



# Downtown Tampa Electric Vehicle Charging Analysis

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**TAMPA**  
DOWNTOWN PARTNERSHIP

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# Table of Contents

- I. INTRODUCTION ..... 2**
- II. EXISTING CONDITIONS..... 3**
  - EV Charging Infrastructure..... 3
    - EV Charging Networks ..... 4
    - Publicly Accessible EV Charging Stations..... 5
    - Tesla Destination/Superchargers ..... 7
  - EV Charging User Typology and Charging Needs ..... 8
  - Relevant EV Policies and Regulations ..... 9
    - City of Tampa..... 9
    - State of Florida..... 10
    - Federal..... 11
    - Sustainable Building Program Incentives..... 12
- III. BEST PRACTICES REVIEW ..... 14**
  - Zoning..... 14
  - Codes..... 15
  - Parking Incentives and Ordinances..... 15
  - Public and Workplace Charging Infrastructure Investment..... 16
- IV. POLICY RECOMMENDATIONS ..... 17**
  - Available EVSE Incentives ..... 17
  - Public and Private EVSE Infrastructure Deployment ..... 17
  - Supportive Code, Policies, and Ordinances..... 19
  - Potential Partnerships..... 21
- V. APPENDIX..... 22**
  - Case Study: Columbus, Ohio ..... 22
  - Commercial and Residential Property Managers EV Charging Survey Results..... 24

- Table 1: Existing EV Charging Stations in Downtown Tampa ..... 3
- Table 2: EV Charging User Typology ..... 8
- Table 3: EV Charging User Needs ..... 8
- Table 4: Electric Vehicle Promotional Actions Comparison ..... 23
- Table 5: Commercial and Residential Property Owners EV Charging Survey Results..... 24

# I. INTRODUCTION

The Tampa Downtown Partnership (TDP) engaged Sam Schwartz to study emerging trends and best practices related to electric vehicle (EV) charging planning and infrastructure and make recommendations for how to best expand EV charging in Downtown Tampa. The study includes an existing conditions analysis of current EV charging stations, policies, and regulations in Downtown Tampa, and provides high-level policy recommendations and actions that TDP can undertake in partnership with the City of Tampa and private sector to support an increase in EV adoption.

The availability of EV charging infrastructure is critical to EV market growth. Greater infrastructure deployment at home, at the workplace, and in public locations can help increase driver confidence, extend driving range, and improve visibility and public awareness. TDP and the City of Tampa recognize the benefits of EVs and are committed to supporting the proliferation of EVs and charging stations, for example as part of the City's *Transforming Tampa's Tomorrow* initiative.

## II. EXISTING CONDITIONS

This section compiles and inventories the existing coverage of available EV charging infrastructure in Downtown Tampa and summarizes the most relevant existing laws, regulations, policies, and programs related to EVs and EV charging infrastructure. As Downtown Tampa explores options for promoting and facilitating the use of EVs, a comprehensive and thorough understanding of the current conditions of EV charging infrastructure and the local regulatory framework will help inform the development of short- and long-term policy recommendations. As part of this research, a short email survey was distributed by TDP to commercial and residential property managers to gather information on existing EV charging infrastructure. The results of the commercial and residential property owners survey are included in the Appendix.

### EV Charging Infrastructure

Publicly available data were utilized to compile and inventory existing EV charging infrastructure in Downtown Tampa. Throughout the study area, there are 30 EV charging locations with a total of 97 EV charging stations. Out of the 30 EV charging stations, 9 are publicly accessible. While some of the public EV charging stations are free to charge and access, the majority of publicly accessible charging stations in Downtown Tampa are located within parking garages where drivers will still need to pay the daily or monthly parking rates. The remaining private EV charging stations in Downtown Tampa are located within residential buildings or businesses that are reserved for their patrons and guests. A table summary of existing EV charging stations in Downtown Tampa is shown below.

*Table 1: Existing EV Charging Stations in Downtown Tampa*

Charging Networks	Management	Location	Public/Private	Number of Chargers	Parking Fee (min-max)/hr.	Charge Rate
ChargePoint	City of Tampa	Fort Brooke Parking Garage	Public (Parking Rates)	2	\$1.65-\$9.65	Free
ChargePoint	City of Tampa	Tampa Convention Center	Public (Parking Rates)	1	\$1.65-\$9.65	Free
ChargePoint	City of Tampa	William F. Poe Garage	Public (Parking Rates)	4	\$1.25-\$7.15	Free
ChargePoint	City of Tampa	Pam Iorio Parking Garage	Public (Parking Rates)	1	\$1.65-\$9.65	Free
ChargePoint	City of Tampa	Twiggs Street Garage	Public (Parking Rates)	2	\$1.25-\$7.15	Free
ChargePoint	Hillsborough County	Pierce Street Parking Garage	Public (Parking Rates)	2	\$0.50-\$5.00	\$0.15 /kWh
ChargePoint	TECO	TECO surface lot	Private/Public (Parking Rates)	3		\$12/6hr \$15/24hr
Tesla	Tesla	Hampton Inn/Home 2 Suites	Public	11	None	\$0.28 /kWh

SemaConnect	University of Tampa	Thomas Parking Garage / West Parking Garage	Public (Permit Required)	4	Free	Free
ChargePoint / SemaConnect / Non-networked	Private Residential Properties*	Various	Private (Tenant and Guest)	52	Varies	Varies
ChargePoint / SemaConnect / Non-networked	Commercial Properties*	Various	Private (Tenant, Patron, Guest)	18	Varies	Varies

\*Additional information can be found in the full commercial and residential property owners survey in the Appendix

## EV Charging Networks

There are two primary EV charging networks in operation within Downtown Tampa: ChargePoint and SemaConnect. These two EV infrastructure companies are further described below:

### ChargePoint

ChargePoint is an EV infrastructure company that operates one of the largest networks of independently owned EV charging stations, operating in 14 countries, and produces underlying technology behind its services. ChargePoint is one of the primary operators and supplier of EV charging stations in Tampa with 30 locations serving both public agencies and private companies. In Downtown Tampa, ChargePoint manages two publicly accessible charging



Figure 1: ChargePoint EV Charger

stations and one private charging station. ChargePoint's current EV charging stations in Downtown Tampa can accommodate both Level 1 and Level 2 chargers and can service two parking spaces. Drivers can pay using the ChargePoint mobile app, a contactless credit card, or via assistance from a station attendant if available.

### *SemaConnect*

SemaConnect is an electric vehicle infrastructure company with several charging locations in the Tampa region. The company installs EV charging stations for commercial, multifamily, and fleet applications. SemaConnect manages two private charging stations located on residential



*Figure 2: SemaConnect EV Charger*

properties and one publicly accessible station.

SemaConnect's current EV charging stations can accommodate both Level 1 and Level 2 chargers. Drivers can pay via the SemaConnect smartphone app or via assistance from a station attendant if available.

## **Publicly Accessible EV Charging Stations**

Publicly accessible EV charging stations in Downtown Tampa are managed by the City of Tampa except for one publicly accessible charging station managed by Hillsborough County. Their management structure and pricing are detailed below.

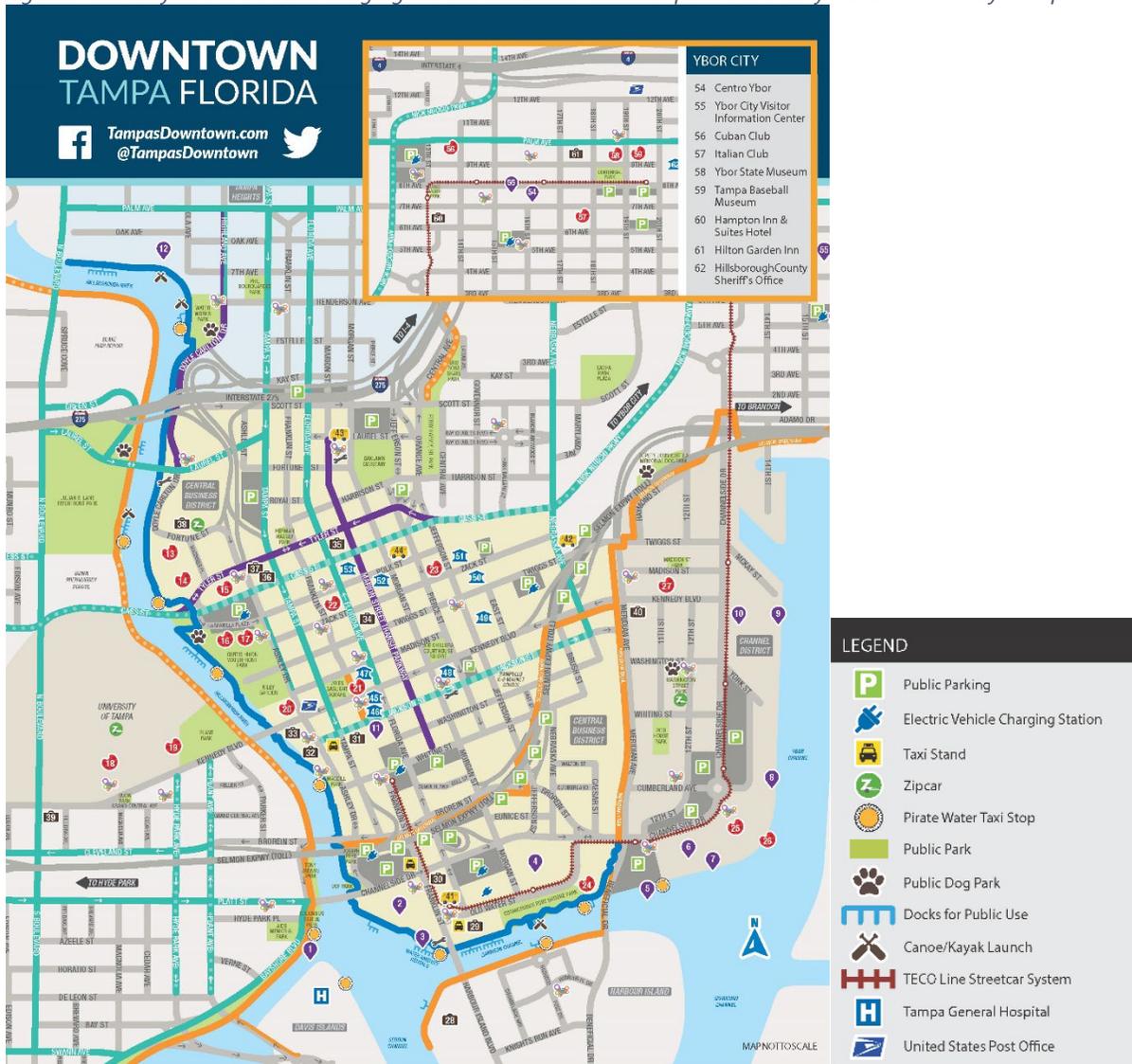
### *City of Tampa*

The Parking Division of the City of Tampa manages eight EV charging stations through five City-owned and -operated parking facilities in Downtown Tampa. The charging stations were procured in 2013 as part of Coulomb Technologies' (now ChargePoint) \$37 million ChargePoint America program at no cost to the City. In exchange, the City participated in a U.S. Department of Energy (DOE) monitoring program through December 2013. Coordination of the ChargePoint America program in the Tampa region was handled by NovaCharge, LLC. These EV charging stations are publicly accessible but drivers are required to pay the parking facility's daily or monthly permit fee to park.

### *Hillsborough County*

Hillsborough County maintains EV charging stations at several County facilities, installed as part of a U.S. DOE grant for locations where there is an anticipated high volume of visitors. The charging stations were provided by ChargePoint in 2012 and can accommodate both Level 1 and Level 2 chargers. Although the charging stations are publicly accessible, drivers will have to pay the parking facility's daily or monthly permit fee to park and use the chargers. In Downtown Tampa, Hillsborough County maintains one EV charging station with four connectors in the Pierce Street parking garage and charges an additional electricity fee of \$0.15/kWh.

Figure 3: Publicly Accessible EV Charging Stations in Downtown Tampa was recently added to the City's map.



## Tesla Destination/Superchargers

Tesla offers Destination charging stations and Supercharger stations at various hotels, restaurants, and shopping centers in Tampa and across the United States. Up until 2017, Tesla paid for the installation cost but has since then shifted the installation cost back to the facility owners. Tesla EV charging stations are often complimentary for Tesla owners or if they are a patron of the facility. It is notable that Supercharger stations were introduced in 2012 and can fully charge a depleted Tesla vehicle in approximately 30 minutes. These Supercharger stations



are generally located along well-travelled routes in the U.S. In Downtown Tampa, there is one publicly accessible Tesla charging station with 11 connectors, located at the Hampton/Home 2 Tampa Downtown Garage. However, these charging stations are only compatible with Tesla vehicles.

*Figure 4: Tesla Superchargers*

## EV Charging User Typology and Charging Needs

Based on our understanding of the range of potential EV users and review of existing EV charging infrastructure locations in Downtown Tampa, the following two tables summarize the various EV charging users, their associated type of EV parking facilities in terms of their respective EV charging preferences, and charging needs.

Table 2: EV Charging User Typology

User Category	Parking Facility Type				Preferences
	Curbside	Parking Garage/Lot	Accessory Residential Parking	Hotel Parking	
Downtown Resident			X		Private parking is typically managed by property management. These users will want to leave their EVs in place overnight for charging. Level 2 charging is applicable. Some residents may be satisfied with Level 1 charging, especially at lower cost.
Downtown Worker		X			Depending on the parking facility, these users may need to move their EVs once charging is complete. Charging availability may be considered as a workplace prerequisite/recruitment. Level 2 charging is applicable.
Day Visitor	X	X	X		These users will only charge while they are in downtown and may not want to move their EVs immediately upon charge completion. Supercharging (above Level 2) is applicable.
Overnight Visitor		X		X	These users will want to leave their EVs charging overnight. Level 2 charging is applicable.

Table 3: EV Charging User Needs

EV Charging Needs	
EV Driver	Typical Daily Replenishment Needs (miles driven daily)
Average American <sup>1</sup>	29 miles
Tampa residents	30 miles
Commuters from adjacent counties	60-80 miles
Distant visitors	150-350 miles

<sup>1</sup> US Bureau of Transportation Statistics, "National Household Travel Survey Daily Travel Quick," 2017, <https://www.bts.gov/statistical-products/surveys/national-household-travel-survey-daily-travel-quick-facts>.

## Relevant EV Policies and Regulations

Policies and regulations related to EV charging infrastructure at the city, state, and federal level were compiled and reviewed to gain a comprehensive understanding of the existing regulatory framework. The following section provides an overview of these policies and regulations.

### City of Tampa

#### *Parking Ordinance*

**Ordinance Number 2011-84, § 6, 7-14-2011, Section 15-56** restricts vehicles from parking in spaces located in any city-owned or -operated parking garage or parking lot that are marked or reserved for the use of electric vehicle charging unless the driver is actively using the EV charging station to charge.

#### *Partnerships*

**ChargePoint:** The City of Tampa applied for and received 10 EV charging stations at no cost to the City as part of Coulomb Technologies' \$37 million ChargePoint America program. The ChargePoint America program was made possible by a \$15 million grant funded by the American Recovery and Reinvestment Act through the Transportation Electrification Initiative administered by the DOE. In exchange, the City of Tampa participated in a DOE monitoring program through December 2013. The Parking Division of the City of Tampa maintains and operates 10 EV charging stations throughout seven city-owned parking facilities. The City of Tampa does not charge an additional service fee for use of these charging stations, although parking fees do apply.

#### *Incentives*

**Tampa Electric Company (TECO):** TECO's Energy Planner program is available to residential customers who subscribe to a broadband internet service. It offers lower prices on electricity for most of the day and throughout the weekend. While it is not dedicated to EV charging, the program encourages off peak-hour charging and electricity use, which helps to minimize demand stress peaks in the energy grid.

#### *Education/Coalition*

**TECO Electric Vehicle and Energy Education Program:** TECO has partnered with USF, the Center for Urban Transportation Research (CUTR), and local high schools to become the first electric utility company in the country to offer an energy-education program focused on teaching students about EV technology. They have a charger in their downtown location employee parking lot (which is also open to the public).

**Clean Cities Coalition Network, Tampa Bay Clean Cities Coalition (TBCCC):** In 2012, TECO, Peoples Gas, USF's Patel School of Global Sustainability, and the Environmental Protection Commission of Hillsborough County launched The Tampa Bay Clean Cities Coalition (TBCCC), which works with vehicle fleets, fuel providers, community leaders, and other stakeholders to

support local actions that reduce the consumption and reliance on petroleum in the transportation sector.

## **State of Florida**

The State of Florida does not offer monetary incentives related to EV charging infrastructure, although it does grant local jurisdictions the power to create their own incentive programs. Additionally, several private utility companies throughout the state offer monetary incentives and rebates to their customers when purchasing or installing EV charging infrastructure.

### *State Incentives*

**Electric Vehicle Supply Equipment Financing Authorization:** Local governments may offer funding to property owners within their jurisdiction to help finance Electric Vehicle Supply Equipment (EVSE) installations on their property or enter into a financing agreement for the same purpose.

### *State Laws and Regulations*

**Authorization for Alternative Fuel Infrastructure Incentives:** Local governments are authorized to use income from infrastructure surtax to provide loans, grants, or rebates to residential or commercial property owners to install EVSE.

**Charging Electric Vehicle Supply Equipment Regulation Exemption:** The Florida Administrative Code (FAC) provides that EV charging stations, which are publicly available and provided by a non-utility company, is not a retail sale of electricity and therefore, the rates, terms and conditions of EV charging services are not subject to regulation.

**Electric Vehicle Supply Equipment Policies for Condominiums:** The FAC provides that condominium associations may not prohibit or restrict the installation or use of EVSE in a homeowner's designated parking space. Condominium associations may put reasonable restrictions on EVSE, but the policies may not significantly increase the cost of the EVSE or prohibit its installation.

**Electric Vehicle Supply Equipment Rules:** The FAC provides that a person may not stop, stand, or park a vehicle that is not capable of using the EVSE in a parking space designated for EVs.

**State Highway Electrification Plan:** The FAC provides that the Florida Department of Transportation (FDOT) must create a master plan for the development of EVSE along the state highway system by July 1, 2021. FDOT must also establish staging areas that will include EVSE at key locations along the state highway system to be used as emergency evacuation stops. A status report on the project was released on December 1, 2020, and is available at [https://fdotwww.blob.core.windows.net/sitefinity/docs/default-source/planning/fto/evmp-status.pdf?sfvrsn=ac348cf4\\_8](https://fdotwww.blob.core.windows.net/sitefinity/docs/default-source/planning/fto/evmp-status.pdf?sfvrsn=ac348cf4_8). Although concerned primarily with statewide matters, the Report does include a table of Preliminary Recommendations, some of which pertain to downtown Tampa.

**State Highway Transportation Plan:** The FAC provides that FDOT, the Public Service Commission, and the Office of Energy will jointly develop a plan to install EVSE along the state highway system. The plan must include recommendations for EVSE legislation and be delivered to the governor and the Florida legislature by July 1, 2021.

#### *Utility Company/Private Incentives:*

**All-Electric Vehicle and Electric Vehicle Supply Equipment Rebates:** Kissimmee Utility Authority (KUA) provides rebates of \$100 to residential customers for the purchase of a new EV and \$100 for the purchase and installation of a home EVSE.

**Electric Vehicle Supply Equipment Incentives:** Brickell Energy's *aFloat Program* offers two different incentives to facilitate the installation of EVSE in Florida: 1) Through the *aFloat Host Agreement*, Brickell Energy covers the cost of hardware, network service plans, management service, and warranties to eligible commercial real estate property owners and managers; 2) The *aFloat Rental Plan* offers EVSE hardware, network service plan, management service, and warranties at a reduced fee in both public and commercial locations.

**Electric Vehicle Supply Equipment Pilot Program:** Duke Energy's *Park & Plug* pilot program offers free Level 2 and direct current (DC) EVSE, installation, warranty, and network connection services to eligible entities, including multi-unit dwellings, workplaces, businesses, and areas along high-traffic corridors. Site hosts are responsible for electricity costs and must agree to participate in the pilot program through December 2022.

## **Federal**

### *Incentives*

**Alternative Fuel Infrastructure Tax Credit:** The DOE grants tax credits for the installation of fueling equipment for natural gas, propane, liquefied hydrogen, electricity, E85, or diesel fuel blends containing a minimum of 20% biodiesel installed through December 31, 2021. Fueling station owners are eligible for a tax credit of 30% of the installation cost for each location, not to exceed \$30,000. Consumers who purchase qualified residential fueling equipment prior to December 31, 2021 may receive a tax credit of up to \$1,000. Note that this incentive originally expired on December 31, 2016 but was [retroactively extended](#) through December 31, 2021.

### *Loans/Grants*

**Improved Energy Technology Loans:** The DOE provides loan guarantees through the Loan Guarantee Program to eligible projects that reduce air pollution and greenhouse gases and support early commercial use of advanced technologies, including biofuels and alternative fuel vehicles. The program is not intended for research and development projects. DOE may issue loan guarantees for up to 100% of the amount of the loan for an eligible project. Eligible projects may include the deployment of fueling infrastructure, including associated hardware and software for alternative fuels such as EV charging stations.

**State Energy Program (SEP) Funding:** The federal government offers grants to states to assist in designing, developing, and implementing renewable energy and energy efficiency programs. State energy offices coordinate SEP funding and manage all SEP-funded projects. States may also receive project funding from technology programs in the DOE's Office of Energy Efficiency and Renewable Energy (EERE) for SEP Special Projects. EERE distributes the funding through an annual competitive solicitation to state energy offices.

**Congestion Mitigation and Air Quality (CMAQ) Improvement Program:** The CMAQ Program provides funding to state departments of transportation, local governments, and transit agencies for projects and programs that help meet the requirements of the Clean Air Act by reducing mobile source emissions and regional congestion on transportation networks. Eligible activities include transit improvements, travel demand management strategies, congestion relief efforts (such as high occupancy vehicle lanes), diesel retrofit projects, and alternative fuel vehicles and infrastructure.

### *Bonds*

**Alternative Fuel and Advanced Vehicle Technology Research and Demonstration Bonds:** The federal government allows qualified state, tribal, and local governments to issue Qualified Energy Conservation Bonds subsidized by the U.S. Department of Treasury at competitive rates to fund capital expenditures on qualified energy conservation projects. Eligible activities include research and demonstration projects related to cellulosic ethanol and other non-fossil fuels, as well as advanced battery manufacturing technologies. Government entities may choose to issue tax credit bonds or direct payment bonds to subsidize the borrowing costs.

### **Sustainable Building Program Incentives**

Sustainable building programs, such as the Leadership in Energy and Environmental Design (LEED) and the Florida Green Building Council (FGBC), also offer incentives for EVSE installation in the form of credits toward LEED certifications that are aimed at increasing EV adoption through the implementation of EVSE and access to vehicle charging.

### *LEED*

The majority of PEV LEED credits are in the Sustainable Sites Credit category and are awarded for providing preferred or discounted parking for low-emissions vehicles, the installation of alternative-fuel fueling stations, and offering building occupants access to a low-emitting vehicle, among others.

### *FGBC*

FGBC is a non-profit corporation in Florida that provides a statewide green-building program and defines, promotes, and encourages sustainable efforts, including the implementation of EVSE, with environmental and economic benefits.

### *Green Local Government Certificate Program*

The FGBC provides this program where local governments can receive a step-by-step toolkit to develop and implement sustainability plans that encourage the adoption of environmentally friendly practices across all government functions.

### *Energy Star*

Energy Star is a program run by the DOE and EPA to promote efficient energy use. The program provides information on the energy consumption of products and devices using different standardized methods. Energy Star certified EV chargers provide the same charging functionality but uses 40% less energy in standby mode, reducing their impact on the environment. Energy Star certified EV chargers also meet national safety standards and are generally embedded with smart technology for remote power monitoring.

### III. BEST PRACTICES REVIEW

This section summarizes our review of policy best practices in the U.S. related to EV charging stations and infrastructure. In general, states and municipalities can employ a variety of policy and planning tools to help facilitate and guide the installation and proliferation of EV charging infrastructure. While there is no one-size-fits-all deployment strategy, *zoning*, *codes*, and *parking ordinances* are three particularly powerful tools that were found to encourage EVSE adoption in addition to sustained investment and funding mechanisms for EVSE installation.

#### Zoning

Zoning is a vital tool to incentivize or require the installation of EV charging stations. In the context of EV readiness, zoning ordinances are a useful tool for both state and local governments to indicate where EVSE are allowed or prohibited. Zoning can also be used to incentivize or require EVSE throughout a municipality's zoning districts or in specific areas. The state of Washington is an example where a targeted approach to siting EVSE through municipal zoning was employed. Through the Washington Department of Commerce, a model ordinance was adopted to establish development regulations and guidance for local governments to install EVSE.<sup>2</sup> In the city of Methuen, MA, the local government adopted an addendum to their zoning ordinance, specifying the requirements for EV infrastructure in residential and commercial areas.<sup>3</sup>

Other incentives such as floor area bonuses or reduced parking requirements for new developments can also help increase the number of EV charging stations. For example, in Georgia, every EV parking space is counted as three parking spots towards off-street parking requirements.<sup>4</sup>

It is important to view zoning as a long-term tool and not as a shortcut to accelerate infrastructure deployment. While zoning is considered a primary tool for EVSE implementation, zoning ordinances should include clear definitions and provisions to avoid unintended limitations on EVSE deployment. The New York City Department of City Planning demonstrated this best practice when it amended zoning language to define EVSE in conjunction with parking facilities as an accessory use, which allowed EVSE to be located in any drive-in property in a commercial district, rather than only at fueling station locations.

Similarly, it is important to also consider existing charging technology while also preparing for the future. For example, Level 1 and Level 2 chargers have different zoning implications and

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<sup>2</sup> Alternative Fuels Data Center, "Alternative Fuels Data Center: Local Government Plug-in Electric Vehicle (PEV) Infrastructure Requirements," <https://afdc.energy.gov/laws/6538>.

<sup>3</sup> Alternative Fuels Data Center, "Alternative Fuels Data Center: Plug-In Electric Vehicle Deployment Policy Tools: Zoning, Codes, and Parking Ordinances," <https://afdc.energy.gov/bulletins/technology-bulletin-2015-08.html>.

<sup>4</sup> Ibid.

uses, in addition to direct current (DC) fast charging (Level 3), which is useful in roadside or commercial applications.

## Codes

Codes and standards can be an effective combination to create a framework of safety requirements and best practices for EVSE. The most common type of code addresses the construction and electrical equipment installation procedures associated with EVSE. These can be particularly effective tools to specify requirements, goals, or limits for new construction features such as requiring a percentage of new parking spaces to be compatible with EVSE. For example, New York City's building codes require 25% of the total parking spaces in new parking facilities to be equipped with the wiring capability to host EV charging stations.<sup>5</sup> In California, building codes require EVSE infrastructure at new multi-family dwellings and non-residential developments.<sup>6</sup>

Codes can encourage and facilitate EVSE by expediting the permitting and inspection process. States such as Oregon have employed codes to establish a flat, consistent fee for residential EVSE installation. Other places like Houston, Texas and Los Angeles, California have used codes in order to streamline the permitting and installation process for EVSE.<sup>7</sup> In Des Moines, Iowa, the city adopted an ordinance to allow EV charging stations in all zoning designations to streamline the installation process.<sup>8</sup> While most expediting efforts have focused on single-family residential EVSE installation, there are opportunities to facilitate more complex installation in multi-family and commercial settings.

## Parking Incentives and Ordinances

Parking ordinances and incentives can apply to publicly accessible EVSE, whether at municipal parking garages/lots, privately operated garages, or on-street locations. Parking ordinances can be leveraged to address various aspects of EVSE installation and usage. These include requirements for EVSE-readiness, the size of EV charging parking spaces, the location of charging stations within a parking facility, or EVSE user rotation, access, and violations. To ensure adequate access and increase convenience for EV users, parking ordinances can be used to restrict the use of EV charging parking stalls for EVs only.

Several cities, including Atlanta, Georgia, Kansas City, Missouri, and Chelan, Washington have ordinances that restrict parking in EV spaces to only EVs actively using the charging station.

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<sup>5</sup> Peter Slowik and Nic Lutsey, "The Continued Transition to Electric Vehicles in U.S. Cities," 2018, [https://theicct.org/sites/default/files/publications/Transition\\_EV\\_US\\_Cities\\_20180724.pdf](https://theicct.org/sites/default/files/publications/Transition_EV_US_Cities_20180724.pdf).

<sup>6</sup> Alternative Fuels Data Center, "Alternative Fuels Data Center: Plug-In Electric Vehicle Deployment Policy Tools: Zoning, Codes, and Parking Ordinances."

<sup>7</sup> Ibid.

<sup>8</sup> Claire Cooke and Brian Ross, "Summary of Best Practices in Electric Vehicle Ordinances," June, 2019, [https://www.betterenergy.org/wp-content/uploads/2019/06/GPI\\_EV\\_Ordinance\\_Summary\\_web.pdf](https://www.betterenergy.org/wp-content/uploads/2019/06/GPI_EV_Ordinance_Summary_web.pdf).

While not strictly parking ordinances, other municipal requirements such as proper signage and adequate lighting near EVSE can also help to standardize and formalize EV charging infrastructure within the public realm.

## Public and Workplace Charging Infrastructure Investment

EV charging should be convenient and set at the appropriate charging level to facilitate consumer access. EV charging stations should also be upgraded as improved charging technology becomes available. Increased numbers of EVSE locations were found to have a positive correlation with consumer confidence and can help expand the range of EVs and increase public awareness. Cities with high EV uptake have at least 300 public charge points per million people and in the most successful EV markets, approximately 10% to 20% of the available public charging stations can accommodate Level 3 chargers.<sup>9</sup> This suggests that the City of Tampa should aim for at least 120 charge points citywide, with 12-24 accommodating Level 3 charging. Based on the resident, employee, and visitor population of Downtown Tampa, **at least a third of those (40) should be Downtown, with 4-8 being Level 3.**

Studies reveal that both workplace and public charging infrastructure have a direct impact on EV uptake. In California, which has some of the highest EV adoption rates, approximately half of the registered EV drivers have access to a charging station at work.<sup>10</sup> Local governments can play an active role in investing in EVSE by directly installing EV charging stations, providing financial incentives to property owners, expediting the station installation permitting process, or adopting legislation that facilitates EVSE installation. Private companies like Tesla and charging infrastructure companies like ChargePoint are already providing and installing EV charging stations, often in coordination with local governments.

Electric power utility companies are critical partners to generally support EV adoption and EVSE implementation. Metropolitan areas with high EV adoption coordinate and work closely with utility companies to offer preferential rates for EV charging, and sometimes direct investment for EV charging infrastructure.

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<sup>9</sup> Peter Slowik and Nic Lutsey, "The Continued Transition to Electric Vehicles in U.S. Cities."

<sup>10</sup> Ibid.

## IV. POLICY RECOMMENDATIONS

This section outlines high-level policy recommendations to promote and facilitate EV charging stations in Downtown Tampa as informed by the existing conditions analysis and the policy best practices review. Recommendations include both actions that the TDP can undertake independently, as well as policy recommendations for the City of Tampa.

### Available EVSE Incentives

- It is recommended that the TDP and the **City of Tampa utilize and encourage developers to leverage eligible EVSE credits when seeking the U.S. Green Building Council (USGBC) LEED and/or the FGBC certification.** Similarly, the Green Local Government certification is another incentive that the City of Tampa can directly pursue by utilizing existing EV charging infrastructure and planning for future EV charging infrastructure.
- At the county level, it is recommended that **Hillsborough County leverage existing state EV incentives,** including the Florida Property Assessed Clean Energy (PACE) Funding Agency, to help finance EVSE installation. Coordination between Hillsborough County and the City of Tampa will be critical to identify sustained sources of funding for EVSE proliferation.

### Public and Private EVSE Infrastructure Deployment

- It is recommended that the **TDP play an active role to help identify and prioritize EVSE installations** where there is high demand and need. Recommended EVSE locations include:
  - **Residential homes:** Multi-family residential dwellings where users will park their EVs to charge overnight.
  - **Workplace:** Where employees will be parked on a weekly daily basis for 6-8 hours.
  - **Destination locations:** Where visitors coming into downtown or the city will stay for a few hours or overnight. All large City-owned lots and garages should be considered.
  - **Along major highways and corridors:** To facilitate and expand the range of EV travel, DC-Fast Charger (Level 3) is recommended.
- **It is recommended that the TDP help assess and determine the quantity and density of public EV charging stations through phased expansions.** It is expected that a higher EVSE growth rate will initially be required to attain sufficient charging access at key locations and can dynamically grow over time in response to demand. The quantity of EVSE will also be determined by the charging level installed because each higher level of charging draws substantially more power. Based on our review of best

practices, cities with high EV adoption rates have at least 300 public charging points per million people and when applied to the City of Tampa (with an estimated population of just under 400,000 according to the 2019 U.S. Census data), it would translate to approximately 120 EV charging stations. This number can be a useful benchmark for future expansions of EV charging stations, the majority of which would presumably be in Downtown Tampa where there is a high concentration of jobs and key destinations. A **comprehensive curbside inventory and utilization study would help identify suitable areas for on-street EVSE expansion based on parking demand** from electric vehicles, and whether curbside charging would serve enough users to justify the investment. City staff could utilize Table 2 above, together with City aspirations, to develop a plan for curbside charging stations.

- It is recommended that the TDP help establish the appropriate charging levels based on the expected mileage range drivers wish to replenish and parking duration of the anticipated EV charging users:
  - **Level 1 charging:** A Level 1 EV charging station can cost between \$200 and \$300, and depending on the location and context, installation costs can vary up to \$1,700.<sup>11</sup> Suitable for low mileage and/or long parking durations. These charging stations use 120 VAC outlets and do not need a charging port. Charging rate is approximately 5 miles range/hour, which is adequate for overnight replenishment of the average American daily average driving of 29 miles.
  - **Level 2 charging:** A Level 2 EV charging station can cost between \$500 and \$2,200. Depending on the location and context, installation costs can vary between \$1,200 to \$3,300.<sup>12</sup> Suitable for moderate mileage and parking durations of up to four hours. These charging stations use 240V circuits and would require a charging port. The power draw is on par with a clothes dryer and the charging rate is approximately 25 miles range/hour.
  - **Level 3 charging:** Level 3 charging stations can cost between \$20,000 and \$50,000, and depending on the location and context, the installation cost can go beyond \$50,000.<sup>13</sup> Suitable for high mileage charging and in locations with high expected volume and turnover rate and where customers are willing to pay for the convenience of fast charging turnaround. The required charging points, associated EVSEs, and installation costs are comparatively more expensive.
- It is recommended that the TDP and/or the City of Tampa **conduct detailed studies to help develop site-specific charging policies to support EVSE hosts' and users' needs.** These may include:

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<sup>11</sup> HomeAdvisor, "Learn How Much It Costs to Install an Electric Vehicle Charging Station," 2020, <https://www.homeadvisor.com/cost/garages/install-an-electric-vehicle-charging-station/>.

<sup>12</sup> Ibid.

<sup>13</sup> Ibid.

- **Parking duration:** Establishing a maximum duration for which EV charging users are permitted to park will encourage higher turnover rate and increase EV user access. The potential for the City to offer an overnight monthly parking rate to further incentivize EV users living in Downtown Tampa can be further explored.
- **User authorization:** Publicly accessible EVSE will help ensure adequate access for EV users and reduce entry barriers into the EV market.
- **Payment models:** Payment models and methods of payment should be equitable and maximize EV charging space utilization while increasing vehicle turnover. While the “free to charge” payment model will maximize EV charging demand, it may not be a sustainable business model considering the electricity and maintenance cost of the EVSE. To facilitate this, consider fees based on time connected to the charging station rather than electricity/kilowatt-hours (kWh) consumed. Charging prices should be less than the equivalent cost of gasoline to further incentivize EV adoption, and charging can be free at local/retail dining locations for their patrons. Due to their charging speed and convenience, Level 3 EVSE installations should carefully consider the expected volume and costs to serve.

Considerations beyond business models can include aspirations for Downtown Tampa to be seen as a forward-looking and desirable urban environment. Free EV charging already exists at several locations in the Tampa area and, like free Wi-Fi, may continue to expand for similar reasons. Discount and reward programs can be created, especially for EV charging stations that are connected to the internet to further incentivize their use.

- It is recommended that the TDP and the City of Tampa consider adopting a **consistent branding and wayfinding language** to help EV users locate and use public charging stations. These publicly accessible charging stations should also have 24/7 contact information available in case of equipment malfunction and should also be included in the Clean Cities national “Alternative Fuels Station Locator” database so EV users can easily find them.
- It is recommended that the TDP and the City of Tampa **explore the potential to leverage existing and/or future EVSE to facilitate and promote electric-powered micro-mobility devices**. Typical e-bikes and e-scooters use standard 110 VAC outlets, which can be provided at select EV charging stations. These EV charging stations should also consider the need for appropriate bike parking infrastructure to facilitate safe charging operations.

## Supportive Code, Policies, and Ordinances

- It is recommended that the City of Tampa consider **adopting land use development regulations that allow Level 1, Level 2, and Level 3 stations as an accessory use**

**within designated land use and zoning districts.** These EVSE can be installed as-of-right to facilitate EV adoption.

- It is recommended that the City of Tampa Construction Services Division **pre-approve select EVSE standards to streamline the permitting process and establish a consistent master specification.** Pre-approvals would reduce and expedite the number of required internal reviews and facilitate the installation of EV charging stations.
- It is recommended that the City of Tampa consider **updating and supplementing existing parking ordinances to provide for EV charging and parking incentives,** reduce the parking requirements for EVSE implementation, enforce parking hours at EV charging stations, dedicate a certain number of parking spaces to EVs, and mandate specific locations for charging infrastructure (potentially informed by ADA accessibility and utility grid assessments).
- It is recommended that the City of Tampa consider **adopting zoning regulations that require a certain percentage of designated parking spaces at newly constructed developments** to be equipped with the appropriate electrical infrastructure to support EVSE installation.
- It is recommended that the City of Tampa coordinate closely with Hillsborough County and the State of Florida to develop complementary EVSE policies that are uniform and can be consistently applied.
- It is recommended that the City of Tampa **include data collection and sharing as part of any future agreements/partnerships** with 3<sup>rd</sup> party EVSE providers, as well as when renewing current contracts. Understanding the frequency and duration of EV charging at EVSE locations will help determine the appropriate EV charging station density, locations, and usage/pricing policies. The City should also explore what data can be collected from existing charging stations related to usage (distribution across different days/times, average duration, costs, etc.) to help inform future EVSE planning.

## Potential Partnerships

- It is recommended that the TDP and the City of Tampa consider leveraging the Southeast Florida Electric Vehicle and Infrastructure Alliance Partner relationships and



any other existing EV-related organizations such as the Electric Drive Transportation Association and the Drive Electric Florida group to build coalition support and engage with the local community on EVSE-related topics.

## V. APPENDIX

### Case Study: Columbus, Ohio

Partnership staff expressed an interest in the example provided by Columbus, Ohio.

Columbus competed against 77 cities, including Tampa, to win the Smart City Challenge in 2016.

<sup>14</sup> The Columbus Smart City Challenge Implementation Vision included EV infrastructure.<sup>15</sup>

Tallahassee, Miami, Orlando, St. Petersburg, and Jacksonville also applied to the Smart City Challenge.

In March of 2018, Columbus published the findings of Navigant Consulting’s “Landscape Assessment” research project, a survey of 900 people in the Columbus region to “establish baseline measures for Columbus to assess the opportunities and perceived barriers to EV adoption and evaluate how they compare to the nation as a whole.”<sup>16</sup> The intent is to repeat the survey at the conclusion of the Smart Columbus Electrification Program.

The August 2020 report by the International Council on Clean Transportation (ICCT), *Update on Electric Vehicle Adoption across U.S. Cities*, assessed the U.S. electric vehicle market in 2019 and the policy actions by cities, states, and electric power utilities that were driving it. The report includes policy data for the 50 most populous U.S. cities, including Columbus and Tampa. Of these 50, between 2015 and 2019 Columbus had the highest annual growth rate of public chargers at 69% (Tampa’s growth rate was 39%). Columbus ranked above average in EV promotional actions. Of the 18 EV promotional actions by the cities, Columbus had performed eight and Tampa had performed three.

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<sup>14</sup> City of Columbus, Ohio, “Smart Columbus,” <https://www.columbus.gov/smartcity/>.

<sup>15</sup> US Department of Transportation, “The Winner: Columbus, Ohio,” <https://www.transportation.gov/smartcity/winner>.

<sup>16</sup> Navigant Consulting, “Columbus Consumer Adoption Research Landscape Assessment,” March 29, 2018.

Table 4: Electric Vehicle Promotional Actions Comparison Comparison between Columbus and Tampa

Electric Vehicle Promotional Actions <sup>17</sup>		
Promotional Action	Columbus	Tampa
City quantitative electric vehicle goal	❖	
City electric vehicle strategy		
City streamlined EVSE permitting process		
City EV-ready building code		
City EV purchase incentive		
City parking benefit		
City charger incentive or support	❖	
City toll reduction benefit		
City carpool lane (HOV) access		
City-owned EV chargers	❖	❖
City electric ride-hailing program or pilot	❖	
City electric carsharing program		
City curbside or right of way charging program	❖ <sup>18</sup>	
City informational materials	❖	❖
City outreach events	❖	❖
City outreach events in low-income communities	❖	
City electric vehicle fleet or procurement target	❖	
City electric buses in public transportation		

As part of the Volkswagen Clean Air Act violation settlement, Columbus EV-ready building codes were under development by the end of 2019 (by which time Miami had passed EV-ready building codes). Columbus received electric bus development and procurement grants.

At the time of the ICCT 2020 report, Columbus had set a goal of 1.8% EV registered vehicle ownership and deployment of 900 public EV charging stations but had not identified a strategy. The City received a \$10 million grant from the Paul G. Allen Family Foundation to assist in reaching this objective in a six-county region. Columbus has striven to increase EV adoption through education efforts including the Acceleration Partners Program, the Smart Columbus Ride & Drive Roadshow, the Electrified Dealer Program, and the Smart Columbus Experience Center. Of the 50 most populous U.S. cities, Columbus ranked 28<sup>th</sup> in electric vehicle share of new vehicles (Tampa ranked 22<sup>nd</sup>).

<sup>17</sup> Bui, Anh, Peter Slowik, and Nic Lutsey, “Update on Electric Vehicle Adoption across U.S. Cities,” 2020, <https://theicct.org/sites/default/files/publications/EV-cities-update-aug2020.pdf>.

<sup>18</sup> SmartColumbus, <http://smart.columbus.gov/projects/electric-vehicle-charging-infrastructure>

## Commercial and Residential Property Owners EV Charging Survey Results

Table 5: Commercial and Residential Property Owners EV Charging Survey Results

Type of Property	Building/ Business Name	Property Address	Do you see EV charging stations as an amenity to potential tenants?	Do you plan to add EV chargers?	How many EV charging stations do you currently have?	What type of chargers are they?	What restrictions are in place (if any)?	Please describe the data you collect	How often are your EV charging stations used?	Do you "charge to charge"? (user pays to use EV station)	What else can you tell us?
City of Tampa	Tampa Convention Center	200 Ashley Dr. S.			1	J-1772				Charging and parking fees apply.	main level across from column B4
City of Tampa	Twiggs St. Garage	901 E. Twiggs			2	Level II (fast charger)				Parking rates apply	Twiggs St. Garage fl 1
City of Tampa	Poe Garage	120 N Ashley			4	Level II (fast charger)				Pay for parking	2 Fl near elevator, 24/7
City of Tampa	Fort Brooke Parking Garage	107 N. Franklin St.			2 - Dual serve: 4 parking spaces	Level II (fast charger)				Charging and parking rates apply, need ChargePoint RFID card	3 Fl near sky bridge
City of Tampa	Pam Iorio Garage	301 Channelside Dr.			Dual station, 2 plugs	Level 2				Hourly parking rates apply; charge is free. RFID card required.	On exit route on right side approaching Florida Ave exit
Hillsborough County	County Center Garage	601 E. Kennedy			2	Level II (fast charger)				Parking plus charging fee	Enter from Jackson, P1 level

Type of Property	Building/ Business Name	Property Address	Do you see EV charging stations as an amenity to potential tenants?	Do you plan to add EV chargers?	How many EV charging stations do you currently have?	What type of chargers are they?	What restrictions are in place (if any)?	Please describe the data you collect	How often are your EV charging stations used?	Do you "charge to charge"? (user pays to use EV station)	What else can you tell us?
Hotel	Hampton Inn/Home 2 Suites	1155 E. Kennedy			11	Tesla 10kW	Tesla use only			Parking plus charging fee	
Office	Wells Fargo Tower/Tow er Realty Partners	100 S. Ashley Dr.	Yes	Yes, within a year	1	Unsure	Must be charging while in space		Weekly	No	
Office	Highwoods - One Harbour Place	777 S. Harbour Island Blvd.			2	Level II (fast charger)					First fl parking garage
Office	Rivergate Tower/Ban yan Street Capital	400 N. Ashley Drive C- 100 Tampa, FL 33602	Yes	No plans at this time	3	Unsure	These are tenant specific per their lease and pay a reserved parking fee.	None	Multiple times daily	Yes	The EV stations we have are for specific tenants per their lease. We do not have open EV parking for the public.
Office	Banyan Street Capital - Bank of America Building	101 E. Kennedy	Yes	No plans at this time	4	Level I (110 outlet)	Maximum time limit in space. Tenant and guest use only.		Multiple times daily	Yes	Charge is only if in place for more than 4 hours.

Type of Property	Building/ Business Name	Property Address	Do you see EV charging stations as an amenity to potential tenants?	Do you plan to add EV chargers?	How many EV charging stations do you currently have?	What type of chargers are they?	What restrictions are in place (if any)?	Please describe the data you collect	How often are your EV charging stations used?	Do you "charge to charge"? (user pays to use EV station)	What else can you tell us?
Office	Highwoods Properties - Suntrust Building	401 E. Jackson St.	Yes	No plans at this time	4	Level II (fast charger)	Only accessible if you pay to park or as a monthly parker to the building			Yes, \$1 for the first 4 hours, \$5 after	9th floor of parking garage
Office	Cushman & Wakefield	100 North Tampa Street, Ste. 2135, Tampa, FL 33602	Yes	No plans at this time	2 - Dual serve: 4 parking spaces	Level I (110 outlet)	Must be charging while in space	None	Unsure	Yes	Rarely used.
Residential	Ella at Encore!	1210 Ray Charles Blvd			1	CHAdEMO 25kW				Free	
Residential	Skypoint	777 N. Ashley Dr.	Yes	Yes, in the process of adding more	1		Residents only				
Residential	Slade	202 N. 11th St.			1	J-772				Free parking, Pay charger (\$1 minimum) with open access	24/7
Residential	Trio at Encore!	1101 Ray Charles Blvd			1	J-1772				Payment required \$0.09 kWh + \$0.30 fee	First Floor parking garage
Residential	2 Bayshore	101 W. Beach Place	Yes	Yes, within 5 years	2	Level II (fast charger)	Must be charging	Time charging and kwh	Unsure	Yes	

Type of Property	Building/ Business Name	Property Address	Do you see EV charging stations as an amenity to potential tenants?	Do you plan to add EV chargers?	How many EV charging stations do you currently have?	What type of chargers are they?	What restrictions are in place (if any)?	Please describe the data you collect	How often are your EV charging stations used?	Do you "charge to charge"? (user pays to use EV station)	What else can you tell us?
							while in space				
Residential	Nine 15	915 N. Franklin St	Yes	No plans at this time	2	Unsure	Must be charging while in space	None	Unsure	No	
Residential	Reed at Encore!	1240 Ray Charles Blvd			2	J-1772				Free parking and free charging; ChargePoint app or RFID card required	
Residential	Tempo at Encore!	1202 N. Governor St.			2	Level II (fast charger) J- 1772				Pay per kWh	Located on 2nd Fl parking garage on N. Wall 24/7
Residential	The Fitzgerald	1211 E. Kennedy Blvd			2	Level II (fast charger)				Parking free; charging is \$1.00/hr.	
Residential	The Pierhouse at Channelside	1226 E. Cumberland Ave			2	Level II (fast charger)	Pierhouse residents only				One in each of the 2 garages
Residential	Channel Club	1115 E. Twiggs St			4	unknown	Residents only				
Residential	Element	808 N. Franklin St			8	unknown	Residents and guests only				

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Residential	Aurora Apartments	124 S. Morgan St			12	Level II (fast charger)	For Aurora tenants only				
Residential	Manor Riverwalk	202 S. Parker St			12	Unknown	Residents only				6 on each floor
Retail parking	Publix Channelsid e	1105 E. Twiggs			2	J-1772				Unknown	
University of Tampa	Thomas Parking Garage	702 W. North B St			2	J-1772 7.2kW				Included with Parking	24/7
University of Tampa	West Parking Garage	514 N. Blvd			2	J-1772 7.2kW				Included with Parking	24/7
City of Tampa	Tampa Convention Center	200 Ashley Dr. S.			1	J-1772				Charging and parking fees apply.	main level across from column B4
City of Tampa	Twiggs St. Garage	901 E. Twiggs			2	Level II (fast charger)				Parking rates apply	Twiggs St. Garage fl 1
City of Tampa	Tampa Street Parking Lot	801 N. Ashley			3	J-1772				Parking fee required	Public usage does not begin until 7pm. Not available at weekends.
City of Tampa	City Hall (closed for constructio n)	420 E. Jackson St.			4	J-1772				Payment required	24/7
City of Tampa	Poe Garage	120 N Ashley			4	Level II (fast charger)				Pay for parking	2 Fl near elevator, 24/7

Type of Property	Building/ Business Name	Property Address	Do you see EV charging stations as an amenity to potential tenants?	Do you plan to add EV chargers?	How many EV charging stations do you currently have?	What type of chargers are they?	What restrictions are in place (if any)?	Please describe the data you collect	How often are your EV charging stations used?	Do you "charge to charge"? (user pays to use EV station)	What else can you tell us?
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Type of Property	Building/ Business Name	Property Address	Do you see EV charging stations as an amenity to potential tenants?	Do you plan to add EV chargers?	How many EV charging stations do you currently have?	What type of chargers are they?	What restrictions are in place (if any)?	Please describe the data you collect	How often are your EV charging stations used?	Do you "charge to charge"? (user pays to use EV station)	What else can you tell us?
							reserved parking fee.				We do not have open EV parking for the public.
Office	Banyan Street Capital - Bank of America Building	101 E. Kennedy	Yes	No plans at this time	4	Level I (110 outlet)	Maximum time limit in space. Tenant and guest use only.		Multiple times daily	Yes	Charge is only if in place for more than 4 hours.
Office	Highwoods Properties - Suntrust Building	401 E. Jackson St.	Yes	No plans at this time	4	Level II (fast charger)	Only accessible if you pay to park or as a monthly parker to the building			Yes, \$1 for the first 4 hours, \$5 after	9th floor of parking garage