

## SEALS, SHAWN

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**From:** Dedrick Roper <dedrick.roper@chargepoint.com>  
**Sent:** Friday, January 03, 2020 11:38 AM  
**To:** IDEM VWTrust; SEALS, SHAWN  
**Cc:** Kevin Miller  
**Subject:** ChargePoint response to VW EVSE RFI  
**Attachments:** Indiana\_VW\_RFI\_ChargePoint\_Final.pdf

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Hi Sean,

Happy new year! Attached, please find ChargePoint's response to the VW Consent Decree Environmental Mitigation Trust, Light-Duty Electric Vehicle Supply Equipment Program RFI. We look forward to continuing to be a resource to IDEM as it develops a program to bring transportation electrification to communities across Indiana. Please reach out with any questions.

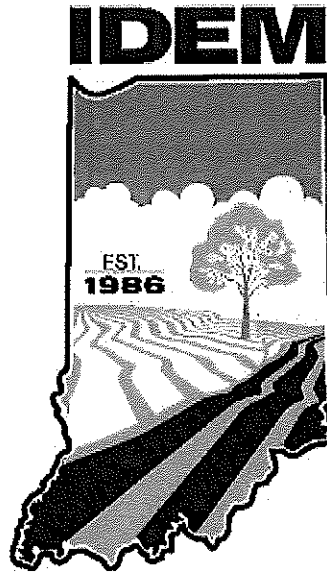
Best,  
Dedrick Roper  
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**IDEM Request for Information  
Volkswagen Consent Decree Environmental Mitigation Trust  
Light-Duty Electric Vehicle Supply Equipment  
(RFP Development Framework)**

Deadline for Comments:  
January 3, 2020



January 3, 2020

Shawn Seals  
Senior Environmental Manager  
Office of Air Quality  
Indiana Department of Environmental Management  
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**Indiana's RFP Regarding Volkswagen Consent Decree Environmental Mitigation Trust  
Light-Duty Electric Vehicle Supply Equipment (RFP Development Framework)**

ChargePoint is pleased to provide written responses to the State of Indiana regarding the best use of funds stemming from the Volkswagen (VW) Settlement and the State's allocation from the Environmental Mitigation Trust. The Trust funds provide a significant opportunity for the State to mitigate the environmental harm VW diesel vehicles caused, as well as advance its sustainable transportation goals and produce long-term benefits to the State and its communities.

**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?**

Indiana currently has 30 DCFC locations along with 249 Level 2 charging locations. This existing charging network is insufficient to support the more than 8,800 EVs currently on Indiana's roads, let alone the tens of thousands expected in the next few years. With this in mind, we recommend an approach that invests in both DCFC and Level 2 charging technologies. We recommend that the investment be weighted 60 to 70% toward supporting an intra-state DCFC corridor with the remaining balance earmarked to support municipal, town, and other locally-based Level 2 charging stations.

**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?**

The most successful VW Settlement programs have implemented maximum funding levels in accordance with the Consent Decree. Programs that implemented maximum funding levels lower than what is outlined in the Consent Decree have realized limited participation. In several cases, all of the funding was awarded to a single applicant or a small number of applicant organizations. In other cases, inexperienced applicants with questionable budgetary estimates have been awarded. In order to promote broad participation from a wide variety of qualified site hosts, we recommend aligning the state's program with the maximum funding levels with the Consent Decree.

The state should also work towards leveraging public and private funding partnerships to broaden the reach of the state's \$6.135 million allocation. This could take the form of utility, federal, and/or local government investment. For example, in New Hampshire and Michigan, utilities are making investments in all the "make-ready infrastructure costs," to support VW Settlement funded projects. This means that the utilities make rate-based investments in all front of the meter (transformers, distribution upgrades, etc.) and behind the meter (electrical panel and line extension) infrastructure, which VW Settlement funds are used to pay for the chargers themselves, networking services, and extended warranties. Because make-ready infrastructure comprises 50 to 90% of the total EV charging infrastructure cost (depending on the specific nature of the site), this arrangements enable VW Settlement funds to go much farther.

In Colorado, the state combined federal, Congestion Mitigation and Air Quality funds with VW Settlement funds to support the build out of 33 DCFC corridor sites. By

combining these funds, Colorado was able to minimize its investment of VW Settlement dollars in the DCFC corridor project and invest those savings into a separate, DCFC and Level 2 rebate program. If Indiana were to confirm co-investment from utilities or other government funding sources the reach of the State's \$6.135 million VW Settlement allocation could be expanded.

**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?**

Indiana would be best served by focusing its charging infrastructure investment for light duty vehicles in the most densely populated regions and underserved areas such as rural and low income communities. North Carolina's, Phase 1 Zero Emission Vehicle Infrastructure Program DC Fast Charging Stations provides a great example for this approach. In North Carolina's program, urban and rural projects have separate funding allocations and are evaluated and ranked separately. This approach ensures an equitable evaluation across both use cases and will ultimately ensure both demographics are supported. Indiana could take this a step further by customizing technology requirements by site type (e.g., lower power for sites with lower utilization).

**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?**

As explained above, Indiana's current network is insufficient to support the more than 8,800 EVs on the road today. With just 30 DCFC locations and 249 Level 2 charging

locations, the interests of State economic development as well as public safety policy require that additional publicly available chargers be added as expediently as possible.

To that end, we recommend establishing rebate programs open to all property types with funding allocations for DCFC and Level 2 by county. There are several successful public funding programs that have followed this approach such as Charge Ahead Colorado and CALeVIP. As far as we are aware, CALeVIP has been the most successful from an uptake perspective. CALeVIP is a simple rebate program open to public, workplace, fleet, and multifamily charging that clearly defines eligible equipment, sites, and funding allocations by county. The program has been incredibly successful in promoting broad participation through simple applications and applicant funding caps and expedited project completion with clearly defined timelines. We recommend a similar approach in Indiana that allows the market to inform the state on the most popular applications.

**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)?**

We recommend a balanced approach that invests in both DCFC and Level 2 technology. As mentioned previously, DCFC is more costly to build and operate. To that end, we recommend 60-70% of funding go toward DCFC. We recommend 30-40% for Level 2 charging without further leverage from additional public or private funding sources.

**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)?**

We recommend 1-3 funding rounds with an emphasis on both DCFC and Level 2 charging in each round. Indiana desperately needs more light duty charging infrastructure in the immediate to near term. With just 30 DCFC and 249 Level 2 locations the State's charging network is insufficient to support current demand or future growth. Spreading this investment over more than three years will miss an opportunity to accelerate the State's transition to electric transportation.

#### **Conclusion**

Thank you for your consideration of ChargePoint's responses. ChargePoint looks forward to being a resource to IDEM as it charts a course for Environmental Mitigation Trust funds to meet the needs of Indiana's communities.

Sincerely,



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Director, Public Private Partnerships  
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## SEALS, SHAWN

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**From:** Leah Thill <lthill@macog.com>  
**Sent:** Friday, January 03, 2020 3:33 PM  
**To:** IDEM VWTrust  
**Cc:** James Turnwald  
**Subject:** MACOG Response to IDEM VW EVSE RFI  
**Attachments:** MACOG Comment\_ IDEM VW EV RFI, Final, 1.3.2020.pdf

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Indiana Volkswagen Mitigation Trust,

Thank you for the opportunity to comment on the development of the RFP Framework for the Volkswagen light-duty electric vehicle supply equipment program.

Attached is MACOG's response to the Request for Information.

Sincerely,  
Leah Thill

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**Leah Thill**  
*Senior Environmental Planner*

**Michiana Area Council of Governments**  
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January 3, 2020

Shawn Seals  
Senior Environmental Manager  
Indiana Department of Environmental Management  
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**RE: Request for Information – Light-Duty Electric Vehicle Supply Equipment Program (RFP Development Framework)**

The Michiana Area Council of Governments (MACOG) is a voluntary organization of local governments which serves the four-county region encompassing St. Joseph, Elkhart, Kosciusko, and Marshall counties.

**MACOG applauds the decision to devote the maximum allowable funding for light-duty electric vehicle supply equipment.** MACOG has an interest in improving our local air quality, given that St. Joseph County and Elkhart County have previously been designated as non-attainment for ozone.

MACOG is committed to reducing emissions by promoting voluntary action. The Partners for Clean Air Program educates the public about simple actions they can take to clean the air. In the past 2 years, MACOG has partnered with South Shore Clean Cities, City of South Bend, City of Goshen, and City of Elkhart to host public education events and test drives. The wider adoption of electric vehicles and corresponding decrease in tailpipe emissions will support other regulatory and voluntary efforts to maintain our air quality over the long term.

**The vast majority of EVSE funding should be devoted to DCFC to enable all battery electric vehicles to travel across the state, while a small percentage of L2 investment will still have a transformational impact locally.**

**MACOG Survey on Volkswagen Funding Priorities**

MACOG surveyed 45 local government staff and elected officials in the 4 county region on how funding should be allocated in 2018:

- 51% of respondents wanted their community to host EV charging stations on government property (i.e. public parking lots) and 42% needed more information.
- The top 3 reasons that funding EV charging stations through VW appealed to respondents were:
  - 66% - Economic development tool (i.e. Increase customer traffic and dwell time in business districts/downtown).
  - 56% - Attract and retain talent (i.e. Encourage employers to offer workplace charging amenities).



- 51% - Demand for charging stations in their community (i.e. People want to purchase or have electric vehicles but lack public places to charge).
- Respondents expressed strong support for the funding of public projects.
  - 60.5% supporting 100% funding of public projects. 27.9% supporting at least 80% funding.
- Respondents indicated a lower funding level should be made available for private projects, 51% supporting 20-40% funding (60-80% match requirement).

### **Charging Stations:**

**Level 2** - There are no L2 charging stations publicly accessible to all vehicle types (J1772) in downtown Mishawaka, Elkhart, Goshen, Plymouth, or Nappanee and only one dual-port non-networked L2 in downtown South Bend. Most L2 EVSE in the region serve a single destination (auto dealers, hotel, Casino) that are not within a safe or convenient walking distance to multiple amenities.

**DCFC** - In 2019, the first CCS and CHAdeMO DCFC stations were installed at the mall in Mishawaka through Electrify American. For BEVs, this improved travel through the region and round trips from other communities in the region to the South Bend-Mishawaka area.

However, for BEVs long-distance travel remains restricted or impossible:

- **Southbound:** No DCFC/L3 stations on or near US-31 between DCFC in northern Mishawaka and Carmel (132 miles).
- **Eastbound:**
  - No DCFC station on I-80 between station in Mishawaka and Ohio border (closest station 100 miles in West Unity, OH).
  - No DCFC on US-30 between US-31 and Fort Wayne.
- **Westbound:**
  - Closest publicly-accessible DCFC is in South Holland, IL (Tri State Tollway, 85 miles from Mishawaka DCFC). *Note: At highway speeds, a vehicle with a 100 mile range in good conditions (limited use of heat, A/C and mild battery temperatures) will experience range anxiety when traveling between the Chicago and MACOG regions and even shorter-range vehicles are impractical.*

The map of Indiana's Current Electric Vehicle Charging Network for DC Fast Charging Stations provided in the RFI does not accurately show the ability of CCS or CHAdeMO-compatible vehicles to travel through northern Indiana. Not all of the DCFC on the provided map serve both CHAdeMO and CCS.

- Burns Harbor, IN (Bob Rohrman) – CHAdeMO only
- Munster, IN (Calumet Harley-Davidson) – CCS only
- Merrillville, IN – Tesla only
- Fort Wayne, IN – 3 locations with CCS only, 1 with Tesla only
- Angola, IN – Tesla only

**Electric Vehicle Registration Data:**

Despite the relative lack of public charging infrastructure, electric vehicle ownership is trending upwards as shown in the figure below. The Bureau of Motor Vehicles provided MACOG with 2014 – 2018 data for BEV and PEV vehicles.

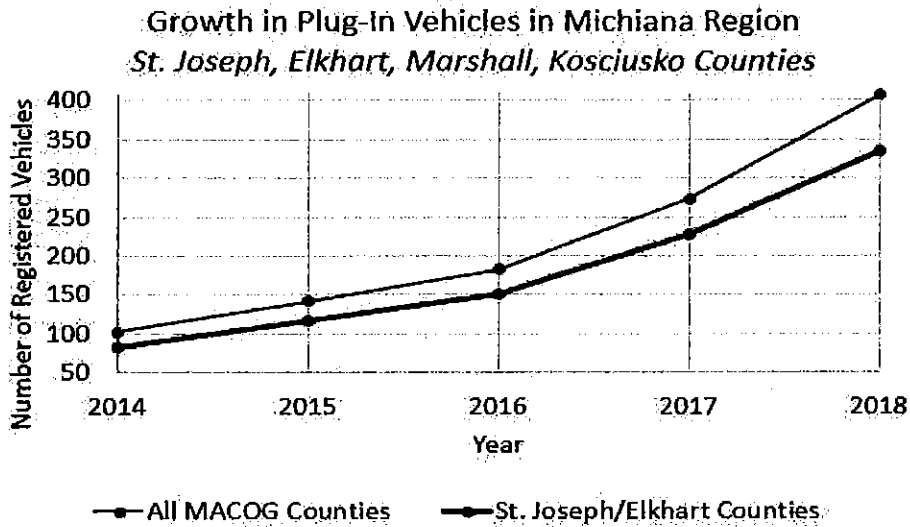


Figure 1. Number of Plug-In Electric Vehicles Registered in the MACOG Region

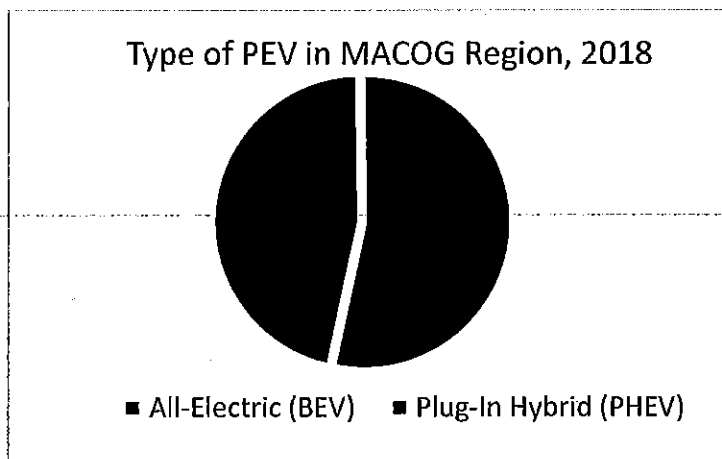


Figure 2. Adoption of Battery Electric Vehicles versus Plug-In Hybrids the MACOG region

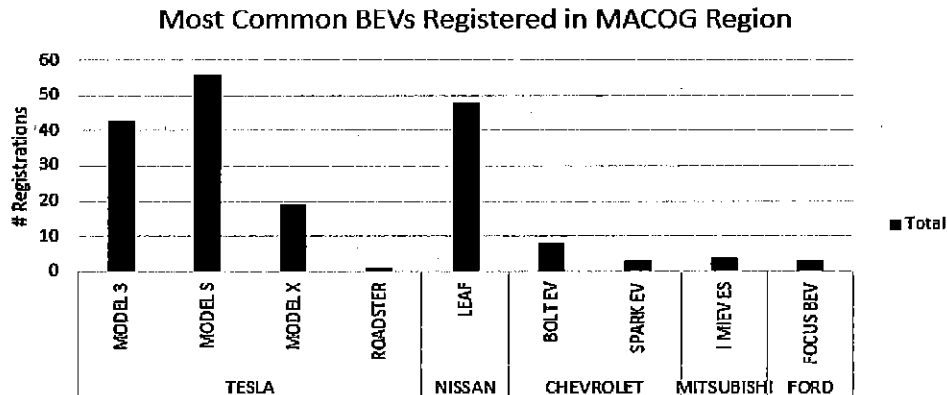


Figure 3. Most common make and model of BEVs registered in MACOG region

**Responses to Specific RFI Questions:**

1. *What EVSE level should be the priority: DCFC with higher cost and fewer locations or L2 with slower charging but more locations?*

DCFC should be a priority, for several reasons:

- Lack of DCFC remains the largest barrier to the long-distance travel of BEVs from the MACOG region, even as longer-range vehicles have come to market.

DCFC may be a critical bottleneck to BEV adoption. Re-charging on L2 for long-distance travel is impractical. Although long-distance trips may be relatively infrequent (the number of local miles driven may be more than long-distance miles), the inability to travel long-distances may impact purchasing decisions and BEV adoption. For all-electric vehicles, long-distance travel is especially prohibitive for short range vehicles (100 miles or less) and even short-range round trips within the region may difficult particularly in cold or hot weather conditions. In contrast, PHEV will not have difficulty reaching their destination by battery or combustion engine.

- Despite increasing affordability of long-range EVs, based on MACOG’s Ride & Drive events **many people continue to drive or purchase pre-owned older models with shorter ranges.**

Many MACOG-area drivers have older EVs with shorter ranges. For examples, 22 out of 50 members of the local EV drivers group (Michiana Electric Vehicle Network) drive a BEV with a range of 75-150 miles (Nissan LEAF (18), Chevy Spark, Toyota RAV4, VW eGolf).

- **DCFC investments are difficult for station owners to recoup** based on usage fees and requires subsidization – the business case is currently weak.

**DCFC requires subsidization, which provides the Volkswagen funding with the opportunity to play a transformational role in a state-wide build out of a 21<sup>st</sup> century**



**electric vehicle transportation network.** In contrast, there is a better business case for L2 due to longer dwell times and both public and private entities are investing in L2, albeit slowly, and less significant subsidization is needed.

2. *Should EV stations be funded at the highest possible level (60% private, 100% public?)*

**MACOG stakeholders favor 100% funding for public projects.** Follow-up conversations with communities interested in hosting L2 EVSE indicated that for networked stations **where the local government would provide electricity for free over a certain period (3-5 years), this should be considered the public match requirement.**

For private entities seeking to provide L2 amenities with restricted access (multi-unit dwellings, workplaces serving customers, employees, tenants), the funding level should be limited to 60% or less. The funding level for publicly accessible stations that are privately owned should be higher than for restricted access stations, if electricity will be given away for free over the period for which warranty/data services are covered by grant funding.

Additionally, the Committee should consider that utilities such as Indiana Michigan Power are proposing incentive programs that would also subsidize the purchase of L2 stations (Innovate Indiana proposal).

3. *Should the priority be on "areas of certain EV driver population" or on "maximum distance between charging station locations, regardless of speed"?*

**EVs of all types need to travel to and between population centers in Indiana.** The primary goal should be to facilitate the travel of BEVs across the entire state of Indiana, by **providing DCFC at least every 50 miles on major highways and interstates.** This is consistent with the requirements of Federal Highway Administration Alternative Fuel Corridors (<https://www.fhwa.dot.gov/environment/alternative-fuel-corridors/>).

**Investment should not be prioritized primarily in locations with higher existing EV driver populations.** While some additional L2 investment could further increase EV adoption in those locations, it should not be to the detriment of critical investments to enable long-distance travel. EV adoption is highest in urban areas, based on the map in the RFI. Presumably, the conditions in those locations are already more favorable to EV adoption or barriers are lower (i.e. income to purchase longer-range EVs or access to charging). A focus on L2 in locations where the most EVs already exist would not help these drivers travel outside their metro area or allow BEVs to reach the metro area.

Regarding the question about installing EVSE "regardless of speed", **L2 stations should not be considered practical tools for long-distance travel, but an option of last resort.** However, a larger number of DCFC stations is more important than speed within the DCFC category. Closer spaced 50 kW DCFC enable long-distance charging better than more



expensive, less frequent 150 – 200+ kW stations. Additionally, many vehicle models are not capable of charging at higher speeds so they do not benefit from higher speeds.

4. *Where should Indiana prioritize EV charging stations? DCFC along highways or L2 at workplace, shopping, destination, or multi-unit housing locations?*

**DCFC along highways should be a priority, with a small investment in L2.** Since PHEV and EV adoption in the MACOG region are roughly equal (Figure 2), investments in L2 are needed to realize the air quality benefits of local tailpipe emissions-free travel. For BEVs, L2 stations also fulfill an important role in enabling round-trip travel within the region and there is currently a need publicly accessible for L2 stations in locations that serve multiple amenities.

However, **the lack of L2 in key publicly accessible areas (notably downtowns) is evidence that insufficient L2 investment has occurred and incentives are needed.** Some VW funding should be devoted to providing publicly accessible L2 in locations such as business districts and downtown that serve multiple destinations. L2 stations with restricted access should receive the least amount of funding.

5. *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)?*

**Even a small percentage of funding provides a substantial number of L2 stations.** A single charging station in a visible location in a community can both provide “necessity charging” for range-limited BEVs and have a significant public awareness impact. Anecdotally, a higher than expected number and variety of electric vehicles can be seen charging at the on-street L2 installed in downtown South Bend in 2018. These public stations spark conversations and increase awareness of charging station availability, which is correlated with acceptance of EVs.<sup>1</sup>

Using the cost estimates provided, if VW funds were invested 85%/15% in DCFC/L2, that would fund about 25 DCFC stations (1 CCS/1 CHAdeMO plug each) and about 92 L2 stations across the state. Matching funds would further increase these numbers.

6. *How many rounds of funding should the state consider for the EV charging infrastructure program?*

MACOG has no opinion on the number of rounds, but DCFC should be the emphasis of the first round. Given that DCFC is a bottleneck prohibiting long range travel through and from the region, investment should focus on building out DCFC across the state as fast as possible to remove this significant barrier to BEV adoption.

7. *If not a current EV driver, what charging infrastructure related changes might alter your decision and move you to EV? How much of a concern or issue is the lack of access*

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<sup>1</sup> M. Singer. Consumer Views on Plug-in Electric Vehicles National Benchmark Report. NREL, Jan. 2016.



*to EV charging stations? How much of a concern or issue is the travel range of current EVs?*

MACOG currently does not own or operate any plug-in electric vehicles in the fleet of light-duty vehicles. Without access to charging stations where the vehicles park overnight, charging logistics would be prohibitive. MACOG vehicles return to the same point most nights but sometimes staff travel to Indianapolis or staff use vehicles for multiple trips back-to-back. Therefore, a BEV would not be feasible for all but the longest-range BEVs on the market. With a plug-in hybrid vehicle, L2 would be more than adequate and even Level 1 charging would be sufficient.

**Additional Comments:**

**Serving All Vehicles:** Just as gas stations serve both diesel and gasoline vehicles, DCFC should serve vehicles with both plug-types: the RFP should require the co-location of at least 1 CCS and CHAdeMO plug types at all DCFC funded. Vehicles requiring CCS and CHAdeMO are both common in the MACOG region and state, and new vehicles with both plug types are sold. Figure 3 shows Nissan LEAF (CHAdeMO) is the 2<sup>nd</sup> most common BEV behind Tesla.

**Redundancy and Maintenance:**

**Range anxiety would be best reduced by ensuring the maximum number of DCFC where drivers can be confident the station will be functioning, rather than more stations which are often broken and unusable.** The greatest risk to a BEV dependent on DCFC is being stranded after arriving at a broken DCFC that was necessary to reach the destination, without several hours at a L2, assuming one is even nearby. Complaints on heavily-utilized stations on PlugShare.com on the Tollway in Illinois indicate that one or the other plug type in the same unit is often broken despite the other functioning, likely because the heavy connectors are dropped. The Ricker's stations around Indianapolis, though numerous, were also frequently broken.

Therefore, sites with redundancy should receive extra points (at least 2 CCS and 2 CHAdeMO plugs available). DCFC under this RFP should either be required to be part of an existing network where O&M/warranty services are included, or for the station owner/operator to purchase similar coverage so that problems are addressed quickly. For L2, this funding should cover the optional warranty services packages on networked stations if station owners will provide fee-free charging (i.e. 3-5 years).

Thank you for the opportunity to provide detailed comments on the RFI.

Sincerely,

A handwritten signature in black ink, appearing to read "James Turnwald", written over a horizontal line.

James Turnwald  
Executive Director

## SEALS, SHAWN

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**From:** Wallpe, Jordan P. <Jordan.Wallpe@duke-energy.com>  
**Sent:** Friday, January 03, 2020 4:17 PM  
**To:** IDEM VWTrust  
**Cc:** Reynolds, Lang W; Weiss, Dan  
**Subject:** Duke Energy Indiana - IDEM EVSE Infrastructure RFI Response  
**Attachments:** Duke Energy Indiana IDEM RFI - EVSE Infrastructure - Jan 3 2020.pdf

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To Whom This May Concern:

Duke Energy Indiana is pleased to offer the following comments in response to the Light Duty EVSE RFI. These comments are in addition to the already filed comments from the Indiana Joint Utility Group. Thank you for the opportunity to provide feedback.

Regards,

**Jordan Wallpe**  
Duke Energy | MW Electric Transportation Manager

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January 3, 2020

Indiana Volkswagen Mitigation Trust  
[VWTrust@idem.in.gov](mailto:VWTrust@idem.in.gov)

RE: IDEM's Request for Information dated December 12, 2019

To Whom It May Concern:

Duke Energy Indiana fully supports the jointly filed comments from the Indiana Utility Group that were filed on January 2, 2020. In addition, Duke Energy Indiana is filing additional comments specific to our work experience in our efforts to deploy EV charging infrastructure across our six-state electric service footprint. Thank you for the opportunity to provide comments on this matter. Our additional comments are as follows:

- 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?*

**Comment:** Available funding should be directed towards higher cost DCFC stations. A level 2 station is much more affordable to the site host who installs the station. L2 charging stations are currently being installed all around Indiana, but DCFC stations are not. There are currently only 11 publicly available, non-Tesla, 24/7 DCFC stations in Indiana according to the DOE Alt Fuels Data Center. This limited number of DCFC stations simply does not allow existing or prospective Indiana EV owners or out-of-state travelers to contemplate longer trips on our highways or interstate EV travel without major uncertainties such as station reliability and slow recharge speeds. EV Range anxiety associated with interstate travel will still exist with slower charging L2 charging stations. Furthermore, the DOE Alt Fuels Data Center EVI-Pro tool suggests that 22 public DCFC plugs are needed to support the 5891 EVs currently registered in Indiana (this does not even include demand from out of state EVs). A realistic growth to 30,000 EVs within the next five years will require 112 DCFC plugs throughout the state. A statewide, comprehensive, planned, maintained and reliable DCFC network is needed to fully realize the objectives of the Volkswagen Mitigation Beneficiary Plan to transform Indiana into an electric transportation future.

- 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 versus 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?*

**Comment:** The State should focus on leveraging public and private funding solutions that provide the best location, recharging speed, and reliability that enable seamless interstate and major highway travel of EVs. Duke Energy's growing experience with EV projects and infrastructure deployment in our six state territories make us well-positioned and well-experienced to achieve these solutions by deploying a coordinated DCFC network with the other state utilities by leveraging available funding. All DCFC sites must be publicly accessible 24/7 and near interstate/major highway exits regardless of private or government-owned locations.

- 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?*

**Comment:** EV charging infrastructure priority should be focused to build out a statewide, comprehensive, coordinated, and reliable DCFC network that allows all EV drivers in-state and out-of-state to reasonably drive to any location in Indiana. Maximum distances between stations should be in the 20-30 mile range with even lower distances near higher populations since stations would be tied to interstate exit opportunities. This provides flexibility to recharge at various locations while driving. At a bare minimum and where reasonable, charging power could be at 50kW for now, but charging power over 100kW will be needed in 2-3 years as more EV models with larger batteries come on the market. There are currently DCFC hardware providers that offer modular DCFC stations that are able to increase charging speeds with additional power modules over time. Lastly, it is our recommendation to have multiple chargers per stations to provide customers the reliability charging redundancy travelers have come to expect when they travel.

- 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?*

**Comment:** Prioritize DCFC along highways and interstates. Unlike the DCFC market, the L2 charging market already provides financially attractive solutions for site hosts installing L2 stations without any financial assistance. For example, a retail store that installs a L2 charging station will attract EV drivers that will stay longer in their store eventually spending more money there. A workplace that offers L2 charging for employees will attract and keep EV driving employees satisfied. A hotel with L2 charging will attract EV drivers as guests and so forth.

The only DCFC stations installed in 2019 in Indiana were from Electrify America and Tesla. Electrify America was mandated and funded through the national consent decree. Tesla provides proprietary charging to Tesla drivers only. The stale open market growth of DCFC stations in Indiana illustrates that the current business model does not yet exist. The state has a rare funding opportunity to help jump-start the DCFC market which will ultimately encourage faster EV adoption for Indiana drivers. It will also attract out of state EV drivers too. Indiana's interstate system already provides numerous benefits to drivers, why not build from this infrastructure by adding DCFC stations?

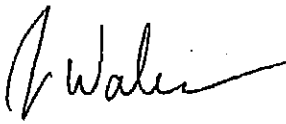
- 5) *Funding limitations are certainly a factor in Indiana's attempt to broaden the existing EV charging network with only \$6.135 million available from the national consent decree. As noted earlier in this RFI, there is a notable difference in the costs associated with expanding the DCFC vs. L2 charging 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)?*

**Comment:** In our experience, the \$207k dual charger estimate in the RFI indicates a higher 100kW+ charging rate per port. Assuming DCFC stations were on non-government owned property and accessible to the public 24/7 (funded @ 80%); and each location had dual chargers, then 37 DCFC stations @ \$207k/site can be built out across the state. In comparison, our Duke Energy Florida Electric Transportation pilot has installed 15 (50kW) DCFC ports for an average per port cost of right under \$45,000. Depending on the charging speed and modular design of the DCFC stations, there could be upwards of 80 DCFC stations funded by the VW Settlement. If all the EVSE funding is allocated for DCFC, there is a strong possibility that a statewide DCFC network could be created using a mix of 50kW – 150kW+ charging stations.

- 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)?*

**Comment:** We prefer the state to commit the maximum amount of DCFC funding possible in the first round of funding. This would allow the companies to seek the highest volume discounts from suppliers. If the state felt it needed to distribute the funds over two years to evaluate reporting or potential compliance issues, then that could be considered.

Thank you,

A handwritten signature in black ink, appearing to read "J. Wallpe". The signature is fluid and cursive, with a long horizontal stroke at the end.

Jordan Wallpe  
Midwest Electric Transportation Manager  
Duke Energy Indiana  
jordanwallpe@duke-energy.com

## SEALS, SHAWN

---

**From:** Tyler Barron <TBarron@elpc.org>  
**Sent:** Friday, January 03, 2020 5:19 PM  
**To:** IDEM VWTrust  
**Cc:** Susan Mudd  
**Subject:** ELPC Comments on Volkswagen Mitigation Trust RFI - 1/3/2020  
**Attachments:** ELPC IDEM Comments 1-3-2020\_FINAL.docx

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Good afternoon,

Please find comments on the light-duty electric vehicle supply equipment program (RFP development framework) for the Environmental Law and Policy Center attached.

Thank you,

Tyler

Tyler Barron  
Policy Fellow  
Environmental Law & Policy Center  
35 E. Wacker Dr., Suite 1600 | Chicago, IL | 60601  
P. (312)795-3721 | [tbarron@elpc.org](mailto:tbarron@elpc.org) | [www.ELPC.org](http://www.ELPC.org)



# ENVIRONMENTAL LAW & POLICY CENTER

Protecting the Midwest's Environment and Natural Heritage

January 3, 2020

Indiana Volkswagen Mitigation Trust  
Indiana Department of Environmental Management  
[VWTrust@iqdem.IN.gov](mailto:VWTrust@iqdem.IN.gov)

Re: IDEM RFI  
Volkswagen Consent Decree Environmental Mitigation Trust  
Light Duty EV Supply Equipment Program

Thank you for the opportunity to comment on the Indiana Department of Environmental Management's (IDEM) request for information regarding the light duty electric vehicle supply equipment program (RFP Development Framework). ELPC is eager to see the state of Indiana invest in valuable electric vehicle infrastructure and take meaningful steps towards transformative technology, reducing emissions from internal combustion engines. Governor Holcomb, when establishing IDEM's Trust Fund Committee, expressed interest in investing VW funds to help communities in a lasting way. Electric vehicles and the infrastructure to support them are the transformative projects which move the state towards cleaner transportation, especially where fueled by renewable resources.

Before answering the questions outlined in the request for information below, ELPC suggests that the miles of range per hour of charge (RPH) in the RFI underestimates the number of miles per charge produced by each charging level. According to information produced by ChargePoint and inserted below, the RPH produced by each level of charging is as follows:<sup>1</sup>

- Level 1 – 5 miles
- Level 2 – 12 miles for cars with 3.7 kW on-board charger  
25 miles for cars with 6.6 kW on-board charger
- DC Fast Charging – 100 miles or more, depending on the power level of the charger

For these comments, ELPC will use the RPH given by ChargePoint on calculations made to answer the questions posed by IDEM. ELPC would appreciate any information and/or sources used for the RPH numbers found on p. 3 of the RFI.






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<sup>1</sup> ChargePoint -- Driver's Checklist: A Quick Guide to Fast Charging

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(312) 673-6500 • [www.ELPC.org](http://www.ELPC.org)

Harry Drucker, Chairperson • Howard A. Learner, Executive Director  
Chicago, IL • Columbus, OH • Des Moines, IA • Grand Rapids, MI • Indianapolis, IN  
Minneapolis, MN • Madison, WI • North Dakota • South Dakota • Washington, D.C.

## EV Charging Basics

Type	Miles of Range Per Hour of Charging (RPH)	Time to Fully Charge	When to Use	Connector
Level 1, Standard Wall Outlet (AC)	5 RPH	+ 16 hours for an 80-mile battery + 40 hours for a 200-mile battery	+ Get some charge while you sleep Note: slower for cars with large batteries	 Note: you'll need your own cable to plug in to the wall for Level 1
Level 2 Charging Station (AC)	+ 12 RPH for cars with 3.7 kW on-board charger + 25 RPH for cars with 6.6 kW on-board charger	+ 3.5 hours for an 80-mile battery + 8 hours for a 200-mile battery	+ At work + While you sleep + Topping up around town	 J1772 connector
DC Fast Charging	100 RPH or more, depending on the power level of the charger + 24 kW (up to 100 RPH) + 44 to 50 kW (up to 200 RPH)	Depends on the power level of the charger and car model, but could be 80% charged within 30 minutes	+ Short stops + Express Corridor locations	 SAE Combo (CCS)  CHAdeMO  Tesla

ELPC's comments on each question outlined in the request for information follow:

### Question 1:

IDEM should invest in both L3 and L2 chargers. The locations of these, however, should differ significantly. L3 chargers should be installed on major highways while L2 chargers should be located in cities. L3 chargers should be located roughly 50-70 miles from one another on highways, no more than 2 miles from an exit, while L2 chargers, placed in cities, should be located in areas that can be easily found and used while drivers engage in other daily activities. This difference in locating chargers should be prioritized to meet the needs of the drivers who will use them. Highway drivers require faster charges to move along a presumably longer route more quickly, while city-dwelling owners can afford to wait longer for a charge as they engage in their daily activities such as grocery shopping or eating a meal. Additionally, many city owners have the opportunity to charge their vehicle overnight at or near their homes which further reduces the need for L3 chargers in cities.

### Question 2:

Rather than focusing on level of funding to broaden reach, ELPC suggests that the areas where the stations can and will be used most effectively and efficiently should be the priority. ELPC has ranked the four options given in the chart labeled "light-duty zero emission vehicle supply equipment funding levels" in order of potential reach of the \$6.135 million. This list is ordered from most potential reach to least potential reach, tempered by where there are currently unmet needs:

- Installed at non-government owned property and made available to the public (highly visible and well utilized facilities such as sports facilities, grocery stores, shopping centers, parking garages, private universities)
- Installed at government owned property and made available to the public (libraries, city and county centers, public schools and universities, pools)
- Installed at multi-unit dwelling but not made available to the public (multi-unit dwellings are very often among the most underserved locations for EV charging)
- Installed at workplace but not made available to the public

### Question 3:

As mentioned in question 1, ELPC believes that the focus of the funding should be on both L3 and L2 chargers, but the location of where each is installed should differ. L3 chargers should be installed on the highways (~ every 50-70 miles, as close as possible but no more than 2 miles from an exit) where large gaps in current charging infrastructure exist and charges must be done quickly. L2 chargers should be installed in cities, where there are naturally more EV owners, and drivers are not in need of quick charges.

**Question 4:**

ELPC supports the build out of Indiana’s corridors so that there is a comprehensive DCFC network, and understands the need to balance the charging needs of highways and metropolitan centers. While we support the idea proposed by IEA and its members that there be a “Crossroads EV corridor,” we do not think this necessitates spending all \$6.1 million of the VW funds on highway related charging facilities.

ELPC estimates that using VW funds to install 12 L3 chargers on IN highways can meet the needs of EV highway drivers (1 L3 charger ~ every 50-70 miles), allowing the rest of the funds to be used to purchase and install L2 chargers in cities across the state. Ensuring DCFCs within 50-70 mile range of each other will address range anxiety, currently a major factor holding back potential EV purchasers. To the extent possible these charging stations should be at visible and well utilized sites that are unlikely to change, eg INDOT service areas. These have the advantages of already being signed for refueling, and hosting numerous other features from bathrooms to restaurants, adding to drivers’ comfort and likelihood of use.

In order to meet the needs of EV highway drivers (1 L3 charger ~ every 50-70 miles, no more than 2 miles from an exit) by filling in existing gaps, we suggest that 12 L3 chargers be placed along the following highways:

- 1 charger on U.S. 31 between Indianapolis and South Bend
- 3 chargers on U.S. 41
- 1 charger on U.S. 52 between Indianapolis and Cincinnati, OH
- 1 charger on I-64 between Indianapolis and Terra Haute
- 1 charger on I-65 between Indianapolis and Louisville, KY
- 1 charger on I-65 between Lafayette and Chicago, IL
- 1 charger on I-69 between Indianapolis and Fort Wayne
- 1 charger on I-70 between Indianapolis and Dayton, OH
- 1 charger on I-74 between Indianapolis and Champaign, IL (ideally at/near intersection with U.S. 41 so it serves both)
- 1 charger at the meeting point of I-80/90 and I-94 in Portage, IN

For each L3 charger, an L2 backup should be installed to create redundancy. This coupling would help establish a more resilient network. L3 chargers should contain both CCS and CHAdeMO plugs.

The remaining funds, after allocating for the 12 L3 chargers listed above, should be used on L2 chargers placed in metropolitan areas. ELPC estimates that a significant number of chargers can be purchased and installed, based upon the estimated costs of charging infrastructure in the RFI. The potential number of chargers varies depending on how much of the cost is covered by settlement funds (60%-100%) and is shown in the chart below. Because L3 chargers would not be installed at either a workplace or a multi-unit dwelling, ELPC assumes that the lowest amount covered for L3 chargers would be 80%.

	L3 Charger – 80% Covered	L3 Charger – 100% Covered
Total Cost	\$1,987,000	\$2,480,000
Percent of Funds Used on L3	32.4%	40.4%
Funds remaining after L3 Chargers	\$4,147,800	\$3,655,000
Total # of L2 Chargers Purchased at 60%	1,382	1,218
Total # of L2 Chargers Purchased at 100%	829	731
Percent of Funds Used on L2	67.6%	59.6%



ELPC strongly encourages IDEM to incorporate language, such as MPCA has included in its VW Phase 2 proposal: “Fast-charging stations must be a minimum of 50 kW and include adequate conduit size at each station for future upgrades up to 350 kW and space for extending the parking pad. To maximize emission reductions, we will encourage charging stations be powered by electricity generated from renewable sources (wind, solar) through either a utility renewable energy program or by purchasing renewable energy credits. Solar directly connected to EV charging may be encouraged for Level 2 charging stations.”<sup>2</sup>

**Question 5:**

ELPC suggests that funding be split: L3 chargers roughly 32%-40% and L2 chargers roughly 59%-67% of the total VW 15% allocation.

**Question 6:**

Funding should be allocated in a single round. Current investments in charging infrastructure are needed to grow the industry and encourage future adoption and utilization of EVs by Indiana residents.

Thank you again for the opportunity to provide input as Indiana moves forward on transforming its transportation system towards a cleaner future.

Sincerely,

Susan Mudd  
Senior Policy Advocate  
[smudd@elpc.org](mailto:smudd@elpc.org)  
P: (312) 795-3722

Tyler Barron  
Policy Fellow  
[tbarron@elpc.org](mailto:tbarron@elpc.org)  
P: (312) 795-3721

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<sup>2</sup> Volkswagon Settlement Beneficiary Mitigation Plan – State of Minnesota Phase 2 (2020-2023) pg. 15

## SEALS, SHAWN

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**From:** Therese Dorau <tdorau@southbendin.gov>  
**Sent:** Friday, January 03, 2020 5:53 PM  
**To:** IDEM VWTrust  
**Cc:** Eric Horvath; Leah Thill  
**Subject:** South Bend Comments on VW EVSE Program  
**Attachments:** South Bend\_VW EVSE Comments 2020-01-03.pdf

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Dear Trustees,

Attached please find information from the City of South Bend's Office of Sustainability in response to the 12/12/2019 Request for Information issued by the VW Trust for the Light-Duty EVSE Program. We appreciate the opportunity to share our experience and the experiences of our local EV drivers to help shape this important and exciting program.

Please contact me directly with any questions.

CC: Eric Horvath, Public Works Director, City of South Bend  
CC: Leah Thill, Environmental Planner, Michiana Area Council of Governments

Sincerely,  
--Therese Dorau



**Therese Dorau**  
Director, Office of Sustainability  
(574) 235-9323  
[tdorau@southbendin.gov](mailto:tdorau@southbendin.gov)  
City of South Bend  
227 W. Jefferson Blvd, Suite 1316  
South Bend, Indiana 46601

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# CITY OF SOUTH BEND

## DEPARTMENT OF PUBLIC WORKS

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### Indiana Volkswagen Mitigation Trust

RE: Request for Information – *Light-Duty Electric Vehicle Supply Equipment Program* (RFP Development Framework)

January 3, 2019

Dear Trustees,

We at the City of South Bend applaud the decision to set aside the maximum 15% of state settlement funds for electric vehicle charging infrastructure via the *Light-Duty Electric Vehicle Supply Equipment Program*. The City believes that transportation electrification is necessary to maintain Indiana's status as a great place to live and do business, to support advanced manufacturing, to improve northern Indiana's air quality, and to reduce Indiana's greenhouse gas emissions. This transition will require substantial investment, so we are enthusiastic about the unprecedented funding opportunity this settlement offers.

The City of South Bend is actively supporting electric vehicle adoption. The City has installed two free public Level 2 EV chargers at the County City Building and will soon be installing two more at our newly-renovated Howard Park and Community Center. The City has also hosted or participated in multiple electric vehicle education events in South Bend, in partnership with the Michiana Area Council of Governments and South Shore Clean Cities, studied electric vehicle registration data in St. Joseph County, and facilitated networking and communication among local EV drivers.

We offer the following comments on the State's Request for Information:

#### 1. EVSE Level Priority

The City would like the Trust to invest in a mix of DC Fast Charging (DCFC) and Level 2 (L2) charging, implemented carefully and thoughtfully.

#### DC Fast Charging

South Bend-based EV drivers frequently express concerns ("range anxiety") about the lack of DC fast charging on major non-interstate routes between South Bend and other key Indiana cities, particularly US 31 between South Bend and Indianapolis and US 30 between South Bend and Fort Wayne.

**The City requests the Program fund a DC fast charging station on the south side of South Bend, at the intersection of US 20 and US 31.** There are several potential sites at large retail stores, such as Wal-Mart, Lowes, and Menards, immediately off this interchange. This location will be doubly-beneficial, serving in-town EV drivers and increase economic activity at the selected location, while also facilitating

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## CITY OF SOUTH BEND | DEPARTMENT OF PUBLIC WORKS

intra-state travel on significant US highways between major Indiana regions – a direct service to residents of South Bend with business to conduct in other Hoosier cities.

The City would also support DC fast chargers in a location immediately off US 31 that supports South Bend-to-central Indianapolis trips (such as Peru or Rochester) and immediately off of US 30 that supports South Bend-to-Fort Wayne trips (such as Warsaw or Columbia City).

### Level 2 Charging

The City of South Bend has limited funding to expand Level 2 charging in the community, however EV drivers are increasing their requests for new stations and new locations. Because of the dwell time typical of L2 stations, expanding the L2 charging network in South Bend will positively impact on the local economy when sited near retail, restaurants, and community amenities like parks, community centers, schools and sports facilities.

**The City requests a portion of Program funding be dedicated to local governments to support publicly-owned, publicly-accessible Level 2 charging stations** at priority locations identified by the local government.

## 2. Funding Levels

### Publicly-Owned EVSE

The City believes that **publicly-owned EVSE should be funded 100%** by the Program, perhaps with an agreement that a local government owner will provide fee-free charging for EV drivers for a certain period (e.g., 3-5 years).

### Privately-Owned EVSE

Level 2 EVSE that are privately owned, such as at a workplace, shopping center, or apartment building, or chargers that generate revenue or recoup expenses from users should receive only **partial financial support**, at a level designed to incentivize and reduce barriers.

### DCFC EVSE

DCFC EVSE should be **funded at a high level** regardless of ownership due to the significant investment required, with a small match required by the station owner (perhaps an 80:20 cost-share).

### For all Levels

The Trust should consider the costs to the station host of operating and maintaining the EVSE infrastructure and ensure that any host receiving Program funding is **obligated to keep equipment in working order, ideally with funding or contractors provided by the Program.**

Electric utilities and cooperatives should be major partners in both public and private EVSE installations. If the relevant **utility provided a small amount of financial and/or in-kind technical support** for each station, and particularly any needed electrical upgrades to power the station, the Program could stretch funds further and more easily overcome barriers.

## 3. Location Priorities – current EV driver populations

Priority should be given to **fast charging in locations and along routes well-traveled by the general public**, regardless of the current penetration of EVs in that location. The visibility of EVSE locations

## CITY OF SOUTH BEND | DEPARTMENT OF PUBLIC WORKS

prominently placed along high-traffic routes will help eliminate "Range Anxiety" for trips within Indiana, thus encouraging adoption of EVs by the average Hoosier driver. It would be counter to the goals of this program to focus primarily on making charging more convenient for those early adopters who already have purchased EVs.

### 4. Location Priorities – highway vs destination

See response to Question 3. L2 charging at destinations is an essential expansion of the charging network and, at current costs, can be incentivized by a moderate Program subsidy. However, DCFC costs will require significant investment and are unlikely to be built without significant Program support. **Therefore, Program support for DCFC in locations that can serve *both* destination and inter-city travelers are ideal, such as the intersection of US 20 and US 31 in South Bend.**

The Federal Highway Administration recommends EVSE stations be located every 50 miles.

### 5. Dividing funding between DCFC and L2 equipment

The portion of Program funding dedicated to DCFC should be based on identified need. Setting aside an arbitrary percentage risks installation of major infrastructure in low-utilization locations. **The Program should identify gaps in Indiana's road network that prevent EV travel, prioritize the highest-value sites, and seek to provide that amount of funding.** For example, if the Trust and its stakeholders identify 30 corridors or interchanges where DCFC would be highly impactful, the Trust should set aside  $30 \times \$75,000 = \$2.25M$ . The remainder of funds should then be distributed for L2 equipment at a range of subsidy levels depending on the expected owner and use (public vs private, free vs fee-to-charge).

All EVSE funded through this program should accommodate a wide range of EV models in terms of plug types and charging capacity. The market for used EVs is rapidly expanding as used vehicles become available at excellent price points. **Ensuring continued access to CHAdeMO plugs will be essential to support the existing stock of EVs.** The Federal Highway Administration recommends EVSE stations include at least one CHAdeMO and at least one CCS plug per location.

### 6. Schedule

L2 technology has matured and can be purchased as a consistent, high-quality, turn-key product from a number of vendors. All vendors should offer discounts for quantity purchase. **A significant portion of the Program's available funding (50% or more) should be made available for L2 EVSE immediately.** Funding should be application-based with set-asides for local governments (100% subsidy) as well as for privately-owned facilities (such as retail, workplace, or multi-family residential) or revenue-generating charging stations.

**DCFC funding will require more planning and site recruitment.** As proposed in #5, above, a corridor/interchange study with public input should be completed. Equipment and services should be procured in multiple rounds of several stations, allowing a balance between taking advantage of economies of scale and a desire to learn and improve from each round of stations installed.

Remainder funds, after early L2 and staged DCFC funding has all been released, can be provided in a final round for L2 chargers.

## 7. EV Barriers

The City of South Bend Office of Sustainability frequently receives feedback from local and regional EV owners. The suggestions below are based on professional knowledge of Office staff and anecdotal information from EV owners that interact with the Office of Sustainability and informal online and in-person networks.

- What would motivate a non-EV owner to purchase EVs?
  - State tax credits
  - Reduction of extra Indiana vehicle registration fees
  - More EVSE to facilitate purchase of pre-owned, lower-range EVs
  - Local availability of new and used EVs for purchase and motivated and knowledgeable sales staff
  - Utility rates that facilitate low-cost at-home charging
  - Charging available at apartment building or workplace
- What Infrastructure would motivate EV purchase?
  - Charging availability at home and work
  - Charging at major retail and community destinations
  - Fast charging as quick, convenient, and cost-effective as gas pumps between major cities within Indiana
  - Continued access to CHAdeMO plugs to support the fast-growing used EV market. The existing stock of EVs significantly relies on the CHAdeMO plug type.
- What other factors prevent transition to EVs?
  - Up-front cost and historically low availability of used models
  - Extra fees for Indiana vehicle registration
  - Lack of dealer knowledge or interest
  - Lack of availability of new or used EVs at local dealers' lots
  - Lack of availability of electrified options in desired form factors (e.g. mini-vans, SUVs, pickup trucks, 4WD-equipped)
  - Diminishing Federal tax credit
  - Lack of ability to charge at individual's home and/or at work
- How much of a concern is lack of access to EV charging?
  - Lack of access is a significant concern among both current and potential EV drivers in the South Bend region.
  - Current EV drivers tend to be financially secure, typically with access to either at-home or at-work charging, and often a second, gas-powered vehicle for longer trips. Lack of stations does not deter these current drivers. However, our region's current EV drivers are very interested in the expansion of the local charging network, would like to phase out their need for a second, gas-powered car, and have indicated they would increase the time and money spent at establishments that offered L2 charging.
  - Potential EV drivers are very concerned about the lack of EV charging, especially those less-affluent or small household families who may live in an apartment or otherwise do not have access to at-home charging.
- How much of a concern is the travel range of current EVs?
  - Current and potential EV drivers all indicate range anxiety is a significant factor in choosing an EV.

## CITY OF SOUTH BEND | DEPARTMENT OF PUBLIC WORKS

- One-car households who are interested in transitioning to an EV from a gas-powered vehicle are especially concerned about range limitations and worry about how they would manage longer trips.
- Current EV drivers indicate they maintain a second, gas-powered vehicle for longer trips both in and out of state.
- Range is a serious concern for less affluent potential EV drivers who would like to buy one of the reasonably-priced but lower-range older EVs that are becoming readily available.

We appreciate the open, public, and thoughtful process being undertaken by the Trustees throughout this process. This concludes the City of South Bend's official comments in response to the Trust's RFI. Questions can be directed to Therese Dorau at [tdorau@southbendin.gov](mailto:tdorau@southbendin.gov) or (574) 235-9323.

Sincerely,



Therese Dorau  
Director of Sustainability  
City of South Bend

**SEALS, SHAWN**

---

**From:**  
**Sent:** Friday, January 03, 2020 6:29 PM  
**To:** IDEM VWTrust  
**Subject:** IDEM RFP Response  
**Attachments:** Mason IDEM RFP Response\_20200103.pdf

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Please find attached comments to the recent IDEM RFP related to EV charging infrastructure.

Respectfully,  
Maeve Mason



Maeve Mason  
Avon, IN 46123

Indiana Department of Environmental Management  
[VWTrust@idem.IN.gov](mailto:VWTrust@idem.IN.gov)

Dear Indiana Volkswagen Mitigation Trust Committee,

I sincerely appreciate this opportunity to submit comments and share my thoughts and experiences with you as part of the Request for Information to solicit input on the development of Indiana's electric vehicle (EV) charging infrastructure. I applaud the VW Committee's commitment to set aside the maximum of 15% for EV charging infrastructure as allowed for by the Volkswagen Environmental Mitigation Trust Program. This is an important first step in recognizing the impact that these dollars can have in Indiana and is in line with the stated purpose of the settlement funds.

I submit to you the following experiences from an EV driver and ask that you consider them when developing the RFP for EVSE across Indiana. This is indeed an incredible opportunity; one that will have lasting and significant impact on Indiana's economy and environment.

Warm regards,

---

**Maeve Mason**

EV DRIVER

Greater Indiana Clean Cities Stakeholder (past Board Member)

## 1. Funding Priorities: Costs associated with DCFC vs L2 EVSE

Given the cost discrepancies between purchasing and installing DCFC and L2 chargers there is no doubt this money should be used to invest in DCFC along interstates. While the unit costs alone are significant, the cost associated with the infrastructure needed to support these different types of chargers is profound.<sup>1</sup> In my experience in working with utility companies, the cost associated with trenching and delivering the necessary 3-phase power for DCFC can quickly outpace the average installation cost estimates.

## 2. Funding Priorities: Public vs. Private investments

The issue of public and private investments in EVSE is complicated and multi-faceted. While I can appreciate the perspectives that encouraging private investments causes businesses and industries to put some 'skin in the game,' this can quickly backfire when decisions are made that effect proper operation and maintenance of this equipment. Too many times I have seen a public/private entity use grant money to install EVSE, only to fail to invest in necessary upgrades and operation and maintenance costs. Unless private entities see these investments as profitable, they often will not invest in network charging that provides necessary data on usage or basic operation and maintenance costs to ensure the chargers remain there for people who need them. It is for this reason, that I believe both private/public funds should be used to help with the initial, upfront investments of EVSE. That said, I believe utilities should be charged with owning and maintaining the equipment. They are the only entities with a vested interest in placing EVSE in appropriate locations and properly maintaining them once they are placed. Furthermore, because they are regulated entities, there is some confidence that rates and costs will be kept in check by public service commissions. This arrangement does not discourage free market entities from maintaining the needed networks or the actual chargers themselves. This also limits the all-to-familiar scenario of abandoned chargers from either bankrupt manufacturers or retail establishments with no incentive to properly maintain equipment.

## 3. Geographic priority: Distance between EVSE vs. priority population

While I recognize the need for investments in EVSE around priority populations, I believe that interstate/corridor charging is more important in the short-term. We are a mobile society, one that expects to travel from point A to point B whenever we want. While investments in urban areas is increasing, we are still highly dependent on interstates and highways to get us to work and play. As more individuals see the benefits of EVs and the ease with which you can own one, the more demand will drive investments in priority population centers.

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<sup>1</sup> EERE Cost Estimates. Source: [https://afdc.energy.gov/files/u/publication/evse\\_cost\\_report\\_2015.pdf](https://afdc.energy.gov/files/u/publication/evse_cost_report_2015.pdf)

#### 4. Geographic priority: Location, Location, Location

Except for dealer-owned and operated locations (which typically restrict access to business hours), there are virtually no public, non-proprietary DCFC in the Indianapolis area (within or near the 465 loop).<sup>2</sup> This is extremely frustrating for a local EV owner. Even with this lack of DCFC, the number of L2 stations (either public or workplace) still make it possible to own/use an EV. Perhaps more significant is that the lack of DCFC makes it virtually impossible for people to travel to Indianapolis as a destination – severely limiting visitors from coming to the area.

Furthermore, traveling between major metropolitan areas in the surrounding area is difficult with current range options. To be sure, the list below describes the miles between public, non-proprietary DCFC located in nearby metropolitan locations:

- 96.3 miles between DCFC along I-69 North (North of Indianapolis and Fort Wayne, IN)
- 108 miles between DCFC along I-65 North (Lafayette and South Holland, Illinois *[emphasize added]*)
- 104 miles between DCFC along I-65 South (South of Indianapolis and Clarksville, IN)
- 87 miles between DCFC along I-74 West (South of Indianapolis and Lawrenceburg, IN)
- There are no DCFC along I-69 South to Bloomington/Evansville
- NOTE: There are only 6 public (24-hour access), non-proprietary, non-Electrify America DCFC chargers in the entire State of Indiana<sup>3</sup>

Even owning a newer model 2019 Chevy Bolt (with a typical summer range of 300 miles and winter range of nearly 200 miles), can make these types of longer-range trips difficult. This is especially true when traveling on the interstate where regenerative braking is limited, and miles seem to shed more quickly.

#### 5. Funding Priorities: DCFC vs L2 EVSE

Funding should be spent solely on DCFC for 2 reasons. The current lack of DC infrastructure is limiting economic growth. In addition, the cost of L2 infrastructure is currently not preventing investments from retailers, workplaces, and municipalities. First, there are currently some 25,803 L1 and L2 chargers in Indiana.<sup>4</sup> Furthermore, these chargers are located throughout the State. Second, based on my own research and estimates, the typical cost to purchase and install a L1 or L2 charger is approximately \$1,200-\$1,500. This is possible not only for residential use, but for small businesses and municipalities. To be sure, based upon my experience as a Clean Cities coordinator, even in cases when grants and or state/private assistance was not available, business owners and cities and towns would bear the cost to install their own L2 chargers.

<sup>2</sup> There are only 3 public, non-proprietary DC fast chargers in/around the 465 loop – Walmart Electrify America site at South Emerson Avenue, IMPA Headquarters, Keystone Crossing and a Ricker's in Carmel. Source: Alternative Fuels Data Center:

[https://afdc.energy.gov/stations/#/find/nearest?location=Indianapolis%20IN&fuel=ELEC&ev\\_levels=dc\\_fast&ev\\_connectors=NEMA1450&ev\\_connectors=NEMA515&ev\\_connectors=NEMA520&ev\\_connectors=J1772&ev\\_connectors=CHADEMO&ev\\_connectors=J1772COMBO](https://afdc.energy.gov/stations/#/find/nearest?location=Indianapolis%20IN&fuel=ELEC&ev_levels=dc_fast&ev_connectors=NEMA1450&ev_connectors=NEMA515&ev_connectors=NEMA520&ev_connectors=J1772&ev_connectors=CHADEMO&ev_connectors=J1772COMBO)

<sup>3</sup> Source: Alternative Fuels Data Center Station Locator (data download, sorted, 12/13/2019)

<sup>4</sup> Source: Alternative Fuels Data Center [https://afdc.energy.gov/stations/#/analyze?fuel=ELEC&ev\\_levels=2&ev\\_levels=1](https://afdc.energy.gov/stations/#/analyze?fuel=ELEC&ev_levels=2&ev_levels=1)

DC fast chargers are necessary to spur economic development and ease of travel. Most of the current DCFC in Indiana are either proprietary or have only recently been installed by Electrify America. I would also add that Electrify America charges between \$0.70 and 0.99/minute for a 350-kW charge plus a small session fee.<sup>5</sup> Electrify America and other independent vendors/provider's rates are often not subject to any commission approval.

6. Timing for the release of funds

In order to spur the development that is necessary now, the funding should be released as soon as possible. While I recognize the Committee has 10 years to distribute fund under the Settlement/Beneficiary Plan, money is needed now in order to invest in necessary infrastructure that will in turn spur interest in EVs. Furthermore, investment in DCFC will send a clear message to automakers that there is interest in Indiana. I had to travel to MI in order to seriously shop for an EV, as there were very few EV models at local dealerships.

7. EV Driver Preferences:

a. EV Driver Motivation

My husband and I made the decision to purchase a 2019 Chevy Bolt in December 2018 in order to take full advantage of the \$7,500 tax credit. We have loved owning this car.

b. Charging Infrastructure

We charge our vehicle in several ways – essentially equally among 3 various options - via DCFC chargers currently available, L2 charging options, and residential charging.

c. Factors to Consider

While we love owning our Chevy Bolt, it is not currently our only mode of transportation. Without more access to DCFC we could not maintain our current lifestyle without both an EV and ICE vehicle as an option.

d. Lack of Access to EVSE

A lack of DCFC within and throughout Indiana makes it difficult to plan trips using our Chevy Bolt. To be sure, even to visit family in southern MI we need to stop at least once, if not twice, to make it the 305 miles. Apart from traveling between Indianapolis and Cincinnati, long-term travel between major metropolitan areas is and will remain difficult without substantial investments in DCFC along the interstates.

e. Range Anxiety

With increased technological advancements and station locators/application, range anxiety is easier to manage, however, the current lack of DCFC serves as a significant deterrent for both current and prospective EV owners.

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<sup>5</sup> <https://www.electrifyamerica.com/pricing>

## SEALS, SHAWN

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**From:** Joshua Cohen <jcohen@greenlots.com>  
**Sent:** Saturday, January 04, 2020 12:00 AM  
**To:** IDEM VWTrust  
**Cc:** SEALS, SHAWN  
**Subject:** Greenlots' response to Indiana Volkswagen Mitigation Trust RFI  
**Attachments:** Greenlots response to IDEM VW RFI.pdf

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Dear Mr. Seals:

Greenlots is pleased to offer the attached response to the above-referenced Request for Information (RFI) for the Indiana Volkswagen Mitigation Trust.

Please confirm receipt of this response, and please don't hesitate to let me know if Greenlots can provide further information or otherwise serve as a resource as IDEM develops its EV charging program.

Thank you for your consideration of these comments.

Josh

-----  
Josh Cohen  
Director, Policy  
Greenlots

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[www.greenlots.com](http://www.greenlots.com)



January 3, 2020

Indiana Volkswagen Mitigation Trust

Via email: [vwtrust@idem.in.gov](mailto:vwtrust@idem.in.gov)

Re: Greenlots' response to Request for Information (RFI) dated December 12, 2019.

Greenlots respectfully submits the following comments in response to the above-referenced RFI published by the Indiana Department of Environmental Management (IDEM) for the Volkswagen Environmental Mitigation Trust's Light-Duty Electric Vehicle Supply Equipment Program.

## About Greenlots

Greenlots is a leading provider of open-standards-based electric vehicle (EV) charging stations, turnkey solutions and accompanying network services. We are committed to providing open-standards solutions because it provides the greatest flexibility and access to cutting edge technology to our customers. Greenlots' customers include owners of North America's largest electric vehicle charging networks.

Our software, services and expertise empower industries across the globe to deploy EV charging infrastructure at scale. Our technology brings together the latest in EV charging and grid management software, connecting people in a safer, cleaner, and smarter way. Founded in 2008 and headquartered in Los Angeles, California, Greenlots' footprint spans across three continents with deployments in 13 different countries.

In January 2018, Greenlots was selected by Electrify America to provide network services for DCFC chargers on its electric vehicle charging network, which is the largest public, high-powered, fast-charging station network in North America. For this business, Greenlots was selected after a competition against all major US and global network providers. Separately, over the past 18 months, Greenlots has identified 140 sites and installed 900 L2 stations at those sites for Electrify America's workplace and multi-unit development program.

Greenlots has supported public entity and utility-owned charging programs with Indianapolis Power and Light (IPL), Duke Energy Florida, Georgia Power, Mississippi Power, Sacramento Municipal Utility District (SMUD), the City of Los Angeles, Seattle City Light, BC Hydro, Hawaiian Energy Company (HECO), Hydro One and Portland General Electric, among others. Greenlots partners, including Electrify America, have adopted the Greenlots "one network solution" approach, allowing a company complete visibility and control of all charging assets from a single system.

In Indiana, Greenlots provides the software management platform for a number of charging stations including a small number owned by IPL. In addition, Greenlots provides the software management platform for the Electrify America DCFC stations deployed in the state.

January 3, 2020

Greenlots' response to IDEM VW Trust RFI

Page 2

In January 2019, Greenlots was acquired by Shell New Energies, a subsidiary of Royal Dutch Shell. Shell purchased Greenlots after surveying the competencies and credibility of various North American electric vehicle charging companies.

Last October, Greenlots participated in IDEM's electric vehicle charging workshop in Indianapolis. We are pleased to provide the State with the following response to its request for information and look forward to further discussing its plans for vehicle electrification and EV charging infrastructure development.

## Questions and Responses

*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?*

All levels of EV charging are important and necessary to support EV adoption, but in terms of the value offered, publicly available DC Fast Charging offers the most value to the broadest range of users and market segments. When located along high-travel corridors with a relatively balanced geographic distribution, public fast charging can support both interstate travel and in-state travel by Hoosiers who may have access to charging at home or at work but may lack the range to travel from one region of Indiana to another. Such public fast charging also supports both existing EV drivers and enables adoption by new drivers who live in settings without convenient charging access. Examples include both residents of multi-family apartment complexes who lack the ability to install in-home charging, or rural residents who live in parts of the state where even the nearby population centers lack charging. Furthermore, unlike L2 charging, fast charging also supports a broader variety of EVs, from smaller light-duty passenger vehicles to delivery vans, work trucks and other larger vehicles.

In terms of cost, fast charging is also the costliest form of charging, as the RFI notes. Indeed, a 50 kW fast charger may cost 10 to 15 times as much as an L2 charger; the cost is generally double that again for a higher power 150 kW charger. Unfortunately, outside of a few narrow use cases, Greenlots is unaware of any business model to profitably deploy public charging today, especially fast charging. The return on investment simply does not exist at this early stage of EV adoption. Greenlots' perspective is widely shared by market analysts such as Wood MacKenzie Power and Renewables which writes:

January 3, 2020

Greenlots' response to IDEM VW Trust RFI

Page 3

"DC fast chargers encounter three fundamental cost issues that virtually assure they remain in the red today...the industry will need some combination of support to advance DC fast charging more broadly [including] significant public subsidies, grants and tax benefits."<sup>1</sup>

The business case for deploying public fast charging is particularly challenging in Indiana, where EV adoption lags behind a majority of other states. According to the Alliance of Automobile Manufacturers, battery electric vehicles (BEVs) and plug-in hybrid electric vehicles (PHEVs) accounted for only 0.12% of the state's 5,955,100 vehicles, and only 0.82% of the states 247,013 vehicles sold during calendar year 2018.<sup>2</sup> Nationally, this places Indiana in the bottom third of EV sales per capita (36<sup>th</sup> out of the 50 states and the District of Columbia).<sup>3</sup>

Because public fast charging offers significant value yet entails significant cost, it is well suited to a thoughtfully designed public funding program. Indeed, Greenlots believes that allocating the full \$6.135 million to public DC fast charging is the most impactful way IDEM can accelerate EV adoption and address a funding need that otherwise will go unmet.

Specifically, Greenlots recommends IDEM allocate the full 15% of its light duty EV infrastructure funds to support the Indiana Energy Association (IEA)'s proposed *Crossroads of America EV Interstate Corridor*. As the IEA describes in its comments to IDEM last year, this proposed plan will establish "a comprehensive network of DC fast charging stations along Indiana's major highways" that will "serve as a backbone for future growth of EVs in Indiana."<sup>4</sup>

*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.*

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<sup>1</sup> Wood MacKenzie Power and Renewables. August 2019. *The U.S. Senate's \$287 billion ATIA bill set to offer up to \$1 billion for EV charging*. Available at: <https://www.woodmac.com/reports/macroeconomics-risks-and-global-trends-the-us-senates-287-billion-atia-bill-set-to-offer-up-to-1-billion-for-ev-charging-360365>

<sup>2</sup> Alliance of Automobile Manufacturers. *Autos Drive Indiana Forward*. Available at: <https://autoalliance.org/in-your-state/IN/>.

<sup>3</sup> *Ibid*, and Atlas EV Hub. Available at: <https://www.atlasevhub.com/materials/market-data/>

<sup>4</sup> Indiana Energy Association. March 29, 2018. *IDEM's Draft Framework of the State's Beneficiary Mitigation Plan Comments of the Indiana Energy Association*. Available at:

[https://www.in.gov/idem/airquality/files/vw\\_settlement\\_20180425\\_comments\\_02.pdf](https://www.in.gov/idem/airquality/files/vw_settlement_20180425_comments_02.pdf)



*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?*

Greenlots believes a comprehensive statewide network of public fast charging stations, such as the *Crossroads of America* plan envisioned by IEA, is the most effective way to leverage charging infrastructure to accelerate EV adoption and return value to the most communities across the state. However, no single government agency, private infrastructure provider or other entity has the interest and financial ability to establish such a statewide network on its own.

This need for cooperation with other partners is why the IEA's proposal offers so much value. The IEA's member utilities have service territories that cover every corner of the state; they have the local knowledge to effectively deploy infrastructure and manage the impact of charging on the grid; and, they have the financial and operational strength to provide ongoing maintenance and ensure the state's investment will be well managed.

For this reason, Greenlots recommends that IDEM both leverage and collaborate with Indiana's electric utilities to establish a statewide public DC fast charging network.

*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?*

Many market segments face unique challenges and barriers to EV adoption. However, as noted above, Greenlots believes the most effective use of Indiana's \$6.135 million portion of the VW settlement allocated to EV infrastructure is to collaboratively establish a statewide public DC fast charging network. This approach is the surest way to provide relatively even coverage across the state. If left to private market participants, not only will the pace of EV charging deployment be slow; it will fail to serve all regions and residents of the state in an even-handed way.

*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?*

As noted above, Greenlots recommends that Indiana prioritize its VW settlement funding to establish a public DC fast charging network along its highways.

*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)?*

As noted above, Greenlots recommends IDEM allocate 100% of the funding to DCFC, specifically to support a statewide public DC fast charging network along Indiana's highways.

*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)?*

In light of Greenlots' overall recommendation to support a statewide public DC fast charging network in collaboration with IEA and its member utilities, Greenlots recommends IDEM make the full funding available this year.

*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:*

January 3, 2020

Greenlots' response to IDEM VW Trust RFI

Page 6

- *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?*

Ample research indicates that availability of charging infrastructure – and particularly the *perception* of availability, which when lacking is frequently manifested as range anxiety – is a key driver of EV adoption. To cite one of many examples, a recent McKinsey report cites range anxiety and access to charging as two of the top three concerns holding back EV adoption.<sup>5</sup> Greenlots views both of these concerns as two sides of the same infrastructure coin – availability and perception of availability.

Greenlots believes that a statewide public DC fast charging network, especially one announced and implemented in a coordinated fashion by IDEM, the IEA and the state's electric utilities – and supported by other key entities such as the Indiana Utility Regulatory Commission (IURC) – is the most effective way to address both availability and the perception of availability.

Greenlots thanks IDEM for inviting input through its RFI and is pleased to offer this perspective. We look forward to continuing to serve as a resource to IDEM as it further develops its EV charging program for the benefit of all Indiana residents.

Sincerely,

Josh Cohen  
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<sup>5</sup> McKinsey & Company. January 2017. *Electrifying insights: How automakers can drive electrified vehicle sales and profitability*. Retrieved from: [https://www.mckinsey.com/~/media/McKinsey/Industries/Automotive%20and%20Assembly/Our%20Insights/Electrifying%20insights%20How%20automakers%20can%20drive%20electrified%20vehicle%20sales%20and%20profitability/Electrifying%20insights%20-%20How%20automakers%20can%20drive%20electrified%20vehicle%20sales%20and%20profitability\\_vF.ashx](https://www.mckinsey.com/~/media/McKinsey/Industries/Automotive%20and%20Assembly/Our%20Insights/Electrifying%20insights%20How%20automakers%20can%20drive%20electrified%20vehicle%20sales%20and%20profitability/Electrifying%20insights%20-%20How%20automakers%20can%20drive%20electrified%20vehicle%20sales%20and%20profitability_vF.ashx)

## SEALS, SHAWN

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**From:** Alex Patrevito  
**Sent:** Friday, January 03, 2020 11:23 AM  
**To:** IDEM VWTrust  
**Subject:** EV Infrastructure

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IDEM,

I am a private citizen and electric vehicle owner (2016 Chevrolet Spark EV) and would like to weigh in on the use of the VW settlement funds for EV infrastructure.

I live in Danville, IN and there are \*zero\* DC fast chargers available to charge where I live. I think there are none at all in Hendricks county, nor the surrounding area (except on the Indy north side). There are very few Level 2 chargers as well.

This is a significant barrier to entry for folks to buy and use EVs in Indiana. I believe we need to invest significantly in DC fast charging across the state (particularly with the CCS / J1772 standard). I am able to use my EV for local use only because I can't make it to see family up in NW Indiana. And co-workers and others I talk to also have family spread out in the state, and they can't tolerate the limited range. Electricity rates are consistent and reasonable, which makes the costs of car charging predictable.

We need DC fast chargers along our interstates and major highways, and (at a minimum) Level 2 chargers available for use at as many government facilities and parks as possible. EVs will continue to increase market share and demand for them will only increase, with many models hopefully being made in Indiana. We need the infrastructure to be in place to be a part of this growth. I know that my wife's next vehicle will be an EV, and once my lease is up on my truck it will be replaced with an EV as well (in 2022-2024). We hope the infrastructure is there. Thank you!

Best wishes,  
Alexander Patrevito

## SEALS, SHAWN

---

**From:** Ignacio EDLM  
**Sent:** Friday, January 03, 2020 11:15 AM  
**To:** IDEM VWTrust  
**Subject:** Regarding Electric Vehicle charging infrastructure in the State of Indiana & the VW settlement fund usage

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To whom it may concern,

As an Electric Vehicle (EV) enthusiast, as well as proponent of technological advancements that are more energy-efficient and less polluting, I am convinced that supporting the development and proliferation of appropriate "refueling" (that is, recharging), infrastructure on this no longer so nascent segment of the transportation industry is pivotal. While our state is prominent in the transportation industry with the significant representation by the likes of Cummins, Inc., Allison Transmission, Subaru, Honda, and numerous other vehicle manufacturers in the Internal Combustion Engine (ICE) space, the reality is that most if not all individual passenger, public transportation, recreational, off-road, heavy-duty, short-haul and long-haul vehicular manufacturers have incorporated or are in the process of incorporating hybrid (ICE+EV, or Plug-in Hybrid – aka PHEV), or full EV offerings in their lineup or in their near-range horizon. With major announcements by The Ford Motor Company (Ford) under the Mustang® brand of a full EV, alongside the rapid rise of popularity of offerings by Tesla Motors, and prior full EV and PHEV by various major manufacturers, including Ford, General Motors (GM), Honda, Toyota and several others, it would be foolish to believe that lacking an open refueling infrastructure would be beneficial for Indiana constituents and visitors. Car rental companies, such as Avis and Hertz already offer PHEV and EV options in their lineup, as they recognize that their clientele want options that are both low cost and high efficiency, and have an increasing awareness of environmental considerations of other types of ICE vehicles. And, in farming equipment, John Deere is rapidly adopting electrification into their power-trains for such types of equipment. Cummins has made similar announcements for heavy-duty engine technology and many other companies are adopting PHEV and EV strategies in a rapidly evolving industry and customer preferential transition underway.

Statistics from Bloomberg NEF and other reputable research agencies, as well as from U.S. Federal Government statistic bureaus indicate that the transition to EVs is very likely to accelerate and represent a very significant component of the market and operating base of vehicles by 2030, and more so by 2040 and 2050. Currently, across the state of Indiana, however, one can rely only on Tesla Supercharger stations as a Tesla Motors vehicle operator, as those are proprietary to that brand of vehicles. Otherwise, there are scant offerings found at places like the IKEA store in the City of Fishers, a couple of charging ports at shopping centers like Fashion Mall at Keystone in Indianapolis and Clay Terrace shopping center in Carmel, and sporadic others in some retail and office outlets, but it is far from a standardized infrastructure people can rely upon. Plus, given these are offerings by unknown brands, and very difficult to find, makes it for an effective unreliable condition for any PHEV or EV operator to be expected to keep in mind. And, as was indicated in an news release on December 20, 2019, BlueIndy will cease operations by May 21<sup>st</sup>, 2020 as the joint venture between Indianapolis Power and Light (IPL), and its French industrial partner did not meet anticipated financial targets to remain viable. This means that while those installed stations will remain in place, it is unclear whether they will be utilized by EV and PHEV operators or also ripped out of the ground.

The reality is that high-output chargers such as those found at Tesla's network or in the BlueIndy infrastructure are expensive, costing \$75,000-\$110,000 to install and commission. However, at Level-2, the costs drop significantly to under \$10,000. Furthermore, there is a recognition by both the transportation and electrical utility industry that this needs to be combined with at-home charging options. That said, it would be unadvisable to consider at-home charging the only solution or the predominant solution as there are significant gaps in the affordability of these options, as well as

the coverage across the multitude of modes in which people choose residential living that fits their lifestyle and income across our state. But, if we as a state do not act, we will lag in a market that is here to stay, which will also create downward pressures for vehicular manufacturers in the not too distant future to believe they have a welcoming and innovation-centric state for their operations, or for any businesses, domestic or foreign, to consider investing in our state, or to be an inviting place for people from other states to consider us as a choice state for them to make home or for tourists to visit it.

I thus urge you to seriously consider the opportunity afforded by the Volkswagen Settlement Funding afforded to the state, in excess of \$6 million dollars, to expand the options available to consumers and businesses alike, and to provide the likes of Duke Energy, IPL the affordances necessary to test out various business models that will be both attractive and affordable to consumers and constituents alike so that we can both lead and fully participate in the accelerating growth curve of this exciting industry to the economic benefit of our state and its citizens.

Thank you in advance for your consideration of my comments accordingly.

Sincerely,

Ignacio Espinosa de los Monteros, MBA

Indianapolis, Indiana resident, Hybrid vehicle owner and EV enthusiast (soon to be owner)

*Sent from my personal computing device. Please excuse any orthographical errors & be kind not to share and/or reproduce without my say, unless its content is public knowledge. Be advised that this message and all its contents are bound to confidentiality and protected in accordance to all applicable international, federal, state and local laws and regulations. Thank you.*

## SEALS, SHAWN

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**From:** Scott Bowers <sbowers@HEPN.com>  
**Sent:** Thursday, January 02, 2020 10:07 PM  
**To:** IDEM VWTrust  
**Subject:** Electric Vehicle Charging Infrastructure RFI Comments  
**Attachments:** Hoosier Energy IDEM EV Charging Infrastructure RFI Comments 1-02-20.pdf

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To Whom It May Concern,

Attached are comments from Hoosier Energy in response to the Indiana Department of Environmental Management and the Indiana Volkswagen Environmental Mitigation Trust Fund Committee request for public input regarding Indiana's electric vehicle charging infrastructure.

Should you have any questions in regards to our comments, please don't hesitate to reach out to me directly.

Thank you.

Scott

**Scott R. Bowers**

Vice President, Public Policy and Member Services

**Hoosier Energy**

2501 S. Cooperative Way

P.O. Box 908

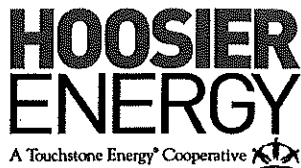
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January 2, 2020

Indiana Volkswagen Mitigation Trust  
[VWTrust@idem.in.gov](mailto:VWTrust@idem.in.gov)

To Whom It May Concern,

In response to the Request for Information (RFI) from the Indiana Department of Environmental Management and the Indiana Volkswagen Environmental Mitigation Trust Fund Committee, Hoosier Energy respectfully submits the attached comments regarding the state's development of its electric vehicle-charging infrastructure.

These written comments are independent of and in addition to the comments submitted by the Indiana Utility Group, which Hoosier Energy is a member, in response to the RFI.

Should you have any questions or wish to discuss our comments in more detail, please feel free to contact Scott Bowers at [sbowers@hepn.com](mailto:sbowers@hepn.com) and (317) 476-0345 directly.

Thank you for the opportunity to share these additional thoughts on this important public policy matter.

Respectfully,

**Scott R. Bowers**  
Vice President, Public Policy and Member Services  
**Hoosier Energy**  
2501 S. Cooperative Way  
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The RFI seeks information on seven (7) topics. We restate the topics below and add our responses to each.

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?**

#### **Comment**

Hoosier Energy and our member co-ops believe that focusing on DCFC charging will be the most impactful use of the funds. DCFC chargers are more expensive and are therefore less likely to be built by private groups or businesses, especially in rural areas that currently have a small number of EV drivers. Using the money to increase the number of DCFC chargers will help fill a current gap in the state's EV infrastructure and help facilitate EV adoption statewide, and not just in metropolitan areas. Additionally, the large cost associated with DCFC charging infrastructure would be hard to justify in rural Indiana without the use of these funds.

A DCFC charging network along Indiana interstates would facilitate EV travel within and through the state with minimal range anxiety, which is a concern for rural EV drivers who may travel greater distances for work, shopping, entertainment, etc.

Using these funds to invest in L2 charging has its problems for rural communities. The investment would likely be concentrated in areas with greater amenities for people to take advantage of while waiting for their vehicles to charge (Urban areas). This could potentially lead to an underinvestment in rural areas. A DCFC network would provide a greater benefit to *all* communities in Indiana.

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 versus 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?**

#### **Comment**

No additional comments to make outside of the comments made by the Indiana Utility Group.

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?**

#### **Comment**

As the “Crossroads of America”, the state should ensure that a DCFC charging network allows easy access across the entire state to benefit all Indiana communities. Additional DCFC chargers may need to be installed in areas of greatest use, but statewide access is most important to serve the greatest number of EV drivers and encourage future EV adoption. With rural EV adoption growing from DCFCs within comfortable range of our Members, we believe that L2 infrastructure will grow organically within our communities.

As larger battery packs become more common in EVs, more large trucks with high towing capacity will be introduced into the market. These are the types of EVs that are likely to be adopted by many Members served by rural electric cooperatives. It will be important to have DCFC infrastructure located along Indiana’s interstates to facilitate charging needs of Indiana’s farming community as well as provide a benefit to all EV drivers traveling across the state.

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?**

#### **Comment**

The majority of EV charging occurs at home with a L1 or L2 charger owned by the EV driver and is adequate to cover most daily needs. We believe that a DCFC interstate charger network would be the most beneficial use of the funds with the greatest statewide impact, particularly for rural EV drivers who typically do not have the same access to public charging infrastructure as urban drivers. A DCFC interstate network would also ease range anxiety and encourage greater EV adoption across all Indiana communities.

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)?**

#### **Comment**

Hoosier Energy and our member co-ops believe that investing 100% of the funds into a statewide DCFC charging network will have the greatest impact in spurring future EV investment in the state and best serve the most people across a wide diversity of Indiana communities.

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)?**

#### **Comment**

No additional comments to make outside of the comments made by the Indiana Utility Group.

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?

#### **Comment**

Hoosier Energy and our member co-ops believe that there is a distinct difference in the needs of an urban vs. rural EV driver. When planning the use of the funds, consideration should be given to the needs of both groups. We believe the best way to have the broadest impact with the funds is to use them for a statewide DCFC charger network.

Hoosier Energy's Members' vehicle purchasing decisions are primarily driven by price and utility. As EV prices drop and the vehicles become more functional to rural needs, we expect our Members to increasingly adopt EVs if the correct public charging infrastructure is in place.

Some of our Members must travel long distances in order to even reach an Indiana interstate when commuting to work or for recreational purposes. Having the ability to quickly and conveniently charge at a DCFC charging station when they reach an interstate will be crucial to rural EV adoption and enable easier travel across the state.

## SEALS, SHAWN

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**From:** Brad Blackman  
**Sent:** Thursday, January 02, 2020 9:51 PM  
**To:** IDEM VWTrust  
**Subject:** RFI Input

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To whom it concerns:

As you know Tesla has been leading way with its private network, having a supercharging station with 150 miles anywhere in the USA.

So it is important to build out EV infrastructure to broaden the appeal for purchasing non-Tesla EVs. The VW Trust funds provides IN an excellent opportunity to do this.

I would support a complete DCFC infrastructure for all IN interstates and US 31 say from Greenwood up to near Michigan. The Indiana Energy Association has essentially proposed this. Any new BEV worth its salt will have over 200 mile range; back this down to say 80% charge to maximize battery life and at minimum you have 160 mile range. I say a spacing of DCFC 80-100 miles apart, with more of concentration in populated areas would be sufficient to establish a network. Allow for future growth in your planning even if funds don't exist today. I would try to leverage state funding with partners like utilities to maximize impact.

<https://indianaenergy.org/electric-vehicles/>

Don't know if state law allows this but seems like a great location for chargers would be in Interstate Rest Stops. Also may consider adding some at trucks stops where both cars and trucks could have access to. The Tesla semi should be available by 2021 if not sooner. Tesla vehicles can use adapters for to connect to other standards.

One of the bigger barriers EV face is with apartment/high-rise/condo dwellers where parking places don't lend themselves to electrical outlets. Certainly would be favor supporting L2 chargers for this segment. Need to work with landlords, perhaps there's some association you could work thru. Key message is having chargers will increase the appeal of their property. In Carmel and even now in Brownsburg there are high rise units with parking on the ground level. Again try to leverage resources. Also advocate for building code changes that require installing electric infrastructure during construction that would allow for L2 chargers to be added later. Thinking of installed conduits and room to add necessary breakers in panels.

Finally, for better health for all Hoosiers Indiana needs to promote energy portfolio standards for electrical production.

Best Regards,

Brad Blackman

**SEALS, SHAWN**

---

**From:** Mark/  
**Sent:** Thursday, January 02, 2020 9:05 PM  
**To:** IDEM VWTrust  
**Subject:** RFI VW Trust, Electric Vehicles  
**Attachments:** EV response.pdf

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Please see the attached.

Mark Smucker

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:

Mr. Shawn M. Seals

Indiana Department of Environmental Management (317) 233-0425

SSeals@idem.IN.gov

*I didn't realize that you had asked for answers to specific questions. In reviewing them, I've not revised my initial response because it speaks more to what EV drivers are encountering out there, which I think may be more helpful than adding my "vote" to answer more specific technical questions. EV drivers' EXPERIENCES may be the things most important to which you might respond, especially given your relatively limited resources.*

### **Respondents to the VW Fund RFI:**

Mark Smucker, MD: Retired physician. An early adopter of Electric Vehicle transportation, Mark acquired a new Tesla Model S in December, 2013. After 6 years and 130,000 miles, he remains fond of his car and unwilling to trade it for anything else.

Adam Thada: Director of Ecological Relationships at Ancilla College, Plymouth, IN. He has spearheaded the college's move towards sustainability, and towards an EV motor pool. His experience with non Tesla EVs has given him a different perspective on the state of Electric Vehicle transportation. His blog: <https://ecology.phjc.org/index.php/author/athada/>

*Adam responded separately to the questions in your RFI, but his response to my comments is included below.*

### **Mark Smucker's response**

#### **Our experience:**

An early adopter of electric driving, my wife and I bought about the 25,000th Tesla Model S, delivered in December, 2013—6 years ago. We have driven this 130,000 EV miles since: routine daily driving, shorter trips to nearby cities and states, and long trips as far as TX, FL, KS, and New York.

The car had a total range on full charge of 265 miles initially, but that was revised to 244 miles with evolution in software.

Our driving routine is unchanged from before the EV; we average exactly the same number of miles per year we did with our last 2 ICE cars, both Cadillac Model CTSs. We traded those at

about 100K miles, but this car is holding up much better than they did and we plan to keep it indefinitely.

**The picture for the Tesla EV driver has evolved over time.** From the beginning, however, there has been PlugShare and similar apps that demonstrate where chargers may be found. Early on we focussed on how we would make "long haul" trips which were "no-brainers" in ICE vehicles but challenging in an EV.

How would we make it from town to town when we travelled? We were worried just how low we could run the battery without winding up "dead" at the side of the road. I bought a folding bicycle for the car that would allow me to charge the car at one place and ride the bike to somewhere else, perhaps a nearby motel for the night after plugging in elsewhere. Once, in Southern Indiana, we plugged in at a vacant RV fairground site at about midnight. There was a party going on in a nearby building. We slept in the car for several hours while we got enough charge to go to the next Supercharger. In Northern Michigan, we found an inapparent 240 v. plug in in a local park mapped on PlugShare by an earlier user. Daylight still, we wandered around town and had lunch during the several-hour charge.

Once, we missed a toll road exit for a nearby supercharger, and had to continue to the next exit and navigate back. Very low on power, we did what we were told would work in a pinch: Drive slowly. We drove on the shoulders at 35 mph, and an hour later made it to the Supercharger with minus 3 miles left on the battery. Another user we met there told us he had driven his Tesla to minus 25 or 30, circling around the charger parking lot, just to see how far he could go.

We now travel from Tesla Supercharger to Supercharger. This has become a "no brainer" as numbers of chargers has exploded over the past 6 years. The most time-efficient stops are laid out for the entire trip at the beginning of the trip by the Tesla computer. We found that the computer is surprisingly accurate at predicting range, length of stops, and the most efficient way to save time while driving/charging on long trips. If we "aim" to have 10% left in the battery predicted by the computer to the next charger, we will be fine. Even 5% is acceptable, but we will be cautioned to drive more slowly by the computer in order to extend our range. We typically drive at 70 mph with speed control engaged, but if we are worried about range we can cut our speed to 60 or even 55 mph with little loss of time and encouraging increase in range.

### **Some considerations:**

#### **A. Long distance personal driving: Should Indiana invest in a vehicle charging network?**

In our Tesla, 85% of our miles are completely "local," charging at home while we sleep and requiring no public charging. Another 5% are to a distant town, where we must plug in to be able to return home but expect to spend several hours at that destination during which even a slow charge (4-5 hours) is not a problem. 5% are to distant locations requiring intermittent charges to get there. In those few instances, a fast charger is required.

The future will be electric cars whose batteries are cheaper and whose range is generous, even if somewhat less than the range of a 20-gallon tank of gas. With a projected range on the upcoming Tesla Cybertruck of 500 miles, drivers will **virtually never need to charge anywhere but at home** while they sleep. Spending 4 hours to charge, as is necessary at most Level 2 chargers and current battery capacities, remains too slow for a traveler moving toward a more distant destination or an employee paid by the hour.



The network of Tesla Superchargers is convenient and heavily used by Tesla drivers. Perhaps Indiana should replicate this network for everyone else who wishes to drive long distance in some other manufacturer's car.

Should Indiana act alone? What about neighboring states? Will chargers in Indiana help you if you intend to spend the day shopping in Chicago, Louisville, or Cincinnati? Should Indiana invest in a network of chargers using today's technology? If one intends to take a longer trip, they will need access to fast charging (30-45 minute duration) in whatever direction they head if they exceed their battery range. But, the technology and type of "hookups" for rapid charging are evolving. **Perhaps the VW fund could devote funds to establishing an industry standard for fast charging technology, rather than paying to install the few chargers the VW fund could pay for.**

### **B. What are charging problems that could be solved inexpensively by a statewide network? The problem of the "blocked" or "inoperative" charger**

There is nothing more frustrating to an EV driver than being "low" on charge and being unable to charge. The chargers at the South Bend UP Mall tell an interesting story:

The Tesla chargers are frequently in use by long distance travelers. Tesla chargers are located at the back of the parking lot at UP (and wherever they are installed), far from any building entrance. Perhaps because of their location well away from where others wish to park, they are rarely used by non-EV cars.

In contrast, the UP Mall non-Tesla EV chargers seem infrequently used—but the spaces are next to the mall entrance are often occupied by non-EVs. "Rarely used" may be because there are now very few EVs; those which exist probably do not exceed their range when travelling to the mall and back home.

Instead, these chargers are often blocked by non EVs wishing to park close to the mall entrance. The problem is no less if the blocking vehicle is an EV which is no longer charging. EV charging spots are not regulated by mall security, who tell those who complain that this is "not our problem." To the non-Tesla driver who comes in with a very low battery, this is frustrating if not even dangerous to the vehicle's battery system. This frustration makes the purchase of an EV untenable for those who do not buy Tesla.

The problem of blocked fueling locations is not new. A gas station won't allow you to park your car blocking a pump. This rarely required enforcement because of self enforcement by drivers all of whom share an interest in being able to stop next to a fuel pump to refuel. EVs are different, in that most drivers don't care about electric charging and some seem to even resent the presence of electrically-fueled vehicles.

Tesla resolves this problem on its chargers, available only to Tesla owners (1) by installing chargers where no one would care to park if they didn't need to charge, and (2) by imposing fines to the Tesla EV owner's credit card, which one must supply if they wish to charge, for stays beyond the time necessary to charge your car—whether you are getting free charging or are paying for your charge. Your car's charging is monitored automatically, and warnings are issued by internet messages to your cellphone app warning of a potential fine when your car is nearly charged.

**Perhaps the VW fund could be used to develop a standard system to encourage drivers not to block available chargers with non EVs or with already-charged EVs. Perhaps the**

**fund could promote charger placement further from business entrances. Perhaps the fund could require businesses receiving their funding to supply a written agreement with local law enforcement to look up owners of offending cars and give them a polite call asking if them to move their cars. Signs instructing EV drivers how to contact authorities would also deter some non-EV drivers from parking there. (The signs could also refer drivers to a 24 hour assistant if if the charger is non-functional).**

**C. Should the VW Fund focus on long distance trucking?** Shipping by truck has replaced horses, wagons, and (largely) trains. Our economy has evolved into distribution of goods made elsewhere. Efficient shipping, whether defined by low cost or low CO2 production, is going to continue to increase. Long distance trucking is ideal for electric vehicles for many reasons:

1. Truckers must stop periodically and have down time for reasons of fatigue and alertness and the law. These stops are ideal times to charge the truck for the next stretch of road.
2. Trucks are heavy, and can tolerate heavy loads of batteries. These heavy loads of batteries will be necessary for the foreseeable future.
3. Charge times will probably need to be in the range of an hour even with future technology because of the amount of power needed to run a large truck.
4. Whether or not trucks become driverless, trucks will still have to stop to refuel along the way.
5. Diesels getting 5 mpg emit a lot of carbon, lowered by EVs, could make a huge dent in environmental CO2 emission.

#### **Adam Thada's Response:**

*The following are an edited set of emails discussing the state of electric vehicles from the standpoint of an EV supporter who has pursued more affordable options than Tesla. Unfortunately, the more affordable options have drawbacks, particularly with regard to ease, availability, and rapidity of recharging.*

The author of these emails, Adam Thada, is the Director of Ecological Relationships at Ancilla College, Plymouth, IN. Follow this link to his blog:  
<https://ecology.phjc.org/index.php/author/athada/>

Mark,

It's not yet clear where EVs go from here.

This round of funds (*from VW Mitigation Trust*) is not eligible for private home-based charging or commercial trucks, so we can eliminate those concerns.

I think your comment about apartment charging is good. However, I don't see it as a bottleneck at this point, the reality in Indiana is that new car buyers I have to think are largely home owners (with a plug), most renters (outside of urban professionals) being in the used car market. If we are looking to influence the purchase of **new** vehicles over the next 1-10 years, I don't think apartment buildings are a big priority. The EV market is still only at 2%... we need to grow that to 10% then momentum will start to take over. Also, landlords have a revenue stream, and can cashflow cheap Level 1 charging across the parking lot that will suffice for **many**.

I suspect because of your experience with a manufacturer who has solved the long-distance charging "problem", you don't see it as a need, but I disagree with you on long-distance charging pretty strongly.

500 mi batteries will either require lots of Li\_ION batteries, which will mean big bucks. Costs are improving 7% a year, but that's incremental, not revolutionary. Solid state batteries are still years away. Most drivers will find that 200 mi range is sufficient for 95% of driving... and only need >200 mi for a few trips per year. It doesn't make too much sense to haul around all that extra lithium to be used just a couple times/yr. More efficient to build a network of highway chargers. Some will opt for big batteries out of convenience, but I think the masses will look hard at the \$\$ \$ and choose a 200 mi range and, say, save \$6K on the purchase.

You don't have "range anxiety" because you have experience driving EV. Car buyers want the freedom of the open road... even if they almost *never* road trip, they want the ability. Rational or not, that's that. And I have to tell you that the non-Tesla DCFC landscape is **ABYSMAL**. Filter on Plugshare for CHAdeMO and CCS in Indiana and start clicking around. See where chargers are, when they are open, and who has checked in lately. You are often looking at a single plug, only 50kW, often broken, with nothing else around for some distance. A network without reliability & redundancy is useless. I can't see putting my family in an EV in January for a road trip unless I know there are multiple options. I know you and I are willing to drive to a dark RV and sleep in our cars... but that won't get us to 10%+ of the market for the energy rEvolution.

Consider also that there are fleet vehicles and people with low-EV-education. I went with a plug-in hybrid at work for this reason... I didn't want to get calls of people stranded on the side of the road, or waiting an hour to charge. Esp if you are a business going by billable hours... you probably won't pay people to do that. As we expand from enthusiasts/early-adopters, people are less forgiving. And they need a positive experience from day 1... or else they'll be turned off.

With confidence of a fast-charging network, I just don't see no-gas EVs going mainstream. "Where's the chargers?" they'll say.

Now... fast-charging. Tesla solved this by building in the infrastructure into the cost of the car. But if you isolated the Supercharging network as a business, I suspect the electricity revenue from kWh sold would not cover costs... it "loses" money. Maybe not Tesla, because they are smart, but consensus view elsewhere is that there is **NO** business case for stand-alone fast chargers. You're looking at **\$200,000** for a 2-plug fast charger. With 80% of EVs charging at home... you have to make up all that expense with infrequent trips. You'll have huge congestion on holidays... then nobody charging the following Wednesday during business hours. Also, consumers will scream when you charge more \$/kWh than the electric company... they don't give a damn about the \$200,000 you spent. To say nothing of a profit margin. It's a classic "market failure" and the government has to step in somewhere to incentivize... unless the big automakers form a consortium, or buy-out the Electrify America network.

Maybe in some markets, a fast charger could be a loss leader, where shoppers run into the grocery store for a few things.

I'm rambling, but let me end with an anecdote. I had a day trip up to Grand Valley State U. the other month... ~130 mi distant. I had a 150 mi LEAF. I would arrive around 11:45 AM, leave for an ecological field trip, then return around 5:00 PM for the trip home. I weighed my options. **NO**

fast charging was available on the route north. If I drove really slow, I could arrive on a single charge. GVSU even has 4 level 2 chargers... however per the ChargePoint app, I saw that they were very frequently full. If I were to arrive and they were all full... I would still have to go on my field trip. I'd be back at 5:00 PM with a battery with 10 mi of range and a very long night ahead. All of those considerations led me to take my plug-in hybrid, with it's 20 mi battery + ICE. Granted, the new minimum will soon be ~200 mi range, but let's say it's Dec - Feb and it's functionally a 135 mi car. .

Chargers need to be ubiquitous. It doesn't even necessarily matter if you use them very often. It doesn't matter that we might even call that irrational. Did everyone need to ditch sedans so they could drive around in faux-SUVs (aka crossovers)? No, but they did. So now we need crossover EVs. We could've had a perfectly good VW hatchback coming next year, but we won't. The perception of having lots of options will drive the confidence to buy.

I won't buy a brand new battery-only car right now unless it has a "T" on the badge.

Others will pick the gateway drug... a plug-in hybrid. The Rav4 PHEV will sell like hotcakes in 2020.

Well, you've wasted another perfectly good hour listening to Car Talk. Hopefully I'll catch you at church after the service Sunday if I'm not doing GAP time.

Note 2

I think I had also detailed to you my first longer-distance electric ride down to Indianapolis last March. Cold and nerve-wracking. Holding off on the defroster so I wouldn't run out of juice. I had 3 fast chargers that I could have used... only 1 was in service on the day of my trip. I then went to plug in downtown Indy, where you think there would be plenty of Level 2 options. Again, both L2 places I tried were inoperable.

Grab the keys to any non-Tesla. It's not a pretty place out there.

Note 3

Sorry, I didn't see a text from you.

Here's all my work with EVs at work (<https://ecology.phjc.org/?s=electric+vehicle&submit=Search>) we have a Honda Clarity (PHEV) and a LEAF (BEV). LEAF range is only 150 mi, it's fast-charger is "CHAdemo".... essentially the only model that uses it anymore.

Note 4: Yup, ongoing upkeep & customer service (*of a level 2 charger*) is a problem. I made myself responsible for our charger... not sure who will maintain it after I'm gone.

That's why I'm perfectly fine with free, non-networked "dumb" Level 2 chargers. Pick a quality brand. It just works. The cost of the electricity is really minimal compared to much else about a business.

With the LEAF: I needed a "gateway" EV for people... we have lots of local/regional trips, so the LEAF sits right outside the transportation office door on the charger - high visibility. It is easy to use, quiet, quick, and "normal" ... the only difference is people just have to figure out how to plug it in (and if they can't do that, well... they probably shouldn't be trusted to drive on public roads). I have pushed the envelope with the vehicle in regards to highway driving + fast charging... but no one else has, and I'm okay with that. I want their first experience out of the gate being 100% positive, no compromise experience, and they have it. It was driven ~9,000 miles this calendar year. Ok, in an ideal world, a more proactive transportation manager would have utilized it more, but I'm going to chalk it up as a win. She (the manager) was in fact antagonistic to the initiative, and management was unwilling to hold her to job performance goals... so with ALL of those headwinds, I'm very happy. No one was stranded, or over promised anything.

NOW: there is a 50/50 chance the college will get a Model 3 next year. That will be fun! The President wants to go full-electric, and wants it to be a motor pool car that people can take across the region. I said that anything other than Tesla is going to evoke massive complaints. Model 3 total cost of ownership should be impressive, not to mention ability to add/delete users, have a fully-trackable vehicle, camera recording of incidents, etc.

Charge on,

-Adam-

## SEALS, SHAWN

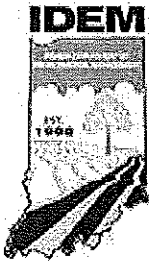
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**From:** INFO  
**Sent:** Thursday, January 02, 2020 1:24 PM  
**To:** SEALS, SHAWN  
**Subject:** FW: Volkswagen Mitigation Trust and building EV infrastructure

Hi, Shawn!

This came through infomail. Let me know if it should go to someone else instead.

Thanks!



Barry Sneed  
*Public Information Officer*  
Indiana Department of Environmental Management

100 N. Senate Ave, IGCN, Suite 1313  
Indianapolis, IN 46204  
On Call Contact Information:  
(317) 232-8596  
Toll Free (800) 451-6027  
[media@idem.IN.gov](mailto:media@idem.IN.gov)

**IDEM values your feedback.**  
Please take two minutes and complete this brief survey.



**From:** [anonymous@idem.in.gov](mailto:anonymous@idem.in.gov) [mailto:anonymous@idem.in.gov]  
**Sent:** Thursday, January 2, 2020 12:03 PM  
**To:** INFO <INFO@idem.IN.gov>  
**Subject:** Volkswagen Mitigation Trust and building EV infrastructure

### Comments or Questions:

Thank you for the opportunity to comment on the Volkswagen Mitigation Trust and how best to improve EV charging infrastructure. I own three EVs (and no internal combustion engine cars). I have a home charger and have no challenges in daily driving. I need EV charging infrastructure for longer trips. Ideally, Level 3 chargers (both CHADeMO and CCS) should be available at regular intervals (ideally every 50 miles) along the interstates and major state roads. People on road trips need fast charging. Level 2 chargers should be available at destination attractions and transit points where people will stay a long time. Some examples: 1. I-65 Indianapolis to Chicago—I recently travelled this route. There are chargers clustered in Indianapolis and Chicago. During cold weather one also needs chargers between these cities. As of now only Lafayette has Level 3 chargers near I-65. This is a good location if traveling to Indianapolis because the car battery will be sufficiently depleted to allow efficient charging. However, when traveling to Chicago the location is sufficient but not ideal. The car battery (I have an EV with a 60 kWh battery) is still 3/4 full. I need the extra bit of charge to have a cushion to make it to Chicago during cold weather or heavy traffic, but charging is slower as the

battery fills up. Ideally there would also be EV charging in Merrillville. 2. The Indiana Dunes area—there are Level 2 chargers at the South Shore Line train station and in the Valparaiso parking lot, which make sense. However, the infrastructure for this key attraction, which is not near the interstates, should be strengthened. Key attractions and transit hubs, such as the state park and national park and the town centers, should have a combination of Level 3 and Level 2 charging. This would encourage visitors from out-of-state. 3. Attractions that draw from a wide region—the Children’s Museum in Indianapolis, for example, would benefit from a combination of Level 3 and Level 2 charging to meet the needs of these visitors. Fortunately, the infrastructure for electricity already exists, including at existing travel plazas. It will be important that the Level 2 and 3 chargers meet the needs of ALL EV drivers. Specifically, Tesla chargers can be used only by Tesla drivers. Some charge networks require passwords and accounts for use. It will be important to install CCS, CHADeMO, and J1772 that can be used by any EV owner with a credit card.

**Name:**

Amy Beth Kressel

**Affiliation:**

**Occupation:**

**Street Address:**

**City:**

**State:**

IN

**County:**

Marion

**ZIP/Postal Code:**

**Phone:**

**Fax:**

**E-mail:**

**How did you find out about IDEM?**

## SEALS, SHAWN

---

**From:** INFO  
**Sent:** Friday, January 03, 2020 8:55 AM  
**To:** SEALS, SHAWN  
**Subject:** FW: Volkswagen Mitigation Trust — comments

Another comment.

Thanks!



**Barry Sneed**  
*Public Information Officer*  
Indiana Department of Environmental Management

100 N. Senate Ave, IGCN, Suite 1313  
Indianapolis, IN 46204  
On Call Contact Information:  
(317) 232-8596  
Toll Free (800) 451-6027  
[media@idem.IN.gov](mailto:media@idem.IN.gov)

**IDEM values your feedback.**  
Please take two minutes and complete this brief survey.



**From:** [anonymous@idem.in.gov](mailto:anonymous@idem.in.gov) [mailto:[anonymous@idem.in.gov](mailto:anonymous@idem.in.gov)]  
**Sent:** Friday, January 3, 2020 12:58 AM  
**To:** INFO <[INFO@idem.IN.gov](mailto:INFO@idem.IN.gov)>  
**Subject:** Volkswagen Mitigation Trust — comments

### Comments or Questions:

I appreciate the opportunity to write about EV charging infrastructure, and how it can be improved. I live in Indianapolis; my family have only electrical vehicles (since the demise of our Prius). We recently drove to Chicago, and were able to charge on the way at Lafayette's Walmart. In the past, we have made the whole trip (without charging on the way) but this was a winter trip. In the winter the batteries don't go quite as far. We might have made it, in our Chevrolet Bolt, but we didn't want to take the chance. So we charged on the way in Lafayette. Ideally, we would charge farther along the journey. The more depleted the battery, the faster the battery charges; the more full the battery, the slower it charges. So if the charging station was closer to Chicago we would have gotten more charge for our money (the fee is per minute, not per kWh). When we had gasoline cars, we would sometimes travel across the country, to New Jersey and New York to see family. Now, with our electric vehicles, and the lack of sufficient infrastructure, we have rented a car for the trip. The money we save on gasoline during the year pays for these occasional car rentals. But the consequence is our eighteen year old daughter, who now has her driver's license cannot help drive on the trip. (Drivers in rental cars must be at least twenty-one years old.) So please understand we need more charging stations on I-65, all the interstates, and the major state roads in Indiana, and across our country. Thank you for listening.



**Name:**

Bruce J. Pfeffer

**Affiliation:**

**Occupation:**

**Street Address:**

**City:**

**State:**

IN

**County:**

Marion

**ZIP/Postal Code:**

**Phone:**

**Fax:**

**E-mail:**

**How did you find out about IDEM?**

Other

## SEALS, SHAWN

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**From:** John Lurkins  
**Sent:** Thursday, January 02, 2020 10:47 AM  
**To:** IDEM VWTrust  
**Subject:** RFI--Light-Duty Electric Vehicle Supply Equipment Program

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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 Revision Date: 12/12/2019\_SMS Level 2 (L2) chargers with slower charging, but with lower cost and more charging locations?

100% of the funds should be spent on DCFC/L3

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 lowercost 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?

Fund at the highest possible levels for each location. I do not see the benefit of funding locations not made available to the public.

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?

Focus should be placed on maximum distance between DCFC locations.

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?

100% of the funds to go towards DCFC along highways. 0% of the funds should go towards L2 at workplace, shopping, destination, or multi-unit housing. Having L2 at the above mentioned locations is a nice perk; it is not a primary reason people shop, work or live at those 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)?

100% DCFC; 0% 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. Revision Date: 12/12/2019\_SMS • 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)?

1 Round—100% 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?

We are currently a two car household. One vehicle is an EV with only 80 miles of range. However, this vehicle meets all of our daily driving needs to get to and from work, drop the kids at school, run to the grocery store, basketball practice, etc.

Our second car is gasoline-powered and this vehicle is also used for our daily driving needs, to and from work, school, grocery store, etc. This is the vehicle we use for long trips. We would strongly consider replacing this vehicle with an EV if a DCFC charging infrastructure was in place.

Thank you,

John Lurkins

## SEALS, SHAWN

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**From:** Evans, Elizabeth Paige  
**Sent:** Thursday, January 02, 2020 11:35 AM  
**To:** IDEM VWTrust  
**Subject:** RFI

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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 Revision Date: 12/12/2019\_SMS Level 2 (L2) chargers with slower charging, but with lower cost and more charging locations?

Funds should only be spent on DCFC/L3

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 versus L2 charging equipment, there is also a balance between funding at the highest possible level for low-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?

Fund at the highest possible levels for each location.

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?

Focus on maximum distance between DCFC locations.

3. 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?

100% of the funds to go towards DCFC along highways.

4. 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)?

DCFC-100%

5. 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. Revision Date: 12/12/2019\_SMS • 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)?

100% funding to DCFC in a single round

6. 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?

I do not currently own an EV. I would like to purchase an EV for my next vehicle in order to save money on operating costs and pay off my student loans. I feel that my daily charging needs could be met, however, the highway infrastructure does not exist to take long trips.

**Betsy Evans, B.S.**

**SEALS, SHAWN**

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**From:** Adam Mohabbat <adam.mohabbat@evgo.com>  
**Sent:** Tuesday, December 31, 2019 5:58 PM  
**To:** IDEM VWTrust  
**Cc:** Colin Murchie  
**Subject:** EVgo Response to IDEM Request for Information | VW Funds Light-Duty EVSE  
**Attachments:** Indiana Appendix D LDV EVSE RFI EVgo Response 123119.pdf

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Hello,

Please find EVgo's response to Indiana Department of Environmental Management's Light-Duty EVSE Program Request for Information (RFI) attached.

If there are any questions or if we can be of further resource, please do not hesitate to reach out.

Best regards,  
Adam Mohabbat

**Adam Mohabbat**  
Market Development Manager  
(760) 505-8292 



December 31, 2019

Indiana Department of Environmental Management  
Indiana Government Center North  
100 North Senate Avenue  
Indianapolis, IN 46204

**RE: Request for Information - Light Duty Electric Vehicle Supply Equipment Program (RFP Development Framework)**

EVgo appreciates the opportunity to provide written comments in response to the Request for Information as the Indiana Department of Environmental Management (IDEM) develops its Light-Duty Electric Vehicle Supply Equipment (EVSE) program. EVgo operates America's largest public and most reliable EV fast charging network<sup>1</sup>, with more than 750 DC fast charging (DCFC) locations in 34 states and 66 metro markets nationwide. Today, more than 100 million Americans live within a 15-minute drive of one of an EVgo charger. EVgo looks forward to accelerating its deployments in Indiana upon successful implementation of its upcoming programs.

EVgo commends the Indiana Volkswagen Environmental Trust Committee (VW Committee) for making important strides in electrifying transportation in Indiana by prioritizing electrification and committing to utilize the full 15% allocation permitted by the national settlement towards Light-Duty ZEV Supply Equipment, or approximately \$6.135 million in Indiana.

As IDEM works to develop its upcoming program for light-duty under Appendix D for the State of Indiana, EVgo respectfully submits the following comments for consideration:

**1. Clarify funding allotments for DC fast charging (DCFC) and Level 2.**

Currently, IDEM and the VW committee have not decided how funding will be divided, if at all, between DCFC and Level 2. To ensure the share of each technology aligns with environmental goals, EVgo affirms that IDEM should clarify the amount of funding that will be reserved for each technology. This would be consistent with other states' approaches to Appendix D, including New Jersey's decision to dedicate \$7 million of its Volkswagen settlement funds to fast-charging infrastructure technology<sup>2</sup>, and North Carolina, who similarly devoted \$3.45 million of its first funding window to fast charging.<sup>3</sup>

Fast charging infrastructure is critical to reaching the state's increasing population of EV drivers and especially crucial to enabling electrification for drivers without reliable access to charging at home or in the workplace, residents of multi-unit dwellings who rely on public charging for the majority of their charging needs<sup>2</sup>, drivers utilizing key transit corridors, as well as light duty vehicle (LDV) fleets, including car sharing and ride sharing applications. The significantly higher cost of DCFC stations, as identified by IDEM, is warranted given the much larger number of vehicles that each DCFC capably serves.

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<sup>1</sup>U.S. Dep't of Energy Off. of Energy Efficiency & Renewable Energy, FOTW #1052, October 22, 2018: Four Networks Maintain Over 60% of Level 2 and DC Fast Charging Stations (Oct. 22, 2018), <https://www.energy.gov/eere/vehicles/articles/fotw-1052-october-22-2018-four-networks-maintain-over60-22343-level-2-and-dc>

<sup>2</sup> <https://www.nj.gov/governor/news/news/562019/approved/20190603b.shtml>

<sup>3</sup> <https://deq.nc.gov/about/divisions/air-quality/motor-vehicles-and-air-quality/volkswagen-settlement/vw-settlement-0>

2. **Focus charging infrastructure first in urban areas with high multi-family dwelling density to alleviate barriers to EV adoption.**

Urban areas with high density of multi-family dwellings often go without access to reliable home charging. In a report quantifying the gap in needed charging infrastructure to support EV adoption, the International Council on Clean Transportation places the number of apartment-dwellers who rely on public charging as high as 82%<sup>4</sup>.

Currently, IDEM states a dichotomy of charging equipment and uses cases in the RFI, with “DCFC along highways or L2 at workplace, shopping, destination, or multi-unit.”<sup>5</sup> EVgo urges IDEM to also consider public DCFC for use cases in urban areas and strongly recommends focus of charging infrastructure — specifically public DCFC which is able to deliver a high number of electrified miles— in urban cores to help alleviate the barrier of owning an electric vehicle when home charging is not an option. This ensures that multifamily communities and renters – not just homeowners – are able to charge an EV. Moreover, focusing DCFC in high-density areas also typically align with areas most affected by contaminants and poor air quality.

3. **Establish 50kW as the minimum for DC fast charging infrastructure, with “future proofing” as an eligible expense.**

A 50kW *minimum* power rating for DCFC is consistent with other programs across the country, including California, Virginia, New York, Washington, North Carolina, and other states. It cannot be emphasized enough that DCFC is not purely a corridor technology, but also one of urban lifestyle charging in many cases. This creates an important role for the 50kW charger, which delivers real fast charging capability (at approximately 3 miles driving range per minute of charge) with low capital requirements and significantly streamlined siting and approval due to lower power requirements than higher power charging.

By establishing 50kW as the minimum power rating, IDEM allows program partners to optimize the value of the settlement funding while delivering at charge rates that vehicles on the road can handle today.

However, if an applicant requests higher power charging, IDEM may consider a higher grant allocation for higher power charging, which will have higher costs. Additionally, EVgo also recommends that “future proofing” be made an eligible expense; this will allow for sites to be “upgraded” to higher power as vehicle battery and charging capabilities develop.

4. **Keep funding application windows continuous to accommodate a dynamic market.**

Rather than allocate all funding at once, EVgo recommends that IDEM continuously open funding windows in order to ensure constant development in the state and avoid any disruptions in the market. Pennsylvania and New Jersey are two states taking such an approach.<sup>6,7</sup>

It may even be advisable to “backload” funding into the future, with a significant but minority portion of funding allocated in the first year, with total budgets growing as EV penetration enables a smaller capital subsidy to be awarded as utilization expectations pick up more of a given project’s financials.

<sup>4</sup> International Council on Clean Transportation, *Quantifying the Electric Vehicle Charging Infrastructure Gap Across U.S. Markets* (January 2019), p. 9, [https://theicct.org/sites/default/files/publications/US\\_charging\\_Gap\\_20190124.pdf](https://theicct.org/sites/default/files/publications/US_charging_Gap_20190124.pdf)

<sup>5</sup> [https://www.in.gov/idem/airquality/files/vw\\_trust\\_request\\_for\\_information.pdf](https://www.in.gov/idem/airquality/files/vw_trust_request_for_information.pdf)

<sup>6</sup> <http://www.depgis.state.pa.us/DrivingPAForward/>

<sup>7</sup> <https://www.drivegreen.nj.gov/plugin.html>



**5. Develop balanced, quantifiable scoring criteria to score proposals.**

IDEM should develop scoring criteria that sends a signal to the market about which projects the state would like to see to meet its policy goals, and the relative balance between what can be competing priorities. EVgo has found that complete geographic coverage, for example, often comes at the funding expense of high utilization and environmental impact, and in turn, less-used chargers require higher subsidy.

The “gold standard” for this practice to date has been North Carolina, which developed a balanced rubric to assess applications, and uses transparent, third – party measures such as driving range to extant DCFC, and measures of environmental justice impact to assess what could otherwise be difficult criteria to develop towards.<sup>8</sup> EVgo highly recommends that IDEM review the North Carolina RFP as a best practice.

**6. Value, but do not specify, charging station locations in program RFP.**

While there are important considerations for IDEM to make in regard to charging equipment and charger use cases, EVgo recommends flexibility in the RFP guidelines for site locations of proposed charging stations. The private sector is well-equipped to carry out site selection and development, and in many cases has national host relationships that can be used to deploy at scale and meet the state’s public policy criteria.

**7. A letter of intent signed by a host customer should be considered sufficient for project applications.**

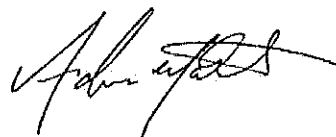
While EVgo does not advocate for funding programs that do not require developers to first identify a specific location for their equipment, a letter of intent should be sufficient to demonstrate site control in the case that the grant applicant is not also the site host.

Such a letter demonstrates site control while allowing all parties to execute additional contractual requirements after, not before, funding has been secured. EVgo has found that this is often preferred for site hosts, and a similar approach by Indiana will ensure that certain sites are not excluded due to additional onerous paperwork requirements signed before funding is certain.

**Conclusion**

EVgo thanks IDEM for the opportunity to provide input and commends the extensive work in moving transportation electrification forward in Indiana. As IDEM continues to develop its Light-Duty EVSE program, please consider EVgo as a resource. We offer ourselves as a continuing partner to usher in a new era of transportation innovation in Indiana.

Sincerely,



Adam Mohabbat  
Manager, Market Development  
[adam.mohabbat@evgo.com](mailto:adam.mohabbat@evgo.com)

<sup>8</sup> <https://files.nc.gov/ncdeq/Air%20Quality/motor/grants/files/VW/North-Carolina-Volkswagen-Settlement-ZEV-DC-Fast-Charging-RFP-Phase-1-061719.pdf>

**SEALS, SHAWN**

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**From:** Donald.Snemis@icemiller.com  
**Sent:** Thursday, January 02, 2020 10:39 AM  
**To:** IDEM VWTrust  
**Cc:** Frederic A. Mills (fred.mills@aes.com)  
**Subject:** RFI Response  
**Attachments:** SEB892KC120010311520-c.pdf

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To Whom It May Concern:

Attached is a response to IDEM's December 12, 2019 Request for Information regarding Light-Duty Electric Vehicle Supply Equipment on behalf of Duke Energy Indiana, Hoosier Energy, Indiana-Michigan Power, Indiana Municipal Power Agency, Indianapolis Power & Light Company, NiSource, Vectren, and Wabash Valley Power Association. Please direct any inquiries to Fred Mills. Thank you.

**IceMiller LLP**

**Donald M. Snemis**  
Partner  
office 317-236-2341 cell 317-652-3012  
Ice Miller LLP  
One American Square, Suite 2900  
Indianapolis, IN 46282-0200  
<https://www.icemiller.com/people/donald-m-snemis/>

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Thank you.  
ICE MILLER LLP

\*\*\*\*\*  
\*\*\*\*\*

January 2, 2020

Indiana Volkswagen Mitigation Trust  
[VWTrust@idem.in.gov](mailto:VWTrust@idem.in.gov)

**RE: IDEM's Request for Information dated December 12, 2019**

To Whom It May Concern:

I write in response to IDEM's December 12, 2019 Request for Information on the development of Indiana's electric vehicle (EV) charging infrastructure. These comments are being submitted jointly on behalf of Duke Energy Indiana, Hoosier Energy, Indiana-Michigan Power, Indiana Municipal Power Agency, Indianapolis Power & Light Company, NiSource, Vectren, and Wabash Valley Power Association (the "Indiana Utility Group"). Some members of the Utility Group may also submit comments individually.

As a matter of full disclosure, the members of the Indiana Utility Group intend to submit a request to utilize VW Trust Funds to fund a bold, statewide, transformational project to create a network of electric vehicle ("EV") charging stations along Indiana's major highways in order to provide motorists confidence in the use of EVs for long-distance travel throughout the Hoosier State. The increased use of EVs in lieu of passenger vehicles with internal combustion engines will reduce NOx emissions and improve Indiana's air quality.

As the Crossroads of America, Indiana occupies a special place in our country. We are a day's drive of 50% of the population of the United States and Canada, and more highways pass through Indiana than any other state. It is imperative that Indiana be a leader in EV transportation.

The RFI seeks information on seven (7) topics. We restate the topics below and add our responses to each.

*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?*

**Comment:** The primary purpose of installing EV charging infrastructure is to encourage the purchase and use of electric vehicles in lieu of vehicles with internal combustion engines in order to reduce air pollution (including nitrogen oxides, or "NOx") from mobile

sources. One of the major reasons that people do not buy and use electric vehicles is "range anxiety," which is the fear that they will run out of power before they reach their destination. This mostly applies to long-distance travel. No EV can currently match the range of a gas-powered vehicle, so charging infrastructure is the key to relieving this concern.

DC fast charging stations can charge an EV in about 30 minutes, making it perfect for a long-distance traveler who is stopping for a meal, a cup of coffee, or a quick shopping trip. If a network of such charging stations were to be established along Indiana's major highways, it would go a long way toward relieving any range anxiety held by those wishing to travel across the Hoosier state in an EV. Creating a network of DC fast chargers would make Indiana a leader in the field of EV infrastructure, connect us to existing and future EV infrastructure in our neighboring states, and ensure that we remain the "Crossroads of America" for many years.

Local travel is adequately covered by Level 1 or residential charging infrastructure, which usually requires overnight charging for a full charge. Most EV owners already have such infrastructure in their homes. A level 2 charging station takes about three (3) hours to charge an EV. It would be unrealistic to expect someone to drive long distances if they know they will need to stop for three (3) hours during such trips. Further, as demonstrated by the RFI, the state already has 249 Level 2 charging locations. Increasing that number will be of only marginal benefit and will have almost no statewide impact. Dividing money for unorganized and non-coordinated local projects will result in the lowest overall benefit for the State.

As such, the best option is for the State to invest in DC fast charging stations positioned strategically along Indiana's major highways to encourage long-distance travel within and through the Hoosier State. Many drivers of vehicles with internal combustion engines will likely be motivated to move to an EV if they knew they could travel longer distances without having to allocate a substantial amount of time during their trip to charge their EV.

Section 1413 of the Fixing America's Surface Transportation (FAST) Act requires the Secretary of Transportation to designate national electric vehicle (EV) charging, hydrogen, propane, and natural gas fueling corridors. The Federal Highway Administration (FHWA) is working with other Federal, State, and local officials, as well as private industry, to help plan and promote an Interstate network of charging stations that will fuel vehicles powered by clean and domestically-produced alternative fuels, so commercial and passenger vehicles can reliably travel between cities and regions, and across the entire nation.

FHWA completed the third round of Alternative Fuel Corridor designations. One of two designations have been assigned to each nominated highway segment: (a) "Corridor Ready," which is where a sufficient number of facilities exist on the corridor to allow for corridor travel using one or more alternative fuels and (b) "Corridor Pending," which is where an insufficient number of facilities currently exist on the corridor to allow for corridor travel using one or more alternative fuels. The designation status for EV Charging is based on the availability of EV charging facilities at 50 mile intervals along designated EV corridors. At this time, Indiana has

January 2, 2020

3 | Page

only one area with a "Corridor Ready" designation, which is in the Northwest corner of the state.<sup>1</sup>

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 versus 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?*

**Comment:** Funding EV infrastructure at private locations not available to the public would not serve the interests of the State of Indiana, as only a few select individuals would benefit from the use of the public funds used to build the infrastructure. EV charging stations at governmental facilities would solve that problem, but funding such infrastructure at 100% would mean losing an opportunity to leverage the trust funds in a manner that maximizes its effect.

The best option for the State is to fund projects at privately-owned locations open to the public, which would require grantees to fund at least 20% of the projects they propose. This would mean that the state's \$6.135 million would, in effect, purchase \$7.362 million of EV infrastructure. By partnering with grantees who (a) will make the infrastructure available to the public and (b) are willing to fund a significant portion of the cost of the project, the State will significantly leverage the value of its investment while building infrastructure available to all Hoosiers and all visitors to our State.

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?*

**Comment:** Level 1 residential charging stations and existing Level 2 infrastructure can largely provide the power necessary for local travel but are not good solutions for long-distance travel. The current problem with EVs is range, so the priority should be to create a network of fast charging stations across Indiana's major highways, from east to west and north to south, that will enable drivers using EVs to travel throughout the state. This will require charging stations placed strategically along our major highways sufficiently close to one another that a driver is always within range of a fast charging station. Because the focus would be on the distance between charging stations, rather than population centers, charging stations will be

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<sup>1</sup> See: <https://afdc.energy.gov/corridors> and click on "EV charging" in the box in the upper right portion of the website.

located in both urban and rural areas, thus serving more people. The location of DC fast chargers should follow FHA criteria for corridor-ready designation. As such, each DC fast charger should be located 50 miles apart along the highways.

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?*

**Comment:** The State should focus its resources on DC fast charging stations. Home charging stations will cover the vast majority of short-range EV needs. While Level 2 charging stations may have their place in office buildings and multi-family units, those are not usually accessible to the public and are thus a poor choice for public funds. It takes a Level 2 charging station 5-9 hours to fully charge today's EVs. As such, Level 2 chargers are not well-suited for trips to shopping malls and grocery stores, which usually last much longer.

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)?*

**Comment:** The cost of creating a network of DC fast charging stations along Indiana's major interstate highways will likely exceed available funds, even if the grantees fund a significant amount of the project themselves. Such a project would be truly bold and transformative. Using the funds for isolated Level 2 charging stations would have little overall impact. For all of the reasons expressed in these comments, the State should fund only DC fast charging stations as part of a strategically-designed network.

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)?*

**Comment:** As described above, we believe that the funds should be used for only one purpose: to create a network of DC fast charging stations along Indiana's major highways. We believe that the State should make the decision to fund the project now and fund it over the next several years as the project proceed.

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?*

**Comment:** As most of these questions are directed to individuals, we defer to the individuals responding to the RFI. That said, although transportation choices are left to the individual, EV manufacturers will be introducing a significant number of new model EVs in the next few years to the general public. This trend will likely increase the number of EVs on the road, particularly in those states that have the foresight to create the infrastructure necessary to support EVs and alleviate the "range anxiety" that is currently a barrier to the natural development of the EV market. Manufacturers have made their decisions about the future of transportation and have shifted away from the combustion engine towards cleaner EVs. We expect consumers to do the same.

#### **Additional Comments**

We have the following additional comments to the RFI:

- The chart in the RFI showing existing DC fast charging stations includes Tesla-only charging stations that can only be used by Tesla owners. According to our research, at least 11 of the charging stations shown on the chart are proprietary to Tesla. This underscores the need for DC fast charging stations in Indiana that are available to the public.
- It is true that a DC fast charging station is more expensive than a Level 2 charging station. However, the DC fast charger takes only about 30 minutes to charge a car. So, a DC fast charger can charge many cars in the same amount of time it takes a Level 2 charger to charge a single vehicle.
- The chart on page 2 of the RFI entitled "Electric Vehicle Charging Level Overview" is outdated. The U.S. Department of Energy reports the following:<sup>2</sup>
  - Level 1 Charging: 2 to 5 miles of range per 1 hour of charging
  - Level 2 Charging: 10 to 20 miles of range per 1 hour of charging
  - DC Fast Charging: 60 to 80 miles of range per 20 minutes of charging

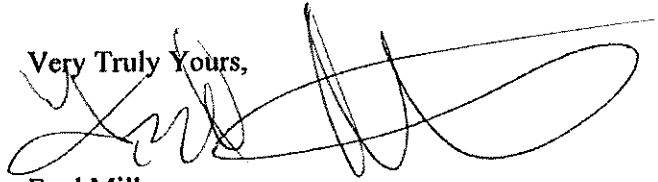
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<sup>2</sup> See: [https://afdc.energy.gov/fuels/electricity\\_infrastructure.html](https://afdc.energy.gov/fuels/electricity_infrastructure.html)

- Other states are considering similar proposals. For instance, a plan put forth in New Hampshire proposes a network of DC fast chargers across its major highways. The proposed plan can be found here: <https://www.des.nh.gov/organization/divisions/air/tsb/tps/msp/documents/20190322-eversource-presentation.pdf>
- The RFI does not discuss future costs. Charging stations will require repairs, maintenance and eventually replacement. As such, the State must choose trusted partners who have the stability and financial wherewithal to ensure that these stations are still working 2, 5, and even 10 years after they are installed.

If you have any questions, please feel free to contact me directly on behalf of the Indiana Utility Group.

Very Truly Yours,



Fred Mills  
VP External Affairs  
Indianapolis Power & Light Company,  
on behalf of the Indiana Utility Group  
[fred.mills@aes.com](mailto:fred.mills@aes.com)



## SEALS, SHAWN

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**From:** Corbin Grohol  
**Sent:** Monday, December 30, 2019 10:28 PM  
**To:** IDEM VWTrust  
**Subject:** IDEM Requesting Public Input about Electric Vehicle Charging Infrastructure

\*\*\*\* This is an EXTERNAL email. Exercise caution. DO NOT open attachments or click links from unknown senders or unexpected email. \*\*\*\*

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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?

DCFC should be priority since they are so expensive. L1/L2 charging is relatively cheap and it is no problem for owners to pay for themselves at home. A law should be considered that forces landlords to allow tenants to install L2 chargers (my landlord declined by request and I had to buy a PHEV instead of EV because of this). Laws should also be considered that encourage employers to install L1/L2 workplace chargers.

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 versus L2 charging equipment, there is also a balance between funding at the highest possible level for lowercost 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?

DCFC may require a larger % of government funding to cover the high cost. Some funds could be used to encourage workplace charging. I do not think L1/L2 chargers at shopping centers are the solution since customers spend less than 1 hour there resulting in less than 20 miles of charge. The focus should be DCFC along highways (barrier: cost), L2 charging at home (barrier: landlords won't let tenants modify electrical infrastructure), and L2 charging at work (barrier: employers have no reason to do it, laws should be considered to encourage employer charger installation)

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?

DCFC should be distance based (purpose: road trips), L2 charging should be population based (purpose: daily commuting needs)

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?

DCFC along highways, L2 at workplace / multi-unit housing locations. L2 at shopping centers are not as useful.

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)?

As stated above, DCFC may require high subsidy due to high cost. However, the focus on workplace/multi-unit housing should be on legislation (rather than direct funding) that encourages/forces charger installation since the cost really isn't much

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)?

The electric vehicle landscape is set to grow quickly with many manufacturers launching vehicles in the next 1-3 years. Roll out the DCFC funding and the L2 workplace/home legislation quickly.

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? I own a Honda Clarity PHEV. I would like to go all electric but landlord declined my request for L2 charger (I even offered to pay for it myself.) • If not a current EV driver, what charging infrastructure related changes might alter your decision and move you to EV? I commute to Purdue. They only have 6 chargers to serve the entire campus...they need at least double to guarantee charger availability when needed. • 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? None. Let's go electric! • 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? Very high. I would drive all electric if my landlord let me install charger or if Purdue had more L2 chargers. • Whether currently a gasoline-powered or EV driver, how much of a concern or issue is the travel range of current EVs? For Tesla, greater than 300 miles is achievable and no problem.

Thanks,  
Corbin Grohol

## SEALS, SHAWN

---

**From:** Jo Broden <jbroden@southbendin.gov>  
**Sent:** Monday, December 30, 2019 4:08 PM  
**To:** IDEM VWTrust  
**Cc:** Tim Scott; Karen L. White; Troy Warner  
**Subject:** Volkswagen Environmental Mitigation Trust  
**Attachments:** South Bend Climate Action Plan.pdf

\*\*\*\* This is an EXTERNAL email. Exercise caution. DO NOT open attachments or click links from unknown senders or unexpected email. \*\*\*\*

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Dear Trustee Members:

New Year greetings to you. I am writing to you today as an elected official from South Bend, Indiana on a matter that impacts my constituents and those residing in St. Joseph or neighboring counties, but also Hoosiers statewide. Specifically, as a Common Council member of a Tier2 city, who has worked on transportation and infrastructure issues through a 4 year term as a member of Michiana Association Coalition of Governments (the regional planning authority for northern Indiana and areas of SE Michigan), as well as, per my service on key Council committees (Chair, of Health and Public Safety; Member, Public Works; and Member, Personnel & Finance), I urge you to consider allocating VW Trust dollars toward expansion of publicly-owned, public-accessible Level 2 charging stations here in the South Bend area.

Specifically, an investment here in the City of South Bend, would serve to address concerns about the paucity of DC fast charging stations between South Bend, Indy, and/or Ft. Wayne. Located at the cross-roads at US 31 and US 20, a future station would benefit both residents and business entities traveling this busy North-South and East-West corridor. EV infrastructure investments in this location, would also be consistent with our values as expressed not only in MACOG planning documents, but also in our recently (and unanimously!) passed Carbon Neutral 2050 Plan. Within the attached South Bend Climate Action plan document, you will see the emphasis on alternative fuel vehicle usage as a priority objective. You will also see that the document emphasizes that we will only achieve our goals as a community (and continue to lead the state on climate action) through collaborative relationships—with your financial assistance of VW Trust dollars, we could build out our limited network and make EV charging a viable option in more convenient locations, and thereby, increase EV purchases and use. As we demonstrate the viability of EV use across our City and provide for access along the US 31 at US 20 location regionally, we will deliver on the goals of the VW Trust funds.

Thank you for your consideration of this letter in support of VW Trust fund usage here in South Bend.

Sincerely,

Jo M. Broden  
City of South Bend  
Common Council Member  
4<sup>th</sup> District  
(574) 235-5978  
jbroden@southbendin.gov

# **CARBON NEUTRAL 2050**

## **SOUTH BEND'S**

### **CLIMATE ACTION PLAN**

**NOVEMBER 2019**

Prepared by:

delta institute 

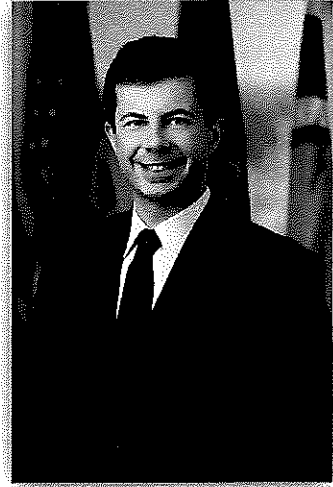
# CONTENTS

FROM THE MAYOR'S DESK .....	1
ACKNOWLEDGEMENTS.....	2
EXECUTIVE SUMMARY .....	3
GUIDING PRINCIPLES .....	5
CLIMATE MITIGATION & RESILIENCE PLANNING .....	6
CLIMATE IMPACTS IN SOUTH BEND.....	6
BENEFITS OF CLIMATE MITIGATION.....	8
WHY NOW? .....	9
WHY WE'LL SUCCEED.....	10
EMISSIONS INVENTORY & REPORT .....	10
OVERALL .....	10
ENERGY.....	11
TRANSPORTATION.....	11
MUNICIPAL OPERATIONS.....	12
EMISSION REDUCTION GOALS & ACTION AREAS .....	12
TRANSPORTATION.....	13
ENERGY.....	23
OTHER AREAS OF POTENTIAL ACTION .....	30
FUTURE PERFORMANCE EVALUATION .....	30
APPENDIX .....	32
PLANNING PROCESS .....	32
INVENTORY AND METHODOLOGY.....	32
STAKEHOLDER ENGAGEMENT.....	32
COUNCIL CLIMATE RESOLUTION (APRIL 2019).....	36

# FROM THE MAYOR'S DESK

Climate change has evolved over decades from a theory to a reality to a true emergency. South Bend has seen this evolution up close. In recent years, climate change has affected our public infrastructure, our economy, and our neighborhood quality of life. As temperatures fluctuate and precipitation worsens, we will have to face increasing expenses, new health dangers, and ever more challenges for the most vulnerable of our neighbors.

The timeline for action, and the impacts South Bend will face if we do not act, are dictated by science, but the solutions are defined by the character of our community. As big as this crisis is, South Bend's ideas and aspirations are big enough to meet it. We aspire to make South Bend a net-zero emissions city by 2050, and will work aggressively toward immediate and mid-term targets. We will need to take meaningful action on where our electricity comes from, how our buildings use energy, and how we move around our city.



As we rise up to meet this challenge, there is some good news. Taking action on climate both helps reduce our risk and provides significant benefits across our community. From reducing a small business's utility bills to updating drafty homes and creating jobs in clean energy sectors, climate action will improve economic outcomes. Equity and justice will grow as emissions shrink with strategies that expand transportation options, improve local air quality, and bring renewable energy to neighborhoods that need investment.

South Bend's Carbon Neutral 2050 Plan sets a series of ambitious goals to reduce carbon emissions from local sources and lays out a high-level plan to address them. This climate action plan focuses on strategies that will provide the most substantial emissions cuts, will be feasible to implement in the near term, and will maximize benefits to residents and businesses. The plan will be a living document, updated at regular intervals to reflect the fast pace of change and keep us focused on our priorities.

We will need everyone – every worker and resident and student, every business and institution and school – to support these ambitious goals and bring these strategies to bear. Together, we must continue to work tirelessly to create a South Bend where our children and grandchildren can thrive. Let our actions today be the basis for the stories we tell, about this moment when our community worked together, took bold action, and met the greatest challenge of our time.

A handwritten signature in black ink, which appears to read "Pete Buttigieg". The signature is stylized and cursive.

Pete Buttigieg, Mayor  
South Bend, Indiana

# ACKNOWLEDGEMENTS

The South Bend, Indiana *Carbon Neutral 2050* plan was prepared by Delta Institute for the City of South Bend, in partnership with the South Bend Office of Sustainability.

The project team would like to recognize the support and contributions made by various officials, city departments, local organizations, and individuals in developing the Climate Action Plan. Summaries of input from the Plan’s community and stakeholder input sessions can be found in the Appendix.

<b><i>City Staff and Elected Officials</i></b>	<b><i>Green Ribbon Commissioners</i></b>	<b><i>Community Leaders</i></b>
<i>Mayor Pete Buttigieg</i>	<i>Krista Bailey, Co-Chair</i>	Jessica Brookshire
<i>Therese Dorau, Sustainability Director</i>	<i>Allison Mihalich, Co-Chair</i>	Gary Gilot
<i>Jo M. Broden, Chair - Health and Public Safety Committee</i>	<i>Mike Keen, Selection Committee</i>	Lori Hamman
<i>Jake Teshka, Chair - Utilities Committee</i>	Roger DePoy	Kate Lee
<i>South Bend Common Council</i>	Michael Dunham	Marty Mechtenberg
<i>Office of the Clerk</i>	Kieran Fahey	Rose Meissner
Dan Buckenmeyer	Steve Francis	Murray Miller
Chuck Bulot	Amy Hill	Neil Miller
Tim Corcoran	Paul Kempf	Rachel Tomas Morgan
Chris Dressel	Julia McKenna	Paul Phair
Eric Horvath	Tim Powers	Phil Sakimoto
Jitin Kain	Leah Thill	Kathy Schuth
Matthew Moyers		Rachel Smith
Denise Linn Riedl		James Turnwald
John Voorde		Greg Vollmer
		Willow Wetherall
		Danielle Wood

# EXECUTIVE SUMMARY

Climate change is a global issue that has local impacts across the United States, including in South Bend. Mitigation that includes actions that reduce the release of greenhouse gas (GHG) emissions is essential to limiting the impacts of climate change.

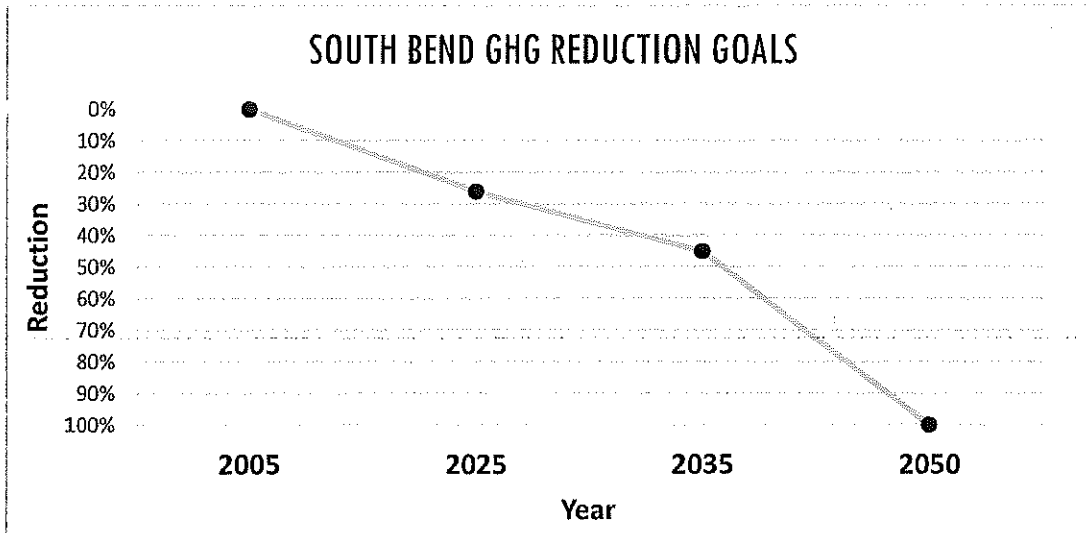
Carbon Neutral 2050, a climate action plan, is intended to 1) contextualize the need for greenhouse gas emission mitigation in South Bend, 2) provide an overview of the City's current emissions inventory, and 3) identify high-priority strategies and actions for short, medium, and long-term reductions across each sector of the community.

Recommended actions in this climate action plan are targeted to help the City of South Bend achieve high-impact GHG emission reductions over three time horizons, each relative to the 2005 baseline.\* These should be adopted and communicated as the City's official GHG reduction goals.

**NOW:** Reduce GHG emissions **26% by 2025**

**NEXT:** Reduce GHG emissions **45% by 2035**

**FUTURE:** Reduce GHG emissions **100% by 2050**



The chart above illustrates the trajectory towards a target of 100% greenhouse gas reduction by 2050. Based on the range of local stakeholder input and a review of South Bend's need and capacity to achieve this reduction goal, the course of emissions reduction targeted in this plan is as follows:

- **NOW - Short Term:** This goal aligns with national reduction targets set by the United States in the Paris Agreement. Cities across the country have adopted the United States' agreed-upon

\* The City is in process of backcasting an estimated 2005 greenhouse gas footprint to serve as a baseline.



contribution to the Paris Agreement as their near-term reduction target. To achieve this 26% reduction in the first five years of concerted action, this plan leverages the most readily available policies and actions and takes advantage of the resources and capacity that South Bend already possesses to implement immediate reduction opportunities.

- **NEXT - Medium Term:** Between 2025 and 2035, the pace of reduction may slow, as medium- and long-term actions will begin to be implemented. This implementation requires systemic changes to achieve an overall reduction of 45% and set the course for a sharper reduction after 2035. Meeting this goal will require significant time, resources, program development, and policy change before yielding returns.
- **FUTURE - Long Term:** A dramatic period of reduction will occur between 2035 and 2050. To achieve the ambitious goal of carbon neutrality, we will continue to drive change but also must rely on new technologies and innovative programs that are not available today.

The South Bend community embraces a forward-looking attitude toward technology, innovation, and inclusion. Specifically, many South Bend residents believe that with advances in scientific understanding and mitigation technology, there will be more opportunities to reduce GHG emissions. Among local stakeholders there are also differences of opinion on how aggressively to pursue GHG emission reduction goals, amidst South Bend's numerous priorities.

In South Bend, as in most municipalities, **transportation and energy use** represent the largest sources of GHG emissions. While the significance of transportation and energy emissions is common across municipalities, actually achieving reductions requires context-sensitive solutions specific to South Bend.

With **transportation** representing nearly a third of South Bend's greenhouse gas emissions, there exists a significant opportunity to reduce GHG emissions in the transportation sector through the following strategies:

- Reducing vehicle miles traveled (VMT) and reducing single occupancy vehicle (SOV) trips.
- Transitioning to cleaner, more efficient fuels.

**Energy use** in buildings represents nearly two-thirds of South Bend's greenhouse gas emissions, so this source represents the largest opportunity for GHG reduction in the city. Avenues for achieving these reductions include:

- Increasing energy efficiency across residential, industrial, and commercial sectors.
- Transitioning to renewable energy sources.

This plan is formulated to ensure that the recommended actions include projections of timeframe, impact, cost, co-benefits, likely stakeholders, and the role of South Bend's municipal government.

# GUIDING PRINCIPLES

*Our Climate Action Plan has been developed with the following guiding principles:*

## **Equity-Centered**

The impacts of climate change are often disproportionately burdensome on low income and minority populations. Additionally, strategies for mitigating the impacts of climate change can sometimes be unaffordable, regressive, or not beneficial to these more vulnerable communities. This Plan has focused on producing equity-centered mitigation outcomes.

## **Quantifiable**

A plan that can be measured is a plan that can be managed. For South Bend to meaningfully benchmark its progress towards mitigation between now and 2050, clear targets and metrics have been developed as key components of the plan.

## **Context-Sensitive**

Each community and region present their own assets, challenges, opportunities, and weaknesses. The existing organizations, structures, processes, and systems in each location are drivers of or barriers to implementation of any mitigation strategy. While useful climate strategies can be pulled from around the globe, this plan prioritizes solutions that most clearly fit South Bend's institutions, demographics, natural environment, regional economy, and infrastructure.

## **Practical, Achievable, and Affordable**

Oftentimes, the highest-impact strategies are not the most feasible. Considering the importance that this plan be actionable for the city, strategies were prioritized based on how achievable they were for the community, municipality, and other agencies, and whether they proved to be too expensive or at the cost of other priorities, like quality of life, access, and economic opportunity.

## **Incentive-Oriented**

Driving change typically requires a mixture of incentives and regulations. Incentives (like grants, loans, and credits) drive change financially. Regulations and policies (like ordinances and permitting requirements) drive change through the legal process. While regulations may not cost a municipality much to implement, they can prove to be onerous and expensive to property owners and developers. Given South Bend's status as a rebounding post-industrial city, concerns exist that increasing regulations could weaken promising economic growth. Therefore, greater emphasis has been placed on incentive-based strategies.

## **Partnership-Driven**

As with any plan, successful implementation will require numerous points of collaboration between municipal government, area-wide agencies, institutions, private enterprise, and non-profits. This plan treats such partnerships as fundamental.

# CLIMATE MITIGATION & RESILIENCE PLANNING

South Bend residents have already felt the accelerating negative impacts of climate change.

The South Bend Carbon Neutral 2050 plan provides actionable climate change mitigation strategies to reduce the release of greenhouse gases. These strategies provide the City of South Bend with opportunities for environmental and public health improvements, as well as economic benefits. Adaptation or resilience plans, which typically follow climate action plans like this one, provide strategies for addressing the current and future impacts of climate change within a municipality.<sup>1</sup>

## CLIMATE IMPACTS IN SOUTH BEND

Climate change is a global issue that will have local impacts across the United States, including in Indiana. The *Indiana Climate Change Impacts Assessment*, completed in 2018 by a collaborative of Indiana-based experts, provides state-specific observations and projections for temperature increases, weather events, and the subsequent impacts for Indiana residents, visualized in Figure 1.<sup>2</sup>

**Mitigation & Adaptation**

**Mitigation:** Actions that reduce the release of greenhouse gas emissions in order to limit climate change (e.g. sustainable transportation, clean energy generation, and energy efficiency).

**Adaptation:** Actions that help communities or individuals adjust to the impacts of climate change (e.g. retrofitting infrastructure for severe weather events, flood protection, and disaster management).

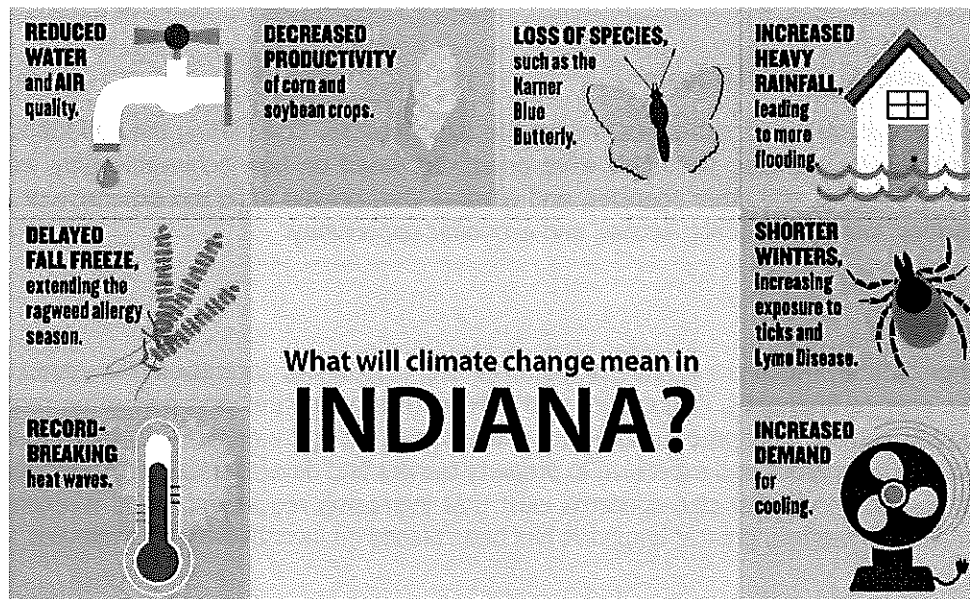


Figure 1: Indiana Climate Change Impacts

In addition to the major impact categories detailed above, negative impacts of climate change in Indiana include stress and wear on public infrastructure with increased severity of weather events, decreased water quality in the St. Joseph River with increased probability of flooding and sewer outflow, and public health concerns as warmer winters allow for mosquitoes, ticks, and other disease-carrying pests to thrive.<sup>3</sup>

Agriculture will be affected via longer agricultural growing seasons, with conditions ripe for undesirable invasive species to flourish. Extreme heat and increased severity and frequency of floods can also cause diminished soil health and other problems for Indiana's farmers.<sup>4</sup>

## Increasing Temperatures

Indiana has already observed a rising average temperature over the past century, and it is projected to increase significantly more in coming years. The number of days that exceed 95°F in South Bend is expected to grow from an average of three to an average of 20-29 days per year by the 2050s.<sup>5</sup> As the average temperature rises, the likelihood of extreme heat days also increases. This can be particularly dangerous for vulnerable populations like children or the elderly, and those without air conditioning.<sup>6</sup>

## Extreme Weather Events

Since 1959, average annual rainfall in the state has been increasing at a rate of 1.33 inches per decade. By mid-century, annual precipitation in South Bend is expected to increase by over four inches and temperatures are expected to increase by 4.7°F.<sup>7</sup> Heavy rainfall events (top 2% of rainfall rates in a year) are expected to increase by an average of 1.2 days per year. As Indiana continues to warm, more precipitation will fall in the form of rain, as opposed to snow, which can increase the risk of flooding in the winter and spring.<sup>8</sup>



*Figure 2: 2018 Flooding along Northside Boulevard in South Bend – Robert Franklin, South Bend Tribune*

In a span of two years, South Bend witnessed a “1,000-year flood” in 2016 followed by a “500-year flood” in 2018, each causing severe damage to the city and surrounding areas.<sup>9</sup> The “500-year flood” in February 2018, which saw the St. Joseph River crest at a record-high 12.7 feet,<sup>10</sup> displaced residents, damaged thousands of homes, and inundated the wastewater treatment plant resulting in discharge of untreated sewage and stormwater into the river. The City of South Bend is estimated to have suffered \$2.1 million of flood damage to municipal assets, including pedestrian trails, embankments, roads (Figure 2),<sup>11</sup> and the water filtration system’s North Pumping Station.<sup>12</sup>

## BENEFITS OF CLIMATE MITIGATION

Climate mitigation and adaptation strategies that address the direct causes and impacts of climate change, often positively impact other areas. Cost savings from reduced energy and fuel usage benefits residents and businesses. Decreased fuel use reduces air pollution and improves local air quality. Transportation alternatives that encourage active lifestyles can improve health outcomes for residents<sup>13</sup> in addition to expanding access and mobility to traditionally underserved populations. Innovation driven by the search for climate solutions creates economic opportunity for existing businesses and local entrepreneurs. Co-benefits often re-enforce each other. For example, improved quality of place and increased transportation access have been shown to support economic growth. Actions were selected for this plan in part based on maximizing these co-benefits. Areas of benefit are summarized below:



**Public Health:** Strategies that result in improvements to air quality (particularly for areas or populations suffering environmental injustice), increased opportunities for exercise (like running and biking, or walking to school), and increased access to critical goods and services that advance healthy living (like supermarkets and medical facilities).



**Cost Savings:** Strategies that result in immediate or long-term financial savings for residents, utility customers, businesses, and property owners. Savings can be from reduced energy consumption lowering energy bills, or rebates, incentives, or tax credits for installing energy efficiency or renewable energy equipment. Savings can also come from reductions in monthly transportation costs. Less fuel needs to be purchased if transit, biking, or walking can be used instead. With more travel options, some may opt to get rid of their car altogether. For large companies, addressing climate change means reducing waste in their processes and supply chain while also decreasing risks and compliance costs.



**Economic Growth:** Strategies that support regional economic development, growth in gross domestic product (GDP), workforce development, and job creation. This can include: substantial infrastructure investments that either enable a company's operations or connect residents to jobs, development of a regional economic cluster that attracts talent from outside and exports goods and services, or programs that increase the capacity and expertise of the local labor pool.



**Quality of Place:** Strategies that improve the physical, aesthetic, and civic character of a place and help residents feel engaged in their communities. These strategies can include the development and enhancement of parks and green space, public art, downtown beautification programs, street festivals, etc.



**Increased Transportation Access:** Strategies that expand and strengthen transportation options beyond car ownership, including bus and rail transit, cycling, walking, using wheelchairs, etc. Universal access principles, which focus on building spaces and places that encourage the movement of all people (including the physically impaired) are central to this benefit.



**Increased Engagement:** Strategies that increase transparency and facilitate participation in community programs and initiatives.



**Increased Equity:** Strategies that address racial, cultural, economic, social, and physical disparities. These include actions that address environmental justice concerns, discrimination, income inequality, impairments to access, etc. Most climate action co-benefits can be designed to improve equity when collaboratively planned and executed.

## WHY NOW?

Trusted organizations, including the United Nations Intergovernmental Panel on Climate Change (UN IPCC), have established that urgency is necessary to address climate change. Globally, the UN IPCC has assessed that preventing a 1.5-degree Celsius increase in temperature, which would exponentially increase negative climate change effects, requires a 45% reduction of worldwide carbon emissions by 2030.<sup>14</sup> Through local climate mitigation actions, South Bend is contributing to this global effort.

South Bend has demonstrated climate leadership for over a decade. In 2008, Mayor Stephen Luecke signed the U.S. Mayors Climate Protection Agreement, and in 2009 convened the Green Ribbon Commission, which led to the foundation of the Municipal Energy Office in 2010. Mayor Pete Buttigieg reconvened the Green Ribbon Commission in 2014 and expanded the Energy Office's role, creating South Bend's Office of Sustainability. The South Bend Common Council passed the Cleaner Energy Resolution in 2016, expressing interest in reducing use of coal power and increasing investment in renewable options,<sup>15</sup> and in 2018 Mayor Buttigieg joined the state's "Repower Indiana" letter, calling for utilities to supply 100% clean energy. Most recently, Mayor Buttigieg confirmed South Bend's commitment to the Paris Agreement on Climate by signing the "We're Still In" letter in 2017 and committed to the Global Covenant of Mayors for Climate and Energy the following year.<sup>16</sup> The Global Covenant, comprised of over 9,000 cities across 132 countries, seeks to collectively reduce 1.3 billion tons of annual CO<sub>2</sub> emissions by 2030.<sup>17</sup>

In April 2019, the South Bend Common Council passed a resolution calling for climate action. This resolution (see appendix) acknowledges established climate science and the observed and projected impacts of climate change on Indiana and South Bend. The resolution outlines the City's leadership in climate issues and outlines next steps for addressing climate change, including development of this climate action plan.<sup>18</sup>

South Bend is at a unique point in its history. As a medium-sized, post-industrial Midwestern city that has stabilized a 50-year population decline, South Bend and its small metropolitan region are still not experiencing as high a rate of economic or population growth as the state of Indiana, overall (Fig. 3).<sup>19,20</sup>

### POPULATION AND GDP STATE, REGION, AND CITY – 2010-2017

	2010	2017	% GROWTH
State of Indiana GDP (millions)*	\$295,133	\$320,084	8.45%
State of Indiana Population	6,483,802	6,660,082	2.72%
South Bend – Mishawaka Regional GDP (millions)*	\$11,480	\$12,231	6.54%
South Bend – Mishawaka Regional population	319,224	321,447	0.70%
City of South Bend Population	101,168	101,860	0.68%

\*adjusted for inflation (2012 dollars)

Figure 3

Although the South Bend region desires to attract more residents and increase economic activity, growth presents both positive and negative implications for addressing climate change. GDP growth can represent an increase in economic opportunity locally, as well as availability of financial resources for addressing climate change, but increased economic activity historically gives rise to an increase in emissions, e.g. more factories operating, more commuters that own cars and travel alone, and more consumption of goods. Additionally, if the South Bend region does not codify sustainable land use principles, growth is likely to produce negative development patterns, like suburban sprawl, which directly increase transportation emissions. As the City and region continue to change, all possible efforts should be made to decouple GDP and population growth from the increases in emissions that typically accompany growth.

## WHY WE'LL SUCCEED

South Bend is well-positioned to achieve GHG emissions reductions. The City has several advantages including zoning and building ordinances that are responsive to sustainable development and green business practices, strong transportation infrastructure, and proximity to several world-class higher education institutions.<sup>21</sup>

Additionally, South Bend can build upon its long-term commitment to environmental sustainability as evidenced by the Office of Sustainability, Green Ribbon Commission, and support from the Common Council, including a commitment to adopting climate actions.<sup>22</sup> Where some communities may be just beginning to establish environmental task forces, South Bend has nearly ten years of formal activity. In addition to government support, several of South Bend's largest businesses and anchor institutions support climate action to protect South Bend from negative impacts of climate change. Lastly, South Bend can work with neighboring communities and regional agencies to tackle issues collaboratively and holistically.

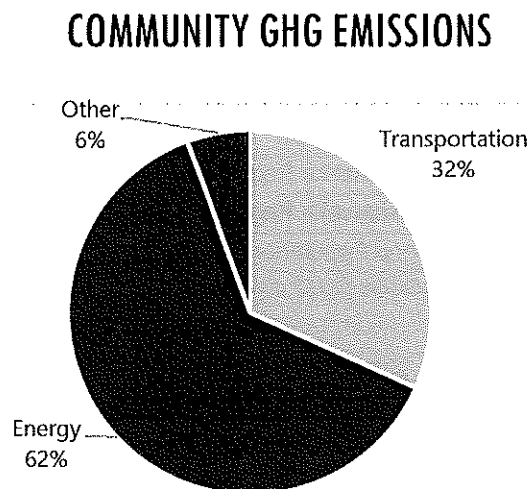
## EMISSIONS INVENTORY & REPORT

In order to determine the most effective strategies for reducing greenhouse gas emissions, the City of South Bend collected data on emissions-producing activity for both municipal operations and the larger South Bend community. South Bend completed its first comprehensive community-wide GHG emissions inventory using 2017 data, and a municipal operations inventory using 2015 data. The data here reflects 2017 community data, validated in 2019 for inclusion in this plan.

### OVERALL

In 2017, the South Bend community was responsible for over 1.2 million metric tons of greenhouse gas emissions (CO<sub>2</sub>e). Municipal operations account for 3% of the city-wide total.<sup>23</sup>

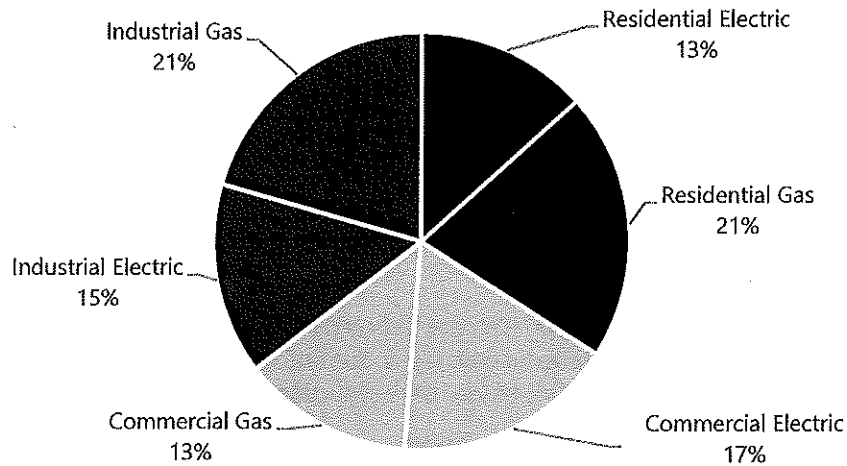
Energy and transportation are the largest sources of community emissions, comprising 63% and 32% of emissions, respectively. The remaining 6% come from a variety of activities including solid waste disposal and water and wastewater systems.



## ENERGY

Energy accounts for 62% of community emissions, split almost evenly between residential, commercial and industrial energy. Additionally, emissions from gas and electricity for each sector are split fairly evenly. The residential and industrial sectors have slightly higher emissions from gas, and the commercial sector has slightly higher emissions from electricity.<sup>24</sup>

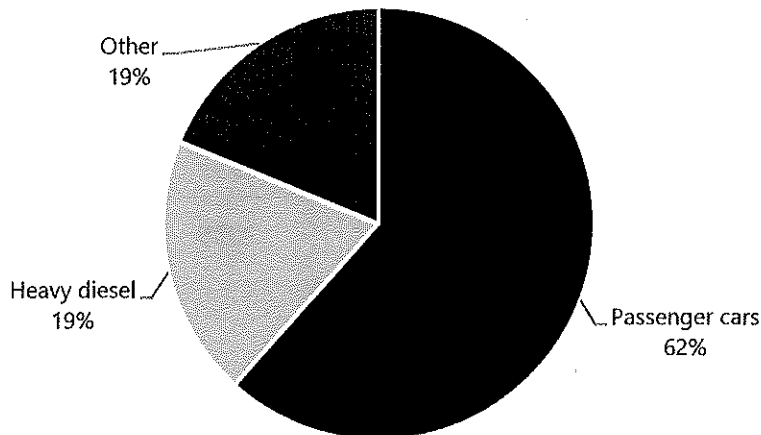
### SOUTH BEND COMMUNITY GHG EMISSIONS: ENERGY



## TRANSPORTATION

Transportation accounts for 32% of community emissions. Of that 32%, passenger vehicles account for almost two-thirds of emissions and heavy diesel transit accounts for 19%. Rail, road construction, and aviation-related emissions, among others, are captured in the "Other" category.<sup>25</sup>

### SOUTH BEND COMMUNITY GHG EMISSIONS: TRANSPORTATION

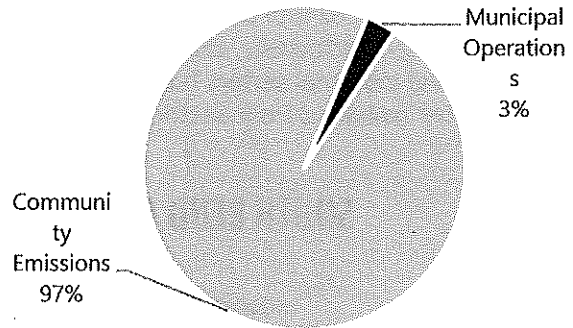




## MUNICIPAL OPERATIONS

Municipal operations account for 3% of the City's overall emissions. The top sources of greenhouse gases within municipal operations include buildings and facilities, the vehicle fleet, and street lights and traffic signals.

## GHG EMISSIONS INVENTORY



## EMISSION REDUCTION GOALS & ACTION AREAS

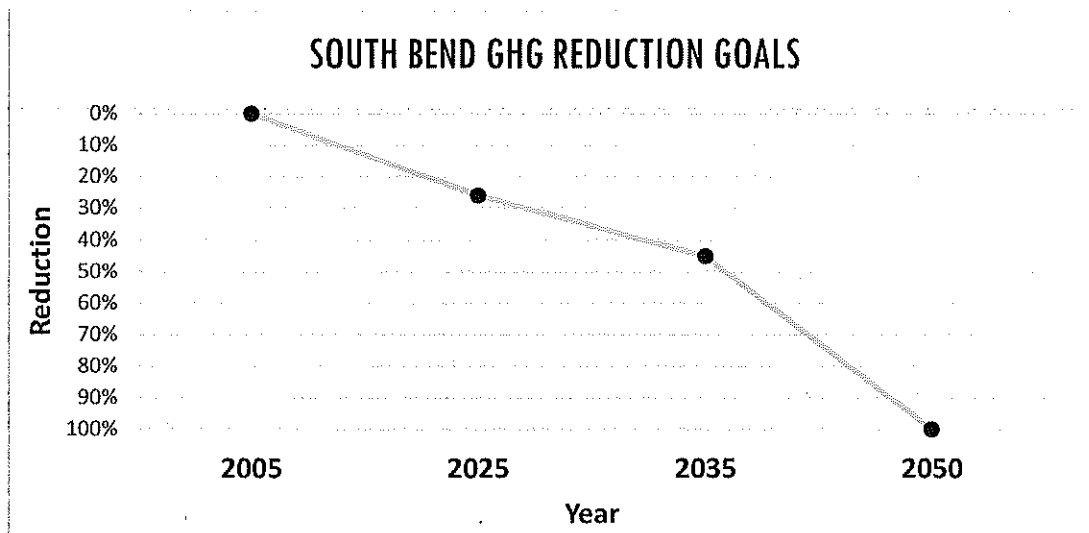
The City of South Bend's Climate Action Plan is a holistic plan that identifies greenhouse gas reduction opportunities throughout the community.

Recommended actions in this Climate Action Plan are targeted to help the City of South Bend achieve high-impact GHG emission reductions over three time horizons, each relative to the 2005 baseline.\* These should be adopted and communicated as the City's official GHG reduction goals.

**NOW:** Reduce GHG emissions **26% by 2025**

**NEXT:** Reduce GHG emissions **45% by 2035**

**FUTURE:** Reduce GHG emissions **100% by 2050**



\* The City is in process of backcasting an estimated 2005 greenhouse gas footprint to serve as a baseline.

The chart above illustrates the trajectory towards a target of 100% greenhouse gas reduction by 2050. Based on the range of local stakeholder input and a review of South Bend’s need and capacity to achieve this reduction goal, the course of emissions reduction targeted in this plan is as follows:

- **NOW - Short Term:** This goal aligns with national reduction targets set by the United States by the Paris Agreement. Cities across the country have adopted the United States’ agreed-upon contribution to the Paris Agreement as their near-term reduction target. To achieve this 26% reduction in the first five years of concerted action, this plan leverages the most readily available policies and actions and takes advantage of the resources and capacity that South Bend already possesses, to implement immediate reduction opportunities.
- **NEXT - Medium Term:** Between 2025 and 2035, the pace of reduction may slow, as medium- and long-term actions will begin to be implemented. This implementation requires systemic changes to achieve an overall reduction of 45% and set the course for a sharper reduction after 2035. Meeting this goal will require significant time, resources, program development, and policy change.
- **FUTURE - Long Term:** A dramatic period of reduction will occur between 2035 and 2050. To achieve the ambitious goal of carbon neutrality, we will continue to drive systems change but also must rely on adoption of new technologies and innovative programs that are not available today.

This projection requires certain assumptions and cannot reflect changes that develop over time, or the interaction between those changes, which are difficult to forecast. For example, greater investment would result in a greater reduction, but South Bend is also part of larger region where actions beyond the City’s control may impact GHG emissions reductions. Additionally, changes in climate conditions, the economy, technology, and stakeholder priorities will naturally impact the City’s progress toward GHG emissions reduction. Thus, the range of possible reduction grows wider as the projections are further in the future.

In South Bend, as in most municipalities, **transportation and energy use** represent the largest sources of GHG emissions. While the significance of transportation and energy emissions is common across municipalities, actually achieving reductions requires context-sensitive solutions specific to South Bend.

All emissions reduction actions listed in this section have been assessed through lenses of **Timeframe for Implementation** (*Short, Medium, Long*), **Impact** (*Low, Medium, High*), and **Cost of Implementation** (*\$, \$\$, \$\$\$*). They are represented by the following icons:

Timeframe:    Impact:    Cost: \$    \$\$    \$\$\$

## TRANSPORTATION

With transportation responsible for nearly a third of South Bend’s greenhouse gas emissions, the following two strategies present significant opportunity to reduce greenhouse gases in the transportation section:

- Goal 1.** Reducing vehicle miles traveled (VMT) and reducing single occupancy vehicle (SOV) trips.
- Goal 2.** Transitioning to cleaner, more efficient fuels.











Given the disparate nature of vehicle trips and emissions, system-wide reductions must be driven by the actions of many different stakeholders, including public agencies, private companies, and private systems.

Solutions will require collaboration to tackle this level of complexity. Additionally, reductions must be advanced through a multi-faceted series of improvements in vehicle technology, in provision of alternative modes of transportation, and through more compact land use patterns.

While system-wide reductions to transportation emissions are long-term in nature and complex to execute, there are many feasible actions that the City of South Bend and its affiliated public agencies can take in the near and mid-term to drive transportation-related emissions reductions. These include improvements to existing fleets, local incentives and regulations, and committed partnerships with diverse public agencies and private organizations.

## GOAL 1. REDUCE BOTH VEHICLE MILES TRAVELED (VMT) AND SINGLE OCCUPANCY VEHICLE (SOV) TRIPS

### ***ACTION T1.1 - Promote and strengthen public transit***

SCALE:   \$\$\$ CO-BENEFITS:        

Bus and paratransit services provided by Transpo are already a standard method for replacing and reducing car trips. As with many transit agencies, Transpo experiences capacity constraints around service, staff, and resources. The same barriers exist for growing ridership in South Bend that many transit agencies experience throughout the country; length of headways, scattered nature of origin-destination, lack of revenue sources, and comparatively low gas prices, parking hassles, and traffic levels. Despite these challenges, the impact transit can make on reducing VMT and SOV trips is significant. Increasing frequency and quality of service, and tailoring coverage areas to existing and emerging origin-destination patterns, will empower transit to play a major role in reducing transportation emissions.

What South Bend City Government Can Do:

- Lobby the Indiana state legislature for increases to transit funding.
- Advocate for a greater emphasis on transit within the project selection criteria of MACOG's Transportation Improvement Program.
- Update the City's capital improvements plan to prioritize transit investments.
- Broker relationships between major employers and educational institutions and Transpo, to provide employer-assisted transit programs.
- Educate community organizations and residents on the value and opportunities around transit, through advocacy and events.
- Partner directly with Transpo on planning and economic development efforts to ensure that projects factor in transit.

**Additional Responsible Parties:** Transpo, MACOG, State of Indiana, South Bend Regional Chamber, Local Businesses and Anchor Institutions

### ***ACTION T1.2 - Promote and improve bike share and alternative mobility programs***

SCALE:   \$\$ CO-BENEFITS:       

Bike share and electric scooter programs are low cost, highly flexible systems for replacing short car trips, and are a transportation mode that produces little to no emissions. These programs have emerged in numerous cities over the last decade. Although they can come with operational challenges (such as safety), they can be effective at reducing the need for single occupancy vehicles when their coverage areas are

properly tailored to origin-destination patterns and when their integration into a system is in such a manner that it does not weaken transit services.

What South Bend City Government Can Do:

- Broker relationships with bike and scooter share providers and properly regulate these programs under the goals and policies of the City's Bike South Bend Plan.
- Consider public investments in bike programs, through MACOG's Transportation Improvement Program and the City's capital improvements plan.
- Broker relationships between major employers, educational institutions, and program providers to provide employer-assisted bike share programs.
- Partner with providers to educate community organizations and residents on the value of the programs through advocacy and events.

**Additional Responsible Parties:** Program Providers, MACOG, South Bend Regional Chamber, Local Businesses

***ACTION T1.3 - Promote and advance biking and walking through education and community partnerships***

SCALE:   \$ CO-BENEFITS:       










Community-led initiatives and partnerships that educate residents about biking and walking are critical to establishing these modes as a standard form of transportation. The affinity residents have for biking in particular can grow significantly when offered as community riding events and workshops around safety, maintenance, and basic operation.

What South Bend City Government Can Do:

- Partner with advocacy groups, schools, recreation centers, anchor institutions, and businesses to promote events and programming on biking, walking, and non-motorized transportation.

**Additional Responsible Parties:** Bike Michiana Coalition, South Bend Community School Corporation, MACOG, Community Recreation Centers (YMCA, etc.), Local Businesses, Community Organizations

***ACTION T1.4 - Reduce the length and frequency of vehicle trips through land development policies and economic development strategies***

SCALE:   \$\$ CO-BENEFITS:       

By promoting dense, walkable development around transit hubs and corridors, and co-location opportunities for businesses, South Bend will have successfully reduced the length of the average trip amongst city residents, as well as the dependence on car ownership, since shorter trip distances can more easily be undertaken by alternative transportation modes, like walking, biking, and transit.










What South Bend City Government Can Do:

- Update municipal development codes to promote density, compact development, transit-oriented development, and bicycle infrastructure, and reduce minimum parking requirements.
- Utilize municipal incentives, like tax increment financing, tax abatement, etc. to help fund and finance development projects that promote transit, walking, and biking over automobile trips.

- Educate property developers on smart growth policies and transit-oriented development.
- Educate the business and development community on the advantages of shared office and commercial spaces.

**Additional Responsible Parties:** Local Developers, Transpo, MACOG, South Bend Regional Chamber, South Bend Region Economic Development

***ACTION T1.5 - Prioritize Infrastructure Investments that advance access to transit and active transportation options within existing urbanized areas***

SCALE: **M III**  **\$\$\$** CO-BENEFITS:        

Regional transportation patterns are heavily dictated by how federal, state, local transportation funding is programmed. Cities and regions that direct these dollars towards complete streets improvements (like sidewalks, bike infrastructure, transit service and infrastructure, universal access) and for pavement and lighting enhancements in denser areas can significantly advance transit-oriented development and shifts toward transit, biking, and walking amongst residents.

What South Bend City Government Can Do:

- Update the City's capital improvements plan to prioritize investments that benefit transit and alternative transportation modes.
- Develop an internal Complete Streets Checklist and Implementation Plan, focused on coordinating efforts between relevant departments and agencies, to ensure that the City's prospective complete street projects are planned and implemented effectively.
- Advocate for a greater emphasis on transit, non-motorized transportation, and compact development within the project selection criteria of MACOG's Transportation Improvement Program.

Additional Responsible Parties: Transpo, MACOG, INDOT, NICTD

***ACTION T1.6 - Promote carpool and vanpool services***

SCALE: **M III**  **\$\$** CO-BENEFITS:        


Carpool and vanpool services (sometimes operated by transit agencies or private companies) can offer commuters the opportunity to complete daily trips with limited-to-no travel in a single occupancy vehicle. Often providing service beyond a transit agency's coverage area, they can complement or serve in lieu of transit ridership.

What South Bend City Government Can Do:

- Educate businesses on carpooling programs and provide them with incentives to institute and maintain these programs, and promote them with their employees.
- Advocate for a greater emphasis on vanpooling and paratransit services within the project selection criteria of MACOG's Transportation Improvement Program.

**Additional Responsible Parties:** Transpo, South Bend Regional Chamber, Local Businesses

***ACTION T1.7 - Promote and strengthen passenger rail services for regional travel***

SCALE: **M** **III** **MED** **\$\$\$** CO-BENEFITS: 

For regional trips above 30 miles in length, passenger rail services like NICTD and Amtrak significantly reduce VMT. Given South Bend’s proximity and connection to Chicago, the regional rail hub of the Midwest, as well as its Amtrak connection to eastern cities like New York and Boston, both Amtrak and NICTD have the capacity to serve as alternatives to regional flights and car trips to reduce transportation emissions.


What South Bend City Government Can Do:

- Lobby the Indiana State legislature and US Congress for increases to passenger rail funding.
- Consider public investments to station infrastructure through MACOG’s Transportation Improvement Program and the City’s capital improvements plan.
- Work with rail providers and the community, to remove railroad-street at-grade crossings.
- In partnership with major employers, educational institutions and economic development entities, market rail connectivity as a regional asset to drive business and population growth.
- Utilize municipal incentives and codes, like tax increment financing, tax abatement, etc. to drive transit-oriented development around railroad stations, or work with railroad agencies to relocate stations closer to planned areas of dense development.

Additional Responsible Parties: MACOG, NICTD, Amtrak

**GOAL 2: TRANSITION TO CLEANER, MORE EFFICIENT VEHICLE FUELS AND TECHNOLOGY IN PASSENGER AND COMMERCIAL VEHICLES**

***ACTION T2.1 - Undertake and promote diesel engine retrofits in municipal and commercial fleets***

SCALE: **M** **III** **HIGH** **\$\$** CO-BENEFITS: 






Whether managed in municipal fleets or private freight companies, trucks with older diesel engines are heavy contributors to emissions and air pollution. Programs to retrofit truck fleets with modern clean air technologies (e.g., diesel oxidation catalysts, diesel particulate filters, NOx catalysts, selective catalytic reduction, exhaust gas recirculation, and CNG conversions) will positively impact air quality.

What South Bend City Government Can Do:

- Oversee retrofitting of diesel engines in existing municipal, transit, and school corporation fleets.
- Educate businesses and provide them with incentives for diesel engine retrofits in private fleets.

**Additional Responsible Parties:** Transpo, South Bend Community School Corporation, South Bend Regional Chamber, South Bend Region Economic Development, MACOG, INDOT, IDEM

***ACTION T2.2 – Incentivize community members to retire older vehicles and replace them with alternative fuel vehicles***

SCALE: **M** **III**  **\$\$\$** CO-BENEFITS:    

Whether electric, hybrid, or the conventional internal combustion engine, newer vehicles are typically more fuel efficient and often use cleaner fuel than their older cousins. Replacing older vehicles with newer ones in a community will reduce local emissions and air pollution.

What South Bend City Government Can Do:

- Incorporate electric and hybrid vehicles into municipal, transit, and school corporation fleets.
- Plan and implement electric vehicle charging infrastructure throughout the city.
- Adopt municipal development codes that incentivize and expedite electric vehicle charging infrastructure by developers and property owners.
- Develop an incentive program for residents and businesses, focused on implementing vehicle charging infrastructure on private property or initiate vehicle swaps with local dealerships.
- Educate businesses, institutions, and residents on the emissions impact of vehicle replacement.

**Additional Responsible Parties:** Transpo, South Bend Community School Corporation, MACOG, INDOT, IDEM

***ACTION T2.3 - Advocate for increased state vehicle emissions testing requirements in St. Joseph County***

SCALE: **M** **III**  **\$** CO-BENEFITS:  


Outside of Lake and Porter counties, motor vehicles must only get tested upon a new vehicle registration. There is no regulatory mechanism in place to ensure the ongoing compliance of motor vehicles with emission standards later in the vehicle's life cycle. Older vehicles with dated, worn out technology are most likely to fall out of compliance, demonstrating a need for more routine testing.

What South Bend City Government Can Do:

- Lobby the Indiana state legislature for regulatory changes.

**Additional Responsible Parties:** Indiana State Legislature, IDEM, INDOT

***ACTION T2.4 - Promote anti-idling technology locally***

SCALE: **M** **III**  **\$** CO-BENEFITS:  

Anti-idling technology reduces or eliminates emissions when an engine is active but the vehicle is not in motion by reducing engine activity and/or switching to reserved sources of energy when idle. Technologies include auxiliary power units, generator sets, battery air conditioning systems, electrified parking spaces, truck stop electrification, fuel-operated heaters (direct fired heaters), and thermal storage systems.

What South Bend City Government Can Do:

- Retrofit municipal, transit, and school fleets to include anti-idling technology, and implement infrastructure improvements like electrified parking spaces.
- Educate businesses and residents and provide them with incentives for anti-idling technology.

**Additional Responsible Parties:** Transpo, South Bend Community School Corporation, South Bend Regional Chamber, South Bend Region Economic Development, INDOT, IDEM

***ACTION T2.5 - Promote upgrades to vehicles that reduce road friction and wind resistance***

SCALE: **M**   \$ CO-BENEFITS: 










Retrofits to a vehicle’s shape, form, or geometry can also improve fuel efficiency by reducing friction and resistance during movement, through techniques like aerodynamic devices and low rolling resistance tires.

What South Bend City Government Can Do:

- Educate businesses and provide them with incentives for reducing road friction and resistance.

**Additional Responsible Parties:** Transpo, South Bend Community School Corporation, South Bend Regional Chamber, South Bend Region Economic Development, INDOT, IDEM

***ACTION T2.6 – Identify how adoption of autonomous vehicle technology can drive fuel efficiency and emissions reductions***

SCALE: **L**   \$ CO-BENEFITS:       

Irrespective of the timeline and scope of adoption, autonomous vehicles are certain to play a role in South Bend’s transportation network within this century. Comprehensive planning is critical for ensuring that this technology results in reductions to greenhouse gas emissions, instead of the increases that many experts are projecting.

What South Bend City Government Can Do:

- Undertake a planning process to prepare for both public and private autonomous vehicle operations by assessing impacts and developing strategies to help manage this technology on a local level.

Additional Responsible Parties: MACOG, INDOT



Action	Additional Stakeholders	Municipal Role	Timeframe/ Impact	Co-Benefits	Cost	
<b>GOAL T1. Reduce vehicle miles traveled (VMT) and single occupancy vehicle (SOV) trips</b>						
T1.1	Promote and strengthen public transit	Transpo, MACOG, State of Indiana, SBR Chamber, Local Businesses & Institutions	Planning Advocacy Promotion	Short, Ongoing High Impact	Cost Savings Public Health Economic Growth Quality of Place Increased Transportation Access Increased Equity	\$\$\$
T1.2	Promote and improve bike share and alternative mobility programs	Program Providers, MACOG, SBR Chamber, Local Businesses	Funding Program Management Promotion Partnership Building	Short, Ongoing Medium Impact	Cost Savings Public Health Economic Growth Quality of Place Increased Transportation Access	\$\$
T1.3	Promote and advance biking and walking through education and community partnerships	Bike Michiana Coalition, School Corporation, MACOG, Community Recreation Centers (YMCA, etc.), Local Businesses, Community Organizations	Promotion Partnership Building	Short, Ongoing Medium Impact	Cost Savings Public Health Quality of Place Increased Transportation Access Increased Equity Increased Engagement	\$
T1.4	Reduce the length and frequency of vehicle trips with land use and economic development	Local Developers, Transpo, MACOG, SBR Chamber, Economic Development	Planning Funding Program Management Regulation Promotion	Medium, Ongoing High Impact	Public Health Economic Growth Quality of Place Increased Transportation Access	\$

T1.5	Prioritize infrastructure investments that advance access to transit and active transportation options	Transpo, MACOG, INDOT, NICTD	Planning Funding Program Management Advocacy	Medium, Ongoing High Impact	Cost Savings Public Health Economic Growth Quality of Place Increased Transportation Access Increased Equity	\$\$\$
T1.6	Promote carpool and vanpool services	Transpo, SBR Chamber, Local Businesses	Advocacy Promotion	Medium, Ongoing Medium Impact	Cost Savings Public Health Quality of Place Increased Transportation Access Increased Equity	\$\$
T1.7	Promote and strengthen passenger rail services for regional travel	MACOG, NICTD, Amtrak	Funding Program Management Advocacy Promotion	Medium, Ongoing Medium Impact	Economic Growth Quality of Place Increased Transportation Access	\$\$\$
<b>GOAL T2. Transition to cleaner, more efficient vehicle fuels and technology</b>						
T2.1	Undertake and promote diesel engine retrofits in municipal and commercial fleets	Transpo, School Corporation, SBR Chamber, Economic Development, MACOG, INDOT, IDEM	Funding Program Management Promotion	Medium, Ongoing High Impact	Public Health Quality of Place Increased Equity	\$\$
T2.2	Incentivize community members to retire older vehicles and replace them with alternative fuel vehicles	Transpo, School Corporation, MACOG, INDOT, IDEM	Funding Program Management	Medium, Ongoing Medium Impact	Cost Savings Public Health Economic Growth Increased Equity	\$\$\$
T2.3	Advocate for increased state vehicle emissions testing requirements in St. Joseph County	Indiana State Legislature, IDEM, INDOT	Advocacy Regulation	Medium, Ongoing Medium Impact	Public Health Increased Equity	\$
T2.4	Promote anti-idling technology locally	Transpo, School Corporation, SBR Chamber, Economic Development, INDOT, IDEM	Promotion	Medium, Ongoing Medium Impact	Cost Savings Public Health	\$

T2.5	Promote upgrades to vehicles that reduce road friction and wind resistance	Transpo, School Corporation, SBR Chamber, Economic Development, INDOT, IDEM	Promotion	Medium, Ongoing Low Impact	Cost Savings	\$
T2.6	Identify how adoption of autonomous vehicle technology can drive fuel efficiency and emissions reductions	MACOG, INDOT	Planning	Long High Impact	Cost Savings Public Health Economic Growth Quality of Place Increased Transportation Access	\$

# ENERGY






With energy use in buildings representing nearly two-thirds of South Bend's greenhouse gas emissions, this area represents the largest opportunity for greenhouse gas reduction in the city. Two primary goals for achieving these reductions include:

- Goal 1.** Increasing energy efficiency in residential, industrial, and commercial sectors.
- Goal 2.** Transitioning to renewable energy sources.

Partnerships with utilities like Indiana Michigan Power and the Northern Indiana Public Service Company (NIPSCO) will be critical for driving these reductions, and as with transportation, the City of South Bend has a distinct ability to use its publicly-owned buildings, financial resources, regulatory power, and procurement processes to demonstrate the value of implementation for constituents.

## GOAL E1. INCREASE ENERGY EFFICIENCY IN RESIDENTIAL, INDUSTRIAL, AND COMMERCIAL SECTORS

### ***ACTION E1.1 - Expand energy efficiency audits for buildings across multiple sectors***

SCALE:   \$ CO-BENEFITS:   





Energy efficiency in buildings starts with a clear and comprehensive appraisal of a property's current energy usage, whether for homes, apartments, businesses, or factories. Energy efficiency assessments are the basis for both energy benchmarking and for identifying opportunities for savings from weatherization, system replacement, process improvement, fuel switching, or other measures.

What South Bend City Government Can Do:

- Partner with local utilities to provide and maintain free energy auditing services for property owners and managers, either through their own staffing or a third-party provider.
- Connect property owners with auditing services at trigger events in the municipal licensing and permitting processes.

**Additional Responsible Parties:** Indiana Michigan Power, NIPSCO, South Bend Regional Chamber, Homeowner Associations, Property Management Firms

### ***ACTION E1.2 - Enact an energy benchmarking ordinance for larger buildings***

SCALE:   \$ CO-BENEFITS:  

As of 2019, 30 cities across the US have adopted some form of an energy benchmarking ordinance. Whether it be simply a reporting-based policy, or paired with actual performance requirements, benchmarking ordinances are an effective way to encourage active energy management by property owners. Typically, the largest buildings account for an outsized portion of the energy usage, and since they are typically professionally-managed and income-focused, they have a greater capacity and motivation to improve performance than an individual residential homeowner. Benchmarking ordinances are typically focused on energy awareness via data collection and reporting, versus instituting new standards for compliance.

What South Bend City Government Can Do:



- Adopt an energy benchmarking ordinance.

- Educate property owners and managers on energy benchmarking, its benefits, and how to successfully undertake it.

**Additional Responsible Parties:** Property Management Firms, Real Estate Associations, South Bend Regional Chamber, Indiana Michigan Power, NIPSCO

***ACTION E1.3 - Expand South Bend’s regional energy efficiency workforce***

SCALE:   \$

CO-BENEFITS:  

For South Bend’s buildings to achieve a maximum level of energy efficiency, an increase in the number of appropriately-skilled local contractors and consultants is urgently needed. In regions of the country similar to South Bend, this form of workforce development has been most successful when existing contractors and tradespeople in related fields are supported in expanding their skillset. Energy efficiency training can also target disadvantaged segments of the workforce, like the re-entry population. A key challenge to overcome is the seasonality of energy efficiency work - planning is necessary to ensure that this sector represents a truly viable opportunity for trainees.



What South Bend City Government Can Do:

- Partner with workforce development and economic development professionals, trade organizations, and certification programs on conducting energy efficiency training workshops.
- Prioritize training workshop graduates for potential municipal energy efficiency projects.

**Additional Responsible Parties:** Workforce Development Entities, South Bend Regional Chamber, Indiana Michigan Power, NIPSCO, South Bend Region Economic Development

***ACTION E1.4 - Update building codes to increase energy efficiency requirements on new construction and major renovation projects***

SCALE:   \$\$

CO-BENEFITS:  



Municipal building codes are a primary method for managing and maintaining the quality and safety of built structures throughout the city. Additionally, building codes set energy efficiency standards and requirements. Compliance with these standards is necessary for securing municipal permits for renovation, construction, and occupancy. Codes can drive improvements to energy efficiency as the electrification of building systems, net-zero energy requirements for new construction buildings, and mandatory increases in energy savings after changes in occupancy or ownership. Importantly, since state regulations significantly govern what municipalities can and cannot include in their municipal codes, coordination with the State of Indiana will be critical for integrating more stringent energy efficiency standards into these codes.

What South Bend City Government Can Do:

- Adopt building code ordinances that require increased energy efficiency requirements on new construction and major renovation projects, but are sensitive to the capacity of the local development and property management communities.
- Lobby for more progressive state building regulations that raise the minimum standards for energy efficiency requirements in municipal codes.

**Additional Responsible Parties:** Property Management Firms, Building Trades, South Bend Regional Chamber, Indiana Michigan Power, NIPSCO, State of Indiana

***ACTION E1.5 - Develop local incentives that support adoption of energy efficiency improvements in buildings***

SCALE: **M III**  **\$\$** CO-BENEFITS: 

Municipalities have often partnered with local utilities or lending institutions to fund energy efficiency incentive programs for residential, commercial, and industrial property owners. Typically paired with free energy efficiency audits, incentives can result in improvements to a building or unit’s heating, cooling, ventilation, insulation, appliance, and lighting systems by offering low-cost financing, rebates, or municipal, state or federal tax credits.





What South Bend City Government Can Do:

- Develop new municipal programs and incentives, in partnership with utilities and lenders, to drive energy efficiency audits and adoption of energy efficiency improvements by property owners.
- Develop new municipal incentives (like PACE), or use existing ones, like tax increment financing and tax abatement, to help fund and finance development projects that incorporate energy efficiency elements.
- Promote programs with the local development community.

**Additional Responsible Parties:** Local Banks and Lenders, Indiana Michigan Power, NIPSCO, South Bend Regional Chamber, Homeowner Associations

**GOAL E2. TRANSITION TO RENEWABLE ENERGY SOURCES**

***ACTION E2.1 - Advocate for the conversion to renewable energy sources by local energy utilities***

SCALE: **SI**  **\$** CO-BENEFITS:   


As the entities required by Indiana law to generation and distribute electricity, utilities have tremendous influence on greenhouse gas emissions on a regional scale. Due to declining hard costs of renewable energy sources over the past decade, many large utilities are moving beyond simply providing green tariffs or passively allowing customer-installed renewable energy, and instead have begun to switch to renewables and cleaner fuels as their primary source of power. As the economics for conversion leads utilities further in their transition from fossil fuels like coal to renewable sources like solar and wind power, the City of South Bend can demonstrate leadership by advocating for this change.

What South Bend City Government Can Do:

- Lobby Indiana Michigan Power and NIPSCO for policy changes around conversion to renewable energy sources by large-scale utilities.

**Additional Responsible Parties:** Indiana Michigan Power, NIPSCO, Indiana Utility Regulatory Commission

**ACTION E2.2 - Advocate for Increased state Incentives to support renewable energy**

SCALE:   \$ CO-BENEFITS:  







Across the country, state-based incentives like tax credits, rebates, loan programs, and renewable energy credits have been critical mechanisms for driving early adoption and integration of renewable energy sources in every sector. While Indiana does provide property tax exemptions and require net metering, and some utilities offer feed-in tariffs and special net metering rates, these opportunities are limited. The size and number of awards and credits delivered through these incentive programs could be significantly increased to match levels offered in other states, which would help drive adoption renewable energy sources by homeowners, businesses and institutions.

What South Bend City Government Can Do:

- Lobby Indiana state legislature to broaden incentive programs for renewable energy sources.

Additional Responsible Parties: State of Indiana

**ACTION E2.3 - Develop municipal Incentives to support renewable energy**

SCALE:   \$\$ CO-BENEFITS:    

Municipalities can develop their own incentive programs that support a transition to renewable energy. One example is the Property Assessed Clean Energy (PACE) program for commercial buildings. PACE allows a municipality (or a third-party partner) to provide property owners incentivized financing for the up-front cost of energy improvements on a property, with the owner paying the costs back over time through a voluntary property tax assessment. Other traditional incentives like tax increment financing and tax abatement could also be utilized to fund development projects that incorporate renewable energy.

What South Bend City Government Can Do:

- Develop new municipal incentives (like PACE), or use existing ones, like tax increment financing and tax abatement, to help fund and finance development projects that incorporate renewable energy.
- Promote programs with the local development community.

**Additional Responsible Parties:** Local Developers, Indiana Michigan Power, NIPSCO, South Bend Regional Chamber, Neighborhood Associations

**ACTION E2.4 - Ensure Incorporation of renewable energy into municipal operations**

SCALE:   \$\$ CO-BENEFITS:  

As one of the largest landowners in the city, South Bend city government has a significant opportunity to adopt renewable energy technology (like rooftop solar panels) across its buildings and facilities. Since public buildings are highly visible and accessible to constituents, the city's adoption of renewable energy strategies would serve as a leading example for residents and businesses in the community.

What South Bend City Government Can Do:

- Conduct a feasibility assessment and develop a capital plan for integration of renewable energy sources into municipal buildings.

**Additional Responsible Parties:** Indiana Michigan Power, NIPSCO

***ACTION E2.5 – Continue to update and maintain municipal permitting and procurement guidelines that facilitate renewable energy adoption***

SCALE: **M** **III**  **\$**

CO-BENEFITS:   

Existing permitting requirements, public procurement guidelines, and construction standards that pre-date renewable energy technology may prove inadvertently onerous and can add to the time and cost of a developer building a wind farm, a homeowner adding a solar array, or a contractor’s bid for a city renewable energy installation. Through the City’s participation in SolSmart, some local permitting processes have been streamlined for solar energy systems. As technology continues to evolve and business and labor markets change, continuing to update the City’s guidelines for both internal and private projects will ensure that the process does not become a barrier to adoption.



What South Bend City Government Can Do:

- Continue to update building permit guidelines to include and consider new renewable energy generation technology.
- Update procurement guidelines to reflect the evolving capacity and structure of renewable energy contractors.

**Additional Responsible Parties:** Indiana Michigan Power, NIPSCO

***ACTION E2.6 – Integrate renewable energy generation into land use planning and redevelopment activities***

SCALE: **M** **III**  **\$\$**

CO-BENEFITS:  

Some renewable energy generation can require significant amounts of land. The largest solar arrays can occupy hundreds of acres, and wind farms or new compressed natural gas lines oftentimes require large easements to establish a necessary buffer from areas of density and development. Readying a community for renewable energy generation oftentimes requires an assessment of existing land uses to determine compatibility, as well as the establishment of planned zones for strategies like solar arrays, wind farms, anaerobic digesters, and CNG lines. Planning for renewable energy districts must be integrated into the City’s comprehensive planning and land acquisition strategies.

What South Bend City Government Can Do:

- Maximize the number of allowable zones for small solar and wind installations.
- Identify potential areas and zones for solar and wind farm installations.
- Develop a land acquisition strategy, in partnership with development groups and local utilities, for facilitating the creation of planned renewable energy generation zones.

**Additional Responsible Parties:** South Bend Redevelopment Commission, MACOG, Indiana Michigan Power, NIPSCO, Renewable Energy Developers



Action	Additional Stakeholders	Municipal Role	Timeframe/ Impact	Co-Benefits	Cost	
<b>GOAL E1. Increase energy efficiency in residential, industrial, and commercial sectors</b>						
E1.1	Expand energy efficiency audits for buildings	I&M, NIPSCO, SBR Chamber, Homeowner Associations, Property Management Firms	Funding Program Management Promotion Partnership Building	Short, Ongoing Medium Impact	Cost Savings Economic Growth Increased Engagement	\$
E1.2	Enact an energy benchmarking ordinance	Property Management Firms, Real Estate Groups, SBR Chamber, I&M, NIPSCO	Regulation Promotion	Short, Ongoing Medium Impact	Cost Savings Increased Engagement	\$
E1.3	Expand South Bend's regional energy efficiency workforce	Workforce Development Entities, SBR Chamber, I&M, NIPSCO, Economic Development	Program Management Promotion Partnership Building	Short Medium Impact	Economic Growth Increased Engagement	\$
E1.4	Update building codes to increase energy efficiency requirements	Property Management Firms, Building Trades, SBR Chamber, I&M, NIPSCO, State of Indiana	Regulation Advocacy	Medium, Ongoing High Impact	Cost Savings Increased Engagement	\$\$
E1.5	Develop local incentives for energy efficiency	Local Banks and Lenders, I&M, NIPSCO, SBR Chamber, Homeowner Associations	Promotion	Medium, Ongoing Medium Impact	Cost Savings	\$\$
<b>GOAL E2. Transition to renewable energy sources</b>						
E2.1	Advocate for the conversion to renewable energy sources by local energy utilities	I&M, NIPSCO, IURC	Advocacy Promotion	Short, Ongoing High Impact	Public Health Economic Growth Quality of Place	\$

E2.2	Advocate for increased state incentives for renewable energy	State of Indiana	Advocacy	Short, Ongoing Medium Impact	Economic Growth Increased Engagement	\$
E2.3	Develop municipal incentives for renewable energy	Local Developers, I&M, NIPSCO, SBR Chamber, Neighborhood Associations	Funding Program Management Promotion	Short, Ongoing Medium Impact	Cost Savings Economic Growth Quality of Place Increased Engagement	\$\$
E2.4	Ensure incorporation of renewable energy into municipal operations	I&M, NIPSCO	Planning	Medium, Ongoing Medium Impact	Cost Savings Increased Engagement	\$\$
E2.5	Update and maintain permitting and procurement guidelines that facilitate renewable energy	I&M, NIPSCO	Regulation	Medium, Ongoing Medium Impact	Cost Savings Economic Growth Increased Engagement	\$
E2.6	Integrate renewable energy into land use and zoning policy	SBR Chamber, MACOG, I&M, NIPSCO Renewable Energy Developers	Planning	Medium, Ongoing Medium Impact	Economic Growth Quality of Place	\$\$

## OTHER AREAS OF POTENTIAL ACTION

Though not primary sources in South Bend's emissions inventory, 5.6% of emissions are attributed to additional categories including water treatment and waste. Exciting new energy-efficient technologies are transforming how waste is managed and that may present tremendous opportunities for emissions reduction. Automated vehicles, artificial intelligence, land management and agriculture methods and other innovations may bring about advances that we cannot even conceive of now. Furthermore, South Bend is positioned well to be a leader in innovation thanks to its nearby universities and developments like Innovation Park, which exists to cultivate marketable innovations in an inspiring environment and assist entrepreneurs bringing products to market.

## FUTURE PERFORMANCE EVALUATION

The City of South Bend and South Bend Common Council have prioritized iterative goal setting and progress-tracking for GHG emissions reductions. The City of South Bend Sustainability Office will provide annual progress reports on the Climate Action Plan, and the municipal and community GHG emissions inventories will both be updated every three years.<sup>26</sup> Action Plans can also be updated as implementation occurs and new resources become available. Reporting can draw from the below list of potential metrics, based on the quality of the available data and the priorities of the audiences.

Category	Metric	Action
Community-Wide	Percent change in community GHG, relative to baseline year	-
	Percent change in municipal government GHG, relative to baseline year	-
	Percent change in electricity or natural gas use (kWh/therms) per capita, versus baseline year	-
	Percent change in population from baseline year	-
	Percent change in city sales tax from baseline year	-
Transportation	Ridership totals on bus transit	T1.1
	Number of trips made by bus transit	T1.1
	Vehicle miles traveled by bus transit	T1.1
	Miles covered by public transit bus routes	T1.1&T1.5
	Vehicle miles traveled by automobiles, tri-annually	T1.1-T1.7
	Percent population who commute by bike	T1.2-T1.4
	Number of trips made by walking	T1.2-T1.4
	Number of trips made by biking	T1.2-T1.4
	Percentage of population living within ¼ mile of transit	T1.4
	Number and percentage of building permits issued within ¼ mile of transit	T1.4-T1.5
	Miles of bike lanes	T1.5
	Miles of sidewalks	T1.5
	Dollars spent on sidewalks and bike lanes in city's capital improvements plan	T1.5
	Dollars spent on sidewalks and bike lanes in MACOG's Transportation Improvement Program (TIP)	T1.5
Vehicle miles traveled by carpool and vanpool services	T1.6	

	Number of boardings and alightings on NICTD and Amtrak trains in South Bend	T1.7
	Percentage of city-owned fleet converted to electric or CNG vehicles	T2.1
	Percent municipal buses and fleet operating on electric and CNG power	T2.1
	Number of electric and hybrid vehicles registered in South Bend	T2.1
	Number of public charging stations located in South Bend	T2.1
	Number of diesel emissions reduction measures for municipal and commercial fleets since baseline year	T2.2
	Average (mode) age of vehicles registered in South Bend	T2.2
	Number of vehicles tested in St. Joseph County	T2.3
Energy	Total energy consumed in applicable units	E1
	Number of energy efficiency audits conducted annually	E1.1
	Percent of city's total building square footage that received an energy efficiency audit within the last 5 years	E1.1
	Number of residential and commercial buildings with energy efficiency designations	E1.1-E1.5
	Total square footage, number, type, and energy-use intensity of buildings parting in a municipal benchmarking program	E1.2
	Number of contractors with professional energy efficiency certifications, like "BPI certified energy auditor", "AEE certified energy practitioner," etc.	E1.3
	Total amount of municipal and state incentives awarded for energy efficiency projects	E1.5
	Cumulative and annual kWh distributed solar installed	E2
	Number, size and output of onsite renewable energy installations in South Bend	E2
	Total megawatt hours (MWh) offset by renewable energy tariffs in South Bend	E2
	Percentage of utility provider's energy generation portfolio that is derived from renewable energy sources	E2.1
	Number of South Bend customers participating in renewable energy tariff programs	E2.2-E2.3
	Total amount of municipal and state incentives awarded for renewable energy projects	E2.2-E2.3
	Percent renewable energy in municipal electricity portfolio	E2.4
	Acreage of land zoned for renewable energy generation	E2.6

# APPENDIX

## PLANNING PROCESS

Delta Institute followed a traditional plan approach wherein Delta reviewed the existing conditions utilizing documents previously created by the City of South Bend and conducting a careful analysis of the City's emissions inventory. After studying the City's existing conditions, Delta engaged with internal and external stakeholders. That engagement informed the creation of the GHG reduction targets for which Delta Institute identified top strategies for pursuing those targets.

## INVENTORY AND METHODOLOGY

Delta reviewed the 2016 City emission inventory that reported 42,225 mT CO<sub>2</sub>e (Scope 1 and 2) as well as the 2018 community-wide inventory which identified annual emissions of 1,294,599 mT CO<sub>2</sub>e (Scope 1, 2, and 3). Delta reviewed the data collection processes and reviewed data entry for any potential discrepancies. Delta reviewed all energy and emissions variables and factors to ensure solid calculations. The data was input into ICLEI ClearPath. ClearPath™ is the leading online software platform for completing greenhouse gas inventories, forecasts, climate action plans, and monitoring at the community-wide or government-operations scale.

## STAKEHOLDER ENGAGEMENT

Delta Institute engaged stakeholders for the Climate Action Plan through two strategies:

- Interviews with internal City of South Bend stakeholders for local context.
- Focus groups for targeted community feedback.

## LOCAL CONTEXT INTERVIEWS

### *Summary*

Every community has specific local conditions that are fundamental to review in order to create a plan that is relevant and useful. Between May 30 and June 30, 2019, Delta Institute met with ten South Bend representatives ranging from elected officials to municipal staff and the staff of regional agencies that work with South Bend. Those interviews confirmed community values, hopes for the future, and a willingness to collaborate in new ways while also raising important considerations for greenhouse gas reduction strategies.

To frame interviews, Delta staff briefed South Bend representatives providing key findings from Delta's review of how the South Bend government, residents, and businesses impact climate. Similar to many American cities, South Bend's emissions largely stem from transportation and energy use. South Bend representatives were already knowledgeable about climate and how their city works and enthusiastically shared their ideas.

### ***Key Observations***

- South Bend needs a South Bend-style plan and solution. Specifically, the plan should be actionable, realistic and meaningful. It should be mindful of South Bend's status as a Midwestern city striving to build a thriving economy.
- Operationally, South Bend has already addressed several foundational barriers to sustainability through zoning, permitting, and design. Leveraging existing economic development tools to encourage sustainable practices in the private sector is an untapped opportunity.
- South Bend wants to improve quality of life for residents with improvements to housing stock and access to economic opportunity. Similarly, there is a desire to make South Bend conducive to employers, too.
- Some South Bend staff want more information and knowledge about both climate and technologies.
- South Bend staff hope GHG reduction strategies can create opportunities and support both new and existing initiatives.
- South Bend staff believe key factors for selecting GHG strategies include cost, impact, achievability, and creating opportunities for residents.

## **TARGETED COMMUNITY FEEDBACK**

In June 2019, Delta Institute conducted a series of focus groups in South Bend. These focus groups were used to collect targeted community feedback to inform the plan's guiding principles, climate reduction targets, and climate action strategies. Community input helped Delta create a framework for selecting and prioritizing strategies.

The focus groups were structured to begin with a brief presentation outlining the goals, historical context, and process for South Bend's climate action plan and inventory information highlighting where the city's GHG emissions are primarily generated. Participants were then asked to share their general feedback, as well as specific concerns, opportunities, and recommendations for reducing GHG emissions in South Bend.

### **FOCUS GROUP SUMMARIES**

#### ***Green Ribbon Commission***

The first focus group was comprised of ten South Bend residents, all affiliated with the Green Ribbon Commission. The South Bend Green Ribbon Commission was established in 2009 and was instrumental in the creation of both the Municipal Energy Office in 2010 and the Office of Sustainability in 2014. The group highlighted the need for a major cultural shift in South Bend, making the implications of climate change relatable to all residents and providing hope and motivation for transformative change. This group hoped to see education for residents, contractors, and students on GHG emission reductions and innovative City-led programs to encourage commercial and industrial sustainability initiatives. They also expressed a desire for aggressive, inspirational goals, as opposed to incremental ones.

#### ***General / Overflow Focus Group***

An alternate focus group time was set up in the evening to allow for flexibility for any participants unable to attend other groups. One participant, affiliated with the Green Ribbon Commission, attended this session. This participant identified economic development as a major driver for the City and expressed desire to attract innovative businesses and solutions. They also stated concerns about potential overregulation, a lack of trained contractors, and a high percentage of renters - making residential improvements difficult to incentivize. Highlighted advantages and opportunities for South Bend included the proximity of several higher education institutions and attractive location.

### ***Commercial / Industrial***

Stakeholders within this focus group represented commercial and industrial businesses, real estate development, organized labor, and City employees. Individuals discussed the need for efficient transportation for the city's workforce and identified the complexities of establishing long-term remedies to reduce single occupancy vehicles. Participants suggested the need for a broader transportation vision for trades workers that could include a mix of employer supported mobility solutions and collaborating with other cities such as Elkhart, IN.

Energy conversations highlighted the practicality of energy efficiency; however, stakeholders agreed that while it would be important to increase local contractors' skills and abilities to install new technologies that might be energy efficient or generate renewable energy, it was more important to target the architects, owners and vendors that could drive the market. This group was keen on articulating the role of educating and informing decision makers within the buildings sector. The group articulated programs and pathways for continuing education, for a more skilled workforce, while sharing the realities of how those resources are being accessed and their success/popularity.

### ***Neighborhood Development***

Participants from universities, nonprofit organizations, neighborhoods, City departments, and agencies shared their insights regarding GHG reduction strategies. Attendees received an overview of the community's GHG emissions profile, which provided context for the focus group's conversation. Attendees spoke candidly about housing stock, low-income communities, communities of color, and risks associated with climate change that vulnerable groups experience. The conversation highlighted transportation conflicts such as the absence of emissions testing Indiana that results in older, less efficient, and higher-emitting cars remaining in service. Many echoed similar sentiments of other focus groups with regards to prioritizing energy and emissions education. Individuals advocated for the Climate Plan to have strategies that translate into tangible pathways for the following areas of concern; home quality improvements, attracting and retaining contractors, tackling public health issues/interconnected issues, and improving conditions for the city's poorest population.

## **SUMMARY OF FINDINGS**

### ***Concerns***

- Lack of proficient energy efficiency contractors and lack of efficiency education for contractors.
- Large low-income population - making sure residential strategies are inclusive of all residents.
- Insufficient public transportation, regional commuting. Driving is the easiest form of transportation.
- Competition with surrounding municipalities for businesses and talent.

### ***Opportunities***

- Proximity to several high-caliber higher educational institutions with innovative programs.
- Partnership with workforce development efforts to train contractors and ensure that workers in fossil fuel related industries are not left behind.
- Colocation and development corridors to reduce passenger vehicle miles.
- Partner with existing entities (e.g. neighborhood associations, unions, Green & Healthy Homes, youth groups, higher education institutions) to strengthen efforts.

### ***Recommendations***

- Education for residents, contractors, and students/youth.
- Action oriented strategies that are inclusive.
- Coordinate emissions reduction strategies with economic development incentives.
- Encourage the City of South Bend to lead by example with actions to reduce GHG emissions.

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- <sup>2</sup> Purdue University. Indiana's past & future climate change: A report from the Indiana Climate Change Impacts Assessment. 2018. <https://ag.purdue.edu/indianaclimate/indiana-climate-report/>
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- <sup>4</sup> Semmler, Ed. South Bend Tribune. Purdue study says farmers need to prepare for climate change. 2018. [https://www.southbendtribune.com/news/business/purdue-study-says-farmers-need-to-prepare-for-climate-change/article\\_0137be8c-7e5a-59b3-9987-74e3da720225.html](https://www.southbendtribune.com/news/business/purdue-study-says-farmers-need-to-prepare-for-climate-change/article_0137be8c-7e5a-59b3-9987-74e3da720225.html)
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- <sup>7</sup> Purdue Climate Change Research Center, Indiana Climate Change Impacts Assessment: Finding Useful Information for the Transportation Sector (2016). [https://mygeoHub.org/resources/1175/download/IN\\_CCIA\\_Transporation.pdf](https://mygeoHub.org/resources/1175/download/IN_CCIA_Transporation.pdf).
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- <sup>9</sup> Parrot, Jeff, Joe Dits and Mary Beth Spalding. South Bend Tribune. A year after historic South Bend area floods, damage remains, preventative measures planned. 2019. [https://www.southbendtribune.com/news/local/a-year-after-historic-south-bend-area-floods-damage-remains/article\\_38db74dd-b1df-5062-ad7b-6acb91694ef7.html](https://www.southbendtribune.com/news/local/a-year-after-historic-south-bend-area-floods-damage-remains/article_38db74dd-b1df-5062-ad7b-6acb91694ef7.html)
- <sup>10</sup> Wastewater treatment plant gauge
- <sup>11</sup> [https://www.southbendtribune.com/multimedia/photos/photos-historic-flooding-in-michiana/collection\\_1131f994-1760-11e8-a893-dfa81fc0b049.html#11](https://www.southbendtribune.com/multimedia/photos/photos-historic-flooding-in-michiana/collection_1131f994-1760-11e8-a893-dfa81fc0b049.html#11)
- <sup>12</sup> Parrot, Jeff, Joe Dits and Mary Beth Spalding. South Bend Tribune. A year after historic South Bend area floods, damage remains, preventative measures planned. 2019. [https://www.southbendtribune.com/news/local/a-year-after-historic-south-bend-area-floods-damage-remains/article\\_38db74dd-b1df-5062-ad7b-6acb91694ef7.html](https://www.southbendtribune.com/news/local/a-year-after-historic-south-bend-area-floods-damage-remains/article_38db74dd-b1df-5062-ad7b-6acb91694ef7.html)
- <sup>13</sup> United Nations Economic Commission for Europe Sustainable Development Brief. The co-benefits of climate change mitigation. 2016. [http://www.unece.org/fileadmin/DAM/Sustainable\\_Development\\_No.2\\_Final\\_Draft\\_OK\\_2.pdf](http://www.unece.org/fileadmin/DAM/Sustainable_Development_No.2_Final_Draft_OK_2.pdf)
- <sup>14</sup> The Intergovernmental Panel on Climate Change. Special report: Global warming of 1.5 degrees Celsius. <https://www.ipcc.ch/sr15/>
- <sup>15</sup> Sierra Club. South Bend council votes unanimously for clean energy transition. 2016. <https://content.sierraclub.org/press-releases/2016/09/south-bend-council-votes-unanimously-clean-energy-transition>.
- <sup>16</sup> City of South Bend Common Council Resolution 19-33, 2019
- <sup>17</sup> Global Covenant of Mayors. About Us. <https://www.globalcovenantofmayors.org/about/>.
- <sup>18</sup> City of South Bend Common Council Resolution 19-33, 2019
- <sup>19</sup> American Fact Finder, US Census
- <sup>20</sup> <https://www.bea.gov/data/gdp/gdp-metropolitan-area>
- <sup>21</sup> 2019 Stakeholder feedback interviews - Delta Institute
- <sup>22</sup> City of South Bend Common Council Resolution 19-33, 2019
- <sup>23</sup> City of South Bend 2019 CDP inventory submission
- <sup>24</sup> City of South Bend 2019 CDP inventory submission
- <sup>25</sup> City of South Bend 2019 CDP inventory submission



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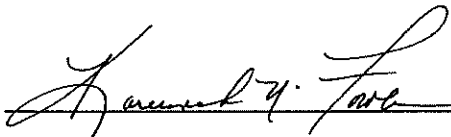
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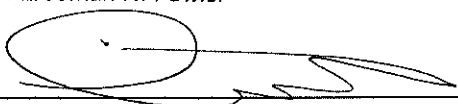
# RESOLUTION

No. 4787-19

Passed by the Common Council of the City of South Bend, Indiana \_\_\_\_\_

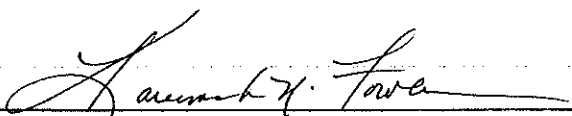
\_\_\_\_\_  
April 22, 20 19

Attest:  City Clerk  
Kareemah N. Fowler


Attest:  President of Common Council

Presented by me to the Mayor of the City of South Bend, Indiana \_\_\_\_\_

\_\_\_\_\_  
April 22, 19  
20 \_\_\_\_\_

 City Clerk  
Kareemah N. Fowler

Approved and signed by me April 24 20 19.

\_\_\_\_\_  
 Mayor

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**BILL NO. 19-33**

**RESOLUTION NO. 4787-19**

**A RESOLUTION OF THE SOUTH BEND COMMON COUNCIL CONCERNING CLIMATE RECOVERY AND OUR COMMITMENT TO DEVELOP A CLIMATE ACTION PLAN AIMED AT GREENHOUSE GAS REDUCTIONS FOR THE CITY OF SOUTH BEND AND TO SUPPORT OTHER CLIMATE RELATED INITIATIVES.**

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**WHEREAS**, scientific consensus concludes that it is extremely likely that the dominant cause of ongoing climate change is the emission of heat-trapping gases by human actions, primarily from the combustion of fossil fuels; and the more carbon dioxide in our atmosphere, the warmer our planet gets. Per the National Oceanic and Atmospheric Administration (NOAA), carbon has not been this highly concentrated in the atmosphere in the past 800,000 years; in fact, according to NOAA, the last five years, 2014-2018, are the warmest years ever recorded<sup>1</sup>; and

**WHEREAS**, in 1988, NASA's Dr. James Hansen testified before Congress on the impending perils of climate change, and the Intergovernmental Panel on Climate Change (IPCC) was established by the United Nations and the World Meteorological Association, and has since released five climate assessments with each affirming: the planet is getting warmer and humans are causing it through our carbon emissions, and unless we reduce emissions, there are serious environmental consequences in our future. Both the 1997 Kyoto Protocol<sup>2</sup> and the 2015 Paris<sup>3</sup> Agreement challenged nations to reduce greenhouse emissions and thereby, limit climate change, and the 2019 IPCC report just released in January advocates for policies aimed at temperature targets under one point five (1.5) degrees Celsius, and further acknowledged that the impact of even a one point five (1.5) degrees Celsius rise will pose drastic impact on the Earth's ecosystems and inhabitants<sup>4</sup>; and

**WHEREAS**, climate change already poses risks at the global, state, and local level, impacts evidenced around the world are: changes in precipitation (intensification of both drought and storm effects), ocean acidification, coral reef degradation, loss of species, threats to marine life and biodiversity, rising sea levels threatening food supplies and livelihoods, and forced emigration of coastal populations. In addition, extreme weather events, temperatures, and air pollutants can acutely impact human health. The elderly, young, homeless, and people with chronic diseases, or respiratory illnesses (such as asthma) are particularly sensitive to extreme temperatures contributing to increase hospital visits, health care costs, and mortality. Another health effect of climate change is the spread of disease such as Lyme and the Zika Virus which are transmitted by ticks and mosquitoes that thrive in hot, humid environments<sup>5</sup>; and

**WHEREAS**, Indiana and South Bend will certainly share in some of these impacts, already documented or projected effects include, but are not limited to: record breaking heat waves and high humidity (with accompanying increased demand for cooling), reduced water and air quality, decreased agricultural productivity (e.g., of corn and soybean crops); increased heavy rainfall leading to more flooding, shorter winters and delayed fall freeze (e.g., extending the ragweed allergy season), increased invasive species; loss of plant, fish and wildlife habitats<sup>6</sup>; and

**WHEREAS**, these and other impacts will not be equally distributed; communities that already face socioeconomic and health inequities, whether around the world or here in our community,

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<sup>1</sup> <https://www.nationalgeographic.com/environment/2019/02/2018-fourth-warmest-year-ever-noaa-nasa-reports/>

<sup>2</sup> UNFCCC (1997) Kyoto Protocol to the United Nations Framework Convention on Climate Change adopted at COP3 in Kyoto, Japan on 11 December 1997

<sup>3</sup> <https://unfccc.int/resource/bigpicture/#content-the-paris-agreement>

<sup>4</sup> <https://www.ipcc.ch/>

<sup>5</sup> <http://docs.southbend.in.gov/WebLink/Browse.aspx?dbid=0&startid=279856&row=1&cr=1>

<sup>6</sup> Purdue Climate Change Research Center's 2019 Indiana Climate Change Impacts Assessment; <https://ag.purdue.edu/indianaclimate/>

will be most severely impacted, including youth, senior, people of color, and low-income populations; and

**WHEREAS**, City services, infrastructure, our local economy, the natural environment, public health, and our homes and businesses are endangered by climate change; and Cities have a primary duty and responsibility to ensure the public health, safety, and welfare of its residents – both now and in future generations; and

**WHEREAS**, Cities are uniquely empowered to take proactive, resolute, and prompt measures to directly influence activities that have climate impacts, such as energy use in homes and buildings, transportation, and by promoting sustainable development; and

**WHEREAS**, this Council, in February of this year at two joint committee hearings of our Health and Public Safety and our Utilities Committees, were presented with clear and compelling science, public testimony, letters, and petitions by local youth of all ages and other community members, to take immediate, real, and lasting legislative actions to reduce emissions of greenhouse gases and thus reduce global warming and contribute to the recovery of our planet; and

**WHEREAS**, Climate action provides opportunities for South Bend to improve our air quality, mobility, public health, social equity, energy independence and energy security, and the quality of our natural environment; it also can serve to attract jobs and economic development opportunity and increase long-term competitiveness. Action on climate change supports the development of a livable, sustainable City with a strong economy and high quality of life. Action can also improve resilience in face of climate change and other challenges; and

**WHEREAS**, South Bend has pursued various climate action with Mayor Stephen Luecke having signed the U.S. Mayors Climate Protection Agreement in 2008, convened the Green Ribbon Commission in 2009, and founded the Municipal Energy Office in 2010. In 2014, Mayor Pete Buttigieg created the Office of Sustainability and reconvened the Green Ribbon Commission, an advisory-body of local climate and sustainability experts. The South Bend Common Council, in 2016, unanimously passed the Cleaner Energy Resolution, and then, in 2018 signed on with Mayor Buttigieg to a “Repower Indiana” letter calling for 100% clean energy use by our utility supplier. In 2017, Mayor Pete Buttigieg signed the “We’re Still In” letter, joining Climate Mayors world-wide affirming a commitment to the Paris Agreement on Climate, despite the United States’ formal withdrawal from the talks; and

**WHEREAS**, this and previous Councils have also supported other energy efficiency and renewable energy initiatives in the municipal budget, including but not limited to energy and water-efficient facilities, alternative fuel vehicles, reducing waste and paper use, and robust community education and engagement endeavors. The City of South Bend actively influences sustainable behaviors in our community, encouraging biking and walking, supporting mass transit, yard waste and recycling opportunities, and advocating for clean and affordable energy; and

**WHEREAS**, by way of executive authority in April of 2018, Mayor Pete Buttigieg committed to the Global Covenant of Mayors for Climate and Energy, and effectively joined South Bend to 9,296 cities representing 814 million people in a pledge to implement policies and to undertake measures to (i) reduce/limit greenhouse emissions, (ii) prepare for the impacts of climate change, (iii) increase access to sustainable energy, and (iv) track progress of these policies and measures in meeting or exceeding the Paris Agreement objectives<sup>7</sup>; and

**WHEREAS**, in keeping with our pledge, our City has already measured and reported both our community and government operation levels of greenhouse gases, we are next poised under this global framework on climate action to set a greenhouse gas reduction goal and create a climate action plan encompassing not only the City of South Bend’s operations, but our community as a whole as defined by the geographic limits of our City; and

**THEREFORE, BE IT RESOLVED** the South Bend Common Council hereby supports the City Administration’s current Q2/Q3 2019 initiative to develop a climate action plan that:

<sup>7</sup> <https://www.globalcovenantofmayors.org>

specifies climate actions most impactful in South Bend, identifies ambitious but achievable greenhouse gas reduction goals customized to South Bend, includes both immediate internal actions and longer-term programs and policies, and outlines appropriate timelines for implementing the specific climate actions and achieving the greenhouse gas reductions; and

**THEREFORE, BE IT RESOLVED**, the South Bend Common Council requests this plan be completed by the Fall of 2019, and the administration's planning process include appropriate stakeholder feedback, consider Council and administration priorities, including but not limited to opportunities for climate action to increase social equity, maximizing benefits and minimizing impacts on individuals and businesses; and consideration of any action through the lens of the "triple bottom line." This approach posits we can slow the pace of climate change in ways that save money, build a better quality of life for our residents, and drive economic growth.

**THEREFORE, BE IT RESOLVED**, and to this end of triple net returns, the South Bend Common Council will look to support the administration's current and future internal policies, and community-focused measures to reduce greenhouse emissions. Accordingly, Council will respond to administration proposals; act to adopt proposed plans, goals, targets and measures as appropriate, including the consideration of a local ordinance or ordinances by the end of 2019; and to ensure adequate funding and staffing for adopted operational climate and community priorities.

**THEREFORE, BE IT RESOLVED**, the South Bend Common Council also sets, henceforth, that the administration create an iterative process of setting goals, tracking progress, and reporting. Specifically, Council and the community will be provided annual progress reports on the climate action plan well in advance of the budget planning process. Both the municipal greenhouse gas inventory and the community greenhouse inventory will be updated every 3 years, and the climate action plan updated on a 3-year cycle.

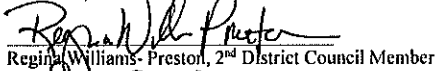
**THEREFORE, BE IT RESOLVED**, Council will seek opportunities to demonstrate climate leadership in Indiana, throughout the Midwest, and in our own community. It will also support the work of the Office of Sustainability and the Administration in doing the same, including collaboration with other governmental entities and agencies, assisting in engaging community stakeholders, and through public-private partnerships. These relationships and activities will be essential to the design, funding, implementation and attainment of our community's climate action plan goals.

**THEREFORE, BE IT RESOLVED**, that this Council commits itself today, and strongly urges future members of the South Bend Common Council, our Mayor's office, and our citizenry to remain engaged in and committed to climate action. Working together, we can confront what has been considered one of the greatest challenges of our time in proactive and strategic ways that benefit our community, our county, and our world.

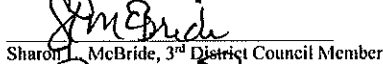
*Approved this 22<sup>nd</sup> day of April 2019*



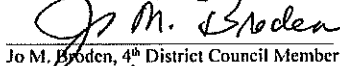
Tim Scott, 1<sup>st</sup> District Council Member



Regina Williams-Preston, 2<sup>nd</sup> District Council Member



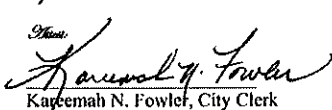
Sharon L. McBride, 3<sup>rd</sup> District Council Member



Jo M. Broden, 4<sup>th</sup> District Council Member



Jake Teshka, 5<sup>th</sup> District Council Member



Kayemah N. Fowler, City Clerk



Oliver J. Davis, 6<sup>th</sup> District Council Member



John Voorde, At Large Council Member



Gavin Eerlic, At Large Council Member

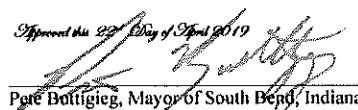


Karen L. White, At Large Council Member



Robert J. Palmer, Council Attorney

*Approved this 22<sup>nd</sup> Day of April 2019*



Pete Bottigieg, Mayor of South Bend, Indiana

PRESENTED 4-22-2019  
NOT APPROVED  
ADOPTED 4-22-2019

## SEALS, SHAWN

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**From:** Blade, Marvin A  
**Sent:** Monday, December 30, 2019 3:08 PM  
**To:** IDEM VWTrust  
**Subject:** Public Comments on EV Infrastructure funding for Indiana

\*\*\*\* This is an EXTERNAL email. Exercise caution. DO NOT open attachments or click links from unknown senders or unexpected email. \*\*\*\*

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I want to provide public input in response to the IDEM RFI around how funding will be used toward a future EV infrastructure. I work at Duke Energy have driven my personal Nissan Leaf for almost four years now. Here are my thoughts below.

- DCFC stations are the choice installations but due to their expense should be limited to interstates nearest the highest population centers. More impact for most the most Hoosiers rather than being dispersed across the state in remote areas where EV adoption is limited initially. **I suggest about 70% of dollars going to DCFC and 30% going to level 2s solely based on the installation costs.**
- DCFC stations are good but in reality a combination of level 2 stations at locations that are safe and convenient can also expand the infrastructure immensely. My experience of driving in Central Indiana tell me **we need DCFC spots near interstates but having level 2 stations near malls, concentrated area of employment such as downtown areas, universities (only open for public use)** and strategically located business parks could be a welcome edition. I was thinking of places that are safe and where people spend time, which is essential for sufficient charging until you get to the next location.
- I love driving to Bloomington as I can find a level two charging stations in a downtown city garage, a county garage and the local mall. These are not the only locations but they are very public and practical in terms of me using time wisely at a downtown B'town coffee shop or mall.

## SEALS, SHAWN

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**From:** Tim Hartigan  
**Sent:** Friday, December 27, 2019 12:09 PM  
**To:** IDEM VWTrust  
**Cc:** Tim Alberda  
**Subject:** Public Input on Indiana EV Charging Network

\*\*\*\* This is an EXTERNAL email. Exercise caution. DO NOT open attachments or click links from unknown senders or unexpected email. \*\*\*\*

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Input pursuant to the Volkswagen Mitigation Trust RFI due by January 3, 2020 according to the RFI document questions posed:

1. (Page 8) The priority for Indiana's network should be L2 type chargers. Funding can impact the network to a much greater degree due to unit cost, and provide more effective coverage.
2. (Page 9) Funding should be shared with other funding sources to help spread the funds over a wider area, as opposed to completely funding fewer locations.
3. Funding should be used to decrease distance between charging points. Using the funding concentrated where current EV's reside will not help achieve a more broad distribution network and further adoption of EV's.
4. Funding should be targeted more toward L2 usage at workplaces, shopping areas, and other destinations.
5. I suggest funding DCFC at this time would greatly restrict the breadth of funding and unnecessarily favor few vehicle brand owners, specifically Tesla. I suggest the split be at least 80-90% for L2 chargers, if not exclusively L2. .
6. Due to the limited amount, I suggest the funding be used in a one round offering.
7. (Page 10) I am not an EV driver. More L2 charge stations might influence my next vehicle purchase. Continued relatively low gasoline prices would affect a future decision to remain gas as well. Travel range is not currently a large factor in my mind since I would maintain at least one other gasoline powered vehicle for some time.

--  
Tim Hartigan  
General Manager  
Gasoline Equipment Service

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## SEALS, SHAWN

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**From:** Robyn Bancroft <rbancroft@oki.org>  
**Sent:** Thursday, December 19, 2019 3:48 PM  
**To:** IDEM VWTrust  
**Cc:** SEALS, SHAWN; Todd Listerman; Mark McCormack; Terri Randall; jordan.wallpe@duke-energy.com; Mark Policinski  
**Subject:** OKI Response: IDEM Requesting Public Input about Electric Vehicle Charging Infrastructure

\*\*\*\* This is an EXTERNAL email. Exercise caution. DO NOT open attachments or click links from unknown senders or unexpected email. \*\*\*\*

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Indiana Volkswagen Mitigation Trust Representative,

On behalf of the Ohio-Kentucky-Indiana Regional Council of Governments (OKI), I want to thank you for the opportunity to share our input regarding IDEM's future investments in EV charging infrastructure. As the recent International Council on Clean Transportation (ICCT) study has shown, the relationship between public charging ports and EV adoption is clearly linked. Being the MPO for SE Indiana, Northern Kentucky and SW Ohio, we support adoption of EVs for the positive impact zero emission vehicles will have on our region's air quality.

The below responses (in green) are based upon OKI's continuous engagement with a broad range of public and private EV-stakeholders and professionals, as well as conversations with our members. OKI staff work diligently to be on the cutting-edge of EV technology, so that we may realize the greatest benefits and opportunities for our tristate's multi-modal transportation network.

In addition to our responses to the seven questions below (in green), OKI is here to help IDEM in any way. There are two specific items we would like to share with you today.

- First, OKI has developed an App in response to Ohio EPA's plans for investing their allotted VW Settlement funds in EV charging infrastructure. This App is intended to assist in defining the attributes of locations as potential sites for EV charging stations. OKI would be pleased to create a similar App for Indiana's EV charging network planning activities as well.
- Second, I-74 and I-70 serve as Indiana's east-west interstate corridors. I-70 has been designated a FHWA Alternative Fuel Corridor, however I-74 has not. OKI would welcome the opportunity to work with IDEM to remedy this inconsistency and get the I-74 corridor equipped and designated to support FHWA's multi-State and regional cooperation and collaboration to create a reliable and comprehensive national network.

Again, thank you for this opportunity to provide comment and partner together. Please feel welcome to contact me with any further comments or questions.

Happy Holidays,



Robyn G. Bancroft, AICP  
 Strategic Initiatives Manager  
 720 E. Pete Rose Way, Suite 420  
 Cincinnati, Ohio 45202  
 Tel: 513.619.7662  
[www.oki.org](http://www.oki.org) | [rbancroft@oki.org](mailto:rbancroft@oki.org)



**IDEM Request for Information / OKI Responses**

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?
  - There should be a mix of both. Fast chargers along interstate corridors (i.e.: I-74 and I-275 in SE Indiana) would support longer-distance, region-to-region/state-to-state travel which is key for any local, regional or state economy. At the same time, Level 2 chargers are needed to fill in local, non-interstate gaps at high traffic generators (i.e.: Hollywood Casino in Lawrenceburg, Perfect North Slopes, Dearborn County Hospital, etc.). As far as what the mix should consist of, ICCT reports that, "...in the top electric vehicle markets, about 10 to 25% of the available public charging is fast charging."
  
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 versus 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?
  - Priority should be placed on funding EV charging stations that will be open to the public. That said, most LPA's are used to the 80/20 split in funding. IDEM may want to consider using this same funding approach.
  - In addition, it is widely believed that privately-owned multi-unit dwellings are not likely going to include EV chargers for their residents without a subsidy. Therefore, OKI suggests that EV charging equipment "installed at multi-unit dwelling but not made available to the public" be covered at a higher percentage than those "installed at workplace but not made available to the public."
  - In the bigger picture, EV charging infrastructure should be amended into local zoning requirements for new construction and major building renovation/expansion projects. IDEM could have a policy supporting this (perhaps providing sample ordinance language) for local jurisdictions.
  - Based on OKI input, the following two funding level options are provided for IDEM's consideration:

<b>Light-Duty Zero Emission Vehicle Supply Equipment Funding Levels</b>		
Installed at govt owned property and made available to the public	Up to 100% covered	Up to 80% covered
Installed at non-govt owned property and made available to the public	Up to 80% covered	Up to 70% covered



Installed at multi-unit dwelling but not made available to the public	Up to 70% covered	Up to 60% covered
Installed at workplace but not made available to the public	Up to 60% covered	Up to 50% covered

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?
  - Focus should be on building the entire network. Investing in EV charging equipment only where EV usage is currently at higher levels will perpetuate “EV deserts” across Indiana. Once again, the availability of public charging ports go hand-in-hand with EV adoption.
  
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?
  - OKI refers back to our response to #1. There needs to be a mix of both. ICCT’s finding of top EV markets having a mix of 10-25% fast chargers and 75-90% Level 2, might be a good formula to reference and apply to each “EV market” across Indiana. IDEM may want to consider Indiana’s metropolitan areas as separate “EV markets.” Adding the MPO overlay to your fast charging and Level 2 charging stations maps would provide an existing inventory for each MPO and a starting point for targeting additional stations at a 1:3 or 1:9 (Fast:L2) ratio. It’s worth noting that the maps provided by IDEM are a bit misleading. For example; the “point” on each map in Dearborn County represents four charging ports (2 Fast and 2 L2).
  
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)?
  - On the surface - based on cost and budget alone, the 60/40 example makes perfect sense. However, without having an analysis of where the gaps for Fast chargers exist across Indiana’s interstate network, this is difficult question to answer. Key interstate gaps should be identified for fast charger locations in order to determine the number needed and priority. Referring back to #4, once the locations for fast chargers are noted, a ratio of 1:3 to 1:9 (Fast:L2) can be applied to determine the number of Level 2 chargers needed within the designated EV Market/Indiana MPO area.
  
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)?
  - OKI supports one funding round, well-advertised with ample response time for application submissions. This will minimize IDEM staff time and resources. Yes, as time passes the cost of EV charging technology will continue to decrease. However, this \$6.135 M would provide a much needed financial catalyst to spark private expansion sooner versus later.

- Application criteria and scoring will be key in awarding the best investments with this limited pool of funding. IDEM's determination of "EV Markets" and gaps/locations where Fast and L2 chargers are needed should hold the greatest weight in the funding prioritization process.
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? State tax credit, market availability (many EVs are not available at car dealerships in the Midwest), Ride & Drive events for people to experience EVs, more public charging stations, employer incentives.
  - If not a current EV driver, what charging infrastructure related changes might alter your decision and move you to EV? Availability especially at retail/commercial areas. For example, running errands around town on weekend – making several stops, one might cut short their shopping trips if they can't recharge. Also, reliability – will charge port be available when I need it? Will it work? Ongoing maintenance of stations once installed is key.
  - 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? Cost. Technology is changing so fast – what will value of car be in one, two,...years? Maintenance – having local dealer/garage know how to service EV. Ability to charge when needed even around town. Gas stations are on every corner – there's really no excuse for running out of gas, but people do!
  - 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? Current stations – you never know if they will be in use and not available or completely out of service
  - Whether currently a gasoline-powered or EV driver, how much of a concern or issue is the travel range of current EVs? Depends on your budget for an EV. Currently, larger ranges are available in more expensive EVs. Benefit of Hybrid/Plug-ins is that you have gas back-up.

**From:** Indiana Department of Environmental Management [<mailto:idem@subscriptions.in.gov>]

**Sent:** Thursday, December 12, 2019 3:27 PM

**To:** Robyn Bancroft <[rbancroft@oki.org](mailto:rbancroft@oki.org)>

**Subject:** IDEM Requesting Public Input about Electric Vehicle Charging Infrastructure



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

## Press Release

**FOR IMMEDIATE RELEASE**  
December 12, 2019

### **IDEM Requesting Public Input about Electric Vehicle Charging Infrastructure**

**INDIANAPOLIS** - The Indiana Department of Environmental Management (IDEM) and the Indiana Volkswagen Environmental Mitigation Trust Fund Committee (Committee) are requesting input from the public to help enhance Indiana's electric vehicle charging infrastructure. Public responses

gathered from this Request for Information (RFI) will be used to ensure the success of Indiana's investment in an electric vehicle charging network.

To view the RFI and submit a response, visit IDEM's VW website at [idem.IN.gov/vwtrust](http://idem.IN.gov/vwtrust). Public responses must be submitted by Jan. 3, 2020. For questions regarding the RFI, contact [VWTrust@idem.IN.gov](mailto:VWTrust@idem.IN.gov).

#### **About the Committee**

The Indiana Volkswagen Environmental Mitigation Trust Fund Committee was formed under an executive order issued by Gov. Eric Holcomb on Oct. 4, 2017. The Committee will play a vital role in the disbursement of Indiana's share of funds from the Environmental Mitigation Trust created as part of Volkswagen's settlement of Clean Air Act violations regarding diesel emissions from their vehicles. Indiana will receive approximately \$41 million under the terms of the consent decree.

#### **About IDEM**

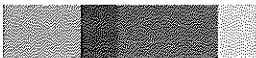
IDEM ([idem.IN.gov](http://idem.IN.gov)) implements federal and state regulations regarding the environment. Through compliance assistance, incentive programs and educational outreach, the agency encourages and aids businesses and citizens in protecting Hoosiers and our environment.

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#### **Media contacts:**

Barry Sneed  
Public Information Officer  
317-232-8596  
[media@idem.IN.gov](mailto:media@idem.IN.gov)

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This email was sent to [rbancroft@oki.org](mailto:rbancroft@oki.org) using GovDelivery Communications Cloud on behalf of: Indiana Department of Environmental Management · 100 North Senate Avenue · Indianapolis, IN 46204



## SEALS, SHAWN

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**From:** Hahn, Jason A.  
**Sent:** Saturday, December 14, 2019 8:18 PM  
**To:** IDEM VWTrust  
**Subject:** Charging stations

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My input is that the Gov't should not be spending time nor funds to subsidize electric charging stations. I realize this is a program to use money taken from VW. However, the state is working on projects to subsidize what the market should determine. As you may know, car companies are more than capable to survive without federal or state welfare programs to facilitate strategies. Welfare for companies generally only causes decisions the market will not support after the subsidies are gone. Perhaps examples would be hydrogen fuel cells or CNG cars. You don't see many today yet many millions of taxpayer dollars were flushed pushing those technologies which ultimately were not viable. Electric cars may be viable, but the market should be left to determine the timing.

Regards,

Jason Hah

Sent from my iPhone

Sent from my iPhone

## SEALS, SHAWN

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**From:** Porus Shah  
**Sent:** Friday, December 13, 2019 6:59 PM  
**To:** IDEM VWTrust  
**Subject:** Request to install EV charging at Richmond Indiana

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Hello

I'd like to request a few DC fast charging stations and level 2 charging stations in Richmond Indiana. There's a large group of hospital employees who drive electric cars and work at Reid Hospital in Richmond Indiana. There are also multiple hotels in Richmond that caters to travelers that drive through I-70.

There's a Meijer store close to the hospital and hotels that would be a great spot for these charging stations.

Thank you.  
Porus Shah

Sent from my iPhone

## SEALS, SHAWN

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**From:** Kathy Schuth <nnndirector@nearnorthwest.org>  
**Sent:** Friday, December 13, 2019 10:41 AM  
**To:** IDEM VWTrust  
**Subject:** RFI - responses

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Thank you for the opportunity to provide information for your EV efforts in Indiana. I am responding from two points of view – as an EV owner (primary vehicle) and as the director of a non-profit business that would be interested in installing charging equipment.

Responding to your 7 questions:

1.  **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?**

I think prioritizing a system across the state by location is the most important consideration. DCFC chargers placed at strategic locations on main roads can provide much needed infrastructure, but Level 2 chargers can provide a needed infrastructure in areas slightly less traveled – a secondary system. We live in South Bend, for example, and without a DCFC charger between South Bend and Indianapolis, we recently took an 8 hour trip between the cities in a Nissan Leaf, utilizing Level 2 chargers. Longer range cars will also alleviate these concerns. A single DCFC charger placed about midway would have tremendous travel time impact in that area of the state, and could be considered on both 31 and 65 (and likely 69)

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 versus L2 charging equipment, there is also a balance between funding at the highest possible level for lowercost 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?**

In my opinion, again, the best answer is not likely to be one or the other, but a mixture of both levels of incentive, with location priority being the largest governing factor. However, I strongly believe that any charging station NOT available for general public use should not receive 100% funding.

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?**

I would prioritize maximum distance between charging stations, to create a statewide infrastructure.

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?**

I would recommend prioritizing DCFC along highways. I believe the private interests and partnerships have L2 charging costs much more available to them, and it's much easier for local provision to fill in those gaps.

**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)?**

We should certainly see all broadening efforts, and funding, as a great win for the state though! If the state needed to spend 100% for DCFC in order to create a complete network, I'd encourage it. Again, I'd prioritize creating networks and work back from that hope.

**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)?**

That's an interesting thought to me, mainly due to possibility of technology upgrades. Perhaps two rounds, so there can be adjustment if needed for better technology, or adjusting to other (if any) charging stations being added adjacent to this program

**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?**

Current EV driver, but yes, access to at least an outdoor outlet is a must. Access to faster chargers on a daily in-town driving basis is actually not as necessary

**☑ If not a current EV driver, what charging infrastructure related changes might alter your decision and move you to EV?**

Definitely more public access in general (gas stations are everywhere!)

**☑ 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?**

Range of vehicles is the main one, as well as access to charge

**☑ 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?**

It's not a large issue for in-town driving, in general – but for any inter-town, city, or state driving, it's a must.

**☑ Whether currently a gasoline-powered or EV driver, how much of a concern or issue is the travel range of current EVs?**

This is also a large concern, and new cars and technologies pushing into the 200 mile limits will greatly increase the readiness of drivers to be able to make this switch (and these cars becoming more affordable)

Thank you for the opportunity to weigh in!

Kathy Schuth



Executive Director  
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[nnndirector@nearnorthwest.org](mailto:nnndirector@nearnorthwest.org)

[www.nearnorthwest.org](http://www.nearnorthwest.org)

## SEALS, SHAWN

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**From:** Casey Herman  
**Sent:** Thursday, December 12, 2019 4:15 PM  
**To:** IDEM VWTrust  
**Subject:** RFI

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To whom it may concern,

I just wanted to share my two cents. I appreciate the infrastructure going in but there are several items I see as being a problem.

- The new stations that I have been to have extremely short charging cables. You have to split parking spaces to charge a vehicle that has the charging door on the front left of the car. IE Walmart at Emerson and 465
- I would have only installed 2-4 chargers there with room for pads to expand later if needed. Then allocated that money to another 2-4 charger DC fast charge station.
- An upcoming issue I foresee is the market is changing. Rivian, Ford, Tesla, and a few others are starting to enter the market with EV trucks. I believe Rivian is next year with theirs. This being said, what happens when you pull up to DC fast charge your truck when you are pulling a trailer. A pull-through station would be needed. It would be super cool if Indiana was first at making this happen. The alternative would be unhitching your camper or whatever you are pulling, charging, then hitching your trailer again. It is still doable but I would be more likely to stop somewhere that I didnt have to drop my trailer to top off the batteries. If you have ever been to the walmart at emerson and 465, you will understand how big of a pain that would be. It is always busy over there. You would probably have to drive to lowes next door, unload, drive back to walmart, charge, and then head back to get your trailer.
- EA should charge appropriately for KW/h vs time. This makes me not want to charge at all at any of the stations as it costs more to charge there than other systems. I base that off of my drive to Wisconsin and back for less than ten dollars last year. I paid at 2 charge point stations and the rest were either dealerships or restaurants. Not trying to sound cheap here but there are other places to charge for way less than what they charge. The convenience of a dc fast charge at these stations vs finding other private stations for a lot less money is going to make the difference. Simply why pay more if you dont have too.

Hopefully some of the above information is found to be helpful.

Thank you for your continued efforts,

-Charles Herman

## SEALS, SHAWN

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**From:** Brian at Home  
**Sent:** Friday, December 13, 2019 8:14 AM  
**To:** IDEM VWTrust  
**Subject:** Electric Charging Network

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There is a serious lack of charging infrastructure in southern Indiana. I have grandchildren in Washington, IN, and I am unable to use my Tesla Model 3 to visit them from Lafayette because of the lack of charging options in that area. Evansville is also another hole in the charging network.

Brian Primeau  
Lafayette, IN

Sent from my iPad