ATTACHMENT A

Levy Nuclear Plant – Transmission Lines

Alternatives Analysis
and
Avoidance and Minimization

October 2011

Progress Energy

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Introduction

Florida Power Corporation, d/b/a Progress Energy Florida, Inc. (PEF), is committed to providing safe, reliable, and affordable energy to its customers. PEF provides electric service to 1.7 million customers and a population of more than 5 million people. The company maintains a diverse mix of power generating facility resources to ensure affordable, efficient, and reliable service. The Levy Nuclear Plant (LNP) and associated facilities are components in PEF's baseload generation plan. PEF is proposing to construct and operate two Westinghouse, AP1000 Reactors at the LNP site located in Levy County, Florida. Project requirements include several offsite linear facilities including a new blow down pipeline and several new transmission lines.

On June 2, 2008, PEF submitted a Site Certification Application (SCA) to the Florida Department of Environmental Protection (FDEP) pursuant to the Florida Electrical Power Plant Siting Act (PPSA), Chapter 403, F.S., and Chapter 62-17, Florida Administrative Code (F.A.C.) requesting certification of the LNP, including approximately 200 miles of new transmission lines. The Governor and Cabinet, sitting as the Siting Board voted unanimously to approve the Administrative Law Judge's Recommended Order to grant full and final certification to PEF for the construction and operation of the LNP and associated facilities. The Final Order on Certification of PEF Levy Nuclear Power Plant Units 1 and 2 was granted on August 11, 2009 (Final Order). The Final Order for the project approved by the Siting Board contains a set of conditions that the project must abide by during the construction and operation of the plant and associated facilities. These are collectively referred to as the LNP Conditions of Certification (COC).

At the federal level, the project is in the licensing phase with the Nuclear Regulatory Commission (NRC) to obtain a Combined Operating License (COL) to construct and operate the LNP. It is anticipated a COL will be received in 2013. In addition, the project is in the permitting phase to obtain a Clean Water Act Section 404 and Rivers and Harbors Act Section 10 permit from the U. S. Army Corps of Engineers (USACE).

PEF's System Planning Group identified the need for four new 500 kV transmission lines from LNP to integrate the power generated at the site to the electrical grid. One transmission line was needed from the LNP to the Crystal River Energy Complex (CREC), one from LNP to a proposed Central Florida South Substation site and two from the LNP to a proposed Citrus Substation site. The proposed Citrus substation site was to be located in the general vicinity of US Highway 19 (US19) east of the CREC. The proposed Central Florida South Substation site was to be located in the general vicinity of the Florida Turnpike and the Sumter/Lake County line. In addition to these lines, 230 kV transmission lines were needed from the CREC to the Brookridge Substation, the Crystal River East Substation to the Citrus Substation (2 lines), the Brookridge Substation to the Brooksville West Substation and from the Kathleen Substation to the Lake Tarpon Substation. Two 69 kV lines are included to provide power to the 2 onsite distribution substations. Table 1 lists the transmission lines included in the LNP project.

Table 1 – LNP Transmission Lines

Line Code	Voltage	Line Name
LPC	500kV	LNP – Citrus Substation (2 lines)
LCR	500kV	LNP – CREC
IS	69kV	North LNP Construction/Administration
IO	69kV	South LNP Construction/Administration
LCFS	500kV	LNP – Proposed Central Florida South Substation
CB	230kV	Crystal River Energy Complex to Brookridge Substation
CCRE	230kV	Citrus Substation to Crystal River East Substation (2 Lines)
BBW	230kV	Brookridge Substation – Brooksville West Substation
PHP	230kV	Polk-Hillsborough-Pinellas (Kathleen Substation to Lake Tarpon Substation)

Corridor Selection

The process of minimizing project environmental impacts was an integral part of the selection of the corridors for the project transmission lines. PEF conducted a detailed selection process to select corridors to be included in the SCA. No alternatives were submitted during the SCA process. These corridors were certified by the Final Order in 2009 and became the study area boundaries for selection of the preferred rights of way (ROW).

The certification contained a condition which provided additional requirements that PEF must consider in the route selection of the transmission lines. Per the COC's Condition C. XXXIV. ROW Location reads:

> *A. PEF shall co-locate the Certified Transmission Lines' ROW to the extent feasible within or adjacent to existing public rights-of-way for those portions of the corridor which include such existing public rights-of-way. To the extent a widened road right-of-way has been acquired by the appropriate governmental agency at the time of final transmission line design, PEF's design shall reflect that new widened right-of-way.*
>
> *B. To the extent feasible PEF shall locate the Certified Transmission Lines' ROW so as to avoid the taking of homes.*
>
> *C. PEF will locate the Certified Transmission Lines' ROW so as to avoid Outstanding Florida Waterbodies (OFW) to the extent feasible and practicable, and locate the ROW within an OFW only upon a showing that the ROW alignment is clearly in the public interest.*
>
> *[Sections 403.526(2)(b)3, 403.522(18), 403.526(2)(a)5, and 258.007(4), F.S.]*

The widths of the corridors range from 300 to 1,000 feet where collocation with existing PEF transmission line right-of-way is expected to 1 mile when flexibility in establishing a future final right-of-way is needed. The corridor information was included in the Environmental Report. Figure 1 illustrates a generalized location of the various corridors reviewed prior to the selection of the corridors to be included in the SCA. At the time the corridor selection was being conducted, the project included a transmission line between the Brooksville West Substation in Hernando County and the Lake Tarpon Substation in Pinellas County which is why the generalized corridor map has potential corridors in Pasco County and northern Pinellas County. Further detailed engineering studies eliminated the need for this transmission line. Figure 2 illustrates the corridors for the LNP project as certified under the PPSA process.

Figure 1 - Generalized Corridor Map for LNP Transmission Line Corridors (2007)

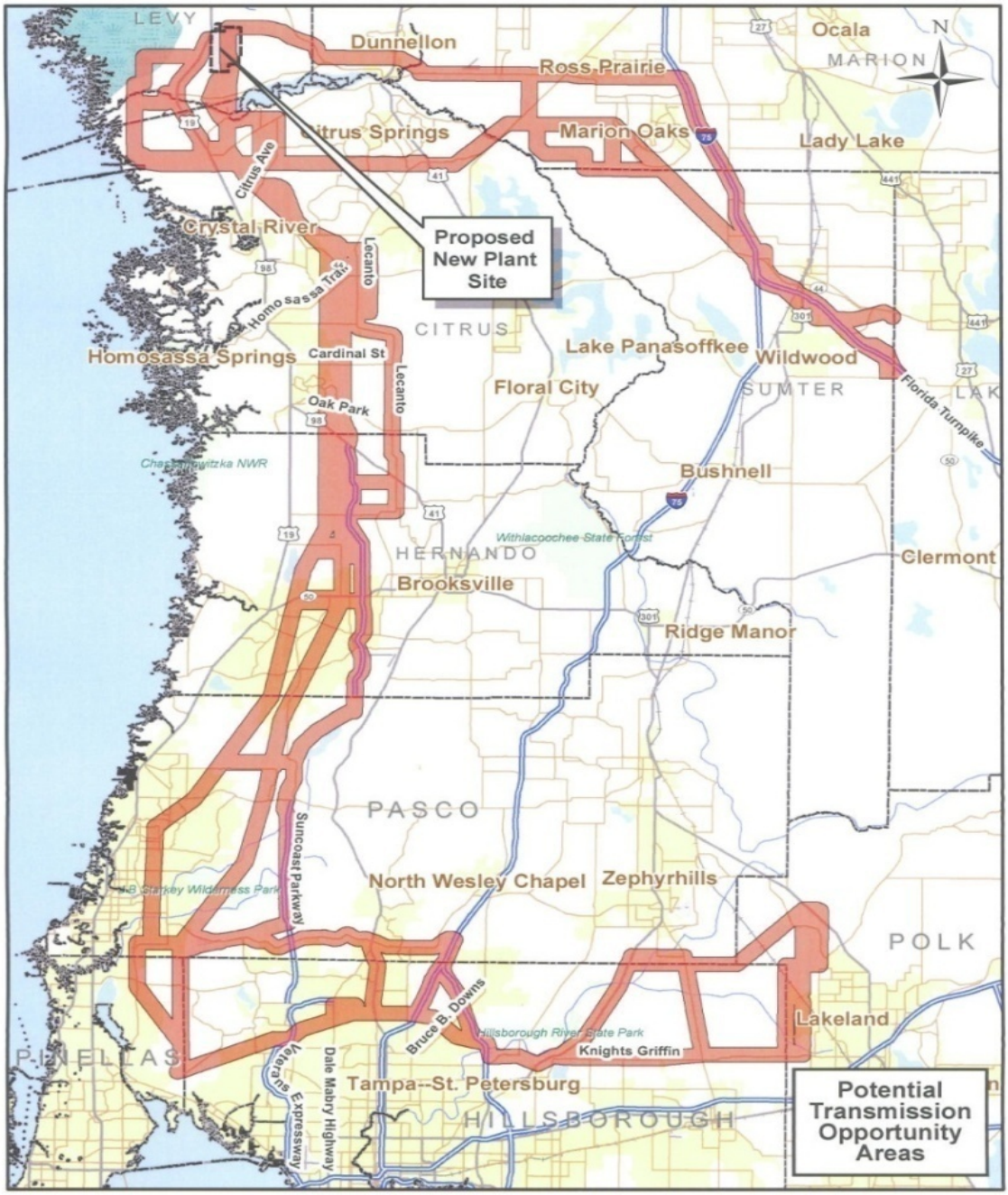
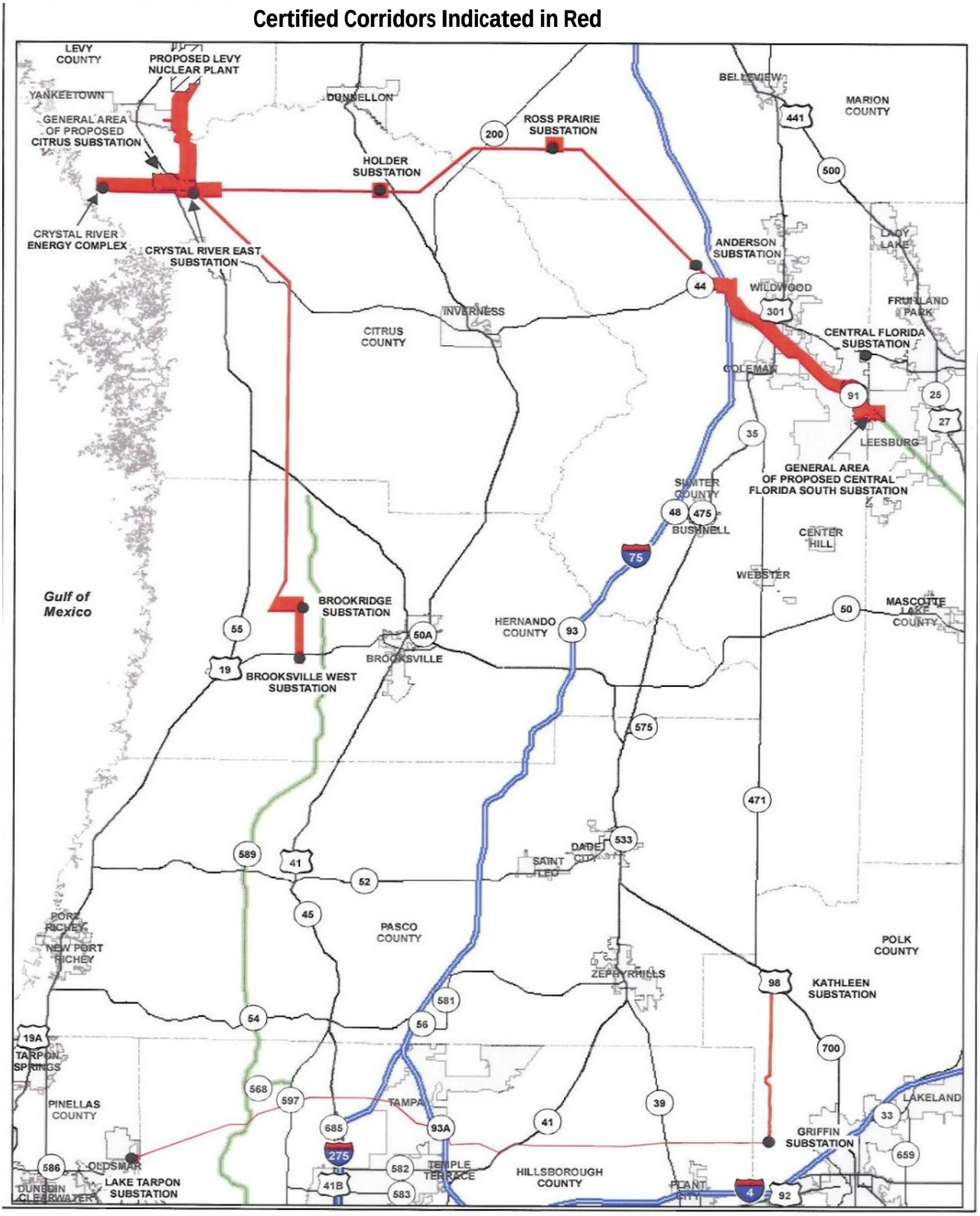


Figure 2 – LNP Transmission Line Certified Corridors (2008)



Route Selection Process Overview

The selection of the preferred ROW included quantitative and qualitative processes. The general steps for the selection of the preferred rights of way included:

- Determination of project start and end points;
- Establishment of a study area;
- Identification of engineering and construction requirements;
- Establishment of evaluation criteria;
- Establishment of a geographic information systems (GIS) database;
- Identification and evaluation of candidate segments;
- Quantitative and qualitative evaluations;
- Selection and evaluation of candidate routes; and
- Public involvement.

Environmental, land use considerations, engineering/constructability, safety and cost factors were taken into consideration in the selection of the preferred routes. To perform these analyses, PEF retained project teams of specialists in engineering, environmental science, land use planning, construction, maintenance, system planning, real estate, public relations, cultural resources, and corporate communications to develop the preferred routes. PEF's legal staff and outside legal counsel provided guidance during these studies. During the process, PEF conducted an extensive public outreach program to seek input from the public, landowners, and government agencies.

Public Outreach

Throughout the transmission line siting process, PEF conducted a proactive process to inform the public and obtain community input on the planning for transmission facilities associated with the LNP. PEF created the Community Partnership for Energy Planning which was a partnership between PEF and a broad range of stakeholders designed to include all interests within the communities that may be impacted by new transmission lines. Stakeholders involved in the process included local governments, regional planners, land and property owners, environmentalists, agencies for environmental resources, and business owners among others.

The Community Partnership for Energy Planning sponsored three Utility Search Conferences (USC). The USCs included approximately 40 participants during each session. The participants represented eight stakeholder groups including government, business, civic, environmental groups, agencies, utilities and various public interest groups. The participants in the conferences spent two days considering local community issues and the future of electric energy supply in the region. The meetings were open to the public. Public involvement activities involving local media outlets were conducted prior to the USC. This innovative process was designed to create an open dialogue between divergent stakeholders and public interest groups and was utilized as part of the public involvement process. The USC provided recommendations on preferred locations for the new transmission lines. These recommendations were closely aligned with the PEF project team's criteria.

Subsequent to the Utility Search Conferences, Community Working Groups (CWGs) were formed. These CWGs consist of approximately 25 community representatives many who participated in the Search Conferences. These CWGs are working with PEF to refine the various recommendations from the Utility Search Conferences and plan additional and broad community outreach. PEF also conducted 13 open houses during February and March 2008, in all ten counties potentially impacted by the new transmission lines. Almost 3000 people attended these open houses. These open houses were sponsored by the Community Partnership for Energy Planning and PEF. Corridor information evaluated at the USC was made available at the open houses for review by the broader public. All property owners within these mile wide corridors study areas were invited to the open houses (approximately

119,000). In addition, government officials, regional planners, homeowners associations, agencies, media and other interested parties identified by the CWGs were invited to these forums.

In addition to the open houses, PEF conducted public meetings with local governments, homeowners associations and special interest groups within the ten county study area. Information received from these efforts was incorporated into the transmission route planning process. PEF continued this active outreach process throughout the selection of the preferred ROW and conducted a second series of nine open houses in October 2008 through January 2009. These open houses had approximately 1900 attendees.

The study area for the selection process was the corridor approved as part of the SCA process. Candidate routes were developed by linking the candidate segments together to extend between the two transmission line endpoints, then entered into a table, given an identification number and carried forward for further evaluation. Some of the segments were included in more than one candidate route. The GIS database was used to determine quantitative measurements and other engineering considerations that formed the basis of the cost evaluation for the candidate routes. The candidate routes were subjected to a quantitative and qualitative evaluation to determine the transmission line routes most suitable for construction, operation, and maintenance in a safe, reliable manner considering the environmental, land use/real estate, design, engineering, safety, and cost criteria.

The identification and evaluation of ecological, physiographical, infrastructure, land use and cultural resource data were also conducted based on data collected from various federal, state, and local agencies as well as private sources including the following data sources:

- U.S. Geological Survey (USGS) 7.5-Minute Series Quadrangle Maps;
- Florida Department of Agriculture and Consumer Services (FDACS) protected plant species data;
- Florida Fish and Wildlife Conservation Commission (FFWCC) protected wildlife species data;
- Florida Natural Areas Inventory (FNAI) element occurrence data;
- Southwest Florida Water Management District (SWFWMD) land use/ land cover data;
- SJRWMD Land Use Land Cover;
- Citrus, Hernando, Hillsborough, Lake, Levy, Marion, Pasco, Pinellas, Polk, Sumter County information regarding existing and proposed schools, community facilities, parks, and roadway improvements;
- Citrus, Hernando, Hillsborough, Lake, Levy, Marion, Pasco, Pinellas, Polk, Sumter County GIS databases consisting of property ownership maps, public records and aerial photography;
- Comprehensive plans, future land use maps, and land development regulations for Citrus, Hernando, Hillsborough, Lake, Levy, Marion, Pasco, Pinellas, Polk, Sumter and the cities of Crystal River and Inverness (Citrus), Brooksville and Weeki Wachee (Hernando), Plant City, Tampa, and Temple Terrace (Hillsborough), Fruitland Park and Leesburg (Lake), Inglis and Yankeetown (Levy), Dunnellon (Marion), New Port Richey, Port Richey and Zephyrhills (Pasco), Clearwater, Dunedin, Oldsmar, Safety Harbor and Tarpon Springs (Pinellas), Lakeland (Polk), Coleman and Wildwood (Sumter); and
- Florida's Turnpike Enterprise facility maps.

Field Reconnaissance

Land use field reconnaissance was conducted on publicly accessible roads and by helicopter. This was done to identify existing residential, commercial, and industrial development as well as community facilities, conservation areas, and parks. Attention was also given to projects under construction and signs announcing new developments and/or community facilities. All of this information, as well as the county property appraiser's records, were added into the project GIS database. The ecological review of the preliminary candidate routes utilized existing SWFWMD and SJRWMD land use/land cover data and FNAI element occurrence data for the study

areas. Field reconnaissance was done at various times during the route selection process to ensure that GIS data reflected actual field conditions.

Based on the project team's experience in previous transmission line studies, and input from community involvement activities, criteria for identifying corridor and route segments were developed. Those criteria required segments, to the extent practicable, to:

- Maximize collocation with existing PEF transmission lines;
- Maximize collocation with other linear features including arterial and collector roads, major canals, and railroads;
- Minimize locating segments adjacent to existing residential development where no transmission line already exists;
- Minimize the severance of land under common ownership;
- Maximize following previously disturbed alignments (roads, trails, canals, ditches, etc.) through Florida Managed Areas, including state lands, (FMA), wetlands and upland forested areas;
- Minimize impacts to wetlands, public lands, cultural resources and threatened and endangered species;
- Minimize river and canal crossings where no crossing (road, railroad, transmission or other utility crossing) already exists;
- Minimize locating segments abutting schools;
- Minimize locating segments abutting community facilities;
- Encourage location close to existing industrial and extractive land uses;
- Minimize location within traditional business districts with concentrations of older or historic buildings; and
- Maintain distance from registered public and private airports consistent with Federal Aviation Administration (FAA) and other applicable State and county regulations.

Candidate route segments were identified by applying these guidelines to the data collected during the regional screening stage. Those segments were then mapped on aerial photography and, after review and acceptance by the project team, each of the segments was given an identification number. Routes were then developed by linking the candidate segments together to extend between the two proposed transmission line endpoints, then entered into a table, given an ID and carried forward for further evaluation.

The candidate routes were subjected to a quantitative and qualitative evaluation to determine the transmission line routes most suitable for construction, operation, and maintenance in a safe, reliable manner considering the environmental, land use/real estate, design, engineering, safety, and cost criteria. Quantitative criteria were measured in units, length, area, and U.S. dollars. Table 2 lists the criteria used and a brief description of the criteria used.

Table 2 – Quantitative Evaluation Criteria

Criteria	Description
Residences	A physical and inhabitable dwelling (i.e.,single-family and multi-family).
Future Residential Land Use	Category applied to an area where the future land use is designated residential according.
Co-location	To place a proposed transmission line within and/or contiguous to existing transmission line ROW.
Existing Linear Facilities	Existing and committed public roads and existing railroads.
Airports and Heliports	Known public and private airports and heliports.
Parcels	A tract(s) or plot(s) of land under a single property identification number
Schools	Existing and proposed public and existing private schools grades K-12, plus universities and colleges.
Community Facilities and Active Recreational Areas	Areas of public assembly including but not limited to community centers, hospitals, places of worship, assisted living facilities, nursing homes, day care facilities, cemeteries, golf courses, ball fields, and playgrounds.
Conservation Lands and Parks	Existing federal, state, and regional designated lands.
Archaeological Resource Sites	Evidence of human impact on the environment over 50 years old and evidence.
Historical Resource Sites	The built environment over 50 years old.
Commercial and Services Land Uses	Land uses predominantly associated with the distribution of products and services.
Industrial and Extractive Land Uses	Industrial land uses are where manufacturing, assembly, or processing of materials and products is accomplished. Extractive land uses are both surface and subsurface mining operations.
Protected Species (flora and fauna) (other than eagle nests)	Protected species are official state and federal lists of endangered species, threatened species, and species of special concern designated in some way by the respective jurisdiction meriting special protection or consideration. (includes wading bird colonies and rookeries)
Eagle Nests	Known active eagle nests.
Upland Forest	Upland areas that support a tree canopy closure of 10 percent or more.
Forested Wetland Areas	Wetlands dominated by a canopy of hardwoods and/or coniferous wetland trees.
Herbaceous Wetland Areas	Wetlands lacking a canopy component and dominated by herbaceous vegetation.
100-Year Floodplain	An area of land that would be inundated by a flood having a 1 percent chance of occurring in any given year.
Construction and Mitigation Costs	Comparative cost estimate to construct a transmission line including physical construction costs and wetland mitigation costs.
500-kV Crossings	Points where PEF's new 500-kV transmission lines cross PEF's existing 500-kV transmission lines.

Quantitative evaluation was used to eliminate less desirable candidate route segments and narrow the candidate route list to a reasonable number of discrete options for further detailed evaluation. The use of GIS spatial analysis allowed the selection team to compile, integrate, analyze, and compare all of the land feature data within a study area to meet the technical objectives of the project.

In addition to the quantitative criteria listed in Table 2 above, the project team recognized that there were other factors not measured in the quantitative evaluation that could affect the ranking of the routes. These are criteria that may be important in the selection of the route but may not be easily measurable. These criteria and a brief description are listed in Table 3.

Table 3 – Qualitative Evaluation Criteria

Criteria	Description
Assessment of potential impacts on property	Potential impacts on real estate were considered by weighing three factors for the high-ranking candidate routes brought forward for qualitative evaluation.
Right-of-way considerations	Right-of-way considerations were evaluated, which included the extent and location of ROW needed for the route.
Clearing, maintenance, and construction	Clearing, maintenance, and construction considerations were evaluated, such as type and density of vegetation within the candidate routes; and construction and maintenance techniques to service the new 500-kV transmission lines.
Cultural resources	The Miccosukee and Seminole Tribes were both contacted to discuss the project methodology and to seek concurrence with the project approach with respect to tribal issues.
Ecological resources	In addition to a review of the ecological data gathered during the quantitative evaluation, land use/vegetation (habitat) and ecology of the candidate routes were evaluated.
State lands and scenic, cultural, and natural landmarks	The potential impacts on state lands located within the candidate corridor/routes were evaluated. Stakeholders and agency representatives were consulted to identify and discuss issues related to the location of the corridor/route transmission lines.
Health and safety	Compliance with federal and state health and safety requirements was confirmed, and the potential impacts associated with construction and maintenance of the route was evaluated.
Reliability	Reliability considerations of the route location were evaluated, including structure type and design, crossings, and limiting the number of angles. Reducing crossings of the 500-kV transmission lines enhances the integrity and reliability of the electrical grid.
Public involvement	PEF obtained public input on the planning for the electrical transmission facilities associated with the LNP transmission lines through an interactive process.

The study used GIS spatial analysis to compile, integrate, analyze, and compare data within the candidate routes. Some of the segments were included in more than one candidate route. The GIS database was used to determine quantitative measurements and other engineering considerations that formed the basis of the cost evaluation for the candidate routes.

The following section contains a brief discussion of the route selection for each of the transmission lines for the LNP project.

Specific Route Discussion

This section discusses the alternatives reviewed for the various transmission line projects.

Levy Plant-Citrus Common Route

PEF's System Planning Group identified the need for four new 500 kV transmission lines from LNP to integrate the power generated at the site to the electrical grid. One transmission line was needed from LNP to CREC (LCR), one from LNP to a proposed Central Florida South Substation site (LCFS) and two from LNP to a proposed Citrus Substation site (LPC lines). Due to engineering limitations, operational restrictions and safety concerns, each 500 kV line must be on its own pole and another transmission line cannot be under built on the same structure.

During the corridor selection process, PEF determined that the 4 lines from the LNP site to the Citrus Substation should be located in one ROW to be known at the Levy Plant to Citrus Common Route. This decision to co-locate the two LPC, the LCR and the LCFS transmission lines in one common alignment from the LNP site to the Citrus Substation was also corroborated by the input from the participants in the Utility Search Conferences and community open houses who recommended against exiting the LNP in an easterly alignment through the City of Dunnellon and against any westerly alignment through the Towns of Inglis or Yankeetown.

PEF followed the selection process described above in the overview section to analyze the potential routes for the Levy–Citrus Common Route. Several items were completed that assisted in this effort including the selection of the structure type for the 500 kV structures, the 500kV conductor and the purchase of the proposed Citrus Substation property.

PEF performed a transmission line structure study which concluded that the preferred tangent structures for the 500-kV transmission lines are tubular steel H-frames (Levy Baseload Project 500-kV Structure Study, PEF, 2009). The structures will be designed to accommodate a single circuit 500-kV transmission line in accordance with PEF 500-kV Design Criteria and the latest edition of the National Electric Safety Code (NESC). The conductors will be attached to the structures using V-string insulator assemblies. The typical spacing between structures will range from 1,000 feet to 1,500 feet. The typical structure height will range from 130 feet to 155 feet above ground. A conductor was also selected. The preliminary design of the 500-kV transmission lines is based on utilizing 3-Bundle 1590 kcmil ACSR conductors.

As a result of the selection of the transmission structure type and the conductor, the team was able to define the ROW width needed for the Common Route. The 500-kV Common Route transmission lines' right-of-way width of 720 to 670 feet was selected to meet the NESC conductor blowout requirements, comply with the FDEP EMF strength regulations required by Chapter 62-814.450 (3), F.A.C., and allow for the construction, maintenance, and operation of safe and reliable transmission lines. This 720 foot ROW also included the co-location of a portion of the double circuit 69-kV Inglis to Ocala and Inglis to Brooksville (IO/IB) transmission lines and the 69-kV IO tapline which runs from the existing IO/IB transmission line north to a distribution substation on the LNP. In areas where

there is no co-location with 69-kV transmission lines, the width of the 500-kV Common Route ROW is 670 feet. The distance between transmission line structures, the height of transmission line structures, the maximum anticipated current, the maximum operating voltage, and the minimum conductor ground clearance were all variables utilized in the calculation of the right-of-way widths.

Within the corridor approved in the SCA, candidate segments were developed and combined into routes. Figure 3 illustrates the candidate segments for the LPC route. Candidate segments were removed from further evaluation for various reasons, including encumbrance of public roads, wetland impacts, engineering constraints, and impacts on conservation and recreation areas. Due to the number of segments developed, these segments were evaluated by the project team to determine if all the segments should be retained or if some should be eliminated.

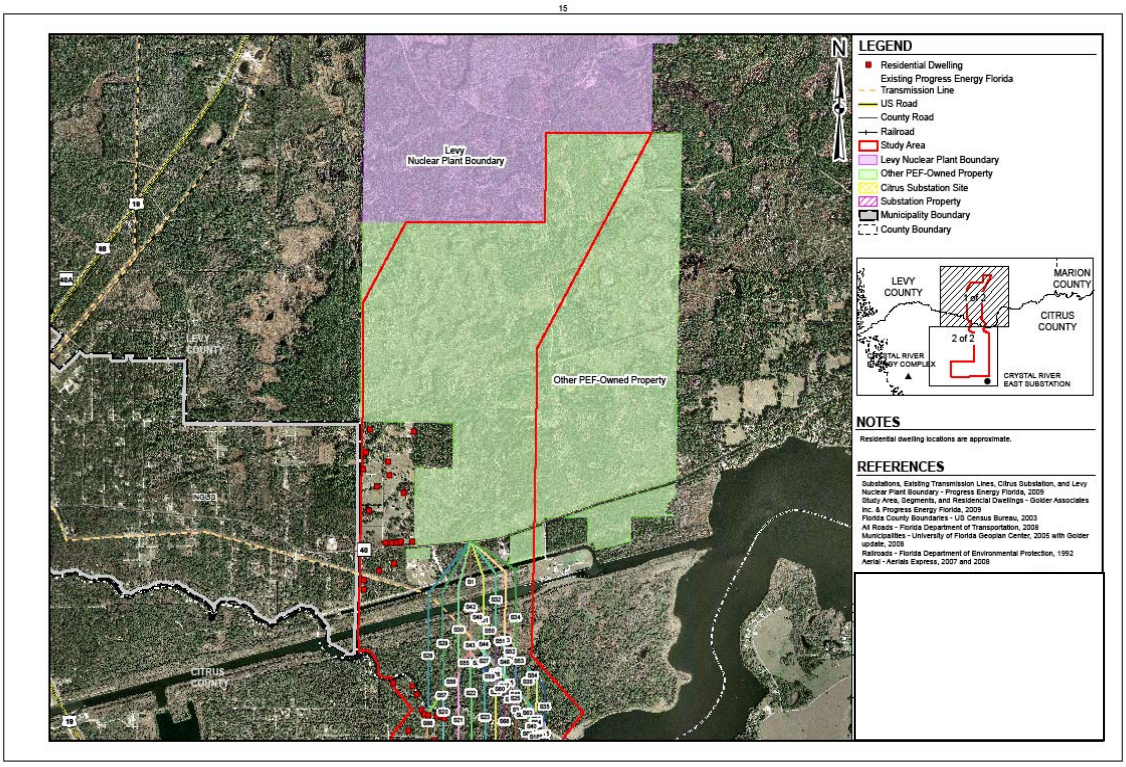
Following the initial selection and evaluation of candidate segments, three quantitative evaluations were conducted consisting of 3,245 routes. The route length for the 3,245 candidate routes ranged from a minimum of approximately 4.0 miles to a maximum of 4.9 miles. There were no schools, known eagle nests, known archaeological or historical resources, or airfields/heliports within any of the routes. The study area has very similar land use, habitat, and infrastructure characteristics throughout. Overall, the candidate routes that utilized the eastern side of the study area comprised the top 254 ranked candidate routes and ranked higher than those in the middle or the western side of the study area.

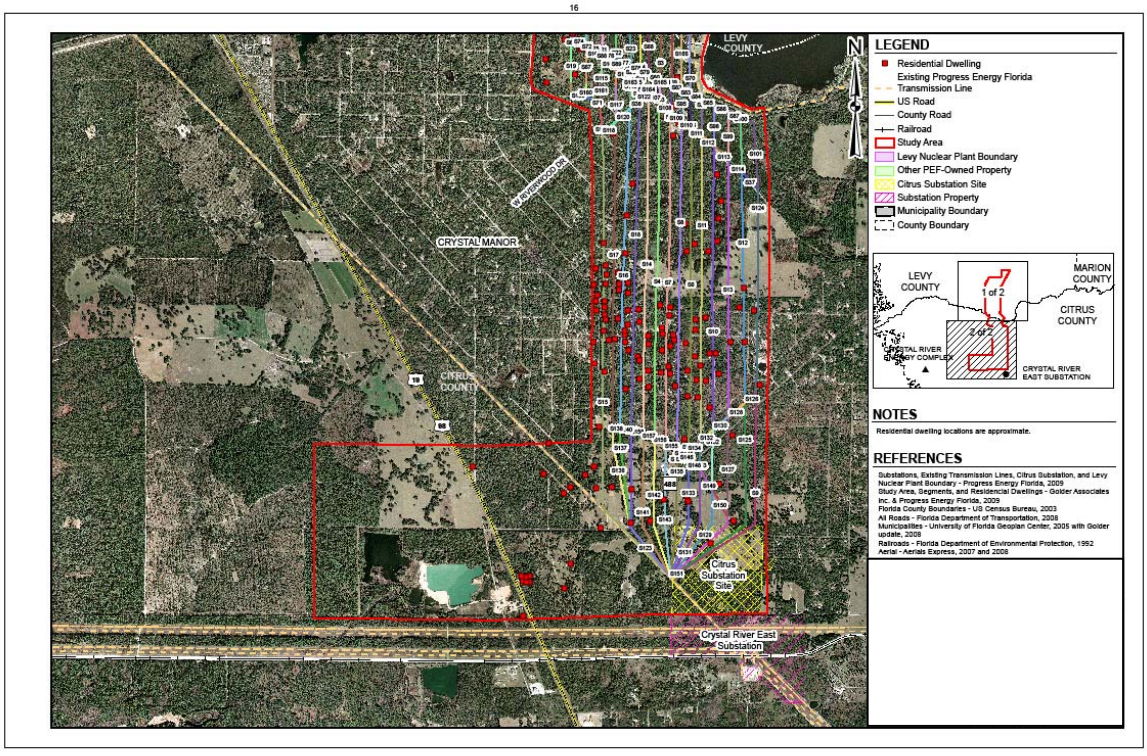
The candidate routes using the eastern portion and middle portion of the study area had fewer residential dwellings than the routes located within the western portion of the study area. Therefore, candidate routes using the western portion of the study area were removed from further evaluation and the candidate routes located in the middle of the study area were modified to minimize impacts on residential dwellings.

One candidate segment was identified for further evaluation because it minimizes impacts on the conservation and recreation areas, through the Greenway. This segment collocates with a portion of PEF's existing IO/IB transmission line and then turns southward through the state lands. Based on feedback from FDEP's Office of Greenways and Trails this alignment minimized any impacts to a potential campground to the west of the proposed ROW and to dam operations, existing parking areas and the existing Lake Rousseau boat ramp to the east. Two further evaluations were completed to analyze routes south of the Greenway. These evaluations further aligned the proposed ROW with existing roadways to minimize environmental impact and residential impacts.

The route selected for the LPC preferred ROW (labeled as Common Route Right-of-Way) is shown on Figure 6. The selected route minimized impacts to residential dwelling, minimized impacts to herbaceous wetlands and upland forest compared to the other routes, and it minimizes impacts to conservation lands by collocating with the existing transmission lines and locating the four lines in one ROW.

Figure 3 – Levy – Citrus Common Route Segments





Levy-Central Florida South Transmission Line

The corridor for the LCFS transmission line follows the existing PEF 500/230 kV lines east from the Citrus Substation. The corridor is approximately 1000 feet wide where it is adjacent to the existing transmission line ROW from the proposed Citrus Substation to the existing Ross Prairie Substation except for where it passes existing substations where it widens to one mile to allow flexibility in routing the new line around existing substation facilities. The 1000 foot wide corridor allowed PEF the option of locating the proposed transmission line on either side of the existing transmission lines. Once the corridor leaves the existing transmission line ROW, it is collocated with the Florida Turnpike to the Central Florida South Substation site.

After the SCA was filed, PEF continued study of the corridor to select a preferred ROW. PEF followed the process described above in the overview section to analyze the potential routes for the LCFS transmission line. The selection of the structure type for the 500 kV structures, the 500kV conductor and the purchase of the proposed Central Florida South Substation property assisted in this effort.

The team was able to define the ROW needed for the LCFS Route from the proposed Citrus Substation site to the proposed Central Florida South Substation Site. The 500-kV LCFS transmission line ROW width selected was to meet the NESC conductor blowout requirements; comply with the FDEP EMF strength regulations required by Chapter 62-814.450 (3), F.A.C.; and allow for the construction, maintenance, and operation of safe and reliable transmission lines. The preferred ROW width varies from 125 to 220 feet. The distance between transmission line structures, the height of transmission line structures, the maximum anticipated current, the maximum operating voltage, and the minimum conductor ground clearance were all variables utilized in the calculation of the ROW widths. The variable ROW width is due to the following: it correlates to the variation in width of PEF's existing 500/230 kV transmission line ROW; it minimizes impact to existing land uses; and it accommodates existing infrastructure.

From the Citrus Substation site east to a point just west of State Road 200 the proposed LCFS transmission line is proposed to be collocated on the north side with the PEF's existing 500/ 230 kV transmission line ROW. PEF considered options on either side of the existing transmission lines but due to the existing ROW on the north side this side was preferred. In this area no new ROW needed to be acquired.

From the area where PEF needed to acquire new ROW, a detailed route evaluation was performed. Candidate segments that would then be combined into routes to evaluate were developed. The identification and evaluation of candidate segments was an iterative process in which several comparisons and combinations were evaluated using the criteria discussed above. Candidate segments were rejected from further consideration if they failed to meet the objectives or route evaluation criteria. The route selection process for the 500-kV LCFS transmission line route included two iterations of quantitative and qualitative evaluations and considered 1,248 candidate routes.

The location of 500-kV LCFS transmission line route within PEF-owned property (or ROW) and co-located adjacent to existing transmission lines and major roads was determined to be the best route for the 500-kV LCFS transmission line. The preferred route's quantitative ranking was in the top 1 percentile scoring of the 1,248 candidate routes. More specifically, the 500-kV LCFS transmission line route was selected based on the following:

- The route minimizes the acreage of herbaceous and forested wetlands and upland forest more than other candidate routes do;
- The route minimizes the impact on conservation lands by utilizing PEF-owned property (No new ROW needed in the Halapata Tastanaki Preserve (SWFWMD lands) and Two Mile Prairie Tract of the

Withlacoochee State Forest. A 420 foot wide PEF ROW already existing through these properties where the new transmission line will be located so no additional land rights will be needed),
- The route minimizes impacts on residential dwellings by utilizing PEF-owned property and is co-located adjacent to existing transmission lines and
- The route is collocated with existing linear facilities (existing transmission lines and Florida Turnpike).

Due to the collocation with the existing transmission lines, the existing access roads can be used in most areas to access the new line eliminating the need for wetland impacts for new access roads.

Levy- Crystal River

The portion of the route from the Citrus substation site to the CREC 500-kV switchyard is located within PEF-owned property for approximately 5 miles minimal route selection was conducted. Location of the 500-kV LCR transmission line route within PEF-owned property was determined to be the best route for transmission line based on the following:

- The route utilizes existing PEF-owned property; therefore, no new linear paths are created within the surrounding area;
- Due to the collocation with the existing ROW exiting the CREC complex the new line can utilize existing access roads, limiting the need to construct new access roads; and
- The route minimizes project costs by utilizing PEF-owned property; therefore, no new ROW will be required.

IS- Levy North LNP Construction/Administration Substation

The IS-Levy North construction/administration substation is located on the LNP property location approximately 300 feet from the transmission line on property owned by PEF. One span of transmission line will be needed to connect the transmission line to the substation so no route selection was conducted on this line.

IO – Levy South LNP Construction/Administration Substation

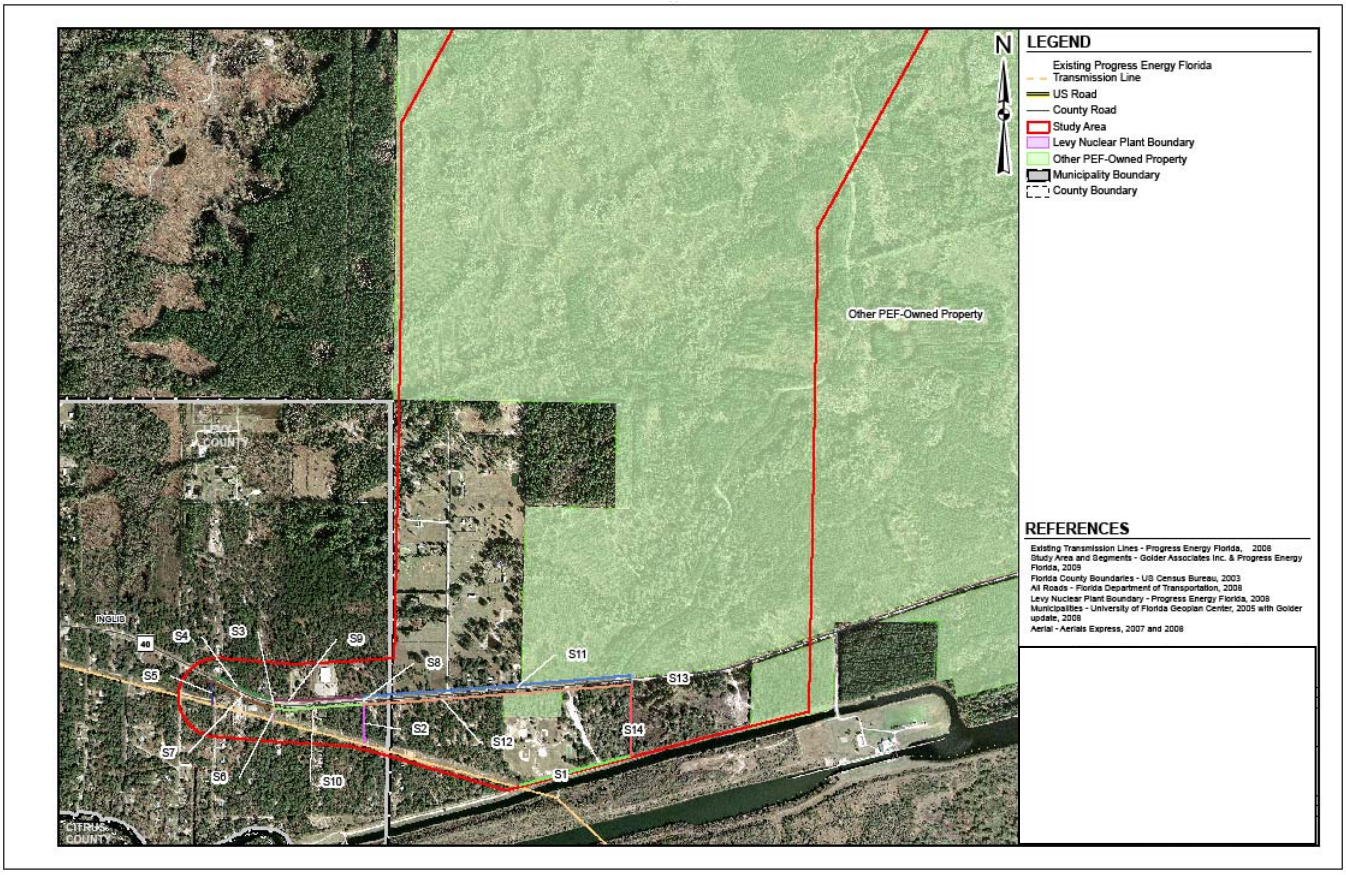
The proposed 69 kV IO transmission line is associated with the construction and administration of the LNP and connects the existing 69 kV Inglis-Ocala transmission line located north of the Cross Florida Barge Canal to the southerly distribution substation within the LNP site. The corridor followed the existing barge canal to the proposed Common Corridor. Figure 4 below illustrates the route segments that were developed for the line. There were no wetlands within any of the route segments. The route selection process consisted of the quantitative evaluation of 13 candidate routes developed from these segments. The route selected follows the Barge Canal to the Levy-Citrus Common Route described above. The line will then be collocated within the Common Route ROW.

The 69-kV IO tapline route was selected based on the following:

- The route is consistent with public input by 1) co-locating adjacent to the existing road, 2) locating within the proposed 500-kV Common Route, and 3) minimizing impacts on residential dwellings.
- The route ranked number 1 out of 13 candidate routes
- The route minimizes the number of affected residential dwellings by co-locating adjacent to an existing road and within the proposed 500-kV Common Route; and

- The route minimizes overall project costs by co-locating with linear facilities.

Figure 4 – IO Segments Reviewed



Crystal River Energy Complex-Brookridge Substation

Further detailed engineering design and the evaluation of alternatives determined the CB line could originate at the proposed Citrus substation instead of the CREC switchyard, so the CREC to Brookridge transmission line became the Citrus to Brookridge Transmission line but kept the same line code (CB). This eliminated the need for approximately 5 miles of transmission line and the wetland impacts within the proposed ROW.

The corridor selected to include in the SCA was collocated with the existing with portions of the existing PEF 500/230/115 kV corridor south and then generally follows either the existing PEF 115 kV Crystal River East – Brookridge (CRB) transmission line ROW. Except for a small area near the proposed Citrus Substation and the Crystal River South Substation this corridor is centered on existing ROW and reduces impacts to the surrounding environment.

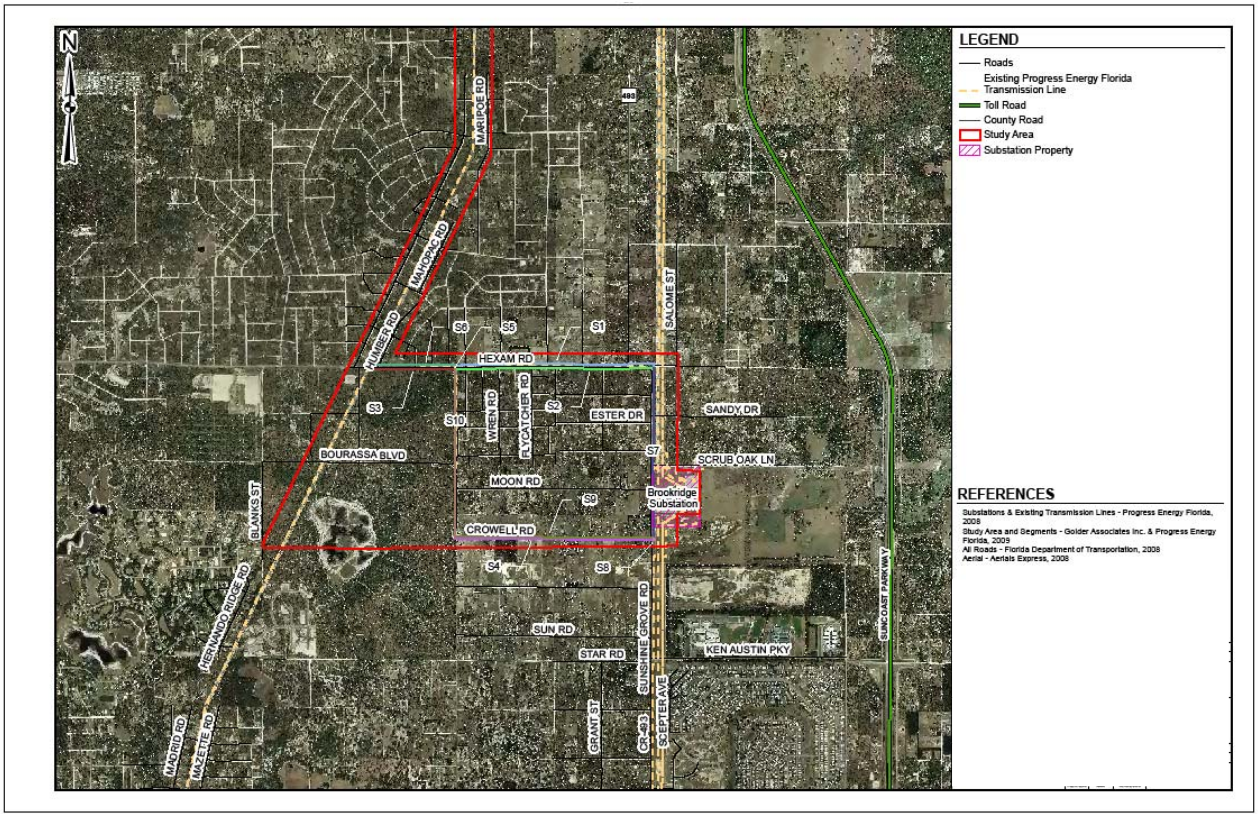
The route selection process considered two quantitative evaluations. The quantitative evaluation from the Citrus substation site to the intersection of Hexam Road considered three candidate routes. One route involved rebuilding the existing transmission line on the same centerline (Route 2). Route 1 and 3 were located on either side of the existing centerline. The quantitative evaluation from the intersection of Hexam Road to the Brookridge substation considered eight candidate routes.

The location of the 230-kV CB transmission line route within existing transmission line ROW and co-location with existing transmission lines was determined to be the best route based on the following:

- The route is consistent with public input by minimizing impacts on residential dwellings, utilizes PEF-owned property, and is co-located with existing transmission lines;
- The route minimizes project costs by utilizing existing rights of way and co-locating with existing transmission lines; and
- Locating the route within existing rights of way and co-locating it with existing transmission lines does not create multiple linear paths through the area.

Figure 5 below illustrates a section of the alternatives studied west of the Brookridge Substation.

Figure 5 - CB Alternatives Reviewed Near the Brookridge Substation



Citrus Substation to Crystal River East Substation

The original planning study identified the need for two 230 kV transmission lines to connect the existing Crystal River East Substation to the proposed Citrus Substation. Further detailed engineering design and review determined these connections were not needed. As a result no further work was conducted on them.

Brookridge Substation to Brooksville West Substation

The route selection process for the 230-kV BBW2 transmission line route evaluated three candidate routes. The 230-kV BBW2 transmission line route is located within PEF's existing rights of way. The 230-kV BBW2 transmission line route was selected based on the following:

- The route utilizes existing PEF transmission line rights of way;
- The route minimizes project costs by utilizing existing rights of way; and
- The route is consistent with public input by utilizing an existing linear path, using existing rights of way, and impacting no residential dwellings.

Polk-Hillsborough-Pinellas Transmission Line

The corridor submitted in the SCA was 1000 feet wide centered on the collocation with the existing KWX transmission line and 300 feet wide centered on the existing Griffin to Lake Tarpon transmission line. Three different route alternatives were reviewed. One located each on either side of the existing centerline (east and west for the KWX line and north and south for the Griffin to Lake Tarpon transmission line. The third was locating on the existing center line. It was determined to the route should be within the existing ROW to minimize impacts.

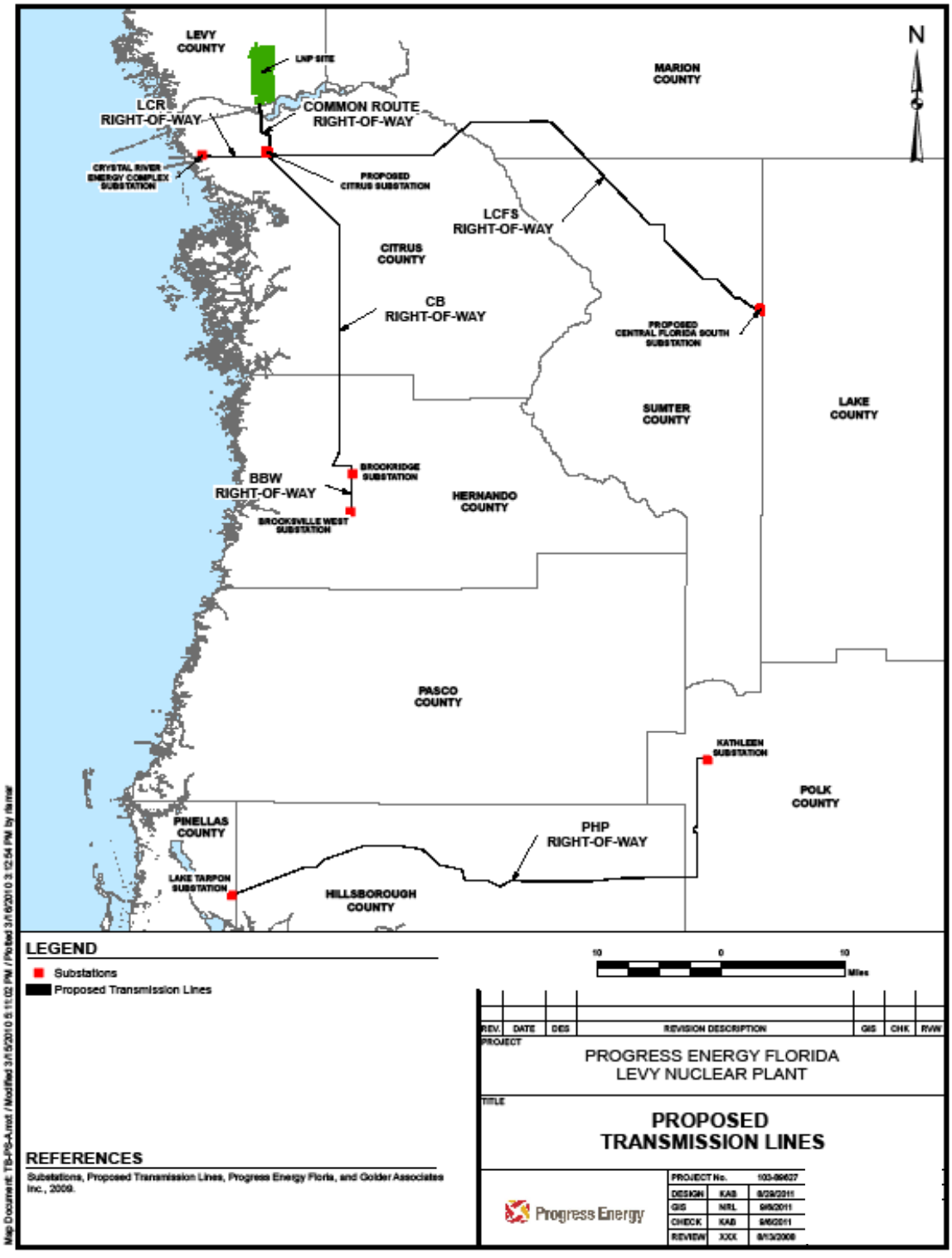
Conclusions

The LNP route selection team followed a prescribed process to select the preferred routes for the transmission lines. Environmental criteria were considered throughout the process both on a quantitative and qualitative basis. As a result the team identified routes that appropriately balanced siting criteria, including reliability, safety, constructability, and public input to meet the criteria listed below:

- The routes minimized impacts on residential dwellings by utilizing existing rights of way and PEF-owned property to the maximum extent practicable, thus avoiding the creation of multiple linear paths;
- The routes maximized co-location with existing PEF transmission lines, thus minimizing environmental impacts and minimizing project costs;
- The routes minimized impacts on schools and other community facilities by utilizing existing rights of way to the maximum extent practicable;
- The routes minimized impacts on known eagle nests;
- The routes minimized impacts on listed NRHP sites;
- The routes minimized impacts on state lands or other conservation areas and parks by utilizing existing rights of way to the maximum extent practicable;
- The routes maximized co-location opportunities adjacent to other linear features, including arterial and collector roads, major canals, and railroads, to the maximum extent practicable; and
- The routes maintained distance from registered public and private airports consistent with Federal Aviation Administration and other applicable federal, state, and county regulations.

Figure 6 illustrates the preferred ROW for the LNP project transmission lines.

Figure 6 – Preferred LNP Transmission ROW



Wetland Avoidance and Minimization

Wetland impacts from the construction of the transmission lines and substations for the LNP project result from fill for access roads and structure pads and the clearing of forested wetlands converting them to herbaceous wetlands.

PEF is proposing to construct access roads and structure pads for this project. Access roads are necessary to provide 24 hour access to the ROW for maintenance and to compensate for the increasing difficulty in using adjacent properties to access our ROW. The structure pads are necessary to provide a safe work area for workers to install and maintain the line. Construction and maintenance of a power line of this size requires the use of various types of equipment and the safety of our crews is a major concern. These areas are necessary to provide the construction and maintenance crews with a safe, stable work area around the pole location. These pads are even more vital to the safety of our crews when working on energized transmission lines. Given the importance of these transmission lines to the transmission grid in the area, much of the maintenance needed on the line will likely be conducted while the line is energized in order to maintain service to our customers.

In the past PEF has chosen to use temporary construction matting rather than constructing permanent access roads on the ROW, however, because of the critical nature of these lines, we have elected to construct permanent access roads and structure pads. Permanent access roads provide our crews with a safer means to access the ROW during construction and also during future maintenance of the line.

Access roads are vital for the future emergency maintenance of the transmission line. In the event these lines were to go down for any reason, PEF wants to minimize the potential outage times to our customers. If permanent access roads were not available, then time will be lost waiting for mats to be brought to the area and installed prior to initiating repair work. The delivery and installation of temporary construction matting can sometimes take more than a day. Installing access roads as part of this project gives future access without damage to the environment and minimizes the safety risks to our crews. Electric utilities are also under increasing pressure by the Public Service Commission to for quick response in the event of an outage on a transmission line. Transmission lines are some of the first lines restored if the event of a storm because they provide the link between the substations and can restore the most customers. Access roads assist us in providing quick response to any outage.

Due to development adjacent to our ROW, PEF has also found it increasingly difficult to access these rights of way from adjacent property. An access road located within the ROW limits potential conflicts and time delays.

The original transmission line wetland impacts for the LNP transmission lines were completed prior to the submittal of the site certification which was submitted to the FDEP in June 2008. At that time PEF had not selected a preferred ROW for the transmission lines. GIS was used to overlay a conceptual ROW on Florida Land Use and Cover Form Classification System maps of the corridors and wetland impacts were then calculated. At that time PEF estimated approximately 330 acres of wetlands would be impacted by the construction of the LNP project transmission lines. Approximately 202 acres of wetlands would be filled and approximately 128 acres would be cleared converting forested wetlands to herbaceous wetlands. These acreages were developed starting from the Levy Plant North Property boundary.

Once route selection was complete, PEF completed wetland delineations on the preferred ROWs to determine the limits of jurisdictional wetlands within the preferred ROW. At the same time, preliminary engineering determined the pole locations for the various transmission lines. Access roads were laid out at the same time. The preliminary engineering drawings were merged with the maps of the field delineated wetlands. Engineering and

environmental staff reviewed the location of each structure and access road to determine if structures could be moved or pads eliminated. Alternatives were reviewed for each access road to determine if other existing access could be used and a new access road be eliminated. Once this was completed, the final acreage of wetland impacts for the LNP transmission lines include approximately 61 acres of fill and 84 acres of clearing of forested wetlands (approximately 34 acres of fill and 77 acres of clearing of USACOE jurisdictional wetlands). Please note for this process, the ROWs originated at CR 40 and the transmission impacts north of CR40 are included in the plant site impacts. Table 4 provides the results of some of the avoidance and minimization measures used to reduce impacts on specific transmission lines or substation projects.

Table 4: Examples of Avoidance and Minimization Measures Undertaken

Facility	Measure Taken
Central Florida South Substation	Site Selection- site chosen to avoid wetland impacts in construction
Kathleen Substation	Redesign to eliminate impacts
All transmission lines	Reduce width of access roads by almost 5 feet
CB	Collocate line with existing CRB line to reduce need for new ROW and additional wetland impacts Eliminated 5 miles of transmission line between CREC and Citrus Substation 4 structures move to avoid wetland impacts
LPC (Common Route)	Collocate 4 - 500 kV transmission lines into one ROW reducing ROW width Collocating the IO – Levy South LNP Construction/Administration Substation within the Common Route to eliminate need for separate ROW Consolidated structure pads into one pad vs. 4 pads Removed access roads in Crystal Manor area
LCFS	3 structures moved to avoid impacts 4 structures shifted to reduce wetland impacts Collocation with existing transmission line reduced width of ROW needed in many areas and reduced need for new access roads
PHP	Moved 40 structures to reduce or eliminate wetland impacts Shifted 6 access roads out of wetlands Removed 6 access roads by use of existing roads

Right of Way Maintenance

Over 90% of the transmission lines proposed for the LNP project will be located within existing ROWs. As a result, vegetation management will continue as it has currently being conducted. PEF utilizes a program of Integrated Vegetation Management (IVM) to manage vegetation on transmission ROWs. Properly maintained ROW are essential for the public safety and worker safety. The long-term goal of our vegetation management program is to provide for public safety and worker safety while providing for reliable service in an environmentally responsible manner. The goal is to convert tall growing plant communities in transmission ROW to communities dominated by low growing plant species. By selectively controlling incompatible plants while preserving low growing grasses, herbs and woody shrubs we are able to accomplish our goal. With proper management, the low growing vegetation can eventually dominate the right-of-way and retard the growth of the tall growing vegetation, providing control of incompatible plants and reducing the need for future treatments. Studies show this type of meadow-like setting will enhance wildlife habitat by promoting vegetation preferred by birds, deer and other small animals.

The first step to creating a low growing plant community is to clear rights-of-way of tall growing and incompatible plant species. This is typically accomplished either mechanically or manually. Cutting or mowing alone is ineffective because it encourages the biological response of re-sprouting. After clearing, right-of-ways are monitored for re-sprouting and reinvasion by incompatible vegetation. Once this occurs, the right-of-way will be enhanced through various methods to provide the desired outcome of a low growing plant community. Many factors are considered before an appropriate method is chosen and implemented.

Summary

PEF conducted a systematic process to review alternatives for routing the transmission lines for the LNP project which included the review of environmental criteria including wetlands, listed species and conservation lands. The preferred routes selected for the project balance impacts to the environment to the extent practicable. Over 90% of the transmission lines to be construction as part of the project are collocated with or within existing ROW. The new ROW between the LNP and the Citrus Substation collocates the four 500 kV lines exiting the plant and for a portion of the distance the 69 kV line to serve the South Plant Administrative Substation.

Once the preferred ROW were selected and field wetland delineations were conducted, PEF used this information along with the engineering design to relocate structures to outside of wetland limits, relocate or eliminate access roads to reduce impacts on wetlands. The unavoidable wetland impacts will be mitigated per the Wetland Mitigation Plan. ROW vegetation management via an integrated vegetation management program including mechanical and herbicides is conducted to ensure a low growing vegetation community is maintained underneath the transmission lines.

Avoidance and minimization of wetland impacts were considered to the maximum extent practicable at every step in the routing of the transmission lines and in the layout of the access roads and structure pads.