The City of
OKLAHOMA CITY

CHARGING AND FUELING INFRASTRUCTURE APPLICATION – COMMUNITY PROGRAM

Charging and Fueling Infrastructure (CFI) Discretionary Grant Program
693JJ323NF00004
CFDA 20.205 - Highway Planning and Construction
PKG00280498

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Project Narrative

The City of Oklahoma City is seeking $640,000 from the Charging and Fueling Infrastructure program to carry out a two-phase process: first, a planning process to identify sites, conduct site assessments, design, and preliminary engineering, followed by a second step of site preparation and installation. The planning process is necessary largely to ensure clarity of and full compliance with the National Electric Vehicle Infrastructure (NEVI) Standards and Requirements final rule (23 CFR Part 680). This process is outlined by substantial deliverables: (1) a City Fleet Analysis; (2) a Prioritization Methodology; (3) a first step City Facility Analysis; (4) a second step City Facility Analysis; (5) an Equity and Workforce Development Plan; (6) a Policy and Procurement Guidance document; and (7) a Roadmap for future projects and future funding beyond the life of the NEVI program. Each of these deliverables is more substantively discussed below.

We have not pre-identified locations for installation. We are seeking to (a) develop a process to identify charging and fueling infrastructure locations to maximize benefits, (b) develop options preferences for charging and fueling infrastructure itself compliant with all applicable regulations and requirements, (c) develop the necessary documentation, permitting, design, and site plans for each site, and (d) work with the Oklahoma Department of Transportation on installation as Title 23 projects.

A significant planning process is necessitated in part by the fact that Oklahoma City is one of the largest cities by area in the U.S. Our transportation infrastructure is commensurate, with more than 12,580 traffic signals; more than 790 signalized intersections; more than 70,000 traffic control signs; more than 3,590 center-line miles of roadway; a forthcoming 9.5-mile bus rapid transit route with 32 platform stops; 22 streetcar stops across 4.8-miles of streetcar track; 52 electric-assist bikeshare bicycles; 1,313 fixed-route bus system stops across 21 routes serving 283 square miles with annual ridership greater than two million; and an expanding mileage of bicycle and pedestrian facilities to create a range of multimodal demands for safety.

An important component of the proposed planning process is the development of a Prioritization Methodology to identify, categorize, and rank prospective sites for publicly available charging and fueling infrastructure. Consideration of expanding private sector efforts are necessary early in the process to reduce duplication and ensure community needs are met; these efforts include, for example, Walmart and Sam's Club, of which there are 15 and 4 locations within Oklahoma City, respectively. To understand where existing charging and fueling infrastructure is across Oklahoma City, we first used the Department of Energy's Alternative Fuel Data Center (AFDC). The AFDC provides a larger picture of existing fueling and charging infrastructure in Oklahoma City given the infrastructure is included irrespective of whether or not it meets or surpasses the standards and requirements of the NEVI final rule:

Comparative Alternative Fuel Stations in Oklahoma City, Oklahoma, and the U.S.

	CNG	LNG	LPG	H	EV (stations)	EV (ports)
Oklahoma City	23	0	3	0	57	138
Oklahoma	115	1	35	0	355	1,143
United States	1,451	133	1,347	114	60,180	156,852

Source: Department of Energy Alternative Fuel Data Center

The AFDC data illustrates that Oklahoma City, the 20th most populous city in the United States, contains less than 0.1% of the nation's electric vehicle supply equipment. To underscore, the findings of the AFDC are different from the findings of the Electric Vehicle Charging Justice40 Map, as they illustrate far fewer given the stations post-NEVI standards and requirements are publicly-accessible, non-Tesla, and DC fast chargers. Further discussion of the siting of these NEVI-compliant chargers, especially with the context of the Department of Energy/Department of Transportation interim Disadvantaged Community tract status, is located in the response to the Equity, Community Engagement, and Justice40 merit criteria.

The sheer scale of gaps in accessibility means a thoughtful prioritization of community sites will be necessary. Oklahoma City has greater than 500 separate buildings, structures, or properties and includes 27 different school districts either wholly or partially within its boundaries, all independent of municipal government. For example: Oklahoma City has greater than 6,200 acres of parkland, which includes 167 public parks; 16 recreation centers; 6 senior centers; 2 aquatic centers; 32 base/softball diamonds; 35 soccer fields; 75 tennis courts; 5 skate parks; 5 golf courses; 3 disc golf courses; 216 acres of urban and rural fishing; 17 splash pads; and 2 dog parks. These numbers are expounded upon in the Parks Master Plan, specifically pages 33 and 34. The Plan also established park typologies: Local Parks, Regional Parks, and Other Parks, each with subcategories – neighborhood parks, community parks, school parks, district parks, metropolitan parks, greenspaces, greenways and trails, nature parks, and special use parks. These typologies are expanded upon in the Parks Master Plan, pages 35 through 39, and used to standardize a Level of Service (LOS) for active and recreational space in Oklahoma City.

This typology framework will inform a prioritization process to determine where the installation of EVSE at public parks meets program requirements and best serves Oklahoma City residents; on pages 36 through 38 of the Parks Master Plan, park typologies and subcategories are assessed based on LOS and include a discussion of access and the associated parking typically required. More robust site consideration, such as nearby street AADT, population density, etc. The Prioritization Methodology to be developed will allow us to determine the necessary variables and consistently select sites and projects strategically irrespective if they are parking facilities at a public building, public schools, public parks, or publicly accessible parking facilities owned or managed by a private entity.

For example: the City provides transit services and manages downtown parking via EMBARK, the transit agency managed via the Central Oklahoma Transportation and Parking Authority (COTPA), a trust of the City of Oklahoma City. EMBARK manages five structured parking garages and four surface lots in and around downtown Oklahoma City. However, each of these sites must be assessed given the publicly accessible requirement, meaning if customers must pay a fee to access the parking garage – and therefore the charging or fueling infrastructure – these

sites would be ineligible for NEVI project funding. A pivot to either (a) identifying publicly accessible areas on-site where charging and/or fueling infrastructure could be made publicly accessible or (b) finding alternative sites that meet the final rule requirement of publicly accessible. To that end, EMBARK also manages more than 1,300 on-street parking spaces throughout downtown, including spaces regulated and reserved for electric vehicles per Oklahoma City ordinance no. 25,709, adopted in 2017.

With regard to estimated fund use, Oklahoma City is requesting $640,000 with local match of $160,000 provided from the City's Capital Improvement Projects Fund set-aside, for which documentation is included with this application. The Planning and Development use encompasses the planning, data analysis, feasibility analysis, environmental review, preliminary engineering and design work, and other preconstruction activities necessary to both (a) conduct data analysis to determine and prioritize sites and (b) ensure full compliance with NEVI standards and requirements.

Use Category	Federal Funding	Local Match	Total
Planning and Development	$630,000	$150,000	$780,000
ROW			
Installation			
Operations & Maintenance			
Public Education	$10,000	$10,000	$20,000
Total	**$640,000**	**$160,000**	**$800,000**

The Planning and Development use is comprised of seven deliverables:

1. *City Fleet Analysis*
    - The City's fleet is estimated to be about 3,400 vehicles categorized by fuel type: unleaded gasoline (2,014 vehicles or an estimated 60% of the fleet), diesel (818 or about 25%), E85-blend gasoline (268 or about 8%), compressed natural gas (242 or about 7%), and a very small number of hybrid vehicles and electric vehicles which combined comprise less than 1% of the overall fleet. Oklahoma City's fleet includes light duty, medium duty, and heavy-duty vehicles. A granular and holistic assessment of vehicles across the fleet with accompanying breakdowns by make, model, fuel type, maintenance costs, mileage, usage, remaining usable life, etc., to determine opportunities to replace outdated or near-outdated vehicles as well as opportunities to gain efficiency through the addition of EVs or other alternative fuel vehicles to the fleet alongside requisite charging or fueling infrastructure.

2. *Prioritization Methodology*
    - A framework must be developed to organize potential installation sites systematically and consistently. Inputs are likely to include area population density, annual average daily traffic on nearby roads, building use/purpose and occupancy, property floodplain designation, pedestrian accessibility, load impact on area electrical utility system, resident demand, preliminary environmental assessments, site environmental justice/disadvantaged status, site safety review

with crash data, proximity to significant criteria pollutant sources, proportion of fleet able to be served, etc. Once completed, the methodology can be a consensus-building tool to weigh pros and cons of given sites and begin generating a larger portrait of need for EVs that can be met through other means including local funding, private development, or other EV-eligible discretionary grant programs.

3. *City Facility Analysis, Step One*
    - The City of Oklahoma City has hundreds of properties, structures, and facilities, some which directly serve residents, such as recreation centers, senior centers, golf course clubhouses, and major destinations like the historic Civic Center Music Hall and Scissortail Park. A sound, reliable, and transparent method of prioritizing these sites has to be undertaken to ensure benefits can be maximized. Across hundreds of different locations, the City Facility Analysis is intended to narrow down the prospects of EVSE installation to the highest priority locations, building off both the City Fleet Analysis and the Prioritization Methodology.

4. *City Facility Analysis, Step Two*
    - The second phase of the City Facility Analysis presumes sites have been prioritized and ranked; now, site assessment is necessary to determine siting of the EVSE itself in addition to any additional concrete, stanchions, or conduit needed to ensure installation/design compliance. This includes assessments for pre-installation accessibility, e.g. identifying improvements as needed to ensure accessibility compliance, the need for and location of on-premise signage, the need for and location of any additional traffic control devices, and assurance of compliance not only with the standards and requirements final rule but also of unique state requirements specific to EVSE.

5. *Equity and Workforce Development Plan*
    - Sites for EVSE in disadvantaged and environmental justice communities as well as areas of persistent poverty are essential considerations, especially because traffic exhaust and tailpipe emissions tend to disproportionately affect minority communities. The Equity component of this deliverable is intended to assess the multitude of data – EPA's EJScreen, CDC/ATSDR's Social Vulnerability Index, FHWA's STEAP, DOT's Equitable Transportation Community Explorer – to prioritize within disadvantaged and environmental justice communities where the most benefits could be achieved. Paired with the Workforce Development component, this deliverable should assess existing certification and training programs within the Oklahoma City metro and work to develop pipelines and opportunities for both residents and City employees to ensure adequate workforce for future projects and economic development. Education and outreach are important parts of this step, to ensure those in Justice40 community members can participate in projects that will improve air quality and transportation equity. Outreach events will ensure community members have transparent access development in their neighborhood, as well as an opportunity to find job training possibilities.

6. *Policy and Procurement Guidance*
    - The NEVI Standards and Requirements final rule, as published in the Federal Register, includes a section summarizing the final rule (12728-12729); twenty categories are provided. All but two categories – "Security" and "Qualified Technician" – are to be addressed through research and development of the Policy and Procurement Guidance deliverable. "Security," which addresses requirements for State Departments of Transportation to "implement appropriate physical strategies" to address both physical security of the EVSE as well as security of personal data and the larger electrical grid, will be addressed via the City Facility Assessment, Step Two; consideration of the "Qualified Technician" requirement will be developed through the Equity and Workforce Development Plan deliverable.
    - Requirements, rules, and regulations continue to emerge from both the State and Federal levels. Navigating these in advance, especially where policies may conflict or overlap, is a necessity to ensure clarity and confidence for policymakers moving forward and can provide a consistent perspective for future EV efforts. For example, in the spring of 2021 the Oklahoma Legislature passed and the Governor signed House Bill 2234, the Driving on Road Infrastructure with Vehicles of Electricity Act, or DRIVE Act. This legislation codified a weight-based EV fee; third-party EVSE testing, "calibration," and "inspection" requirements; tax remittance and reporting requirements; charge rate disclosure rules; and, most significantly, enacted a per kilowatt hour tax of $0.03 to be levied on any non-private EVSE, described as "not be applicable to electric vehicles charged at a private residence at which the owner or occupant of the residence uses electric power paid for by the owner or occupant of the residence." This taxation elements means any EVSE installed will be subject to tax collection and remittance after January 1 of next year, thus calling into question the policy-based economic burden placed on recipients of publicly-available EVSE.
    - Further rules promulgated by the Oklahoma Corporation Commission mandate compliance with the most recent National Fire Protection Association's NFPA 70 as well as other physical siting requirements each installation project must be sure to comply with in addition to regular inspections, data reporting, and physical security features, all atop the Federal standards and requirements.
    - Locally, the City of Oklahoma City's Planning Department is currently in a multi-year update to the City's development-related codes; a scan of existing and forthcoming land use and zoning policies relevant to electric vehicles, especially with a mind towards curb management, would be well-timed for inclusion in the update.
    - Another feature of this deliverable must be a "market scan" of EVSE compliant with the NEVI standards and requirements as well as Build America, Buy America. This will be necessary not just to ensure compliance but because the City is interested in exploring the degree of renewable – specifically solar – EVSE available on the market from both an ease-of-installation and in an effort to limit new load placed on the electrical grid. Obviously, compliance is significant per the final rule, including interoperability, MUTCD-compliance signage and traffic control devices, data reporting requirements, connectivity and

cybersecurity, communications, and more, but market options should be assessed and the question of whether solar-powered EVSE can supply the required amount of power is an important one to ensuring lower costs for users and residents.
- Other elements of EVs – placement of on-premise signage, ability to quantify emissions data for use in programs like Ozone Advance, methods of disposal – should be synthesized and summarized in this deliverable to provide a sensibly-constrained series of options and clarity among extant policy to provide confidence to policymakers and stakeholders to move forward.

7. *Roadmap: Future Projects and Future Funding*
    - The final deliverable is to ensure continued momentum for EVSE; by the end of the project, the deliverables would have produced a ranked list of City of Oklahoma City facilities, prioritized based on a developed methodology, as well as prospective sites in EJ community tracts. The Roadmap is intended to use those assets to build a path forward by identifying and operationalizing how to seek funding. The Roadmap will chart a time-phased map of locations and projects with upcoming discretionary funding opportunities, including the annual STBG-UZA call for projects conducted through the Oklahoma City region's MPO as well as the Department of Energy's Clean Cities program, which provides funding for the Public Fleet Conversion program also with the Oklahoma City region's MPO. Other Federal opportunities should be similarly treated including Congestion Mitigation Air Quality (CMAQ) funds, Energy Efficiency Conservation Block Grant (EECBG) funds, Carbon Pollution Reduction Grant (CPRG) funds, and others, in addition to local opportunities including Commercial-Property Assessed Clean Energy (C-PACE) incentives and relevant EVSE and EV tax credits. The intent is for the Roadmap to serve as the project capstone, but in doing so to provide robust next steps to continue implementation. Continued education and outreach could include topics such as: the state of the EV market; the state of the EVSE-related job market and workforce; and opportunities for growth in both workforce and fleets. Ensuring ongoing communication can demonstrate to the private sector that vehicle electrification is a solid part of the state's economy.

These deliverables and their contents are discussed further in the responses to the Merit Criteria.

Budget Information
The requested $640,000 is in addition to 20% local match provided by the City for a total project cost of $800,000 to be used for contractual purposes. The budget does include less than the 5% cap for Public Education; that combined $20,000 is intended to supplement public outreach and education efforts especially during the development of the Equity and Workforce Development Plan as well as the Roadmap deliverable.

Project Readiness and Environmental Risk
If Oklahoma City is a recipient of an FY 2022 CFI Program award, funds will be obligated by the September 30, 2025 deadline and expended well before the September 30, 2030 deadline.

Based on a starting point of a fully-executed Grant Agreement in the third quarter of calendar year 2023, the City's competitive bidding process would require about as much as a six-month period between publication of the Request for Proposals, the formal selection process, and approval and award by City Council. Once awarded, work could begin as early as very late 2023. The chart below identifies the projected timeline milestones organized by the projected deliverables discussed in further detail below:

	2023			2024				2025			
	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Pre-Award											
Proposal Submission											
Executed Grant Agreement											
Scope of Work and Competitive Bidding											
Plan Development & Deliverables											
City Fleet Analysis											
Prioritization Methodology											
Alternative Fuel Corridor Buffer Analysis											
Alternative Fuel Corridor Outreach and Site Assessments											
City Facility Analysis, Step One											
City Facility Analysis, Step Two											
Equity & Workforce Development Plan											
Policy and Procurement Guidance											
Roadmap: Future Projects and Future Funding											

Safety - Merit Criterion #1

Safety through design will be accomplished by integrated risk assessment early in the design stages to proactively include risk reduction for all users. Per the NEVI Standards and Requirements final rule, not only are NEVI projects are to be treated as a Title 23 Federal-aid highway project but so are "any publicly accessible EV charging infrastructure project funded with Federal funds." The Oklahoma Department of Transportation (ODOT) may "assume the responsibilities … for design, plans, specifications, estimates, contract awards, and inspections with respect to the projects" according to the 2015 Stewardship and Oversight Agreement on Project Assumption and Program Oversight by and Between Federal Highway Administration, Oklahoma Division and the State of Oklahoma Department of Transportation. This ensures compliance with the Public Right-of-Way Accessibility Guidelines, or PROWAG, as PROWAG was formally adopted by ODOT per a May 9, 2012 memo; in addition, the U.S. Access Board's Design Recommendations for Accessible Electric Vehicle Charging Stations atop ADA Accessibility Standards, ABA Accessibility Standards, and Section 508 Standards are required in construction and all will be integrated into site design and product selection. While it is not intentional to conflate safety with access, appropriately accessible facilities will ensure avoidance of negative impacts to users. Additionally, consideration of FHWA's Proven Safety Countermeasures, especially those concerning pedestrians (e.g. medians and pedestrian refuge islands in urban and suburban areas, crosswalk visibility enhancements, and walkways), will be

applied in the site assessment and design stages well as principles of Crime Prevention Through Environmental Design, or CPTED.

Safety will be a key component specifically of two deliverables: the Alternative Fuel Corridor Outreach & Site Assessments and the City Facility Assessment, Step Two. These site assessments will need to take into account area connection to transportation infrastructure, any existing record of crash or injury, evaluation of sufficient on-site lighting, traffic flow, area traffic counts, existing compliance with ADA and PROWAG, and other more granular, site-specific variables to assist in the final steps of prioritizing projects and indicating what elements, e.g. MUTCD-compliant signage, traffic control devices, etc., might need to be planned for a construction project to ensure maximize user safety and deliver meaningful upgrades to the EVSE site.

Earlier in 2023, Oklahoma City was awarded an $800,000 discretionary grant from FHWA's Safe Streets & Roads for All (SS4A) program, newly created from the Infrastructure Investment and Jobs Act (IIJA). The $800,000 award along with $200,000 will go towards the development of a citywide Comprehensive Safety Action Plan to include identification of the High-Injury Network across Oklahoma City's transportation network. While Oklahoma City is now the 20th most populous city in the U.S. following the 2020 Census, when compared with those 19 larger cities based on fatal crashes per 100,000 between 2016 and 2020, Oklahoma City (12.3) ranked fourth behind Jacksonville (15.7); Dallas (13.7); and Phoenix (12.6). NHTSA's Fatality and Injury Reporting System Tool (FIRST) is one of the most important tools the City uses to assess site-specific transportation safety and provides us with a means to look at site-specific, granular historical crash data, and the development of the High-Injury Network as part of the SS4A award can be applied to locations for charging and fueling infrastructure.

Lastly, as mentioned in the section on Workforce Development, Job Quality, and Wealth Creation, local training is currently available to first responders in the event of a public safety emergency involving "alternative energy vehicles," including electric vehicles. As part of the workforce development component of this proposed plan, identifying needs, necessities, and costs of providing such training/certification to City-employed first responders will occur with funding and certainly contribute further to user safety, whether at an EVSE location or on any of Oklahoma City's streets and roads.

Climate Change, Resilience, and Sustainability - Merit Criterion #2

A significant planning process is necessary because expanded charging and fueling infrastructure has the potential for significant greenhouse gas emission reductions in Oklahoma City. Oklahoma City is a high vehicle-miles traveled (VMT) community; the Oklahoma Highway Safety Office estimated Oklahoma City's overall 2021 VMT to be 7,992,160,963 with an estimated population of 662,314 for per capita VMT of about 12,067 per person. The American Community Survey 2021 five-year estimates for commute to work in Oklahoma City indicate 80% of commutes are single-occupant vehicles followed by about 10% carpooling, about 7% working from home, and the remainder comprised of walking (1.60%), tax, motorcycle, bicycle, or other (1.50%), and public transit (0.50%). The Air Quality chapter of Oklahoma City's sustainability plan, Adapt OKC, lays out a strategy for two-pronged transportation sector emissions reduction (page 86):

> Our best approach to emissions reduction is twofold: continue to enhance transit services and prioritize safe infrastructure for bicycle and pedestrian commutes; and accommodate remaining VMT through alternative fuels that generate few to no emissions. Those emissions - namely CO_2, and ground-level ozone precursors nitrous oxides (NO_x) and volatile organic compounds (VOCs) – pose serious risks to the health, well-being, and economies of Oklahoma City.
>
> - Adapt OKC: Adapting for a Healthy Future, 2020

The former prong has been well underway for more than a decade with expansions of transit service to greater hours and days; the addition of a downtown streetcar and three forthcoming bus rapid transit routes; a fleet of 53 pedal-assist/e-bikes; and slow but steady work on a Regional Transit Authority in the Oklahoma City MSA to operate and manage an intercity rail system. The Charging and Fueling Infrastructure program can better assist Oklahoma City with the latter prong: accommodating existing VMT through alternative fuels that generate few to no emissions. There are additional goals and policies related to emissions reduction in the transportation sector the Charging and Fueling Infrastructure program can help accomplish.

The EPA's National Emissions Inventory can provide a longitudinal and reliable metric of greenhouse gas emissions given the current absence of local, regional, or state greenhouse gas data in Oklahoma. Importantly, "greenhouse gases" includes more than just carbon dioxide (CO_2), but also methane (CH_4), oxides of nitrogen (NO_x), and volatile organic compounds (VOCs); the latter two are particularly relevant to Oklahoma City as NOx and VOCs are required pre-cursors for the formation of photochemical smog or ground-level ozone (O_3). Ozone has been the most pernicious greenhouse gas for Oklahoma City since at least the signing of the 1997 Early Action Compact memorializing efforts by the City of Oklahoma City, the Oklahoma Department of Transportation, the Greater Oklahoma City Chamber of Commerce, EPA Region 6, and others to ensure the Oklahoma City region remains in attainment of the National Ambient Air Quality Standard for ozone. While Oklahoma City's air quality has improved based on declining levels of those four major criteria pollutants, as illustrated in the table below, Oklahoma City still struggles with growing VMT and increasingly hot temperatures conducive to ozone formation:

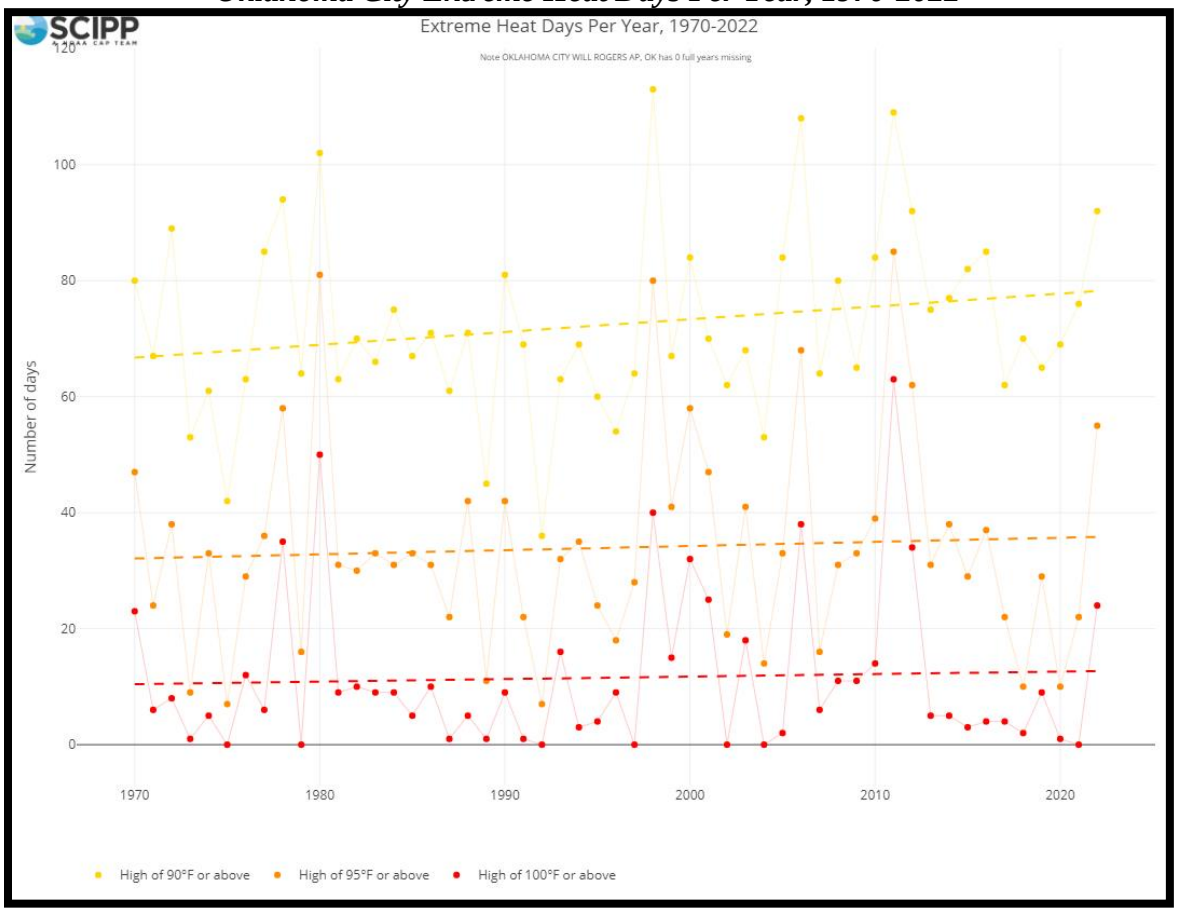
On-Road Gasoline Light Duty Vehicle Greenhouse Gas Emissions, 2011-2020

Year	CO_2	Methane	NO_x	VOCs
2011	5,064,136	231	11,846	8,091
2014	3,673,894	195	8,570	6,707
2018	3,600,893	163	5,870	5,061
2020	2,794,174	196	2,063	2,502

Source: U.S. EPA National Emissions Inventories

Data from the NOAA-funded Southern Climate Impacts Planning Program illustrates the increases in extreme heat days per year across all of Oklahoma between 1970 and 2022:

Oklahoma City Extreme Heat Days Per Year, 1970-2022



Source: SCIPP Temperature Trends Dashboard

Continued vehicle emissions combined with increasing annual temperatures pose a threat to Oklahoma City and the Oklahoma City metro of exceeding the National Ambient Air Quality eight-hour Standard for ozone. In 2022, the Association of Central Oklahoma Governments (ACOG), the Oklahoma City metropolitan statistical area's metropolitan planning organization, published the Cost of Nonattainment Study for the Oklahoma City Area in an effort to quantify the potential economic impact of the U.S. EPA designating the region in nonattainment. Impacts were projected from 2022 to 2050 in a range between $9.5 billion and $15 billion, including significant costs associated with transportation conformity and Nonattainment New Source Review. Additional EVSE, especially if capable of delivering significant emissions savings, can serve as an effective hedge against the costs of a nonattainment designation which would impact

Oklahoma City residents in myriad ways including likely higher transportation costs, e.g. new fuel mixes, mandatory emissions testing and vehicle inspection, etc.

The Policy and Procurement Guidance is intended to include market options for NEVI-compliant EVSE but also an ability for the City to find out if, among those NEVI-compliant products, models exist that can meet needs or preferences. For example, rural areas or areas with significant site constraints could benefit from solar-powered EVSE, which could limit the extent of construction, reduce the need for interconnection, eliminate the need for trenching, and – contingent on market options – fully comply with the NEVI final rule with little to no impact on the grid. Most of the electricity presently generated for Oklahoma City has emissions byproducts; according to 10-K reports filed with the U.S. Securities and Exchange Commission, the largest investor-owned utility serving the majority of Oklahoma City residents uses natural gas and coal are primary generation fuels, meaning the breadth of emissions reductions per EV is limited by generation source:

OG&E-Generated Energy Produced and Purchased, By Type, 2018-2022

Year	Natural Gas	Coal	Renewables
2018	48%	45%	7%
2019	64%	28%	8%
2020	62%	25%	13%
2021	48%	40%	12%
2022	60%	30%	10%
5-Year Averages	**56.4%**	**33.6%**	**10%**

Source: OG&E 10-Ks

These so-called "upstream emissions" mean that if driving a brand-new, 2023 Chevrolet Bolt EV in an Oklahoma City ZIP, the U.S. Department of Energy's Greenhouse Gas Emissions from Electric and Plug-In Hybrid Vehicles tool finds that total vehicle emissions (130 grams per mile) are greater in Oklahoma City when compared to the same vehicle on the average U.S. electricity generation mix (130 grams per mile versus 120 grams per mile).

Moreover, gas and electric utilities in Oklahoma are now recouping costs due to Winter Storm Uri in February 2021; this recoupment amid additional rate increases contributed to the U.S. Energy Information Administration report that retail electricity costs across all sectors in Oklahoma between June 2021 and June 2022 saw an increase of 49% versus the 14% increase seen by the rest of the country. There is no expectation of electricity prices decreasing nor is there expectation of greater climatic cooling; as a result, the Policy and Procurement Guidance deliverable must include identification and consideration of renewable energy-powered EVSE as a means to ensure access and benefits but in aggregate keep the incremental demand additional EVSE might place on the electrical grid in an effort to see as little added load, especially during peak hours, as possible. EVSE with solar and/or storage could help control some of those external costs, e.g. electricity generated with an upstream emissions byproduct, as well as potentially streamline installation and deliver a fractional but nonetheless real effort to support electric vehicles without contributing to costs likely to result in the long-term addition of gas- or coal-fired power plants. According to the latest National Solar Jobs Census by the Interstate Renewable Energy Council, Oklahoma and Pennsylvania are the only states to see an overall decrease in solar job growth from 2020 to 2021 (page 17), and while Oklahoma is currently

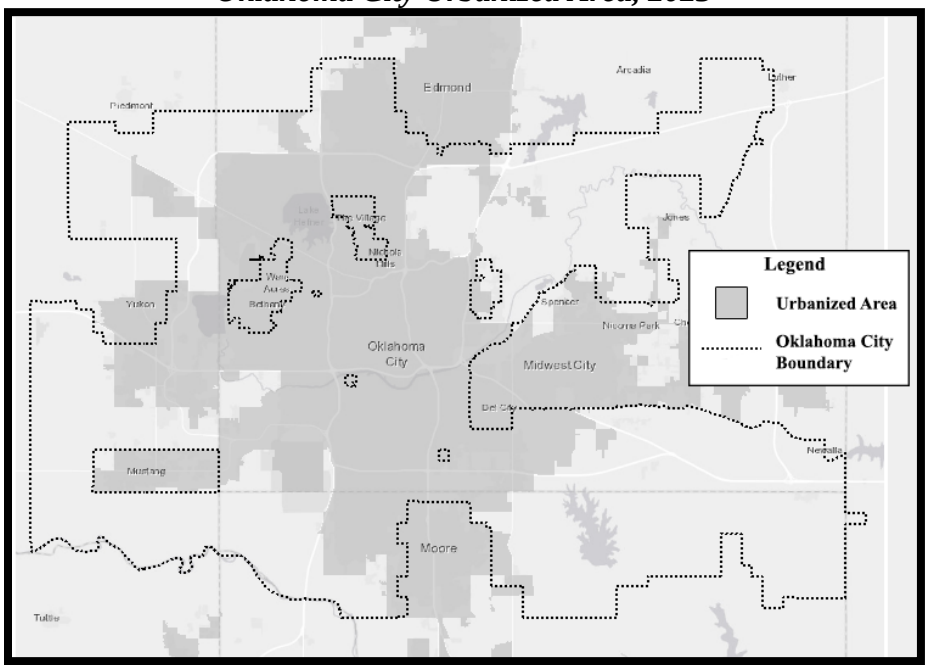
ranked 41st for solar jobs statewide, it is projected to install 2,214 megawatts of solar over just the next five years on top of its existing 112 megawatts.

Oklahoma City has been successful utilizing solar-powered LED streetlights for recreational trails to reduce project costs and limit environmental impacts. Residents, too, have embraced rooftop solar in Oklahoma City, and the U.S. Federal Aviation Administration announced its largest-ever solar project at Oklahoma City's Mike Monroney Aeronautical Center, a complex of more than 130 buildings across 1,100 acres.

Equity, Community Engagement, and Justice40 - Merit Criterion #3

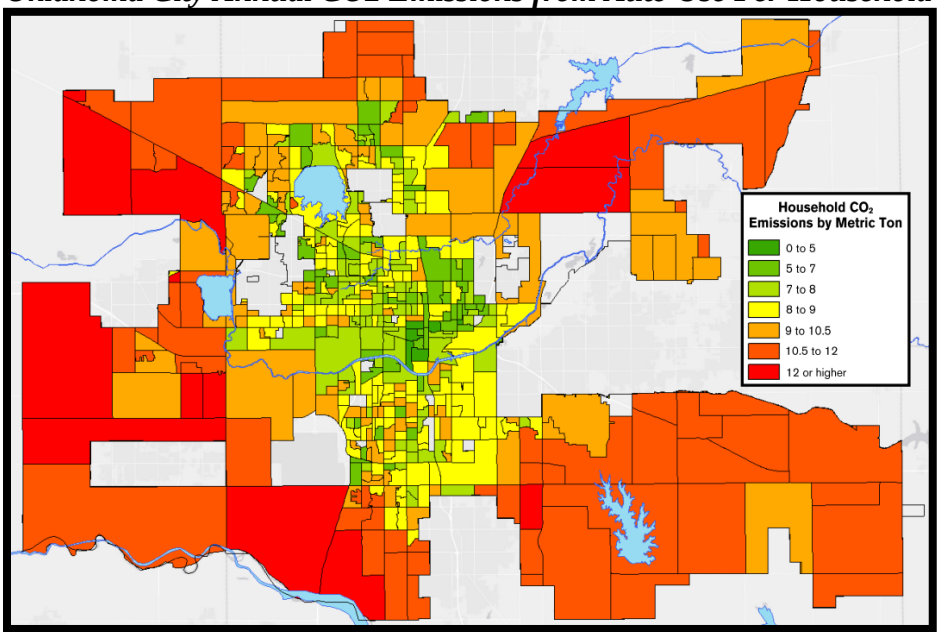
The unique challenges of rural communities are present in Oklahoma City as approximately 1/3 of the city is outside of Oklahoma City Metropolitan Statistical Area's Urbanized Area, meaning it meets the Federal definition of "rural." These sparsely populated areas of Oklahoma City include areas within the 1-mile buffer of the designated Alternative Fuel Corridors as well as some City-owned property; closer assessment of opportunities for EVSE installation or other alternative fuels in the large rural areas is necessary, especially as these sites could benefit nearby communities whose residents often travel to Oklahoma City for work or recreation.

Oklahoma City Urbanized Area, 2023



The Center for Neighborhood Technology (CNT) maps annual household greenhouse gas emissions based on "vehicle miles traveled, a national average fuel efficiency, and an average emissions factor per gallon of gasoline." For Oklahoma City, CNT's data reflects households with the highest greenhouse gas emissions are overwhelmingly located towards the periphery of the city limits – including much of the area's designated "rural." This indicates there are substantial emissions reductions possible for projects in rural areas of Oklahoma City. Identifying prospective locations for EVSE in rural Oklahoma City will be important given the intensity of emissions as reflected in the CNT map below:

Oklahoma City Annual CO2 Emissions from Auto Use Per Household



Source: Center for Neighborhood Technology, adaptokc

The Electric Vehicle Charging Justice40 Map Tool estimates 58 chargers across 19 locations in Oklahoma City; of those, 24 chargers at 8 locations are sited in DOE/DOT Interim Guidance Disadvantaged Communities. This equates to 41% public, non-Tesla, DC Fast chargers at 42% of locations are in Disadvantaged Communities, signified by their highlighting in the following table:

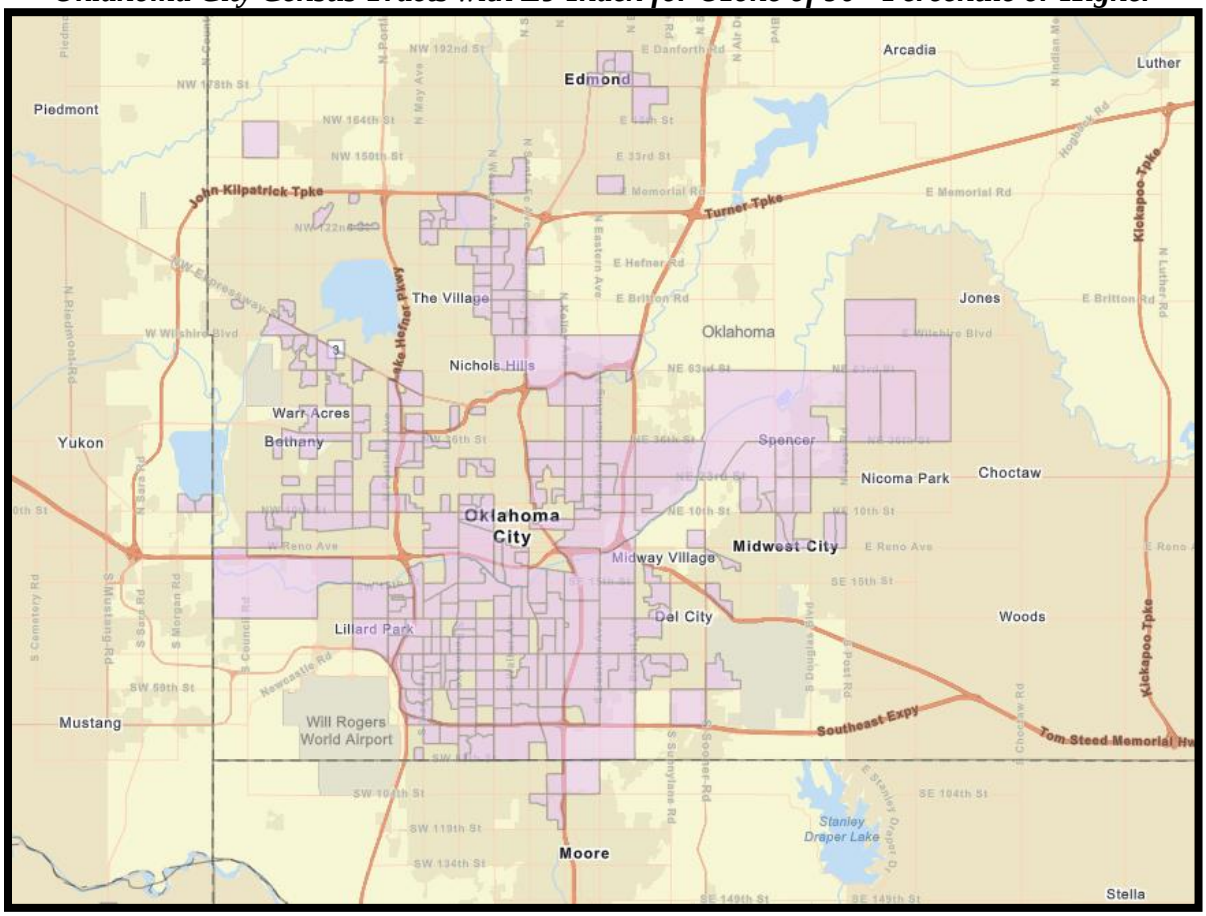
Station Name	Use	ZIP Code	Chargers	Disadvantaged	DAC Tract
Crest Foods	Grocery	73099	4	No	
On-Cue #122	Fueling	73099	1	Yes	40017301100
Crest Foods	Grocery	73170	8	No	
Westminster Village	Shopping	73170	8	No	
Santa Fe Plaza	Shopping	73139	6	Yes	40109107207
Spiers New Technology	Office	73149	2	No	
Orr Nissan Central	Automotive	73149	2	Yes	40109107207
CPG Properties	Shopping	73108	2	No	
On-Cue #143	Fueling	73108	1	Yes	40109100200
Clevyr, Inc.	Office	73106	2	Yes	40109102500
Penn Crossing	Shopping	73099	2	Yes	40109100200
On-Cue #119	Fueling	73112	2	Yes	40109100200
Crest Foods	Grocery	73127	8	Yes	40109105905
The Last Drop	Restaurant	73105	2	No	
On-Cue #106	Fueling	73130	1	No	
Town & Country Village	Shopping	73120	2	No	
Bob Howard Nissan	Automotive	73114	2	No	
Edmond Hyundai	Automotive	73013	1	No	
Mercedes-Benz OKC	Automotive	73013	2	No	
		TOTAL	**58**		

Source: Electric Vehicle Charging Justice40 Map

Expanding available locations in disadvantaged communities, areas of persistent poverty, and environmental justice tracts will be accomplished with tools like EJScreen; as an example, EJScreen permits us to identify the Census tracts across Oklahoma City with an Environmental

Justice Index score for ozone exposure of 90% or higher, which yielded a significant portion of Oklahoma City and its population:

Oklahoma City Census Tracts with EJ Index for Ozone of 90th Percentile or Higher



Source: [EJScreen]

These 90th to 100th percentile tracts are compared to all other tracts *across the United States*, not simply within Oklahoma. Many of these tracts overlap with large EJ areas, particularly much of northeast Oklahoma City which was historically redlined and south-central Oklahoma City south of the river, another region of the city that suffered from redlining and housing discrimination and which currently houses a significant share of Oklahoma City's Hispanic population and culture.

Additionally, equity is an important consideration in the prioritization of sites. When specifically considering public parks, the Trust for Public Land's calculated ParkScore ® rating for Oklahoma City reflects neighborhoods with predominately Black and Hispanic/Latinx populations have above average access to Oklahoma City parks:

> Residents in neighborhoods where most people identify as a person of color have access to 353% more park space per person than those in predominantly white neighborhoods. Any Census-designated race/ethnicity not shown above does not meet the minimum threshold to be displayed.

- The Trust for Public Land, Oklahoma City ParkScore® Ranking

The Equity and Workforce Development Plan deliverable is intended to serve as the tool to guide placement of EVSE equitably and cognizant of reducing the impact of emissions in historically disadvantaged areas. Moreover, the addition of publicly-available EVSE in environmental justice communities is not likely to be conducted by private sector actors and given the sheer quantity of need. EJScreen estimates 1,787 block groups within Oklahoma City are within the 90th to 100th percentile for ozone; the Equity and Workforce Development Plan can help us better drill down to find opportunities for significant benefits to residents and businesses rather than a top-down approach. Equity and workforce development are conceptually combined given there is often overlap and it is a substantive way to ensuring workforce development is considered through the lens of need and connecting those most in need with economic opportunities, training, and chances to participate in a new and more technological economy.

Workforce Development, Job Quality, and Wealth Creation – Merit Criterion #4

Discussed in the prior section, the proposed deliverable of an Equity and Workforce Development Plan

Per 2022 data from the U.S. Bureau of Labor Statistics' Southwest Information Office, "[S]ince 1989, when state data became available, union membership rates in Oklahoma have been below the U.S. average"; in 2022, 10.1% of the U.S. workforce was estimated to be of union membership whereas in Oklahoma that number was just 5.5%.

Workforce development will be critical given the "qualified technician" requirements. At present, the Francis Tuttle Technology Center (Francis Tuttle) and Oklahoma City Community College (OCCC) in Oklahoma City provide curriculum specific to electric vehicles that can serve as an opportunity to align future workforce efforts for the Oklahoma City region.

Francis Tuttle is one of Oklahoma's 29 Technology Center districts providing CareerTech training for high school students and adult learners, as well as services for business and industry customers; their curriculum current integrates electric vehicles in two ways:

(1) Three of Francis Tuttle's Oklahoma City campuses support the Automotive Service Technician major, which is "aligned to Automotive Service Excellence (ASE) standards," which now include materials specific to electric vehicles via the "Light Duty Hybrid/Electric Vehicle Specialist Test," "the first advanced level test offered by ASE for light duty hybrid/electric vehicle technicians. It is designed to measure a technician's knowledge of the skills needed to diagnose both high- and low-voltage electrical/electronic problems, as well as other supporting system problems, on hybrid/electric vehicles." The major is open to high school juniors, high school seniors, and adult students, requiring a total of 1,080 hours with recommended lengths of either full-time (nine months of instruction) or part-time (18 months of instruction) with eight courses of 135 hours each.

(2) Francis Tuttle provides "alternative energy vehicle" training to emergency responders on how to adapt to collisions and crashes given the new technology within electric vehicles:

> This is for First Responders, wrecker operators, and anyone wanting to know how to handle electric powered vehicles that have been involved in an accident. Areas covered: How to identify an electric or Hybrid vehicle; What to look for to see if the electric vehicle battery has been damaged; Knowing what devices to avoid when working around a damaged electric vehicle; How to find battery disconnect devices on specific electric vehicles and how to use them; Safety and fire suppression equipment that is needed and how to use it; Live vehicle inspection to determine component locations. #EVTraining"

This training opportunity could be a workforce development tool for City staff including emergency responders and staff mechanics.

Oklahoma City Community College (OCCC) also provides curriculum specific to alternative fuels and electric vehicles; OCCC is a public community college with an enrollment around 20,000 with a main campus in south Oklahoma City and three satellite locations. OCCC has an Alternative Fuels program through their Division of Business and Information Technology; classes include Level 1 certification for CNG compressor operation, Level 2 certification for CNG compressor mechanics, a CNG vehicle technician certification course, and an electric vehicle technician course.

Workforce development efforts provide an opportunity to interface with the OnwardOKC initiative, a regional effort among "five of Greater Oklahoma City's largest and most diverse technology centers" focused on critical industries and opportunities including technical trades, computer technology, construction, transportation, and cybersecurity. This is in addition to the Electric Vehicle Infrastructure Training Program, or EVITP, mentioned in the NEVI Standards & Requirements final rule. Per the EVITP's directory of state-specific "affiliated Contractors who employ EVITP Certified electricians," statewide there are 23 of such Contractors with only 4 of those located in Oklahoma City. Determining how local certification and training programs can support and supplement national opportunities, such as EVITP, will be necessary in addition to determining the needs for training and certification of City employees for fleet management and maintenance and potentially first responders.

Additionally, the Oklahoma Department of Labor (ODOL) maintains an Alternative Fuel Program for "administrative assistance, education, training, and awareness within the State of Oklahoma to ensure public safety in the expansion of the use of alternative fuels in the transportation sector" to "serves contractors, owners, and the general public when dealing with Compressed Natural Gas (CNG), Electrical Vehicles (EV), Liquid Natural Gas (LNG), and Hydrogen vehicles or modes of transportation." This program was established in response to the passage of 2001's House Bill 1360, the Alternative Fuels Technician Certification Act. Both State and Federal compliance with existing administrative rules will be necessary to ensure as prepared and certified a workforce as possible. While the DOL includes a list of approved certification courses that includes liquid propane gas, CNG compressor maintenance, and CNG,

there is no inclusion of electric vehicles as the document is dated 2014. ODOL does identify the Standard Occupational Classification (SOC) Code for electric vehicle mechanics and technicians, 49-3023, Automotive Service Technicians and Mechanics, as one of Oklahoma's Top 100 Critical Occupations, which are "occupations that are in high demand and are projected to have positive future growth"; ODOL projects only 55 Automotive Service Technician and Mechanic jobs to be added in Oklahoma between 2021 and 2023 despite requiring no more than certification with "short-term on-the-job training."

These existing programs offer opportunities to create a workforce development pipeline for electric vehicles specifically but alternative fuel vehicles generally that can be used to solicit women, persons of color, underserved communities, and others underrepresented in infrastructure jobs. Workforce development will be especially important for Oklahoma City because EVs have already made an impression via economic development – and will need the trained workforce to come. On December 20, 2022, City Council voted to adopt a resolution approving "certain job creation economic development incentives with Canoo Manufacturing LLC" in the amount of $1,000,000; in exchange, Canoo "plans to add 550 net new jobs in Oklahoma City over the next three (3) years" with an average wage "estimated to be $71,558." Over a ten-year period of operations, Oklahoma City estimates the Canoo project delivering an economic impact of $3,954,949,255 including capital investment, wages, and taxes. During that ten-year period, the impact to local sales tax and property tax revenue is estimated to be $5,325,104 and, after the ten-year period, $790,592 annually thereafter.

Additionally, Canoo "also plans to make a capital investment of $347,000,000"; in April 2023, Canoo purchased a $34.27 million, 500,000 square-foot, 1972 manufacturing facility in Oklahoma City, one of two forthcoming Canoo facilities in Oklahoma:

> An existing commercial site with room for expansion on more than 120 acres, Canoo's Oklahoma City Manufacturing Facility will support a full general and final vehicle assembly line, state-of-the-art robotics, a body shop, paint shop, and automated paint line including e-coat and sealing, quality control, complete vehicle testing, validation and more. With an existing training center and test track, the facility is located within easy proximity to road, rail, and waterways, making it ideal for sophisticated supply chains and manufacturing.
>
> - Canoo press release, April 10, 2023

Oklahoma City was also a stakeholder in the New Electric Energy Workforce Industry Plan, an April 2022 product of the Association of Central Oklahoma Governments (ACOG) as part of the region's Comprehensive Economic Development Strategy. Collaboration with ACOG will be necessary to implement recommendations, such as supporting CareerTech's high school "Work Keys" certification program and their Energy Career Cluster to "prepare students for technical jobs" with "increased training for data science, engineering, and battery technology" to support "current workforce development efforts and help stabilize energy sector industries which have been heavily impacted by the COVID-19 pandemic." Oklahoma City will also collaborate with ACOG on the Equitable Mobility Powering Opportunities for Workplace Electrification Readiness (EMPOWER) effort funded through the Department of Energy's Low Greenhouse

Gas (GHG) Vehicle Technologies Research, Development, Demonstration and Deployment program.

Oklahoma City's Public Works Department operates a Small, Local, and Minority Business Utilization Program. This includes business that qualify as minority-owned, women-owned, a small business, or locally-owned – meaning the business is located within 40 miles of Oklahoma City. Currently, there are 165 businesses registered, including firms specializing in paving, demolition, stormwater, wastewater, bridge, HVAC, and more. When a firm is awarded a City contract, the firm is required to submit a Subcontracting Plan to establish their efforts to recruit and utilize small, local or minority businesses. During a project, the Program's Pay Application Breakdown Form is submitted with each pay application on a monthly basis; this data is used for program monitoring and performance measures. Finally, after final project inspection, the firm submits a Subcontracting Close Out Form which ensures final acceptance and payment of final claim may be processed.

The Title 23 nature of NEVI projects ensures ODOT makes use of their Unified Certification Program and the DBE firms it certifies in addition to the firms the City maintains in a registry as part of its Small, Local, and Minority Business Utilization Program.

CFI Program Vision - Merit Criterion #5

Fleet vehicles that serve and operate in the community are to be an important focus; they include the overall fleet of municipal vehicles, which already includes a range of light-duty, medium-duty, and heavy-duty vehicles that are gas-powered, diesel-powered, electricity-powered, CNG-powered vehicles, and hybrids. Additionally, two trusts of the City – the Oklahoma City Water Utilities Trust (OCWUT) and the City's transit agency, EMBARK – have dedicated fleets that need to be included and needs assessed as part of this planning process. Specifically, this includes any additions to filling infrastructure, be it electric or CNG, necessary at their locations.

EMBARK completed a Zero-Emission Transition Plan in 2022 "to continue the diversification of the revenue vehicle fleet by purchasing additional battery electric buses (BEB). These buses will supplement the existing fleet of diesel, CNG, hybrid, and electric vehicles. New BEBs will replace diesel buses that have reached the end of their useful life" (page 4). From the Transition Plan's Next Steps & Conclusions section (page 47):

> Based on the analysis in this plan, BEBs offer cost efficient operation as compared to other fuel types. However, due to range variation, additional detailed planning work is needed to better determine how best to integrate BEBs into existing and future services in the most optimal way. Environmental and equity considerations should be integrated into this additional analysis.
>
> Additional next steps that will assist in fleet transition planning efforts include:
>
> - EMBARK plans to maintain a mixed fleet of BEB and CNG buses. A detailed total cost of ownership analysis between these fuel types would be useful to better inform more specific policy decisions concerning this fleet mix, and the financial considerations of continuing to expand the BEB fleet.

- Identification of clear targets for BEB implementation which can be used as guidelines for future analysis.
- Full site evaluation and phased implementation plan for charging infrastructure to support long-term BEB fleet targets, such as expansion of EMBARK's current facility planning processes to more clearly integrate BEB infrastructure over the long term.

Since publication of the Zero-Emission Transition Plan, EMBARK has pursued other Federal discretionary grants, including Rebuilding America's Infrastructure with Sustainability and Equity (RAISE) and the Low or No Emissions Vehicle Program, to fund the aforementioned facility planning processes and to eliminate diesel-fueled buses from fixed route service.