

Louisiana State Plan for Electric Vehicle Infrastructure Deployment



Louisiana State Plan
August 1, 2022

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Deployment 2022

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Glossary of Terms

Glossary of Terms

- ADA: Americans with Disabilities Act
- AFC: Alternative Fuel Corridor
- AFDC: Alternative Fuels Data Center
- BAU: Business As Usual
- BEV: Battery Electric Vehicle
- CCS: Combined Charging System
- Charging Plug: The individual charging port
- Charging Station: A location where EV charging facilities are located
- DAC: Disadvantaged Communities
- DBE: Disadvantaged Business Enterprise
- DCFC: Direct Current Fast Charger
- DNR: Department of Natural Resources
- DOE: U.S. Department of Energy
- DOT: Department of Transportation
- EPA: U.S. Environmental Protection Agency
- EV: Electric Vehicle
- EVSE: Electric Vehicle Supply Equipment (EV Charger)
- FHWA: Federal Highway Administration
- IJA: Infrastructure Investment and Jobs Act
- Justice40: Government program to ensure that 40% of overall program benefits are delivered to disadvantaged communities through jobs, training, business development, etc
- LA DOTD/DOTD: Louisiana Department of Transportation Development
- LADA: Louisiana Dealers Association
- LCF: Louisiana Clean Fuels
- LDEQ: Louisiana Department of Environmental Quality
- LDNR: Louisiana Department of Natural Resources
- MPO: Metropolitan Planning Organization
- NEVI: National Electric Vehicle Infrastructure
- PHEV: Plug-in Hybrid Electric Vehicle
- SAE: Society of Automotive Engineers
- SLCFP: Southeast Louisiana Clean Fuels Partnership

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Introduction

Over the next five years, Louisiana will receive \$73,367,735 for electric vehicle (EV) infrastructure through the Infrastructure Investment and Jobs Act (IIJA). The Louisiana Department of Transportation and Development (DOTD) will administer funds for the deployment of electric vehicle charging infrastructure via a competitive grant process throughout the State.

As part of the EV infrastructure deployment, Congress has made National Electric Vehicle Infrastructure (NEVI) Formula Program funds available for expenditure by state transportation agencies. These funds will cover up to 80 percent of the EV infrastructure expenses with a minimum of 20 percent non-federal match covered by grant recipients. The NEVI program requires each State transportation agency to submit a deployment plan to the Federal Highway Administration (FHWA) by August 1, 2022. DOTD has contracted with Louisiana Clean Fuels (LCF) and Grant Management Group, LLC to timely submit this plan.

The draft of the DOTD electric vehicle charging infrastructure plan was published for a 30-day comment period ending July 18, 2022 on both the DOTD website and on a crowdsourcing website published to facilitate transparency and ease of access (https://lcf.mysocialpinpoint.com/la_ev_plan).

In addition, DOTD recently submitted an alternative fuel corridor (AFC) nomination to FHWA on May 13, 2022 to designate routes for electric chargers and hydrogen fuel. All of our nominated highways were approved and can be found here on the FHWA Alternative Fuel website. These approved AFC corridors for electric vehicles are important to the overall NEVI program as the DOTD plans to provide connectivity between charging stations within Louisiana and across State lines.

Louisiana is among the most vulnerable States to the impacts of climate change. Louisianians are already experiencing direct physical, mental, and financial tolls as well as indirect impacts to social systems and ecosystems that are struggling to cope with extreme weather events, heat, drought, flooding, and other manifestations of climate change. As is the case globally, Louisiana's low-income communities, communities of color, Indigenous peoples, and other marginalized residents are hit especially hard.



These impacts are projected to get much worse over the coming decades if there is not significant global action to curb greenhouse gas (GHG) emissions. The Louisiana Climate Action Plan contains 28 strategies and 84 specific actions to reduce GHG emissions across the entire State's economy. Under "Strategy 9" of the Transportation section of the Climate Action Plan, Louisiana's task is to "accelerate adoption and accessibility of low- and zero-emission vehicles and fuels." The successful deployment of electric vehicles will play a major role in our attempts to achieve these goals and meet our carbon emission reduction goals.

Louisiana can support greater adoption of clean vehicles by expanding the infrastructure to support this transition, including charging and fueling stations that are accessible to drivers and passengers across income levels. This strategy includes actions focused on light-duty passenger vehicles as well as actions tailored to the additional technological and infrastructural needs to transition medium-duty and heavy-duty transportation, shipping, and aviation to low or zero-carbon fuels. The State of Louisiana can lead by example through efforts to transition public fleets to low and zero-emission vehicles.

As zero-emission vehicles become increasingly available for passenger transit, steps need to be taken to ensure strategic and equitable statewide buildout of vehicle electrification infrastructure, with measures to prioritize access for underserved and overburdened communities. The DOTD intends to strategically utilize these Federal funds to deploy electric vehicle charging infrastructure across the State in a way that increases access for all communities. To that end, the Climate Action Plan sets a goal of 250 stations per 100,000 residents by 2050. These sites include Level 2 workplace and other publicly accessible charging stations in addition to the DC Fast Chargers on the alternative fuel corridors.

Timeline

In 2018, Louisiana Clean Fuels, a U.S. Department of Energy designated Clean Cities coalition, developed a base EV Corridor Plan for the State of Louisiana that met the standards of previous rounds of the FHWA Alternative Fuel Corridor program. The National Electric Vehicle Infrastructure (NEVI) Formula Program Guidance from FHWA was published in February 2022 with guidelines for speed, quantity, and location of DC Fast Chargers. DOTD then created an EV planning committee to begin developing an Electric Vehicle Infrastructure Plan to be published on August 1, 2022. DOTD is in the process of developing a competitive grant program through which DC Fast charging station locations will be selected and funded. The state's goal is to finish developing the grant program by December 2022 and solicit applications by the first quarter of 2023.

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State Agency Coordination

DOTD's EV planning committee includes representatives from FHWA, Louisiana Department of Environmental Quality (LDEQ), and Louisiana Department of Natural Resources (LDNR). This committee met bi-weekly for several months to discuss alternative fuel corridors and DOTD's EV Infrastructure Plan as it relates to NEVI formula funds. This interagency coordination contributed to the timely submission of the Round 6 Alternative Fuel Corridor Nomination on May 13, 2022 and assisted with submission of the Louisiana Electric Vehicle Infrastructure Plan prior to the August 1, 2022 deadline.

The committee collaborated with Southeast Louisiana Clean Fuels Partnership (SLCFP), a Clean Cities Coalition, and also the Center for Sustainable Energy.

EV Planning Committee Members:

- Louisiana Department of Transportation and Development
- Louisiana Department of Environmental Quality
- Louisiana Department of Natural Resources
- Grant Management Group, LLC
- Louisiana Clean Fuels, Inc. (a Clean Cities coalition)
- Federal Highway Administration - Louisiana Division

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Public Engagement

DOTD and its project partners created a public involvement plan and distributed surveys to the general public through an EV webpage on DOTD's website and social media outlets. A survey was also distributed to the Tribal Nations through consultation via FHWA. Resources that explain the program and solicit public feedback from the community and stakeholders include a landing page for the program on the DOTD website, an online survey, social pinpoint site (a map based public input method for suggested charging locations), social media posts, press releases, and multiple public meetings to discuss the plan. These resources opened a line of communication with the public for the program that was used to draft the statewide plan. DOTD will maintain these resources going forward as the grant program is developed.

Public engagement of underserved communities has included meetings with the Urban League of Louisiana, Louisiana Municipal Association, Black Mayors Caucus, Southern University System Facilities Management, minority Mayors throughout the State, and the City of New Orleans Council Utilities Regulatory Office. These entities were engaged to develop a coalition of groups with a large and deep reach into underserved communities. All have committed to being part of our stakeholder outreach and to provide feedback on our EV infrastructure deployment plan.

Our efforts will expand as the grant program and application process are developed.

Public Involvement Resources:

- [DOTD program landing page](#)
- [Online Survey](#)
- [My Social Pinpoint](#)

Stakeholders Involved in Plan Development

Following the publication of the NEVI guidance document in February 2022, DOTD has had conversations with utilities, Metropolitan Planning Organizations, private sector companies, non-profit organizations, and other various entities. This outreach effort helped solicit diverse, high-quality feedback from these stakeholders across the State, and that feedback was crucial in guiding the development of the overall Electric Vehicle Infrastructure program.

In order to incorporate high-quality feedback from the public, the DOTD and its project partners held one-on-one calls, virtual meetings, and one hybrid (in person meeting with virtual component) with targeted stakeholders during the development of the state plan. The draft plan was published on June 18, 2022 for a 30-day public comment period on the DOTD website. The DOTD hosted meetings (virtual and in person) with stakeholders to gather their feedback on the draft plan. Comments and feedback from stakeholders were accepted through the official DOTD email account, DOTD-EVProgram@la.gov, and will be accepted for the entire 5-year project period.

Table 1: Outreach Conducted and Planned by DOTD For State EV Plan Development

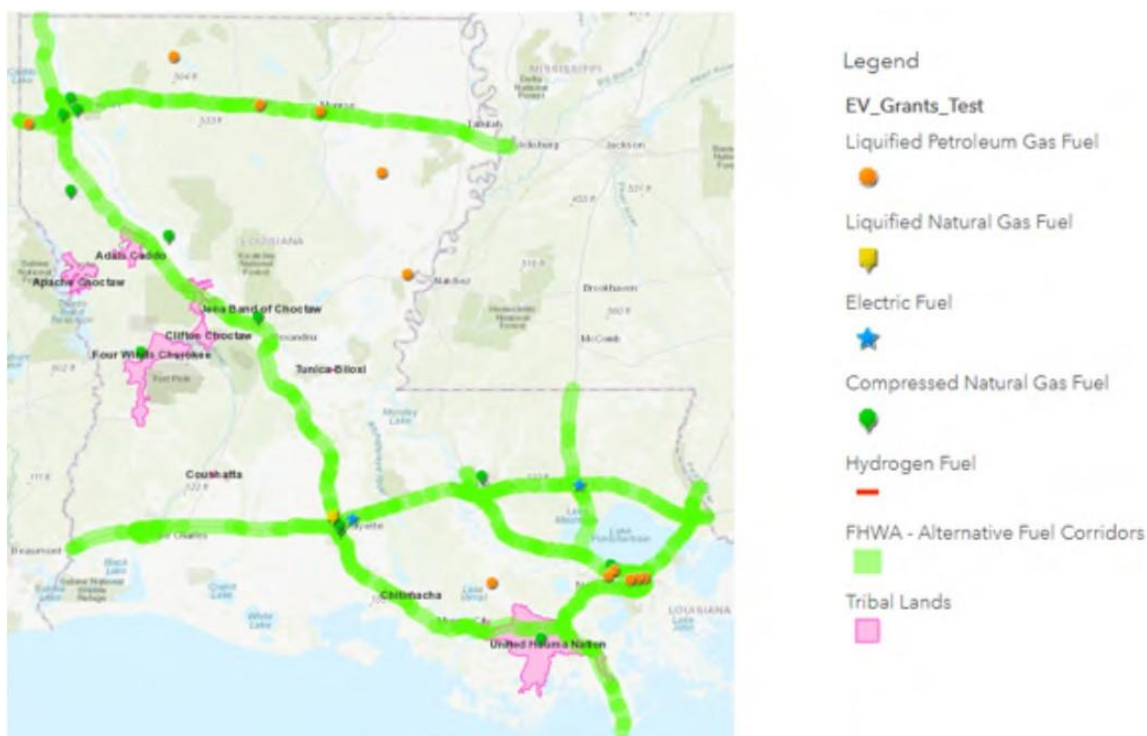


The open lines of communication with and the involvement of various stakeholder groups in the plan's development ensure that the deployment, installation, operation, and use of EV charging infrastructure will achieve equitable and fair distribution, in addition to meeting federal Justice40 requirements.

Outreach with Tribal Governments

DOTD partnered with the Federal Highway Administration and other State DOT's to conduct a joint webinar on June 14, 2022, to engage the Tribal Nation with land interest in Louisiana. These tribes include the Chitimacha Tribe, Coushatta Tribe, Tunica-Biloxi Tribe, and the Jena Band of Choctaw Indians. The participating DOT's include Mississippi (MDOT), New Mexico (NMDOT), Texas (TxDOT), Oklahoma (ODOT), and Arkansas (ARDOT); all of which are located in FHWA Regions 6 and 4. In addition to the virtual meeting, DOTD has provided the Tribal Nation with surveys to engage them in our plan and gather their feedback. The following map shows Tribal lands in relation to DOTD's designated Alternative Fuel Corridors.

Map 1: Tribal Land Map of Louisiana



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Plan Vision and Goals

The Louisiana EV plan is designed to enable residents and businesses who currently own or want to purchase electric vehicles to fuel quickly and safely across the State for work, recreation, and travel. In order to accomplish this goal, DOTD is developing a competitive grant program that allows for a phased approach to the buildout of electric vehicle supply equipment (EVSE) over 5 years that meets the FHWA requirements of DC Fast Chargers spaced a maximum of 50 miles apart and within one mile of an interstate exit or highway intersections along the corridor, with electric capacity of at least 600kW. Under the State's forthcoming competitive grant guidelines, rural areas and those with historically low EV adoption rates and low highway utilization numbers are expected to be built in phases over the 5-year period of the program.

Louisiana's EV infrastructure deployment plan will be updated annually and will allow public and private entities to apply for funding to build stations that meet the qualifications set forth by FHWA's proposed guidelines. Based on current ownership data, EV utilization is low in underserved areas of Louisiana. Additionally, underserved areas with low EV ownership and/or high levels of poverty may receive operating assistance to address equity issues in rural and urban areas.

The State intends to take a phased approach to awarding grant applications to build out our electric vehicle fueling corridors. The first phase of the grant program (See Map 7) will prioritize the installation of the minimum number of AFC-compliant stations that satisfy AFC requirements (i.e., a compliant charging station every 50 miles or less). Once the adequate number of applications have been awarded to achieve these minimum standards, the State will begin awarding projects that fall into Phase 2 of the program (See Maps 8 & 9). Applications for sites in the study areas indicated in these maps will be awarded with remaining funds and are optimized using the criteria and weights such as those proposed in Table 7 to prioritize site selection with the highest potential charging demand and efficiency. These study areas illustrate the State's strategy to create redundancy in the charging network and increase capacity at locations with high utilization.

5-Year Goals

Year 1

Year one will focus on building out the electric alternative fuel corridors to meet minimum FHWA standards. Initial analysis conducted by consultants indicates that approximately 30 new and upgraded sites are needed to complete nominated EV corridors statewide. As Louisiana intends to disburse grants for the installation of public DC Fast Chargers, the state can only award proposals that fit the criteria set forth by FHWA and the State plan. Additional outreach and education may be needed to reach qualified site hosts and encourage them to apply for funding. A full list of the approved EV corridors can be found in the Existing and Future Conditions section of this document.

Year 1 Goals
Host one in-person expo for potential applicants and at least 2 additional virtual events to encourage quality proposals to the DOTD grant solicitation.
Award approximately 10 projects and distribute approximately \$9 million for DC Fast Chargers.
Conduct a funding decision review process conducted at the end of the fiscal year to ensure diversity, equity, and inclusion (DEI) and network reliability goals are being met.
Collect data from the network to assess usage and identify trends for future development.

Year 2

Year 2 will focus on further building out the electric alternative fuel corridors according to FHWA standards. After the first round of projects is awarded, DOTD will assess the success of the grant program and adjust the strategy and timeline going forward.

Year 2 Goals
Conduct a grantee feedback session with Year-1 Awardees to determine effectiveness of the program.
Host at least 2 educational outreach events to encourage quality proposals to the DOTD grant solicitation.
Award approximately 12 projects and distribute approximately \$11 million for DC Fast Chargers.
Collect data from the network to assess usage and identify trends for future development.

Year 3

Year 3 will focus on building remaining sites that will complete the corridors so that Louisiana will achieve “fully built out” status under the FHWA guidelines. Once we achieve this status, the State will begin awarding projects that are indicated as near “Phase 2 study areas” and other sites allowed by the NEVI funding as appropriate. DOTD intends to continuously monitor the grant program and make adjustments using the lessons learned in years one and two. Monitoring will include site visits to ensure grant recipients are properly installing and maintaining the charging sites and meeting Justice40 requirements and data reporting requirements in the Federal Minimum Standards.

Year 3 Goals
Continuous monitoring of the grant program by DOTD overseeing the grant recipients' use of NEVI funds to ensure continued compliance with state and federal requirements.
Award enough grants based on availability of funds to close remaining gaps in the corridors that will allow our state to achieve “fully built out status”.
Begin awarding applications under Phase 2 to create redundancy and increase capacity in the charging network and ensure that underserved areas and disadvantaged communities are being adequately covered.
Collect data from the network to assess usage and identify trends for future development.

Year 4

DOTD intends to continuously monitor the grant program and make adjustments using the lessons learned in years one, two, and three. Monitoring will include site visits to ensure grant recipients are properly maintaining the charging sites and meeting Justice40 requirements. Monitoring will also include collecting data regarding the usage and cost of electricity according to data reporting requirements in the Federal Minimum Standards.

Year 4 Goals
Continuous monitoring of the grant program by DOTD overseeing the grant recipients' use of NEVI funds to ensure continued compliance with state and federal requirements.
Award grants based on availability of funds to close remaining gaps in the corridors that will allow our state to achieve “fully built out status”.
Begin awarding applications under Phase 2 to create redundancy and increase capacity in the charging network and ensure that underserved areas and disadvantaged communities are being adequately covered.

Year 5

Within 5 years of implementing the statewide EV plan, DOTD intends to completely build out designated corridors that meet the FHWA requirements. Once the corridors are fully built out, any remaining NEVI funds may be spent on EV charging infrastructure on other public roads or in other publicly accessible locations that are open to the general public. These sites and study areas have been identified through extensive analysis of various available data sources and are illustrated on Maps 8 & 9 of this document (see section: EV Charging and Infrastructure Deployment).

Year 5 Goals
Approximately 75 DC Fast Charger sites installed statewide / 300 - 760 charging ports.
Corridors designated as fully built out by FHWA Standards.
If adequate funding remains after corridors are deemed “complete”, then off-corridor projects may apply for and receive funding for chargers.
Collect data from the network to assess usage and identify trends to create a program evaluation report.

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Contracting

To implement the statewide plan using NEVI funds, DOTD intends to administer a competitive grant program which will involve contracts with grant recipients to whom NEVI funds will be disbursed for the installation, operation, and maintenance of electric vehicle charging stations throughout the State. Through DOTD's procurement and authorization process, grant recipients will be responsible for ensuring that any subcontractors and vendors meet all federal requirements for charging infrastructure funded as part of the NEVI program. DOTD intends to list on the EV webpage the applicants, bidders, selected bidders, and amount of funds disbursed. Grant recipients will be monitored to ensure the charging stations remain operational and adequately maintained. According to the NEVI Formula Program Q&A following operations costs are eligible:

- Charging equipment lease fees, in the case that an EV charging station operator opts to lease rather than purchase charging equipment.
- Cellular network fees, internet service fees, or other similar fees necessary to provide communications between EV charging stations and charging network providers.
- Hardware and software maintenance and repair costs, including service agreements with third-party contractors and charging equipment manufacturers or warrantors.
- Other operating costs that are necessary and directly related to the charging of vehicles.

Both Clean Cities coalitions in the state, Louisiana Clean Fuels. and the Southeast Louisiana Clean Fuels Partnership, will work to provide resources and education to communities to engage small businesses and disadvantaged communities (DAC's) to ensure awareness of the funding and access to assistance.



Existing and Future Conditions Analysis

EV Adoption by Parish - Q4 2021

Map 2: EV Registration by Parish in Louisiana Q4 2021

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Vehicle Availability

The Alliance of Automotive Innovation has indicated, in statements to the Louisiana Dealers Association (LADA), that the automotive industry will invest over \$330 billion in EV's by 2025 and grow the number of available EVs for sale from roughly 60 models today, to over 130 models by 2026. The LADA has stated that Louisiana dealers are currently investing millions of dollars in facilities and training to sell these models. Currently dealerships across the nation are experiencing supply chain issues. Many dealerships in Louisiana have commented on how difficult it is to keep an EV or a plug-in hybrid electric vehicle (PHEV) on their lots as manufacturer supplies are low and vehicles sell quickly. Delivery of ordered vehicles may take up to a year. These issues surrounding electric vehicle availability are not unique to Louisiana and are being experienced by all States.

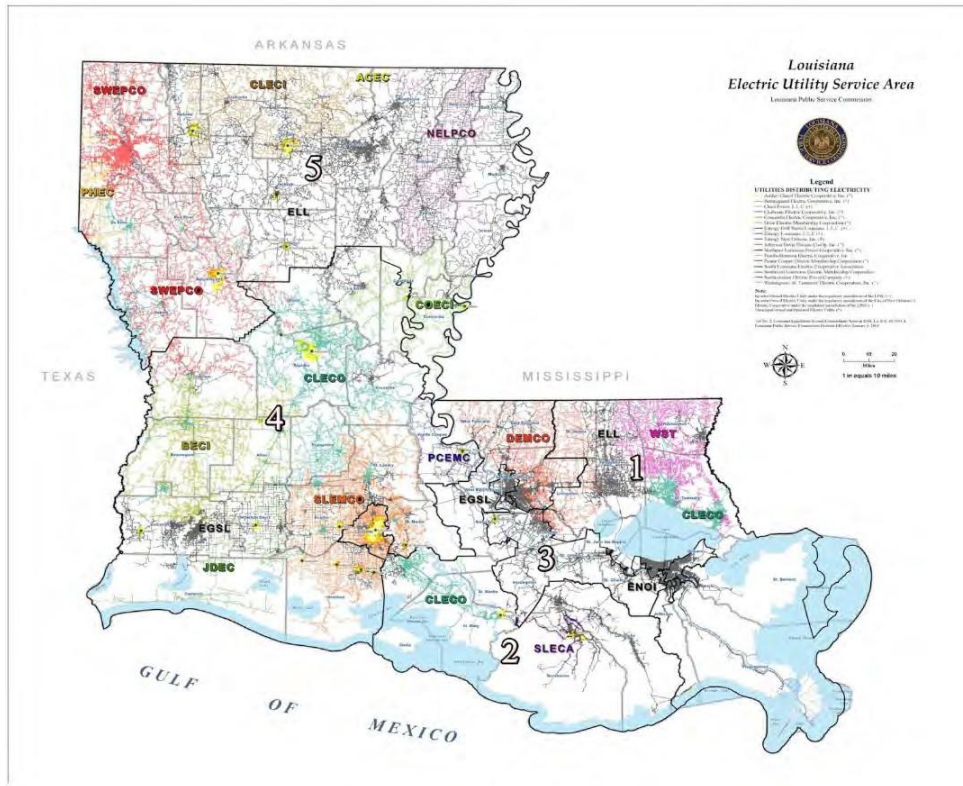
Louisiana Utilities and their Service Areas

Electric utilities that service the program areas are Entergy, Cleco, Lafayette Utility Services, LEPA, AEP/SWEPCO, and members of the Association of Louisiana Electric Cooperatives. The utility companies maintain that they have adequate capacity, but it is unknown how much work is needed to complete "make ready" status work for individual sites along corridors. The availability of 3-Phase power will be a minor issue in most of the state. However, there are instances where exceptions to the distance requirements may be granted, such as when grid capabilities are limited, or when the exception would support charging in disadvantaged communities, or in rural areas.

Table 3: Types of Utilities in LA and How They Are Regulated

Types of Utilities in Louisiana		
Investor-owned utilities (IOUs)	Municipal Power Companies ("Municipalities")	Cooperatives ("Co-ops")
For-profit Owned by shareholders	Not for-profit Owned by cities and counties	Not for-profit Owned by co-op members
Example: Entergy, CLECO & SWEPCO (AEP)	Example: Lafayette Utility Service (LUS)	Example: Dixie Electric (DEMCO)
Regulators		
SWEPCO, DEMCO, SLEMCO, CLECO, and Entergy Louisiana are regulated by the Louisiana Public Service Commission (LPSC) (http://www.lpsc.louisiana.gov) Entergy New Orleans is regulated by the New Orleans City Council	CLECO, SWEPCO, and Entergy are subject to the jurisdiction of the Federal Energy Regulatory Commission (FERC) with respect to transmission tariffs and interconnection with other utilities, reliability, and the transmission of power. It should be the same for Entergy and SWEPCO.	Municipal Power Companies ("Municipalities") are often regulated by Local government (city council or elected or appointed board) and in some cases, a state board. The Louisiana Public Service Commission does not regulate utilities owned by municipalities.

Map 3: Louisiana Electric Utility Service Areas



State Geography, Terrain, Climate and Land Use Patterns

The EPA defines ecoregions as “areas of general similarity in ecosystems and in the type, quality, and quantity of environmental resources.” Louisiana is subdivided into six “Level III” EPA ecoregions: South Central Plains ecoregion (northwestern and center-west parishes); Mississippi Alluvial Plain ecoregion (northeastern, center-east, and southeastern parishes); Mississippi Valley Loess Plains, Southeastern Plains, and Southern Coastal Plains ecoregions (southeastern inland parishes); and Western Gulf Coastal Plain ecoregion (southwestern parishes). The listed ecoregions are further subdivided into smaller regions denoting more detailed comparisons of land areas within the state, however, for the sake of brevity this document will summarize only the six Level III ecoregions that make up the state.

Major land uses in the South-Central Plains EPA ecoregion consists of timber production, livestock grazing, and oil and gas production. Dominant vegetation includes pines (native short-leaf pines are now largely replaced by commercial pine plantations), several varieties of oak, sweetgum, and understory growth including sumac, greenbriar, and hawthorn. Rolling plains are one distinguishing feature of this ecoregion that differentiates it from the flatter Mississippi River Valley plains or Gulf Coast plains. The major body of water running through this ecoregion is the Red River. The Red River floodplains are naturally bottomland hardwood forests, but have been largely cleared for crop cultivation and grazing, although some wooded areas remain. Crops dominating this region include cotton, soybeans, corn, wheat, and rice.

The Mississippi Alluvial Plain EPA ecoregion spans the entire length of Louisiana (north to south), following the current course of the Mississippi River and covering some areas west of the river, and north near Lakes Maurepas and Pontchartrain. Climates are notably variable throughout the region, with temperatures and precipitation increasing from north to south, however there are many commonalities along the river corridor. Constructed levees restricted river overflow and opened adjacent land for agricultural use. Northern and central Louisiana climates and soil are amenable to cultivation of cotton, soybeans, corn, and rice; while southern Louisiana agriculture is dominated by sugarcane, with some soybeans and pastures. This ecoregion is also home to extensive wetland habitats. Though deforestation and development have reduced cohesion of wetland habitats over time, this region remains a major bird migration corridor and is rich with biodiversity. Bald cypress and water tupelo trees can be found in freshwater wetland areas throughout this ecoregion, as well as oak in more well-draining areas. The southern portions of this ecoregion are host to many live oak, laurel oak, and Spanish moss.

The main distinguishing feature of the Mississippi Valley Loess plains EPA ecoregion is the prominent presence of loess – loosely compacted wind-blown sediment. Soils in this ecoregion tend to be sandy, silty, and well-draining in comparison to the dense clayey deposits found in the Mississippi Alluvial Plains. This ecoregion covers a relatively small portion of southeast Louisiana, including much of East Baton Rouge Parish, and West and East Feliciana Parishes. Land use in this region hosts a heavy presence of pine plantations, pasture, and crop land, however urban use covers a large portion in the Baton Rouge vicinity.

Northern St. Helena, Tangipahoa, and Washington Parishes make up the Southeastern Plains ecoregion of Louisiana. This landscape is home to oak-pine and mixed hardwood forests, pastures, cropland, and growing residential and commercial development. Dairy is a prominent industry here. Soils of this ecoregion are largely sandy, gravelly, and well-draining.

Eastern Livingston Parish, southern Tangipahoa Parish, and southern St. Tammany Parish make up the Southern Coastal Plains ecoregion of Louisiana. Lower elevations than the Southeastern Plains and wetter soils are characteristic of this ecoregion. Habitats here include marshes and swampy lowlands. Soils range from poorly to moderately well-draining. Floodplains in this ecoregion contain forests of bald cypress, water tupelo, and oak-dominated hardwood forests.

The Louisiana portion of the Western Gulf Coastal Plain ecoregion spans from the Sabine River to the Atchafalaya Basin. The southernmost latitudes of this ecoregion contain the Chenier plains which are largely treeless, but do contain live oak and hackberry with a palmetto-heavy understory, and extensive salt or brackish-water grassy marshes along the Gulf Coast. Much of the northern portions of this ecoregion are dominated by grasslands and herbaceous plant species, with inclusions of live oak and long-leaf pine. The area has suffered urbanization and conversion to croplands and pastures. Crops include sugarcane, rice and crawfish agriculture, and soybeans. Soils of this ecoregion are primarily clayey and poorly draining, though sandy, loamy textures are somewhat present at surface-levels in some areas.

According to the EPA, statewide average annual precipitation falls somewhere between 44.8 – 84.7 inches per year, with northern regions generally receiving between 50 – 60 inches per year, and southern regions receiving between 60 – 70 inches per year. Hurricane season is lengthening over time, so these concerns will continue to be relevant for more areas across Louisiana and these changes will be considered in the selection of projects through this program. According to National Oceanic and Atmospheric Administration (NOAA) maps depicting areas vulnerable to storm surge flooding, areas as far north as central Livingston Parish may be vulnerable to storm surge flooding during a Category 1 hurricane. During a Category 5 hurricane, areas as far north as northern Pointe Coupee Parish may be vulnerable to storm surge flooding.

Especially in areas susceptible to flooding or storm surge from hurricanes, consideration will need to be made for how electric vehicle chargers installed under this program will be resilient against the unique environmental concerns in our state. As discussed above, the southern portions of the state are susceptible to storm surge flooding during hurricane season, and this makes it imperative that our major evacuation routes are well supported by electric vehicle charging infrastructure so that EV owners in these regions can safely evacuate their homes in the event of a major storm. DOTD may also consider backup generation (such as solar + battery storage) for EV chargers along major evacuation routes for additional resiliency for emergency situations.

Sources:

https://gaftp.epa.gov/EPADDataCommons/ORD/Ecoregions/la/la_front.pdf
<https://enviroatlas.epa.gov/enviroatlas/interactivemap/>
<https://noaa.maps.arcgis.com/home/index.html>

State Travel Patterns, Public Transportation Needs, Freight and Other Supply Chain Needs

Louisiana has a total of 943 miles of Interstate highways. DOTD has nominated all of its Interstate highways as EV corridors. In order to build out the statewide EV charging network the interstate highways should be prioritized since freight movement by truck in Louisiana relies heavily on the Interstate Highway System. I-10, I-12 and I-20 provide much of the east-west movement for truck traffic, while I-49, I-55, and I-59 facilitate north-south truck freight movements. There are also Interstate loops and spurs in a number of the State's metropolitan areas. In Louisiana, trucking accounts for approximately 58 percent of the tonnage moved in, out, and through the state (excluding pipelines).

Alternative Fuel Corridors - Corridor Networks

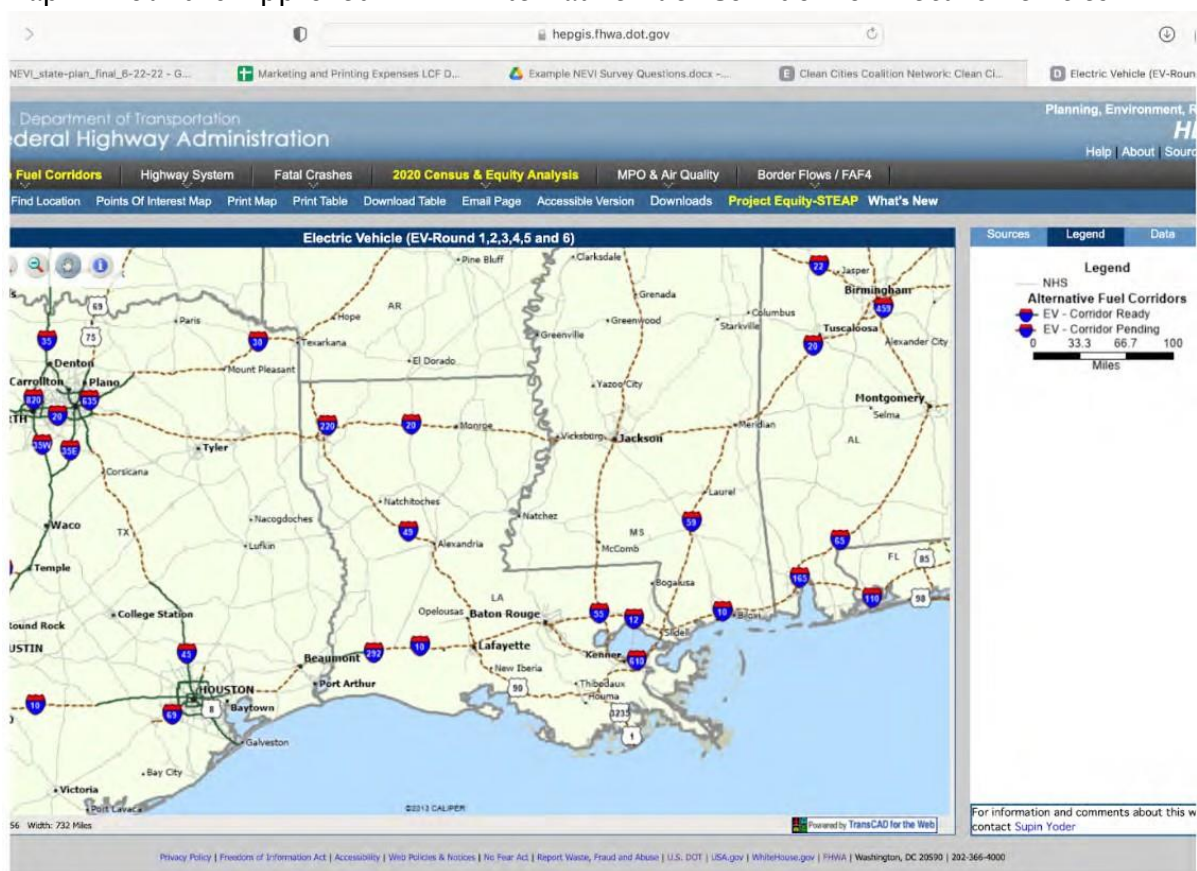
DOTD, in partnership with the Louisiana Department of Environmental Quality (LDEQ), the Louisiana Department of Natural Resources (LDNR), Louisiana Clean Fuels, and many other partners, submitted Round 6 nominations for the designation of alternative fuels corridors in Louisiana in accordance with 23 U. S. C. 151(a) on May 13, 2022. The State nominated multiple Interstate Highway Systems, including some loops and spurs, with additional nominations for US 90 (Future I-49) from I-10 in Lafayette to US 90 Business / Westbank Expressway (Future I-910) in New Orleans, and LA 1 / LA 3235 from US 90 south to Port Fourchon, a major energy corridor for our nation. These sections of non-Interstate corridors also serve as crucial evacuation routes for southeast Louisiana.

Since the approval of the State's EV Corridors by the FHWA on July 6, 2022, the above-mentioned interstate and highway routes in Louisiana are now eligible for the National Electric Vehicle Infrastructure (NEVI) program.

Table 4: FHWA Round 6 - Electric Alternative Corridor Definitions

Corridor Ready	Corridor Pending
<p>Public DC Fast Charging:</p> <ul style="list-style-type: none">• No greater than 50 miles between one station/site and the next on the corridor.• No more than 1 mile from Interstate exits or highway intersections along the corridor.• Stations should include four Combined Charging System (CCS) connectors - Type 1 ports (simultaneously charging four electric vehicles).• Site power capability should be no less than 600 kW (supporting at least 150 kW per port simultaneously across 4 ports).• Maximum charge power per DC port should not be below 150 kW.	<p>A strategy/plan and timeline for public DC Fast Charging stations separated by more than 50 miles.</p> <p>Location of station/site- no more than 1 mile from Interstate exits or highway intersections along the corridor.</p>

Map 4: Round 6 Approved FHWA Alternative Fuel Corridor for Electric Vehicles



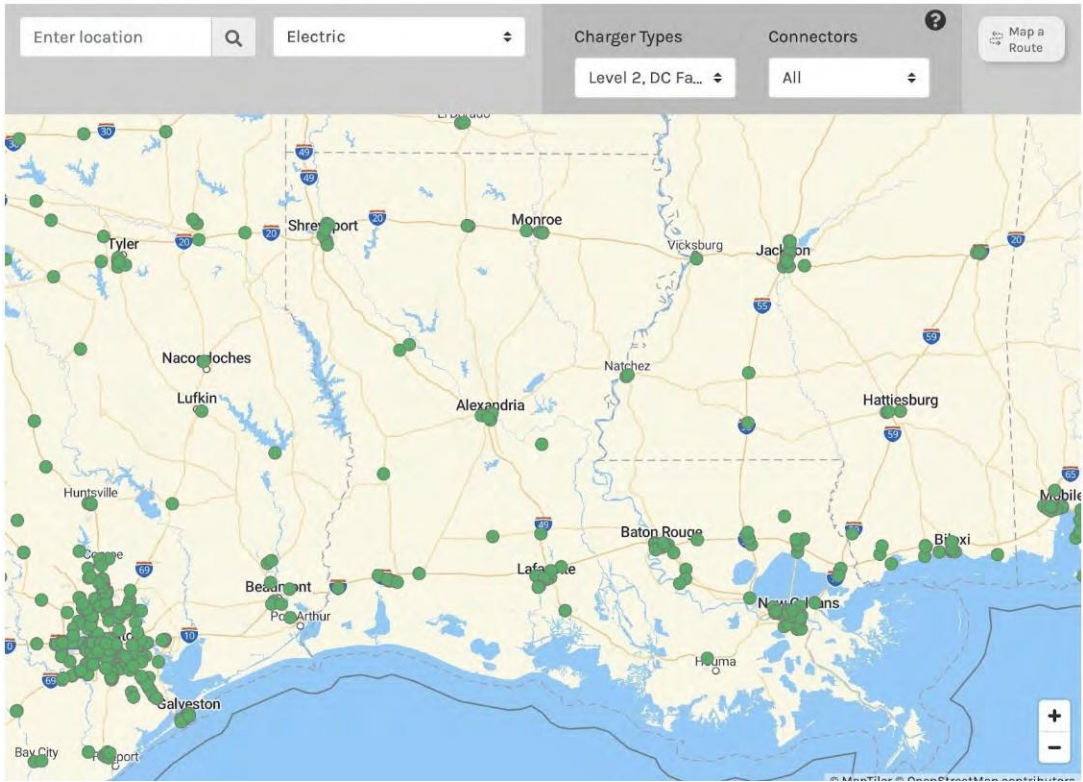
Existing Locations of Charging Infrastructure Along AFCs

DOTD feels that the NEVI formula funding is critical to helping Louisiana do its part to reduce carbon emissions in order to provide a more sustainable future for generations to come. As a part of our previous strategy to complete our EV corridors, the LDEQ utilized a DC Fast Charging Master Plan created by Louisiana Clean Fuels that suggested charging sites that met all of the previous FHWA Alternative Fuel Corridor standards. Since the NEVI guidance and Round 6 standards were published, the DOTD has learned that many of the stations that were awarded funding will no longer qualify under the new, higher standards. Fortunately, three of the Electrify America (EA) sites that were built along I-10 still qualify under the new standards and EA has indicated that they intend to install chargers along Interstate 20 in Louisiana.

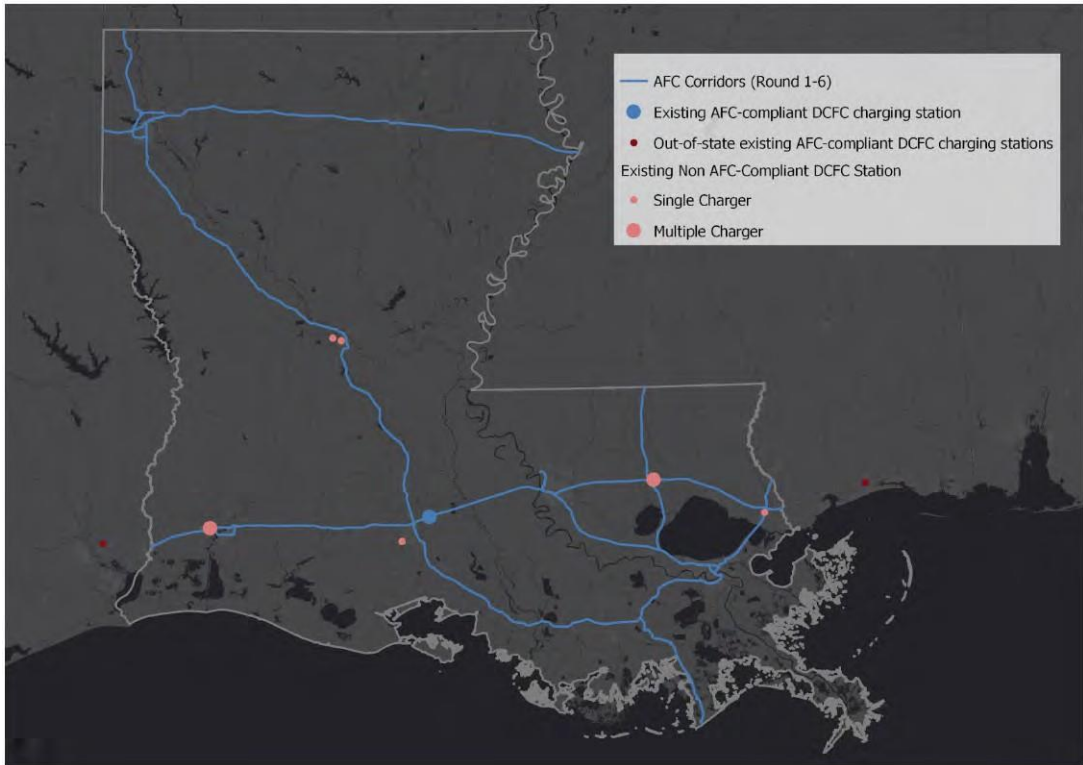
Table 5: Existing DC Fast Chargers in Louisiana

State EV Charging Location Unique ID	Charger Level (DCFC, L2)	Route	Location	Number of EV Connectors	Distance from Interstate	Meets FHWA Speed & Connector Standards	EV Network
1	DCFC	I-10	1932 Rees Street, Breaux Bridge	6	0.8 miles from I-10	Yes	Electrify America
2	DCFC	I-10	525 N Cities Service Hwy, Sulphur	4	1.3 miles from I-10	One Plug does not meet 150kW requirement and needs upgrade	Electrify America
3	DCFC	I-12 / I-55	2030 Hammond Square Drive, Hammond	4	.9 miles from I-12 1.8 Miles from I-55	Yes	Electrify America
4	DCFC	I-10	791 Taos St, Slidell	1	0.4 miles from I-10 2 miles from I-12	Needs upgrade	ChargePoint Network
5	DCFC	I-49	7520 Coliseum Blvd, Alexandria	1	5 miles from I-49	No	ChargePoint Network
6	DCFC	I-49	1515 Dorchester Drive, Alexandria	1	4 miles from I-49	No	ChargePoint Network
7	DCFC	I-10	6606 Johnston St, Lafayette	1	7 miles from I-10	No	ChargePoint Network

Map 5: Existing Level 2 and DCFC in Louisiana as of June 19, 2022



Map 6: Existing DCFC Stations in Louisiana



Known Risks and Challenges

Vehicle availability, transformer shortages, nationwide demand for EVSE charging equipment, and potential labor shortages of trained and qualified EVSE installers are significant barriers to success for projects awarded under the State's competitive grant program. Additionally, Build America Buy America requirements may make procurement a difficult and taxing process for grant awardees.

Weather conditions such as flooding, hurricanes, and their corresponding power outages may also reduce the timeframe for site owners and operators to ensure charging stations are operable.

These ongoing supply chain issues for vehicles, switchgear, labor, raw materials, ground mounted transformers, microchip shortages, and other hardware do have the potential to extend project implementation timelines.

8

EV Charging Infrastructure Deployment

Through a competitive grant process, DOTD will partner with applicants to develop the EV Charging Network along the interstate corridors. As Louisiana currently has minimal infrastructure, the strategy of the DOTD is to develop a robust network of DC Fast Charging stations that satisfy the FHWA Alternative Fuel Corridor requirements for EVSE. As part of the strategy to create a seamless national EV charging network, the DOTD is coordinating with nearby DOTs through participation in the National Alternative Fuels Corridor Council, which is facilitated by Clean Cities coalitions.

Building upon a previous study conducted by Louisiana Clean Fuels, the DOTD is conducting its own updated analysis of existing and projected EV adoption rates, existing EV charging stations, and existing EV infrastructure using the DOE Alternative Fuels Data Center's Station Locator in order to model the regional volume of public Level 2 and DCFC EV infrastructure needed to support EV adoption in our state annually. This study will also allow the state to pinpoint the optimal locations for charging stations needed based on weighting criteria determined through the stakeholder feedback process (e.g., EV or charging density, equity, alternative fuel corridors, environmental justice areas) and will allow the DOTD to prioritize the identified locations for site selection based on characteristics (e.g., military or tribal areas, parks, travel destinations or other points of interest) specified through the stakeholder process.

DOTD is planning a two-phased approach to developing Louisiana's EV charging network through the NEVI program. Phase 1 of the program would focus on satisfying the minimum requirements of the FHWA Alternative Fuel Corridor program as shown in Map 7 while focusing on areas with high demand. Phase 2 of the program will focus on building resiliency, redundancy, and overall coverage of the charging network. This second phase (shown in Map 8) will help add redundancy for long-distance travel, but will also provide a more widely distributed network of charging for intrastate and local travel. Distributing charging sites widely along our designated corridors will provide crucial support for EV owners to travel freely throughout the state and will provide resiliency in the event of emergency situations in which owners will need to evacuate their homes.

Initial applicant scoring criteria for grant recipients will be based on the vision and goals of the plan. These might include but are not limited to:

- Locations within 1 mile of a designated alternative fuel corridor
- Site readiness with adequate utility power (minimum of 600 kW) capacity in place
- Inclusion of on-site energy storage and/or solar if it reduces total project costs
- On-site amenities such as lighting, shelter, and nearby attractions and/or facilities
- Ability to fund 20% or more of the project
- Job training / apprenticeship programs for maintenance and operations
- Disadvantaged Business Enterprise (DBE) goals for vendors
- Business strategy for continuous operations and maintenance beyond 5 years
- Site design considerations such as ADA compliance and pull-through spaces for trailers and large vehicles

List of Proposed Criteria Categories and Possible Criteria

To determine prioritization criteria for selecting projects to fund through the NEVI program, DOTD contracted with the Center for Sustainable Energy, which used its Caret software to develop a multi-criteria analysis to evaluate and prioritize locations for installing chargers. The selection of criteria takes into account the specific needs of Louisiana and will help prioritize projects that specifically meet the needs of our state. A list of CSE-proposed criteria categories and possible criteria for each category is presented in Table 6. The State has identified three broad criteria categories: existing charging infrastructure, mobility goals, and accessibility and equity goals. For each category, the DOTD collected data and evaluated multiple possible criteria to meet the policy objective for each broad category. These selected criteria allow for the comparison of variations in the planning of projects that meet already identified priorities.

Table 6. List of CSE-Proposed Criteria Categories and Possible Criteria

Criteria Categories	Description	Possible Criteria
Existing Charging Infrastructure	Existing chargers in various scopes of geography (1 mi, 2mi, 4mi, 8mi, 16mi), and distance to these chargers.	Count of existing L2 chargers Count of DCFC (non-Tesla) chargers Count of DCFC (Tesla) chargers Distance to the nearest AFC Distance to the nearest AFC-compliant charging station Distance to the nearest L2 chargers Distance to the nearest DCFC (non-Tesla) chargers Distance to the nearest DCFC (Tesla) chargers
Mobility Goals	Existing travel demand variables in various scopes of geography (1mi, 2mi, 4mi, 8mi, 16mi).	Highway traffic VMT (vehicle-miles-traveled) Surface road traffic VMT Total VMT Distance to the nearest highway ramp Count of registered vehicles Count of registered electric vehicles (EV) Amenities Count of points of interest (POI) Non-Compliant AFC Nearby
Accessibility and Equity Goals	Spatial characteristics of the region that identify the less-advantaged groups or those who should benefit the most from this project, in various scopes of geography (1mi, 2mi, 4mi, 8mi, 16mi).	Median income Apartment units Household vehicles Justice-40 identified disadvantaged communities (DACs) Tribal areas Military areas

One of the advantages of multi-criteria analysis is that weights can be applied to selected criteria to represent their relative importance. Weights are multiplied to represent the proportional relevance of each criterion in the final scores assigned to each proposed location. The larger the weight of a criterion, the bigger the multiplier, increasing the likelihood that locations that represent an essential criterion will be ranked highly as a potential charger site. A list of the criteria and the weights used are presented in Table 7.

Table 7. List of the Criteria and Weights Used to Calculate the Suitability Score

Factor	Description	Relationship	Weight (Phase 1)
Amenity	Score indicates whether a grid cell (~0.3 square miles) contains an amenity that would be suitable for charging, such as a library, supermarket, convenience store, restaurant, etc.	Suitability increases as the number of high-value sites increase	25%
Surface VMT	Vehicle miles traveled (in thousands) on surface roads in the grid cell. VMT is a useful proxy for electric vehicle charging demand.	Suitability increases as VMT increases	12.50%
Median Income	Median household income within the grid cell.	Suitability increases with decreasing income.	12.50%
Non-Tesla DCFC Count (16 mi)	The number of non-Tesla DCFC within ~16 miles from the centroid of a grid cell. This is an important factor to assess proximity of existing EVCS.	Suitability decreases as number of EVCS increases	12.50%
Highway VMT	Vehicle miles traveled (in thousands) on interstate and state highways in the grid cell. VMT is a useful proxy for electric vehicle charging demand.	Suitability increases as VMT increases	12.50%
Non-Tesla DCFC Count (8 mi)	The number of non-Tesla DCFC within ~8 miles from the centroid of a grid cell. This is an important factor to assess proximity of existing EVCS.	Suitability decreases as number of EVCS increases	6.30%
Total VMT	Vehicle miles traveled (in thousands) on all roads in the grid cell. VMT is a useful proxy for electric vehicle charging demand.	Suitability increases as VMT increases	6.30%
Amenity Count (1 mi)	Count of amenities within 1 mile from the centroid of a grid cell. Amenities can include library, supermarket, convenience store, restaurant, etc.	Suitability increases as the number of high-value sites increase	6.30%
Total VMT (2 mi)	Vehicle miles traveled (in thousands) within ~2 miles from the centroid of a grid cell. VMT is a useful proxy for electric vehicle charging demand.	Suitability increases as VMT increases	6.30%

Typical Specifications for Electric Alternative Fuel Corridor:

- CCS Connector (SAE standard)
- 150-350kW Max Power (higher power acceptable assuming costs are not prohibitive)
 - 400-800 volts, 150-600 amps, 3 phase
- Any shared circuits provide a minimum of 150kW per vehicle
- Idle fee after charging complete/time limit exceeded
- Minimum 4 DC Fast Charge units per station
- Max 8 units per station
- Pull through spaces for vehicles with trailers
- Open 24/7 and publicly available
- Adequate lighting, restrooms, ADA compliant
- Plug to Charge Preferred (payment handled by vehicle when plugging in) payments by phone/app/card will also be acceptable
- Include contactless payment methods from all major debit/credit card providers
- Compatible with OCPP communications
- Spaces marked “EV Only”
- Signs recommending charging to 80%
- Real-time station location, operational status, and cost/fees available through a freely accessible API to third-party software developers
- Vendor required to make usage data per location available to DOTD on a quarterly basis
- Signage directing users to charging locations
- Charging station/vehicle awnings
- Must allow for customers to report outages, malfunctions, and other issues in real-time

Funding Sources

DOTD will develop a competitive grant program where grant recipients fund the non-federal share of the NEVI Formula Program. Operations and maintenance funds may be available for the first five years of station operations for select locations that qualify as rural, underserved, and or disadvantaged communities. The potential funding sources for the non-federal sources will vary based on the applicants.

The DOTD encourages applicants to provide matching funds in excess of the required 20% minimum when possible. The DOTD understands that asset management firms have an interest in working with local governments and non-government organizations on financing the implementation of EV Charging Infrastructure in exchange for profit sharing similar to the arrangements they have for funding basic utility infrastructure. The program also has the interest of venture capital firms that can partner with owners and operators.

Estimated Cost to Develop an EV Charging Network in Louisiana

Both empirical data from the California Electric Vehicle Infrastructure Project (CALeVIP) and EV charging cost data from external literature was used to estimate the cost to install a 150kW power level DC charger for AFC compliance. The average per-port cost for these projects was approximately \$310,000, which includes the capital cost of charging equipment, construction, and miscellaneous expenses such as permitting, licensing, waste hauler, construction management, etc. Note that these projects use FreeWire chargers that do not require utility upgrade, therefore the charging station OEM cost may be significantly higher than other cost estimates using the traditional 150kW DCFC chargers. On the other hand, a [working paper](#) from the International Council on Clean Transportation suggests that a DCFC networked 150kW charging station with one port costs \$75,000 on average, which is equivalent in purchasing power to about \$83,775 in 2022. Installing each port at a site with 3-5 chargers costs \$28,312 on average, which is equivalent in purchasing power to about \$31,625 in 2022.

The funding available for installing EV infrastructure in Louisiana is approximately \$91M (\$73M from IIJA/NEVI plus approximately \$18M in matching funds). Accordingly, the State estimates that it will be able to install 300-760 charging ports based on these numbers. The wide range is due to unpredictable factors such as inflation, cost difference between California and Louisiana, supply chain change, site-specific variations, and other changes in hardware or labor costs over the funding period, which could all result in more or fewer allocated chargers from the available funds.

The State anticipates that Louisiana will require approximately 30 DCFC new and upgraded sites to satisfy the 50-mile minimum distance requirements under the FHWA Alternative Fuel Corridor program for all of the highways that were nominated in our “Round 6” corridor nomination package. After that requirement is satisfied and after DOTD and the FHWA deem Louisiana’s corridors to be “fully built-out”, the state will prioritize installing additional chargers along and off the nominated corridors to better serve high use areas and to achieve redundancy in underserved areas.

2022 Infrastructure Deployments/Upgrades

DOTD conducted analysis and modeling with the Center for Sustainable Energy’s (CSE) Caret software to determine the approximate number and location of chargers to be installed across Louisiana. The State breaks the grant program into two phases with Phase 1 prioritizing the installation of the minimum number of AFC-compliant stations that satisfy AFC requirements (i.e., one compliant charging station every 50 miles or less) and Phase 2 where the state will prioritize the installation of additional chargers along and off the nominated corridors to better serve high use areas and to achieve redundancy in underserved areas.

Table 8 summarizes the minimum number of chargers to be installed and upgraded for AFC compliance along the nominated segments. Currently, there is only one AFC-compliant DCFC charging station near Lafayette, LA with six chargers. The modeling suggests installing 3 additional chargers to a location that already has 1 existing DCFC; as well as 3 chargers near Monroe, LA at a planned Electrify America charging station with one charger. The upgrade work with installation of these chargers will provide AFC-compliance at some road segments along I-10, I-20, and US-90. Moreover, the modeling suggests that the 2 DCFC charging stations along I-10 and I-12 that have 4 chargers, but need improvement to be AFC-compliant, should be upgraded for lower capital cost investment.

Table 8. Chargers to be Upgraded and Installed, Phase 1

Items	Action	# Locations	# Chargers to be installed	# Total chargers
Existing AFC-compliant DCFC charging station	None	1	0	6
Existing DCFC charging stations that have 1 charger	Upgrade - Installation	1	3	4
Planned Electrify America charging station	Upgrade - Installation	1	3	4
Existing DCFC charging stations that have 4 chargers but need upgrade	Upgrade	2	0	8
CaretEVI-suggested new DCFC chargers to be installed to satisfy the minimum requirement	New Installation	24	96	96
Subtotal - Phase I AFC-DCFC Projects		29	102	118

To make all nominated AFC segments compliant, the modeling suggests that 96 DCFC chargers at 24 sites should be installed at various locations along I-10, I-12, I-20, I-49, I-55, US-90, and a few local highways in the southern part of the state. The text description of the locations of these suggested stations are provided in Table 9, and a detailed map of suggested stations, including upgrades and new installations, are presented in Map 6.

Proposed DC Fast Chargers: Phase 1

Table 9. Description and Approximate Location of DCFC Stations to be Upgraded and Installed, Phase 1

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147
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The Phase 1 map below (Map 7) indicates the approximately 30 upgraded and new sites needed to achieve the minimum sites needed to achieve “fully built out” Electric Alternative Fuel Corridors under FHWA standards. The legend in Map 7 below indicates the recommended number of plugs per site as indicated by the State’s initial analysis.

With the upgraded and installed DCFC stations simulated with CaretEVI’s algorithm, the DOTD then calculated the EV charging infrastructure density (e.g., stations per 50 miles) along the AFC corridors, including the Interstate Highway System and a few other highways in the state. The charging density results are presented in Table 5. Results show that the number of DCFC chargers per 50 mi exceeds 4 per 50 miles for the most predominant highways in Louisiana, such as I-10, I-49, I-20, US-90, and I-12. For nominated AFC corridors with shorter lengths, they are all compliant based on CaretEVI’s geospatial model as they would instead be within the 50 miles driving distance threshold to the next AFC station.

Map 7: Approximate Locations of DCFC Stations to be Upgraded and Installed, Phase1

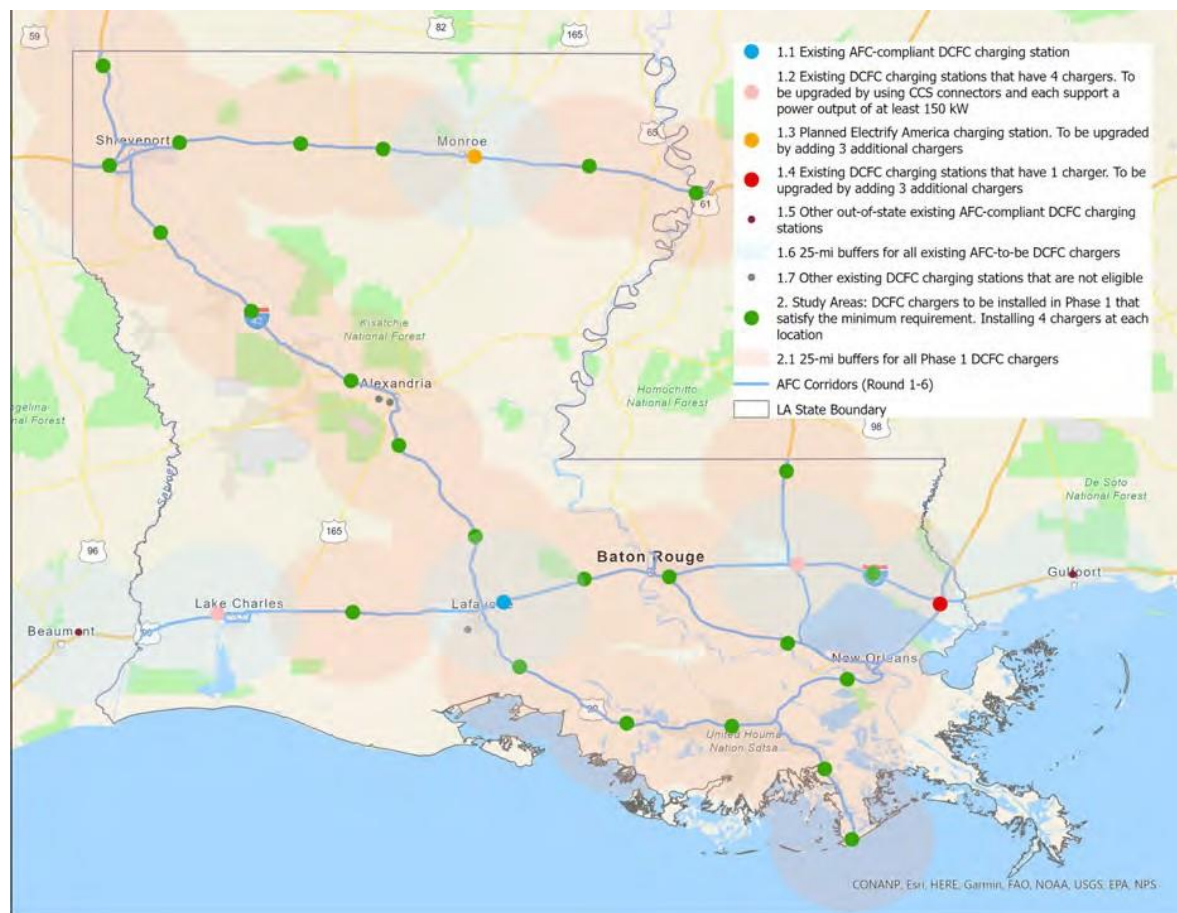


Table 10. DCFC Charging Density Along AFC Corridors, Phase 1

AFC Corridors	Length (mi)	Existing DCFC Charger ²	New DCFC Charger ³	Total DCFC Charger	DCFC Charger per 50mi
Interstate 10	273.85	11	15	26	4.7
Interstate 49	244.09		24	24	4.9
Interstate 20	189.51	1	25	26	6.9
US 90	143.00		16	16	5.6
Interstate 12	86.62	4	8	12	6.9
Interstate 55	66.06		4	4	3
LA 1	34.67				0
Interstate 220	18.12				0
LA 3235	15.65		4	4	12.8
Interstate 210	12.74				0
Interstate 59	12.01				0
Interstate 910	10.18				0
Interstate 110	9.06				0
LA 3132	7.63				0
Interstate 610	4.92				0
US 167	3.52				0
LA 3090	3.46		4	4	57.7
LA 657	0.48				0

² including planned site(s)

³ Suggested by CaretEVI

Upgrades of Corridor Pending Designations to Corridor Ready Designations

At the time this document was drafted, the state did not have any new corridors that were able to be designated as “Ready”. As part of the 5-year EV implementation plan, the State will reevaluate the status of the corridors and conduct an annual gap analysis to determine when previously nominated pending corridors can be upgraded to “Ready” or “Complete” status. The goal of the implementation plan is precisely to accomplish this feat.

Increases in Capacity and Redundancy Along Existing AFC

DOTD examined the existing charging stations and after applying Round 6 standards, there are only three sites along the I-10 that meet AFC requirements. As Louisiana has little to no existing AFC corridors for EVs, it is essentially starting from scratch. It is understood that redundancy in EV infrastructure in metropolitan areas will likely be necessary to achieve Justice40 goals. However, our first priority will be to complete our Pending EV Corridors so that they can achieve “Signage Ready” status. Any NEVI funds remaining after basic corridor build out is achieved and certified by FHWA will go to increasing capacity and redundancy in high-use areas, ensuring that evacuation routes are adequately covered with accessible fast chargers. Additionally, these funds will go to identifying and adding chargers to previously underserved “charging deserts” on state routes or other non-corridor highways.

Electric Vehicle Freight Considerations

While the focus of NEVI funding is on passenger vehicles and not freight transportation, the encouragement of charging sites to include pull-through spots may contribute to supporting freight transportation by electric vehicles. DOTD expects freight companies to pursue infrastructure funding through the \$2.5b discretionary funding for “community fueling” through the Bipartisan Infrastructure Law. DOTD is also engaging with organizations such as the Louisiana Motor Transport Association and various port authorities to incorporate their needs into this State EV Plan and forthcoming grant program.

Public Transportation Considerations

Transit agencies in a few metro areas in Louisiana have already begun adding electric transit buses to their fleets. East Baton Rouge Parish’s transit system, the Capital Area Transit System, currently has 9 electric BYD buses with plans to procure 11 more by the end of 2022. Shreveport’s transit system, SporTran, currently has 5 fully electric Proterra buses and is in the process of procuring more. Other transit agencies around the state have shown strong interest in these buses such as the cities of Monroe and Lafayette.

Additionally, with the publication of the EPA’s Clean School Bus funding programs, many school districts around the state are now considering applying for funding assistance to procure electric school buses. While the conversion of public transportation vehicles to alternative fuels, including battery-powered electric vehicles, has been underway for many years in Louisiana, charging those vehicles typically occurs “behind the fence” on public transit agency or school property and is not accessible by the public.

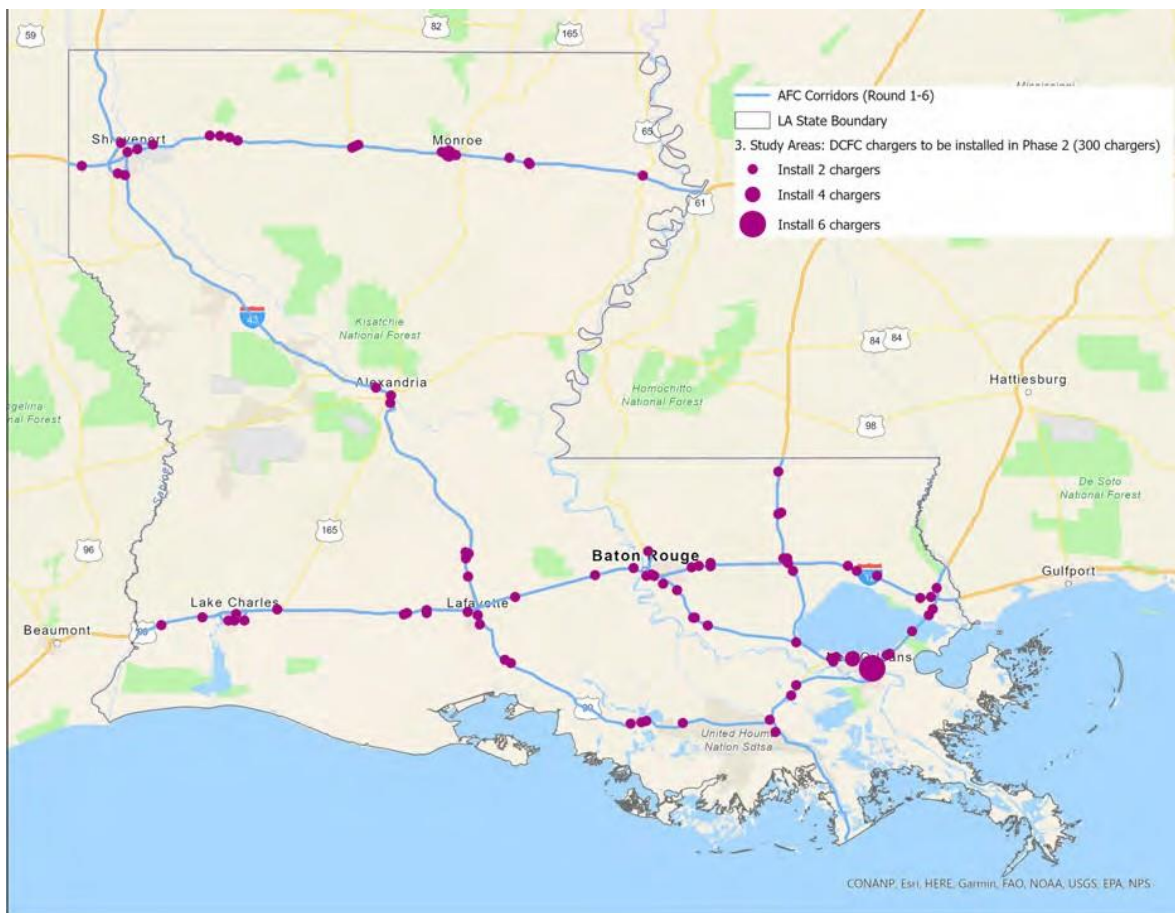
FY23-26 Infrastructure Deployments

The two infrastructure cost scenarios for Phase 2 (Maps 8 & 9) indicate the results of analysis on how to provide the best coverage possible for EV owners in our state. Depending on installation costs and potential fluctuations in cost of equipment and materials, the State estimates that it will have enough funding to award between 75 -190 sites over the course of the project period. The first couple of years, funding awards will focus on building out of the approximately 30 new and upgraded sites needed to satisfy Electric Alternative Fuel Corridor requirements by the FHWA. Once the state achieves complete corridors, as per the FHWA standards, DOTD will move to awarding projects under the “Phase 2” of the state Plan.

Phase 2: Approximate Location of Planned EV Infrastructure along nominated EV Corridor

Maps 8 and 9 below indicate study areas as suggested by the State’s initial EV charging infrastructure siting analysis. The sites indicated are ones that would be of interest to the State once the AFC requirements are satisfied.

Map 8: Phase 2 DCFC Installation, 300 DCFC Chargers in Total



— AFC Corridors (Round 1-6)

□ LA State Boundary

3. Study Areas: DCFC chargers to be installed in Phase 2 (760 chargers)

- Install 2 chargers
- Install 4 chargers
- Install 6 chargers
- Install 8 chargers
- Install 12 chargers

CONANP, Esri, HERE, Garmin, FAO, NOAA, USGS, EPA, NPS

The EV infrastructure plan will rely on third-party entities to coordinate with municipalities on zoning and permitting. Discussions with stakeholders during the development of the EV infrastructure plan demonstrated that utilities and EVSE companies were well equipped to handle zoning and permitting processes as part of their normal business practices. DOTD will monitor developments at the state and local levels during the implementation of this plan and provide updates to state and local officials when requested. The DOTD, in partnership with its contractors, may provide educational resources and assistance to applicants and stakeholders on best-practices as needed.

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Implementation

The State strategy is to encourage EV deployment in rural and underserved communities. The State will conduct outreach efforts with elected officials, non-governmental organizations, unions, disadvantaged businesses, citizens, and potential workforce participants. This effort will focus on the potential economic, workforce, wealth building, and transformational transportation opportunities for these disadvantaged communities.

The installation and operation of EV charging stations in these communities can create new revenue sources for financially challenged but strategically located towns and cities by attracting EV owners to visit their shops, restaurants, and local attractions. It will allow communities to utilize their relationships with utilities to help ensure affordability and community access. These relationships can be built to include community revenue sharing and partnerships with automobile dealers to focus on building EV ownership, particularly in rural areas.

Strategies for EVSE Operations & Maintenance

Grant applicants receiving awards will follow agreed-upon requirements for operation and maintenance. Monitoring and service level agreements for station performance will be specified in award agreements. DOTD will monitor station up-time through vendor reported usage data and general user satisfaction on publicly accessible third-party charging websites. Operation and maintenance costs will be evaluated per location over time. Enforcement of any idle fees will be the responsibility of the vendor/station operator.

EVSE companies may be required to provide 24/7 support year round and have call centers available to ensure that help can be given at any time. Additionally, most charging issues can be resolved via remote diagnostics or the implementation of remedial measures.

Strategies for Identifying Electric Vehicle Charger Service Providers and Station Owners

In addition to its existing solicitation methods to advertise, select, and award contracts to electric vehicle charging equipment service providers/property owners, the DOTD will partner with its Clean Cities coalitions to both solicit applications and to educate potential applicants on the grant process. Part of the State's strategy to assist grant applicants with identifying qualified electric vehicle charger service providers will be to host an in-person EVSE expo with educational sessions put on by Louisiana Clean Fuels, EVSE companies, engineering and consulting firms, utilities, and other experts. Additionally, relevant educational resources will be made available and published on the DOTD website. These resources may include webinars, videos, and links to technical help documents.

As part of the feedback process for the EV plan development, it has become clear that utilities and charging equipment (EVSE) companies have the expertise and ability to locate suitable locations for charging stations within DOTD's recommended EV study areas. Additionally, EVSE companies are well equipped to maintain the equipment for the site owners and hosts. DOTD will monitor the progress of awarded projects with regular correspondence between the vendor and project team as spelled out in award agreements.

Strategies for EVSE Data Collection & Sharing

The DOTD is aware of the substantial data submission requirements that each funded project must meet on a quarterly and annual basis. Contracts with grant applicants will include requirements to provide anonymized usage data for analysis and monitoring by the DOTD. According to the proposed minimum standards, real-time availability of each plug needs to be available online through an open API so third-party apps can access the data. The following will likely need to be available in real-time:

- Location
- Connector type
- Power level
- Status
- Number of ports meeting ADA requirements
- Pricing (in \$/min, \$/kWh, or \$/mi)

Working with its stakeholders and the U.S. Joint Office of Energy and Transportation, the DOTD will develop its data management plan according to the final specifications when published.

Strategies to Address Resilience, Emergency Evacuation, Snow Removal, and Seasonal Needs

The Louisiana Fuel Team was developed in an effort to supplement the state's emergency response to the public's need for fuel during times of evacuation and/or other emergencies. The group is composed of public and private sector volunteers working together to gain greater efficiency in making fuel available prior to, during, and after an emergency such as a hurricane.

The state Department of Natural Resources (DNR) serves as the lead agency to oversee the Fuel Team Playbook, while the Department of Agriculture and Forestry (LDAF) serves as the lead state agency for coordination and optimization of the emergency fuel supply.

With hurricane season starting earlier and ending later each year, and with the intensity of said storms also increasing, the need to include alternative fuel vehicles and EVs into the state's emergency response and preparedness plans is critical. As such, EV owners need a reliable charging network for continued travel that is also designed to help the public evacuate from extreme conditions. To address the need for EVSE along evacuation routes for coastal areas, the DOTD nominated US 90, LA 1, and LA 3235 as Planned Alternative Fuel Corridors for EVs.

The DOTD and Fuel Team should explore and establish readiness capabilities to mitigate these risks. Priorities include placing charging stations in safe, well-lit locations near interchanges and crossroads that are easily accessible, near commercial or public sites, and have adequate physical and cyber security, communications systems, and power access.

Emerging technologies and new business models that include mobile EV charging, fast chargers designed with battery backup systems and solar power, and vehicles with bi-directional charging capabilities can all be part of a resilience plan that state DOTs could adopt in the future to assist motorists during emergency evacuation events.

Strategies to Promote Strong Labor, Safety, Training, and Installation Standards

DOTD expects vendors selected under this program to emphasize safety in all aspects of station development, installation, and maintenance. DOTD will add training and certification criteria to the scoring matrix for vendor evaluation in the solicitation process. The State will follow the FHWA minimum standards, many of which address workforce certification and safety requirements.

10

Civil Rights

The NEVI Program will be implemented to meet all federal and state requirements regarding accessibility and equity. This will be pursuant to all federal, state, and local regulations and statutes to ensure compliance with the Americans with Disabilities Act (ADA) and Title VI of the Civil Rights Act of 1964 (Title VI). The ADA prohibits discrimination against persons with qualified disabilities regarding the usability and or participation of all programs, services, activities or benefits offered by DOTD. DOTD ensures that no person in Louisiana shall on the grounds of race, color or national origin, be excluded from participation in, be denied benefits of, otherwise be subjected to discrimination under any program activity.

11

Equity Considerations

This NEVI Plan will align with the Justice40 Initiatives by focusing on deployment in urban and rural underserved communities. Eighteen percent of Louisiana's population lives in poverty. The implementation of the NEVI Program offers opportunities for entrepreneurial and workforce initiatives in these communities. The program will give special consideration to applications that are focused on these communities.

Current EV growth in Louisiana has occurred predominantly in more urban areas and in neighborhoods of affluence due to the current higher initial cost of EVs and the current need to charge them at home or access limited charging sites. Our plan utilizes the Caret model to project EV ownership growth in our state as electric vehicles become cheaper and more accessible for lower income individuals and as a used EV market develops.

Our initial approach will install the EV charging stations along the designated alternative fuel corridors which are mostly in rural areas, then move to a more distributed model that will increase reliability and accessibility throughout the charging network, especially in underserved communities. The DOTD has engaged with the State's Metropolitan Planning Organizations (MPOs) in order to understand local infrastructure needs and focus on historically underserved communities in Louisiana. DOTD will continue to work with local leaders and stakeholders in both urban and rural communities throughout the program to ensure that the NEVI funds meet federal Justice40 requirements. The DOTD will continue to conduct outreach through several media channels to increase awareness and improve the accessibility of the State EV Plan. As projects are awarded, all project partners will be required to comply with all federal requirements for the program.

Identification and Outreach to Disadvantaged Communities (DACs) in the State

DOTD will continue to reach out to a wide spectrum of interest groups and stakeholders such as colleges, universities, churches, neighborhood associations, and environmental justice groups to identify and work with disadvantaged communities across Louisiana.

DOTD will include disadvantaged businesses and use its Compliance Section to access those groups they regularly engage with to inform them of the EV opportunities and assist with applications and project implementation as needed.

Process to Identify, Quantify, and Measure Benefits to DACs

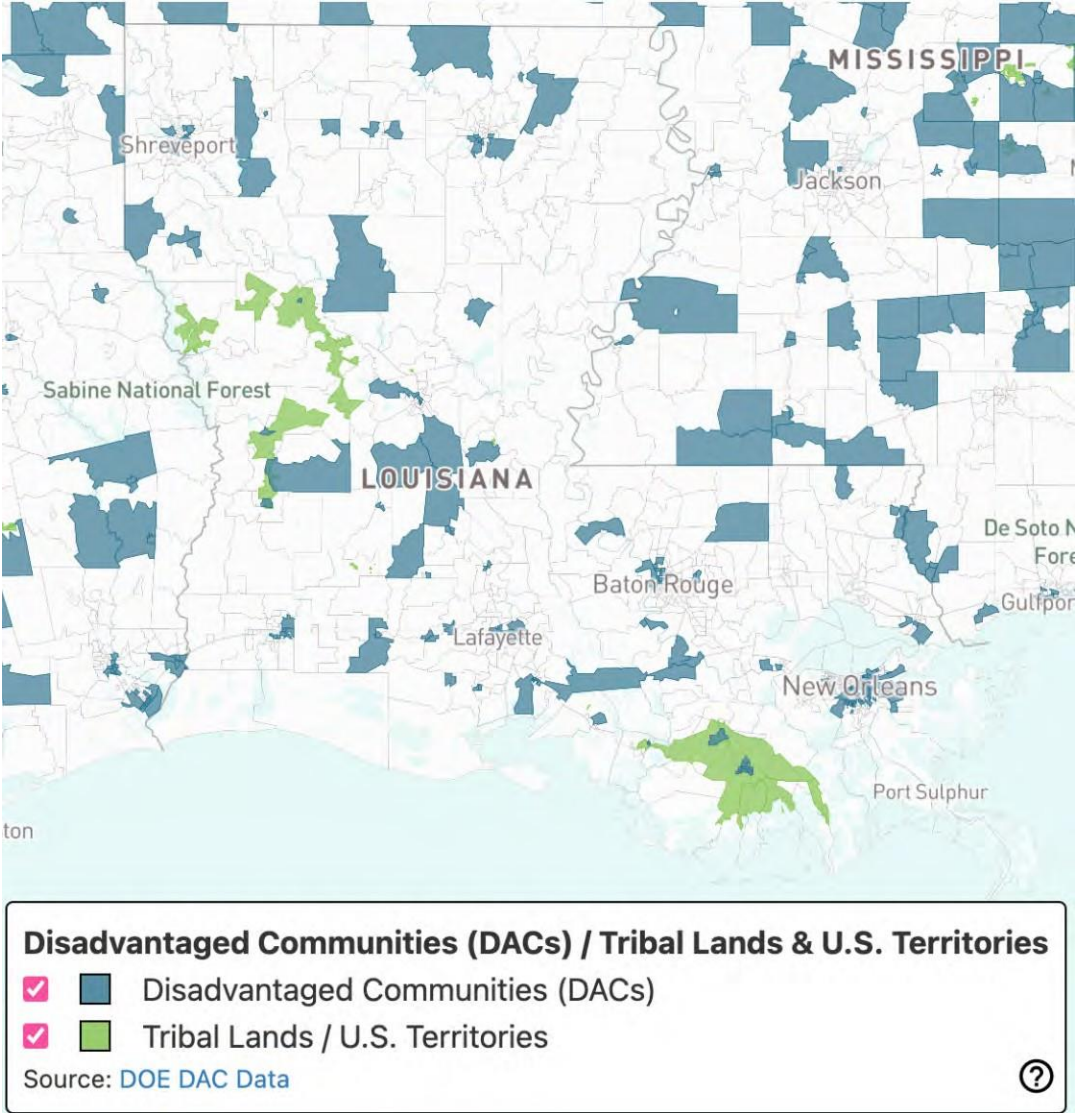
The DOTD will use tools developed by the U.S. Department of Energy to meet the goals of the federal Justice40 Initiative. In particular, DOTD will utilize the Energy Justice Mapping Tool to identify Disadvantaged Communities, which was developed through the following four main steps:

1. Calculate Burden Indicator Percentiles - for each census tract, DOE calculated the percentile values for each of the 36 burden indicators.
2. Calculate Cumulative Burden Score - DOE summed the percentiles across the indicators to create a score for each tract with each indicator receiving equal weight. The final scores for each census tract could range from 0 to 36, where 36 would represent the greatest disadvantage.
3. Select 20% Most Burdened Census Tracts in Each State - based on the score, DOE selected the top 20 percent of census tracts in each state. This ensured that every state was represented.
4. Prioritize High-Poverty Census Tracts - to ensure wealthier locations were not inadvertently included, DAC eligibility was further restricted based on income. A census tract selected in step 3 was categorized as a DAC if at least 30% of households:
 5. are at or below 200% of Federal Poverty Level and/or
 6. are considered low-income households as defined by the Department of Housing and Urban Development (HUD).

In sum: To be considered a DAC, a census tract must rank in the 80th percentile of the cumulative sum of the 36 burden indicators and have at least 30% of households classified as low-income.

Nationwide, 13,581 census tracts were identified as DACs using this methodology (18.6% of 73,056 total U.S. census tracts). Additionally, federally recognized tribal lands and U.S. territories, in their entirety, are categorized as DACs in accordance with the Office of Management and Budget's (OMB) Interim Guidance "common conditions" definition of community.

Map 10: Locations of DACs and Tribal Lands in Louisiana (Source)



Benefits to DACs through this Plan

DOTD will make an effort to measure the benefits, direct and indirect, of this plan on disadvantaged communities. Metrics to measure such benefits may include the following:

- The number of people from disadvantaged communities receive apprenticeships or job training related to EV infrastructure, and how many are hired.
- Number and type of community groups who are engaged in outreach activities
- Percentage of disadvantaged business enterprises (DBE) vendors who receive EV-related contracts

The DOTD looks forward to national standards being established by the DOE/DOT office and FHWA to finalize the metrics for measuring benefits.

One of our strategies will be to use the installation of charging stations to increase access to locally owned businesses, cities, and towns. Travelers charging in these communities offers an opportunity for additional income that will support local economic growth. Indirect benefits will be improved air quality due the absence of tailpipe emissions from electric vehicles. An additional benefit of the use of electric vehicles will be the lower cost of fuel and maintenance compared to comparable gasoline or diesel vehicles.

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Labor and Workforce Considerations

Louisiana has an opportunity to create new workforce opportunities through the implementation of its EV charging program. Installers, maintenance technicians, electrical workers, and various other trades will be needed to serve this new industry.

DOTD will work with the Louisiana Workforce Commission, Board of Regents, and colleges and universities to develop training programs to respond to fill these workforce needs.

DOTD will employ all the resources of its Compliance Section to provide opportunities to contract with disadvantaged business enterprises (DBE's) as either prime contractors or subcontractors on funded projects. The level of DBE participation will be included as part of the scoring criteria in ranking grant applications for EV charging infrastructure. Further, grant applicants will be encouraged to engage with community residents and stakeholders to maximize workforce participation.

Louisiana EV Committee member, Louisiana Clean Fuels is partnering with the Louisiana Community and Technical College System (LCTCS), who have expressed great interest in developing curricula at community and technical colleges in the state to develop a workforce specifically targeted at the care and maintenance of charging stations and alternative fuel vehicles. This will allow members of DACs to have access to an education that targets a growing need in the community and will provide skilled workers for the state. This system will build a more diverse workforce and filter feed into the small business community of the state.

Additionally, during the application and selection process of grant funds for charging sites, special considerations will be made for projects that fall in disadvantaged communities under the Justice40 initiative. These may be businesses that serve rural areas or DACs or if a site plans to utilize service or maintenance crews from DACs.

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Cybersecurity

DOTD is committed to ensuring that cybersecurity charging networks, electric vehicles, including Electric Vehicle Charging Networks, do not pose a cybersecurity risk to people or property in Louisiana. DOTD's grant recipients who own, operate, and maintain EV charging stations and their data are required to share anonymized data with DOTD on a recurring basis. These grant recipients should also publish station locations, power ratings, and costs to various sites tracking EV charging stations including the U.S. Department of Energy's Alternative Fuel Data Center (AFDC.gov). Additionally, annual usage data will be made available and collected by Clean Cities Coalitions in the state to track usage trends in funded sites. The Coalitions will in turn, report the data to the DOTD.

As part of award agreements, prior to issuance of the award, the grant recipients will be required to:

- Provide details about how they have hardened their infrastructure to minimize cybersecurity risks to protect their station, the network of stations or the electrical infrastructure
- Provide a cybersecurity plan that demonstrates the cybersecurity maturity of the recipient and its compliance with State regulatory and federal cybersecurity requirements
- Demonstrate how they will maintain and improve cybersecurity throughout the life of the proposed solution
- Alert DOTD and the Cybersecurity and Infrastructure Security Agency (CISA) of any known suspected network of system compromises
- Report any cyber-related incidents (along with data related to the incident) in a timely fashion to DOTD
- Provide evidence on how the cybersecurity plan was implemented

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Program Evaluation

To evaluate the grant program, DOTD's 5-year plan includes monitoring the grant recipients' sites through site visits to ensure proper maintenance and compliance with state and federal guidelines, as well as monitoring usage at the sites. These guidelines include ensuring the sites continue to meet Justice40 requirements where at least 40% of overall program benefits are delivered to disadvantaged communities through jobs, training, business development, etc. DOTD will oversee and monitor the criteria annually.

In addition, EV data will be available on DOTD's Open Data Portal at <https://data-ladotd.opendata.arcgis.com/> with a web map application for easy viewing. Data will include charging station types for Level 2 and DC Fast Charger stations and their locations. Statistics, data summaries, and shapefiles are also available online at the Alternative Fuel Data Center, along with an interactive map of EV charging locations throughout the State that is validated regularly.

Program evaluation will involve online data collection quarterly and annually. Applicants will be required to provide data to identify charging station use, reliability, maintenance, and installation cost information as required under the FHWA minimum standards. Annual data will be collected related to the organization operating, maintaining or installing Electric Vehicle Supply Equipment (EVSE) as well as information on certifications of local businesses certified to do the work.

Data collection of particular interest will be network connectivity of electric vehicle charging infrastructure and real-time accessibility.

Program evaluation will continue throughout the life of the grant program. The grant program is designed for the installed infrastructure to be maintained for a 5-year period of time. An onsite review of each site will be performed annually. Maintenance funds will be disbursed based on satisfactory completion of the site visit and evaluation.

Discretionary Exceptions

As analysis of the potential sites is completed and a strategy is employed for the Louisiana EV Infrastructure Plan, DOTD may request exemptions from some or all of the FHWA AFC requirements such as: 50 mile maximum distance between sites, 1 mile maximum distance from an approved AFC, 4 port minimum, and requirements for electricity output (a minimum of 150kW per plug simultaneously). Any exception requested will need to be supported by a reasoned justification from the DOTD that demonstrates the exception will support a convenient, affordable, reliable, and equitable national EV charging network. These exemption requests will be submitted before the aforementioned yearly updates with the provided template to the Joint Office of Energy and Transportation for review. Only those projects in disadvantaged communities, rural areas, or where grid capabilities are limited will be considered for exceptions.

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**Appendix:
Supporting
Materials**

Map 11: AFC Corridors, Nominated in Rounds 1-6



Figure 1: Estimated GHGs Reduced with No State Incentives and Production Caps in Place for Federal Incentives

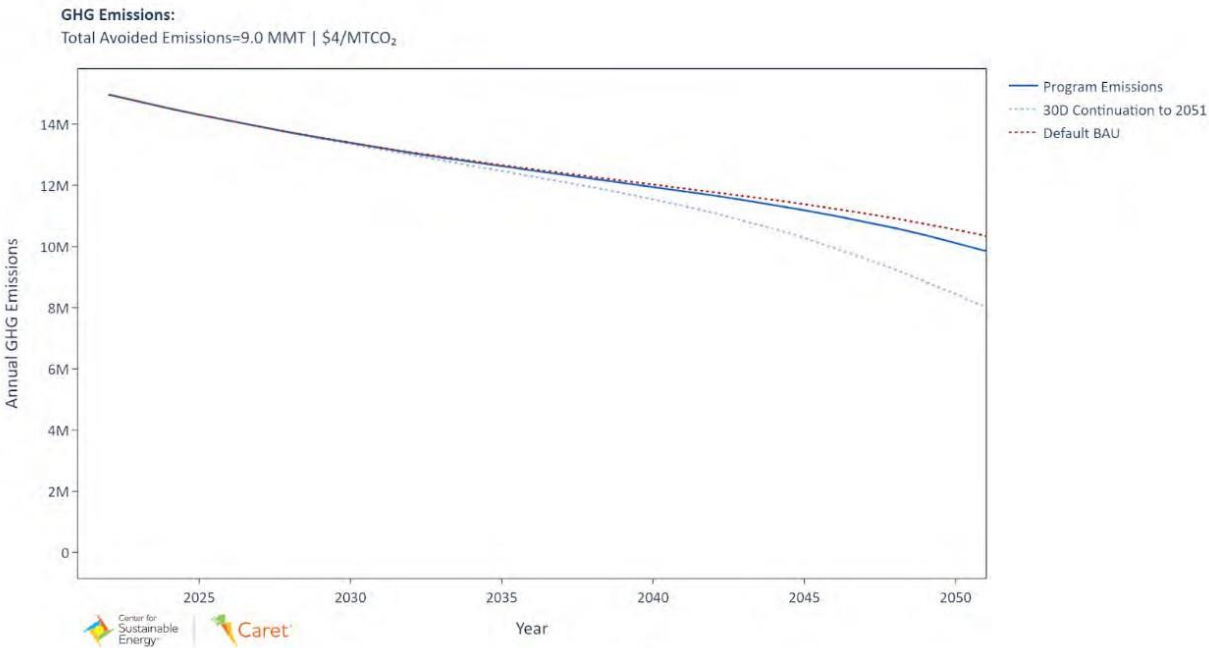


Figure 2: Estimated EV Sales in Louisiana with No State Incentives and Production Caps in Place for Federal Incentives

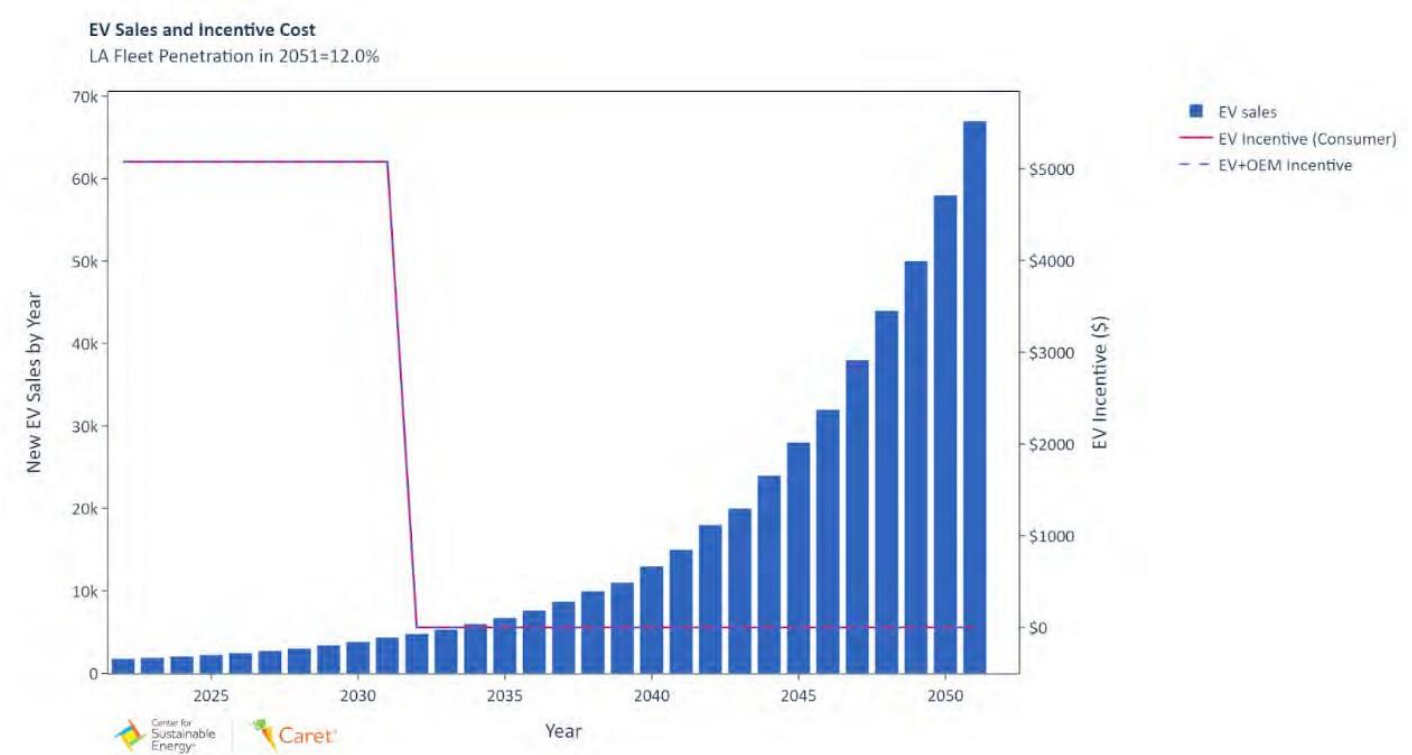


Figure 3: Charging Considerations for Medium and Heavy-duty Trucks (Source: NACFE)

This figure showcases the issues with bay parking chargers, and conveys why it is important to include pull-through parking for larger vehicles or ones pulling trailers.

