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Paul Baker

Florida Department of Transportation

605 Suwannee Street, MS20

Tallahassee, FL 32399

Co.Purch@dot.state.fl.us

Re: ChargePoint RFI response on the National Electric Vehicle Infrastructure Program Plan (NEVI) Investments in Florida

Dear Mr. Baker,

ChargePoint thanks you for the opportunity to provide comments on the National Electric Vehicle Infrastructure Program Plan (NEVI) Investments in Florida. We would like to provide the following responses to the questions FDOT posed in the RFI. We look forward to continued collaboration on these historic investments to enable transportation electrification and please do not hesitate to let us know if you have any questions regarding our comments.

General

1. **Please describe your organization's involvement and experience with DCFC infrastructure. What are your long-term EV plans? How many chargers and/or charging stations are you able to build, install, and/or maintain on an annual basis?**

ChargePoint is creating a new fueling network to move people and goods on electricity. Since 2007, ChargePoint has been committed to making it easy for businesses and drivers to go electric with one of the largest EV charging networks and a comprehensive portfolio of charging solutions available today. ChargePoint's cloud subscription platform and software-defined charging hardware are designed to include options for every charging scenario from home and multifamily to workplace, parking, hospitality, retail, and transport fleets of all types. One ChargePoint account provides access to hundreds-of-thousands of places to charge in North America and Europe. To date, more than 123 million charging sessions have been delivered, with drivers plugging into the ChargePoint network at least every second.

ChargePoint's hardware offerings include both Level 2 and DC fast charging (DCFC) products, providing a range of options across those charging levels for specific use cases including light duty, medium duty, and transit fleets, multi-unit dwellings, residential (multifamily and single family), destination, workplace, and more. ChargePoint's software and cloud services enable EV charging station site hosts to manage charging onsite with features like access control, charging analytics, and real-time availability. ChargePoint's modular design provides dynamic power sharing and field replaceable parts to help minimize downtime and stranded energy. ChargePoint products are UL-listed, CE (EU) certified and Buy America compliant.

Electrification of transport is ChargePoint's sole focus. Our short-term and long-term priorities are to provide charging solutions that enable all people and goods to drive

electric. ChargePoint's primary business model consists of selling smart charging solutions and services directly to businesses and organizations. The ChargePoint charging stations and services are independently owned and operated, and site hosts will work with a ChargePoint partner or their own selected partner for construction and installation. ChargePoint is not an EV service provider (EVSP) and does not typically seek to own and operate DCFC on another party's property.

2. **Where does your organization see the biggest opportunities for the utilization of NEVI funds? This could be in terms of innovative technology solutions, partnerships, and/or targeting geographic locations.**

   NEVI presents a unique opportunity to build a national network of publicly accessible electric vehicle charging stations across America's most traveled corridors. Beyond connecting communities with high-speed charging, these charging stations serve to build consumer awareness of the benefits of electric vehicle ownership and establish range confidence, both which foster and enable the broader adoption of electric vehicle technologies and help lower carbon emissions and other criteria pollutants. The NEVI program supports the ChargePoint mission to enable an electric mobility future and build a sustainable future for all.

3. **What are the biggest challenges or barriers that should be addressed to expedite reaching the goals of the NEVI program?**

   The largest barriers impacting the goals of the NEVI program are operational costs, particularly in rural areas, permitting, supply chain, and program design.

   Operational costs/rural:

   The return on investment for a NEVI site with four ports capable of simultaneously charging four vehicles at 150kW can be challenging. With low forecasted utilization, high

demand charges, and an upfront capital investment of roughly $200,000 assuming an 80% eligible cost reimbursement on a $1 million project, the operating costs can be more than $100,000 per year. We recommend that FDOT consider providing an operational cost reimbursement (i.e. demand charge relief) in the early years of operation and until the station owner is able to generate a reasonable and positive return on investment. Such reimbursement could be in place until new utility tariffs or programs specific to EV charging are developed or utilization is substantial enough to cover demand charges and generate a reasonable return on investment. This burden can be exacerbated in rural areas where EV adoption is particularly low. As stated by the Joint Office in the Q&A posted to DriveElectric.gov, "State DOTs are encouraged to prioritize uses of NEVI Formula Program funds for operation and maintenance costs at EV charging station locations that may have lower utilization (particularly in the near term) but are still necessary to ensure a contiguous, national network."

Permitting and ADA:

We suggest the enactment of state-specific accessibility requirements for new EV charging installations, ensuring parking spaces are wide and flat enough to accommodate a van. Such requirements can significantly impact the feasibility, permitting process and total project costs and should be defined in the FDOT Deployment Plan and the successive funding program RFPs.

Supply chain:

The global supply chain to deliver charging equipment and secondary electrical components, along with utility infrastructure, is dynamic and a challenge facing every company in the market. With current conditions, the lead time from purchase order to project mobilization is dynamic, multi-faceted and has seen extenuating circumstances that is delaying projects. Forthcoming NEVI funding and the associated charging

equipment will further impact supply chain dynamics and may put additional pressure on the supply chain, leading to more unforeseen circumstances. We recommend FDOT provide flexibility and foster transparency with NEVI awardees that can accommodate supply chain disruptions and project timelines.

Program design:

FDOT should structure their NEVI program RFPs in a way that allows for a competitive site selection process which maximizes the number of eligible applicants. When states release programs that require eligible applicants to bid on a statewide or multi-site corridor program, this limits the number of applicants willing to do so and skews the program's business model preference to EVSPs that seek to own and operate DCFC on another party's property. As there are only a few EVSPs today seeking to make such investments, this can limit the pool of applicants, including small businesses, retail, fueling and convenience, municipalities and other property owners or site hosts with just a single or handful of locations across different corridors. Entities such as these are capable and interested in owning and operating themselves, and do not always seek out an EVSP. ChargePoint has over 5,000 customers including hundreds of fueling, retail, municipal, utility and investors interested in owning and operating DCFC. When states take a winner-take-all or corridor-based approach to RFPs it limits the potential applicant pool, resulting in fewer applications and less competition which does not maximize private sector investment.

We recommend that FDOT design their NEVI programs to align with the FHWA Standards and Requirements of 150kW per CCS port at each site as this provides for redundancy and establishes driver confidence of available charging to meet forecasted market adoption of electric vehicle sales. For example, to require one additional 350 kW charger could add another $100,000 - $150,000 in additional capital expenditure costs per site and another $25,000 in increased operating costs. These increased costs would

make sites economically infeasible to operate and unnecessarily costly to construct. Further, utilities may not be able to provide the necessary power to certain remote locations. Sites should be designed with 350kW future charging speeds in mind which could incorporate the following future proofing considerations (see examples below).

Site Location

4. **Please describe what you believe makes an ideal DCFC location including amenities as well as any risk factors that should be considered. How would you rank the relative importance of these factors?**

The most important factor to a DCFC location is on-site or nearby amenities for drivers which not only provides for a great driver experience, which helps promote adoption, but also supports those businesses by driving economic activity and establishing a strong business case for DCFC. Following amenities, it is important that DCFC sites are safe, visible, and well-lit from dawn-to-dusk. Below is a list of all the key considerations for siting DCFC:

1. Amenities
2. Safety
3. Proximity to travel corridors
4. Utility demand fee
5. FHWA Alternative Fuel Corridor designation
6. Proximity to existing DCFC
7. EV registration uptake
8. Commercial density
9. Parcel ownerships
10. Buildable site
11. Population density

12. Disadvantaged communities

Risk factors, ranked in importance, include:

1. Utilization
2. Utility demand rates
3. Available utility infrastructure
4. Available real estate (including ADA requirements)

5. **Please describe your process, including market research, land use requirements, and business development opportunities for determining a DCFC site location.**

ChargePoint is working with our customers and investors who are evaluating the capital and operational costs for these projects based on forecasted utilization, utility tariffs and other critical variables. ChargePoint has developed tools that support our customers decisions and consider a range of factors, including those mentioned in question 4, to determine a DCFC site location.

6. **What do you think the DCFC site of the future looks like? Will location to amenities be as important or will micromobility be used to get to the amenities? What innovations/disrupters are coming?**

ChargePoint designs and builds its charging solutions in a manner that is scalable and enables future expansion as utilization increases or higher power levels are needed. FDOT should align with the NEVI guidance of 150kW minimum and four CCS ports at each site in the initial years of NEVI. Sites can be designed with 350kW future charging speeds in mind which could incorporate the following future proofing considerations:

- Sites should have sufficient real estate or additional parking spaces to increase the number of DCFC in the future

- If pouring a new pad for the utility transformer, the pad to be upsized to support a larger transformer in the future
- Spare conduit should be housed in a pull box located near the switchboard
- Upsize the switchboard so that it can accommodate additional DCFC

Amenities on-site and within walking distance to a DCFC site is and will continue to be one of the most important attributes of highway charging infrastructure sites.

Partnerships and Business Models

7. **Please explain any previous partnerships regarding EV infrastructure your organization has had including which parties initiated the outreach and what, if any, contracting mechanisms were used. These should include public and private entities as well as utility owners.**

ChargePoint's primary business model consists of selling smart charging solutions directly to businesses and organizations and offering tools that empower station owners, or site hosts, to deploy EV charging designed for their individual application and use case. ChargePoint engages partners and entities across the EV charging industry. The highlighted partnerships and engagement below are most relevant to the NEVI program.

Utility Engagement:

Coordination with the electric utility is a critical part of any DC fast charging project and will be particularly important for NEVI projects that require 600kW of DC power. Engagement with utilities during the project scoping process is important to evaluate a site and the available power and upgrades that will be needed. ChargePoint also recommends that if utility documentation is required, FDOT provides sufficient time (at least 2 months) from the time of grant release/announcement to obtain required

documentation or provide a contact to utility personnel that can support applicants. A "Will Serve Letter" is a commonly used documentation to justify utility coordination as described. Any engagement and discussions that FDOT can spearhead with not just the Florida Public Service Commission, but also municipal owned utilities and electric cooperatives can help to streamline the utility coordination process, potentially resulting in faster deployments.

Operations and Maintenance Partner:

ChargePoint has various operation and maintenance partners across the country, and dedicated staff and in-house support teams that train and manage those contract and partnerships. Uptime is monitored proactively for all DCFC and customers that have purchased our 5-year comprehensive warranty including labor for any necessary repairs, which is called ChargePoint Assure. Our partners in the field respond to the dispatch request within 24 hours and we schedule with the customer as soon as parts/customer are available. In the event that parts are not needed, we schedule with the customer also within 24 hours of acceptance of the work order. As we experience growth, our field dispatchable partners are being layered with redundancy.

Private Sector Engagement:

Engaging the private sector to provide the require match will support goals of the NEVI program. FDOT can maximize private sector investment by designing and launching grant programs that allow for a competitive site selection process which maximizes the number of eligible applicants and the diversity of private investment. When states take a winner-take-all or corridor-based approach to RFPs that limits the potential applicant pool, resulting in fewer applications and less competition which does not maximize private sector investment. Site hosts are willing to make this commitment and in doing

so, they want to maximize the chargers' benefits by providing a safe and inviting host site with rich amenities – further benefitting the NEVI program.

8. **Describe what makes a successful business model and partnership. Also, please describe threats that can lead to a business and partnership's failure. These can be examples from current and/or previous partnerships.**

   ChargePoint has a large and a diverse customer based in Florida that own and operate their own charging stations in ways that meet their objectives which have proven to be a successful business relationship. The ChargePoint Network is continuing to grow in Florida as we provide our charging solutions to new and existing customers.

9. **Please provide your organization's viewpoints on contracting methods for DCFC infrastructure, including leasing and/or revenue sharing agreements. Have you implemented any cost/revenue sharing models for the operation of DCFC EVSE? If yes, please share what you can about the terms of those partnerships.**

   Our preferred contracting method for fund disbursement is grants for individual sites that are selected on a competitive basis. As ChargePoint is not an EVSP and sells hardware and services to individual owners and operators, ChargePoint does not engage in revenue share agreements or other charging station sharing models. ChargePoint will support customers through installation and management of the charging stations in various ways.

10. **Does Florida have the workforce required to operate and maintain DCFC EVSE charging sites? If not, please describe what you think is required to develop it.**

    Florida has an existing private sector charging network throughout the state. This infrastructure has been sited, constructed, installed, owned, and operated by a network of project managers, construction professionals, electricians, and private entities.

ChargePoint works with a number of workforce partners to ensure the ownership, operation, and maintenance of DCFC EVSE to ensure positive experiences for EV drivers.

Equipment

11. **On average, how long does it take to install a DCFC from start to finish? This includes site determination, design, permitting, site preparation, utilities, and installation.**

    On average we see it taking two years to construct a DCFC site once an agreement is officially executed for a grant. Supply chain, utility connection delays, COVID-19, and many other variables can make this timeline longer or shorter given each project's unique circumstances.

12. **Are you currently able to meet the requirements of Buy America for DCFC infrastructure projects? If not, please explain your plans to meet the requirements and any potential issues.**

    Yes, our United States based manufacturing facility is in California. Our components and overall product satisfy the requirements of the IIJA/BIL/NEVI Buy America provisions as elucidated by the Made-in-America Office within the Office of Management and Budget within the Executive Office of the President. ChargePoint continues to improve and expand our manufacturing capabilities withing the United States. Currently, our company is increasing our manufacturing capacity and will pursue additional on-shoring and relocation efforts to meet anticipated state demands from the NEVI program funding.

13. **Are there any components required for DCFC infrastructure that are in short supply that could delay the goals of the NEVI program? Please describe what steps you have taken or what processes you have implemented to ensure the continuity of your supply chain.**

Existing constraint and impact from the supply chain significantly impacts charging equipment and components available, but ChargePoint has developed several strategic initiatives to mitigate shortages. Along with many DCFC components, microchips and cables are amongst shortest in supply. Additionally, the components for high powered DCFC products are the same components used in other technologies and use-cases across industries, further adding complexity and demand from various products and sectors. With the complexity and dynamic nature of the supply chain, we recommend FDOT allow for flexibility for DCFC installation timelines.

14. **Please describe how your organization mitigates cybersecurity vulnerabilities. Is this consistent with industry standards? If not, where are the differences? Do you follow national cybersecurity standards including National Institute of Standards and Technology (NIST) Cybersecurity Framework? Do you comply with Florida's 60GG-2 for ensuring the security of your infrastructure? What other technologies do you offer for an end-to-end secured operation?**

As a world leader in EV charging, ChargePoint supports an open, standards-based, and secure charging ecosystem to enable innovation and protect sensitive business operations. ChargePoint's Cloud and network services have achieved the highest security standards including PCI DDS, SOC2, GDPR, ISO 15693, ISO 14443 and other relevant standards. Our stations are also able to authenticate with secure tap to charge payment technology through Apple and Android phones. The following provides additional information on our network security initiatives and protocols.

PCI Compliance

ChargePoint maintains PCI compliance and is audited on an annual basis an independent 3rd party Qualified Security Assessor (QSA).

Information Security Policy

Our Information Security Policy is based on the PCI-DSS 3.2.1 information security standard. The PCI DSS standard requires a comprehensive information security policy that is used throughout the organization and is distributed to all system users, including contractors, vendors, and business partners.

ChargePoint Services

ChargePoint provides services to thousands of customers through a cloud-based platform. The IT infrastructure is designed and managed in alignment with security best practices and a variety of IT security standards, including:

- SOC 1/SSAE 16/ISAE 3402 (formerly SAS70), SOC2, SOC3
- FISMA, DIACAP, and FedRAMP
- DOD CSM Levels1-5, PCI DSS Level1
- ISO 9001 / ISO27001
- ITAR, FIPS140-2, and MTCS Level3

The production environment is isolated from the ChargePoint corporate network. ChargePoint also has no connect to any of our partner networks. The charging stations all communicate over the cellular network, bypassing the need for any local IT connectivity.

Operation, Maintenance and Data Sharing

15. **What are your current or planned fee structures (time-based, energy-based, power-based, etc.) and what payment mechanism do you accept? Please explain any issues you have encountered or identified.**

We recommend FDOT to align their Deployment Plan with the FHWA Proposed Minimum Standards and Requirements regarding fee structures and payment mechanism.

Our customers, including DCFC site hosts, determine pricing to meet their financial and customer needs. FDOT should not dictate any price requirements and should allow station owners flexibility within reason. Enabling site hosts to manage pricing and pricing policies for charging stations is a critical tool for engaging current and future EV drivers. The ability to set pricing and pricing policies is central to ensuring site hosts can achieve their unique goals for hosting EV charging stations. When site hosts can establish the pricing and pricing policies of their stations, they will be encouraged to maximize station utilization and encourage future investment without grant funding.

Drivers will have multiple point-of-sale methods will be available, including:

- **Contactless Credit Card.** Credit cards with embedded RFID chip may be used.
- **FREE ChargePoint Account and RFID Card.** Cards are free and drivers can simply tap and charge. Several OEMs, including BMW, Chevy, Mercedes Benz, Cadillac, and Smart provide ChargePoint cards with the purchase of one of their EVs.
- **ChargePoint Mobile App.** EV drivers can start and stop charging with just one tap in the **mobile ChargePoint app.** This app is synched to the driver's ChargePoint account.
- **Apple Pay and Android Pay.** Drivers can authenticate and pay by tapping their phone.
- **Apple Watch**. ChargePoint drivers can also use their phone or Apple Watch as if it were a ChargePoint card to start a charging session via NFC on compatible Android and iOS devices.
- **Credit Card.** Drivers may call the toll-free number clearly displayed on every station 24/7 in order to authorize charging.

16. **Describe the typical maintenance for your organization's EVSE infrastructure as well as the maintenance schedule including any required hardware and software updates. Please include the typical lifecycle for your DCFC and what performance measurements are monitored.**

ChargePoint Assure provides a 98% uptime guarantee and can be purchased in advance for 5 years at the time of hardware and software procurement. ChargePoint Assure providers for a 98% uptime guarantee by having local and regional contractors with equipment and parts that are available to service the charging stations and 24/7 driver support to remote start the stations if needed.

We recommend that FDOT follow the FHWA Proposed Minimum Standards and Requirements in regard to uptime definition and calculation. FDOT should allow the costs to maintain uptime, in addition to a five-year networking or data plan, to be reimbursable and included as part of the project's eligible costs. Such costs would need to be paid up front in order to be eligible and included along with EVSE hardware, shipping, and applicable sales tax.

ChargePoint designs our charging hardware to meet or exceed a useful life of 10 years.

17. **How would your EVSE share data to a FDOT sponsored central data repository? What type(s) of data can you provide?**

ChargePoint strongly recommends there is a unified process across the industry and individual states for NEVI related data requirements, specifically following the FHWA Minimum Standards and Requirements. FHWA will provide State DOTs with resources to facilitate the data collection and submission, including an online data portal, instructions for data formatting, standard reporting templates and automating data collection from charging network providers. We recommend that required data included in FDOT NEVI programs mirror that of FHWA and that there is not additional data requested beyond

the FHWA requirements. This will mitigate issues of onerous or overly complex data requirements.

18. **What should FDOT do to ensure the end-users of EVSE infrastructure have the most convenient and reliable charging experience? Please include how emergency evacuations and power outages should be addressed.**

    FDOT can ensure convenient and reliable charging by supporting network roaming, competitively scoring and selecting sites, and funding operations and maintenance costs.

    ChargePoint supports the FHWA Minimum Standards and Requirements requiring OCPI version 2.2.1 allowing for charging networks to communicate through roaming agreements which will lead to a more convenient and reliable charging experience. Additionally, FDOT should structure their NEVI programs in a way that allows for a competitive site selection process which will maximize the number of eligible applicants and locations FDOT can select. Sites can be scored by a transparent scoring rubric that is developed by FDOT to align with their program goals (e.g. distance to emergency evacuation routes, convenience and reliability metrics, etc.). Finally, uptime is key to achieve a positive charging experience. FDOT should require grant recipients to have a five-year extended warranty and provide a maintenance plan demonstrating how uptime requirements will be achieved when applying for funding.

<u>Strategies for Low Utilization</u>

19. **FDOT is looking to provide DCFC in rural and disadvantaged communities that may have a lower return on investment and is interested in how to make these projects more desirable to potential applications. What strategies can FDOT utilize to encourage deployment of DCFC EVSE into rural, underserved, or disadvantaged communities? When answering please include information on driving factors.**

a. **Guaranteed number of projects for economies of scale**
b. **Short term operation and maintenance agreements (5 years or less)**
c. **Long term operation and maintenance agreements (longer than 5 years)**
d. **Any others?**

We have significant experience deploying charging infrastructure in rural, remote, and underserved communities.

First, aligning the FDOT Deployment Plan with the FHWA Minimum Standards and Requirements of 150kW per CCS port will minimize expensive demand charges and attract applicants in rural and disadvantaged communities. FDOT should also consider an operating cost reimbursement to ensure the station owner is able to minimize losses in the first 5-years of operation until there are more EVs on the road. Operational funding support should be based on projected operating expenses. Applicants should be asked to provide a 5-year operating cost model for each site, clearly identifying projected utilization, demand charges and kWh costs, and justify the need for operational funding support. Operational funding support should be provided on a reimbursement basis only and should be capped so station owners do not profit from such funding support. Operational funding support will be critical in utility territories with high demand charges or in rural or disadvantaged areas where utilization will be low.

Considering costs to build a NEVI site, and the number of stations that will be deployed each year, economies of scale should not be considered in FDOT's Deployment Plan. This consideration may encourage FDOT to take a winner-takes all approach and would negatively impact the number of sites that can be funded by FDOT, thereby excluding sites that have better attributes for rural or disadvantaged communities. ChargePoint recommends requiring a five-year extended warranty to be included in all applications.

20. **To increase utilization rates to rural, underserved, or disadvantages communities what considerations or innovation solutions should be considered?**

Common strategies to increase visibility and awareness of DCFC locations include highway and wayfinding signage, EV charging map integrations (AFDC, ChargePoint, PlugShare, etc.), and strategic project siting accomplished through a competitive site selection process.

Specific Information Requested

Interested vendors may respond to some or all the following topics, based on their proposed role in the creation of a DCFC EVSE network:

1. ***Summary of Experience***

FDOT is interested in a summary that describes your organization's experience with DCFC EVSE.

ChargePoint was founded in 2007 and has been in business for 15 years. ChargePoint operates one of the world's largest EV charging networks with roughly 188,000 activated ports to charge on its network, 12,000 of which are DCFC ports, and access to an additional 300,000 public places through roaming integrations with other major networks.

2. ***System Block Diagram***

FDOT is interested in a high-level system block diagram that illustrates all components and connections required to create the proposed system.

3. ***Hardware Information***

   FDOT is interested in datasheets and technical specifications for components included and required to create a typical DCFC system.

   ChargePoint Express Plus platform: datasheet and brochure.

4. ***Software Information***

   FDOT is interested in information on software components included and needed to create a typical DCFC system.

   ChargePoint Network Fact Sheet.

5. ***Maintenance Plan***

   FDOT is interested to know about the maintenance services and typical maintenance schedule for DCFC infrastructure.

   ChargePoint Assure Maintenance and Warranty Program overview.

Sincerely,

Zak Pettit
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