Request for Information

VOLKSWAGEN CONSENT DECREE ENVIRONMENTAL MITIGATION TRUST

LIGHT-DUTY ELECTRIC VEHICLE SUPPLY EQUIPMENT PROGRAM (RFP DEVELOPMENT FRAMEWORK)

Deadline for Comments:
January 3, 2020

Submissions

Information responsive to this RFI should be sent to:
Indiana Volkswagen Mitigation Trust
VWTrust@idem.IN.gov

Program Questions

Questions specific to Indiana's Volkswagen Mitigation Trust Program should be sent to:

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Indiana Department of Environmental Management
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Revision Date: 12/12/2019_SMS

Indiana Department of Environmental Management
Volkswagen Environmental Mitigation Trust

Light-Duty Electric Vehicle
Supply Equipment Program

Statement of Purpose

The State of Indiana, through the Indiana Department of Environmental Management (IDEM), issues this Request for Information (RFI) to solicit input on the development of Indiana's electric vehicle (EV) charging infrastructure.

Background

As a part of the national Volkswagen Environmental Mitigation Trust Program's consent decree, each Beneficiary (IDEM in the case of Indiana) may use up to 15% of its allocation of Trust Funds on the costs necessary for, and directly connected to, the acquisition, installation, operation and maintenance of new light duty EV charging infrastructure. As a portion of Indiana's roughly $41 million total, this equates to roughly $6.135 million to support the further development of Indiana's EV charging infrastructure. Additional information on the national consent decree can be found on the Indiana Volkswagen Mitigation Trust Program website.

Through a public outreach and comment period, along with several meetings of the Indiana Volkswagen Environmental Trust Committee (VW Committee), it was determined that Indiana would set aside the maximum of 15% for the EV charging infrastructure component of the national consent decree. To gain additional information on EVs and EV charging infrastructure related topics, the VW Committee hosted a day-long workshop on October 8, 2019. The presenters, panelists, and participants at this workshop provided a great deal of useful information and also prompted key questions to be considered in the development of the Indiana's EV charging infrastructure.

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Electric Vehicle Charging Level Overview

Charging Level	Power Supply	Typical Locations	Miles of Range per Hour of Charge
Level 1 Charging (L1)	120 VAC	Home Garage	~3-4 miles
Level 2 Charging (L2)	240 VAC	Home garage, retail parking lot, workplace, parking garage	~17-20 miles
DC Fast Charging (DCFC)	200-450 VDC	Auto dealer, retail parking lot, parking garage, travel center, rest stop	~50-60 miles

Goals and Objectives

Indiana's primary goal is to maximize the financial investment to the greatest extent possible. Due to the high costs related to modern EV charging infrastructure, the $6.135 million must be strategically dispersed across different technologies and different areas of Indiana to be impactful. In largest part, Indiana is requesting input on how to best meet current unmet charging needs in Indiana. Current electric vehicle owners and those who are on the brink of making that decision will be well-suited to provide this input, but other interested stakeholders will provide meaningful perspective as well. Some specific goals that have been identified for the Indiana program are as follows:

- Increase Indiana's access to EV charging locations.
- Increase Indiana's access to EVs statewide.
- Have adequate EV charging stations in place for XX%* of Indiana's population.
- Have no more than XX* miles between DCFC equipment (typically located on or near interstate highways) and XX* miles between L2 equipment (slower charging equipment that is often located at destinations, shopping centers, or workplaces).
- Incentivize growth in number of EV charging station locations—whether DCFC or L2—on Indiana interstates and highways, as well as at employer, recreation, activity, shopping, and multi-unit housing locations.
- Leverage Indiana Volkswagen Mitigation Trust Program funding with potential Indiana project partners such as utility providers, municipalities, and other entities interested in supporting a more robust and sustainable EV charging infrastructure for Indiana.

*Note: These values are yet to be determined and input provided through this RFI will inform Indiana's recommendation moving forward.

Through this RFI, Indiana is intending to get feedback focused on what we want to include and accomplish through a RFP.

Indiana's Current Electric Vehicle Charging Network

The maps below show the location of the existing EV charging network in Indiana as well as the EV population per county. Currently Indiana has 30 DCFC locations along with 249 L2 locations identified with crosses and dots. EVs currently operate in ninety-one of Indiana's ninety-two counties with the relative population being presented in gradient shades below. Both charging station speeds have reasonable distribution across Indiana's interstate system, but there are certainly gaps that need to be filled for a viable statewide system.

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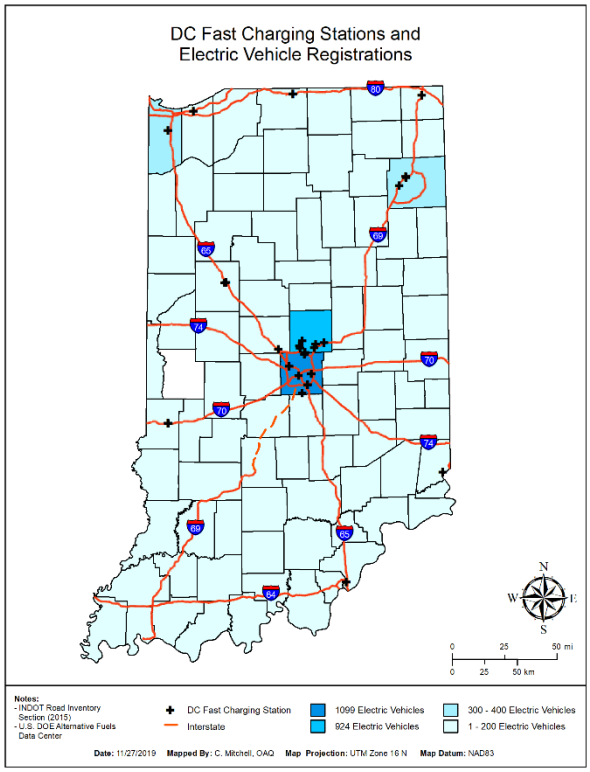
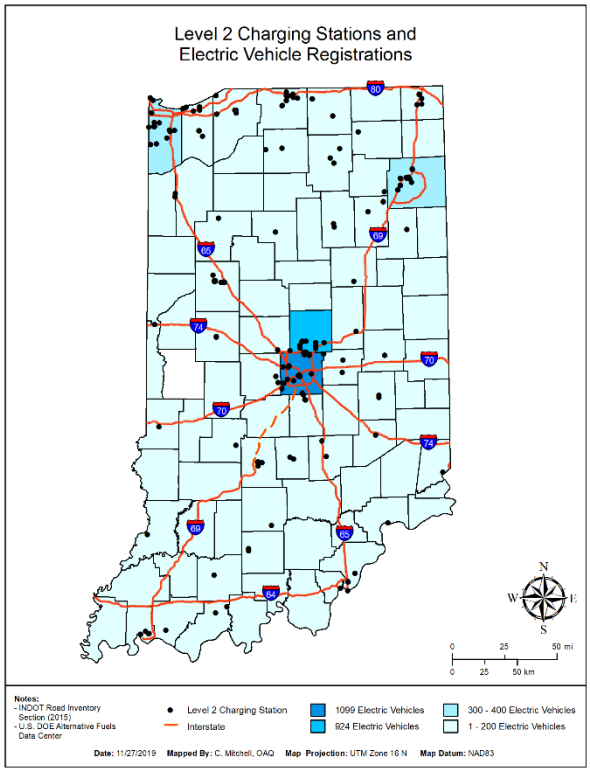
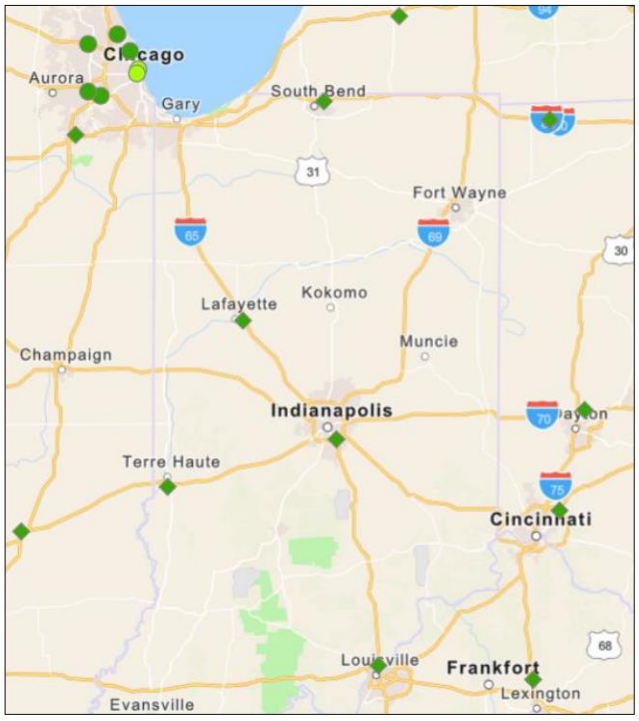
Indiana's Current Electric Vehicle Charging Network





Electrify America - Cycle 1 DCFC Investments in Indiana



Mishawaka – University Park Mall
Two 350 kW and two 150 kW chargers

Lafayette – Walmart Supercenter
Two 350 kW and two 150 kW chargers

Indianapolis – Walmart Supercenter
Two 350 kW and six 150 kW chargers

Terre Haute – Walmart Supercenter
Two 350 kW and two 150 kW chargers

Clarksville – Walmart Supercenter
Two 350 kW and two 150 kW chargers

Highway station commissioned
Highway station under construction
Metro station commissioned
Metro station under construction

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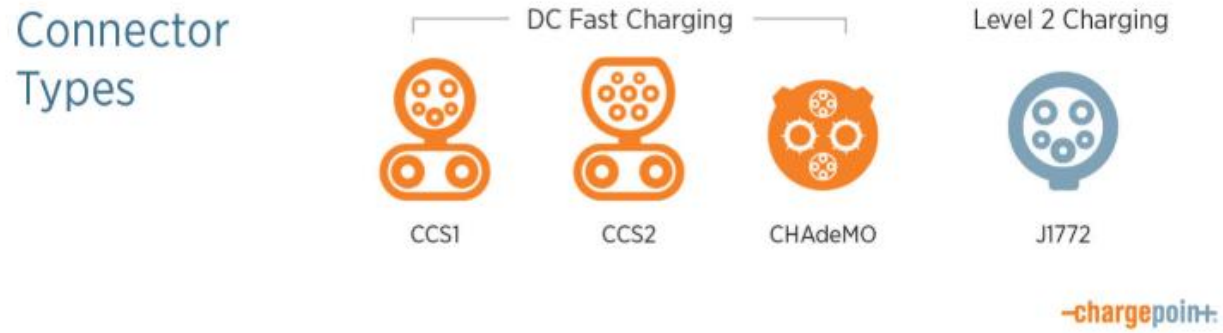
The Electrify America program investment as required by the national consent decree will be made over four 30-month cycles. Each of these cycles will invest $500 million. Cycle 1 was completed in mid-2019, Cycle 2 will focus on 18 metro areas across the nation (none in Indiana) and will be completed at beginning of 2022. Cycle 2 metro areas were selected based on existing and projected EVs in the area, EV sales trends, utility and policy environment and proximity to existing Cycle 1 Electrify America network. Cycle 3 begins in 2022 and Electrify America will be taking comments on locations in the near future. Electrify America's station location strategy to date is driven largely by real estate company partners and criteria including safety, visibility, sufficient parking, retail proximity, 24/7 access, and adequate power proximity.

EV Connector Types



DC fast charging of EVs is done with a different type of connector than Level 2 AC charging. The image above shows the types of connector types used primarily in the United States at this time. Although EV manufacturers are discussing a consistent standard for connector types, there is not yet one single standard for either. The J1772 connector is the most commonly used for L2 charging of EVs, while non-Tesla current DC fast charging connector types include a couple combined charging system (CCS) types along with "CHArge de MOve" (CHAdeMO). Tesla vehicles have their own proprietary connector type (not pictured).

Consistent with the current national standard, Electrify America installations include at least one CCS and one CHAdeMO plug type connection with charging speeds ranging from 150kW to 350kW charging speeds.

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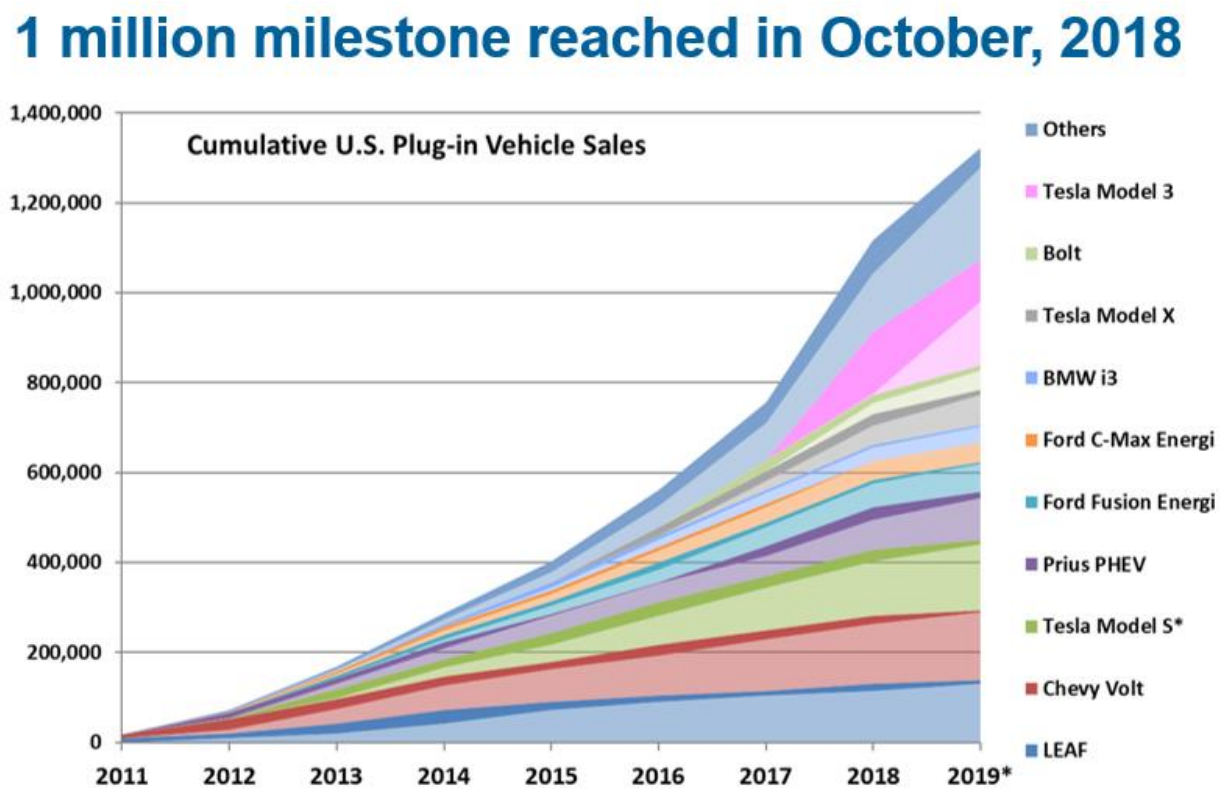
National Trend and Indiana's Current Electric Vehicle Registrations



The chart above shows the national trend for EV purchases over the last eight years. Not only are more EVs being purchased across the country, but new EV models and range and technology advancements in existing vehicles continues to make EVs more viable for many drivers. Current electric vehicles have a range from roughly 100 miles to well over 300 miles with retail prices starting around $30,000 and topping out over $100,000.

The national trend shows more and more EVs purchased over time, but will Indiana follow? The geographical distribution of EVs in Indiana is included in the maps in the Indiana's current EV charging network section above. Currently there are a little less than 6,000 EVs registered in the State of Indiana.

EV Type	Indiana Registrations
Battery Electric (BEV)	2,722
Plug-in Hybrid Electric (PHEV)	3,169
Grand Total	**5,891**

Estimated Electric Vehicle Charging Infrastructure Costs

Generally as the charging speed of the equipment increases, so does the cost. The table below gives a general estimate of what one might expect for DCFC and L2 charging equipment along with installation. Installation costs can vary greatly due to location, number of chargers installed as well as the cost to access necessary electrical supply for the equipment.

Cost Estimates of Charging Infrastructure	
DC Fast Charger - Single	$126,500
DC Fast Charger - Dual	$207,000
Level 2 Charger – Each	$5,000

Potential Funding Levels

The national mitigation trust allows for funding at differing levels dependent upon the location and whether or not that EV charging equipment is made available to the public. The funding levels found in the table below are for light-duty zero emission vehicle supply equipment regardless of charging speed (DCFC or L2). However, Indiana does not intend to fund Level 1 EV charging equipment or hydrogen fuel cell vehicle supply equipment.

Light-Duty Zero Emission Vehicle Supply Equipment Funding Levels	
Installed at government owned property and made available to the public	Up to 100% covered
Installed at non-government owned property and made available to the public	Up to 80% covered
Installed at workplace but not made available to the public	Up to 60% covered
Installed at multi-unit dwelling but not made available to the public	Up to 60% covered

Request for Information

The State wishes to address the following information in developing the RFP for EVSE across Indiana, consider these as you review this document and provide your official comments:

1. DCFC equipment provides significantly faster charging than does L2. However, it also comes at a significantly higher per connector price. Finding the balance between the speed of DCFC and L2 equipment and the funds available from the national mitigation trust will be key to a successful and sustainable EV charging infrastructure program in Indiana.
    - With that in mind, what EVSE level should be the priority? Direct-Current Fast Chargers (DCFC/L3) with higher cost and fewer charging locations or

Level 2 (L2) chargers with slower charging, but with lower cost and more charging locations?

2. The maximum funding levels for EV charging equipment from the national mitigation trust were identified earlier ranging from 60% for private locations not made available to the public up to 100% for government-owned locations that do make the EV charging stations available to the public. Just as there is a question of balance between the speed and cost of DCFC verses L2 charging equipment, there is also a balance between funding at the highest possible level for lower-cost investment to funding at lower levels to encourage public and/or private investment in Indiana's EV charging network.
   - With this in mind, should Indiana fund at the highest possible levels for each EV charging location or work towards leveraging public and private funding partnerships in the hope of broadening the potential reach of the $6.135 million?

3. As the maps earlier in this RFI indicate, there are certainly unmet charging needs in Indiana in relation to both proximity to EV driver population as well as distance between viable EV charging opportunities.
   - With this in mind, what should be the EV charging infrastructure priority? Should it be focused on areas of certain EV driver population or should the priority be more related to the maximum distance between charging locations, regardless of charging speed?

4. Another way to look at unmet charging needs beyond just population and distance between stations is the intended use of the EV charging infrastructure. While DCFC serve the purpose of connecting states, traditionally via interstate routes, L2 chargers allow drivers to charge during typical daily activities such as work, shopping, visiting key destinations, as well as home charging in multi-unit housing locations (in-home charging is not eligible under the national consent decree).
   - With this in mind, where should Indiana prioritize EV charging stations? DCFC along highways or L2 at workplace, shopping, destination, or multi-unit housing locations?

5. Funding limitations are certainly a factor in Indiana's attempt to broaden the existing EV charging network with only $6.135 million available from the national consent decree. As noted earlier in this RFI, there is a notable difference in the costs associated with expanding the DCFC vs. L2 charging network in Indiana.
   - How should Indiana's limited funding be split between DCFC and L2 charging equipment, if at all (i.e. 60% for DCFC and 40% for L2)?

6. Indiana has up to 10 years from the initial date of the full execution of the national consent decree (October 2, 2017) to spend the Trust funds. These funds can be made available all at once or in multiple rounds of funding. Furthermore, these potential rounds of funding do not have to be the identical in funding amounts or technologies.

- With this in mind, how many rounds of funding should the state consider for the EV charging infrastructure program? If more than one round of funding, what should be the focus of each round (i.e. Round 1: 40% of funding to L2 EVSE followed by Round 2: 60% funding to DCFC)?

7. Indiana recognizes there are many reasons why drivers might be hesitant to move away from gasoline-powered vehicles to EVs. Listed below are several EV-related comments that have been received during conversations on Indiana's EV charging network. Whether you are a current driver of gasoline-powered or electric vehicles, Indiana asks for insight on these issues:
    - If not a current EV driver, what would motivate you to consider moving to EV?
    - If not a current EV driver, what charging infrastructure related changes might alter your decision and move you to EV?
    - If not a current EV driver, what other factors might impact your decision to continue driving gasoline-powered vehicles as opposed to transitioning to EVs?
    - Whether currently a gasoline-powered or EV driver, how much of a concern or issue is the current lack of access to EV charging stations?
    - Whether currently a gasoline-powered or EV driver, how much of a concern or issue is the travel range of current EVs?

The RFI is intended to provide the State with enough information to develop a comprehensive RFP for a successful EV charging network across Indiana. Indiana appreciates any and all insight shared during the public comment period.