

MEMORANDUM

To: Cotter Christian
From: Brett Johnson, P.E.
Kimley-Horn and Associates, Inc.
Date: June 19, 2024
Subject: SR 7 Undergrounding

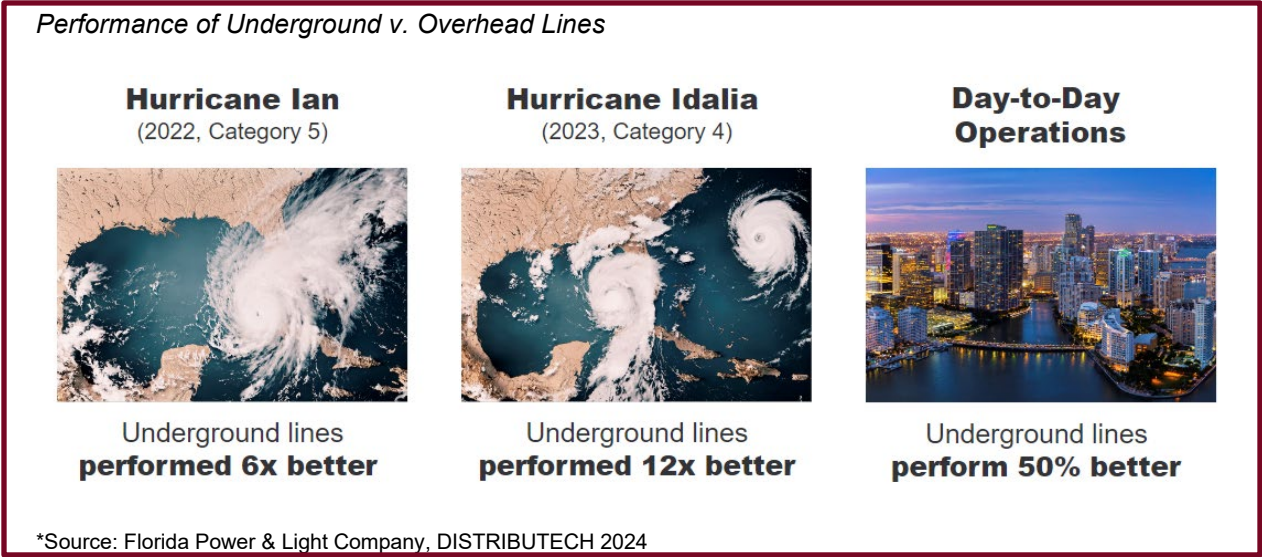
The Margate Community Redevelopment Agency requested that Kimley-Horn provide a conceptual opinion of probable cost for the overhead/underground conversion of the existing electrical/communications utilities along N State Road 7, between W Atlantic Boulevard and Coconut Creek Parkway (see map below). It was also requested that the project site be surveyed in anticipation of future utility provider coordination and design work.



The conversion of overhead utilities underground, also known as undergrounding, will improve the resiliency/reliability, safety, and aesthetics of the electrical and communications infrastructure serving the community. These attributes are distinct, special benefits directly resulting from underground utility systems. A brief description of each benefit can be found below:

Resiliency/Reliability: Based on a report entitled *Out of Sight, Out of Mind, An Updated Study on the Undergrounding of Overhead Power Lines* by the Edison Electric Institute (2012), an underground utility system is generally more resilient than an overhead utility system because it is less susceptible to impacts from weather events, exposure to wildlife, and contact with vegetation. The design of underground utility systems also creates reliability benefits.

At a recent industry conference, FPL described the performance statistics of their overhead system versus their underground system related to two major hurricanes that impacted their service territory as well as a day-to-day performance comparison. The results are summarized below in the following table.



Safety: An underground utility system is generally safer than an overhead utility system because the electric and communication cables and equipment are less accessible to accidental contact by the public. For example, during windstorm events, overhead facilities may be blown down creating impacts to property and exposing the public to a potential risk of electric shock. Additionally, routine maintenance trimming of landscaping may cause accidental contact with overhead lines resulting in risk of electric shock.

Aesthetics: Undergrounding provides an opportunity to enhance the visual aesthetics in the area and allows greater flexibility for architectural and landscaping improvements in areas previously restricted by overhead utilities.

To quantify the approximate lengths of existing facilities within the project site, the project survey and record information received from the utility providers were reviewed. A site visit was performed in conjunction with City of Margate staff in May 2024 to further verify the information regarding the existing facilities. The existing pole-line consists primarily of an electric feeder and between two and five communications lines depending on the location along the project corridor. While there are no electric transformers on N State Road 7, there are existing aerial and pad-mounted transformers fed from the feeder. There are also connections to other aerial feeder lines going west and east. The apparent right-of-way line is at the back of the sidewalk, so any proposed conduit would have to be constructed under the roadway/sidewalk and any proposed equipment would require obtaining easements from the adjacent property owners. Pricing information based on industry experience and previous projects was used to generate the conceptual opinion of probable cost on the following page.



CITY OF MARGATE

Conceptual Opinion of Probable Cost

SR 7 Undergrounding

Date: 6/19/2024

Existing Overhead Lengths

FPL	3948	Pole-Line Feet
ATT	2437	Pole-Line Feet
Comcast	3707	Pole-Line Feet
Lumen	6814	Pole-Line Feet
Hotwire	229	Pole-Line Feet
Breezeline	3948	Pole-Line Feet

Item No.	Description	Quantity	Unit	Unit Price	Amount
FPL Overhead to Underground Conversion					
1.1	Feeder	4091	LF	\$ 64.44	\$ 260,000.00
1.2	Switches	11	EA	\$ 7,035.78	\$ 80,000.00
1.3	Primary	130	LF	\$ 19.49	\$ 3,000.00
ATT Overhead to Underground Conversion					
2.1	Main	2926	LF	\$ 46.34	\$ 140,000.00
Comcast Overhead to Underground Conversion					
3.1	Main	4448	LF	\$ 27.06	\$ 120,000.00
Lumen Overhead to Underground Conversion					
4.1	Main	4088	LF	\$ 27.06	\$ 110,000.00
Hotwire Overhead to Underground Conversion					
5.1	Main	275	LF	\$ 27.06	\$ 10,000.00
Breezeline Overhead to Underground Conversion					
6.1	Main	4088	LF	\$ 27.06	\$ 110,000.00
Miscellaneous Overhead to Underground Conversion					
7.1	Miscellaneous	3948	LF	\$ 47.50	\$ 190,000.00
Property Restoration					
8.1	Private Property Restoration	8884	LF	\$ 2.84	\$ 30,000.00
8.2	Landscaping Around Equipment	13	EA	\$ 982.91	\$ 10,000.00
Pavement Restoration					
9.1	Boring Pavement Repair	3948	LF	\$ 37.07	\$ 150,000.00
FPL Direct Costs (accounting for FPL Operational and ASRC Credits)					
10.1	Initial Direct Costs	3948	LF	\$ 1.20	\$ 5,000.00
10.2	Direct Costs	1	LS	\$ 577,756.46	\$ 580,000.00
10.3	Operational and ASRC Credits	1	LS	\$ (235,508.31)	\$ (240,000.00)
ATT Direct Costs					
11.1	Initial Direct Costs	1	LS	\$ 5,000.00	\$ 5,000.00
11.2	Direct Costs	2437	LF	\$ 31.70	\$ 80,000.00
Comcast Direct Costs					
12.1	Initial Direct Costs	1	LS	\$ 5,000.00	\$ 5,000.00
12.2	Direct Costs	3707	LF	\$ 23.45	\$ 90,000.00
Lumen Direct Costs					
13.1	Initial Direct Costs	1	LS	\$ 5,000.00	\$ 5,000.00
13.2	Direct Costs	6814	LF	\$ 12.54	\$ 90,000.00
Hotwire Direct Costs					
14.1	Initial Direct Costs	1	LS	\$ 5,000.00	\$ 5,000.00
14.2	Direct Costs	229	LF	\$ 23.45	\$ 10,000.00
Breezeline Direct Costs					
15.1	Initial Direct Costs	1	LS	\$ 5,000.00	\$ 5,000.00
15.2	Direct Costs	3948	LF	\$ 23.45	\$ 90,000.00
16	Engineering/Permitting/Surveying	1	LS	\$ 191,966.95	\$ 200,000.00
17	Easement Acquisition Assistance	11	EA	\$ 3,000.00	\$ 30,000.00
18	Construction Phase Services	1	LS	\$ 270,000.00	\$ 270,000.00
Subtotal - Today's Dollars					\$ 2,415,000.00
30% Contingency					\$ 720,000.00
Total =					\$ 3,135,000.00

The Engineer has no control over the cost of labor, materials, equipment, or over the Contractor's methods of determining prices or over competitive bidding or market conditions. Opinions of probable costs provided herein are based on the information known to Engineer at this time and represent only the Engineer's judgment as a design professional familiar with the construction industry. The Engineer cannot and does not guarantee that proposals, bids, or actual construction costs will not vary from its opinions of probable costs.

Some of the assumptions made during the development of the conceptual opinion of cost are as follows:

- The anticipated conduit and equipment needs of the utility providers to convert their existing overhead facilities underground are estimated based on a like-for-like conversion – no facilities for additional/upgraded services that are not currently existing, or for future services, are included.
- No utility provider coordination was performed. If the project moves into the design phase, network designs will be requested from the utility providers and the needs of each can be further refined.
- The Florida Department of Transportation and the utility providers will permit/allow construction of the proposed facilities in the right-of-way.
- One contractor will be procured to construct the proposed facilities for all the affected utility providers under a single contract. A Florida Power & Light Company approved contractor will be used so that electric cabling and equipment can be installed by the same contractor that constructs the conduit and equipment pads.
- Existing street lighting will be replaced by infrastructure provided through the Florida Power & Light Company's LED Lighting Solutions program, which is anticipated to have minimal to no upfront costs.

If it is desired to proceed with the undergrounding, the next step would be to begin coordination with the affected utility providers. This is an often time-consuming process that is necessary to determine what proposed facilities are required for each overhead system to be relocated underground. Once network designs are received from each of the providers, easement needs can be ascertained for pad-mounted equipment that will not fit within the right-of-way. The easement acquisition process is another element of undergrounding that can be time-consuming and needs to be considered throughout the project.

With utility provider coordination and easement acquisition underway, the design process consists of consolidating the utility providers' designs into a single plan set to resolve any conflicts between the various designs and allows bidding of the project to a single contractor to make the construction as efficient as possible. The City of Margate will need to enter into several agreements with Florida Power & Light Company to engage in a municipality-led undergrounding effort – *Underground Facilities Conversion Agreement*, *Applicant-Installed Facilities Agreement for Underground Conversions*, *City/County Right-of-Way Agreement for Underground Conversions*, and *Notification of FPL Facilities*. After construction of the conduit and pads are complete, cabling and equipment are installed, the services are converted from the overhead system to the new underground system, and lastly the overhead infrastructure is removed. Converting the communications facilities along the project corridor could be complicated depending on the nature of the provider and communication facility type. If it is decided that the project should proceed, coordination can be performed with the facility owners to gain a better understanding of what the conversion could entail.