# Polk Power Station Phase II Reclaimed Water Pipeline

## Request for SCA Modification—Chapter 9.0



Prepared by:

ECT
Environmental Consulting & Technology, Inc.
3701 Northwest 98th Street
Gainesville, Florida 32606
ECT No. 100244-0300

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# LIST OF ACRONYMS AND ABBREVIATIONS

| | |
|---|---|
| DHR | Division of Historical Resources |
| DRI | development of regional impact |
| ECT | Environmental Consulting & Technology, Inc. |
| F.A.C. | Florida Administrative Code |
| FDACS | Florida Department of Agriculture and Consumer Services |
| FDEP | Florida Department of Environmental Protection |
| FDOT | Florida Department of Transportation |
| FLUCFCS | Florida Land Use, Cover and Forms Classification System |
| FLUM | future land use map |
| FNAI | Florida Natural Areas Inventory |
| ft | foot |
| $ft^2$ | square foot |
| FWC | Florida Fish and Wildlife Conservation Commission |
| GIS | geographic information system |
| HDD | horizontal directional drilling |
| LDC | land development code |
| MGD | million gallons per day |
| NPDES | National Pollutant Discharge Elimination System |
| NWI | National Wetlands Inventory |
| PAR | Public Access Reuse |
| Partnership | Regional Reclaimed Water Partnership Initiative |
| PCU | Polk County Utilities |
| PPS | Polk Power Station |
| PPSA | Florida's Electrical Power Plant Siting Act |
| PUD | planned unit development |
| RARE | Roadless Area Review and Evaluation |
| RDA | Rural Development Area |
| SDA | Suburban Development Area |
| SR | State Road |
| SWFWMD | Southwest Florida Water Management District |
| SWUCA | Southern Water Use Caution Area |
| Tampa Electric | Tampa Electric Company |
| TIITF | Florida Board of Trustees of the Internal Improvement Trust Fund |
| USFWS | U.S. Fish & Wildlife Service |
| USGS | U.S. Geological Survey |
| WTS | wetlands treatment system |
| WWTP | wastewater treatment plant |

# 9.0 PHASE II RECLAIMED WATER PIPELINE CORRIDOR MODIFICATION

Tampa Electric Company (Tampa Electric) certified the Polk Power Station (PPS) in 1994 through Florida's Electrical Power Plant Siting Act (PPSA), Case No. PA 92-32. Tampa Electric has been approved to expand the current power generation facility and, as a result, will need additional cooling water for the facility located south of Mulberry in Polk County (see Figure 9.0.0-1). Tampa Electric has been a key member of a unique partnership, the Regional Reclaimed Water Partnership Initiative (Partnership), also comprised of the Southwest Florida Water Management District (SWFWMD), the Cities of Lakeland and Mulberry, and Polk County. The purpose of the partnership is to provide water resource benefits to each participant by using an underutilized water source to its maximum benefit. Previously, a reclaimed pipeline from the City of Lakeland Wastewater Wetlands Treatment System (WTS) to PPS was approved as a modification under the Florida Department of Environmental Protection's (FDEP's) siting rules (Section 62-17.211, Florida Administrative Code [F.A.C.]).

Tampa Electric has already completed the first phase of the partnership with the City of Lakeland to reuse their reclaimed water. In this case, the City of Mulberry and Polk County have excess secondary treated wastewater (reclaimed water), which can be used by Tampa Electric to further reduce their need for groundwater from the Southern Water Use Caution Area (SWUCA) and also reduce nutrient loading to the Alafia River.

Continuing discussions with the Partnership have resulted in the decision to connect the wastewater flows from both the Polk County Wastewater Treatment Plant (WWTP) and the City of Mulberry WWTP to the certified reclaimed pipeline corridor (see Figure 9.0.0-2).

To use the 0.8 million gallons per day (MGD) of available reclaimed wastewater from Polk County, Tampa Electric will need to construct a pipeline from the Polk County

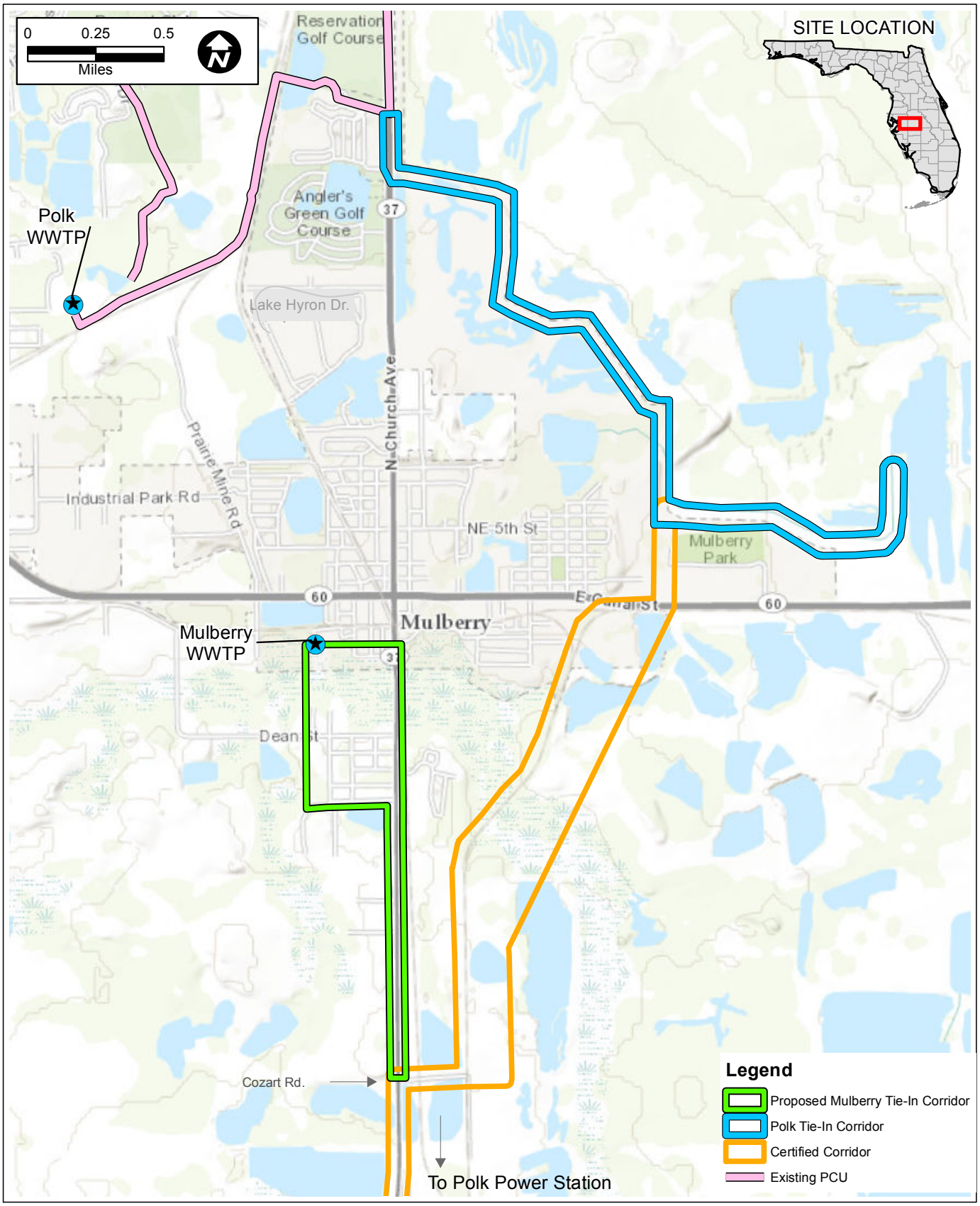



FIGURE 9.0.0-1.
PROJECT LOCATION

Sources: ESRI, 2013; ECT, 2013.

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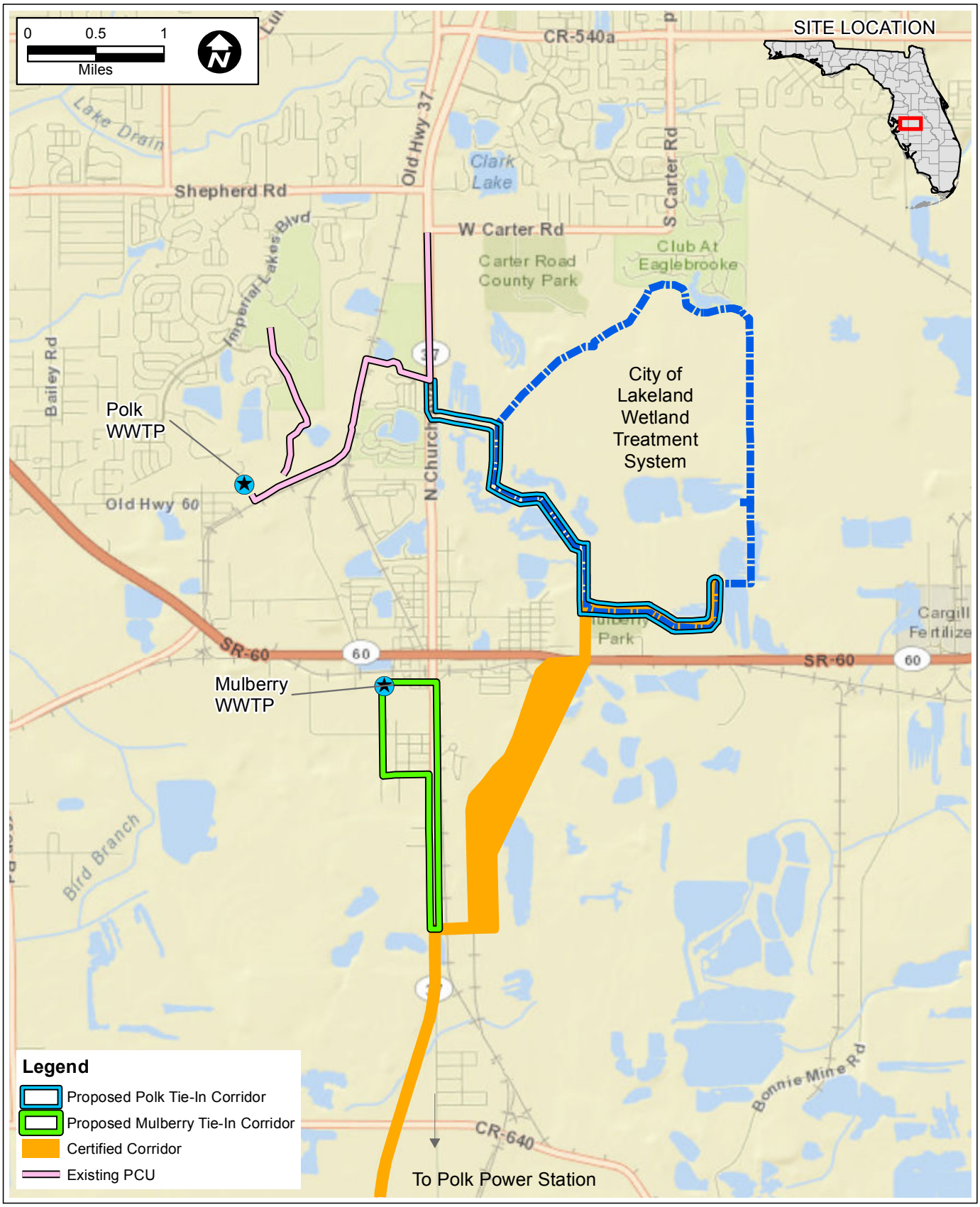



FIGURE 9.0.0-2.
LOCATION OF PROPOSED CORRIDORS

Sources: ESRI, 2013; ECT, 2013.

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Public Access Reuse (PAR) system to the existing intake structure at the Lakeland WTS. The plans are to transfer the water via underground pipeline from the PAR system to the WTS using a 16-inch diameter pipeline. The connection to the PAR system will be along State Road (SR) 37 north of the intersection with SR 60. No aboveground facilities are anticipated at the connection site.

To use the 0.4 MGD of available reclaimed wastewater from the City of Mulberry, Tampa Electric will need to construct a pipeline from the Mulberry WWTP located southwest of the SR 60 and SR 37 intersection (see Figure 9.0.0-2), to Tampa Electric's PPS site via the approved pipeline corridor certified by Tampa Electric previously, which runs in part along SR 37 south of Mulberry to PPS. The plans are to transfer the water via underground pipeline from the WWTP to PPS. The pipeline is expected to be 10 inches in diameter and will connect from the WWTP to the existing 30-inch line at SR 37 and Cozart Road.

These new proposed pipelines were not certified in the original PPSA application (1994) or in recent modifications (2009 and 2011) to the PPS site; therefore, these directly associated linear facilities represent a modification under FDEP's siting rules. Tampa Electric is using FDEP's Application Instruction Guide: Electrical Power Plant Sites and Associated Facilities found as FDEP Form 62-16.900. This modification application follows the format of Chapter 9.0 of that instruction guide, which addresses electrical transmission lines and other associated linear facilities such as the proposed pipelines.

The need for the project and this modification is based on the requirement for additional and sustainable water makeup for cooling purposes for the planned future expansion of PPS. Specifically the project will:

- Promote maximum beneficial reuse of Mulberry and Polk County wastewater effluent, which is currently being discharged to the Alafia River.
- Help meet SWFWMD's priorities of reducing groundwater withdrawals in the SWUCA and provide a framework for future beneficial reuse of reclaimed wastewater in the SWUCA.

- Provide Tampa Electric an alternative water supply source that will minimize future groundwater withdrawals for their planned electrical generation expansion, which, in turn, will provide additional reliable electricity to the region.

## 9.1 MAPS

Maps are referenced and included in the text as appropriate. The exception is the required map series (aerial photographs, land use, zoning, and vegetation/land cover; Figures 9.1.0-1 through 9.1.0-4, respectively), which are included at the end of this application.

## 9.2 PROJECT DESCRIPTION

Tampa Electric is undertaking a preliminary engineering and piloting study for an approximately $14-million project to develop a reclaimed water source from the City of Mulberry and Polk County for use at PPS. SWFWMD facilitated an agreement between the City of Mulberry and Tampa Electric for the City to provide at least 0.4 MGD of water from its WWTP to the PPS facility through a 2-mile-long pipeline, connecting to the existing reclaimed water pipeline to PPS. SWFWMD also facilitated an agreement between Polk County and Tampa Electric for Polk County to provide at least 0.8 MGD of water from its PAR system to the PPS facility through a 2.5-mile pipeline, connecting to the existing reclaimed water pipeline system at the Lakeland WTS. The project was conceived as a method to offset permitted reductions in groundwater withdrawals from PPS wells, eliminate the loss of Mulberry and Polk County water through a National Pollutant Discharge Elimination System (NPDES) discharge, and maintain cooling water reservoir quantity and quality. The project has the potential to be 50 percent cofunded by SWFWMD as part of their Reclaimed Water Initiative, which seeks to encourage alternative water sources while reducing groundwater pumping.

Currently, hydraulic calculations dictate a pipeline diameter of 10 or 12 inches for the Mulberry pipeline and 16 inches for the Polk County pipeline will be required to provide initial and long-term capacity. Pumping of the Mulberry water will likely be accomplished through a single pump station located at the Mulberry facility. The use of variable

frequency drives on the pumps will enable flows to be adjusted to meet both demand at the PPS treatment facility and future flow conditions. At the present time, it is anticipated that a single pump station, to be located at the Mulberry facility, will be required to adequately provide the required flows over the entire length of pipe, although that determination will require further analysis during the design phase of the project. At the present time, it is anticipated that no pumps will be required for the connection to Polk County.

Right-of-way requirements will be small with regard to the width used for installation and operation of the pipeline. The majority of the proposed pipeline alignment is along a portion of public right-of-way that is approximately 150 feet (ft) wide. The actual trench width will be approximately 1 to 2 ft wider than the pipeline diameter. In areas where the pipeline is not along public rights-of-way and specific rights-of-way need to be acquired, it should be approximately 25 ft wide to accommodate the pipe, installation, and future maintenance. Figure 9.2.0-1 depicts a typical cross-section of the pipe installation.

At the City of Mulberry WWTP, Tampa Electric will build a new pump station that will consist of an approximately 15- by 15-ft wet well and an associated electrical building that will host the electrical and control gear for the operation of this new pump station.

The pump facility will not be housed and will connect the City of Mulberry WWTP effluent with a new pipeline that will convey this stream into the 30-inch pipeline to PPS. The new pump station will be located inside the City of Mulberry WWTP site and will use the existing access and parking onsite. The new pump station will be fenced and locked and will occupy an area of approximately 1,600 square feet ($ft^2$).

Figure 9.2.0-2 depicts a typical plan view of the new pumping facility, and Figure 9.2.0-3 presents a typical elevation view for this pump station.

A. FLEXIBLE PIPE REFERS TO ALL STEEL, DUCTILE-IRON, AND PLASTIC PIPES.

B. TYPICAL TRENCH SECTIONS (I, II AND III) ARE TO BE USED ONLY WHERE STABLE, COMPACT SOIL CONDITIONS EXIST. IF BOULDERS OR LARGE OBSTRUCTIONS ARE ENCOUNTERED, TRENCH SECTIONS MAY BE DEEPER OR WIDER THAN SHOWN. THE ENGINEER SHALL BE ADVISED SHOULD THIS OCCUR.

C. THE NEED FOR PROTECTIVE SYSTEMS AND EXCAVATION SLOPES SHALL BE DETERMINED CONSIDERING APPLICABLE LOCAL, STATE AND FEDERAL (OSHA) SAFETY STANDARDS AND REGULATIONS, AND GEOTECHNICAL CONSULTANTS' RECOMMENDATIONS.

D. PROTECTIVE SYSTEMS SHALL BE DESIGNED AND BUILT IN ACCORDANCE WITH THE APPLICABLE LOCAL, STATE AND FEDERAL (OSHA) SAFETY STANDARDS AND REGULATIONS.

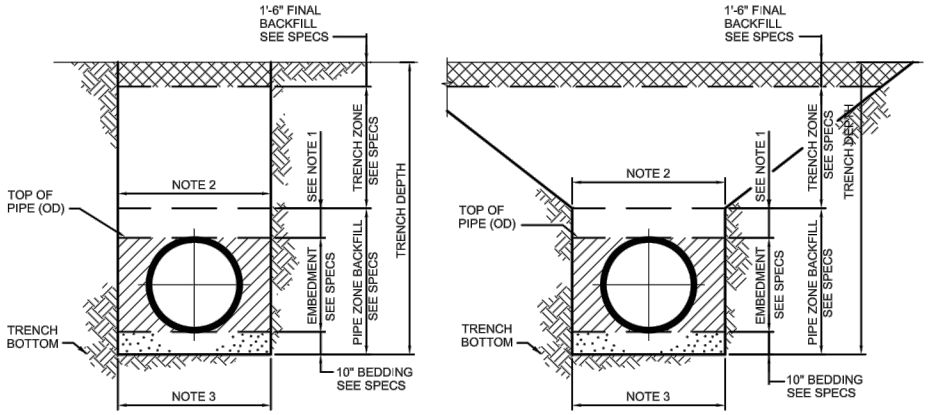
E. SUPPORTING DOCUMENTATION SHALL BE SUBMITTED TO THE ENGINEER REGARDING PIPE DESIGN AND COMPLIANCE WITH APPLICABLE LOCAL, STATE AND FEDERAL (OSHA) SAFETY STANDARDS.

F. UNSUPPORTED VERTICAL AND/OR SLOPING TRENCH WALL SLOPES SHALL NOT BE STEEPER THAN ALLOWED BY APPLICABLE LOCAL, STATE AND FEDERAL (OSHA) SAFETY STANDARDS AND REGULATIONS, UNLESS SUPPORTING DOCUMENTATION IS SUBMITTED, ACCORDING TO AFOREMENTIONED SAFETY STANDARDS.

G. TRENCH SECTIONS OTHER THAN THE TYPICAL SECTIONS SHOWN MAY BE UTILIZED PROVIDED THEY COMPLY WITH APPLICABLE LOCAL, STATE AND FEDERAL (OSHA) SAFETY STANDARDS AND REGULATIONS. DOCUMENTATION SUPPORTING THIS COMPLIANCE AND PIPE DESIGN CALCULATIONS SHALL BE SUBMITTED TO THE ENGINEER.

H. IF OVER-EXCAVATION DUE TO POOR FOUNDATION MATERIAL IS ORDERED BY THE ENGINEER, THE BACKFILL MATERIAL SHALL BE ACCORDING TO THE EARTHWORK SECTION OF THE SPECIFICATIONS ARTICLE ENTITLED, "FILL AND BACKFILL MATERIAL REQUIREMENTS."

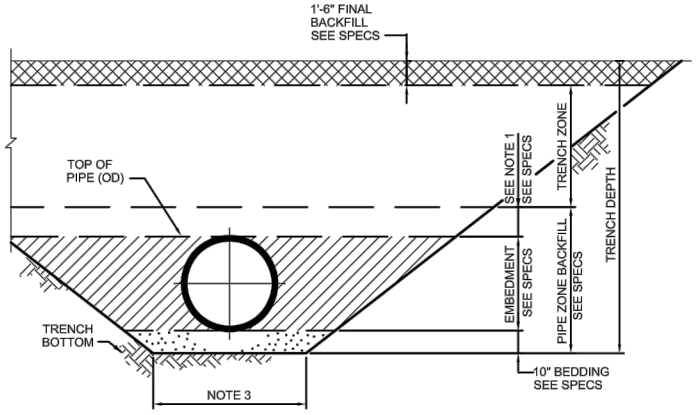
I. IF DURING CONSTRUCTION, THE WATER TABLE IS DISCOVERED TO BE ABOVE THE TRENCH BOTTOM, THE ENGINEER SHALL BE NOTIFIED, AND APPROPRIATE DEWATERING SHALL BE IMPLEMENTED TO LOWER THE WATER LEVEL BELOW THE TRENCH BOTTOM. THE BACKFILL MATERIAL SHALL BE ACCORDING TO THE EARTHWORK SECTIONS OF THE SPECIFICATIONS, OR AS ORDERED BY THE ENGINEER.




TRENCH SECTION - TYPE I




TRENCH SECTION - TYPE II




TRENCH SECTION - TYPE III

NOTES:

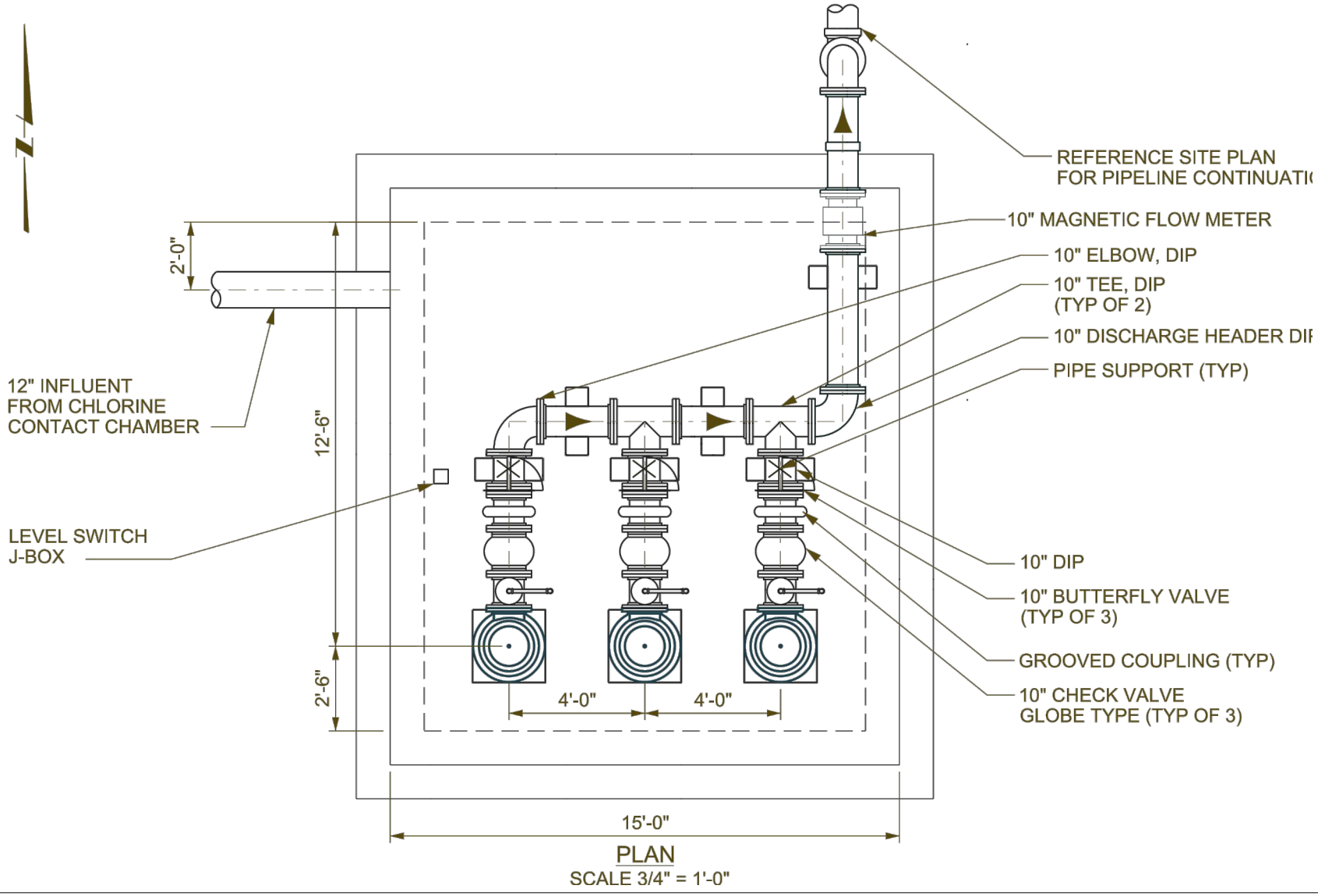
1. 6" MIN FOR PIPE DIAMETER < 24"
   12" MIN FOR PIPE DIAMETER > 24"
2. MAX TRENCH WIDTH @ TOP OF PIPE:
   OD + 36" FOR, 18" & LARGER PIPE OD
   OD + 24" FOR LESS THAN 18"
3. MIN TRENCH BOTTOM WIDTH =
   OD + 24" FOR MECHANICAL COMPACTION

FIGURE 9.2.0-1.

PIPELINE TRENCH DETAIL - TYPICAL

Sources: MWH, 2013; TECO, 2013.

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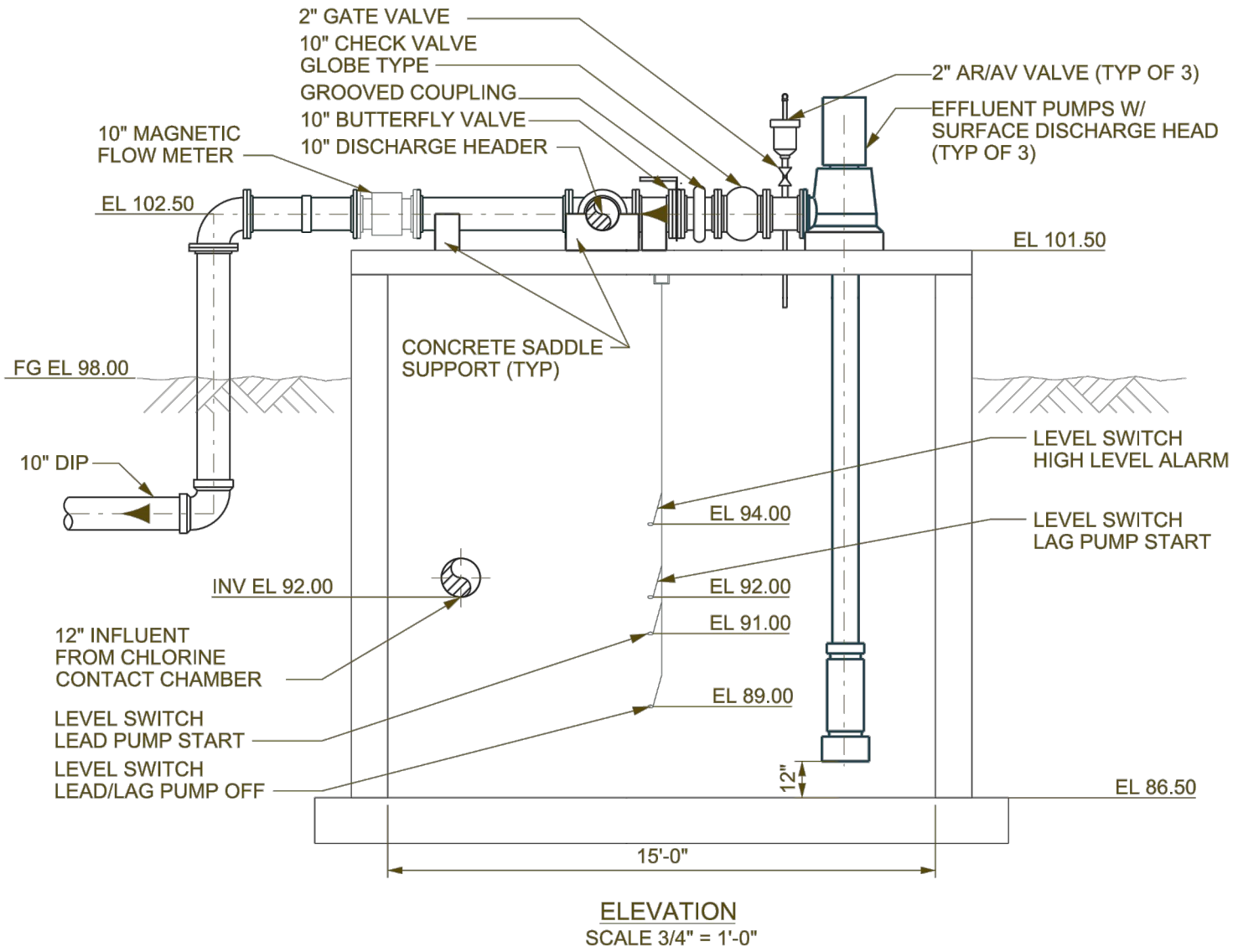



PLAN
SCALE 3/4" = 1'-0"

FIGURE 9.2.0-2.
EFFLUENT PUMP STATION - PLAN VIEW

Sources: MWH, 2013; TECO, 2013.

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ELEVATION
SCALE 3/4" = 1'-0"

FIGURE 9.2.0-3.
EFFLUENT PUMP STATION - ELEVATION

Sources: MWH, 2013; TECO, 2013.

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## 9.3 CORRIDORS

### 9.3.1 CORRIDOR SELECTION

For the proposed connection to the Polk County PAR system, referred to in this document as the proposed Polk tie-in corridor, corridor selection considerations involved avoiding the congested areas along downtown Mulberry and wetlands to the extent practicable while connecting to the existing intake structure at the Lakeland WTS.

The corridor connecting the Mulberry WWTP to the existing line from Lakeland to PPS is herein referred to as the proposed Mulberry tie-in corridor. The corridor selection process for this tie-in corridor was straightforward in that PPS lies almost due south of Mulberry's WWTP and Polk County's PAR system. Tampa Electric prefers to use existing Tampa Electric or other utility rights-of-way, as well as road rights-of-way, wherever possible. Additionally, there are existing Tampa Electric transmission line easements along SR 37 for a portion of the distance.

A regional screening map was developed to identify potential siting constraints and opportunities within the area between the desired end points of each corridor. Table 9.3.1-1 lists the types of resources mapped. Using siting opportunities, such as other linear facilities, the regional screening map allows a visual representation of where potential siting constraints are located. Constraints are resources that could present issues with or hindrances to siting such a facility. They may include such things as residences, airports, parks, preserves, endangered species locations, or large wetlands. While not necessarily considered a fatal flaw to siting a pipeline, particularly a water pipeline, siting constraints can potentially pose engineering and design challenges, economic uncertainties, or permitting issues. Figure 9.3.1-1 shows the regional screening map of the study area.

Much of the study area is dominated by existing or former phosphate-mined lands. Therefore, large ponds or active mining areas would preclude placement of the pipeline. SR 37 provides a major siting opportunity to avoid the town of Mulberry, which is the major developed area in the study area. Tampa Electric's consultants, along with environmental, engineering, and real estate staff, looked at various options within the study area.

Table 9.3.1-1. Study Area Resources Typically Mapped

| Category | Resource |
|---|---|
| Base map information | • Highways, roads, streets<br>• County boundaries<br>• City boundaries<br>• Railroads, airports, heliports<br>• Existing and proposed substations<br>• Existing transmission lines<br>• Existing Tampa Electric properties, rights-of-way, and easements<br>• Water bodies, rivers, streams, canals |
| Land use information | • Existing and proposed development for which local approvals are pending<br>• Planned unit developments (PUDs) and developments of regional impact (DRIs)<br>• Property boundaries<br>• Existing schools and county school board lands<br>• Cemeteries and historical structures and districts<br>• National parks, wildlife refuges, estuarine sanctuaries, landmarks, or historical locations<br>• State parks and preserves<br>• SWFWMD-owned lands<br>• County lands, parks, recreation areas, and mitigation lands<br>• Privately designated wetland mitigation areas<br>• Privately owned environmental preserves/sanctuaries |
| Environmental information | • Listed federal- and state-protected species and unique habitats, U.S. Fish and Wildlife Service (USFWS)-designated critical habitats<br>• Wetlands as delineated on USFWS National Wetlands Inventory (NWI) maps |

Source: ECT, 2013.

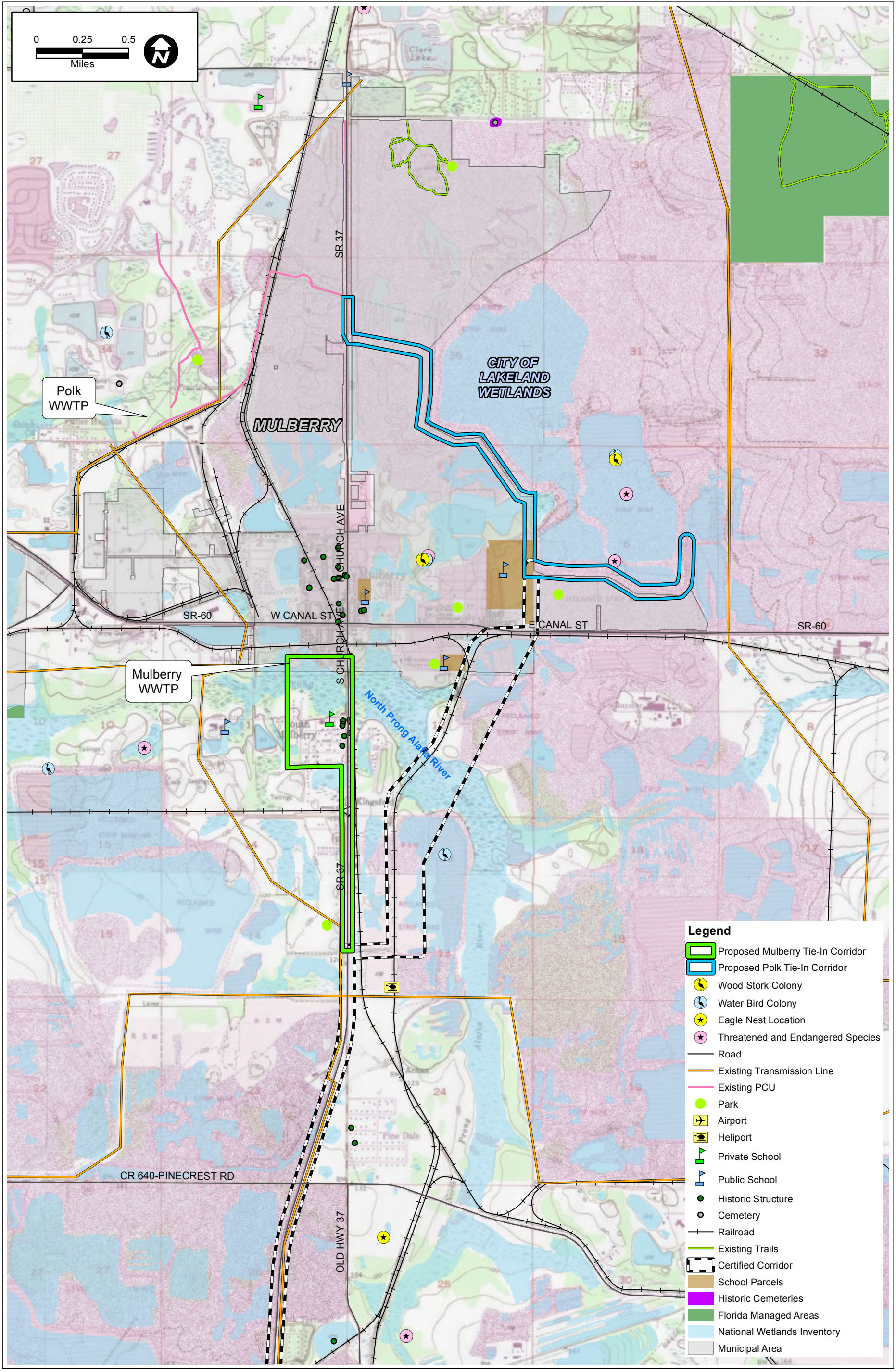



FIGURE 9.3.1-1.
REGIONAL SCREENING MAP

Sources: USFWS, 2010; Polk County, 2010; FDOT, 2011; FAA, 2012; FGDL, 2012; FWC, 2012; NWI, 2012; Bureau of Archaeological Research, 2013; FNAI, 2013; ECT,2013.

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To provide Tampa Electric with flexibility in selecting a right-of-way, the corridors were made much wider than the eventual right-of-way required, approximately 25 ft and possibly less where public right-of-way is available. The proposed Polk tie-in corridor varies from 175 to 300 ft in width, and the proposed Mulberry tie-in corridor as proposed varies from 160 to 1,900 ft in width, with the widest part being at the Mulberry WWTP, to provide maximum flexibility in that area. If site-specific issues arise, Tampa Electric will have the flexibility to adjust the right-of-way within the proposed corridors to avoid or minimize the impacts to resources.

### 9.3.2 CORRIDOR DESCRIPTIONS

Figure 9.3.2-1 illustrates the proposed pipeline corridors at a scale of 1 inch equaling 1 mile. The proposed corridors are depicted on Florida Department of Transportation (FDOT) Polk County maps, which also reflect major geographic features and roads. Also shown are existing electric transmission lines located within 5 miles of the proposed corridors.

The proposed Polk tie-in corridor connects to the existing pipeline at a point west of SR 37 along the north side of the Paradise Lakes PUD and along the former Reservation Golf Course (the golf course is defunct, and the property is for sale). The corridor connects to SR 37 along Apache Trail. The corridor straddles SR 37 south for approximately 1,150 ft before turning south-southeast between land owned by the Florida Board of Trustees of the Internal Improvement Trust Fund (TIITF) and land owned by the Mims Corp. The proposed corridor turns south at the intersection with the western edge of Lakeland's WTS and follows along the toe of the western berm to the previously certified reclaimed pipeline corridor, which it parallels to the endpoint at the Tampa Electric pump station located at the WTS east of Mulberry, just north of SR 60, in Polk County. The proposed Polk tie-in corridor is approximately 3.3 miles in length. Figure 9.1.0-1 (two pages) depicts this corridor on recent aerial photographs (FDOT, 2011) at a scale of 1 inch equals 1,000 ft. Information gathered from field reconnaissance confirms the aerial photographs represent current conditions in the area with the clarification that the Reservation Golf Course and clubhouse are inactive.

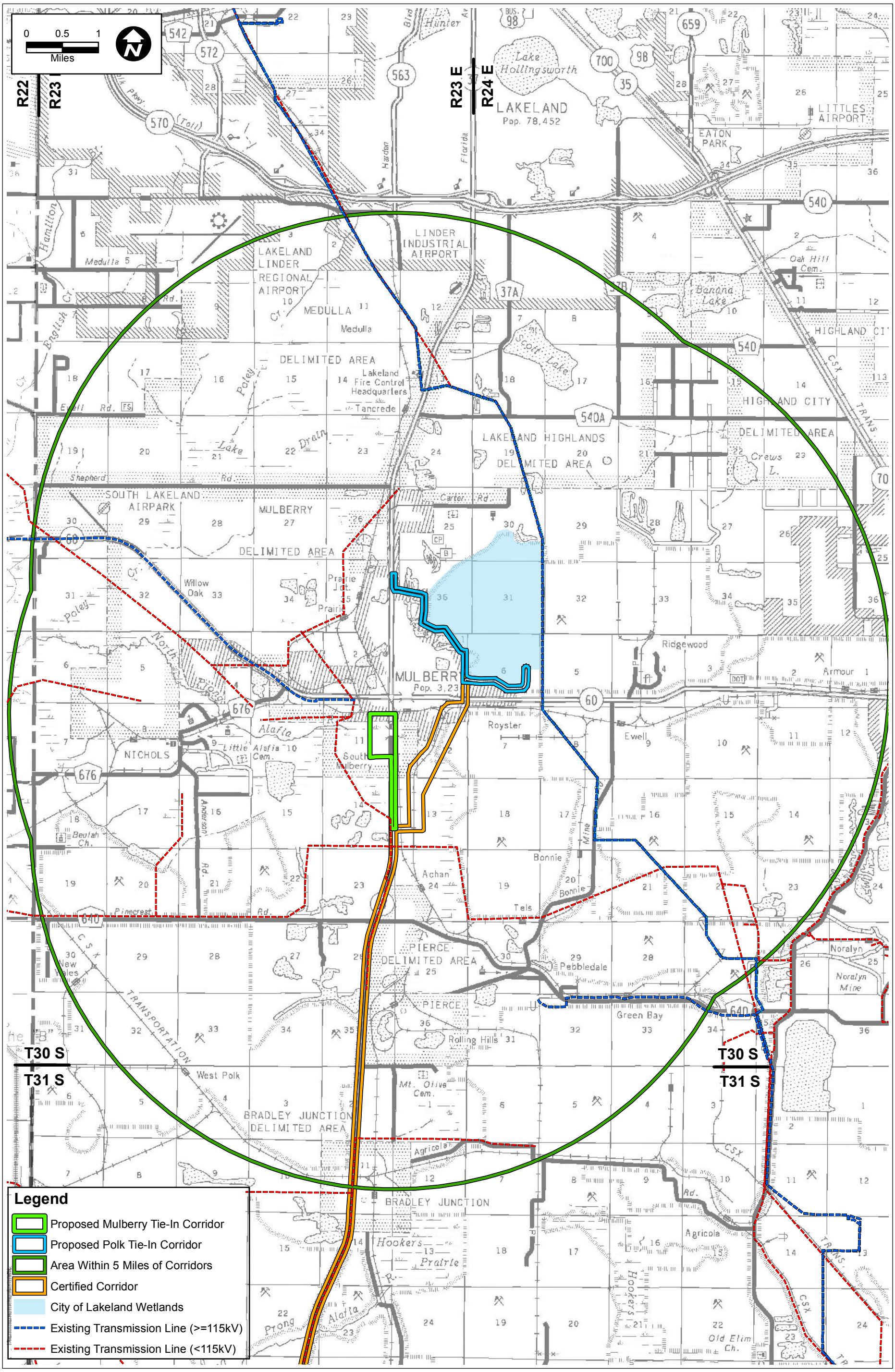



FIGURE 9.3.2-1.
PROPOSED PIPELINE CORRIDORS WITH EXISTING TRANSMISSION LINES WITHIN 5 MILES

Sources: FDOT, 2003, 2005; Polk County, 2013; ECT, 2013.

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The proposed Mulberry tie-in corridor begins at the City of Mulberry WWTP. At the southern end of the plant the corridor will extend from west to east from Cook Street to SR 37. The corridor is widest in this location to provide maximum flexibility in crossing the North Prong Alafia River just south of the Mulberry WWTP. The proposed corridor will encompass both sides of SR 37, while remaining west of the existing rail right-of-way, and continue southward to the intersection of SR 37 and Cozart Road, where it will connect to the previously certified reclaimed pipeline corridor. The proposed Mulberry tie-in corridor is approximately 1.9 miles long. Figure 9.1.0-2 depicts this corridor on recent aerial photographs (FDOT, 2011) at a scale of 1 inch equals 1,000 ft. Information gathered from field reconnaissance confirms the aerial photographs represent current conditions in the area.

### 9.3.3 ALTERNATE CORRIDORS

Tampa Electric is not proposing any alternate corridor to either of its proposed corridors. Tampa Electric believes it can minimize impacts from the project given the width and flexibility provided by the proposed corridors as described.

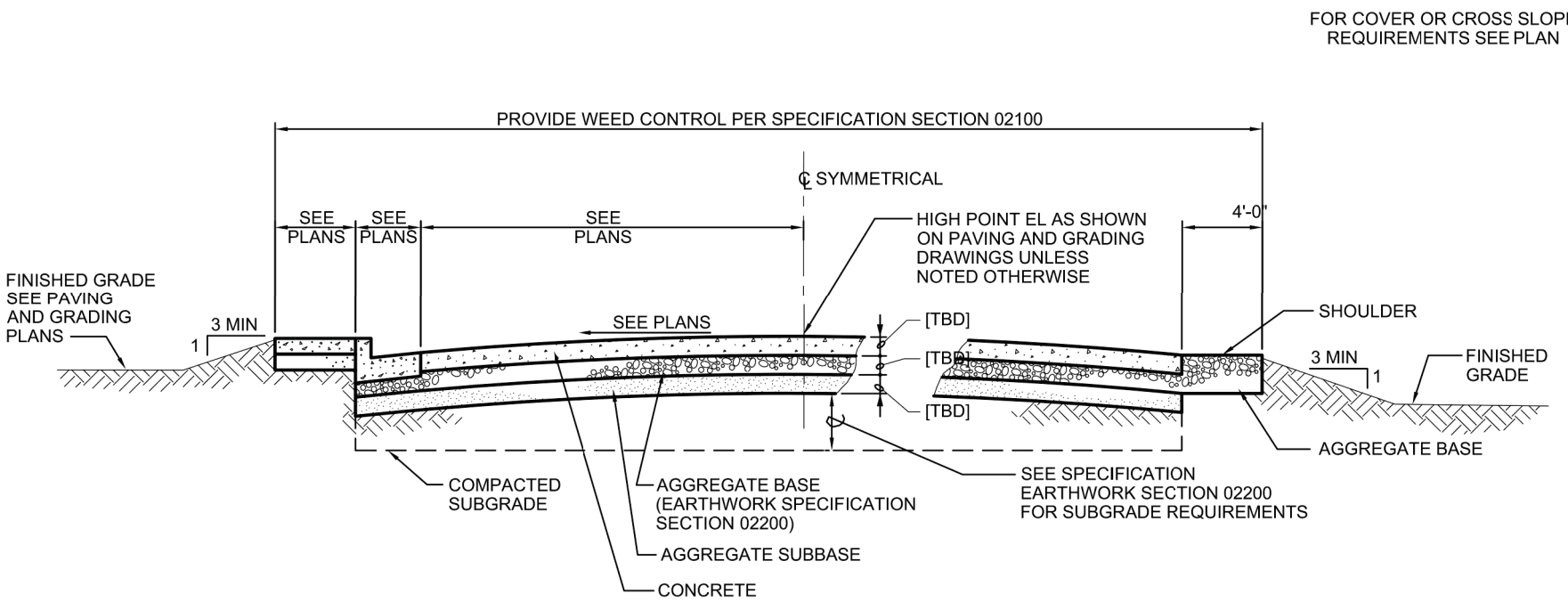
### 9.3.4 ACCESS ROADS

Tampa Electric does not anticipate permanent access roads along the proposed pipeline corridors at this time; however, temporary access roads will be needed around the Mulberry facility, the tie-in to the Polk County PAR system, and the area around the river crossing. Figure 9.3.4-1 depicts a typical, temporary construction road detail if such access roads are needed. The rest of the corridor should provide reasonable access as is.

The one other area where some access may be needed is at the Lakeland WTS terminus. The land appears open and accessible as is but will require review with the contractor.

### 9.3.5 COST PROJECTIONS

The project is expected to cost $14 million, with the potential for 50 percent being funded by SWFWMD through its Reclaimed Water Initiative.




NOTES:

1. DETAILS SHOWN ARE TYPICAL ROAD SECTIONS UNLESS INDICATED OTHERWISE.
2. SEE GENERAL NOTES FOR DIMENSION REQUIREMENTS.

FIGURE 9.3.4-1.

ACCESS ROAD CROSS-SECTION - TYPICAL

Sources: MWH, 2013; TECO, 2013.

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## 9.3.6 SOCIAL AND POLITICAL ENVIRONMENT OF THE CORRIDOR AREAS

### 9.3.6.1 Governmental Jurisdictions

Both proposed corridors are located within Polk County. A portion of each proposed corridor falls within the incorporated city of Mulberry. Figure 9.3.6-1 shows both proposed corridors at a scale of 1 inch equals 2 miles, in relation to the governmental jurisdictions within 5 miles of the edge of the proposed corridors. Not indicated on the figure, portions of the North Prong Alafia River that lie in the proposed Mulberry tie- in corridor are owned by the State of Florida through the Florida Board of TIITF, as is an area located north of the Lakeland WTS that abuts the northeastern portion of the Polk tie-in corridor. Other ownership entities are the City of Mulberry, Polk County, and the School Board of Polk County.

The following federal, state, and local jurisdictional areas were researched, and none were found to occur within 5 miles of the edge of the proposed corridors:

- National parks.
- National forests.
- National wildlife refuges.
- National seashores.
- National wilderness areas.
- National memorials.
- National monuments.
- Properties in the national register of historic places.
- Natural landmarks.
- Game management areas.
- Marine and estuarine sanctuaries.
- State forests.
- Roadless Area Review and Evaluation (RARE) areas.
- Outstanding Florida Rivers.
- Areas of critical state concern.
- State archaeological landmarks.
- State aquatic preserves.
- Indian reservations.
- Military installations.

### 9.3.6.2 Zoning and Land Use Plans

**Comprehensive Plan**

Both of the proposed corridors cross an unincorporated area of Polk County and the incorporated city of Mulberry. The Local Government Comprehensive Planning and Land Development Regulation Act of 1985 (Chapter 163, Florida Statutes) requires all counties

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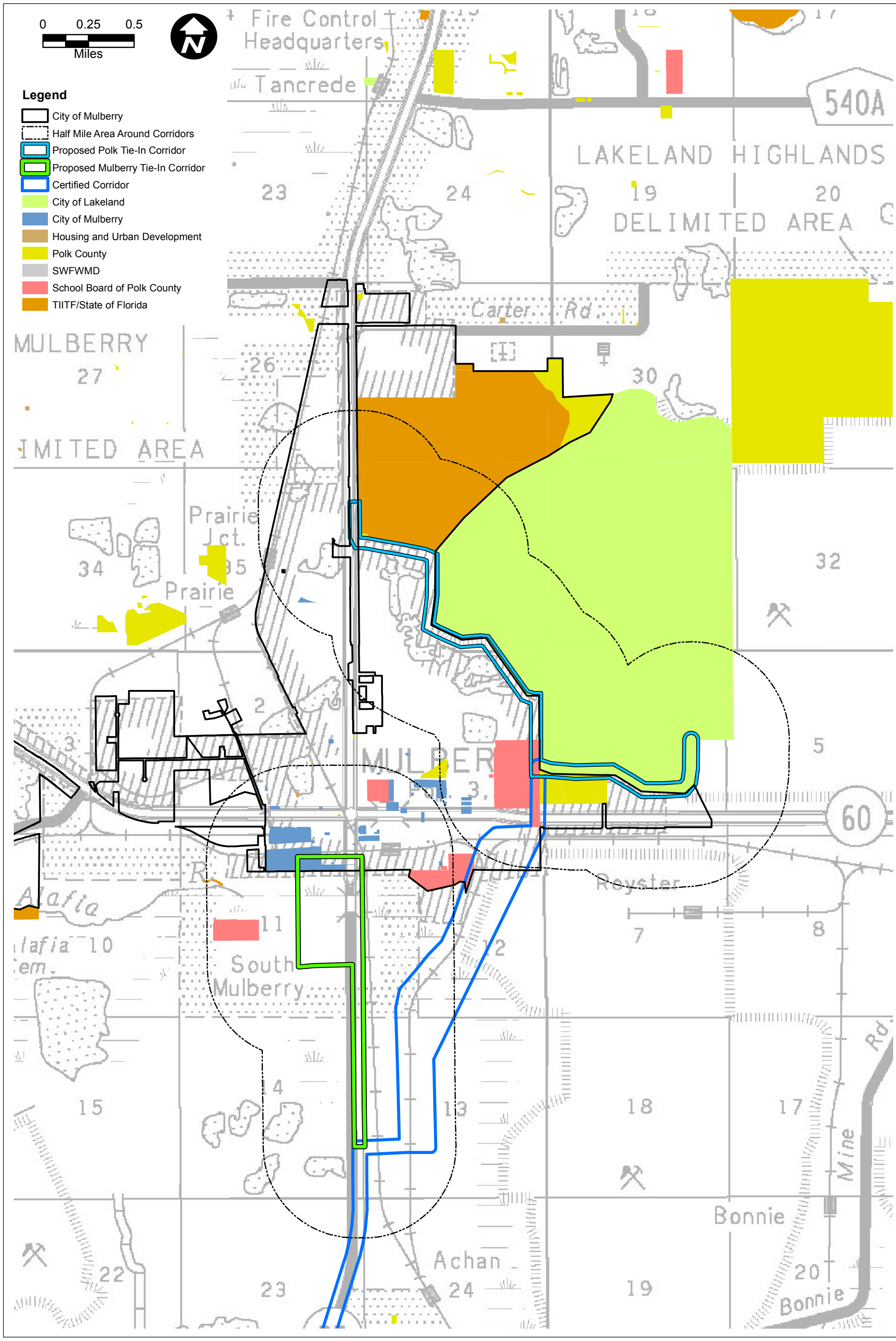



FIGURE 9.3.6-1.
GOVERNMENTAL JURISDICTIONS WITHIN 0.5 MILE
OF PROPOSED CORRIDORS

Sources: FDOT, 2003, 2005; Polk County, 2013; ECT, 2013.

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and municipalities within the state to prepare comprehensive plans. Figure 9.1.0-2 depicts the proposed corridors and 0.25-mile buffers to each corridor at a scale of 1 inch equals 1,000 ft in relation to the adopted land use plans of the two local governments affected. Appendix A contains reproductions of relevant portions of the county's and the city's future land use maps.

The following lists the future land use map categories crossed by the corridors and/or are located in the 0.25-mile buffer as shown on Figure 9.1.0-2:

- Polk County:
  - Proposed Polk tie-in:
    - Residential Low-1 (RL-1).
    - Residential Low-4 (RL-4).
    - Institutional-2 (INST-2).
    - Industrial (IND).
    - Phosphate Mining (PM).
  - Proposed Mulberry tie-in:
    - Agriculture/Residential-Rural (A/RR).
    - Recreation and Open Space (ROS).
    - Residential-Suburban (RS).
    - Linear Commercial Corridor (LCC).
    - Business Park Center (BPC-1).
    - Business Park Center (BPC-2).
    - Industrial (IND).
    - Phosphate Mining (PM).
- City of Mulberry:
  - Proposed Polk tie-in:
    - Conservation (CON).
    - Outdoor Recreation (OR).
    - Low-Density Residential (LDR).
    - Manufactured Home (MH).
    - Highway Commercial (HC).

- Public Buildings and Grounds (PBG).
- Industrial (IND).

- Proposed Mulberry tie-in:
  - Outdoor Recreation (OR).
  - Low-Density Residential (LDR).
  - High-Density Residential (HDR).
  - Highway Commercial (HC).
  - Central Business District (CBD).
  - Public Buildings and Grounds (PBG).
  - Industrial (IND).

Descriptions of the future land use categories crossed by the proposed corridors and/or located in the 0.25-mile buffer in the two jurisdictions are provided in the following sub-sections.

**Polk County**

- Phosphate Mining (PM)—This land use designation identifies existing or proposed phosphate mining operations, support facilities, and nonreclaimed phosphate-mined areas.
- Agriculture/Residential-Rural (A/RR)—This land use category recognizes the importance of agriculture and provides for its protection and future continuance through the establishment of a base residential density of one dwelling unit per 5 acres.
- Recreation and Open Space (ROS)—This designation identifies primarily sites and facilities that are accessible to the general public and are oriented toward providing recreation services for the resident and short-term and long-term visitors to Polk County. These lands are commonly county-owned or maintained open spaces, community and regional parks, and the facilities and services associated with each respective park type.
- Residential-Suburban (RS)—Areas in this category are established for a low-density suburban residential environment up to and including one

dwelling unit per 5 acres. This classification is characterized by single-family and duplex units.

- Residential Low (RL-1 and RL-4)—This land use classification is to provide areas for low-density residential development in the urban areas of the unincorporated county. Densities are allowed up to and including five dwelling units per acre. This classification is characterized by single-family, duplex units and small-scale multifamily units.
- Linear Commercial Corridor (LCC)—These corridors are characterized by linear concentrations of commercial, office, and institutional uses along a roadway. The maximum floor area ratio is 0.35.
- Business Park Centers (BPC-1 and BPC-2)—This designation is intended to promote employment opportunities by allowing for the establishment of office parks, research and development parks, areas for light industrial facilities, distribution centers, and mixed-use employment centers. The maximum floor area ratio ranges from 0.25 to 0.75, depending on the type of use and location of the business park center (within or outside the Urban Development Area). Residential development of up to 15 dwelling units per acre is allowed.
- Institutional-2 (INST-2)—Institutional areas are primarily characterized by private and public service structures. Permitted uses include public and private educational facilities, government administration buildings, public safety structures, cultural facilities, and health care facilities. The maximum floor area ratio is 0.75.
- Industrial (IND)—This land use category is characterized by facilities for the processing, fabrication, manufacturing, recycling, and distribution of goods. The maximum floor area ratio is 0.75.

**City of Mulberry**

- Conservation (CON)—The primary function of this land use designation is to protect natural resources, lake water quality, and groundwater quality. Residential, commercial, industrial, and agricultural land uses are not allowed. Recreational land uses are allowed provided that as little land as pos-

sible is disturbed during any construction, and that the activity will not degrade or harm any natural resource.

- Outdoor Recreation (OR)—Permitted uses in this land use designation include publicly and privately owned properties that are open to recreational use by the general public. One residential unit per 10 acres is allowed for a caretaker, and up to 2,000 $ft^2$ of nonresidential building is allowed per acre.
- Low-Density Residential (LDR)—This land use category permits development of one dwelling unit on a minimum lot size of 7,500 $ft^2$ and a maximum of five dwelling units per acre.
- High-Density Residential (HDR)—Single-family dwelling units, duplexes, and multifamily dwelling units are allowed. The maximum number of single-family dwelling units per acre is seven with a minimum lot size of 6,000 $ft^2$. Duplexes must have a minimum of a 7,500-$ft^2$ lot size, and multifamily units must have a minimum lot size of 10,000 $ft^2$. Up to 16 multifamily units are allowed per acre.
- Manufactured Home (MH)—Permitted uses include manufactured homes and noncommercial recreational facilities. The maximum number of dwelling units per acre is eight. Commercial uses are allowed (lower order services such as professional offices, banks, grocery, drug stores, and convenience stores) up to 25 percent of the total site.
- Highway Commercial (HC)—Allowed uses in this land use designation include offices, retail, wholesale, and indoor recreation such as bowling alleys and skating rinks. The maximum floor area ratio is 3.0.
- Central Business District (CBD)—This land use designation allows the linear development of commercial activities along SR 37 and allows retail and office uses up to a maximum floor area of 2.0.
- Industrial (IND)—Permitted uses include manufacturing and processing activities, wholesale storage, and warehousing. The maximum floor area ratio is 1.0.
- Public Buildings and Grounds (PBG)—This land use category allows schools, government buildings, fire and police stations, community centers, parks, playgrounds, ball fields, indoor recreation facilities, nature preserves,

and open space. The floor area ratio for public buildings is not to exceed 2.0. A caretaker residence is allowed at a density of one dwelling unit per 10 acres.

An area located north of SR 60 crossed by the Polk tie-in corridor near its eastern terminus is identified on Figure 9.1.0-2 as unassigned. This is a property that has been annexed into the city, but has not been assigned a city future land use map (FLUM) designation or a city zoning district. The existing and prevailing land use designation is Industrial in the Polk County Comprehensive Plan. It is likely that this area would be within the Urban Growth Development Area. Urban Growth Areas are generally located adjacent to existing municipalities and generally those areas with existing infrastructure and public facilities and services that are able to support higher density and compact, mixed-use development. This area is also within the floodplain-protection, aquifer-protection, Polk Green District overlay, and transit centers and corridors districts (see the zoning and land use districts discussion in the next subsection).

The unassigned areas shown in the proposed Mulberry tie-in corridor are, or likely are, in the Polk County Agricultural/Residential-Rural land use category. It is likely that these areas would be within the Suburban Development Area (see the zoning and land use districts discussion in the next subsection). These areas are also within the floodplain-protection, wetland-protection, aquifer-protection, Polk Green District overlay, and transit corridors and centers districts (see the zoning and land use districts discussion in the next subsection).

**Future Land Use Element**

**Polk County**

The proposed pipeline corridors traverse unincorporated portions of west-central Polk County. There are five distinct development areas that combine with future land use categories to guide development within unincorporated Polk County.

The portion of the proposed Polk tie-in corridor located in unincorporated Polk County is in the Rural Development Area (RDA). The RDA provides areas for rural activities such as agricultural uses, mining activities, and rural residential uses.

The area of proposed Mulberry tie-in corridor located in unincorporated Polk County in the Residential-Suburban land use designation is located in the Suburban Development Area (SDA). SDAs are areas that have predominantly developed in a suburban residential pattern with county-owned, municipal, or county-franchised potable water systems but without centralized sewer services. The remainder of the proposed Mulberry tie-in corridor located in unincorporated Polk County is in the RDA.

The Polk County Comprehensive Plan identifies pipelines as utility use (Future Land Use Element Policy 2.125-D1b). Pipelines are considered a permitted use throughout Polk County in all land use classifications.

Future Land Use Element Policy 2.125-D2 is titled Utilities Development Controls. Utilities are allowed in non-RDA areas provided that the scale of such facilities are related to the surrounding land uses and are designed to preserve the character of residential neighborhoods. The policy states, in Part c, "[t]he development of utility facilities shall be permitted in the RDA, as designated on the Future Land Use Map, only when such developments provide regional services, or is incompatible with urban uses, or services the existing needs of the immediate area in which it is located." The proposed pipeline is planned to assist in the provision of a regional service (the production of electricity).

Policy 2.102-A8 addresses public facilities and utilities siting. The policy states that, "[p]ublic facilities and utilities shall be located to:

a. Maximize the efficiency of services provided,
b. Minimize their cost, and
c. Minimize their impacts on the natural environment."

Policy 2.123.-C2 allows development within wetlands, as determined by appropriate regulatory agencies, for utility transmission and collection lines.

**City of Mulberry**

The comprehensive plan does not provide a definition for utilities. The Future Land Use Element does not contain any specific policies that address pipelines. Objective 7 states that, "[t]he City shall ensure the availability of suitable land for utility facilities necessary to support proposed development."

**Zoning and Land Use Districts**

**Polk County**

Development within the unincorporated areas of Polk County is controlled and guided by three levels of development controls: development areas (e.g., RDA and SDA); future land uses (e.g., Agriculture/Residential-Rural, Residential Suburban, Linear Commercial Corridor, etc.); and special-area overlay districts and areas. The proposed pipeline corridor study areas are located in the following special-area overlay districts and areas:

- Floodplain-protection areas.
- Wetland-protection areas.
- Aquifer-protection areas.
- Polk Green Districts.
- Transit corridors and centers.

The proposed corridors do not intersect the wellfield-protection district overlay, Green Swamp protection area, mineral-resource protection overlay, redevelopment districts overlay, historical preservation sites overlay, airport-buffer district, military compatibility zones resource protection district, or SR 17 Ridge Scenic Highway overlay. Figure 9.1.0-3 at the end of this text provides copies of the overlay districts that are intersected by the proposed corridors.

**Floodplain-Protection Areas**—Portions of both of the proposed corridors intersect Flood Zone A areas in the unincorporated Polk County areas of the corridors. The objective of the floodplain-protection area overlay is to limit development within areas subject to flooding to activities and intensities that will not enlarge the offsite floodplain, alter the natural function of the floodplain, and not be more than a minimal risk to loss of property and life. There are specific land development code (LDC) regulations addressing riverine, lake, and other floodplains.

**Wetland-Protection Areas**—Wetland-protection areas are located in several areas along proposed Polk tie-in corridor. Wetland-protection areas are associated with the North Prong of the Alafia River and other wetland/lake areas crossed by the proposed Mulberry tie-in corridor. Wetland-protection areas are established in the Future Land Use Element of the comprehensive plan to limit development and redevelopment activities to activities and intensities that will have minimal impact on the natural function of the wetlands. Wetland impacts, where unavoidable and properly mitigated, are allowed for the placement of utility transmission lines. Applicable permits are required prior to Polk County issuing a final development order. Construction techniques should not alter the natural retention and filtering capacities of wetlands.

**Aquifer-Protection Areas**—The entirety of the unincorporated portions of both proposed corridors are located in an aquifer-protection area (Floridan Vulnerable). The overlay map excludes the city limits of Mulberry. The aquifer-protection areas are established to protect these areas from direct contamination and protect the natural recharge function. Land development regulations have been promulgated to minimize the threat of contamination through restrictions on hazardous materials and require that postdevelopment runoff volumes not exceed predevelopment runoff volumes, stormwater be treated, and subsurface storage and flow simulate predevelopment natural conditions.

**Polk Green Districts**—The entire area of the City of Lakeland WTS in the vicinity of the proposed Polk tie-in and the North Prong of the Alafia River and its floodplain and associated wetlands crossed by the proposed Mulberry tie-in are shown as potential network connections. The Polk Green Districts overlay is established to designate lands that are desirable for future acquisition (or other property acquisition measures) to provide for the preservation of open space, habitat protection, linear parkways, and recreation areas. Proposed development within the districts will be reviewed under Polk County's development review procedures.

**Transit Corridors and Centers**—The central business district of the city of Mulberry and areas extending southward to include the Kingsford neighborhood and east and west

along SR 60 and north and south along SR 37 are identified as within a transit corridor and center (intersecting with both corridors). The Polk County Comprehensive Plan Transportation Element identifies this area as Category 1. This category describes fixed-route services operating within an urbanized area and providing access to the central business district and intense commercial corridors. The emphasis is on local circulation and land access.

**City of Mulberry**

The City of Mulberry has established zoning districts. The intersection of the proposed Polk and Mulberry tie-in corridors and the associated 0.25-mile buffers with the zoning classifications is shown at a scale of 1 inch equals 1,000 ft in Figure 9.1.0-3. The proposed corridors and/or the 0.25-mile buffer areas cross the following zoning districts:

- Conservation (CON).
- Outdoor Recreation (O-R).
- Single-Family Residential (R1-L).
- Multiple-Family Residential (R1-H).
- Manufactured Home Planned Development (MH).
- Planned Development (PD).
- Highway Commercial (C-2).
- Central Business District (C-1).
- Light Industrial (I-L).
- Heavy Industrial (I-H).
- Public Institutional (P-I).

The Planned Development zoning district (currently undeveloped land) located adjacent to the Lakeland WTS is identified as having a maximum development density of 343 dwelling units, a density of 4.4 dwelling units per acre.

**Land Development Code**

**Polk County**

The Polk County LDC defines transmission lines, including water distribution lines, and utility pipelines as a Class I utility (see page 10-66 of the Polk County LDC, adopted March 1, 2000, and revised June 2004). Class I utilities are permitted in all land use districts (Table 2.1 of the LDC: Use Table for Standard Land Use Districts).

Polk County has resource protection standards for surface water bodies, wetlands, floodplains, airports, aquifers, ecological communities, wellheads, and historic preservation.

Wetland impacts from utility transmission lines are permitted where unavoidable and where properly mitigated as determined by agencies having jurisdiction pursuant to Section 620, C.2c.

**City of Mulberry**

The LDC defines essential services as "[t]he erection, construction, alteration or maintenance, by private utilities or municipal or other governmental agencies, of underground or overhead gas, electrical, steam or water transmission or distribution systems, collection, communication, sewers, pipes, conduits, ... or other similar equipment and accessories in connection therewith reasonably necessary for the furnishing of adequate service by such public utilities or municipal or other governmental agencies or for the public health or safety or general welfare, but not including buildings." The proposed pipeline meets the definition of essential services.

A review of the LDC finds no further reference to essential services. The table of permitted uses in Section 2.04.01 of the LDC does not identify utilities, pipelines, or similar uses. Power stations and telephone switching stations are allowed in every zoning district except for Conservation and Outdoor-Recreation.

Section 3.06.02.03 of the LDC addresses noise. This section addresses operation by identifying maximum sound levels for various octave bands adjacent to residential uses and to industrial and commercial uses. Other objectionable noises due to intermittence, beat frequency, or shrillness will be muffled or eliminated so as to not become a nuisance to adjacent uses.

Section 5.03.00 of the LDC addresses wetlands protection. This section establishes two zones for the protection of wetlands: the wetland zone defined as the landward extent of the wetland and the upland zone, which extends from a minimum of 40 ft from the landward extent up to 200 ft. Section 5.03.05(E) is an exemption for utility crossings.

Section 5.04.00 of the LDC addresses lake (pit) protection. It is the purpose of this section to maintain pit water quality and reduce nutrient loading. A shoreline protection zone

extends 40 ft landward from the ordinary high-water line. Development within the shoreline protection zone will be designed, constructed, and maintained to avoid adverse impacts to the pits. Compliance with this mandate includes:

- Maintaining natural drainage patterns to the maximum extent feasible.
- Minimizing the amount of fill to accommodate the permitted development.
- Minimizing environmental damage.
- Maintaining 50 percent of the natural vegetation within the 40-ft protection zone.
- Planting buffers if no natural vegetation is present such that 40 percent of the protection zone is covered.
- Limiting the removal of vegetation to the minimum necessary to complete the permitted development.
- Restoring any portion of the vegetation in the protection zone damaged or removed during construction by replanting native grasses and ground cover or other appropriate plantings.

#### 9.3.6.3 Easements, Title, Agency Works

Easements may be necessary for the pipelines to cross lands for which the title is held by the Board of TIITF, Polk County, the City of Mulberry, or SWFWMD within the proposed corridors.

Approvals for crossing or use of state road rights-of-way must be granted pursuant to FDOT regulations. Approvals of crossings or use of county-maintained road rights-of-way must be granted pursuant to the requirements of Polk County and the City of Mulberry. This is particularly noteworthy since much of the proposed Mulberry tie-in corridor follows along road rights-of-way. Additionally, both proposed corridors cross SR 37. Crossings of SR 37 will conform to specifications contained in FDOT's Utility Accommodation Manual (2010).

The crossing of the North Prong Alafia River at SR 37 will require horizontal directional drilling (HDD). Tampa Electric will request a sovereign submerged lands crossing approval for the river crossing.

Permits are normally required to cross or collocate with canals or works of the district under the jurisdiction of SWFWMD. Such works may include structures, impoundments, wells, streams, canals, or other watercourses officially adopted by SWFWMD's governing board.

Table 9.3.6-1 presents a list of potential lands, roads, canals, or works of the district for which crossing approvals would normally be required.

### 9.3.6.4 Vicinity Scenic, Cultural and Natural Landmarks

No resources considered regionally scenic, cultural, or natural landmarks occur within either corridor.

### 9.3.6.5 Archaeological and Historic Sites

Tampa Electric conducted a Master Site File search through the Division of Historical Resources (DHR) of the corridors proposed in this application (see Appendix B). Based on that research, one previously recorded archaeological site, five surveys, one bridge, 23 previously recorded standing structures, and two previously recorded resource groups were found within 0.75 mile of the proposed Mulberry tie-in corridor. Table 9.3.6-2 lists archaeological or historical sites like those found within the proposed Mulberry tie-in corridor. For the proposed Polk tie-in corridor, the Master Site File search resulted in no archeological sites, two surveys, and no standing structures within 1,000 ft of the proposed corridor.

DHR will review these results and make an assessment as to potential impacts to these known, as well as potentially unknown, locations. DHR may request, as a condition of certification, a cultural resources assessment be conducted along areas of the final right-of-way that have a likelihood of containing archaeological artifacts.

Table 9.3.6-1. Possible Easements, Titles, and Crossing Approvals Expected to Be Required for Pipeline Construction in the Proposed Corridors

| Facility/Lands | Agency | Approval |
|---|---|---|
| Roads | | |
| SR 37 | FDOT | Right-of-way use or crossing permit |
| Water Bodies/Conservation Lands | | |
| North Prong Alafia River | FDEP and SWFWMD | Sovereign submerged lands crossing approval |
| Parks | | |
| Mulberry Park | Polk County | Easement or permit |
| School Board Easement | | |
| Mulberry High School | Polk County School Board | Easement |

Source: ECT, 2013.

Table 9.3.6-2. Archaeological and Historical Sites Possibly Located in the Proposed Mulberry Tie-In Corridor

| Site ID | Site Name | Comment | Location |
|---|---|---|---|
| PO04622 | South Mulberry | Artifact or isolated find | South Mulberry |
| PO06449 | Seaboard Coast Line Railroad Grade | Linear resource | Mulberry |
| PO07528 | Winston and Bone Valley Railroad | Linear resource | Mulberry |
| PO07533 | Bridge No. 160063 | | Mulberry |
| PO00292 | Proctor | Residence | Dean and SR 37, Mulberry |
| PO05165 | Garland Motors | Residence | 1270 SR 37, Mulberry |
| PO05166 | 1100 +/- SR 37 | Commercial | SR 37, Mulberry |
| PO05167 | 1064 to 1066 SR 37 | Residence | Mulberry |
| PO05168 | 1060 to 1062 SR 37 | Residence | SR 37, Mulberry |
| PO05169 | 1041 +/- SR 37 | Residence | SR 37, Mulberry |
| PO05170 | 1071 SR 37 | Residence | SR 37, Mulberry |
| PO05171 | 1073 +/- SR 37 | Residence | SR 37, Mulberry |
| PO07294 | 370 Cameron, Mulberry | Residence | Mulberry |

Source: DHR, 2013.

## 9.3.7 BIOLOGICAL AND PHYSICAL ENVIRONMENT OF THE CORRIDOR AREAS

### 9.3.7.1 Land Use/Vegetation

The existing land use and vegetation cover types occurring within and for 0.5 mile adjacent to either side of the proposed corridors (study areas) were acquired from the current SWFWMD geographic information system (GIS) database (2011), overlain on 2011 FDOT aerial photographs at a scale of 1 inch equals 1,000 ft. These land use/cover types were classified using the Florida Land Use, Cover, and Forms Classification System (FLUCFCS) (FDOT, 1999), Categories II and III. Figure 9.1.0-4 (provided at the end of this document) illustrates the various land use/vegetation types within the study area, and the following subsections provide descriptions of the major land use and vegetation cover classes mapped within the study area. Although the data provided by SWFWMD were originally generated in 2006, the vegetation/land use covers depicted are representative of current resources.

**Land Use**

Land uses mapped along the proposed corridors consist of residential, commercial and services, mining, open land, agricultural, and utilities. According to the FLUCFCS, these categories include low-density residential (110), medium-density residential (120), high-density residential (130), commercial and services (140), industrial (150), extractive (160), reclaimed land (165), institutional (170), recreational (180), golf courses (182), open land (190), cropland and pastureland (210), other open lands (rural) (260), transportation (810), and utilities (830). Of these land use classifications, the mining land use is dominant within the Polk tie-in corridor, while residential and commercial uses dominate the Mulberry tie-in corridor.

The cropland and pastureland (210) use classification is typically associated with cattle grazing on open fields of pasture grasses. No cropland (row crops) is apparent on the aerial photographs. There are few areas mapped as pasture within the study area. These improved and unimproved pastures have a dominant cover of pasture grasses such as Bahia grass (*Paspalum notatum*), Bermudagrass (*Cynodon dactylon*), smutgrass (*Sporobolus indicus*), and big carpetgrass (*Axonopus furcatus*), among others. Depending on the degree of improvement, old field species such as dog fennel (*Eupatorium capillifolium*),

sweet broom (*Scoparia dulcis*), common ragweed (*Ambrosia artemisiifolia*), slender goldenrod (*Euthamia caroliniana*), pokeweed (*Phytolacca americana*), manyflower marshpennywort (*Hydrocotyle umbellata*), blackberry (*Rubus* spp.), and other weedy herbaceous species, as well as occasional shrubs of saw palmetto (*Serenoa repens*), wax myrtle (*Myrica cerifera*), Brazilian pepper (*Schinus terebinthifolius*), or netted pawpaw (*Asimina reticulata*), often inhabit these communities. In addition, it should be noted that the reclaimed areas of former mining lands have also mostly been converted to pasture.

Residential, commercial and services, and utilities make up a more significant portion of the study area. Most of these areas are associated with the city of Mulberry in the central portion of the study area. Although not all roads are mapped as transportation (810) on Figure 9.1.0-4, the study area crosses or encompasses portions of several roadways, particularly SR 37.

**Vegetation**

The proposed corridors will be located within or adjacent to the SR 37 road rights-of-way for much of their length, then will cross phosphate-mined land in various stages of reclamation for the remainder. The majority of the road rights-of-way are maintained grassy areas with ditches. In addition to the maintained right-of-way, a few natural communities will be traversed or are located within 0.5 mile adjacent to the proposed corridors. These vegetation cover classes include mixed rangeland (330), hardwood conifer mixed forest (434), reservoirs (530), stream and lake swamps (bottomland) (615), freshwater marsh (641), wet prairies (643), and emergent aquatic vegetation (644). Although not technically vegetation communities, lakes (520) and reservoirs (530) are also included and described, along with the dominant vegetation types, in the following subsections. Finally, although not mapped as streams and waterways (511), there are a few named and unnamed natural drainage crossings that are typically associated with the stream and lake swamp (615) classification.

**Upland Communities**

There are two minor-occurring upland natural communities within or adjacent to the proposed corridors. These communities consist of both natural and altered states of forest and rangeland.

**Mixed Rangeland (330)**—Mixed rangeland occurs in very few locations throughout the proposed corridors and 0.5-mile adjacent area. This community typically includes more than one-third intermixture of grassland and shrub-brushland each occurring together. The grassland component of the mixture is generally treeless and occupied by grasses, rushes, sedges, and other herbs. Some shrubs would be expected to occur and would include saw palmetto, wax myrtle, and Brazilian pepper.

**Hardwood Conifer Mixed Forest (434)**—This forest community is found in some areas along the proposed corridors. However, it is not dominated by either pines or hardwoods; that is, neither conifers nor hardwoods comprise 66-percent canopy dominance. The hardwood component of the canopy is primarily live oak (*Quercus virginiana*), water oak (*Q. nigra*), laurel oak (*Q. laurifolia*), or diamond-leaved oak (*Q. hemispherica*). Cabbage palm (*Sabal palmetto*), sweetgum (*Liquidambar styraciflua*), hackberry (*Celtis laevigata*), pignut (*Carya glabra*), and common persimmon (*Diospyros virginiana*) also may occur here. Slash pine, sand pine, and/or longleaf pine are intermixed. Shrubs typically consist of saw palmetto, wax myrtle, groundsel tree (*Baccharis halimifolia*), and/or American beautyberry (*Callicarpa americana*). These communities in the study area have been disturbed due to residential development or previous mining activities.

**Wetland/Surface Water Communities**

Wetlands are present within or adjacent to the study areas encompassing the proposed corridors, which is to be expected considering the prevalence of wetlands in central Florida. Four wetland community types and two surface water features have been identified within the study areas.

**Reservoirs (530)**—This surface water category refers to artificial impoundments of water. Reservoirs within the study areas typically result from impoundments created from phosphate mining activities.

**Stream and Lake Swamps (615)**—This bottomland community is dominated by hardwood tree species such as laurel oak, pop ash (*Fraxinus caroliniana*), elm (*Ulmus americana*), American hornbeam (*Carpinus caroliniana*), water hickory (*Carya aquatica*), black gum (*Nyssa sylvatica*), red maple (*Acer rubrum*), cabbage palm, swamp bay (*Persea palustris*), and sweet bay (*Magnolia virginiana*), among others. Common shrub/small tree species include Carolina willow (*Salix caroliniana*), elder (*Sambucus nigra*), swamp dogwood (*Cornus foemina*), buttonbush (*Cephalanthus occidentalis*), American snowbell (*Styrax americanus*), and dahoon holly (*Ilex cassine*). A variety of sedges, rushes, ferns, and epiphytes are also important components of this swamp type. The majority of these forested wetlands occur along stream crossings of within the study area, especially the South Prong Alafia River in the central portion of the study area and adjacent to a large marsh complex south of East Mulberry in the northern portion of the study area.

**Fresh Water Marsh (641)**—Fresh water marshes typically exhibit a distinct vegetation zonation pattern based largely on the depth and duration of flooding. Typical species along the upper rim of the wetland include sand cordgrass (*Spartina bakeri*), soft rush (*Juncus effusus*), spike rushes (*Eleocharis* spp.), maidencane (*Panicum hemitomon*), and various sedges, among others. In the center of the wetland, where water is deeper and present for a longer duration, vegetation species such as sawgrass (*Cladium jamaicense*), fireflag (*Thalia geniculata*), pickerelweed (*Pontedaria cordata*), bladderworts (*Utricularia* spp.), and arrowheads (*Sagittaria* spp.) dominate. Occasional shrubs of Carolina willow, Brazilian pepper, and wax myrtle can sometimes be found in and around these wetlands. This wetland type is found at several locations within the study area. A large marsh complex, associated with the North Prong Alafia River, exists just east of the Mulberry tie-in corridor just south of SR 60 in the central portion of the study areas.

**Wet Prairie (643)**—This classification includes areas exhibiting hydric soils supporting a variety of grasses, sedges, and rushes. It is found in only a few locations and is distinguished from freshwater marshes in that the depth and duration of ponding is less. Typical vegetation includes cordgrass, yellow-eyed grasses (*Xyris* spp.), redtop panicgrass (*Panicum rigidulum*), rosette grasses (*Dichanthelium* spp.), various sedges (*Cyperus* spp., *Carex* spp.), spike rushes, maidencane, and meadow beauties (*Rhexia* spp.). This wetland type is also found throughout the study area but is less common than freshwater marsh.

**Emergent Aquatic Vegetation (644)**—This wetland category includes deeper water systems with a discernible presence of free-floating, floating-leaved emergent, and/or emergent vegetation either occurring along littoral zones or as floating islands. Typical plant species found in these areas include Carolina willow, Peruvian primrosewillow (*Ludwigia peruviana*), cattail (*Typha* sp.), anglestem primrosewillow (*Ludwigia leptocarpa*), paragrass (*Urochloa mutica*), water lettuce (*Pistia stratiotes*), water hyacinth (*Eichhornia crassipes*), duckweeds (*Lemna* spp. and *Spirodela* spp.), fragrant white water lily (*Nymphaea odorata*), and spadderdock (*Nuphar advena*), among others. Areas mapped as emergent aquatic vegetation are uncommon within the study area.

**Intermittent Ponds (653)**—This category of wetland is defined as a water body that exists only for a portion of the year. It may be referred to as a seasonal water body. Its existence relies on water received directly from precipitation, runoff, or spring flow. Many upland perennial plants are unable to withstand the duration of inundation, while many wetland plants are unable to withstand desiccation. Wetland plants may also be nutrient-limited within small drainage basins. Intermittent pond habitats favor annual plants with some uniquely adapted perennials that suffer extensive mortality. A few small such communities occur within the study area.

### 9.3.7.2 Affected Waters and Wetlands

The proposed corridors occur within the SWFWMD management area. SWFWMD's management area is large and contains nine surface water basins. The proposed corridors fall primarily within the Alafia River basin.

The proposed corridors' physiography is characterized by topography that is gently rolling to nearly flat. Typical elevations along the corridors range from approximately 150 ft in the uplands to approximately 50 ft along some of the tributaries.

Surface water bodies and wetlands crossed by the proposed corridors were identified using 1:24,000 U.S. Geological Survey (USGS) topographic maps, National Wetlands Inventory (NWI) maps, SWFWMD land use/cover maps, and recent aerial photographs (2011).

Pursuant to the provisions of Section 62-302.400, F.A.C., the majority of surface waters and wetlands crossed by the corridors would be classified as Class III waters, Recreation, Propagation, and Maintenance of Healthy, Well-Balanced Population of Fish and Wildlife. The proposed corridors do not include any Outstanding Florida Waters.

**Water Bodies**

Table 9.3.7-1 provides a list of the major water bodies found within the proposed corridors. The North Prong Alafia River is the only significant water body crossed by the proposed corridors. Several small phosphate ponds are also located within the proposed corridors. The remainder of waters crossed by the proposed corridors includes minor drainages and roadside ditches. These smaller water bodies are not listed in the table.

Many of the ditches and roadside swales crossed or within the proposed corridors (such as along SR 37) are intermittent, carrying water only during the rainy summer season. These intermittent ditches are neither navigable nor generally used for recreational purposes.

**Wetlands**

Given the shallow groundwater table in places, flat topography, and varying soil conditions, there are various types of wetlands within the study area. As described in Section 9.3.7.1, these wetland types include bottomland swamps, fresh water marshes, wet prairies, and emergent aquatic vegetation. The hydrologic regime of these wetlands varies from semipermanently flooded to seasonally flooded, depending on their landscape

Table 9.3.7-1. Surface Water Bodies within the Proposed Corridors

| Water Body | Receiving Water | Comments |
|---|---|---|
| North Prong Alafia River | Alafia River | Proposed Mulberry tie-in corridor crosses east of SR 37 south of Mulberry |
| Unnamed lake(s) | | Proposed Polk tie-in corridor crosses grouping of several unnamed phosphate ponds east of SR 37 in the reclaimed lands area |

Source: ECT, 2013.

position and the extent of drainage improvements within the immediate area. Extensive phosphate activities in and near the study area have altered the natural hydrologic regime of some of the wetlands.

Since much of the proposed corridors follows along SR 37, most water bodies that will be crossed have already been impacted by previous development such as filling, bridging, or culverting at the proposed point of crossing. This will minimize disturbance associated with construction, since the area has already been impacted. However, limited construction for the placement of pipe may be required in jurisdictional wetlands or reservoirs. Detailed design information will be provided to the appropriate regulatory agencies as postcertification submittals (see Section 9.4.2) to ensure that drainage patterns and characteristics are not further altered from the predevelopment condition.

#### 9.3.7.3 Ecology

An area including the proposed corridors and 1,500 ft beyond either edge of the corridors was evaluated for the potential presence of listed plant or wildlife species. Listed species include those with a designation of endangered, threatened, species of special concern, or commercially exploited that are regulated by the U.S. Fish and Wildlife Service (USFWS), Florida Department of Agriculture and Consumer Services (FDACS), or Florida Fish and Wildlife Conservation Commission (FWC).

Listed species were included for discussion in this application based on their known or expected occurrence in the proposed corridor study areas as residents, migrants, or transients determined on previous identifications in Polk County and the presence of suitable habitat within the proposed corridors. The lists of plant and animal species identified as potentially occurring within or adjacent to the proposed corridors are presented in the following subsections.

The probability of occurrence of these species was based on known locations for such species, recent and historical reports of occurrence in the scientific literature, and the presence of suitable habitat as shown on land use and land cover maps, NWI maps, and recent aerial photographs. Florida Natural Areas Inventory's (FNAI)'s database (2013)

was also used to identify known occurrences of such species. Since the specific locations of many plant species are not known or mapped, and most vertebrates, particularly birds, have extensive ranges and show significant daily and/or seasonal movement and distribution patterns, the ecology section addresses their probability of occurrence in the proposed corridors primarily based on suitable habitat and range. This represents a conservative approach resulting in more diverse species inventories than solely depending on field observations and inclusion of species that may not occur within the confines of the proposed corridors.

In addition to the probability for occurrence, the potential for impacts due to right-of-way clearing, construction, and maintenance or other concerns such as the presence of ecologically unique or valuable habitats was evaluated for the species identified as potentially occurring in or adjacent to the proposed corridors. The following subsections present individual discussions of the species.

**Plant Species**

Fifteen plant species listed as endangered and four species listed as threatened by USFWS are known to occur in Polk County; 44 plant species are listed as endangered and 28 as threatened by the state of Florida (Wunderlin and Hansen, 2008).

Based on the results of an FNAI search of element occurrences, no state- or federally regulated plant species are known to occur within the proposed corridors. Due to the habitat specificity of most listed species known to occur in Polk County (e.g., restricted to sand pine scrub or other scrub habitats) and the disturbed condition of virtually all the habitats crossed by the proposed corridors, no federally listed species and eight state-listed as endangered and seven state-listed as threatened plant species are considered to have a reasonable likelihood for occurrence within the proposed corridors. In addition, seven species listed as commercially exploited by FDACS have the potential to occur within the proposed corridors (Table 9.3.7-2). Given the known range of these species and presence of potential habitat on or adjacent to the proposed corridors, there is a possibility that some or all of these species could occur within or nearby the proposed corridors.

**Wildlife Species**

The presence or potential for occurrence of wildlife species within a given area is primarily related to the presence of suitable habitat for cover, feeding, and reproduction. In general, the type and quality of wildlife habitats vary with vegetation type and structure, surrounding land use, and hydrology. For this reason, wildlife habitat types can frequently be equated with vegetation community types.

To determine the vegetation community (i.e., habitat) types intersected by the proposed corridors, land use and land cover classification maps were obtained from SWFWMD (2011). These maps identified natural community systems as well as developed lands in various stages of disturbance. Using the SWFWMD classification (see Section 9.3.7.1), community systems identified in the proposed corridors that serve as the principal wildlife habitat types include forested mixed uplands, upland hardwood forests, and wetlands such as freshwater marshes, emergent wetlands, bottomland swamps, and mine ponds. Habitats such as improved pasture, agricultural operations, transportation rights-of-way, recently or currently active mined lands, and landscaped residential and commercial development are of relatively lower value to wildlife due to the limited diversity of niches, which is reflected in the lower wildlife species diversities in such habitats.

Developed residential areas offer little habitat value to native vegetation and wildlife. Such areas occur primarily near Mulberry. In contrast, the undeveloped habitats in and along the proposed corridors include a variety of upland and wetland communities representing a wide range of habitat values for specific plant and wildlife species. Areas of potentially high habitat value within the proposed corridor areas include the forested swamp areas and marsh communities found along the North Prong of the Alafia River.

Table 9.3.7-2. Listed Plant Species Known to Occur in Polk County with Potential to Occur Within the Proposed Corridors

| Scientific Name | Common Name | Designated Status FDACS* | Preferred Habitat | Potential for Occurrence |
|---|---|---|---|---|
| *Calopogon multiflorus* | Manyflowered grasspink | E | Damp pinelands, meadows | Low |
| *Matalea floridana* | Florida milkvine | E | Mesic hammock, sandhill | Low |
| *Pecluma pumula* | Plume polypody | E | Hammocks, floodplains | Low |
| *Pecluma ptilodon* | Comb polypody | E | Upland mixed forest | Low |
| *Spiranthes brevilabris* | Small ladiestresses | E | Dry to moist roadsides and fields | Moderate |
| *Thelypteris serrata* | Toothed lattice-vein fern | E | Swamps, floodplains | Moderate |
| *Tillandsia fasciculata* | Cardinal airplant | E | Hammocks, cypress swamps, floodplains | Moderate |
| *Tillandsia utriculata* | Giant airplant | E | Hammocks, floodplains, mixed forest | Moderate |
| *Gonolobus suberosus* | Angularfruit milkvine | T | Rich woods | Moderate |
| *Harrisella porrecta* | Threadroot orchid | T | Hammocks, floodplains, swamps, old orange groves | Moderate |
| *Pteroglossaspis ecristata* | Giant orchid | T | Scrub, sandhill, disturbed areas with xeric soils | Low |
| *Sacoila lanceolata* | Leafless beaked ladiestresses | T | Open pastures, roadsides, wet pine flatwoods | High |
| *Tillandsia balbisiana* | Northern needleleaf | T | Floodplain forest, cypress swamps | Low |
| *Zephyranthes atamasca var. treatiae* | Treat's zephyrlily | T | Floodplain forest, swamps, acid peaty soils | Moderate |
| *Zephyranthes simpsonii* | Simpson's zephyrlily | T | Roadsides, wet flatwoods, meadows | High |
| *Encyclia tampensis* | Butterfly orchid | CE | Hammocks, swamps, floodplains | Moderate |
| *Epidendrum conopseum* | Green-fly orchid | CE | Cypress and hardwood swamps, moist hammocks | Moderate |
| *Lycopodium cernuum* | Nodding club-moss | CE | Wet depressions, ditches, moist areas | High |
| *Osmunda cinnamomea* | Cinnamon fern | CE | Swamps, hydric hammocks, floodplains, marshes | High |
| *Osmunda regalis* | Royal fern | CE | Swamps, floodplains | High |
| *Rhapidophyllum hystrix* | Needle palm | CE | River bluffs, ravine slopes, hammocks, bottomland | Moderate |
| *Zamia* spp. | Coontie | CE | Oak hammocks, pinelands, shell middens | Moderate |

*No federally listed species expected within the proposed corridors.
E = endangered.
T = threatened.
CE = commercially exploited.

Sources: FDACS, 2013.
FNAI, 2013.
ECT, 2013.

The status and potential for occurrence of species recommended for study (i.e., species listed as endangered, threatened, or of special concern) in the study area were determined by a habitat analysis, literature survey, agency data, and ground surveys. A total of 27 vertebrate species, including 8 reptiles and amphibians, 17 birds, and 2 mammals, were identified as species occurring or possibly occurring in the study area. The status and potential for occurrence of these vertebrate species in and along the proposed corridor areas are summarized in Table 9.3.7-3 and discussed in the following paragraphs.

**Amphibians**

**Gopher Frog (*Rana capito*)**—The gopher frog is a state-listed species of special concern as identified by FWC. This amphibian is typically considered a commensal species to the gopher tortoise. Therefore, habitat requirements tend to be xeric upland habitats that support gopher tortoise populations. Along the proposed corridors wherever gopher tortoise habitats may be found, there is a low likelihood this species may be present.

**Reptiles**

**American Alligator (*Alligator mississippiensis*)**—The alligator is listed as threatened due to similarity of appearance by USFWS and a species of special concern by FWC. This reptile would almost certainly be present in wetlands and water bodies along the proposed corridors.

**Eastern Indigo Snake (*Drymarchon corais couperi*)**—This distinctive large, black snake can occur in suitable habitats throughout Florida. It has a wide range of habitat preferences and prey species. Often considered as a gopher tortoise commensal, it can be found in xeric habitats, but also uses more mesic habitats. There is a low likelihood it would be found along the proposed corridors. Both USFWS and FWC list the indigo snake as a threatened species. No FNAI records were found for this species in either corridor.

Table 9.3.7-3. Listed Wildlife Species Potentially Occurring in the Tampa Electric Reclaimed Water Pipeline Corridor Study Areas

| Common Name | Scientific Name | Designated Status* | | Likelihood of Occurrence within Proposed Corridors |
|---|---|---|---|---|
| | | USFWS | FWC | |
| Amphibians | | | | |
| Gopher frog | *Rana capito* | — | SSC | Low—wherever gopher tortoises are found |
| Reptiles | | | | |
| American alligator | *Alligator mississippiensis* | T(S/A) | SSC | High—wetlands and water bodies throughout the corridor areas |
| Eastern indigo snake | *Drymarchon corais couperi* | T | — | Low—wherever gopher tortoises are found |
| Blue-tailed mole skink | *Eumeces egregious lividus* | T | — | Low—no suitable habitat found along the corridors; no records exist for the study area (FNAI) |
| Gopher tortoise | *Gopherus polyphemus* | — | T | Low—may be found in more xeric portions of study area |
| Sand skink | *Neoseps reynoldsi* | T | — | Low—no suitable habitat found in the corridor areas, although some records exist for the general study area (FNAI) |
| Florida pine snake | *Pituophis melanoleucus mugitus* | — | SSC | Low—no suitable habitat found in corridor areas; no records exist within study area (FNAI) |
| Short-tailed snake | *Stilosoma extenuatum* | — | T | Low—no suitable habitat found in corridor areas; no records exist within study area (FNAI) |
| Birds | | | | |
| Florida grasshopper sparrow | *Ammodramus savannarum floridanus* | E | — | Low—no suitable habitat exists along the corridors |
| Florida scrub jay | *Aphelocoma coerulescens* | T | — | Low—scrub habitat along portions of the corridors; no records exist for the study area (FNAI) |
| Limpkin | *Aramus guarauna* | — | SSC | Moderate—riverine system habitat present in corridor areas; however, no records exist from study area (FNAI) |
| Florida burrowing owl | *Athene cunicularia floridana* | — | SSC | Low—prefers dry, well drained pastures; no records exist for study area (FNAI) |

Table 9.3.7-3. Listed Wildlife Species Potentially Occurring in the Tampa Electric Reclaimed Water Pipeline Corridor Study Areas (Continued, Page 2 of 3)

| Common Name | Scientific Name | Designated Status* | | Likelihood of Occurrence within Proposed Corridors |
|---|---|---|---|---|
| | | USFWS | FWC | |
| Crested caracara | *Caracara cheriway* | T | — | Low—could be observed foraging along open areas within corridors |
| Little blue heron | *Egretta caerula* | — | SSC | High—suitable habitats along corridors; wading bird colonies known within 0.5 mile of proposed corridors, and individual records exist for study area (FNAI) |
| Snowy egret | *Egretta thula* | — | SSC | High—suitable habitats along corridors; wading bird colonies known within 0.5 mile, (FNAI) |
| Tricolored heron | *Egretta tricolor* | — | SSC | High—suitable habitats along corridors; wading bird colonies known within 0.5 mile of proposed corridors, and individual records exist for study area (FNAI) |
| White ibis | *Eudocimus albus* | — | SSC | High—suitable habitats along corridors; wading bird colonies known within 0.5 mile of proposed corridors |
| Florida sandhill crane | *Grus canadensis pratensis* | — | T | Moderate—wet pastures and marshes along corridors |
| Bald eagle‡ | *Haliaeetus l. leucocephalus* | — | — | Moderate—numerous phosphate lakes exist in the area for foraging; listed because of protective buffers afforded active nest sites |
| Wood stork | *Mycteria americana* | E | — | High—suitable habitats along corridors; breeding colony known within 0.5 mile of proposed corridors, as well as individual records in existence within study area (FNAI) |
| Red-cockaded woodpecker | *Picoides borealis* | E | — | Low—suitable old growth pine trees absent from corridor areas |
| Roseate spoonbill | *Platalea ajaja* | — | SSC | Low—more coastal species, but could be found foraging inland |
| Everglades snail kite | *Rostrhamus sociabilis plumbeus* | E | — | Low—lack of suitable habitat within corridors |
| Least tern | *Sterna antillarum* | — | T | Low—Suitable habitat lacking; no records exist for the corridor areas (FNAI) |

Table 9.3.7-3. Listed Wildlife Species Potentially Occurring in the Tampa Electric Reclaimed Water Pipeline Corridor Study Areas (Continued, Page 3 of 3)

| Common Name | Scientific Name | Designated Status* | | Likelihood of Occurrence within Proposed Corridors |
|---|---|---|---|---|
| | | USFWS | FWC | |
| Mammals | | | | |
| Florida mouse | *Podomys floridanus* | — | SSC | Low—possibly found where gopher tortoises exist; no records from the study area (FNAI) |
| Sherman's fox squirrel | *Sciurus niger shermani* | — | SSC | Low—preferred habitat generally lacking from corridors; no records exist for study area (FNAI) |

* E = endangered.
T = threatened.
T(S/A) = threatened due to similarity in appearance to a federally listed species.
SSC =species of special concern.
†FNAI 2013 records search of rare element occurrences for the study area.
‡The bald eagle has been delisted; however, it is included due to federal protection and recommended nesting buffers.

Sources: FWC, 2013.
USFWS, 2013.
FNAI, 2013.
ECT, 2013.

**Blue-tailed Mole Skink (*Eumeces egregious lividus*)**—This lizard is listed by both federal and state as threatened. Like the sand skink, this species is found along the Lake Wales Ridge and prefers xeric scrub habitats, which are not present in the corridor. Therefore its likelihood of occurrence is low.

**Gopher Tortoise (*Gopherus polyphemus*)**—The gopher tortoise's range in Florida includes the entire study area. It is likely to be found in more xeric habitats along the proposed corridors. Since it prefers burrows in sunny locations, any xeric habitats along existing road or railroad rights-of-way may be particularly suited to this species. However, these drier habitats are limited within the corridors; therefore, the tortoise has a low likelihood of occurrence. FWC currently lists the gopher tortoise as threatened.

**Sand Skink (*Neoseps reynoldsi*)**—This federally threatened species is habitat specific, restricted to rosemary scrub habitats of the Lake Wales Ridge. It occurs in Polk County (FNAI, 2010), but habitats are lacking within the corridor areas. Therefore its likelihood of occurrence is low.

**Florida Pine Snake (*Pituophis melanoleucus mugitus*)**—The Florida pine snake prefers longleaf pine/xeric oak woodlands. No such habitats are found in the corridor areas. FNAI (2013) shows no records for this species for the study area; therefore, its likelihood of occurrence in the corridors is considered low.

**Short-Tailed Snake (*Stilosoma extenuatum*)**—The short-tailed snake is generally restricted to sandhill communities, which are xeric habitats. No xeric habitats are present in the corridor areas. FNAI (2013) indicates no records for this species in the proposed corridors; therefore, it has a low likelihood of occurrence.

**Birds**

**Florida Grasshopper Sparrow (*Ammodramus savannarum floridanus*)**—This bird is also listed as endangered by both regulatory agencies. This is a grassland species usually found around the Lake Okeechobee area. It formerly ranged into Polk County. However,

due to range and habitat limitations, it is considered to have a low likelihood of occurrence within the proposed corridors.

**Florida Scrub Jay (*Aphelocoma coerulescens*)**—The Florida scrub jay prefers xeric scrub habitats generally found along the Lake Wales Ridge of Florida, which is primarily southeast of the study area. No scrub habitat is found along the study areas, and FNAI (2013) revealed no recorded observations from the study areas. Therefore its likelihood of occurrence is low. The scrub jay is listed as threatened by both USFWS and FWC.

**Limpkin (*Aramus guarauna*)**—FWC lists the limpkin as a species of special concern. Its range is primarily north-central Florida, and it is found in slow-moving waterways inhabited by the apple snail. This bird's likelihood of occurrence in the proposed corridors is considered moderate due to the presence of a riverine system within the proposed corridors.

**Burrowing Owl (*Athene cunicularia floridana*)**—The burrowing owl prefers xeric pastures with low vegetation. The proposed corridors cross little such habitat, so its likelihood of occurrence is considered low. No records exist for the study area (FNAI, 2013).

**Crested Caracara (*Caracara cheriway*)**—This bird is listed as threatened by both agencies. The bird is more commonly observed in open cabbage palm prairies and grasslands of Central Florida. While nesting habitat is relatively scarce along the proposed corridors, there is a low possibility the bird could be observed foraging along the open habitats and roadways along the proposed corridors.

**Little Blue Heron (*Egretta caerula*)**—This wading bird is listed as a species of special concern by FWC and is found in suitable wetlands throughout Florida. They prefer freshwater habitats for foraging. This heron may be found foraging in suitable habitats along the proposed corridors.

**Snowy Egret (*Egretta thula*)**—FWC lists snowy egrets, like the other wading birds, as a species of special concern. This bird is widely distributed in Florida in both fresh and saltwater systems. It may occur in wetlands along the proposed corridors.

**Tricolored Heron (*Egretta tricolor*)**—The tricolored heron (formerly called Louisiana heron) is a species of special concern as listed by FWC. It likes estuarine habitats but can be found foraging in almost any wetland system. It may occur along the proposed corridors.

**White Ibis (*Eudocimus albus*)**—The white ibis is actually one of the most common wading birds in Florida, but FWC lists it as a species of special concern. Large flocks of this bird are often seen foraging in shallow marshes or wet pastures. The white ibis is likely to occur along the proposed corridors.

**Florida Sandhill Crane (*Grus canadensis pratensis*)**—The Florida sandhill crane is listed as threatened by FWC. It prefers marshes for nesting and pastures, wet prairies, or farm fields for foraging. Given the potential habitats along the proposed corridors, its likelihood of occurrence is considered moderate.

**Bald Eagle (*Haliaeetus leucocephalus*)**—The bald eagle has been delisted by both the state and federal agencies; however, it is discussed here because it is afforded protection through various federal acts and nest buffer guidelines. The eagle is making a comeback in population numbers in the United States, and, in Florida, eagle nests are becoming more common. No active eagle nests are known to occur in or within 0.5 mile of the proposed corridors. However due to the proximity to numerous lakes and wetlands, the bird's likelihood in the corridors is considered moderate.

**Wood Stork (*Mycteria americana*)**—The wood stork is an endangered species according to both USFWS and FWC. This large bird prefers nesting in cypress swamps. Two known historical nesting colonies (FWC Colony Nos. 616039 and 616114) are found near the proposed corridors. Both colonies are located in Mulberry (USFWS, 2010). Fig-

ure 9.7.3-1 shows these two locations. Individuals of the species almost certainly would be found foraging in marshes, ditches, and phosphate ponds along the proposed corridors.

**Red-Cockaded Woodpecker (*Picoides borealis*)**—The red-cockaded woodpecker is listed as federally endangered. Its unique habitat requirements include old-age pine trees inflicted with red-heart disease, which allows the birds to form cavities in living trees. Since no old-age pine stands are found in the proposed corridors, the bird's likelihood of occurrence is low.

**Roseate Spoonbill (*Platalea ajaja*)**—Roseate spoonbills are a conspicuous bird that nest and primarily forage along the coast. They do occasionally forage inland and therefore may occur in the study areas due to its proximity to Tampa Bay. FNAI (2013) does not report any occurrences around the study areas; therefore, the likelihood of occurrence for the roseate spoonbill is considered low.

**Everglades Snail Kite (Rostrhamus sociabilis plumbeus)**—This endangered bird prefers habitats consisting of slow-moving water with emergent vegetation (such as maidencane or sawgrass). It is typically found in the Lake Okeechobee area southward through the Everglades. Although FNAI lists a few historical sitings north of the PPS site, its likelihood of occurrence in the study areas is considered low.

**Least Tern (*Sterna antillarum*)**—This state-listed threatened species is typically a coastal bird but does occur inland and has been found in Polk County. It prefers nesting of sand or gravel substrates and has been known to nest on dirt roads and roof tops. FNAI (2013) has no records of this bird along the proposed corridors; therefore, its likelihood of occurrence is low.

**Wading Bird Colonies**

FWC (1999), USFWS (2010), and FNAI (2013) do list known locations of several wading bird colonies in the study area, in addition to the two wood stork colonies discussed previously. While none are recorded as occurring within the proposed corridors, one is shown to occur within 0.5 mile of the proposed corridors (see Figure 9.3.7-1): Colony

0 0.25 0.5
Miles

SHEPHERD ROAD
OLD HWY 37
SR 37
MULBERRY
N CHURCH AVE
S CHURCH AVE
SR-60
W CANAL ST
E CANAL ST
616039
WOOD STORK
LITTLE BLUE HERON
TRICOLORED HERON
616114
WOOD STORK
WOOD STORK
616313
CR 640-PINECREST RD
OLD HWY 37
BALD EAGLE

**Legend**

- Half-Mile Area Around Corridors
- Proposed Polk Tie-In Corridor
- Proposed Mulberry Tie-In Corridor
- Water Bird Colony
- Eagle Nest Location
- Threatened and Endangered Species
- Road
- Existing Transmission Line
- Existing Trails
- Certified Corridor
- TECO Property Boundary
- Florida Managed Areas
- Polk Power Plant
- Municipal area

FIGURE 9.3.7-1.
THREATENED AND ENDANGERED SPECIES

Sources: FWC, 1999; USFWS, 2010; Polk County, 2010; FNAI, 2013; ECT,2013.

TECO TAMPA ELECTRIC

No. 616039 located within the city of Lakeland wetlands east of the proposed Polk tie-in corridor.

Since these nests were last reported active in 1999 by FWC, it is unknown if they are currently active, but historical colonies can be reformed from year to year.

**Mammals**

**Florida Mouse (*Podomys floridanus*)**—The Florida mouse is also recognized as a commensal to the gopher tortoise, commonly found residing in tortoise burrows. FWC lists the species as a species of special concern. While gopher tortoises potentially exist within the proposed corridors, the Florida mouse's likelihood of occurrence is considered low. FNAI (2013) reports no records for the study areas.

**Sherman's Fox Squirrel (*Sciurus niger shermani*)**—This squirrel has a low likelihood to occur in the study areas and along the proposed corridors. FWC lists the species as a species of special concern. It would be expected to be found in drier pine flatwoods, xeric oak, or sandhill communities, which are not common along the proposed corridors. FNAI (2013) shows no records of this species within the study areas.

#### 9.3.7.4 Other Environmental Factors

The preceding subsections present relevant environmental information regarding the biological and water resources within and near the reclaimed water pipeline proposed corridors. No additional information has been determined necessary to describe environmental characteristics of these corridors.

## 9.4 EFFECTS OF RIGHT-OF-WAY PREPARATION AND TRANSMISSION LINE CONSTRUCTION

### 9.4.1 CONSTRUCTION TECHNIQUES

The proposed pipeline corridors follow existing SR 37 and railroad rights-of-way for a portion of the proposed Polk tie-in corridor and much of the proposed Mulberry tie-in corridor; therefore, clearing is expected to be minimal. Field reconnaissance indicates public right-of-way along SR 37 is approximately 150 ft wide and covered by short grass.

Pipeline construction methods for most of the corridors' extent will consist of open cut (dig trench, place pipe, backfill, and restore) installation. Some sections of the alignment requiring special crossings will use trenchless jack-and-bore or HDD techniques. Special crossings include pipeline installations crossing under surface or subsurface features that are to be left undisturbed (wetlands, river/stream crossings, rail crossings, roadways, intersections, densely located existing utilities). Decisions regarding the installation method will be made during final design and may be influenced by the results of competitive bidding. Construction limits for special crossings will be defined in the pipeline construction drawings. It is likely that HDD techniques will be employed around the North Prong Alafia River crossing; jack-and-bore installation will be employed where it is feasible to install a bore pit. Drawings, fracture mitigation plans, depths, and borehole diameters will be determined after the design is complete and a construction contractor is selected.

A traditional jack-and-bore installation requires a bore pit to accommodate the boring rig. Any bore pit in this area of Florida would require dewatering. Dewatering plans would be developed once design is complete and a construction contractor selected.

Since the bore rig for directional drills sits above grade, other underground utilities are less likely to interfere with the rig. Also, directional drills can be made deeper than traditional jack-and-bores, which allow directional drills to be more suitable for river crossings and other long drills. The extra depth allows for increased safety during day-to-day operations. HDD uses a precise guidance system that allows the bores to be accurate over a long distance. Furthermore, the use of HDD techniques minimizes impacts to the surrounding area, especially to wetlands such as those associated with the North Prong Alafia River.

Construction equipment will include loaders, graders, dump trucks, directional drilling machines, asphalt paving machines, compactors, pipe handling equipment, and watering trucks.

Construction activities will generally include the ongoing/progressive installation of pipe, valves, and restoration along the full route. Typically, a pipe crew can install approx-

imately 200 ft per day on average; therefore, the full length of pipeline may require approximately 120 crew-days. With two crews, this would take approximately 3 months working straight through. A third or fourth crew would probably be working in parallel for restoration, special crossings, etc. When installation is complete, the pipeline would be pressure-tested for final acceptance. It is reasonable to consider a total construction period of 6 to 7 months for submittals, mobilization, installation, testing, acceptance, and weather/other delays. However, the timetable could change depending on the final pipeline alignment with respect to adjacent utilities, wetlands, number of roadway crossings, weather delays, etc.

Construction equipment will include loaders, graders, dump trucks, directional drilling machines, asphalt paving machines, compactors, pipe handling equipment, and watering trucks.

Access roads are not required for the majority of the corridors where they follow public road rights-of-way. No access road will be constructed across the North Prong Alafia River or its floodplain. This sensitive portion of the route will be constructed using HDD. While it is not anticipated that permanent access roads will be needed along the pipeline corridors at this time, temporary access roads may be needed around the berm of the Lakeland WTS and will be needed in the area around the river crossing. Figure 9.3.4-1 depicts a typical construction road detail.

Where the proposed Polk tie-in corridor does leave SR 37 near Apache Trail, Tampa Electric may require access improvement east of SR 37 to the eastern terminus and at the Lakeland WTS terminus. The land appears fairly open and accessible as is, but this area will be reviewed with the contractor. The rest of the route should provide reasonable access as is.

### 9.4.2 ENVIRONMENTAL RESOURCE PERMIT

Currently certification is sought for corridors in which narrow rights-of-way will be identified. Once the corridors are certified, rights-of-way identified and acquired, and detailed designs finalized, Tampa Electric will provide the information normally found in an envi-

ronmental resource permit application to the reviewing agencies as a postcertification condition, as authorized by Section 62-17.191, F.A.C.

### 9.4.3 SOLID WASTES

Solid wastes generated from right-of-way clearing and pipeline construction typically consist of cleared vegetation and construction-related debris. Solid wastes will be collected and removed for disposal in compliance with state and local landfill regulations, chipped and spread over the right-of-way, or piled and burned within the right-of-way, if allowed and in compliance with local burning ordinances.

### 9.4.4 CHANGES TO VEGETATION, WILDLIFE, AND AQUATIC LIFE

Impacts on terrestrial and aquatic systems and species associated with pipeline right-of-way preparation and construction depend primarily on the location of the selected right-of-way and, to a lesser degree, on clearing and construction techniques.

Through a systematic, environmentally responsive corridor selection process, the crossing of major terrestrial, wetland, and aquatic systems was minimized or avoided to restrict any potential impacts to sensitive habitats and/or endangered and threatened species associated with pipeline construction and maintenance. Where the proposed corridors follow along SR 37 or other roadways, it is not anticipated that pipeline construction or maintenance will have any significant impact on native vegetation, wildlife, or aquatic life. The remaining areas that could be potentially crossed by the pipeline include a number of natural and disturbed upland and wetland community types. Design options will be explored to minimize wetland impacts and provide environmental benefits at the crossing of the Alafia River wetlands. However, with the proposed use of HDD, impacts will minimized and limited to minor vegetative clearing at each end of the drill/pull sites. No aquatic environments will be impacted.

No listed species are anticipated to be impacted by the narrow right-of-way. If the listed gopher tortoise is present along the right-of-way, Tampa Electric will acquire the necessary approvals from FWC to either permanently or temporarily relocate the affected tortoises. No other listed species will be adversely affected by construction of this facility.

### 9.4.5 IMPACT ON HUMAN POPULATIONS

Pipeline construction occurs as a series of tasks generally accomplished in sequence by different specialized crews. Tasks (where necessary) include clearing of right-of-way, excavation, construction of access roads, and cleanup activities. Construction of the both pipelines is expected to take approximately 6 to 7 months. Crew sizes vary depending on the task and usually range in size from 6 to 12 members. Although several crews may work simultaneously along the length of a line, the duration of a crew's activities in any one area will be quite short (usually 1 to 2 days). Inconveniences experienced by residents near the pipeline will be primarily confined to noise from machinery used intermittently at various locations along the rights-of-way during construction and minor traffic disruptions due to use of heavy equipment along road rights-of-way. The construction and associated noise-producing activities are intermittent in nature and will take place only during normal daylight working hours, unless otherwise directed by local permitting agencies.

Population densities in the vicinity of the proposed corridors vary but remain relatively low throughout most of the length of the corridors with the exception of the Paradise Lakes and Angler's Green Mobile Home Parks in the northwestern portion of proposed Polk tie-in corridor. This corridor is characterized by undeveloped land, wetlands/lakes, recreational lands, manufactured homes, school property, and industrial uses north of SR 60. The proposed Mulberry tie-in corridor is characterized by low-density residential (single-family) homes, wetlands, commercial uses, light industrial uses, and vacant land. In the area of the two mobile home parks with the highest residential density, the proposed Polk tie-in corridor is collocated with SR 37. Only a short section (approximately 0.3 mile) of the proposed Mulberry tie-in corridor is not collocated with SR 37.

The proposed Polk tie-in corridor incorporates portions of the eastern portions of the Paradise Lakes and Angler's Green Mobile Home Parks. There is a residential neighborhood located west of the Mulberry High School property that lies within the 0.25-mile buffer of this corridor. The proposed Mulberry tie-in corridor is located near the Kingsford neighborhood, located east of SR 37 just south of the Mulberry city limits and incorpo-

rates part of the neighborhood known as South Mulberry (from west of Belmont Street east to SR 37 and from north of Dean Street to Cameron Street).

Impacts to the human population attributable to construction and possible maintenance of the proposed pipelines will be minimal due to the avoidance of much of the existing development in the region by the proposed corridors, collocation with existing linear facility rights-of-way where feasible, and short duration of construction activities in any one location.

### 9.4.6 IMPACT ON REGIONAL SCENIC, CULTURAL, AND NATURAL LANDMARKS

No such resources are known to occur within the proposed corridors; therefore, no impacts are anticipated.

### 9.4.7 IMPACT ON ARCHAEOLOGICAL AND HISTORICAL SITES

As discussed in Section 9.3.6.5, according to DHR's Master Site File, there are several known archaeological/historical features found in the proposed corridors. Every effort will be made to avoid these sites. This can be accomplished with alignment of the actual right-of-way.

If requested by DHR, an archaeological site assessment survey will be conducted of archaeologically sensitive areas (as determined by DHR) within the eventual right-of-way, and the report of the survey will be submitted to DHR for review. If any sites within the rights-of-way are determined to be significant, DHR will be consulted regarding appropriate procedures for either preservation or excavation of the significant site(s).

If unforeseen archaeological finds are discovered during construction, DHR will be notified. Following a determination of the importance of such finds, Tampa Electric will work with DHR to assess mitigation measures necessary to minimize adverse impacts.

## 9.5 POSTCONSTRUCTION IMPACTS AND EFFECTS OF MAINTENANCE

### 9.5.1 MAINTENANCE TECHNIQUES

A water pipeline typically requires little maintenance. Other than monitoring flow rates and operating pressure, water pipeline maintenance activities include:

- Monthly windshield inspection of the pipeline to look for evidence of leaks exhibited by seepage and/or depressions along the alignment.
- Monthly inspection of the air release valves to ensure proper operation.
- Exercising of valves on a monthly basis. Depending on the number of valves implemented into the final design, this activity could take approximately 2 days.
- Pipeline pigging. However, due to the characteristics of the water, pipeline pigging may not be required. A more thorough analysis of the need for pigging should be done during design activities.

The eventual right-of-way will primarily follow public road rights-of-way, so it will be maintained accordingly as FDOT currently maintains it.

Maintenance manpower requirements should be likewise minimal. The windshield inspection and inspection of air release valves can be accomplished by a single person in 1 day.

Maintenance activities for the pump station should include onsite inspection twice weekly to observe the general condition of the pumps, electrical components, and piping. The activities should include inspection for leaks, unusual pump/motor sounds, security of the pump house, etc.

Telemetry will provide a general view of pump and pipeline health through monitoring of flow rates, pump speed, system pressure, etc. Such monitoring could be accomplished during the normal course of control room activities.

### 9.5.2 MULTIPLE USES

Tampa Electric rights-of-way are frequently used for other purposes compatible with the operation and maintenance of pipelines. Multiple use of a pipeline right-of-way typically includes grazing, limited agricultural operations, controlled landscaping, recreational uses such as golf courses and hiking/biking trails, and other compatible activities that do not interfere with Tampa Electric's full use of the right-of-way and the function of the pipeline facilities. In most cases, Tampa Electric obtains an easement for the construction, maintenance, and operation of its pipeline, as well as the rights of ingress and egress to that line from any other party that retains the fee-simple interest in the property. The easement may provide for acceptable use of the right-of-way by the fee owner for activities that do not interfere with Tampa Electric's full use of its easement and the function of the pipeline facilities.

### 9.5.3 CHANGES IN SPECIES POPULATIONS

Section 9.3.7 discusses the status and potential for occurrence of important species in and along the proposed corridors. The absence of significant impacts to important species is not coincidental, as efforts were made during the corridor selection study to avoid potentially sensitive habitats as much as practicable. The avoidance of ecologically unique or valuable habitats was achieved primarily through collocating the corridors with existing public roadway rights-of-way and other linear rights-of-way or traversing open lands, phosphate-mined lands, or existing agricultural lands.

No changes in local species populations are expected as a result of pipeline presence and maintenance. Displacement of individuals from the immediate right-of-way area that may occur during construction activities will be temporary. Habitat use will decline during actual construction due to noise and human presence. Such avoidance behavior will enable wildlife to escape direct impacts from construction activities, although some losses of individual vertebrates (e.g., rodents, amphibians) may occur during right-of-way clearing. These displaced species are expected to reinhabit the right-of-way areas after construction. No animal or plant species are expected to be permanently displaced from the transmission line right-of-way area.

Due to necessary maintenance practices in the right-of-way, a decrease in structural diversity may occur in formerly forested areas (i.e., permanent loss of a tree canopy layer), which are limited in the proposed corridors. Since most of the corridors follow existing road rights-of-way, previously disturbed lands, or active agricultural lands, clearing of canopy vegetation will be minimal. The long-term effects of this pipeline and associated maintenance should not adversely affect regional populations of any listed species. Through a vegetation maintenance program and proper culverting of access roads where needed, both existing habitat and hydrology will be maintained.

### 9.5.4 EFFECTS OF PUBLIC ACCESS

Much of the proposed pipeline corridors follow public road rights-of-way where access is currently not prohibited. Where Tampa Electric crosses private ownerships, Tampa Electric will install locked gates where the right-of-way enters and exits through existing fencing. That way, no new public access will be allowed along these portions of the right-of-way except by Tampa Electric maintenance crews.

### 9.5.5 OTHER POSTCONSTRUCTION EFFECTS

No other postconstruction effects are anticipated. Water pipelines are unobtrusive once constructed, and no other effects are anticipated.

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# 9.1 MAPS

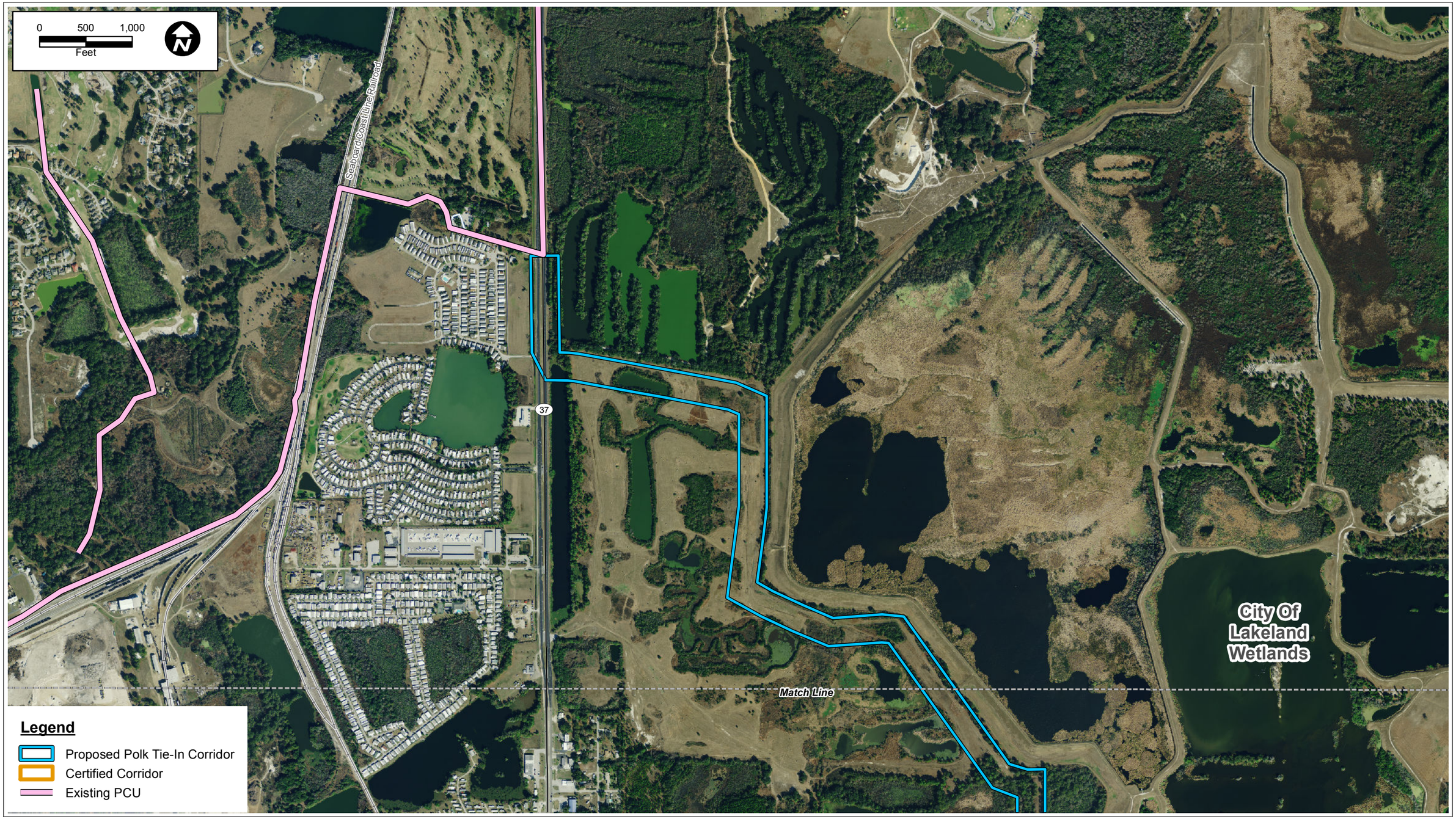



FIGURE 9.1.0-1.
2011 AERIAL OF PROPOSED POLK TIE-IN CORRIDOR

SHEET 1 OF 3

Sources: FDOT, 2011; ECT, 2013.

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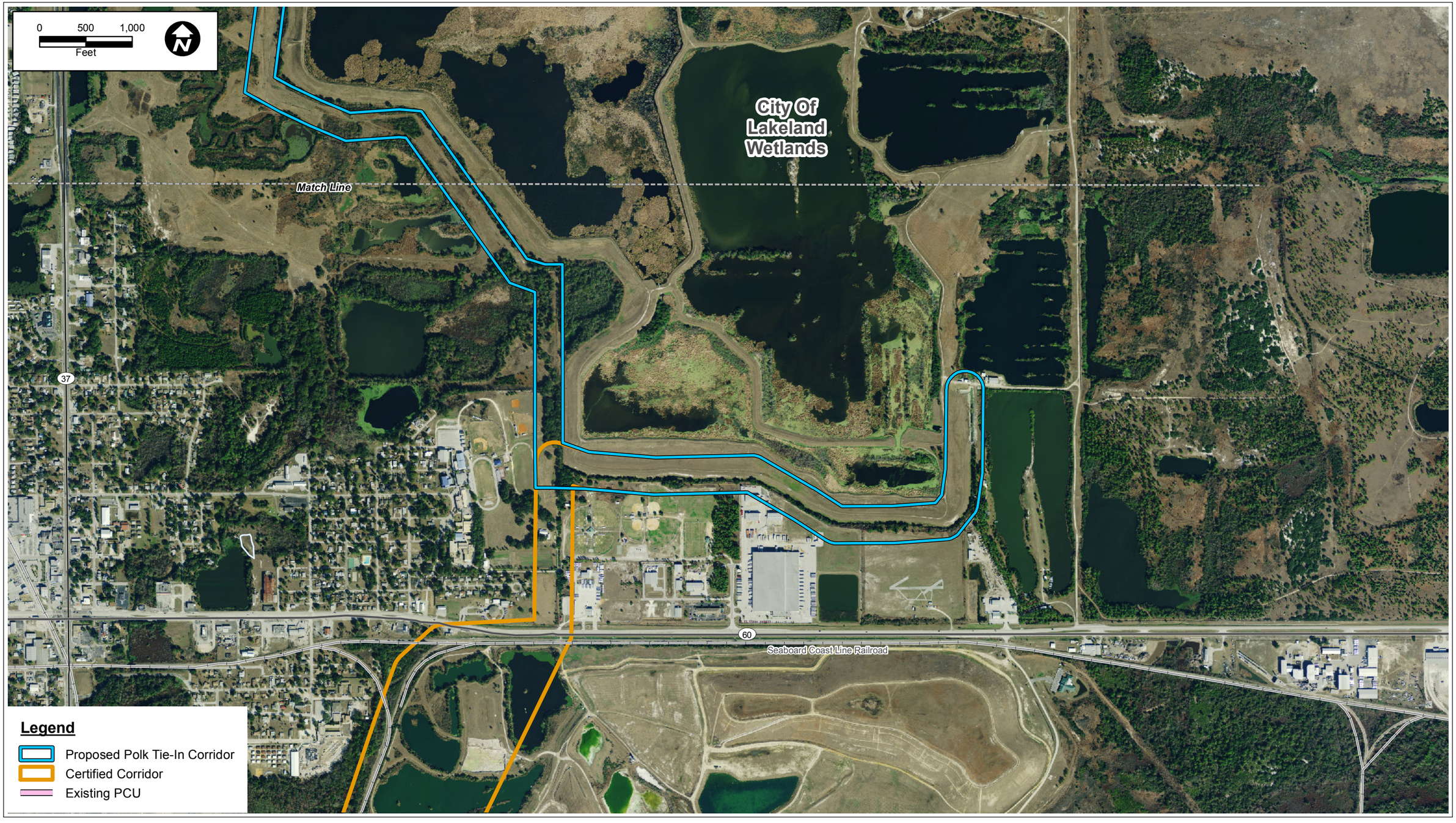



FIGURE 9.1.0-1.
2011 AERIAL OF PROPOSED POLK TIE-IN CORRIDOR

SHEET 2 OF 3

Sources: FDOT, 2011; ECT, 2013.

TECO TAMPA ELECTRIC

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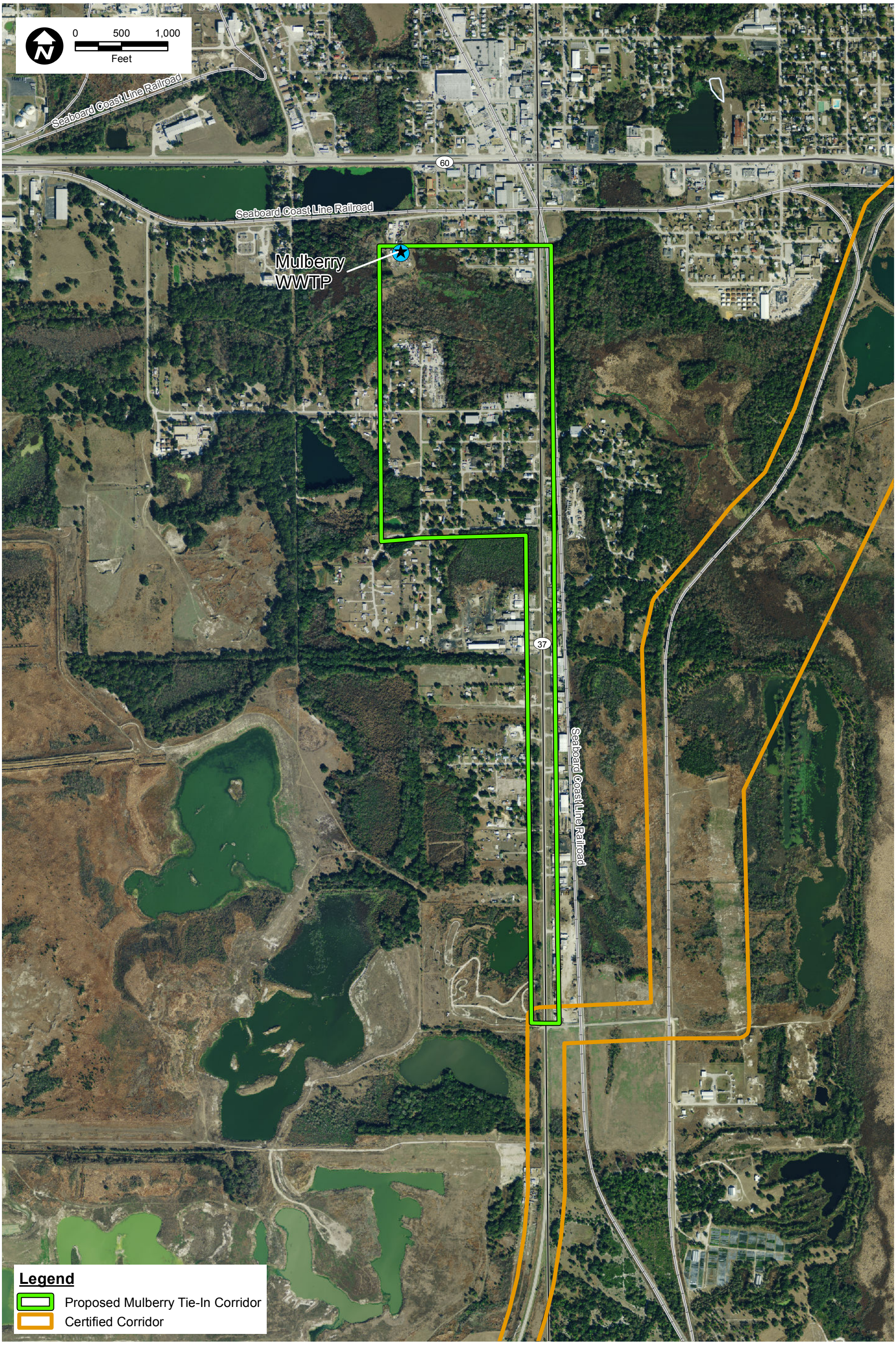



FIGURE 9.1.0-1. SHEET 3 OF 3

2011 AERIAL OF PROPOSED MULBERRY TIE-IN CORRIDOR

Sources: FDOT Imagery, 2011; ECT, 2013.

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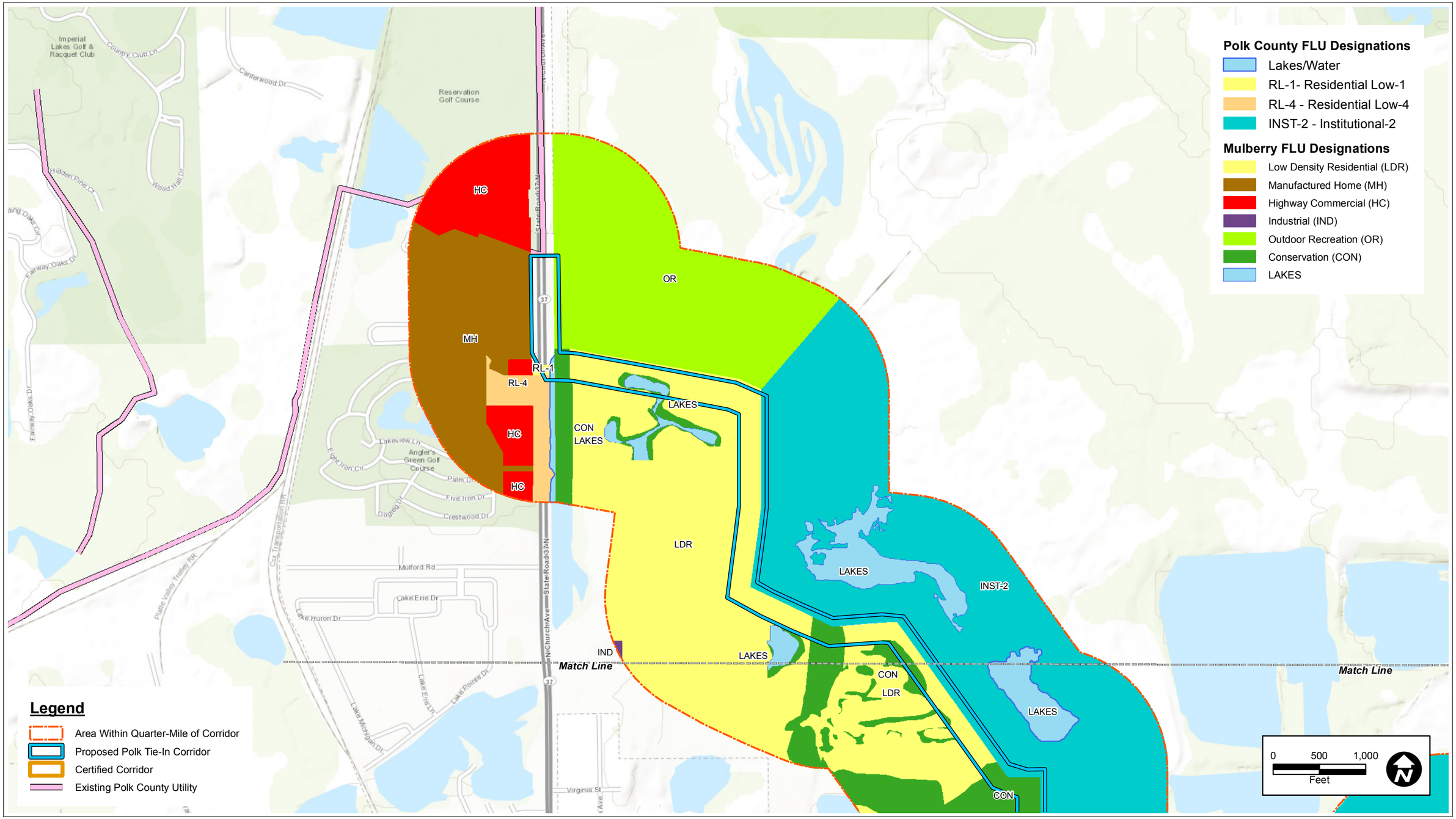



FIGURE 9.1.0-2.
FUTURE LAND USE (FLU) DESIGNATIONS WITHIN ONE QUARTER-MILE OF PROPOSED POLK TIE-IN CORRIDOR

SHEET 1 OF 3

Sources: FDOT Imagery, 2011; Polk County, 2013; City of Mulberry, 2012; ECT, 2013.

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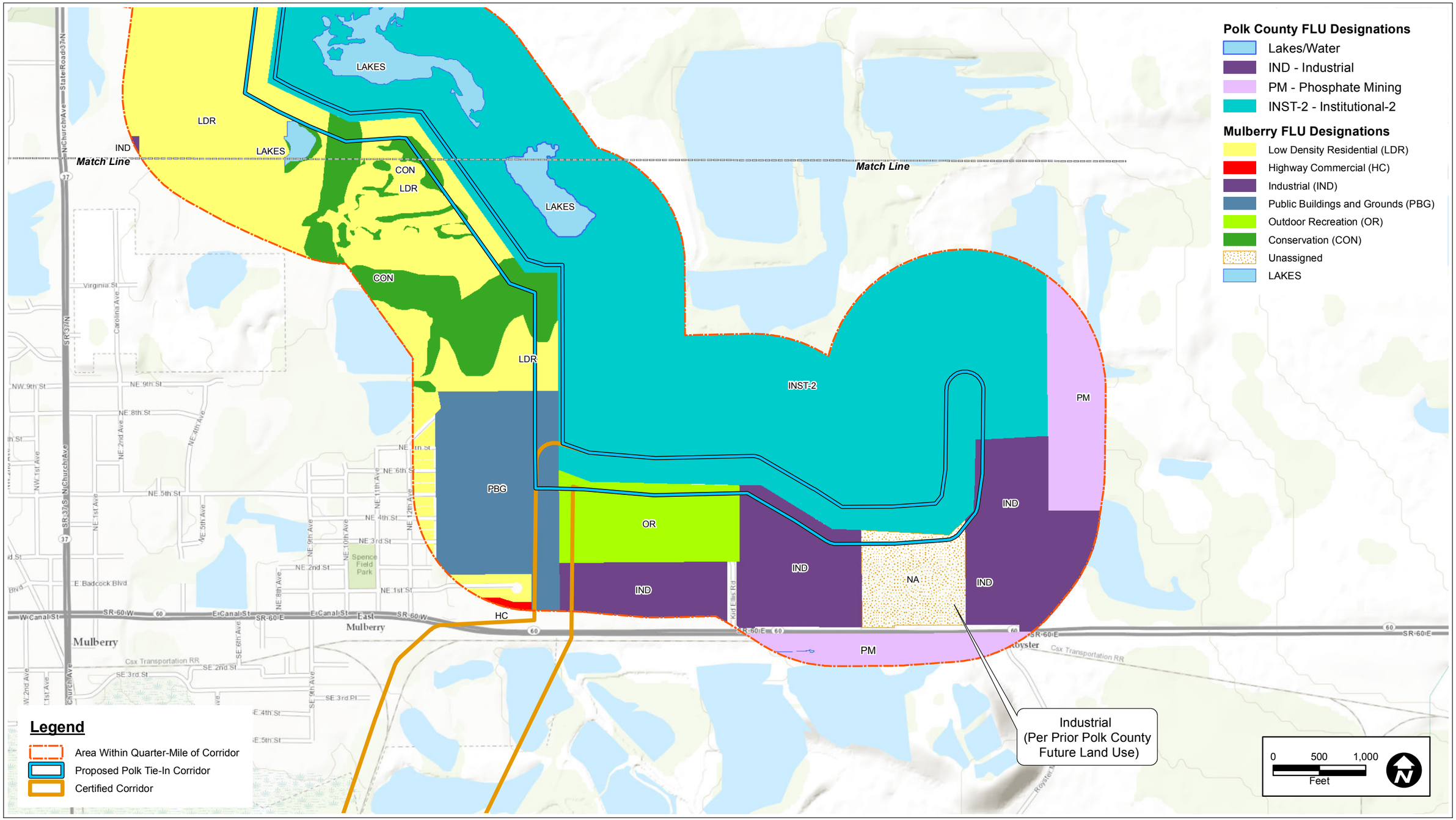



FIGURE 9.1.0-2.
FUTURE LAND USE (FLU) DESIGNATIONS WITHIN ONE QUARTER-MILE OF PROPOSED POLK TIE-IN CORRIDOR

SHEET 2 OF 3

Sources: FDOT Imagery, 2011; Polk County, 2013; City of Mulberry, 2012; ECT, 2013.

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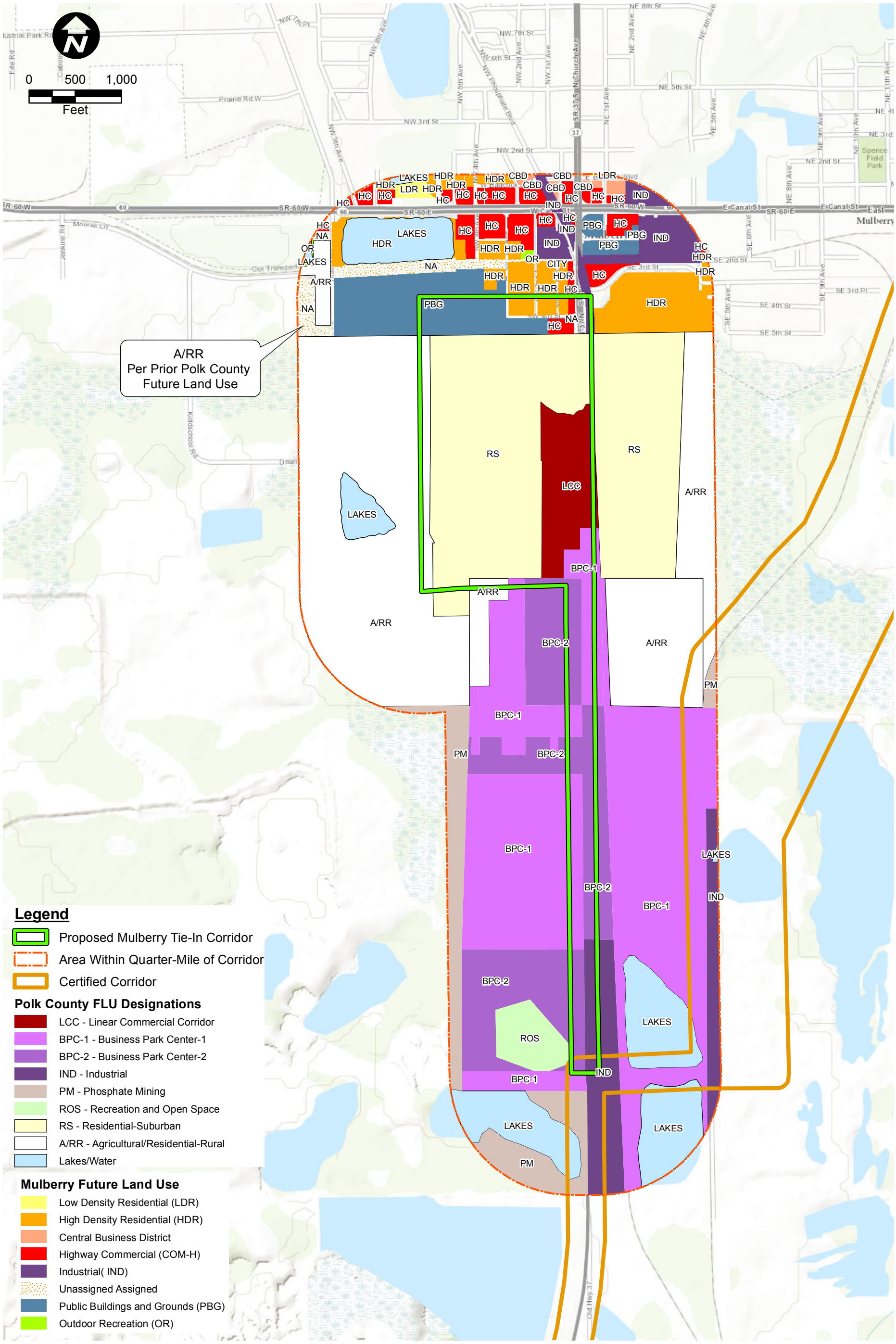





FIGURE 9.1.0-2. SHEET 3 OF 3

FUTURE LAND USE (FLU) DESIGNATIONS WITHIN ONE QUARTER-MILE OF PROPOSED MULBERRY TIE-IN CORRIDOR

Sources: FDOT Imagery, 2011; Polk County, 2013; City of Mulberry, 2012; ECT, 2013.

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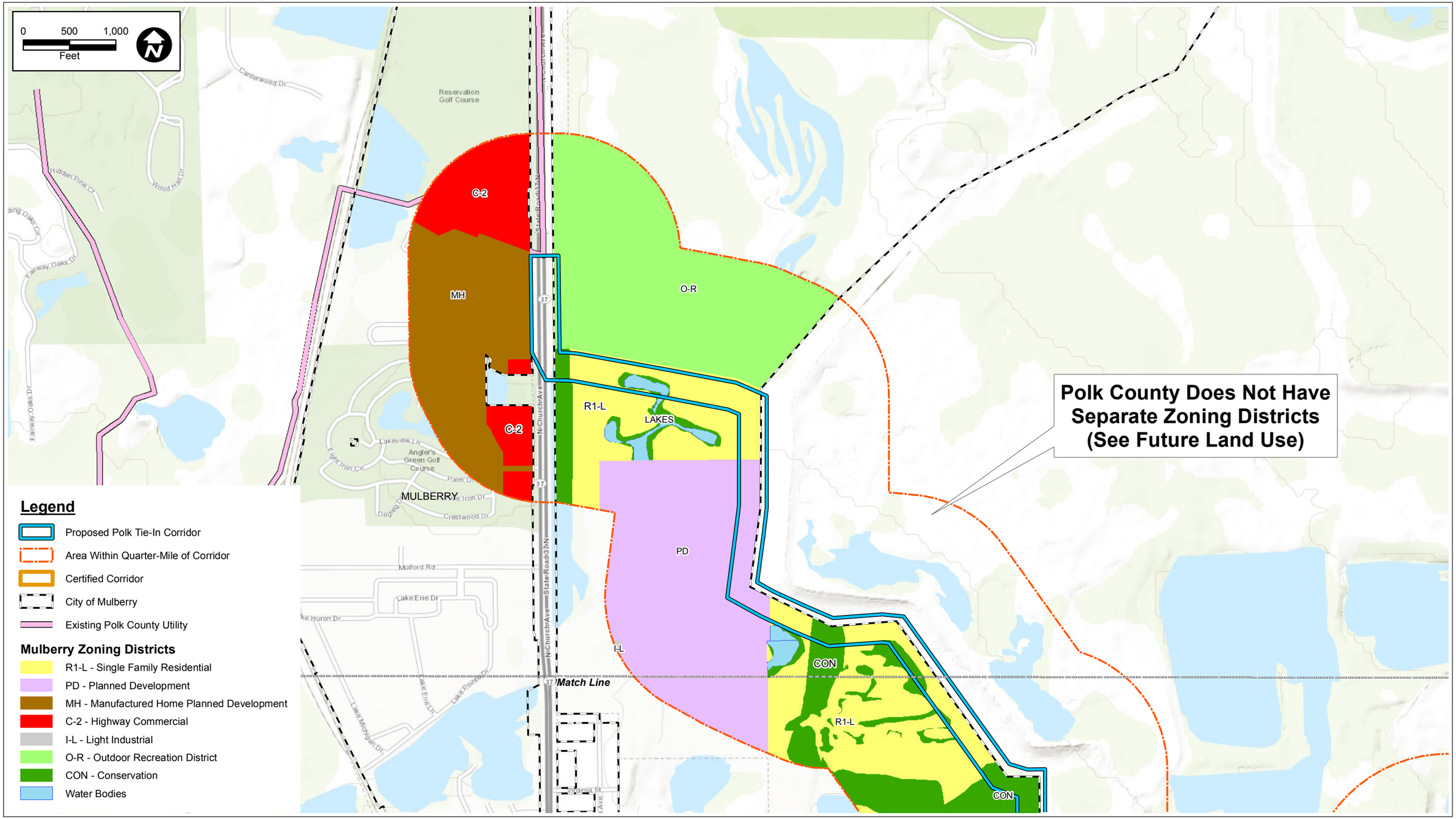



FIGURE 9.1.0-3.
ZONING
ZONING DISTRICTS WITHIN ONE QUARTER-MILE OF PROPOSED POLK TIE-IN CORRIDOR

SHEET 1 OF 18

Sources: FDOT Imagery, 2011; Polk County, 2013; City of Mulberry, 2012; ECT, 2013.

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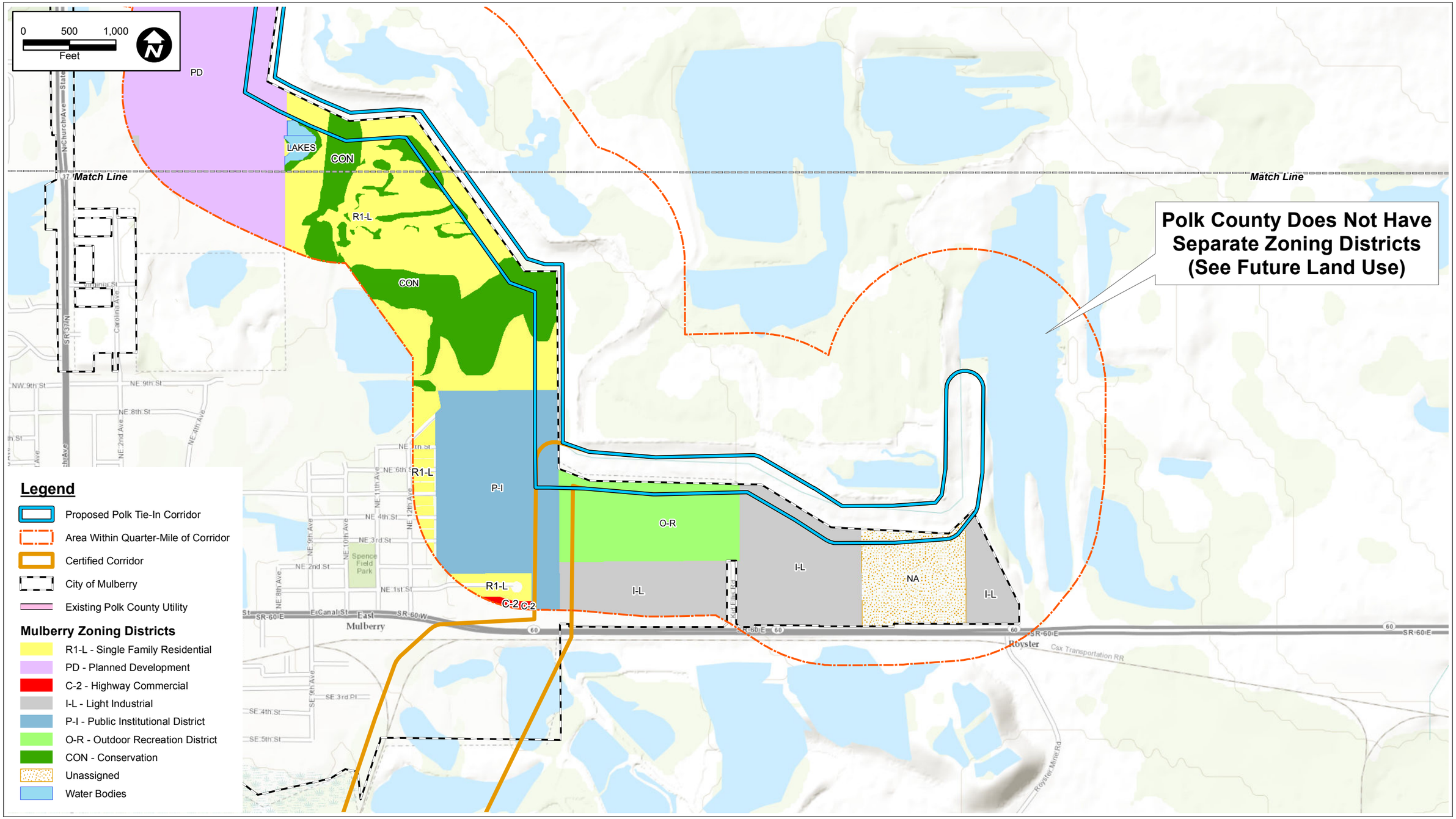



FIGURE 9.1.0-3.
ZONING
ZONING DISTRICTS WITHIN ONE QUARTER-MILE OF PROPOSED POLK TIE-IN CORRIDOR

SHEET 2 OF 18

Sources: FDOT Imagery, 2011; Polk County, 2013; City of Mulberry, 2012; ECT, 2013.

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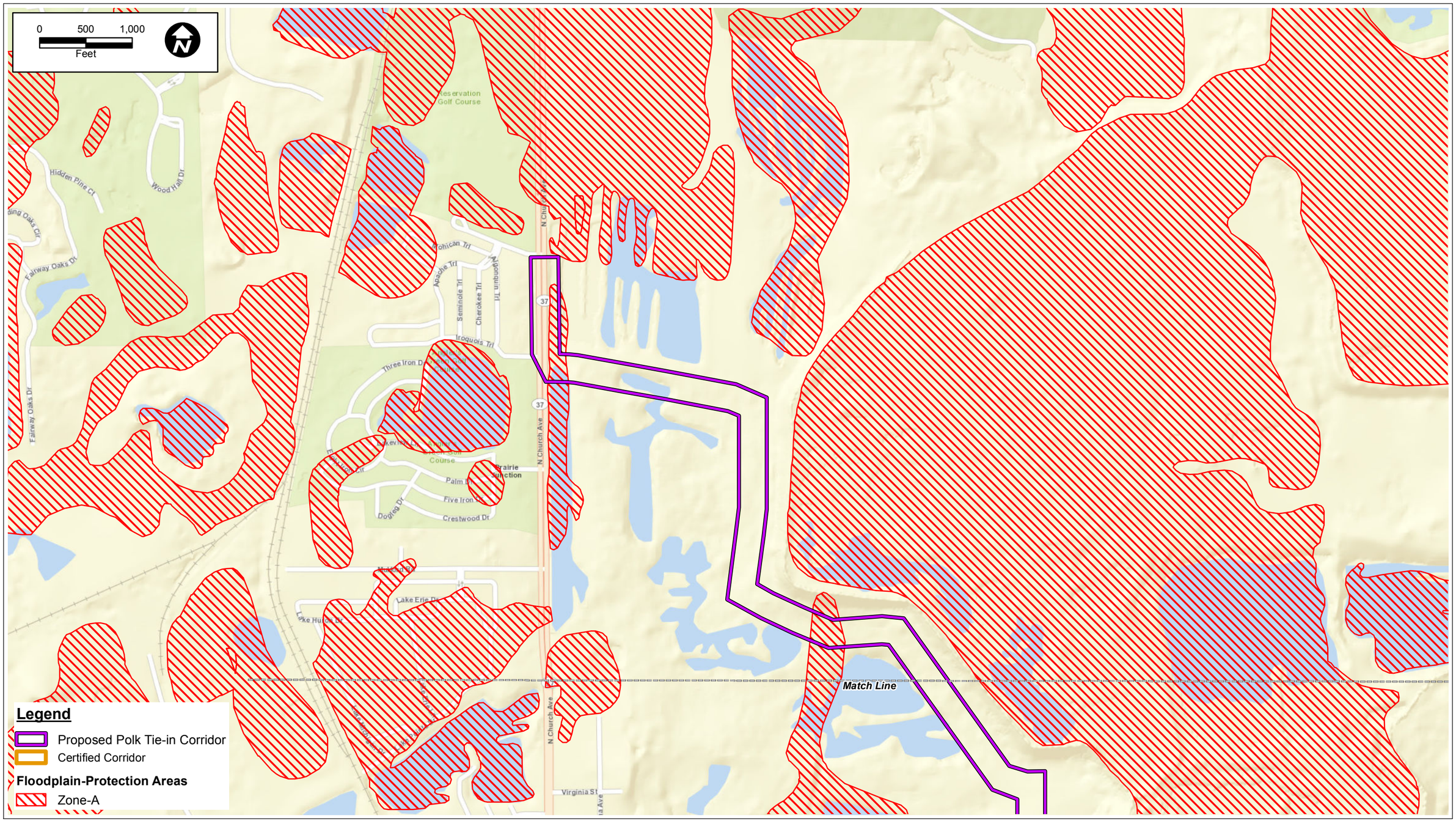



FIGURE 9.1.0-3.
ZONING
POLK COUNTY FLOODPLAIN OVERLAY DISTRICT OF PROPOSED POLK TIE-IN CORRIDOR

SHEET 3 OF 18

Sources: Polk County, 2010; ECT, 2013.

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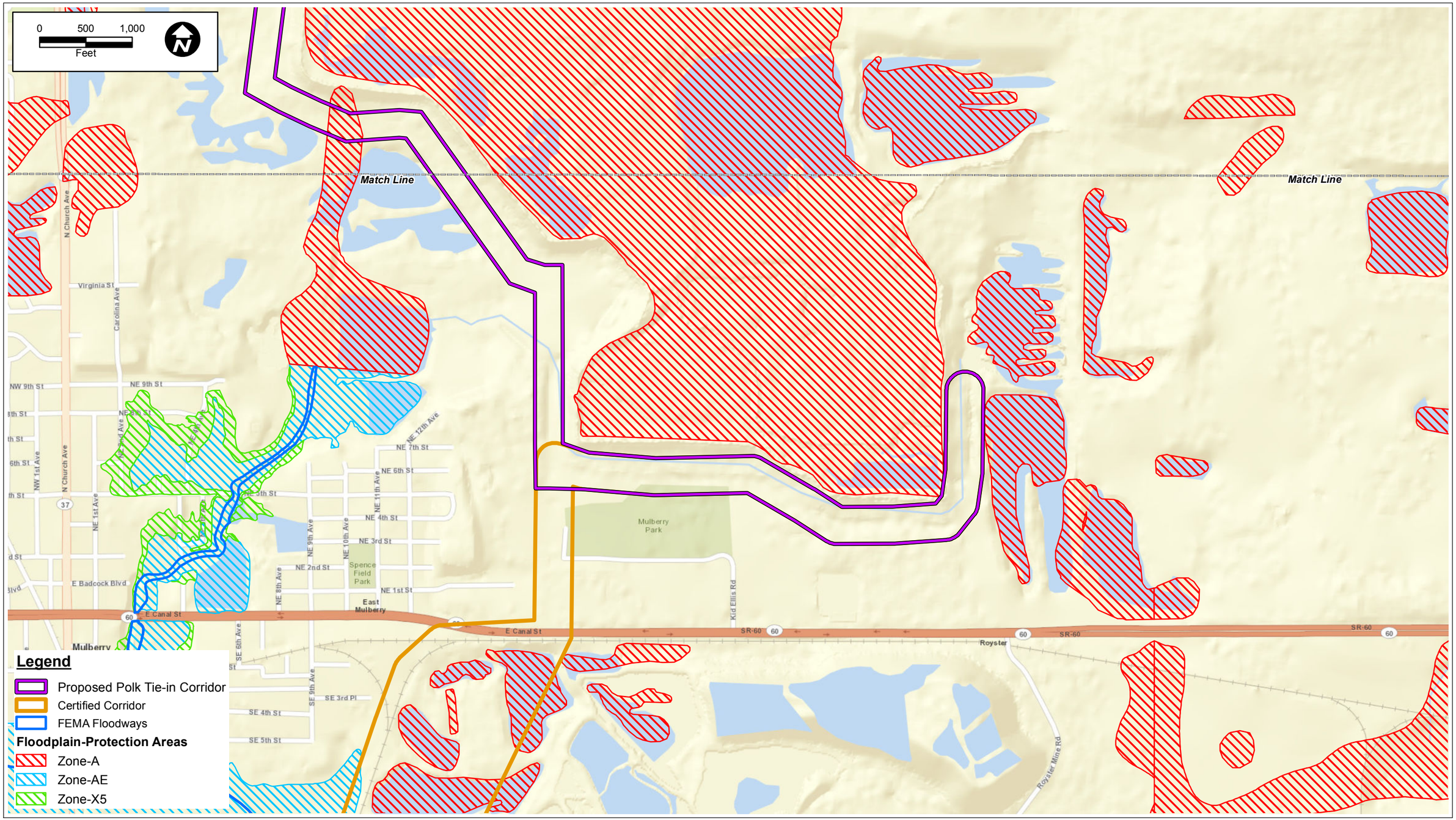



FIGURE 9.1.0-3.
ZONING
POLK COUNTY FLOODPLAIN OVERLAY DISTRICT OF PROPOSED POLK TIE-IN CORRIDOR

SHEET 4 OF 18

Sources: Polk County, 2010; ECT, 2013.

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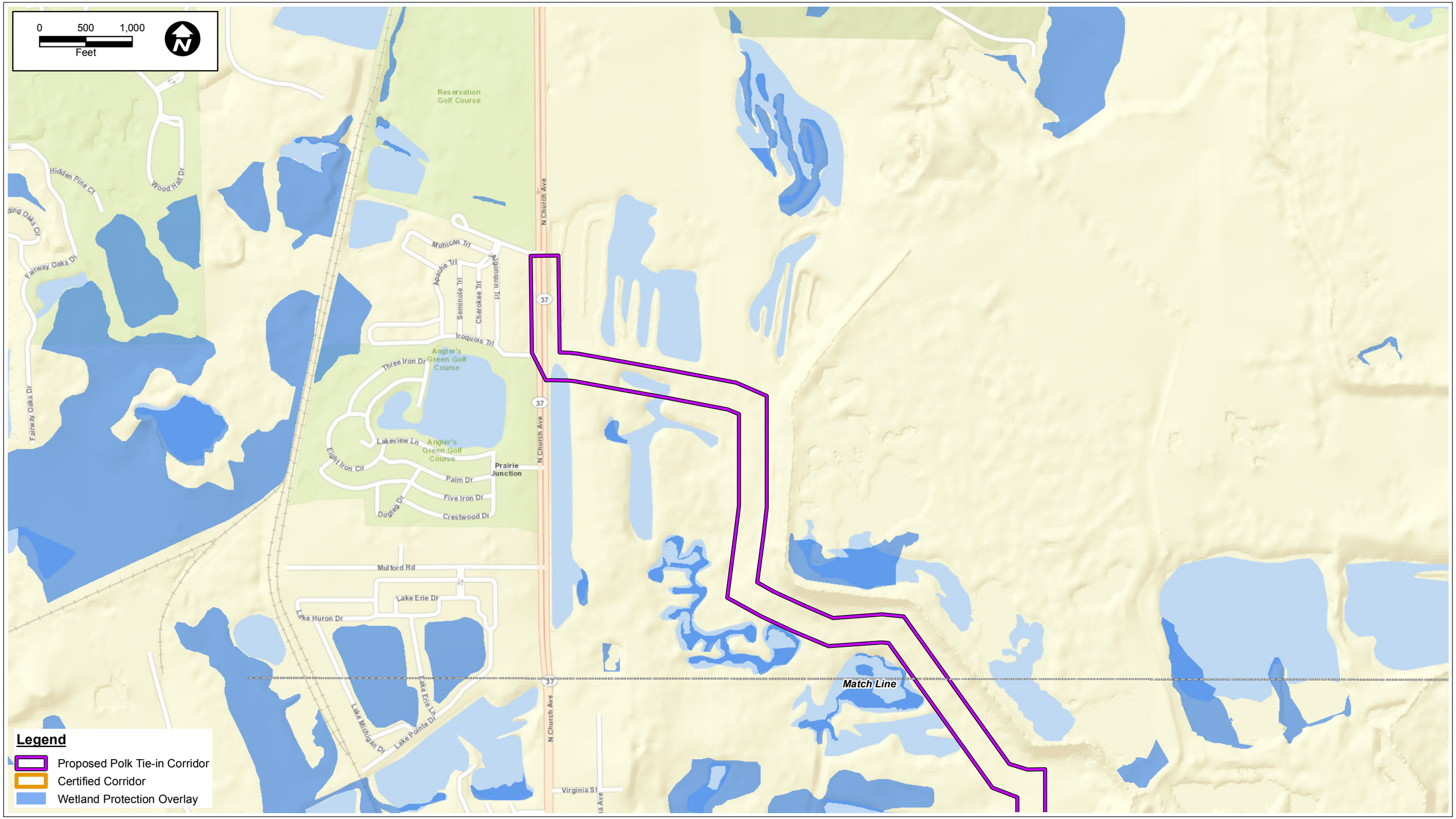



FIGURE 9.1.0-3.
ZONING
POLK COUNTY WETLAND PROTECTION OVERLAY DISTRICT OF PROPOSED POLK TIE-IN CORRIDOR

SHEET 5 OF 18

Sources: Polk County, 2010; ECT, 2013.

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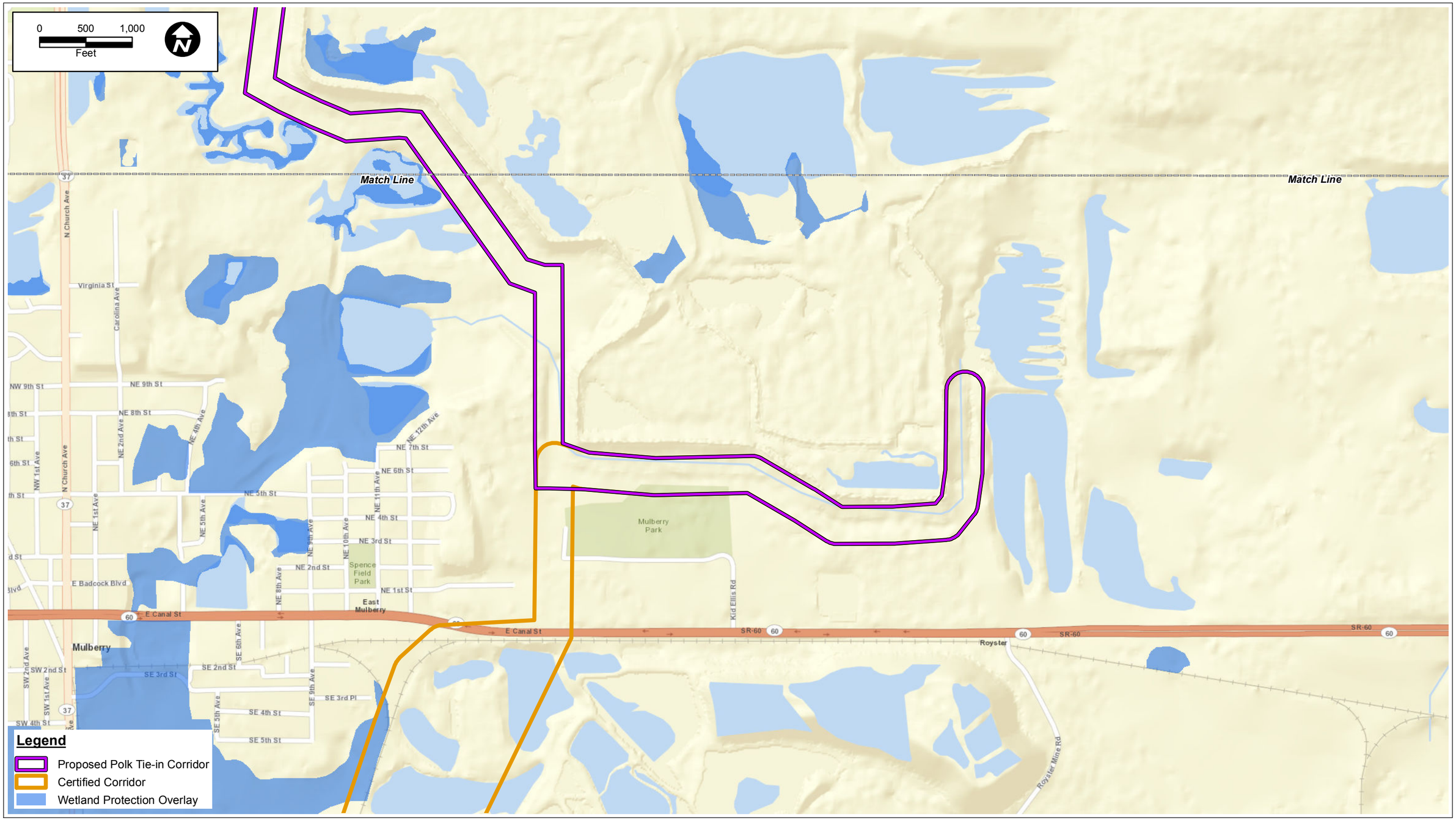



FIGURE 9.1.0-3.
ZONING
POLK COUNTY WETLAND PROTECTION OVERLAY DISTRICT OF PROPOSED POLK TIE-IN CORRIDOR

SHEET 6 OF 18

Sources: Polk County, 2010; ECT, 2013.

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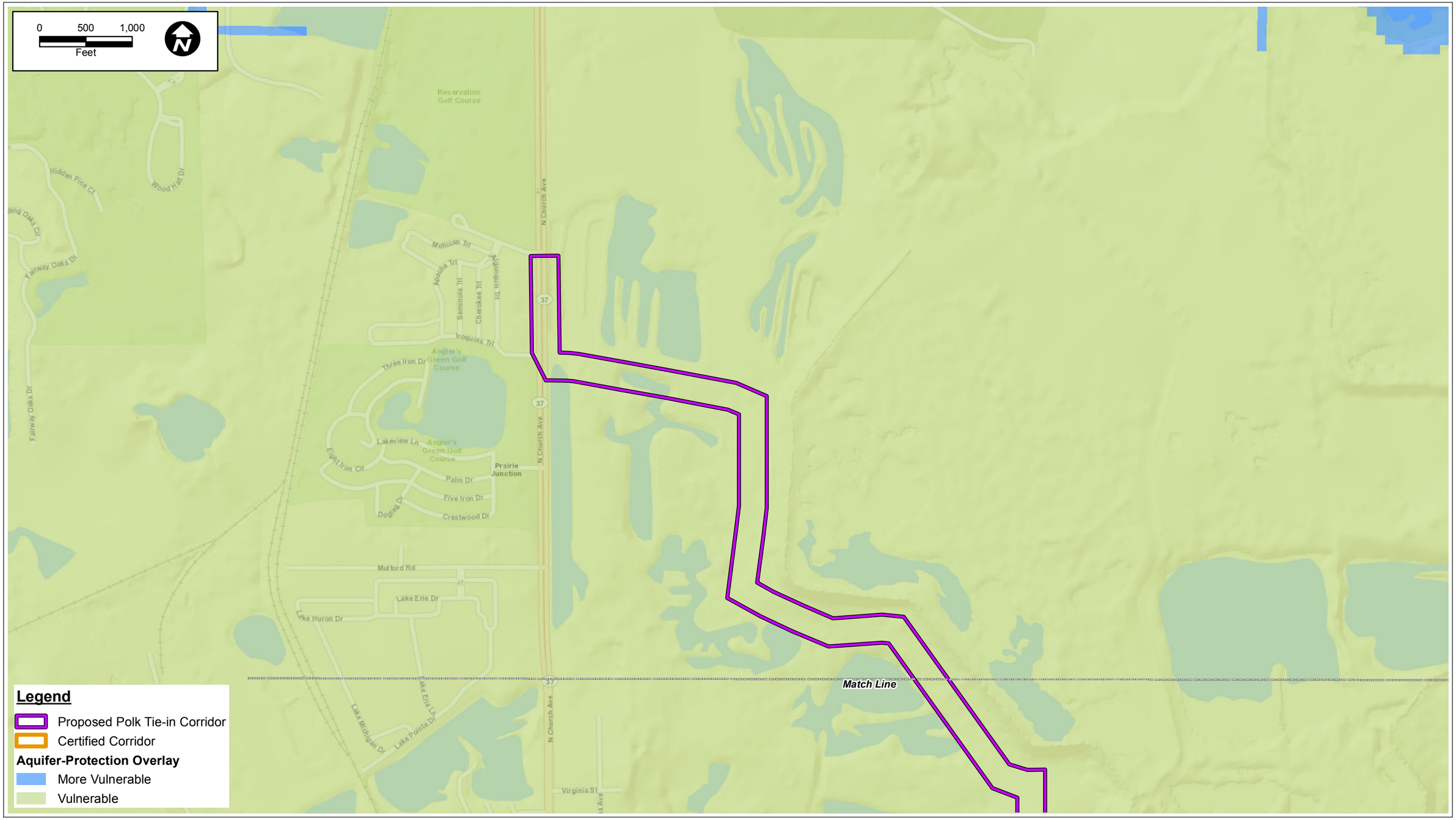



FIGURE 9.1.0-3.
ZONING
POLK COUNTY AQUIFER PROTECTION OVERLAY DISTRICT OF PROPOSED POLK TIE-IN CORRIDOR

SHEET 7 OF 18

Sources: Polk County, 2010; ECT, 2013.

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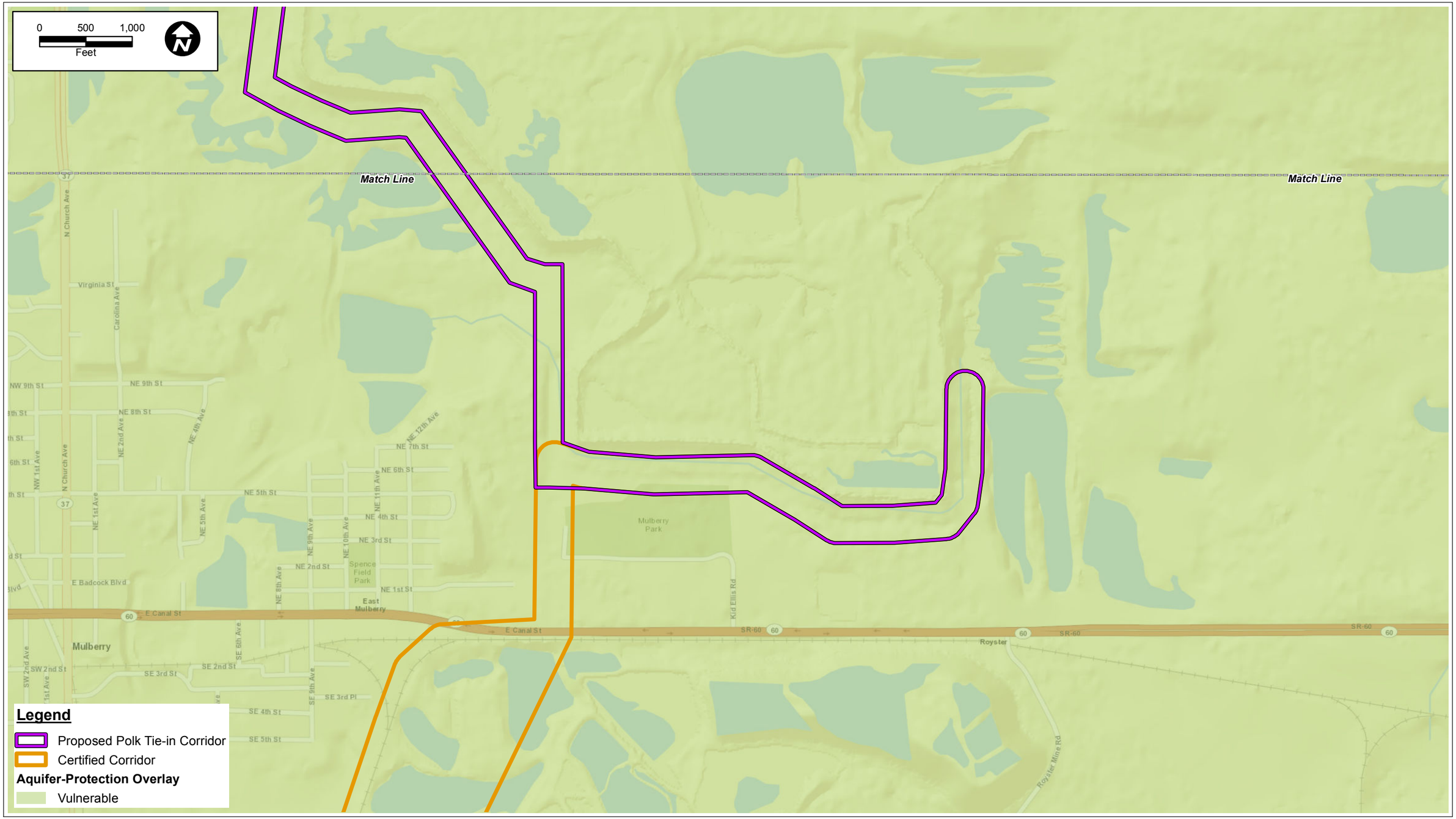



FIGURE 9.1.0-3.
ZONING
POLK COUNTY AQUIFER PROTECTION OVERLAY DISTRICT OF PROPOSED POLK TIE-IN CORRIDOR

SHEET 8 OF 18

Sources: Polk County, 2010; ECT, 2013.

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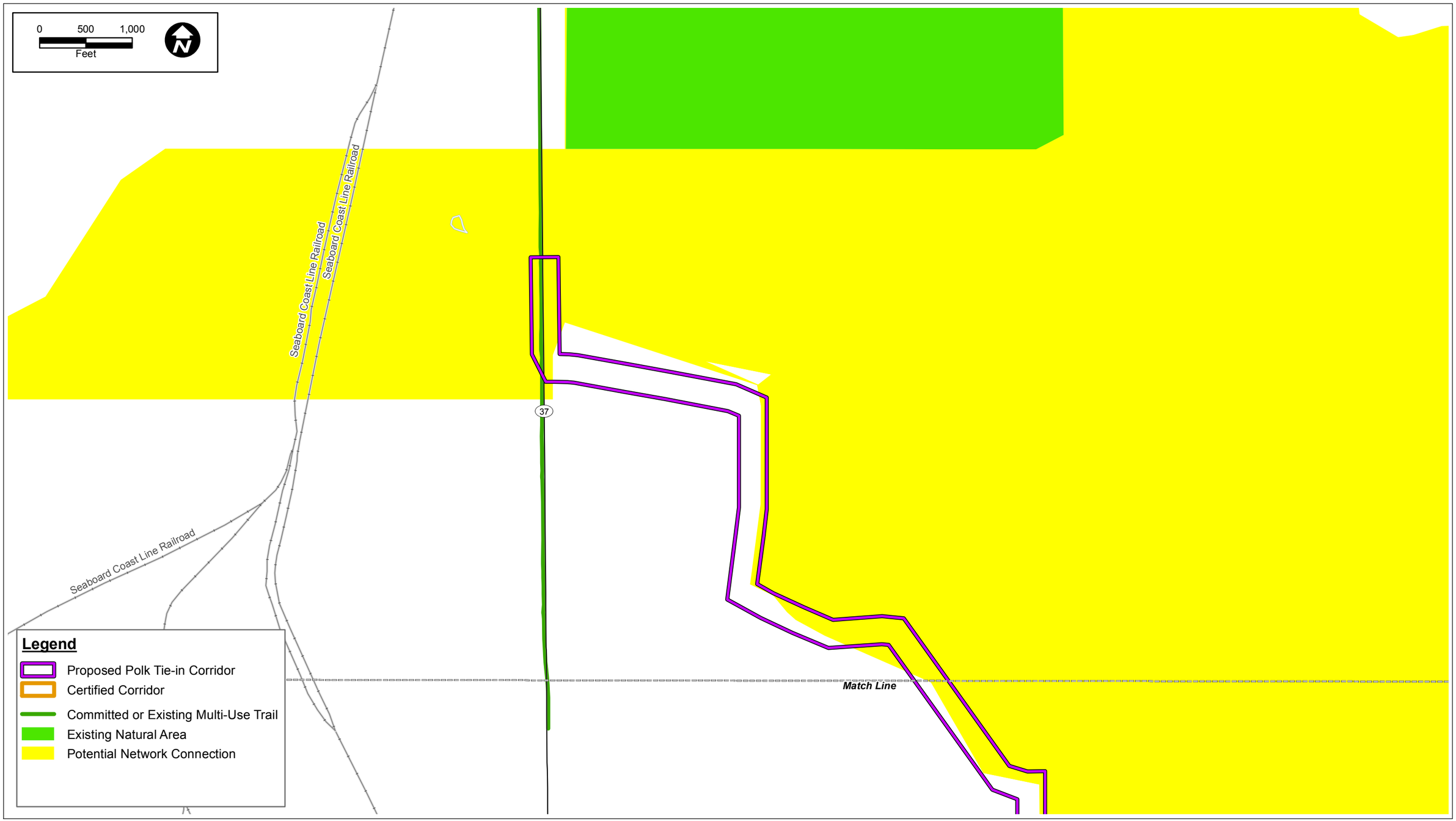



FIGURE 9.1.0-3.
ZONING
POLK COUNTY GREEN DISTRICTS OF PROPOSED POLK TIE-IN CORRIDOR

SHEET 9 OF 18

Sources: Polk County, 2010; ECT, 2013.

TECO TAMPA ELECTRIC

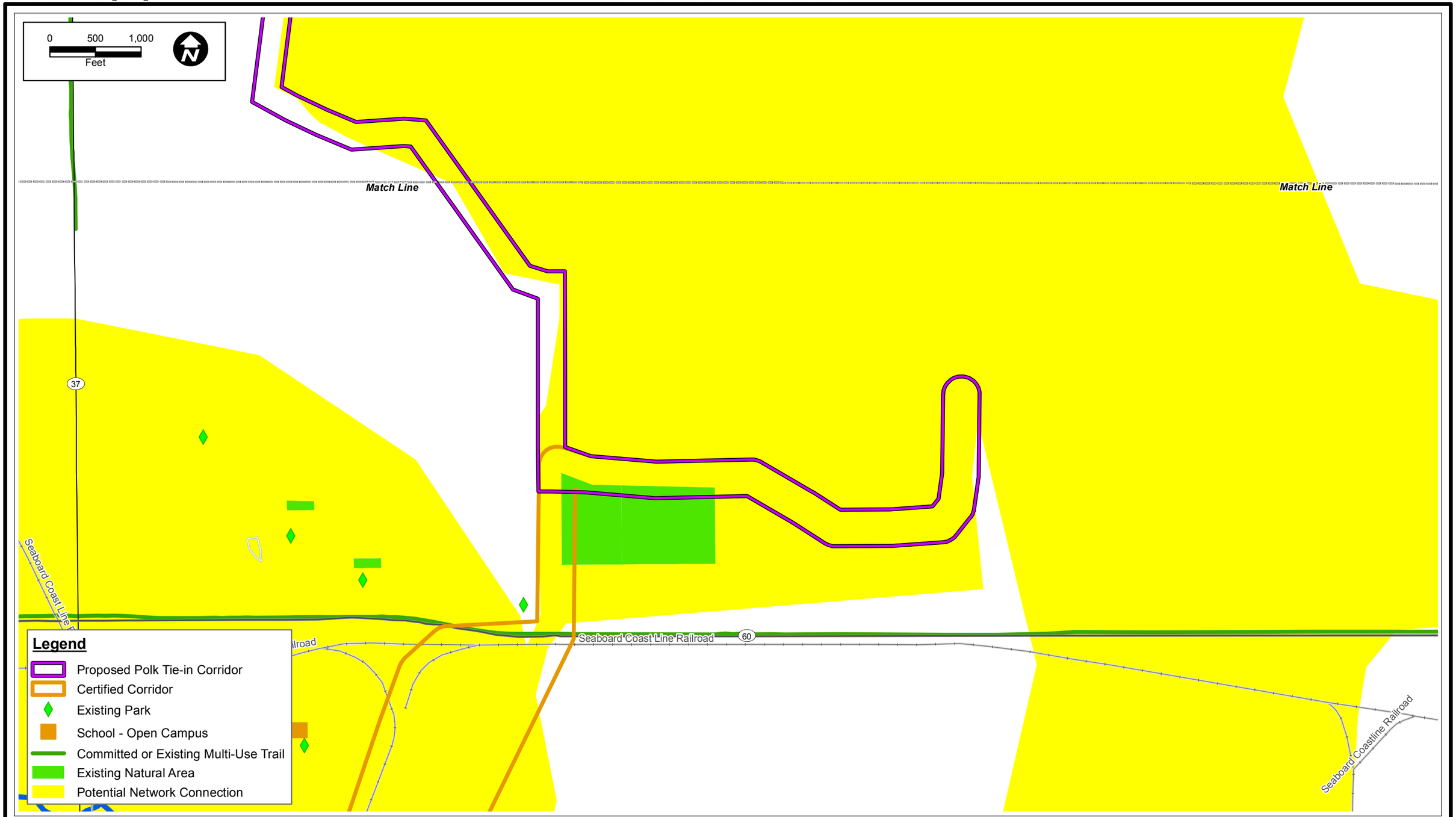



FIGURE 9.1.0-3.
ZONING
POLK COUNTY GREEN DISTRICTS OF PROPOSED POLK TIE-IN CORRIDOR

SHEET 10 OF 18

Sources: Polk County, 2010; ECT, 2013.

TECO TAMPA ELECTRIC

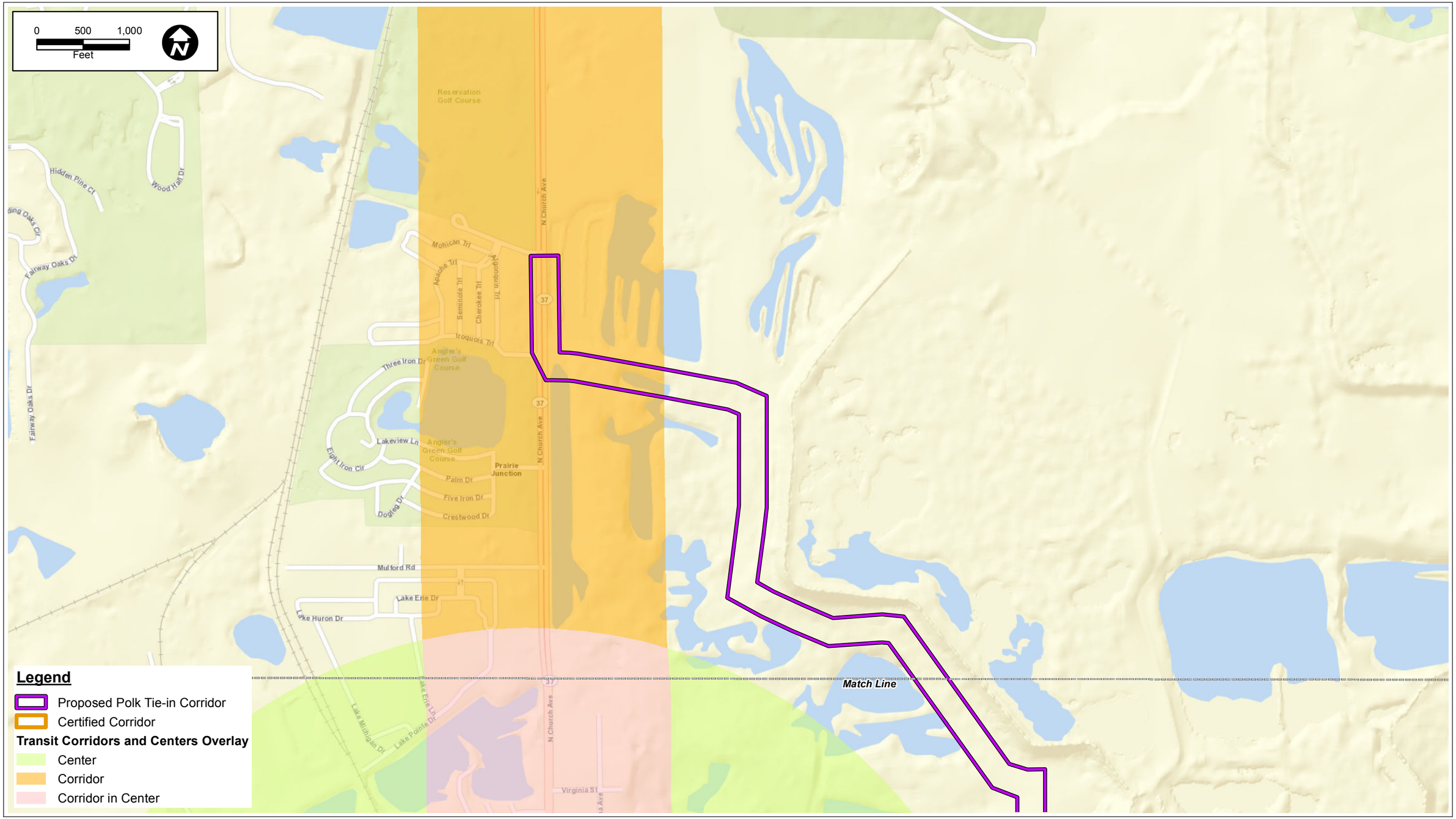



FIGURE 9.1.0-3.
ZONING
POLK COUNTY TRANSIT CORRIDORS AND CENTERS OVERLAY DISTRICT OF PROPOSED POLK TIE-IN CORRIDOR

SHEET 11 OF 18

Sources: Polk County, 2010; ECT, 2013.

TECO TAMPA ELECTRIC

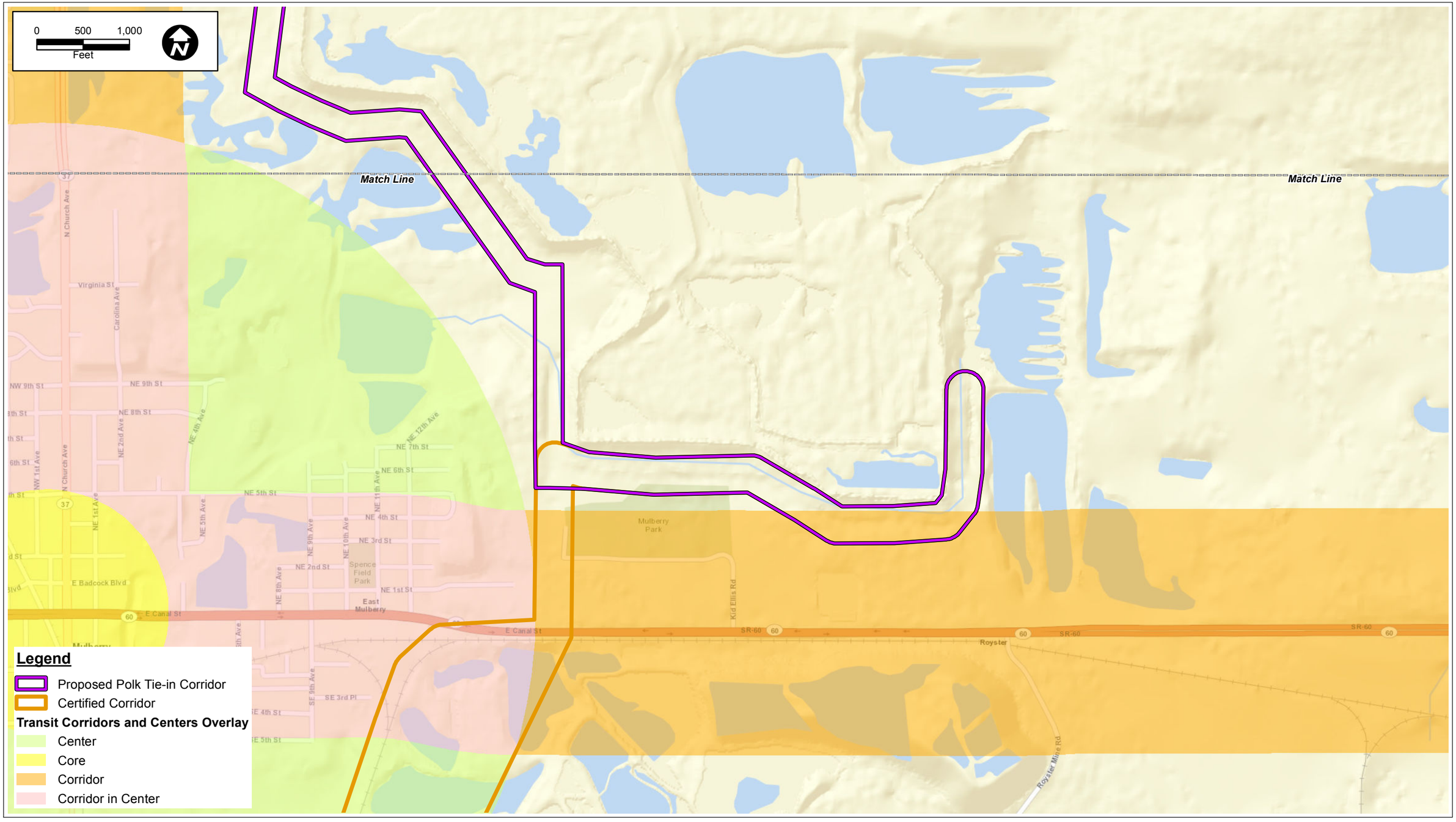



FIGURE 9.1.0-3.
ZONING
POLK COUNTY TRANSIT CORRIDORS AND CENTERS OVERLAY DISTRICT OF PROPOSED POLK TIE-IN CORRIDOR

SHEET 12 OF 18

Sources: Polk County, 2010; ECT, 2013.

TECO TAMPA ELECTRIC

0 500 1,000
Feet

**Polk County Does Not Have Separate Zoning Districts (See Future Land Use)**

## Legend

- Proposed Mulberry Tie-In Corridor
- Area Within Quarter-Mile of Corridor
- City of Mulberry

**Mulberry Zoning**

- R1-L - Single Family Residential
- R1-H - Multiple Family Residential
- C-1 - Central Business District
- C-2 - Highway Commercial
- I-H - Heavy Industrial
- P-I - Public Institutional District
- O-R - Outdoor Recreation District
- Unassigned

FIGURE 9.1.0-3.
ZONING
ZONING DISTRICTS WITHIN ONE QUARTER-MILE OF PROPOSED MULBERRY TIE-IN CORRIDOR

SHEET 13 OF 18

Sources: FDOT Imagery, 2011; Polk County, 2013; City of Mulberry, 2012; ECT, 2013.

TECO TAMPA ELECTRIC

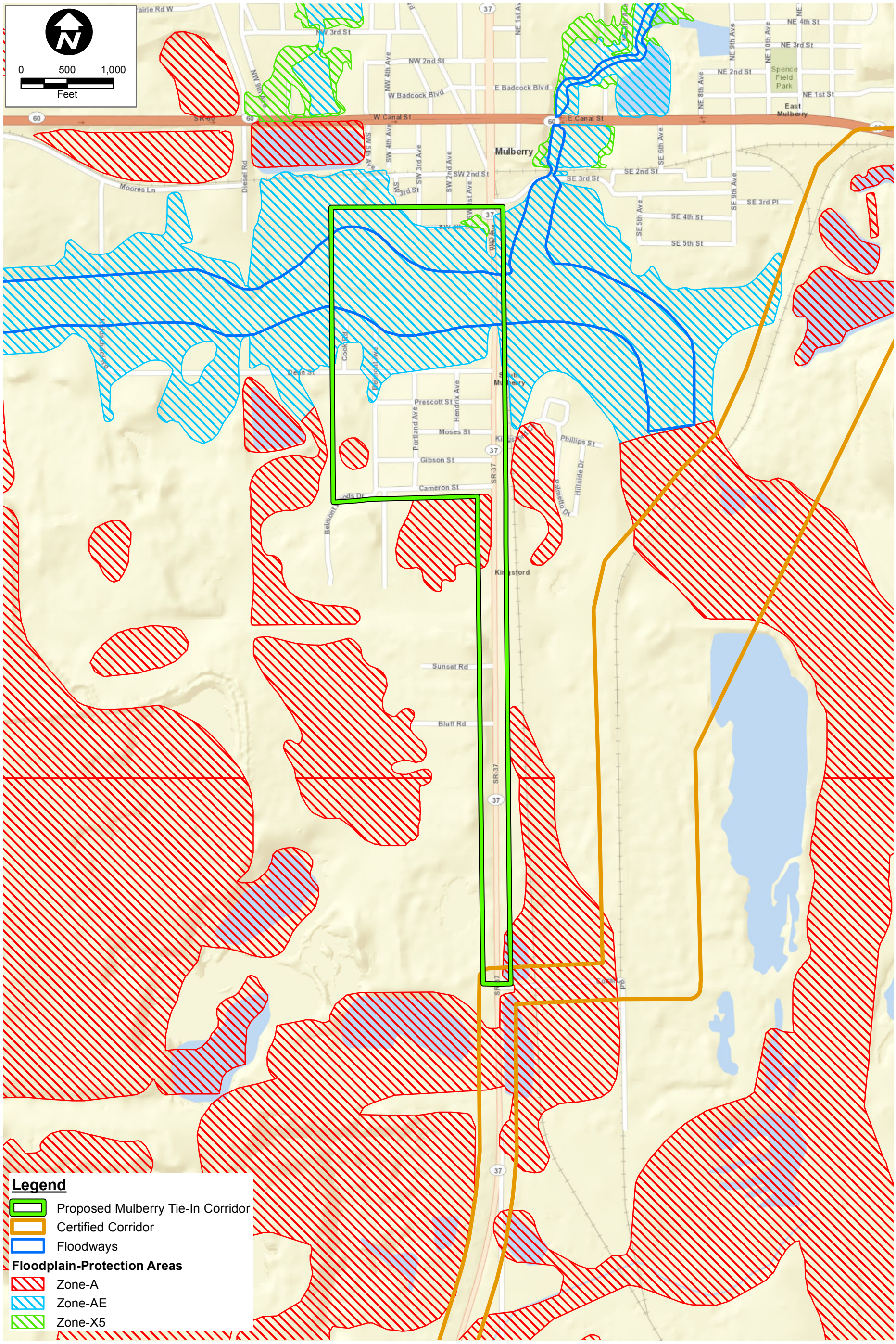



FIGURE 9.1.0-3.
ZONING
POLK COUNTY FLOODPLAIN PROTECTION OVERLAY DISTRICT OF
PROPOSED MULBERRY TIE-IN CORRIDOR

SHEET 14 OF 18

Sources: Polk County, 2010; ECT, 2013.

TECO TAMPA ELECTRIC

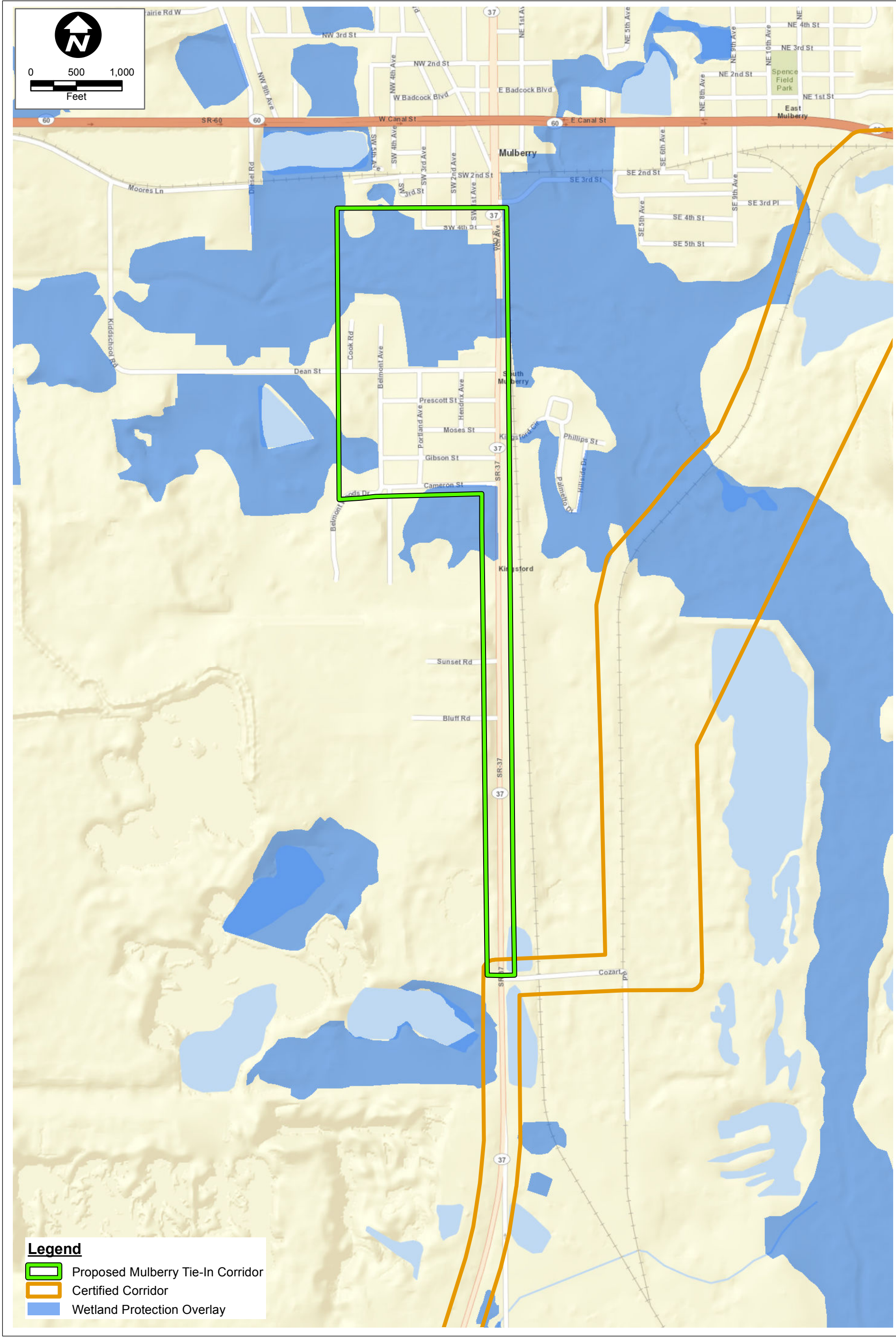



FIGURE 9.1.0-3.
ZONING
POLK COUNTY WETLAND PROTECTION OVERLAY DISTRICT OF
PROPOSED MULBERRY TIE-IN CORRIDOR

SHEET 15 OF 18

Sources: Polk County, 2010; ECT, 2013.

TECO TAMPA ELECTRIC

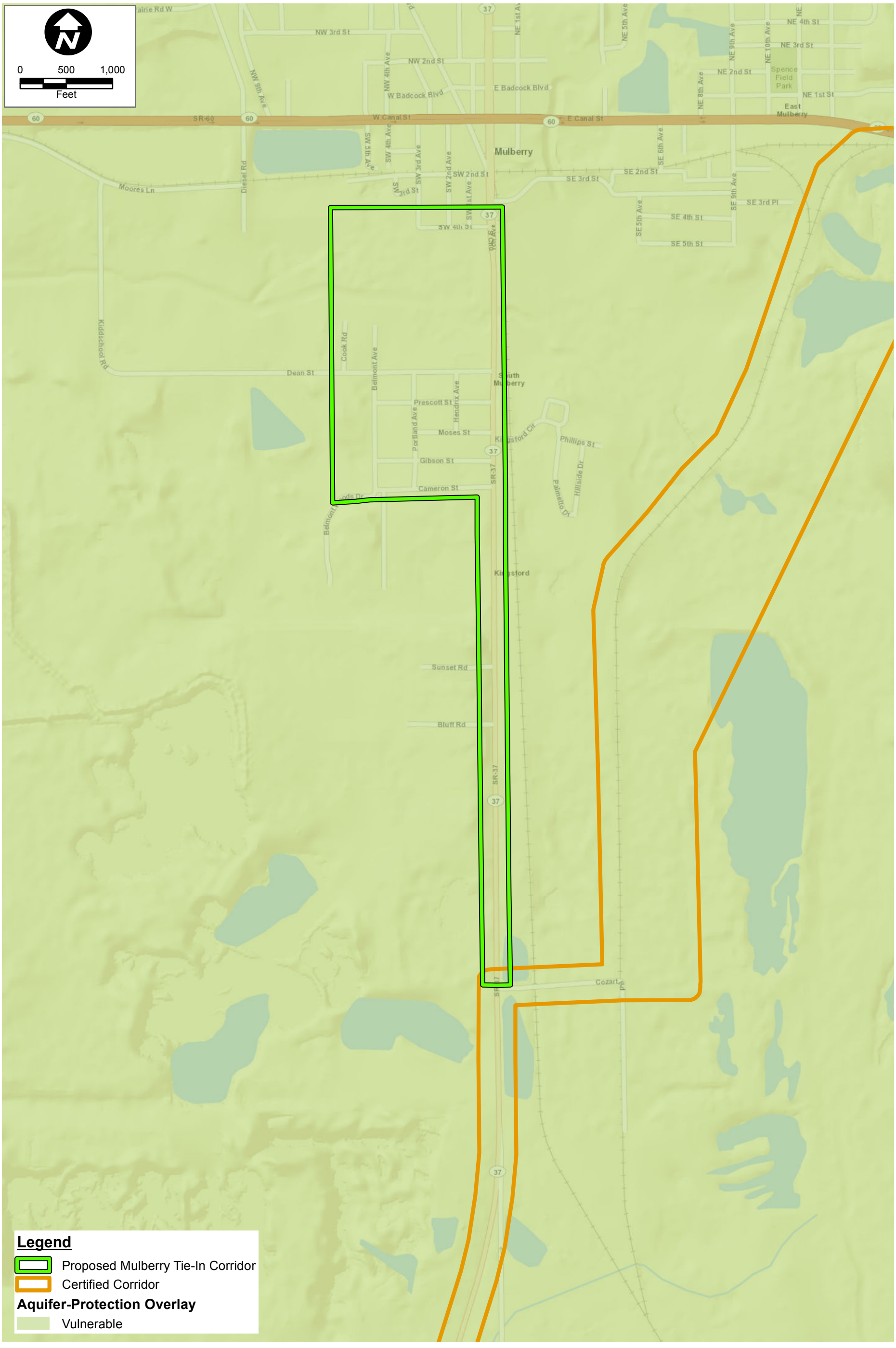



FIGURE 9.1.0-3.
ZONING
POLK COUNTY AQUIFER PROTECTION OVERLAY DISTRICT OF PROPOSED MULBERRY TIE-IN CORRIDOR

SHEET 16 OF 18

Sources: Polk County, 2010; ECT, 2013.

TECO TAMPA ELECTRIC

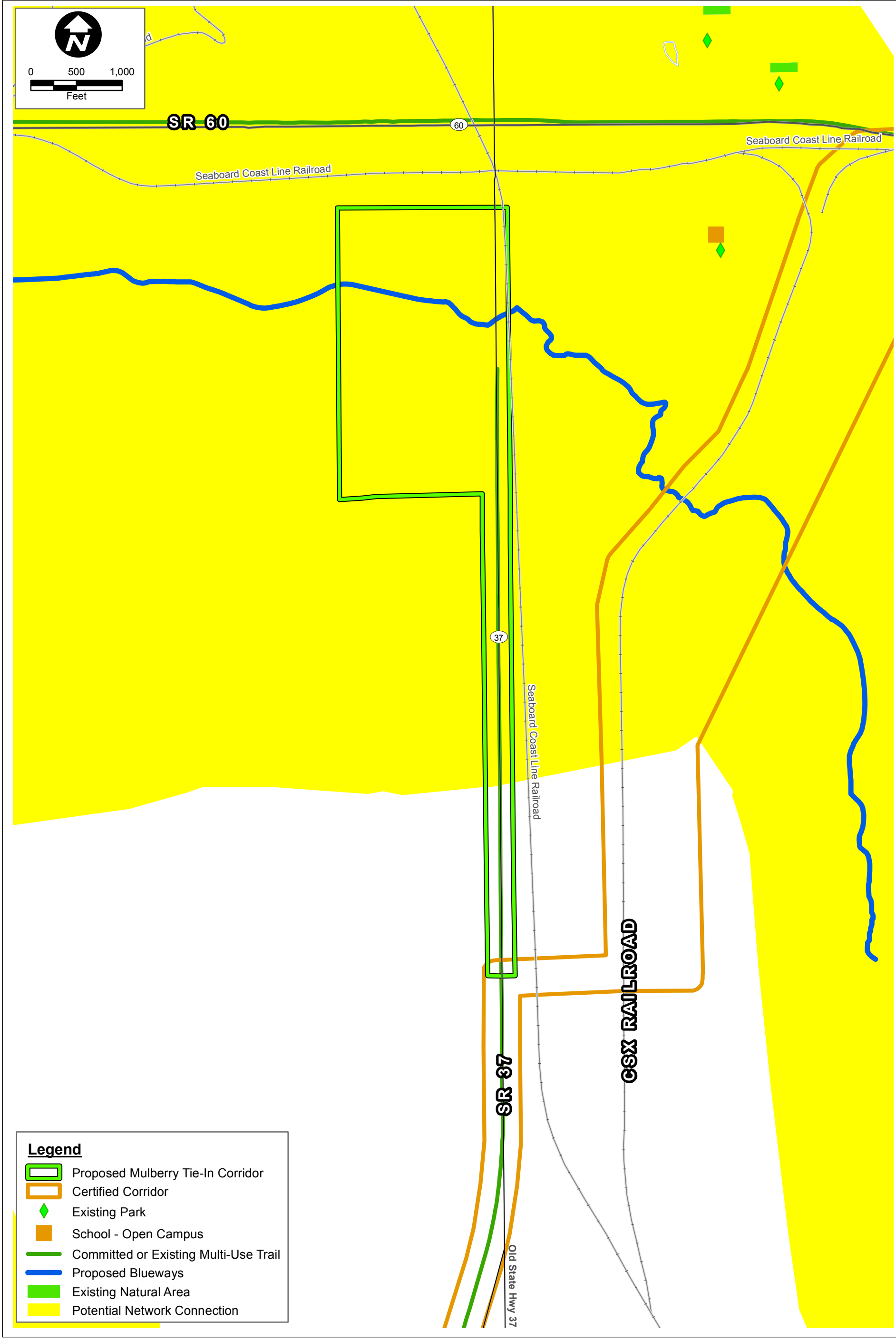



FIGURE 9.1.0-3.
ZONING
POLK COUNTY GREEN DISTRICTS OF PROPOSED
MULBERRY TIE-IN CORRIDOR

Sources: Polk County, 2010; ECT, 2013.

SHEET 17 OF 18

TECO
TAMPA ELECTRIC

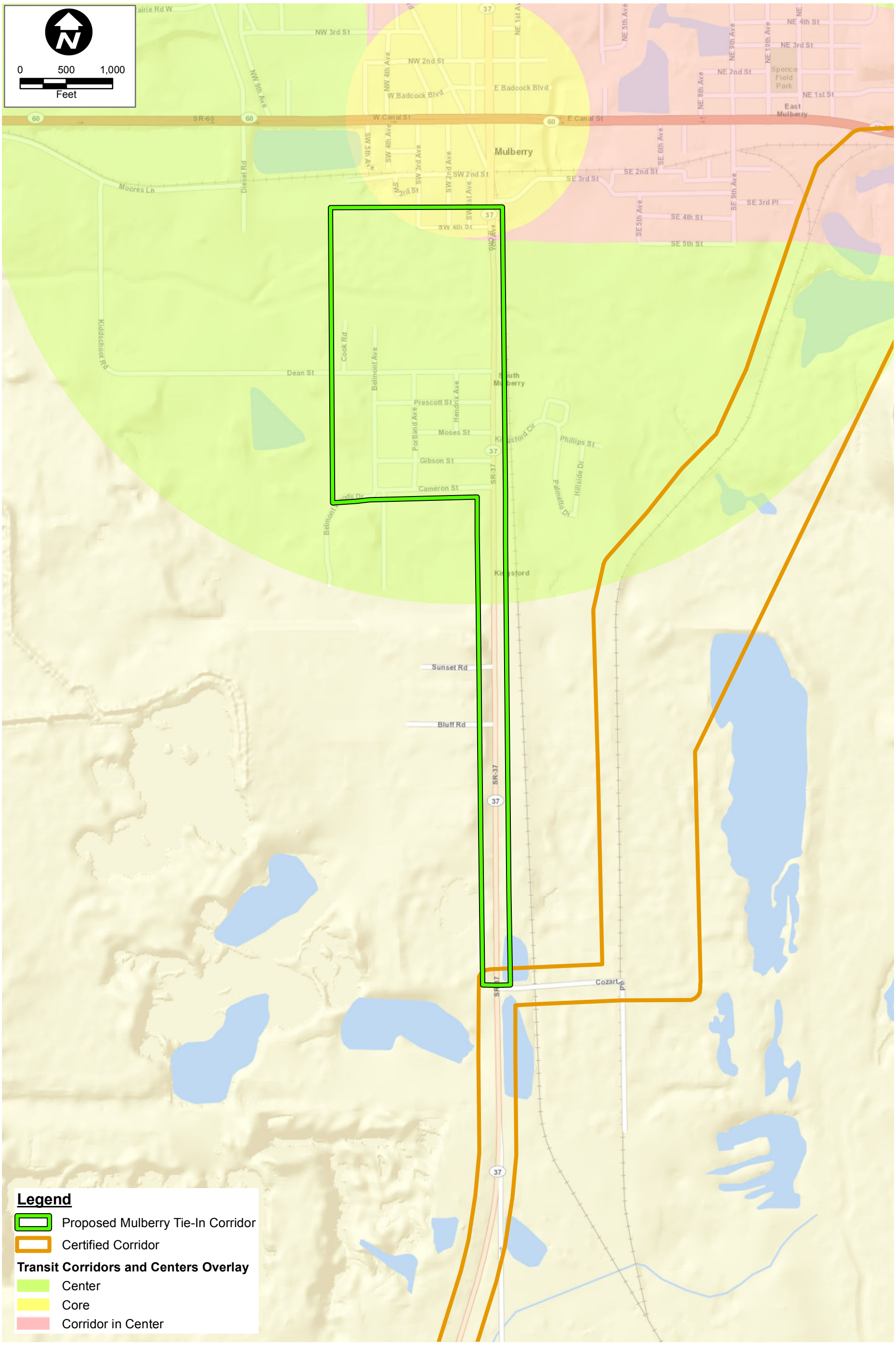



FIGURE 9.1.0-3.
ZONING
POLK COUNTY TRANSIT CORRIDOR AND CENTERS OVERLAY DISTRICT OF PROPOSED MULBERRY TIE-IN CORRIDOR

SHEET 18 OF 18

Sources: Polk County, 2010; ECT, 2013.

TECO TAMPA ELECTRIC

| LEVEL 3 CODE | DESCRIPTION |
|---|---|
| 110 | RESIDENTIAL, LOW DENSITY <LESS THAN TWO DWELLING UNITS PER ACRE> |
| 120 | RESIDENTIAL, MEDIUM DENSITY <TWO-FIVE DWELLING UNITS PER ACRE> |
| 130 | RESIDENTIAL, HIGH DENSITY |
| 140 | COMMERCIAL AND SERVICES |
| 150 | INDUSTRIAL |
| 160 | EXTRACTIVE |
| 165 | RECLAIMED LAND |
| 170 | INSTITUTIONAL |
| 180 | RECREATIONAL |
| 182 | GOLF COURSES |
| 190 | OPEN LAND |
| 260 | OTHER OPEN LANDS <RURAL> |
| 530 | RESERVOIRS |
| 615 | STREAMS AND LAKE SWAMPS (BOTTOMLAND) |
| 641 | FRESHWATER MARSHES |
| 644 | EMERGENT AQUATIC VEGETATION |
| 653 | INTERMITTENT PONDS |
| 810 | TRANSPORTATION |

FIGURE 9.1.0-4.
VEGETATION AND LAND USE KEY FOR
PROPOSED POLK TIE-IN CORRIDOR

Sources: SWFWMD, 2013; ECT, 2013.

TECO
TAMPA ELECTRIC

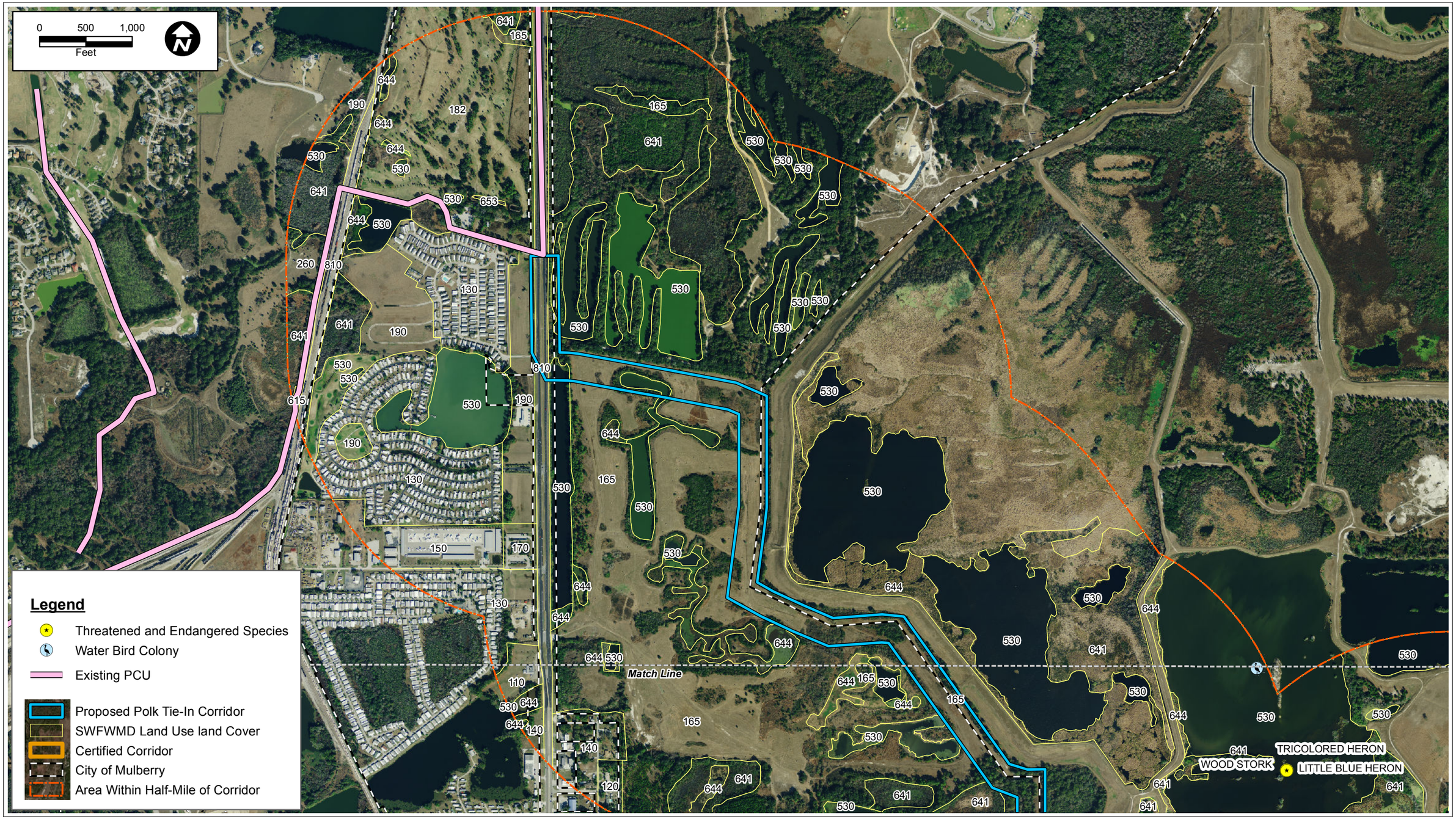



FIGURE 9.1.0-4.
VEGETATION AND LAND USE WITHIN A HALF-MILE OF PROPOSED POLK TIE-IN CORRIDOR

SHEET 1 OF 2

Sources: SWFWMD, 2011; FDOT Imagery, 2011; ECT, 2013.

TECO TAMPA ELECTRIC




FIGURE 9.1.0-4.
VEGETATION AND LAND USE WITHIN A HALF-MILE OF PROPOSED POLK TIE-IN CORRIDOR

SHEET 2 OF 2

Sources: SWFWMD, 2011; FDOT Imagery, 2011; ECT, 2013.

TECO TAMPA ELECTRIC

| LEVEL 3 CODE | DESCRIPTION |
|---|---|
| 110 | RESIDENTIAL, LOW DENSITY <LESS THAN TWO DWELLING UNITS PER ACRE> |
| 120 | RESIDENTIAL, MEDIUM DENSITY <TWO-FIVE DWELLING UNITS PER ACRE> |
| 130 | RESIDENTIAL, HIGH DENSITY |
| 140 | COMMERCIAL AND SERVICES |
| 150 | INDUSTRIAL |
| 160 | EXTRACTIVE |
| 170 | INSTITUTIONAL |
| 190 | OPEN LAND |
| 210 | CROPLAND AND PASTURELAND |
| 260 | OTHER OPEN LANDS <RURAL> |
| 330 | MIXED RANGELAND |
| 434 | HARDWOOD - CONIFEROUS MIXED |
| 530 | RESERVOIRS |
| 615 | STREAMS AND LAKE SWAMPS (BOTTOMLAND) |
| 641 | FRESHWATER MARSHES |
| 643 | WET PRAIRIES |
| 644 | EMERGENT AQUATIC VEGETATION |
| 810 | TRANSPORTATION |
| 830 | UTILITIES |

FIGURE 9.1.0-4.
VEGETATION AND LAND USE KEY FOR
PROPOSED MULBERRY TIE-IN CORRIDOR

Sources: SWFWMD, 2013;ECT, 2013.

TECO
TAMPA ELECTRIC

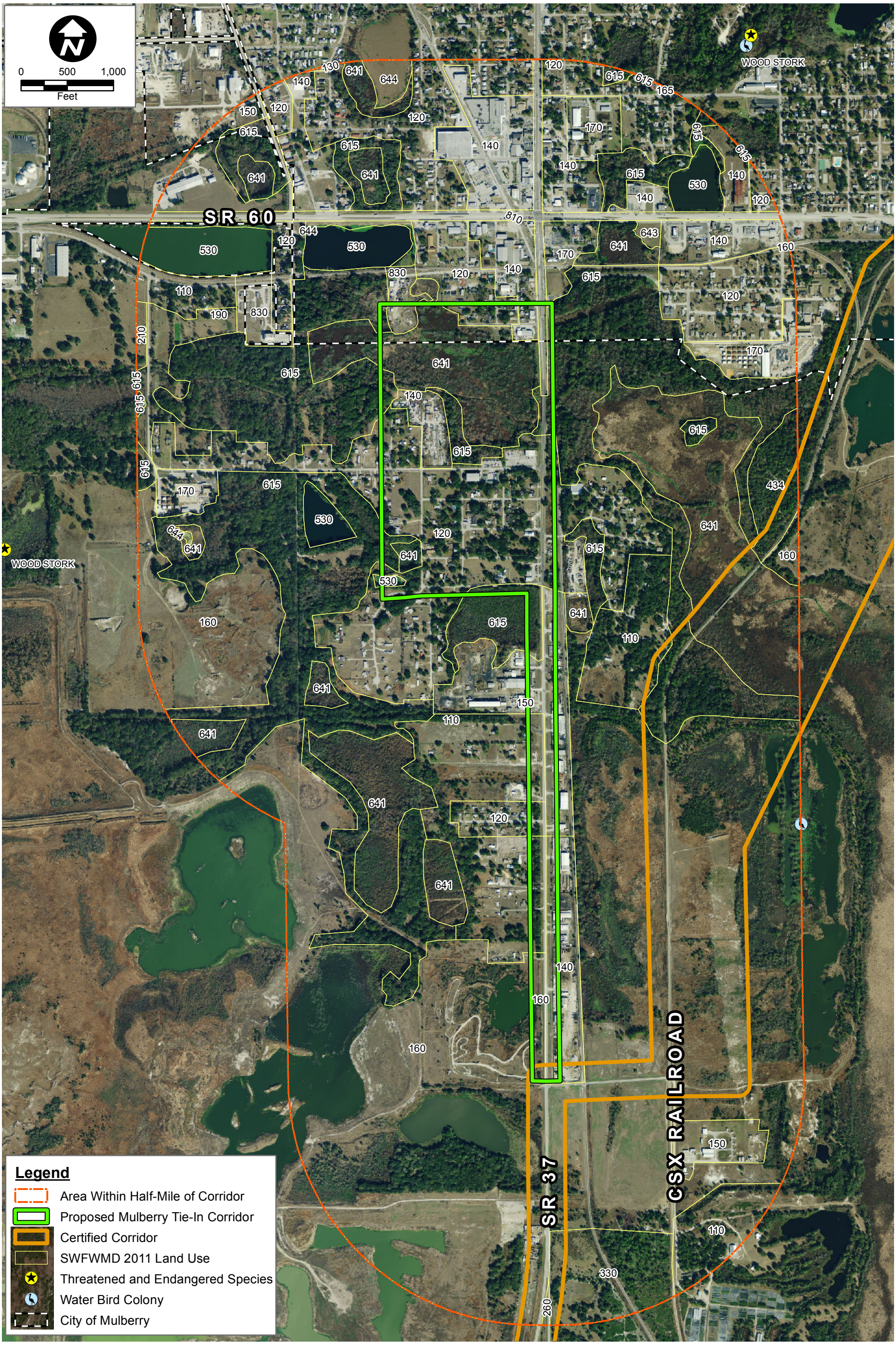



FIGURE 9.1.0-4.
VEGETATION AND LAND USE WITHIN A HALF-MILE OF PROPOSED MULBERRY TIE-IN CORRIDOR

Sources: SWFWMD, 2011; FDOT Imagery, 2011; ECT, 2013.

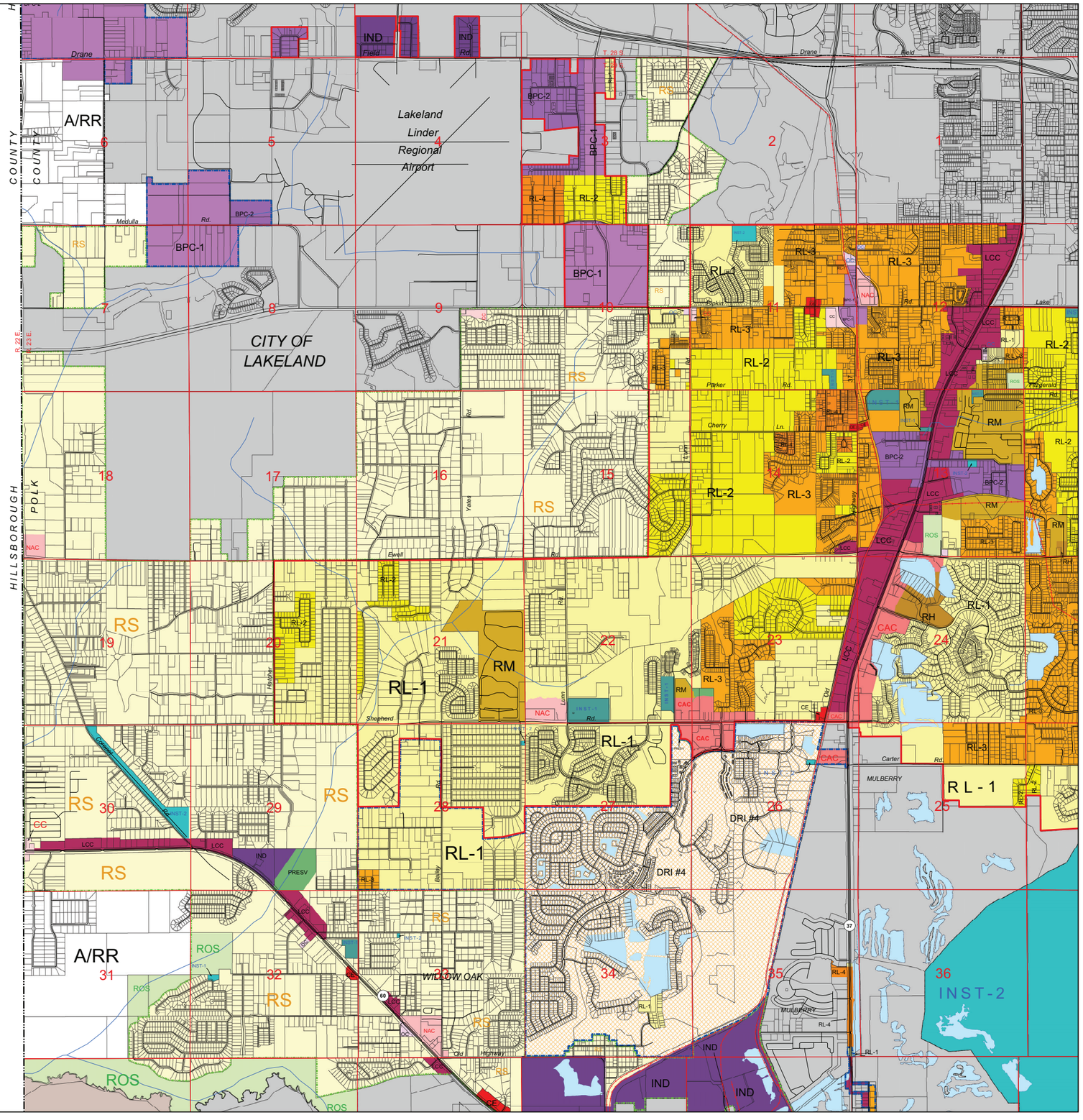
TECO TAMPA ELECTRIC

# APPENDIX A

# FUTURE LAND USE MAPS

# 2030 COMPREHENSIVE PLAN MAP SERIES
# FUTURE LAND USE/PARCEL BASE MAP

## SECTION 1-36 TOWNSHIP 29 RANGE 23




### LAND USE LEGEND

- CC - Convenience Center
- NAC - Neighborhood Activity Center
- CAC - Community Activity Center
- TC - Town Center
- RAC - Regional Activity Center
- HIC - High-Impact Commercial Center
- TCC - Tourism Commercial Center
- LCC - Linear Commercial Corridor
- CE - Commercial Enclave
- OC - Office Center
- EC - Employment Center
- BPC-1 - Business Park Center-1
- BPC-2 - Business Park Center-2
- IND - Industrial
- PM - Phosphate Mining
- LR - Leisure Recreation
- PI - Professional Institutional
- INST-1 - Institutional-1
- INST-2 - Institutional-2
- IAC - Interchange Actitivty Center
- ROS - Recreation and Open Space
- PRESV - Preservation
- CORE - Conservation Core
- MU - Mixed Use
- RCC - Rural Cluster Center (Non-Residential)
- RCC-R - Rural Cluster Center (Residential)
- RS - Residential-Suburban
- RL-1 - Residential Low-1
- RL-2 - Residential Low-2
- RL-3 - Residential Low-3
- RL-4 - Residential Low-4
- RM - Residential Medium
- RH - Residential High
- A/RR - Agriculture/Residential-Rural
- PRE-DRI & DRI - Development of Regional Impact
- SAP - Selected Area Plan
- Southeast SAP Village Center Core
- Southeast SAP Village Center

**Green Swamp Areas**

- GSACSC - Green Swamp Area of Critical State Concern
- RIDGE-SPA - Ridge Special Protection Area
- RURAL-SPA - Rural Special Protection Area
- PC-SPA - Polk City Special Protection Area

**Development Areas**

- Transit Supportive Development Areas - TSDA
- Urban Growth Areas - UGA
- Suburban Development Areas - SDA
- Utility Enclave Areas - UEA
- Neighborhood Utility Service Areas - NUSA

Note: "X" Indicates Extra Development Standards

### GENERAL LEGEND

- Interstate Highways
- U.S. Highways
- State Highways
- County Roads
- Local Roads
- Proposed Roads
- Railroads
- Parcels
- County Boundary
- Sections
- Township/Range
- Lakes/Water
- Municipalities

| NUMBER | CPA INDEX | DATE | ORD. |
|---|---|---|---|
| note | OLDER ENTRIES HAVE BEEN REMOVED FROM THIS LIST AND ARE AVAILABLE UPON REQUEST. | - | - |
| 00A-25 | 30.6 +/-AC FROM RS TO INST, S LAKELAND AIRPORT AT CORONET RD & US 60, S30 T29 R23 | 20 JUN 00 | 00-36 |
| 00S-10 | 2.35 +/-AC FROM RS TO CE, INT OF US HWY 60 & WILLOW OAK RD, S32 T29 R23 | 26 SEP 00 | 00-68 |
| 01B-02 | 17 +/-AC INST TO ROS, N OF CR 540A, S13 T29 R23 | 19 DEC 01 | 01-95 |
| 01B-13 | 21 +/-AC LCC & RS TO IND, N OF HWY 60, S OF RAMBLEWOOD SOUTH, S29 T29 R23 | 10 JUL 02 | 02-36 |
| 02A-15 | 28 SITES OF EXISTING WTF & WWTF TO INST-2, S26,28,32,33 T29 R23 | 18 DEC 02 | 02-92 &02-93 |
| 02B-16 | 24 SITES CHANGING TO INST-1 FOR ELEM & MIDDLE SCHOOLS, S22 T29 R23 | 18 DEC 02 | 02-107 |
| 02B-18 | 6 SITES CHANGING TO INST-2 FOR HIGH SCHOOLS & MAINTENANCE FACILITIES, S13 T29 R23 | 18 DEC 02 | 02-109 &02-110 |
| 03S-05 | 1 +/-AC FROM RL-4 TO CE, HARDEN BLVD, N OF WEST PIPKIN RD, S11 T29 R23 | 22 JAN 03 | 03-06 |
| 03S-15 | 6.2 +/-AC FROM LCC TO BPC-2, COMMERCE DR, E OF SR 37, S13 T29 R23 | 30 JUL 03 | 03-45 &03-46 |
| 03B-10 | 8.6 +/-AC FROM RL-1 TO LCC & 1.2 +/-AC FROM RL-1 TO OC, E OF SR 37, S OF LK MIRIAM DR, S12 T29 R23 | 17 DEC 03 | 03-103 |
| 04S-03 | 1.7 +/-AC FROM INST-1 TO LCC, W OF SR 37, N OF CREATIVE DR, S13 T29 R23 | 07 APR 04 | 04-13 |
| 04S-09 | 2 +/-AC FROM RL-3&4 TO CC, E OF LUNN RD, S OF PIPKIN RD, S11 T29 R23 | 06 OCT 04 | 04-47 |
| 04S-10 | 10 +/-AC FROM RS TO NAC, E OF COUNTY LINE RD, N OF EWELL RD, S18 T29 R23 | 06 OCT 04 | 04-48 |
| 04B-08 | 20 +/-AC FROM CC AND RL-1 TO NAC, SHEPHERD RD, W OF LUNN RD, S22 T29 R23 | 30 NOV 04 | 04-77 |
| 05S-05 | 1.2 +/-AC FROM RL-1 TO OC, SW CORNER OF INT OF LUNN RD AND WEST PIPKIN RD., S10 T29 R23 | 19 APR 05 | 05-015 |
| 05S-13 | 8 +/-AC FROM RS TO IND, N OF SR 60, BETWEEN WILLOW OAK RD & CORONET RD, S29 T29 R23 | 13 JUL 05 | 05-032 |
| 05B-01 | 28 +/-AC FROM RS TO PRESV, N OF SR 60, BETWEEN WILLOW OAK RD & CORONET RD, S29 T29 R23 | 07 DEC 05 | 05-081 |
| 06S-15 | 0.25 +/-AC FROM RS TO CE ON N SIDE OF PIPKIN RD, W OF HARDEN RD, E OF S DOSSEY RD, S11 T29 R23 | 26 JUL 06 | 06-039 |
| 06S-18 | 0.92 +/-AC FROM RL TO OC, NE CORNER OF CR 540-A & CHRISTINA PARK RD., S13 T29 R23 | 11 OCT 06 | 06-063 |
| 06S-22 | 0.7 +/-AC FROM RS TO CC & 0.7 +/-AC FROM CC TO RS, SE CORNER OF YATES & W PIPKIN RDS, S09 T29 R23 | 08 NOV 06 | 06-074 |
| 07A-08 | 18.49 +/-AC A/RR TO BPC,N OR PIPKIN RD,S OF DRANE FIELD RD,E OF COUNTY LINE RD,E OF HAMILTON RD, S06 T29 R23 | 22 JUN 07 | 07-030 |
| 07B-10 | 80.2 +/-AC NAC, RL, DRI TO CAC, RM, INST, PRESV, SHEPHERD RD & IMPERIAL PKWY, VAR SECS IN T29 R23 | 19 DEC 07 | 07-090 |
| 07B-19 | 4.12 +/-AC FROM RL TO INST, ON PARKER RD, W OF OLD HWY 37, SW OF LAKELAND, S11 T29 R23 | 19 DEC 07 | 07-098 |
| 09S-06 | 3.60 +/-AC FROM DRI TO IND, NW OF PRAIRIE MINE RD TERMINUS & N OF SR 60, S34 T-9 R23 | 08 APR 09 | 09-014 |
| 09S-12 | 2.4 +/-AC RL TO CEX, E AND W OF OLD HWY 37,S OF SCHOOLHOUSE RD,N OF CHERRY LN, S13,14 T29 R23 | 16 DEC 09 | 09-085 |
| 10B-01 | Various changes A/RR to RL and RS to RL (EAR based) | 04 AUG 10 | 10-039 & 10-040 |
| 10B-14 | 26 +/-AC CE & RL TO BPC,NAC,AND OC,LOCATED N,S,E,&W OF W PIPKIN/ HARDEN BLVD INT, S11,12 T29 R23 | 04 AUG 10 | 10-056 & 10-057 |
| 10S-04 | 1.01 +/-AC RL TO LCC,N SIDE OF WHITE LANE,W OF SR 37, S13 T29 R23 | 01 SEP 10 | 10-061 |
| 11S-01 | 1.22 +/-AC RS TO OC,SW SIDE OF SR60 ACROSS FROM WILLIS RD, S32 T29 R23 | 18 JAN 11 | 11-001 |
| 11S-05 | .78 +/-AC RL TO OC IN TSDA,4634 HARDEN BLVD., S12 T29 R23 | 11 OCT 11 | 11-024 |
| 11S-06 | 1.81 +/-AC RS TO OC IN SDA,SE CORNER SR60 AND PINEGROVE RD, S33 T29 R23 | 11 OCT 11 | 11-025 |
| 13S-08 | 4.72 +/-AC FROM RL TO CC IN TSDA,S OF PIPKIN RD,W OF CR37,BETWEEN DOSSEY AND OLD HWY37,S11 T29 R23 | 24 AUG 13 | 13-032 |

| NUMBER | LDC INDEX | DATE | ORD. |
|---|---|---|---|
| 02T-10 | INSTITUTIONAL TO INST-1 OR INST-2 | 24 JUL 02 | 02-51 |
| 05D-16 | 5 +/-AC RL-2 TO RL-3,W OF OLD HWY 37,E OF LUNN RD,N OF EWELL RD,S SIDE OF CHERRY LN, S14 T29 R23 | 01 JAN 06 | 06-007 |

**Map Prepared By:**
**POLK COUNTY**
**BOARD OF COUNTY COMMISSIONERS**
**INFORMATION TECHNOLOGY / GIS SECTION**

**CPMS Managed by:**
**OFFICE OF PLANNING AND DEVELOPMENT**

**GENERALIZED MAP**

0 0.5 1 Miles

N W E S

**TWN 29 RNG 23**

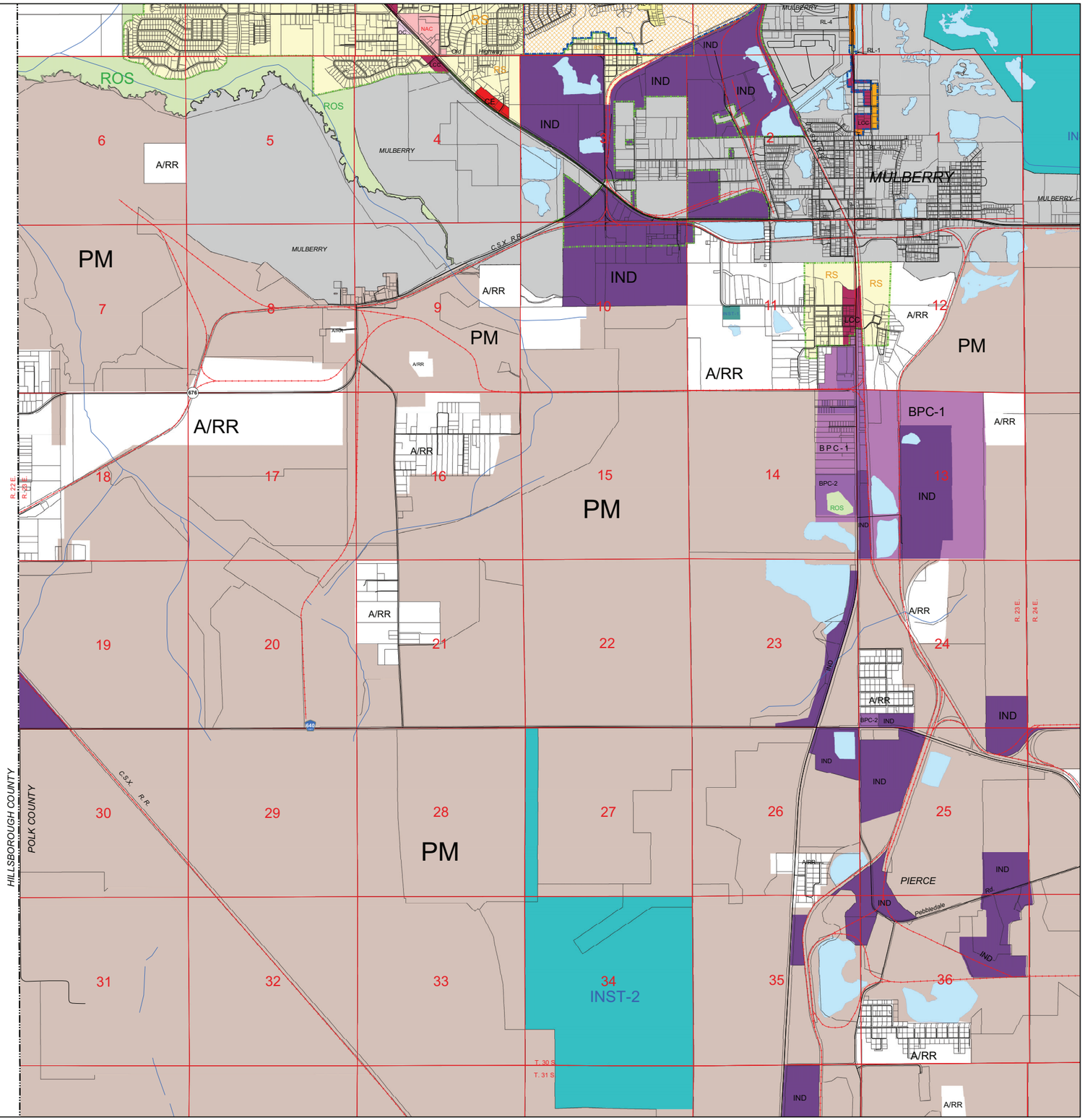
CPMS Disclaimer:
THIS IS ONE MAP OF THE "POLK COUNTY COMPREHENSIVE PLAN MAP SERIES". IT MUST BE INTERPRETED IN CONJUNCTION WITH THE OTHER MAPS OF THE SERIES AND THE OBJECTIVES AND POLICIES OF THE "POLK COUNTY COMPREHENSIVE PLAN" AS ADOPTED AND AMENDED BY THE POLK COUNTY BOARD OF COUNTY COMMISSIONERS.

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2) Any decision made or action taken or not taken by any person in reliance upon any information or data furnished hereunder; or
3) Any other actions or inactions that may arise that were not contemplated by this disclaimer.

S:\IT_GIS_Share\GIS_Projects\Growth Management\Long_Range_Planning\Comprehensive_Plan_Map_Series_CPMS_Project_9_2010\PDF\2030 Current Maps\TownshipRangeFLU 1/8/2014

# 2030 COMPREHENSIVE PLAN MAP SERIES
# FUTURE LAND USE/PARCEL BASE MAP

## SECTION 1-36 TOWNSHIP 30 RANGE 23




### LAND USE LEGEND

- CC - Convenience Center
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- RAC - Regional Activity Center
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- TCC - Tourism Commercial Center
- LCC - Linear Commercial Corridor
- CE - Commercial Enclave
- OC - Office Center
- EC - Employment Center
- BPC-1 - Business Park Center-1
- BPC-2 - Business Park Center-2
- IND - Industrial
- PM - Phosphate Mining
- LR - Leisure Recreation
- PI - Professional Institutional
- INST-1 - Institutional-1
- INST-2 - Institutional-2
- IAC - Interchange Actitivty Center
- ROS - Recreation and Open Space
- PRESV - Preservation
- CORE - Conservation Core
- MU - Mixed Use
- RCC - Rural Cluster Center (Non-Residential)
- RCC-R - Rural Cluster Center (Residential)
- RS - Residential-Suburban
- RL-1 - Residential Low-1
- RL-2 - Residential Low-2
- RL-3 - Residential Low-3
- RL-4 - Residential Low-4
- RM - Residential Medium
- RH - Residential High
- A/RR - Agriculture/Residential-Rural
- PRE-DRI & DRI - Development of Regional Impact
- SAP - Selected Area Plan

**Green Swamp Areas**

- GSACSC - Green Swamp Area of Critical State Concern
- RIDGE-SPA - Ridge Special Protection Area
- RURAL-SPA - Rural Special Protection Area
- PC-SPA - Polk City Special Protection Area

**Development Areas**

- Transit Supportive Development Areas - TSDA
- Urban Growth Areas - UGA
- Suburban Development Areas - SDA
- Utility Enclave Areas - UEA
- Neighborhood Utility Service Areas - NUSA

Note: "X" Indicates Extra Development Standards

### GENERAL LEGEND

- Interstate Highways
- U.S. Highways
- State Highways
- County Roads
- Local Roads
- Proposed Roads
- Railroads
- Parcels
- County Boundary
- Sections
- Township/Range
- Lakes/Water
- Municipalities

| NUMBER | CPA INDEX | DATE | ORD. |
|---|---|---|---|
| 95A-10 | 120 +/-AC FROM A/RR TO IND, PEBBLEDALE RD 25, S36 T30 R23 | 17 OCT 95 | |
| 96A-08 | 16.3 +/-AC FROM A/RR TO IND & BPC, E OF SR 37 & INT OF CR 640, S24,25 T30 R23 | 03 DEC 96 | |
| 99A-05 | 334 +/-AC A/RR TO ROS ON N PRONG OF ALAFIA RIVER, S31,32 T29 R23; S05,06 T30 R23 | 25 MAY 99 | |
| 03S-18 | 10 +/-AC FROM BPC-2 TO ROS, SR 37, S OF MULBERRY, S14 T30 R23 | 30 JUL 03 | 03-49 |
| 07A-09 | 31 +/-AC PM TO IND IN RDA,NE CORNER OF CR 640 AND NEW WALES RD, S 19 T30 R23 | 22 JUN 07 | 07-031 |
| 09A-04 | 43.63 +/-AC FROM PM TO IND, SE CORNER OF SR 37 & CR 640, S26 T30 R23 | 17 JUN 09 | 09-029 |
| 09A-05 | 19.06 +/-AC FROM BPC TO IND, E SIDE OF SR 37 N OF CR 640, S13 T30 R23 | 17 JUN 09 | 09-030 |
| 09B-04 | 228 +/-AC FROM PM TO IND, E & W OF SR 37, S OF CR 640, S25,26,35,36 T30 R23 | 01 DEC 09 | 09-076 |
| 10A-03 | 800 +/-AC PM TO INST,W OF SR 37,S OF CR 640,NE OF BRADLEY, S27,34 T30 R23; S03 T31 R23 | 03 JUN 10 | 10-031 |
| 10B-01 | Various changes A/RR to RL and RS to RL (EAR based) | 04 AUG 10 | 10-039 & 10-040 |
| 11B-04 | 395 +/-AC PM TO IND,S OF SR 60 ALONG BONNIE MINE RD,N SIDE OF COUNTY RD 640,E OF OLD HIGHWAY 37, S24,25 T30 | 06 DEC 11 | 11-036 |

| NUMBER | LDC INDEX | DATE | ORD. |
|---|---|---|---|
| 02T-10 | INSTITUTIONAL TO INST-1 OR INST-2 | 24 JUL 02 | 02-51 |
| 09D-04 | 800 +/-AC INST-1 TO INST-2,W OF SR37,S OF CR640,NW OF BJUNCTION, S27,34,35 T30 R23; S02,03,10,11 T31 R23 | 03 JUN 10 | 10-030 |

**Map Prepared By:**
**POLK COUNTY**
**BOARD OF COUNTY COMMISSIONERS**
**INFORMATION TECHNOLOGY / GIS SECTION**

**CPMS Managed by:**
**OFFICE OF PLANNING AND DEVELOPMENT**

**GENERALIZED MAP**

0 0.5 1 Miles

N W E S

**TWN 30 RNG 23**

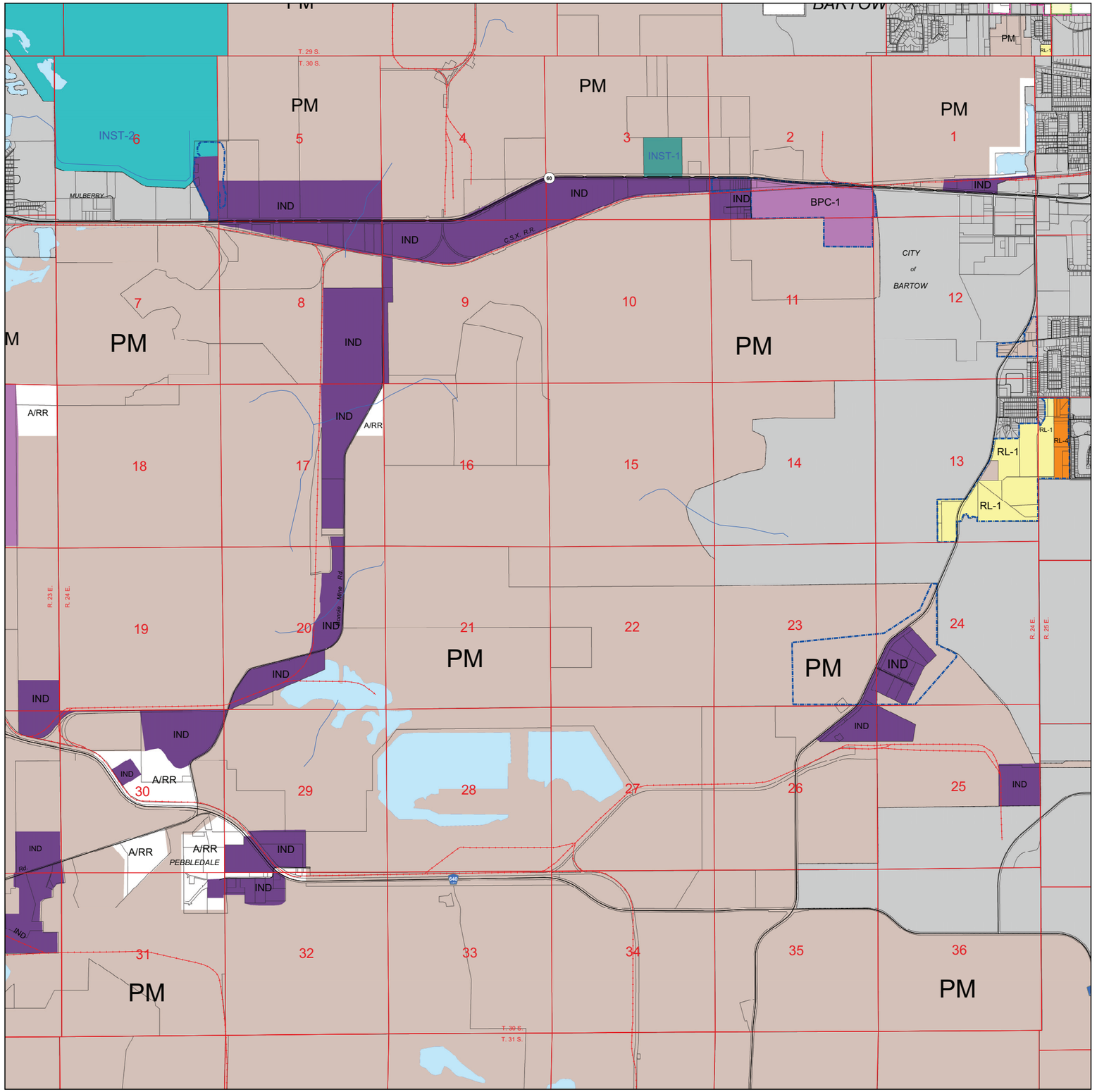
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S:\IT_GIS_Share\GIS_Projects\Growth Management\Long_Range_Planning\Comprehensive_Plan_Map_Series_CPMS_Project_9_2010\PDF\2030 Current Maps\TownshipRangeFLU 4/29/2013

# 2030 COMPREHENSIVE PLAN MAP SERIES
# FUTURE LAND USE/PARCEL BASE MAP

## SECTION 1-36 TOWNSHIP 30 RANGE 24




### LAND USE LEGEND

- CC - Convenience Center
- NAC - Neighborhood Activity Center
- CAC - Community Activity Center
- TC - Town Center
- RAC - Regional Activity Center
- HIC - High-Impact Commercial Center
- TCC - Tourism Commercial Center
- LCC - Linear Commercial Corridor
- CE - Commercial Enclave
- OC - Office Center
- EC - Employment Center
- BPC-1 - Business Park Center-1
- BPC-2 - Business Park Center-2
- IND - Industrial
- PM - Phosphate Mining
- LR - Leisure Recreation
- PI - Professional Institutional
- INST-1 - Institutional-1
- INST-2 - Institutional-2
- IAC - Interchange Actitivty Center
- ROS - Recreation and Open Space
- PRESV - Preservation
- CORE - Conservation Core
- MU - Mixed Use
- RCC - Rural Cluster Center (Non-Residential)
- RCC-R - Rural Cluster Center (Residential)
- RS - Residential-Suburban
- RL-1 - Residential Low-1
- RL-2 - Residential Low-2
- RL-3 - Residential Low-3
- RL-4 - Residential Low-4
- RM - Residential Medium
- RH - Residential High
- A/RR - Agriculture/Residential-Rural
- PRE-DRI & DRI - Development of Regional Impact
- SAP - Selected Area Plan

**Green Swamp Areas**

- GSACSC - Green Swamp Area of Critical State Concern
- RIDGE-SPA - Ridge Special Protection Area
- RURAL-SPA - Rural Special Protection Area
- PC-SPA - Polk City Special Protection Area

**Development Areas**

- Transit Supportive Development Areas - TSDA
- Urban Growth Areas - UGA
- Suburban Development Areas - SDA
- Utility Enclave Areas - UEA
- Neighborhood Utility Service Areas - NUSA

Note: "X" Indicates Extra Development Standards

### GENERAL LEGEND

- Interstate Highways
- U.S. Highways
- State Highways
- County Roads
- Local Roads
- Proposed Roads
- Railroads
- Parcels
- County Boundary
- Sections
- Township/Range
- Lakes/Water
- Municipalities

| NUMBER | CPA INDEX | DATE | ORD. |
|---|---|---|---|
| 94A-14 | 154 AC FROM A/RR TO IND 29,30,31,& 32-30-24 | 04 OCT 94 | - |
| 02A-13 | 102 AC FROM A/RR TO PM, NE COR OF SR 640 & BONNIE MINE RD, S OF MULBERRY 29,30-30-24 | 10 JUL 02 | 02-48 |
| 03A-06 | 35 AC FROM A/RR TO IND, CR 640, E OF SR 37, 29-30-24 | 09 JUL 03 | 03-44 |
| 06A-02 | 26 AC FROM PM TO IND 1.5 MILES S OF SR 60 ON BONNIE MINE RD 17-30-24 | 26 JUL 06 | 06-034 |
| 07B-08 | 40 AC PM TO IND, S OF BARTOW, N OF CR 640, S OF SR 60, W OF NORALYN MINE RD 25-30-24 | 19 DEC 07 | 07-088 |
| 07B-15 | 120 AC FROM LCC TO IND, SR 60, W OF ARMOUR RD, W OF BARTOW 2, 3-30-24 | 19 DEC 07 | 07-094 |
| 09S-03 | 8.99 AC FROM RDA TO UGA, S SIDE OF SR 60 & E OF BONNIE MINE ROAD, S-02 T-30 R-24. | 08 APR 09 | 09-015 |
| 10B-01 | Various changes A/RR to RL and RS to RL (EAR based) | 04 AUG 10 | 10-039 & 10-040 |
| 11B-04 | 395AC PM TO IND,S OF SR 60 ALONG BONNIE MINE RD,N SIDE OF COUNTY RD 640,E OF OLD HIGHWAY 37, 24,25-30- | 06 DEC 11 | 11-036 |

| NUMBER | LDC INDEX | DATE | ORD. |
|---|---|---|---|
| 02T-10 | INSTITUTIONAL TO INST-1 OR INST-2 | 24 JUL 02 | 02-51 |

**Map Prepared By:**
**POLK COUNTY**
**BOARD OF COUNTY COMMISSIONERS**
**INFORMATION TECHNOLOGY / GIS SECTION**

**CPMS Managed by:**
**OFFICE OF PLANNING AND DEVELOPMENT**

**GENERALIZED MAP**

0 0.5 1 Miles

**TWN 30 RNG 24**

N W E S

CPMS Disclaimer:
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Path: S:\IT_GIS_FLUApp\Fluapp\MXDs\FLU_MAPPER_RESIZE.mxd & Date: 7/3/2012

# CITY OF MULBERRY - 2030 FUTURE LAND USE MAP

## Mulberry Future Land Use

- Low Density Residential
- High Density Residential
- Manufactured Home
- Central Business District
- Highway Commercial
- Industrial
- Public Buildings and Grounds
- Residential Planned Unit Development (labels indicate maximum dwelling units per acre)
- Outdoor Recreation
- Conservation
- Unassigned
- Water Bodies

(4.3)

(5.2)

(6.0)

## Legend

- Mulberry City Boundary
- Parcels
- US Highways
- State Roads
- County Roads
- Local Roads
- Railroads
- Water Bodies

N
W E
S

0 ¼ ½ 1
Miles

City of Mulberry
104 S. Church Ave., P.O. Box 707
Mulberry, FL 33860
Phone: (863) 425-1125
www.cityofmulberry.com

CENTRAL FLORIDA REGIONAL PLANNING COUNCIL
555 East Church Street, Bartow, FL 33830-3931
P.O. Box 2089, Bartow, FL 33831-2089
(863) 534-7130 - SUNCOM 515-2025
Fax (863) 534-7138 - Toll Free (800) 297-8041
www.cfrpc.org

Updated per
Ordinance no. 8-2012
August 7, 2012

DISCLAIMER:
The information on this map should be considered conceptual and subject to change. This map is not a survey.

Data Sources:
Central Florida Regional Planning Council
Florida Department of Transportation
Polk County Property Appraiser
City of Mulberry

Date: 11/6/2013
Document Path: D:\Projects\Current_Jurisdiction_maps\Mulberry\Mulberry_FLU_080712.mxd

# APPENDIX B

# DHR REPORTS

This record search is for informational purposes only and does NOT constitute a project review. This search only identifies resources recorded at the Florida Master Site File and does NOT provide project approval from the Division of Historical Resources. Contact the Compliance and Review Section of the Division of Historical Resources at 850-245-6333 for project review information.

November 12, 2013

Florida Master Site File

Jude Dawson
Environmental Consulting & Technology, Inc.
3701 NW 98th Street
Gainesville, FL 32606
Phone: 352.248.3336
Email: jdawson@ectinc.com

In response to your inquiry of November 12, 2013, the Florida Master Site File lists no archaeological sites, two surveys, and no standing structures, found in the following parcels of Polk County:

**The portions of T29S R23E Sections 35 & 36, T30S R23E Section 01, and T30S R24E Sections 05 & 06, indicated by the map submitted with search request (including a project area and a 1,000 foot buffer).**

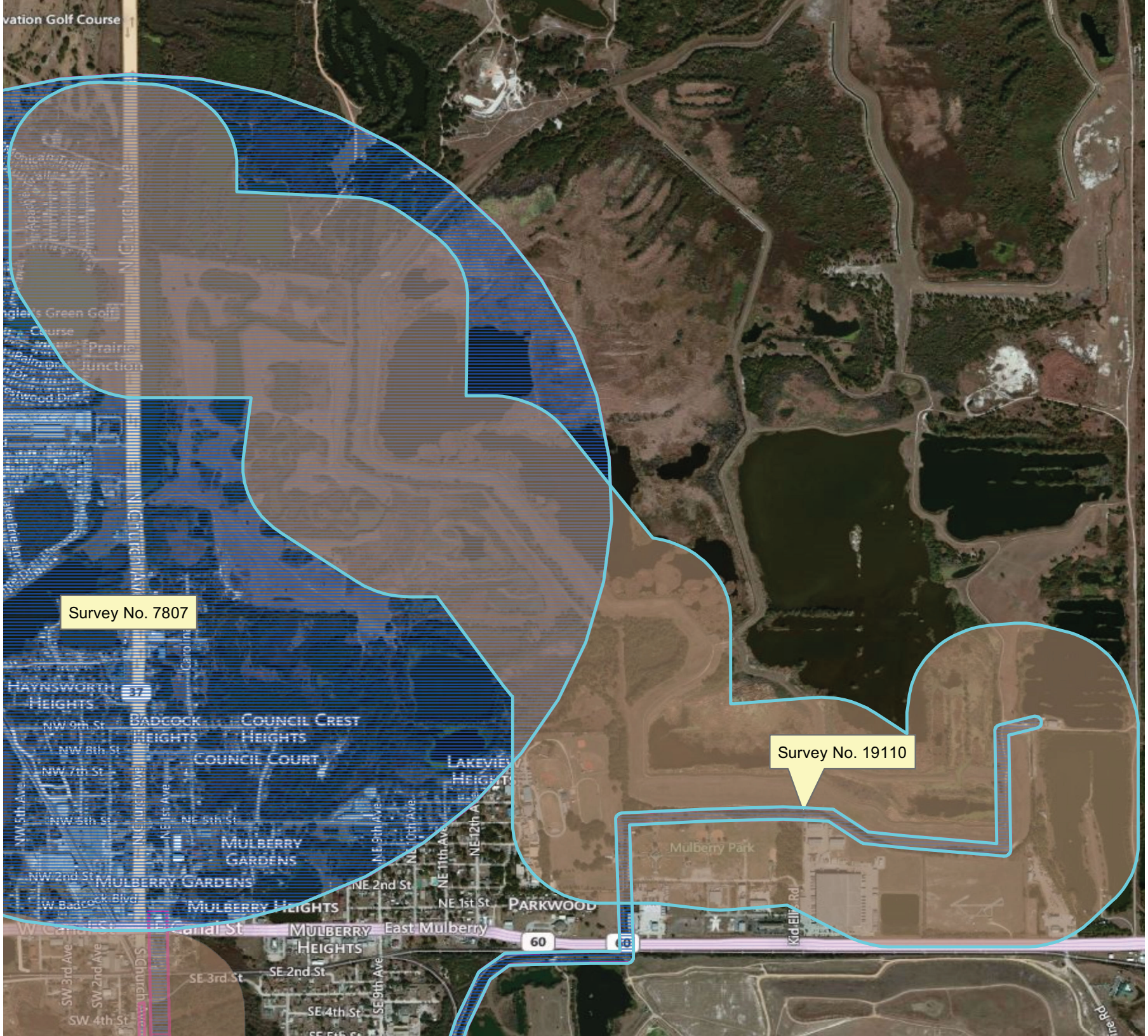
When interpreting the results of our search, please consider the following information:

- **This search area may contain *unrecorded* archaeological sites, historical structures or other resources even if previously surveyed for cultural resources.**
- **Because vandalism and looting are common at Florida sites, we ask that you limit the distribution of location information on archaeological sites.**
- **While many of our records document historically significant resources, the documentation of a resource at the Florida Master Site File does not necessarily mean the resource is historically significant.**
- **Federal, state and local laws require formal environmental review for most projects. This search DOES NOT constitute such a review. If your project falls under these laws, you should contact the Compliance and Review Section of the Division of Historical Resources at 850-245-6333.**

Please do not hesitate to contact us if you have any questions regarding the results of this search.

Sincerely,

Gabrielle McDonnell
Archaeological Data Analyst
Florida Master Site File
Gabrielle.McDonnell@DOS.myflorida.com


Survey No. 7807
Survey No. 19110
Mulberry Park
HAYNSWORTH HEIGHTS
BADCOCK HEIGHTS
COUNCIL CREST HEIGHTS
COUNCIL COURT
MULBERRY GARDENS
MULBERRY HEIGHTS
East Mulberry
PARKWOOD
60
NW 9th St
NW 8th St
NW 7th St
NW 5th St
NE 5th St
NW 2nd St
NE 2nd St
NE 1st St
SE 2nd St
SE 3rd St
SE 4th St
SW 4th St

| SurvNum | Title | Pub_ Date | Author1 | Sponsor | Num _New | Num _Old | CratNum | Archaeo | Struc | Cell |
|---|---|---|---|---|---|---|---|---|---|---|
| 7807 | Historic Properties Survey and Assessment of the One Mile Area of Potential Effects of the Proposed 180ft McKAy- Mulberry (87001-4) Telecommunications Tower, Polk County, Florida | 2001 | PARKER, BRIAN | DYNAMIC ENVIRONMENTAL ASSOC. | | | 200107605 | YES | YES | YES |
| 19110 | Cultural Resource Assessment Survey of the Tampa Electric Company (TEC) Polk Power Station Reclaimed Water Pipeline Project, Polk County, Florida | 2012 | Janus Research | Anthony N. Arcuri | 0 | 4 | 201202109 | YES | YES | |
| | | | | | | | | | | |

This record search is for informational purposes only and does NOT constitute a project review. This search only identifies resources recorded at the Florida Master Site File and does NOT provide project approval from the Division of Historical Resources. Contact the Compliance and Review Section of the Division of Historical Resources at 850-245-6333 for project review information.

January 2, 2014

Florida Master Site File

Jude Dawson
Environmental Consulting & Technology, Inc.
3701 NW 98th Street
Gainesville, FL 32606
Phone:352-248-3336
Email: jdawson@ectinc.com

In response to your inquiry of January 2, 2014, the Florida Master Site File lists one archaeological site, five surveys, two resource groups, one bridge, and twenty-three standing structures, found in the following parcels of Polk County:

**The portions of T30S R23E Sections 01, 02, 11-14, 23, & 24, indicated by the map submitted with search request (including a project area and a ¾ mile buffer).**

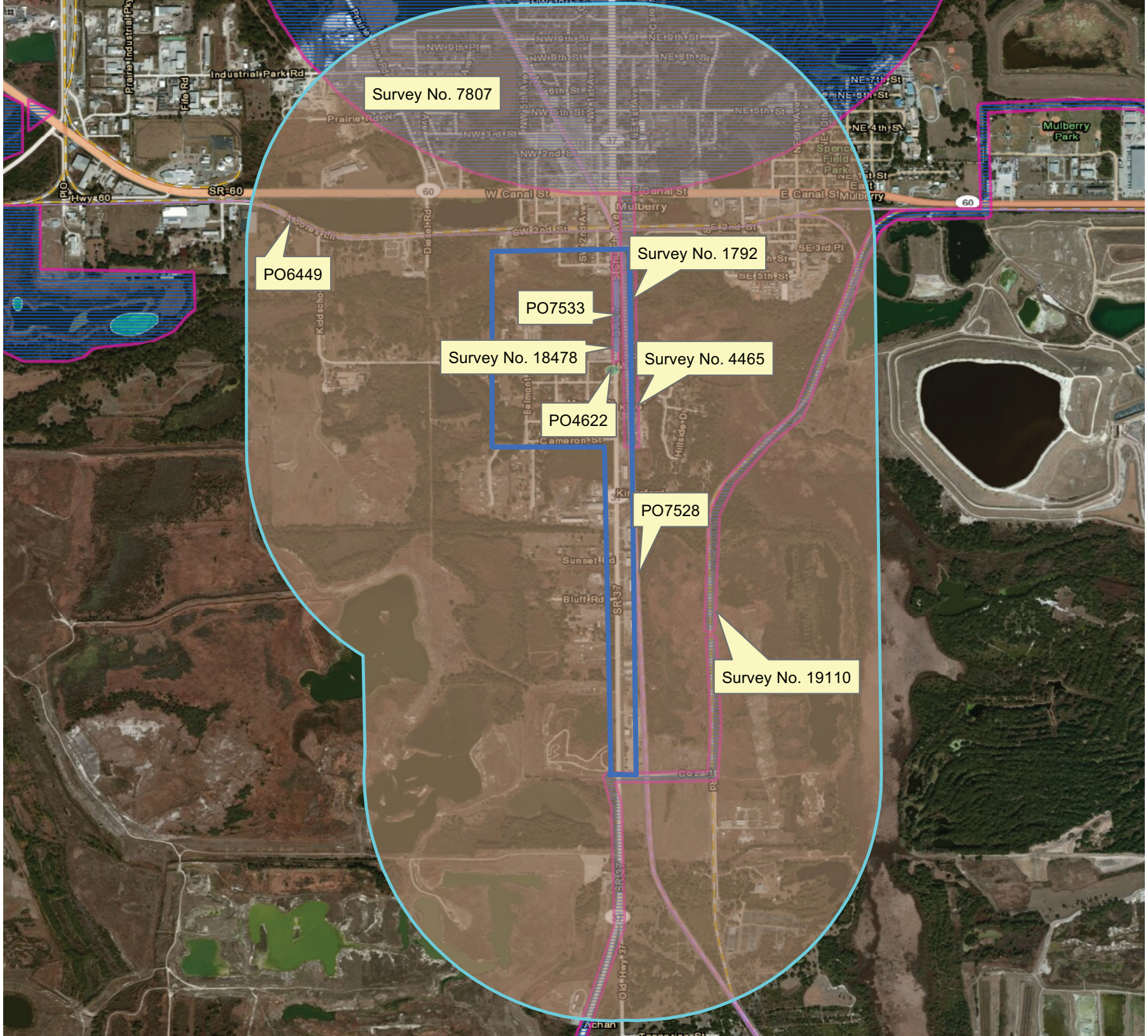
When interpreting the results of our search, please consider the following information:

- **This search area may contain *unrecorded* archaeological sites, historical structures or other resources even if previously surveyed for cultural resources.**
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- **Federal, state and local laws require formal environmental review for most projects. This search DOES NOT constitute such a review. If your project falls under these laws, you should contact the Compliance and Review Section of the Division of Historical Resources at 850-245-6333.**

Please do not hesitate to contact us if you have any questions regarding the results of this search.

Sincerely,

Gabrielle McDonnell
Archaeological Data Analyst
Florida Master Site File
Gabrielle.McDonnell@DOS.myflorida.com


Survey No. 7807
Survey No. 1792
PO6449
PO7533
Survey No. 18478
Survey No. 4465
PO4622
PO7528
Survey No. 19110
Industrial Park Rd
Prairie Industrial Pky
Fife Rd
Prairie Rd W
Hwy 60
SR-60
W Canal St
E Canal St
Mulberry
Mulberry Park
Spencer Field Park
Kiddscho
Dieckel Rd
Belmont
Cameron St
Hillside Dr
Sunset Rd
Bluff Rd
SR-37
Old Hwy 37
Cozart Rd
Achan

| SiteID | SiteName | SiteType1 | SiteType2 | Culture1 | SurvEval | SurveyNum | ShpoEval | PlotType | Shape_Leng | Shape_Area |
|---|---|---|---|---|---|---|---|---|---|---|
| PO04622 | SOUTH MULBERRY | Land-terrestrial | Single artifact or isolated find | Prehistoric lacking pottery | Ineligible for NRHP | 4465 | Ineligible for NRHP | NORM | 0.00165650445 | 0.00000020045 |

| SiteID | SiteName | FDOTnum | YearBuilt | Length | Ownership | Design1 | Material1 | InUse | ShpoEval | Shape_Leng |
|---|---|---|---|---|---|---|---|---|---|---|
| PO07533 | Bridge # 160063 | 160063 | c1951 | 285 | State | Slab | Concrete | YES | Ineligible for NRHP | 0.00306119994 |

| SiteID | SiteName | RgType | NRCategory | City | TimeSig1 | TimeSig3 | Narrative | HistAssc1 | SurveyNum | Evaluation | ShpoEval | Shape_Leng | Shape_Area |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PO06449 | Seaboard Coast Line Railroad Grade | Linear Resource | STRU | Mulberry | Twentieth century American, 1900-present | 1911-1930 | See continuation sheet. | Transportation | 19110 | See continuation sheet. | Insufficient Information | 1.28929314196 | 0.00007197963 |
| PO07528 | Winston & Bone Valley RR | Linear Resource | STRU | Mulberry | | American 1892-present | See continuation sheet. | Transportation | 19110 | See continuation sheet. | Eligible for NRHP | 0.76148249439 | 0.00009024593 |

| SiteID | PLOTMTHD | Site Name | Address | Destroyed | Survey Number | Year Built | Style | ExtPlan | StrucSys1 | ExtFabric1 | ExtFabric2 | ExtFabric3 | StrucUse1 | StrucUse2 | SurvEval | SurvDist | ShpoEval |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PO00291 | M | C C PEARCE HOUSE | 506 N CHURCH ST | NO | 0 | 1918 | Frame Vernacular | | | Drop siding | | | Private residence | | Not Evaluated by Recorder | Not Evaluated by Recorder | Not Evaluated by SHPO |
| PO00292 | D | PROCTOR HOUSE | DEAN ST AND HWY 37 | NO | 0 | | Queen Anne (Revival) ca. 1880-1910 | | | Drop siding | Wood shingles | | Private residence | Abandoned or vacant | Not Evaluated by Recorder | Not Evaluated by Recorder | Not Evaluated by SHPO |
| PO00294 | D | ASH'S TRIANGLE GROCERY | N PHOSPHATE BLVD AND ST | NO | 0 | | Commercial | | | Board and batten | | | Private residence | Abandoned or vacant | Not Evaluated by Recorder | Not Evaluated by Recorder | Not Evaluated by SHPO |
| PO00295 | D | MUTUAL STORES INC | 110 NW 1ST ST | NO | 0 | c1910 | Commercial | | Masonry | Brick | | | Commercial | | Not Evaluated by Recorder | Not Evaluated by Recorder | Not Evaluated by SHPO |
| PO00296 | M | CENTRAL PHARMARCY | 111 NW 1ST AVE | NO | 0 | | Commercial | | Masonry | Brick | | | Commercial | | Not Evaluated by Recorder | Not Evaluated by Recorder | Not Evaluated by SHPO |
| PO00297 | D | 206 NORTH EAST 1ST ST | 206 NORTH EAST 1ST ST | NO | 0 | | Neo-Classical Revival ca. 1880-1940 | | | Drop siding | | | Private residence | | Not Evaluated by Recorder | Not Evaluated by Recorder | Not Evaluated by SHPO |
| PO00298 | D | HALL HOUSE | 208 NORTHEAST 1ST ST | NO | 0 | | | | | Weatherboard, Clapboard | | | Private residence | | Not Evaluated by Recorder | Not Evaluated by Recorder | Not Evaluated by SHPO |
| PO00299 | D | WIGGS HOUSE | 400 NORTHWEST 4TH ST | NO | 0 | c1905 | | | | Board and batten | | | Private residence | | Not Evaluated by Recorder | Not Evaluated by Recorder | Not Evaluated by SHPO |
| PO00300 | M | 107 NORTHWEST 5TH ST | 107 NORTHWEST 5TH ST | NO | 0 | | Frame Vernacular | | | Aluminum | | | Private residence | | Not Evaluated by Recorder | Not Evaluated by Recorder | Not Evaluated by SHPO |
| PO00301 | D | MCGLOHAN BUILDING | 1ST AVE & 2ND ST & NW | NO | 0 | | | | | Brick | | | Commercial | Abandoned or vacant | Not Evaluated by Recorder | Not Evaluated by Recorder | Not Evaluated by SHPO |
| PO00302 | M | GOSS HOUSE | 500 NORTHWEST 1ST AVE | NO | 0 | | | | | Weatherboard, Clapboard | | | Private residence | | Not Evaluated by Recorder | Not Evaluated by Recorder | Not Evaluated by SHPO |
| PO00303 | M | 507 NORTHWEST 1ST AVE | 507 NORTHWEST AVE | NO | 0 | | Frame Vernacular | | | Drop siding | | | Private residence | | Not Evaluated by Recorder | Not Evaluated by Recorder | Not Evaluated by SHPO |
| PO00304 | M | 603 NORTHWEST 1ST AVE | 603 NORTHWEST 1ST AVE | NO | 0 | | Frame Vernacular | | | Drop siding | | | Private residence | | Not Evaluated by Recorder | Not Evaluated by Recorder | Not Evaluated by SHPO |
| PO00305 | M | 801 NORTHWEST 1ST AVE | 801 NORTHWEST 1ST AVE | NO | 0 | | Frame Vernacular | | | Drop siding | | | Private residence | | Not Evaluated by Recorder | Not Evaluated by Recorder | Not Evaluated by SHPO |
| PO00306 | M | 509 NORTHWEST 2ND AVE | 509 NORTHWEST 2ND AVE | NO | 0 | | Frame Vernacular | | | Drop siding | | | Private residence | | Not Evaluated by Recorder | Not Evaluated by Recorder | Not Evaluated by SHPO |
| PO05165 | D | GARLAND MOTORS | 1270 SR 37 | NO | 4465 | c1925 | Frame Vernacular | Irregular | Wood frame | Weatherboard, Clapboard | | | Private residence | | Ineligible for NRHP | Ineligible as contributor to NR district | Ineligible for NRHP |
| PO05166 | D | 1100 +/- STATE ROAD 37 | 1100 +/- SR 37 | NO | 4465 | c1935 | Masonry vernacular | Rectangular | Concrete block | Concrete block | Drop siding, Weatherboard, Clapboard | Weatherboard, Clapboard | Commercial | Abandoned or vacant | Ineligible for NRHP | Ineligible as contributor to NR district | Ineligible for NRHP |
| PO05167 | D | 1064-1066 STATE ROAD 37 | 1064-1066 SR 37 | NO | 4465 | c1925 | Frame Vernacular | Irregular | Wood frame | Brick | Wood/plywood | | Private residence | | Ineligible for NRHP | Ineligible as contributor to NR district | Ineligible for NRHP |
| PO05168 | D | 1060-1062 STATE ROAD 37 | 1060-1062 SR 37 | NO | 4465 | c1925 | Frame Vernacular | Rectangular | Wood frame | Brick | Wood/plywood | | Private residence | | Ineligible for NRHP | Ineligible as contributor to NR district | Ineligible for NRHP |
| PO05169 | D | 1041 +/- STATE ROAD 37 | 1041 +/- SR 37 | NO | 4465 | c1930 | Frame Vernacular | Irregular | Wood frame | Drop siding | Asbestos shingles or siding | | Private residence | | Ineligible for NRHP | Ineligible as contributor to NR district | Ineligible for NRHP |
| PO05170 | D | 1071 STATE ROAD 37 | 1071 SR 37 | NO | 4465 | c1920 | Frame Vernacular | Irregular | Wood frame | Drop siding | | | Private residence | | Ineligible for NRHP | Ineligible as contributor to NR district | Ineligible for NRHP |
| PO05171 | D | 1073 +/- STATE ROAD 37 | 1073 SR 37 | NO | 4465 | c1920 | Frame Vernacular | Irregular | Wood frame | Drop siding | | | Private residence | | Ineligible for NRHP | Ineligible as contributor to NR district | Ineligible for NRHP |
| PO07294 | D | 370 Cameron Street, Mulberry, FL 33860 | 370 Cameron ST | NO | | 1913 | Frame Vernacular | | Wood frame | | | | Private residence | Abandoned or vacant | Ineligible for NRHP | Ineligible as contributor to NR district | Ineligible for NRHP |

| SurvNum | Title | Pub_Date | Author1 | Author2 | Sponsor | Num_New | Num_Old | CratNum | Archaeo | Struc | Cell | Shape_Leng | Shape_Area |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1792 | Proposed replacement of two bridges on SR 37, North and South Forks of the Alafia River, Polk County | 1988 | BROWNING, WILLIAM D. | WIEDENFELD, MELISSA G. | Fla Dept of Transportation | | | | YES | YES | | 0.01276708234 | 0.00000317707 |
| 4465 | Cultural Resource Assessment Survey for the State Road 37 Storm Water Management Facilities for Bridges #160063 and #160061, Polk County, Florida | 1995 | JANUS RESEARCH | | FL Dept. of Transportation | 8 | | 199503826 | YES | YES | | 0.04890979812 | 0.00001390011 |
| 7807 | Historic Properties Survey and Assessment of the One Mile Area of Potential Effects of the Proposed 180ft McKAy- Mulberry (87001-4) Telecommunications Tower, Polk County, Florida | 2001 | PARKER, BRIAN | | DYNAMIC ENVIRONMENTAL ASSOC. | | | 200107605 | YES | YES | YES | 0.09699069815 | 0.00074335984 |
| 18478 | Memorandum, Cultural Resource Assessment Survey, Re-Evaluation of the SR 37 PD&E Study North Prong of the Alafia River Bridge No. 160063, Polk County, Florida; FPID No. 428937-1 | 2011 | ACI | Almy, Marion | | 1 | 0 | 201104000 | YES | | | 0.01044417791 | 0.00000106998 |
| 19110 | Cultural Resource Assessment Survey of the Tampa Electric Company (TEC) Polk Power Station Reclaimed Water Pipeline Project, Polk County, Florida | 2012 | Janus Research | | Anthony N. Arcuri | 0 | 4 | 201202109 | YES | YES | | 0.45080937128 | 0.00010145666 |