

## MEMORANDUM

Date: October 15, 2014

**TO:** Town Commission

**FROM:** Anne Ross, Assistant Town Manager

**SUBJECT:** Ordinance 2014-33, Providing for Referendum for Underground Utilities Along Gulf of Mexico Drive

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The Town of Longboat Key has conducted a cost analysis associated with undergrounding utility lines along Gulf of Mexico Drive. An Ordinance has been prepared to seek voter approval for this proposed project. The Ordinance provides for referendum to be placed on the ballot for the March 10, 2014 General Municipal Election.

Town staff will present PowerPoint presentation that outlines the utility undergrounding project and discusses the Ordinance. A not-to-exceed cost estimate has been prepared and will be refined for second reading and public hearing at the November 12, 2014 Special Meeting.

Please don't hesitate to contact me if you have any questions.

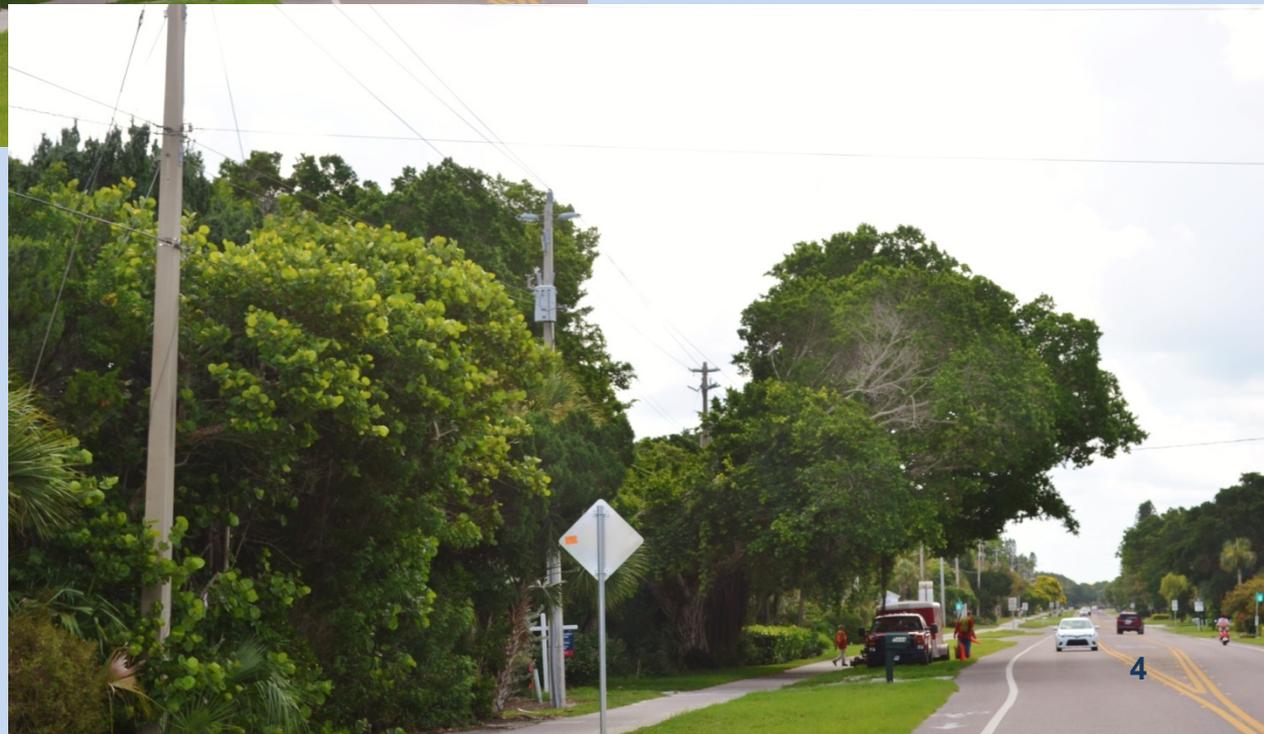


**UTILITY UNDERGROUNDING ON  
GULF OF MEXICO DRIVE  
REFERENDUM**

**TOWN COMMISSION SPECIAL MEETING  
OCTOBER 20, 2014**













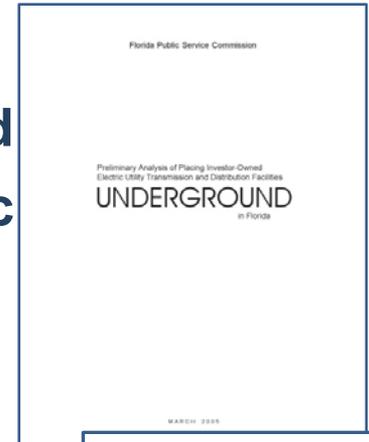
# OVERHEAD VERSUS UNDERGROUND

## Advantages

- **Underground Electric is More Reliable than Overhead**
- **Underground is Aesthetically More Pleasing to Public**
- **New Developments are Typically Installing Underground**
- **Underground Looped System Minimizes Customer Inconvenience**
- **Underground is Safer**

## Disadvantages

- **Underground Construction Costs 5 to 10 Times More than Overhead**





# OVERHEAD VULNERABILITY





# UNDERGROUND VULNERABILITY



Hurricane Jeanne Damage



Hurricane Ivan Damage



# FLORIDA POWER & LIGHT (FPL) HARDENING PROJECT

- **Improving Distribution System in Vulnerable Areas**
- **Assess System Every 7 to 8 Years**
- **FPL Planned to Conduct Longboat Key Hardening Project in Summer 2014**
- **FPL Project on Hold at LBK Request**



# FPL HARDENED POLES

## Bradenton Beach





# PROJECT COMPONENTS

- **Underground Existing Utilities on Gulf of Mexico Drive (GMD)**
- **Street Lighting Replacement or Enhancement**
- **Fiber Optic Line Installation**



# UTILITY CONSIDERATIONS

- **FPL Design Components**
  - **Overhead Lateral Line Transitions**
  - **Looping Existing Underground Systems**
  - **On Ground Cabinet Size**
- **Comcast**
- **Verizon**



# OVERHEAD LATERAL LINE TRANSITIONS

- **Side Streets**
- **Back Property Services**
- **Single Family Homes**
- **Multi Family**
- **Commercial**



# LINE TRANSITIONS EXAMPLE – PROPOSED SIDE STREET GUNWALE LANE

Before

*Single Pole*



After

*Double Pole*





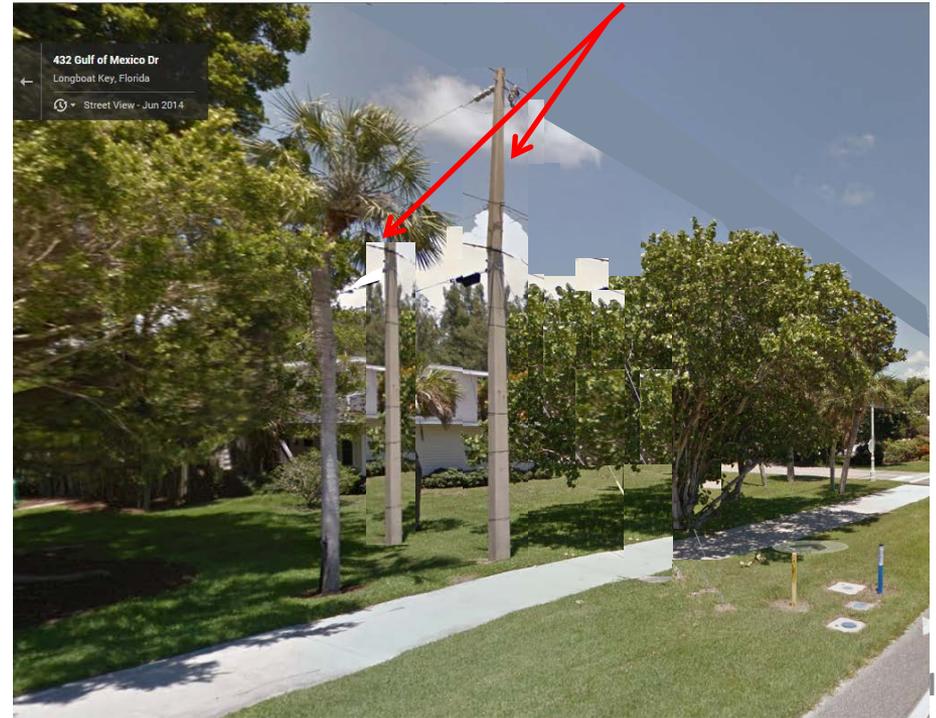
# LINE TRANSITIONS EXAMPLE – PROPOSED BACK PROPERTY SERVICES CHANNEL LANE

**Before**

*Single Pole*

**After**

*Double Pole*





# LINE TRANSITIONS EXAMPLE – PROPOSED SINGLE FAMILY HOMES 3475 GMD

Before

After

*Single Pole*

*Single Pole*



# LINE TRANSITIONS EXAMPLE – PROPOSED SINGLE FAMILY HOMES STRAIGHT TO WEATHERHEAD

2823 GMD

Before

After

*No Pole*





# LINE TRANSITIONS EXAMPLE – PROPOSED COMMERCIAL 400 GMD

Before



After





# LINE TRANSITIONS EXAMPLE – JENSEN BEACH





# GULF OF MEXICO DRIVE (GMD) UNDERGROUNDING PROJECT

- **Flexibility Added for Slight Adjustments to Overhead Poles along GMD – Further Setback from Northbound/Southbound Line of Sight**
- **Limited by Existing Vegetation, Property Boundaries, Electrical Design Constraints**



# ON GROUND CABINETS EXAMPLE – EXISTING LBK

Large Size



Medium Size – SNC Style





# ON GROUND CABINETS EXAMPLE – LOW PROFILE VISTA STYLE PLANNED FOR UNDERGROUNDING PROJECT

Low Profile

Low Profile & Medium Size





# STREET LIGHTING LOCATIONS

- **Replace Existing Light Locations & Add Select New Locations**
- **Install Light Locations to Meet Florida Department of Transportation (FDOT) Lighting Standards on Roadway**



# STREET LIGHTING STYLE

- **Standard Style**
- **Turtle Friendly, as much as possible**
- **Decorative Style**
- **Decorative Style with Pedestrian Lighting**



# STREET LIGHTING STYLE EXAMPLES - EXISTING

Gulf Shores



South End





# STREET LIGHTING STYLE EXAMPLES - STANDARD

City Island



Fruitville





# STREET LIGHTING STYLE EXAMPLES - ARCHITECTURAL

West Palm Beach



Jensen Beach



City Island





# STREET LIGHTING STYLE EXAMPLES – ARCHITECTURAL W/ PEDESTRIAN

State Road 80





# FIBER OPTIC BACKBONE LINE

- **Majority of Cost in Installation of Conduit**
- **Significant Cost Reduction if Done in Conjunction with Undergrounding Project**



# PROJECT FRAMEWORK

- **Town will act as Project Manager**
  - **Contract Design**
  - **Contract Construction**
  - **Contract Restoration**
- **Town will Transfer Completed Project to Utility Companies**



# PROJECT COST DEVELOPMENT

- **Brannon & Gillespie, LLC**
  - **Conducted Feasibility Analysis**
  - **Provided Costs for Project Components**
- **Public Financial Management, Inc.**
  - **Provided Financing Costs**
- **Bryant, Miller, & Olive**
  - **Provided Referendum Bond Language**



# PROJECT COSTS

| Project Component                       | Estimated Cost   |
|---|------------------|
| Undergrounding Utilities                | \$13,100,000     |
| Street Lighting Replacement/Enhancement | \$4,400,000      |
| Fiber Optic Line Installation           | \$500,000        |
| Financing Costs                         | \$700,000        |
| Contingency                             | <u>\$300,000</u> |
| Total Project Cost for Referendum       | \$19,000,000     |

Notes:

1. Total cost is not reduced by anticipated FPL Contribution. FPL Contribution will be in a form of reimbursement.
2. Lighting Costs include decorative lights with pedestrian lighting to FDOT Street Lighting Standard.



# APPROXIMATE AD VALOREM FINANCING

| <u>Home Value</u> | Annual<br>Millage <u>over</u><br><b>20</b> years | Annual<br>Tax <u>over</u><br><b>20</b> years | Annual<br>millage <u>over</u><br><b>30</b> years | Annual Tax<br><u>over 30</u><br>years |
|-------------------|--|--|--|---------------------------------------|
| \$250,000         | 0.2898   | \$72.46                                      | 0.2353   | \$58.82                               |
| \$500,000         | 0.2898   | \$144.92                                     | 0.2353   | \$117.64                              |
| \$750,000         | 0.2898   | \$217.39                                     | 0.2353   | \$176.47                              |
| \$1,000,000       | 0.2898   | \$289.85                                     | 0.2353   | \$235.29                              |



# UNDERGROUNDING PROJECT REFERENDUM PROCESS

- **Adopt Undergrounding Debt Referendum Ordinance**
  - **First Reading October 20, 2014**
  - **Second Reading November 12, 2014**
- **Conduct Public Information Meetings**
- **Conduct Debt Referendum March 10, 2015**
- **Pending Passing Referendum Continue with Project**
- **Validate Bond through Court Proceeding**



## REFERENDUM ORDINANCE 2014-33

- **Calls Elector Vote of Undergrounding Project on March 10, 2015**
- **Sets General Obligation Bonds as Financing Vehicle**
- **Establishes Bond Repayment from Ad Valorem Taxes**
- **Establishes Not to Exceed Project Cost Allowance**
- **Defines Ballot Language**



# REFERENDUM BALLOT

## APPROVING GENERAL OBLIGATION BONDS TO FINANCE/REFINANCE UNDERGROUNDING UTILITIES RELATING TO GULF OF MEXICO DRIVE

Shall Town of Longboat Key be authorized to issue General Obligation Bonds, in one or more series, not exceeding \$19,000,000.00, bearing interest not exceeding maximum legal rates, maturing not more than 30 years from issuance, to finance/refinance undergrounding electrical, communications, and/or other utilities relating to Gulf of Mexico Drive within the Town, payable from the Town's full faith, credit, and unlimited ad valorem taxing power?

\_\_\_\_\_

\_\_\_\_\_

**Yes - For Bonds**

**No - Against Bonds**



# UNDERGROUNDING PROJECT ANTICIPATED PROCESS

- **Adopt Undergrounding Provision Ordinance**
- **Finalize Financing Plan**
- **Design Project**
- **Request FPL Binding Estimate & Contractor Bids**
- **Negotiate Contribution in Aid of Construction (CIAC) with FPL**
- **Contract for Construction**
- **Construction Management**
- **Transfer Utility Infrastructure to FPL, Comcast, Verizon**



# UNDERGROUNDING PROVISIONS ORDINANCE

- **Require all New or Renovated Utility Facilities be Installed Underground**
- **Require all New or Renovated Private Property Utilities be Installed Underground**
- **Require Property Owner Connection to Underground Utilities by Date Certain following Notice of Underground Utility Availability (Other Municipalities have used 3 Month Timeline)**

ORDINANCE NO. 10-07

AN ORDINANCE OF THE TOWN COUNCIL OF THE TOWN OF PALM BEACH, PALM BEACH COUNTY, FLORIDA, AMENDING CHAPTER 122, UTILITIES, PROVIDING A NEW ARTICLE V REQUIRING THAT ELECTRICAL POWER SUPPLY, TELECOMMUNICATIONS, VIDEO, CABLE TELEVISION, INTERNET, BROADBAND, AND SIMILAR FACILITIES BE PLACED UNDERGROUND; PROVIDING FOR PRIVATE PROPERTY OWNER'S RESPONSIBILITY; REQUIRING PERMITS; PROVIDING FOR EXCEPTIONS; PROVIDING FOR PENALTIES; PROVIDING FOR SEVERABILITY; PROVIDING FOR REPEAL OF ORDINANCES IN CONFLICT; PROVIDING FOR CODIFICATION; PROVIDING AN EFFECTIVE DATE.

WHEREAS, it is the intention of the Town to require all new utility facilities, including, without limitation, all wiring, electric supply conductors, fiber optic cable, telephone or other communications cable, or similar utility facilities used to provide electrical power, telecommunications, video, cable television, internet, broadband, and similar services, placed within the Town to be located underground, whether such utility facilities be placed on Town or state rights-of-way, easements, or on private properties; and

WHEREAS, it is further the intent of the Town to convert existing overhead utilities within the Town to underground utilities; and

WHEREAS, in requiring the undergrounding of utility facilities, it is the intent of the Town to treat all suppliers, sellers, and providers of utility services within the Town in a nondiscriminatory manner.

NOW, THEREFORE, BE IT ORDAINED BY THE TOWN COUNCIL OF THE TOWN OF PALM BEACH, PALM BEACH COUNTY, FLORIDA, AS FOLLOWS:



# FACTORS CONSIDERED IN CIAC COST

- **Cost of New Underground**
- **Cost of Hypothetical Equivalent New Overhead**
- **Net Book Value of the Existing Overhead**
- **Cost of Removing Existing Overhead**
- **Cost of Planned Hardening Project**
- **Salvage Value of Materials (Copper)**
- **Differential O&M Costs of Underground vs. Overhead**
- **Avoided Storm Restoration Costs Provided by Underground**



## RECOMMENDED NEXT STEPS

- **Finalize Estimated Costs**
- **Adopt Referendum Ordinance**
- **Conduct Public Information Meetings**

## ORDINANCE 2014-33

**AN ORDINANCE OF THE TOWN OF LONGBOAT KEY, FLORIDA, AUTHORIZING THE ISSUANCE, SUBJECT TO THE BOND REFERENDUM HEREIN PROVIDED FOR, OF NOT TO EXCEED \$19,000,000.00 GENERAL OBLIGATION BONDS MATURING ON OR WITHIN 30 YEARS OF ISSUANCE PAYABLE FROM THE FULL FAITH, CREDIT, AND UNLIMITED AD VALOREM TAXING POWER OF THE TOWN FOR PROVIDING FUNDS, TOGETHER WITH ANY OTHER LEGALLY AVAILABLE FUNDS, TO FINANCE OR REFINANCE THE COST OF UNDERGROUNDING UTILITIES RELATING TO GULF OF MEXICO DRIVE WITHIN THE TOWN; PROVIDING FOR AND CALLING A BOND REFERENDUM OF THE QUALIFIED ELECTORS OF THE TOWN TO BE HELD ON MARCH 10, 2015; PROVIDING FOR OFFICIAL BALLOTS; PROVIDING FOR BOND REFERENDUM PROCEDURES; ESTABLISHING ITS INTENT TO REIMBURSE SUCH CAPITAL EXPENDITURES INCURRED WITH PROCEEDS OF SUCH GENERAL OBLIGATION BONDS; AND PROVIDING AN EFFECTIVE DATE.**

**WHEREAS**, it is necessary and desirable that the Town of Longboat Key, Florida (the "Town"), issue general obligation bonds to finance or refinance the costs associated with undergrounding electrical, communications and/or other utilities relating to Gulf of Mexico Drive within the Town (the "Project") and pay issuance expenses in connection with the sale thereof; and

**WHEREAS**, Florida Power & Light ("FP&L") plans to replace the existing overhead power poles with larger stronger power poles to fortify, or harden, them against stronger storm forces; and

**WHEREAS**, by undertaking the Project at this time, the Town can maximize the financial assistance available for the Project through FP&L's Contribution in Aid of Construction; and

**WHEREAS**, the Town Commission of the Town (the "Town Commission") hereby determines that the qualified electors of the Town should make, through a bond referendum, the final decision determining whether to issue the Bonds to finance or refinance the costs to design, acquire, construct, relocate, and install the Project; and

**WHEREAS**, the Town Commission hereby determines that it serves a paramount public purpose that the Project be designed, acquired, constructed, relocated, and installed and that it is in the best interest of the Town to issue general obligation bonds to finance or refinance the costs of the design, acquisition, construction, relocation, and installation of the Project; and

**WHEREAS**, to pay all or a part of the cost of the Project, it is necessary to issue the general obligation bonds of the Town as hereinafter provided; and

**WHEREAS**, this Ordinance is intended to constitute a "declaration of official intent"

within the meaning of Section 1.150-2 of the Income Tax Regulations which were promulgated pursuant to the Internal Revenue Code of 1986, as amended, with respect to the debt incurred to finance or refinance the design, acquisition, construction, relocation and installation of the Project; and

**WHEREAS**, the Town now desires to issue general obligation bonds in one or more series in an amount not to exceed Nineteen Million Dollars (\$19,000,000.00) (the "Bonds") pursuant to the terms of an authorizing bond resolution hereafter to be adopted by the Town Commission if the qualified electors of the Town approve the bond referendum authorized herein; and

**WHEREAS**, the Bonds shall be payable from the full faith, credit, and unlimited ad valorem taxing power of the Town.

**NOW THEREFORE, BE IT ORDAINED BY THE TOWN COMMISSION OF THE TOWN OF LONGBOAT KEY, FLORIDA, THAT:**

SECTION 1. **AUTHORITY FOR THIS ORDINANCE.** This Ordinance is adopted pursuant to the Constitution and laws of the State of Florida, including Sections 100.201-100.351, Florida Statutes, Chapter 166, Florida Statutes, the Charter of the Town, and other applicable provisions of law (hereinafter collectively referred to as the "Act").

SECTION 2. **FINDINGS.** The Town Commission hereby finds and determines that the recitals set forth herein are true and correct and adopts the same as its findings and determinations.

SECTION 3. **AUTHORIZATION OF BONDS.** Subject and pursuant to the provisions hereof, the Bonds of the Town are authorized to be issued in one or more series in the aggregate principal amount not exceeding Nineteen Million Dollars (\$19,000,000.00) to provide funds, together with any other legally available funds of the Town, to finance or refinance the cost of the design, acquisition, construction, relocation, and installation of the Project. The monies received and interest earned from the issuance of the Bonds will be used for such purpose. The Bonds shall be general obligations of the Town and shall be secured by the full faith, credit, and unlimited ad valorem taxing power of the Town. The Bonds shall mature in not more than thirty (30) years from issuance, and the Bonds shall bear interest at a rate not exceeding the maximum rate permitted by law at the time of the sale of the Bonds. Both principal and interest on the Bonds, and redemption premiums, if any, shall be payable at the office of the paying agent to be named by the Town at or prior to the sale of the Bonds.

The Bonds shall be issued pursuant to authority granted under this Ordinance and the Act, but only after approval of the bond referendum hereinafter called and subsequent adoption of an authorizing bond resolution by the Town Commission, as governing body of the Town.

SECTION 4. **BOND REFERENDUM.** A bond referendum of the qualified electors residing in the Town is hereby called to be held on Tuesday, March 10, 2015, in conjunction with the general election to be held on such date, to determine whether or not the issuance of the Bonds in an aggregate amount of not exceeding Nineteen Million Dollars (\$19,000,000.00) shall be approved by such qualified electors to finance or refinance the cost of the design, acquisition, construction, relocation, and installation of the

Project. All qualified electors in the Town shall be entitled and permitted to vote in the bond referendum.

The Sarasota County Supervisor of Elections and the Manatee County Supervisor of Elections (collectively, the "Supervisors of Elections") and the Town Clerk of the Town (the "Clerk") shall take all necessary measures to hold, administer, and conduct the bond referendum in the manner prescribed by law. The results shall be certified to the Department of State in accordance with Section 100.351, Florida Statutes. All procedures and requirements of the laws of the State of Florida, the Charter of the Town, and other applicable law, including, without limitation, Section 100.271, Florida Statutes, shall be complied with for the purpose of conducting the computation of ballots and completion of bond referendum procedures.

Trish Granger, Town Clerk of the Town of Longboat Key, Florida, as the elections official of the Town pursuant to Article IV, Section 2(b) of the Charter of the Town, is hereby designated and appointed as the official representative of the Town Commission in all transactions with the Supervisors of Elections in relation to matters pertaining to the use of the registration books and the holding of said bond referendum.

Ballots containing the question set forth in Section 6 hereof shall be prepared for the use of absent electors entitled to cast such ballots in said election. Early voting for the election shall be conducted in accordance with Town Ordinance 2014-32.

**SECTION 5. NOTICE OF BOND REFERENDUM.** Notice of the bond referendum shall be published in a daily newspaper of general circulation in the Town, at least twice, once in the fifth week and once in the third week prior to the week in which the bond referendum is held, the date of first publication in said newspaper to be at least thirty (30) days before said bond referendum, in substantially the form attached hereto as Exhibit A and in the manner provided in Section 100.342, Florida Statutes. The Town Clerk is hereby charged with the responsibility of this notice procedure.

**SECTION 6. OFFICIAL BALLOT.** The ballot for voting in the bond referendum shall be in substantially the following form:

**Official Ballot  
Town Of Longboat Key, Florida  
Bond Referendum Election  
March 10, 2015**

**APPROVING GENERAL OBLIGATION BONDS TO FINANCE/REFINANCE  
UNDERGROUNDING UTILITIES RELATING TO GULF OF MEXICO DRIVE**

Shall Town of Longboat Key be authorized to issue General Obligation Bonds, in one or more series, not exceeding \$19,000,000.00, bearing interest not exceeding maximum legal rates, maturing not more than 30 years from issuance, to finance/refinance undergrounding electrical, communications, and/or other utilities relating to Gulf of Mexico Drive within the Town, payable from the Town's full faith, credit, and unlimited ad valorem taxing power?

\_\_\_\_\_ Yes - For Bonds

\_\_\_\_\_ No - Against Bonds

SECTION 7. BOND REFERENDUM RESULTS. Returns of the votes cast at the bond referendum shall be made as required by law.

If a majority of the votes cast at the bond referendum shall be "Yes - For Bonds," the Bonds shall be approved, and then the Bonds may be issued pursuant to this Ordinance as provided by authorizing bond resolution of the Town Commission, as governing body of the Town. If less than a majority of the votes cast at the bond referendum shall be "Yes - For Bonds," the Bonds shall be defeated, and no Bonds shall be issued pursuant to this Ordinance.

SECTION 8. LANGUAGES. To the extent required by law, the official ballot and notice of bond referendum shall be published in both the English and the Spanish languages.

SECTION 9. INTENT TO REIMBURSE. The Town Commission hereby expresses its intention that the Town be reimbursed from the proceeds of the Bonds for costs relating to the Project. Pending reimbursement, the Town expects to use funds on deposit in the Town's general fund or other appropriate fund or account to pay such costs. This Ordinance is intended to constitute with respect to the construction of the Project a "declaration of official intent" within the meaning of Section 1.150-2 of the Income Tax Regulations.

SECTION 10. EFFECTIVE DATE. This Ordinance shall become effective immediately upon adoption by the Town Commission.

PASSED at a meeting of the Town Commission held the \_\_\_ day of \_\_\_\_\_, 2014.

ADOPTED at a meeting and public hearing of the Town Commission held the \_\_\_\_ day of \_\_\_\_\_, 2014.

\_\_\_\_\_  
James L. Brown, Mayor

ATTEST:

\_\_\_\_\_  
Trish Granger, Town Clerk

Attachment: Exhibit A

**EXHIBIT A**

**NOTICE OF GENERAL OBLIGATION BOND REFERENDUM  
FOR UNDERGROUNDING UTILITIES (GULF OF MEXICO DRIVE)  
TO BE HELD ON TUESDAY, MARCH 10, 2015**

**TOWN OF LONGBOAT KEY, FLORIDA**

To be held on Tuesday, March 10, 2015, as provided by  
Ordinance 2014-33 of the Town Commission,  
as governing body of the Town of Longboat Key, Florida adopted on  
November 12, 2014

Notice is hereby given that a bond referendum will be held in the Town of Longboat Key, Florida on Tuesday, March 10, 2015. The bond referendum will be held to determine whether there shall be issued General Obligation Bonds (the "Bonds") of the Town, in one or more series, in an amount not exceeding Nineteen Million Dollars (\$19,000,000.00). The Bonds shall be general obligations of the Town and shall be secured by the full faith, credit, and unlimited ad valorem taxing power of the Town. The Bonds shall mature in not more than thirty (30) years from issuance, and the Bonds shall bear interest at a rate not exceeding the maximum rate permitted by law at the time of the sale of the Bonds. The monies received and interest earned from the issuance of the Bonds will be used to finance or refinance the cost of undergrounding electrical, communications, and/or utilities relating to Gulf of Mexico Drive within the Town.

The issuance of such Bonds and the holding of such bond referendum have been authorized by Ordinance 2014-33 of the Town Commission of the Town adopted on November 12, 2014.

In accordance with the Constitution and laws of the State of Florida and the Charter of the Town of Longboat Key, all qualified electors of the Town of Longboat Key, Florida, shall be entitled to vote in the bond referendum to which this notice pertains. The polls at said bond referendum will be open from 7 o'clock a.m. until 7 o'clock p.m. on Tuesday, March 10, 2015, and will be held at polling places in the several precincts of the Town.

The Town of Longboat Key shall be authorized to issue the bonds covered by the question hereinabove set forth only if such issuance shall have been approved by vote of a majority of the qualified electors of the Town of Longboat Key voting thereon.

By order of the Town Commission of the Town of Longboat Key, Florida.

Trish Granger  
Town Clerk,  
Town of Longboat Key, Florida



# ***LONGBOAT KEY, FLORIDA***

## **Feasibility Study**

For

## **Undergrounding Overhead Power & Communications Utilities**

**October 15, 2014**

Prepared By:

***Brannon & Gillespie, LLC***

631 US Highway 1, Suite 301  
North Palm Beach, FL 33408  
Certificate of Authorization No. 6784





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## *Longboat Key Undergrounding Overhead Power & Communications Utilities Feasibility Study*

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### Purpose of this Study

Over the past several years, the Town of Longboat Key and various residents have seen a need to become more informed on the option of undergrounding the overhead power and communications lines within the Town and the associated potential to improve reliability, safety, and aesthetics of these service facilities. The weather events of 2004 and 2005 as well as others across the country have once again reinforced the need for communities to seek ways to better secure their lives and property.

The current economic slowdown has lowered construction costs and interest rates in many areas offering the opportunity to make infrastructure improvements at significantly lower costs than previously possible. In addition, the opportunity for cost reductions from FPL and the impending overhead line hardening program that is about to start makes this the pivotal point to move forward with undergrounding. The project costs will increase dramatically after the hardening is completed. Interest rates and contractor costs will also increase as the economy get back to normal.

In addition, a persistent need for improvements in cellular phone service and the opportunities to save significant costs by installing the needed fiber optic backbone facilities in conjunction with a utility undergrounding project add additional merit to undertaking this study.

For the residents of Longboat Key to evaluate the undertaking of such a project, they would require a better understanding of the options, benefits and costs of overhead utility undergrounding. To assist in educating the residents, the Town has undertaken this study.



## Executive Summary

A rapidly changing world focused on communications and a continuously increasing dependence on reliable power make it critical that we keep our eyes open for opportunities to move from the old technology to the new technologies. Online Banking, Online Shopping, Social and Professional Networking, Email Communications, and many other similar functions are becoming increasingly important in our daily lives. Opportunities for credits such as the GAF credits offered by FPL, or opportunities provided by Community Redevelopment Projects, or opportunities offered by reduced construction costs during economic recessions, or opportunities offered by grants for Homeland Security Projects or Environmental Preservation Initiatives are just a few of those being watched today. It is not a question of moving ahead or not, but a question of capitalizing on the opportunities to move ahead focusing on minimizing the cost and maximizing the benefits.

Many communities such as Daytona Beach, Sewall's Point, Jupiter Island, Jupiter Inlet Colony, Jupiter, Palm Beach, Gulf Stream, Hollywood, Fort Lauderdale, Naples, and Miami Beach are undergrounding overhead facilities. Initially the community focus was on improving the electrical facilities for reliability, aesthetics, and safety. As the information age has exploded, communities are becoming equally interested in the communications facilities for reduced costs and robust connectivity. The days of satisfaction with old DSL technology and wired phones are quickly fading as residents and businesses become more and more dependant on the internet and mobile communications solutions. This trend will soon accelerate as the information technology community move into cloud computing and the limiting factor for performance will be the speed at which a personal communication device can send a request and receive it back.

The new underground Comcast facilities typically incorporate the new "Fat Cable" technology which is capable of delivering in excess of 105MB data download rates. Comcast offers a variety of bundled communications packages including Voice over IP telephone service, cable television, and fast internet access. Verizon fiber facilities typically deliver up to 70MB data download rates and similar bundled packages of Voice over IP



## ***Longboat Key Undergrounding Overhead Power & Communications Utilities Feasibility Study***

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telephone service, cable television, and fast internet access. However, unless funds are provided by others, Verizon is more likely to limit undergrounding in existing neighborhoods to copper line facilities which offer slower speeds and are less competitive than the Fiber Optic facilities. Without a robust fiber optic backbone facility within the Town of Longboat Key, the level of needed communications cannot be provided.

Longboat Key residents are considering the option of undergrounding the overhead utility lines. Florida Power & Light Company and many Florida governmental agencies promote underground utilities. The benefits of undergrounding overhead utility facilities are typically characterized as improvements in reliability, safety, and aesthetics. Underground facilities eliminate many safety issues that result from overhead line equipment failures. Downed lines present a danger of electrocution as well as blocking ingress and egress of emergency response vehicles. Underground facilities are less susceptible to windstorm damage. And lastly, underground facilities are generally less offensive aesthetically as compared to overhead lines.

After reviewing the existing facilities, it is our professional opinion that the cost to replace the overhead power, telephone, and cable television facilities on Gulf of Mexico Drive with underground facilities would be approximately \$12 Million. Florida Power & Light Company currently requires that all underground services originate from a location accessible to their maintenance vehicles. This typically means that all underground services will now be required to originate at the street, and run to the electric meter location with no access points in between. This policy will require that all existing overhead services and existing underground services not originating at the street will have to be replaced in an undergrounding project. Verizon service lines as well as Comcast service lines would also extend from the street to the electric meter location. In addition, all utility lines located along rear property lines, or otherwise not located along the street, will typically have to be relocated to the street for vehicle access. At this time, the residents are addressing the undergrounding of the facilities along Gulf of Mexico Drive and all existing underground service lines will continue to be utilized. Underground primary voltage lines serving FPL transformers out in the neighborhood will also be continued to be utilized and will be converted into loop configuration so that service can be restored simply by switching.



## ***Longboat Key Undergrounding Overhead Power & Communications Utilities Feasibility Study***

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In addressing the aesthetic impact, this study provides for landscaping around FPL cabinets with plantings compatible with the existing landscaping. Typically, an undergrounding project of this scope would take approximately three years to complete from the initial survey and design work to final removal of the overhead poles and wires. Existing sections of underground facilities suitable for reuse would be incorporated into the new underground system provided that the cost to reuse was less than the cost to replace.

Where the undergrounding of the facilities provides a general benefit to all residents such would be the case with undergrounding Gulf of Mexico Drive, the funding is typically by Ad Valorem Taxation. Where projects are targeted to subsets of the Town or specific neighborhood areas, the funding is typically via special assessment taxation. Assessment methodologies frequently provide owners credit where they have previously paid for underground facilities and such facilities are suitable for reuse. The resulting underground electric facilities are typically much more reliable and safer than the overhead lines they replaced.

Currently, FPL is providing Credits up to 25% of the otherwise required contribution in Aid of Construction as a means of promoting the undergrounding FPL of electrical facilities. This credit is typically referred to as the GAF or Avoided Storm Restoration Cost credit. Communications companies are evolving from single service providers to competing multiple service bundle providers. Fortunately, most of the communications lines are currently underground along Gulf of Mexico Drive. The exceptions are a few spans of service wire and a small fiber optic line believed to belong to Comcast. The simplicity of the existing communications lines offers a great cost savings opportunity compared to typical undergrounding projects.



## *Longboat Key Undergrounding Overhead Power & Communications Utilities Feasibility Study*

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### Study Scope

This study focuses on the undergrounding of the existing overhead utility electric power, telephone, and cable television line facilities with equivalent underground facilities. This study provides cost opinions for replacement of overhead utility facilities with underground facilities based on current utility standard construction practices and configurations. This study covers the facilities located within the right-of-way of Gulf of Mexico Drive within the Town of Longboat Key.

The study assumes that the engineering will include an engineer representing the interest of the community and that the construction of FPL underground facilities will be executed by the Town of Longboat Key, and not by FPL. These items are key to securing lowest costs and maximizing community benefits. FPL assumes no responsibility for complying with the community's schedules as their priority is maintaining service to existing electric customers and they will attend to that work ahead of any undergrounding work. In addition, FPL does not assume any responsibility for restoring landscape or hardscape damaged during the construction when such damage was associated with required work. FPL does not provide any conduits for communications companies or service work for any non-residential services that need to be placed underground.

The study will also include replacing the lighting on Gulf Of Mexico Drive and installing a fiber optic backbone circuit the length of Gulf of Mexico Drive during the undergrounding project.

#### Assumptions:

The construction will be executed in two or three phases.

Underground utility cables will be installed within GMD Right-of-way.

Easements will be used for above grade FPL equipment where possible.

Lighting along GMD will be no less than currently existing.

Fiber Optics backbone line will accommodate cell service, Town Sites, and Security Cameras.



## Legal and Surveying

Typical requirements for legal services include routine reviews of such documents as request for proposals, request for qualifications, surveying contracts, landscaping contracts, construction contracts, utility company contracts and agreements, and easement instruments. Additional specialized services include special assessment attorney and bond counsel services. These services are included in this study.

Undergrounding Projects require a significant surveying effort. In the initial stages, a survey is required to document all property lines, ownership lines, right-of-way lines, utilities, sidewalks, pavement areas, driveways, structures, buildings, obstructions, trees, fences, etc. located within a corridor along the conceptual underground route. Should easements be required, surveyors typically prepare easement drawings and legal descriptions. Additional survey services are required to provide construction staking at the beginning of the underground construction phase. As construction progresses, surveyors must gather as-constructed field data to document the actual location of the installed underground facilities for Florida Power & Light company. When an FPL "ROW Agreement" is utilized, surveyors will typically provide a final as-constructed version of the construction drawing and a legal description of the ROW tract to be utilized. The services as described herein are included in this study.



## Easements and Right-of-Ways

In the past Florida Power & Light Company would not install underground facilities within road rights-of-way except to cross a road to reach an easement on the other side. All FPL underground facilities were required to be placed within an easement except service laterals serving the property within which they were placed. As a result of the problems with the tropical storms of 2004 and 2005, FPL revised its policies to allow such installations within street right-of-ways. The authority having or sharing jurisdiction over the rights-of-way must agree to reimburse Florida Power & Light for relocation costs when such relocations were requested by the authorities having jurisdiction. This “ROW AGREEMENT” option enabled many communities to underground Florida Power & Light Company facilities with minimal requirements for easements saving both time and money.

A survey of the Gulf of Mexico Drive right-of-way will be required to determine exactly where the travel lanes, boundaries, sidewalks, and existing utility facilities are located, Title searches will be required to identify existing easements and to aid in describing any new easements that may be required. However, from our site observations, we found no conditions that would preclude utility undergrounding due to a lack of or inability to secure easements or a right-of-way via an “ROW AGREEMENT”. There are typically no costs associated with the acquisition of easements and right-of-ways other than legal reviews and surveyor services. This study does not include any costs other than legal and surveyor services.



## *Longboat Key Undergrounding Overhead Power & Communications Utilities Feasibility Study*

### Landscaping

In as much as “Improving Aesthetics” is a factor in undergrounding overhead utilities, it is common that communities wish to place plantings around equipment such as FPL transformers, FPL switch cabinets, telephone terminal boxes, and cable television pedestals. The degree to which a given community desires to install such landscaping to hide utility ground mounted equipment varies from community to community. Landscaping plans are typically developed during the construction design process with plantings designed to match the existing surrounding landscaping. Typically, a landscape architect is used to prepare a detailed list of required plants including such details as size, grade, species, and spacing. Such specificity ensures landscaping vendor’s bids are for comparable services. This study will assume the landscaping requirements to be typical based on our experience with landscaping primarily being placed around Florida Power & Light Company padmounted transformers, switch cabinets, and capacitor cabinets.

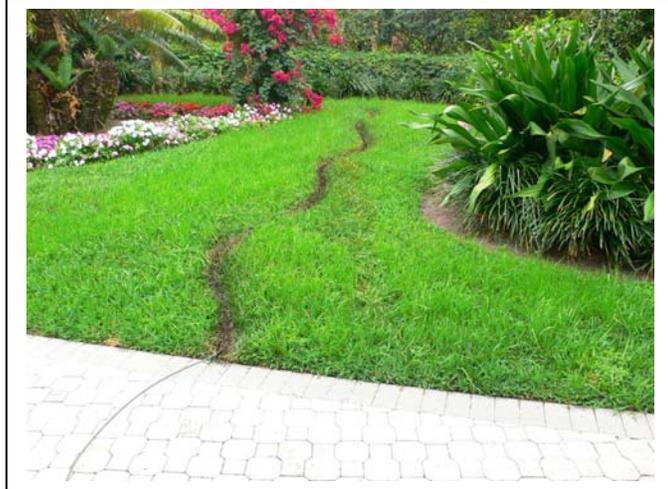
In some cases, additional landscaping will be required to remedy damage incurred during the removal of the overhead poles and wires after the underground facilities have been installed. This is typically minimal and handled on a case by case basis. This study will not include costs for landscape restoration required due to damage resulting from overhead facility removals as these costs are typically minimal and not predictable.





## Safety

In as much as “Improving Safety” is a concern for every community, live electric lines on the ground can cause injury or death. Underground high voltage electric lines typically include concentric ground wires which provide a direct path to ground and activate protection devices that de-energize the lines. Energized



overhead lines lying on the ground are unfortunately a common occurrence. Down power lines or communications lines can prevent emergency vehicles for having access. In as much as the untrained public cannot typically tell the difference between a low voltage communications line and an electric power line, it is usually assumed that a down line is dangerous and precaution is warranted.





## Reliability

Recent storms that hit the northeast coast brought comments from national news network broadcasters as to why the power was not underground. Comments came back that it was too expensive to place the facilities underground, and it takes too long to repair the underground lines when they fail, and that water would be a problem. It should be noted that the cry for underground facilities comes



from observations that areas with underground facilities suffer much less damage and are restored significantly faster than overhead areas. New sealed ground mounted switch cabinets recently adopted by FPL are stainless steel and are sealed switches of a type that is capable of operating in wet conditions and being installed at ground level or below grade. FPL has adopted a policy of looping underground cables so that power can be restored when a cable fails simply by switching actions. The failed cable can then be repaired at a later time. Pad mounted transformers in coastal areas have also been converted to the stainless steel type.





## Aesthetics

Unightly overhead lines are a thing of the past in undergrounded areas. Tree trimming by the utilities often results in a very unsightly appearance as crews use such methods as “V” Cutting to promote vegetation growth away from their lines. “V” Cutting, Side Trimming, and Topping of trees almost always creates an poor appearance. As overhead lines are removed, vegetation is allowed to resume a natural and more attractive appearance.





## Construction

Typically, all new underground wire and cable is installed inside underground conduit today. The most frequently used method employed to install the underground conduit in existing developed neighborhoods is the Horizontal Directional Boring Method. This method is particularly desirable where you have extensive landscaping and hardscape such as pavers. It also results in much less impact on traffic flows. Costs for this type installation have dropped drastically as machine costs and competition have improved. However, there are still some spots where old fashion shovels are the best.



New padmounted transformers frequently utilize stainless steel cabinets which offer much better useful life characteristics. In addition, FPL now offers stainless steel sealed switch cabinets that are operable in rising water levels. These switches operate inside sealed gas filled chambers.





**Longboat Key Undergrounding Overhead Power & Communications Utilities Feasibility Study**

Opinion of Cost  
For  
Undergrounding the Overhead Utilities

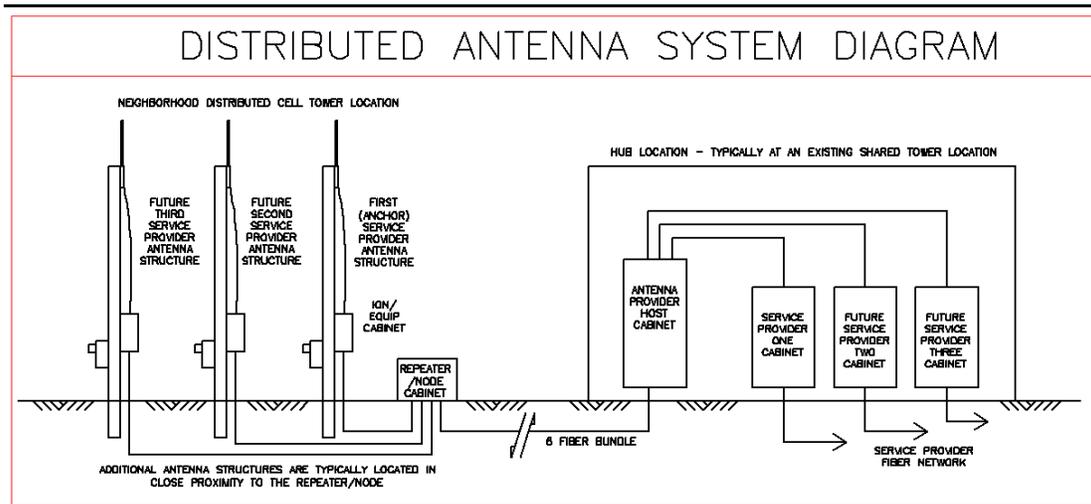
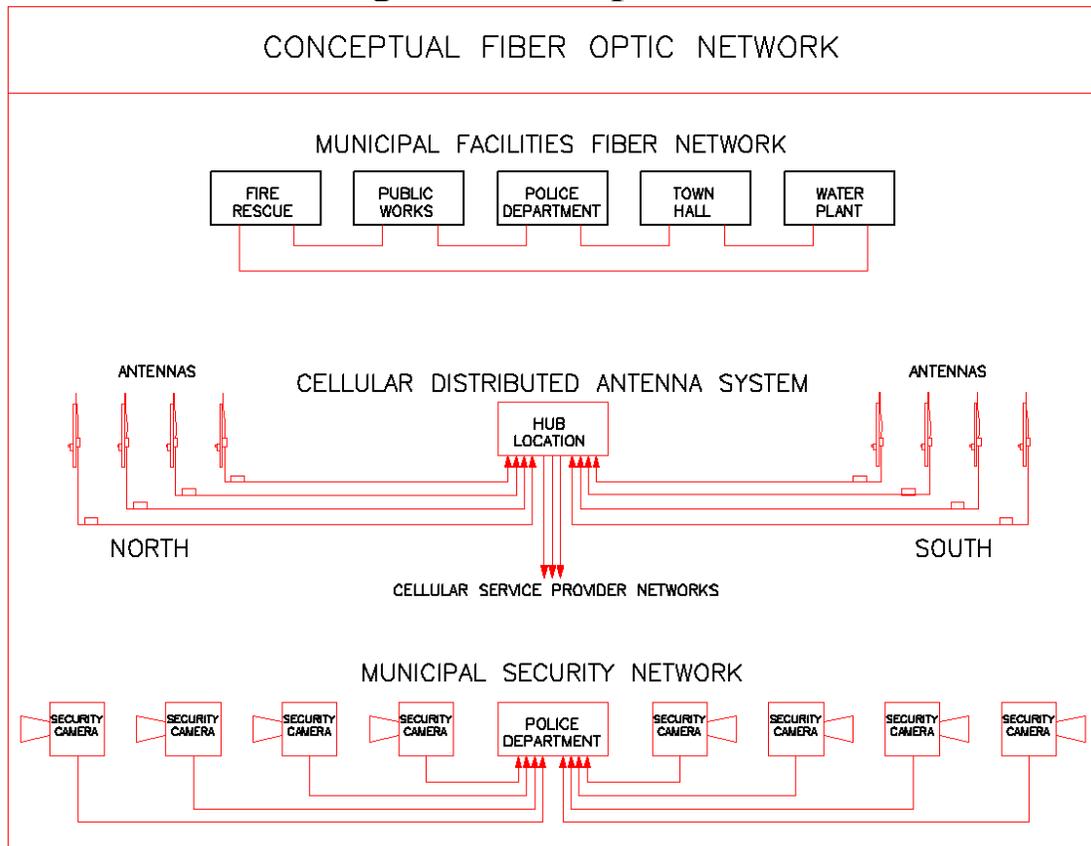
The following is our professional opinion as to the likely cost for undergrounding the overhead FPL and Communications facilities along Gulf of Mexico Drive within Longboat Key. This opinion of cost does not include installing new lighting or the installation of a new fiber optic backbone network. Those two items will be covered separately.

| Component  | Cost                    |
|--|-------------------------|
| Survey Costs (Design, Const, and As-Built/ROW)           | \$ 297,016.07           |
| Legal Costs (Review Easements, Contracts, Bond, & ROW)   | \$ 154,448.36           |
| Cost Allocation Methodology/Feasibility/Advertising      | \$ 80,892.61            |
| Project Management and Administrative Support            | \$ 594,032.14           |
| Project Engineering Services                             | \$ 356,419.28           |
| Electrician Elect. Meter Enclosure Conversion Costs      | \$ 105,160.40           |
| New Streetside Underground Service Lateral Costs         | \$ 126,318.11           |
| Utility Conversion Costs (Contractors, FPL, TEL, & CATV) | \$ 9,247,275.44         |
| Management of Traffic                                    | \$ 126,623.85           |
| Site Landscape Restoration Costs                         | \$ 32,357.05            |
|  | \$ -                    |
| Contingency (15%)  | \$ 1,979,456.71         |
|  |                         |
| <b>Total Opinion of Cost</b>                             | <b>\$ 13,100,000.00</b> |

Note: The opinion of cost represents our professional opinion based on unit costs data from similar projects and our experience. This opinion does not represent an exact cost for this project and should not be considered as such.



## Opinion of Cost For Installing a Fiber Optic Backbone





## ***Longboat Key Undergrounding Overhead Power & Communications Utilities Feasibility Study***

Studies previously provided to the Town by the Wireless Workgroup and TE Connectivity indicate the preferred method of expanding quality cellular service to the Northern portion of the Town would be to install a group of small cell towers typically referred to as a Distributed Antenna System. Several Vendors have talked to the Town concerning such an installation. To provide for the installation of a third party Distributed Antenna System in the northern areas and the southern areas of Longboat Key, a fiber optic network is required to backhaul the cell phone traffic back to an existing service provider's existing pickup point. In the southern portion of the Town, a rooftop location was identified as a potential solution. However for this study, we are provisioning fibers for a set of DAS antennas on the south end as a worst case requirement. In addition, such a backbone fiber optic backbone network is needed to provide for a communications link the Town's facilities in a reliable and cost effective switched loop configuration. Lastly, to provide for future security connections for tag reading cameras, video cameras, infrared cameras, etc., comparable to those being installed in other similar municipalities, a fiber Optics backbone network is needed. After reviewing the number of DAS antenna sites that would typically be required, the strands required for the Town's communications, and the potential security needs; a fiber optic cable with a minimum of 48 strands is recommended. To install these facilities as a stand-alone project would cost over \$1 Million. Our opinion of the cost to install this backbone facility, when installed in combination with the undergrounding project, is as follows:

|   |               |
|---|---------------|
| Survey Costs (Design, Const, and As-Built/ROW)              | \$ 7,833.92   |
| Legal Costs (Review Easements, Contracts, and ROW)          | \$ 3,916.96   |
| Project Management and Administrative Support               | \$ 19,584.81  |
| Project Engineering Services                                | \$ 11,750.88  |
| Conduit Bore Costs  | \$ 284,488.36 |
| 48 Strand Fiber Optic Cable materials and installation      | \$ 107,207.80 |
| Contingency (15%)   | \$ 65,217.41  |
| Total Opinion of Cost (Constructed with the Undergrounding) | \$ 500,000.14 |

Note: The opinion of cost represents our professional opinion based on unit costs data from similar projects and our experience. This opinion does not represent an exact cost for this project and should not be considered as such.



## Opinion of Cost For Installing a New Lighting System

Lighting along Gulf of Mexico Drive currently consists of 105 FPL cobra head and directional security lights with an average spacing of 495 feet. In locations where the light source can be seen from the high water line on the beach, hoods have been installed significantly diminishing the fixture's effectiveness. As installed,



these fixtures are providing spots of high level illumination along with large areas of no illumination. The current installation can best be categorized as accent light providing for lighting at specific points. Typically such systems provide lighting at intersections, curves, driveways, and locations designated for safety

purposes by the public safety departments. The Town will have several options in replacing these lights in conjunction with the undergrounding project. Option one could be to have FPL install the same type fixtures in which case costs would increase significantly with rental fees for the dedicated lighting poles and new underground wiring. Currently, FDOT provides funding for lighting on FDOT roadways. However, there would be additional annual costs of approximately \$19,000 per year over and above the current funding that the FDOT would not





## ***Longboat Key Undergrounding Overhead Power & Communications Utilities Feasibility Study***

cover. On the other hand, the Town could elect to install their own lighting system which most Towns elect to do. Our opinion of the cost for the Town to double the current number of fixtures with decorative turtle friendly fixtures would be approximately \$2.5 Million. Likewise, the cost in our opinion to triple the current number of fixtures and bring the roadway light levels up to a minimum initial average level of one foot-candle would be as shown below.

|   |                 |
|---|-----------------|
| Survey Costs (Design, Const, and As-Built)                  | \$ 10,992.06    |
| Legal Costs (Review Easements, Contracts)                   | \$ 3,664.02     |
| Project Management and Administrative Support               | \$ 5,496.03     |
| Project Engineering Services                                | \$ 14,656.07    |
| Conduit, Controls, and Wiring                               | \$ 659,284.77   |
| Fixtures, Arms, Poles, Bases (materials and installation)   | \$ 3,131,994.15 |
| Contingency (15%)   | \$ 573,913.06   |
| Total Opinion of Cost (Constructed with the Undergrounding) | \$ 4,400,000.16 |

Note: The opinion of cost represents our professional opinion and does not represent an exact cost for this project and should not be considered as such. The choice of lighting levels is typically a Town decision when the lighting system is for accent lighting. Typically, compliance with the FDOT Plans Preparation Manual, Street Lighting Guidelines does not apply to casual accent lighting.



## *Longboat Key Undergrounding Overhead Power & Communications Utilities Feasibility Study*

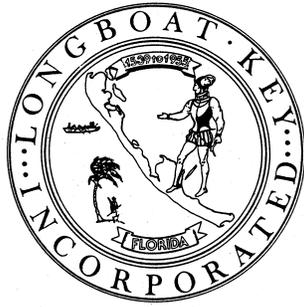
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### Conclusion

In light of the impending FPL hardening Project, we feel that Longboat Key has a unique opportunity to enjoy financial benefits at this time associated with executing this project. Based on our experience, we believe that the Longboat Key Underground Utilities Project as envisioned is technologically feasible and the site characteristics can support such a project from an engineering and construction perspective. In addition, our opinion of the costs is consistent with our experiences elsewhere in Florida and there appear to be no extraordinary cost elements.

In our view, the primary challenges facing the Longboat Key Undergrounding Project in order of importance are obtaining property owner support, managing expectations, and obtaining equipment easements. The property owner support issue relates directly to the wide mix of property owners relative to their ability and willingness to participate. Managing expectations relates again to the projects duration and community disruption during construction. Easements will be challenging as property is limited and highly valued.

We believe that the Town of Longboat Key has demonstrated a realistic understanding of the process, issues and variables involved to execute such a project.



**End of Agenda Item**