

## Volume II – Segment and Site-Specific Information

### Segment Number: 17

#### Site Location:

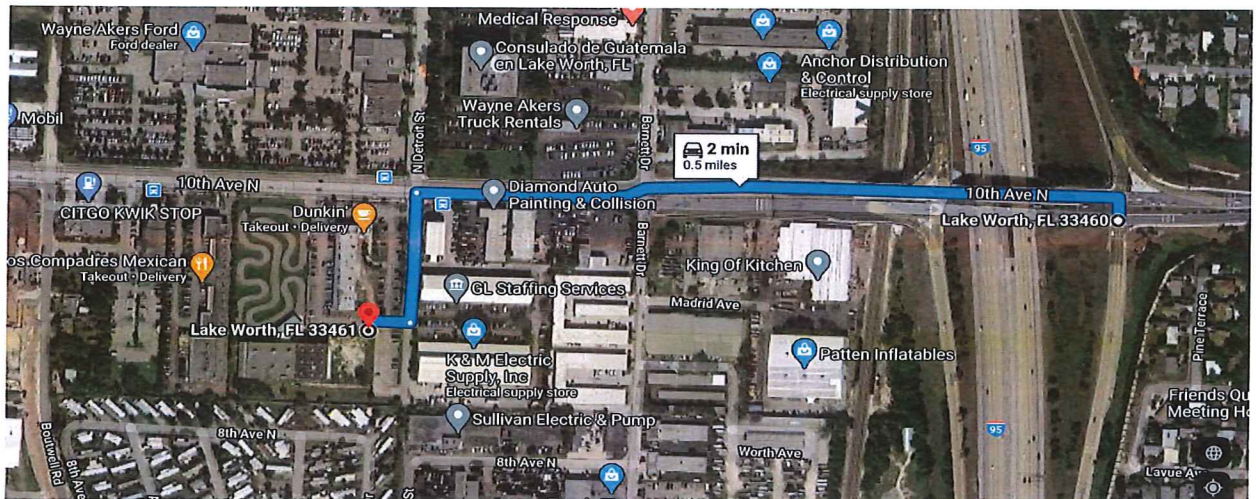
The City of Lake Worth Beach is pleased to have the opportunity to apply for the Florida Department of Environmental Protection, Electric Vehicle Charging Infrastructure (EVCI) Phase 2 Grant opportunity under RFA No. EVCI-RFA-02, Segment 17, located in Palm Beach County.

The proposed site for Segment 17 on behalf of the City of Lake Worth Beach and Three Palms Investments, LLC, will be 2003 10th Avenue North, Lake Worth Beach, FL 33461, LAT: 26.626729° LON: -80.072575. The site is conveniently located off Interstate I-95, Exit 64, 10<sup>th</sup> Avenue North. The site is approximately one-half of a mile to the west of I-95, on the corner of 10<sup>th</sup> Avenue North and North Detroit Street in Lake Worth Beach.

The site offers multiple amenities including Fun Depot, a family entertainment center with 45,000 square feet of entertainment including; game room, go-carts, bowling, a recently added full-service restaurant & bar, ice-cream shop and laser tag. This site also features a 24-hour Dunkin', El Guanaco an El Salvadorian Restaurant, Latin Bakery & Café, Barber Shop and multiple other establishments within walking distance. The proposed site location allows for various amenities and easy entry and exit on to the highway. The EV Charging Stations will be provided reliable power via a 26kV primary feeder from the City's 7<sup>th</sup> Ave North Substation which is located approximately 0.14 of a mile to the south. This location will allow for a quick and stable connection to the power grid.

**Location Map:** I-95, Exit 64, 10th Avenue North

**LAT:** 26.626729° **LON:** -80.072575



#### Cost Effectiveness:

The City of Lake Worth Beach is aware that this location choice and partnership is a publicly accessible non-government owned property and therefore needs to contribute a minimum of 20%. The City of Lake Worth Beach will contribute a full 25%, thus qualifying for maximum point consideration. The sum of this contribution includes project management, equipment, labor &

materials for site power service, bollards, signage & painting, permit costs and grant administration to meet the needs of section 4.7 of the requirements and the public.

**Itemized Cost Estimate:**

Item	Description	Unit Cost	Unit(s)	Qty.	Total Cost
CLWB PM	Review plans, project coordination, site inspections, material procurement, engineering design, budgeting & scheduling	\$500	Day	30	\$15,000
CLWB Electric Utility Line Crews	Labor & Equipment for EV Charging Unit Power Service	\$7,500	LS	1	\$7,500
CLWB Electric Utility Materials	UT Pole, wire, transformers & appurtenances for power service	\$7,500	LS	1	\$7,500
Charge Point CPE 250 Level 3 Chargers	ChargePoint Express CPE 250 Station (62.5 kW)	\$38,760	EA	2	\$77,520
Shipping & Handling	Shipping & Handling	\$3,500	LS	1	\$3,500
Cloud Plan	Charge Point Enterprise 5-Year Cloud Plan	\$4,799	EA	2	\$9,598
5 Year Maintenance & Service Plan	Charge Point CPE250 Assure 5-Year Service Plan	\$15,500	EA	2	\$31,000
EV Charging Units Installation	Installation of Paired Units	\$8,500	LS	1	\$8,500
Bollards, Signage & Stall Painting	Procurement & Installation of Bollards, Signage & Stall Painting	\$4,500	LS	1	\$4,500
Grant Administration	Grant Administration	\$500	Day	15	\$7,500
Permitting	Electrical Building Permits		LS	1	\$4,500
<b>TOTAL PROJECT COST</b>					<b>\$176,618</b>

**Summary of Costs:**

Item	Description	Unit Cost	% of Total Cost
CLWB Cost Share	Project Management, CLWB Electric Utility Labor & Materials, Grant Administration, Permitting, Bollards, Signage & Stall Painting	\$46,500	26.3%
Grant Cost	EV Chargers, S&H, 5-Yr. Cloud Plan, 5-Yr. Maintenance & Service & EV Charging Unit Installation	\$130,118	73.7%

**Proximity to Amenities:**

This location offers an extensive amount of amenities including several restaurants, bakery and family entertainment center. After hours amenities also include a 24-hour Dunkin'.

Within a quarter mile radius of the proposed charging site are additional restaurants, 24-hour convenience store/ gas-station and Wood Spring Suites Hotel.

**Resilience Considerations:**

The location selected for public access EV charging is an active site hosting several restaurants and businesses. Recent site improvements include, newly paved parking areas, drainage improvements, upgraded site lighting and additions to the Fun Depot family entertainment center.

The EV charging units will receive power via a 26kV distribution circuit which is fed from the 7<sup>th</sup> Avenue north substation located approximately 800 linear-feet to the south. The proposed plan includes installation of a new utility pole, capable of withstanding 145 MPH winds, to be set in the existing pole line on the east side of the property. The new pole will be equipped with transformers sized to avoid being overloaded and support additional EV charging units if needed in the future. From the newly installed utility pole, an underground service and riser will be installed to enhance reliability performance.

There is no current plan for on-site generation at the charging site however, the City of Lake Worth Beaches' Electric Utility is equipped with power generation units capable of providing up to 90 MW of electric for the City and municipalities within the service territory. This generation is typically used when called upon by the Florida Municipal Power Authority (FMPA) or during emergency situations.

In the event of an emergency, power provided from the City's generation units, can be delivered to priority feeders in the system. Part of the emergency generation considerations is a priority feeder list which is used to get critical infrastructure running as quickly as possible. This site will be a priority for emergency generation to allow for the continued emergency evacuation route charging infrastructure to maintain its capability. This site is also located off a main feeder backbone not far from our local generation site making any immediate repairs from hurricane level destruction quicker, resulting in much lower down time compared to other private company EVCI installations.

In addition to the site location considerations, the entire electric utility power system is being upgraded and storm hardened. The system hardening project includes upgrading utility poles and hardware to withstand 145 MPH wind loads during times of severe weather. Additionally, the storm hardening project includes upgrades to all substations. The 7<sup>th</sup> Avenue north substation which will be providing power to the EV charging station is scheduled for a complete rebuild within the next 6 months resulting in an uninterrupted supply, protection and redundancies not currently present. The upgrades will decrease outage time and enable faster restoration times.

This site has multiple layers of expandability and capacity growth and is large enough to support several EV charging installations. As part of the Grant opportunity, two Level 3 chargers will be

installed initially with the potential for growth in the future. With the increased demand and affordability of electric vehicles, the City of Lake Worth Beach looks into the future to provide the infrastructure for residents and visitors alike.

No local energy storage or renewable energy is planned for this site but the City of Lake Worth Beach is making renewables a large percentage of their portfolio. Lake Worth Beach Electric Utility is mindful of our responsibility to reduce our impact on the environment and is delivering results. Over 98% of our electric supply comes from some of the most efficient and carbon free sources of energy in the state of Florida. We are proud to say that over 36% of our electricity comes from a carbon-free resource, and we anticipate that we will be over 50% by 2024. By 2025 our emission rate will be less than 50% of our 2005 emission rate\*, and approximately half the projected statewide rate. The City of Lake Worth Beach Electric Utility has almost 2 MW of solar power available nearby to assist in grid restoration of this feeder along with the local generation mentioned up above. This provides multiple emergency redundancies during daytime hours. A possible consideration for this site in the future can be solar parking coverings but this would have to be in cooperation with the partnership plans for site and area development. Overall, this location will be hardened to meet the needs of environmental factors and the future of the community regarding ECVI needs.

#### **Economic and Environmental Benefit of Hybrid and All-Electric Vehicles:**

Using more energy efficient vehicles such plug-in electric and hybrid vehicles can have a direct economic impact, supporting both the national and the local economy by diversifying the transportation fleet, thereby reducing the impact of international supply disruptions. All of this further adds to energy security on both a local and national level.

Plug-in hybrid electric vehicles (PHEVs) and all-electric vehicles (EVs) are both capable of being powered solely by electricity, which is produced locally by the City's electric utility.

PHEVs and EVs typically achieve better fuel economy and have lower fuel costs than similar conventional vehicles that have internal combustion engines. PHEVs and EVs can reduce fuel costs dramatically because of the high efficiency of electric-drive components. Their fueling costs are on average 50 to 75% lower than that for internal combustion engine vehicles, contributing to a typical total cost of ownership of an average of approximately \$12,000. Moreover, PHEV and EV maintenance expenses are much lower than those for internal combustion vehicles. There is no need to change spark plugs, oil, or air filters, and there are far fewer pumps, circuits, valves, coils, and the many other internal combustion engine components that periodically fail. Furthermore, there is no transmission to fail or radiator to overheat.

The proposed location of the EVCI is situated to many amenities in close proximity to the site. These amenities include nearby convenience stores that have conventional fueling stations. PHEVs have added flexibility because they can also refuel with gasoline or diesel at these nearby conventional fueling stations when necessary. This is critical in times of an emergency whereby convenient access to evacuation routes such as I-95 is of the utmost importance.

PHEVs and EVs can have significant emissions benefits over conventional vehicles. PHEVs and EVs can also reduce the emissions that contribute to climate change and smog, thus improving public health and reducing ecological damage. PHEV emissions benefits vary by vehicle model and type of hybrid power system. EVs produce zero tailpipe emissions, and

PHEVs produce no tailpipe emissions when in all-electric mode. The City's electric utility intends to significantly incorporate into its portfolio minimizes these emissions even more.

#### Economic Benefit for the Surrounding Community

As has been previously indicated, the proposed site for the electric vehicle charging infrastructure provides both a viable location for the grant's purpose of emergency stations near the highway and an opportunity for community improvement. The property owner, Three Palms Investments, LLC, has locally owned and operated this site since 1984 and recently completed a 45,000 square foot expansion to their existing Fun Depot facility. The Fun Depot facility in addition to the surrounding restaurants will greatly benefit from the installation of the EV charging stations.