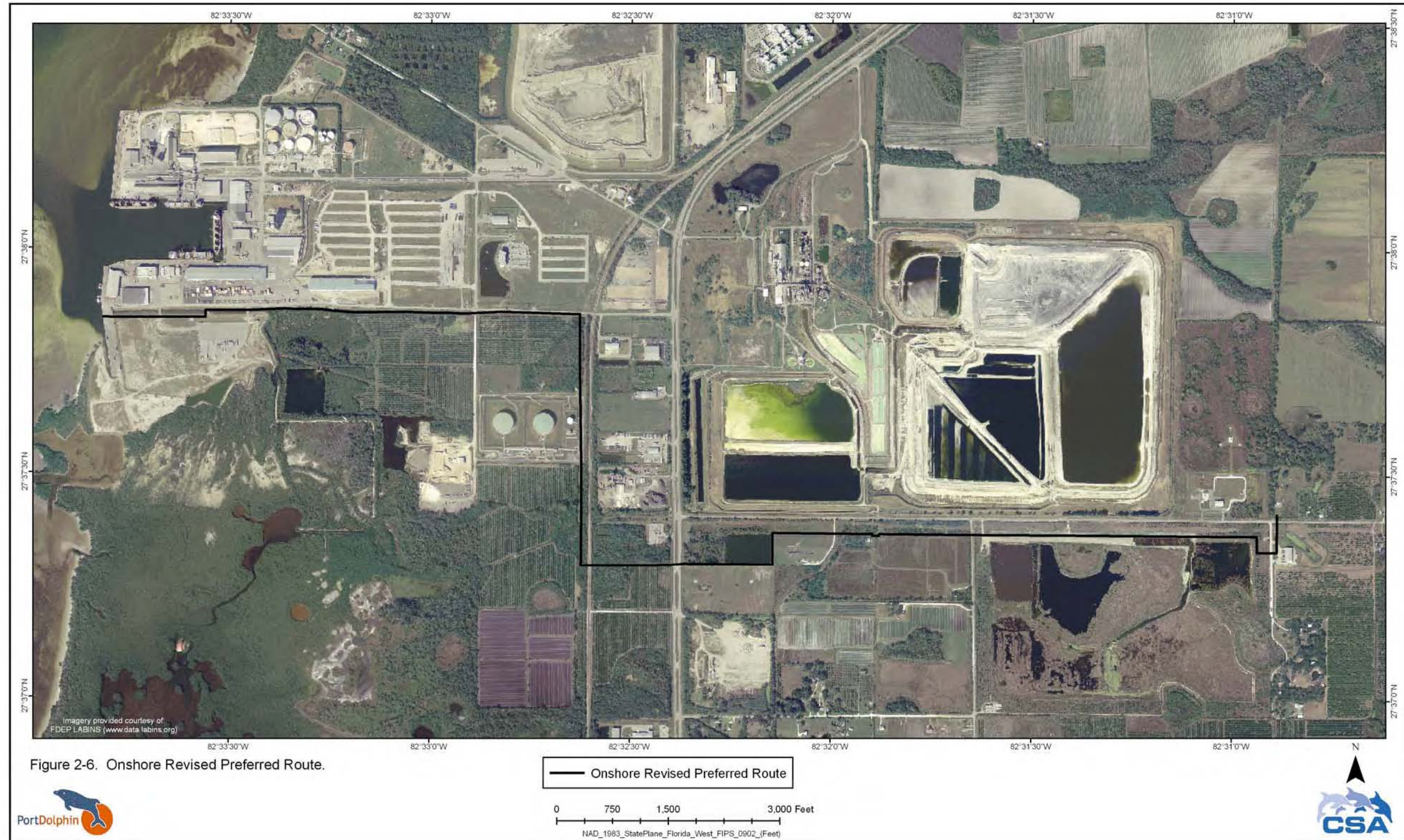


Figure 2-6. Onshore Revised Preferred Route.