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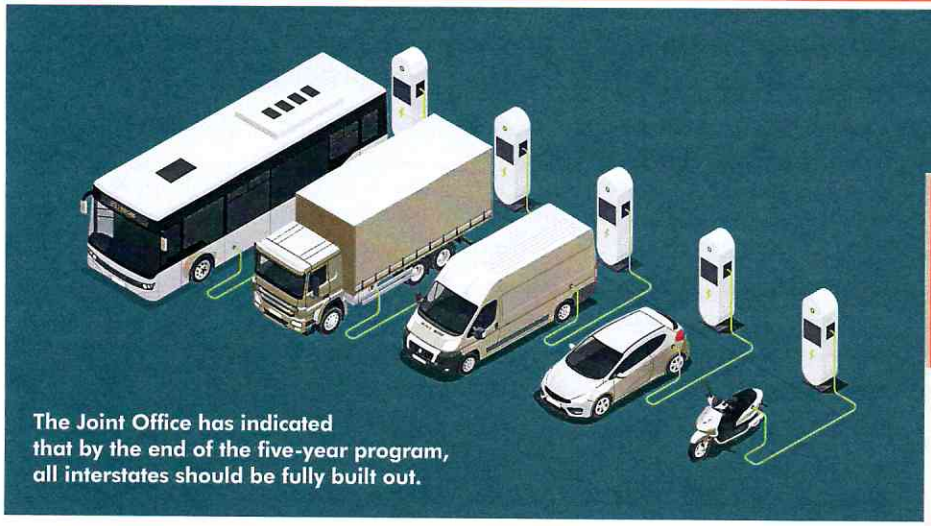
NEVI

NATIONAL ELECTRIC VEHICLE INFRASTRUCTURE FORMULA PROGRAM OVERVIEW



The Joint Office has indicated that by the end of the five-year program, all interstates should be fully built out.

TRANSPORTATION CONNECTION

Basic Requirements of the Charging Infrastructure

- **Located no more than one mile from an alternative fuel corridor (AFC)**
- **Support up to four vehicles charging at 150kw simultaneously**
- **Open to all vehicle makes (non-proprietary)**
- **Maximum 50 miles between charging stations**

The Bipartisan Infrastructure Law (BIL) passed in 2021 has funding available for the development of electric vehicle (EV) infrastructure. As part of the BIL, the National Electric Vehicle Infrastructure Formula Program distributes five billion dollars ($5B) over the next five years (FY 2022-2026) to state departments of transportation for the development of DC fast charging (DCFC) infrastructure. This infrastructure is intended to serve long distance EV travel along alternative fuel corridors (AFCs).

In order to access NEVI funds, North Dakota was required to submit a plan by August 1, 2022 demonstrating how the network will be completed to meet requirements set by the U.S. Department of Energy and U.S. Department of Transportation's Joint Office for EV Infrastructure Deployment. The Joint Office has indicated that by the end of the five-year program, all interstates should be fully built out. The remainder of the funding can be dedicated to other priority corridors as identified by each state.

A Note on Alternative Fuel Corridors

Alternative Fuel Corridors, or AFCs, is a program run by the Federal Highway Administration (FHWA) that establishes a network of corridors that serve travel using alternative fuels. These corridors serve more than just electric vehicles and may include other fuel types such as propane, compressed natural gas (CNG) or hydrogen (H2). States nominate corridors to FHWA, and work to develop the fueling infrastructure to meet the criteria by each fuel type. In relation to the NEVI program, program funding must be dedicated towards building out existing AFCs. If additional corridors are nominated as AFCs, they must be built out as NEVI-compliant corridors before funding can be used outside of the AFC corridors.

North Dakota's NEVI Plan

- **North Dakota will receive $25.9 million in funding from the NEVI Formula Program**
- **The state's first phase of NEVI will be dedicated to building chargers along North Dakota's AFCs, I-94 and I-29.**
- **The later phase will be focused on building chargers throughout the state for more local, community-level charging needs.**

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Location

Where will NEVI-funded charging infrastructure be located?
Under federal law it is not legal to sell power from highway right of way (including rest areas), making these areas unsuitable for charger locations. North Dakota DOT is anticipating that infrastructure will be built on private sites within one mile of the Alternative Fuel Corridors, through strong partnerships with the private sector to host, operate, and maintain the charging locations.

Funding

How much funding is North Dakota receiving under NEVI?
North Dakota is set to receive $25,952,484 over the five funding years (FY2022-2026). The grant program will fund up to 80 percent of EV charging infrastructure with a required 20 percent non-federal match, which can include private dollars.

Ownership And Operation

Who will own and operate the charging infrastructure?
Funding will be awarded to contractors who will build the charging stations. North Dakota DOT does not intend to own or operate those charging stations.

Payment

Who will be paying for the energy costs of electric vehicle charger use?
Electric vehicle drivers will pay for the electricity they use at charging stations.

Participation

Is it necessary that North Dakota participate in NEVI?
This is a federal requirement. The North Dakota DOT is responsible for the planning of the infrastructure and distribution of funding within the state for the NEVI program. All 50 states and US territories have submitted plans and will receive funding for the program.

Energy Stance

Where does North Dakota stand when it comes to electric vehicle use?
The North Dakota DOT is energy-agnostic. Our approach is to:

- Comply with Federal programs when applicable
- Tap federal funding when available
- Save taxpayer dollars when possible
- Prepare for shifts in industry direction and consumer preferences

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ELECTRIC VEHICLES AND MOTOR FUEL TAX REVENUE

REVENUE

TRANSPORTATION CONNECTION

As electric vehicle (EV) use continues to grow in North Dakota, the state must consider how to address the impact on the state's motor fuel tax (MFT) revenue. Because EVs do not require gasoline to operate, they do not contribute to the MFT that helps fund North Dakota's transportation system. North Dakota currently charges an annual $120 registration fee for fully-electric EVs, $50 for plug-in hybrid EVs, and $20 for fully-electric motorcycles in addition to the typical annual registration fees (see N.D.C.C. § 39-04-19.2)

What does the average vehicle currently generate in MFT?

North Dakota DOT conducted a study based on historic state travel data and vehicle registration data to estimate the average contribution of MFT from different vehicle categories. Data from 2019 was used as the base.

Using a cell phone validated travel demand model, the impacts to current MFT from out of state drivers was estimated. Because fuel can currently be purchased out of state for miles driven within North Dakota, the state's total VMT is not an accurate representation of the revenue generated from in-state driving. It is estimated that 94.63% of Commercial Truck VMT are paying MFT and 97.51% of Passenger VMT are paying MFT.

Using a combination of the cell phone validated travel demand model and data from NDDOT, the average mileage driven per year, gallons of fuel consumed per year, MFT collected per vehicle per year, and total MFT collected by vehicle class were estimated.

Data from 2019

Vehicle Miles Traveled
9,859,000,000

Tax Rate
$0.23/Gal
(both unleaded and diesel)

Fuel Sold
762,000,000 Gal
(both unleaded and diesel)

MFT Revenue Collected
$175,260,000

Licensed Drivers
559,887
(561,000 current)

Registered Vehicles
Passenger **466,248**
Pickup **279,837**
Truck **89,746**
Total 835,831

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Fuel Consumption and Revenue by Vehicle Class

The estimates indicate that the average passenger vehicle generates $104 per year in MFT, while the average commercial truck generates $1,090. The actual contribution by vehicle will differ based on mileage driven and the vehicle's fuel efficiency, with less efficient vehicles contributing more MFT for every mile driven.

With a $120 EV registration fee in place, the state collects $16 more per year on average through the EV supplemental registration fee than the average MFT.

However, the $120 registration fee is substantially less than the $1,090 estimated revenue collected from commercial trucks. While the use of batteries or hydrogen for commercial vehicles may be years away, their relative effects on revenue will be substantially higher per vehicle than that of passenger vehicles. It should also be mentioned that commercial interstate trucking is highly regulated and subject to interstate agreements such as IFTA and IRP that will impact how fees are assessed and collected from these carriers.

Passenger/Pickup

9,947
Avg VMT/ Reg. Veh.

22.00
MPG (Assumed)

452
Gal./Year

$104
MFT/Year

$77,589,523
MFT/Year/Class

Commercial Truck

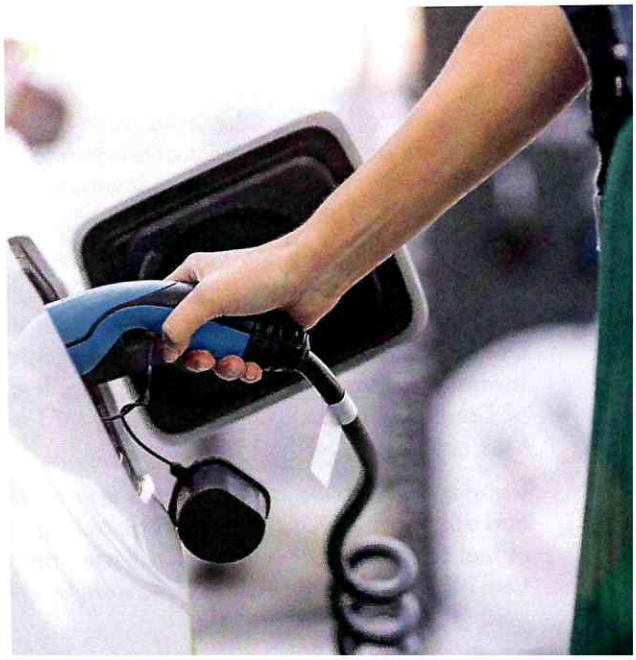
23,701
Avg VMT/ Reg. Veh.

5.00
MPG (Assumed)

4740
Gal./Year

$1,090
MFT/Year

$97,844,335
MFT/Year/Class



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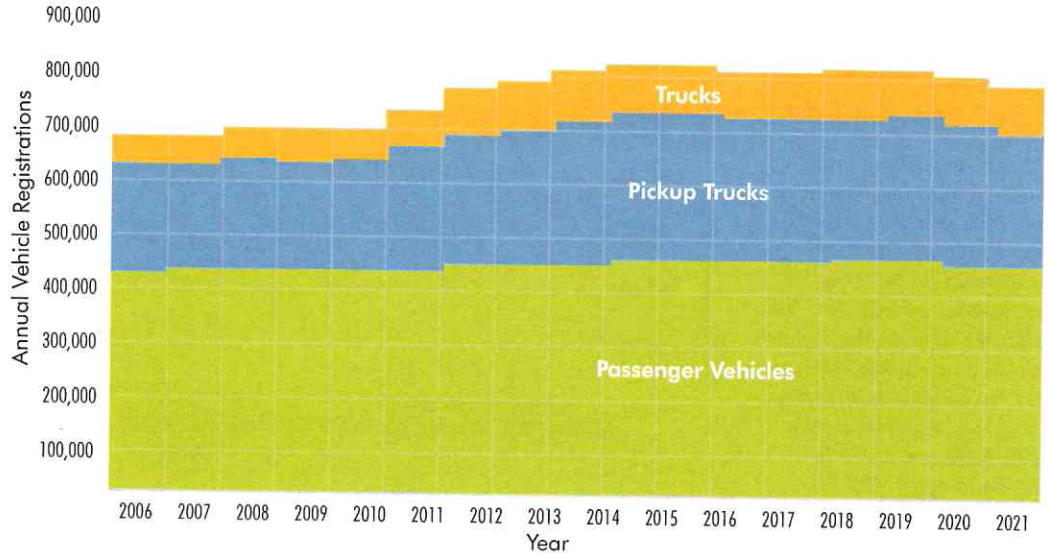
REVENUE

HOW WILL EVs IMPACT MOTOR FUEL TAX REVENUE?

The estimated impact on the state's motor fuel tax revenue used a number of trends to understand the growth of EVs in the state, as well as the growth of VMT and the overall growth of vehicle registrations.

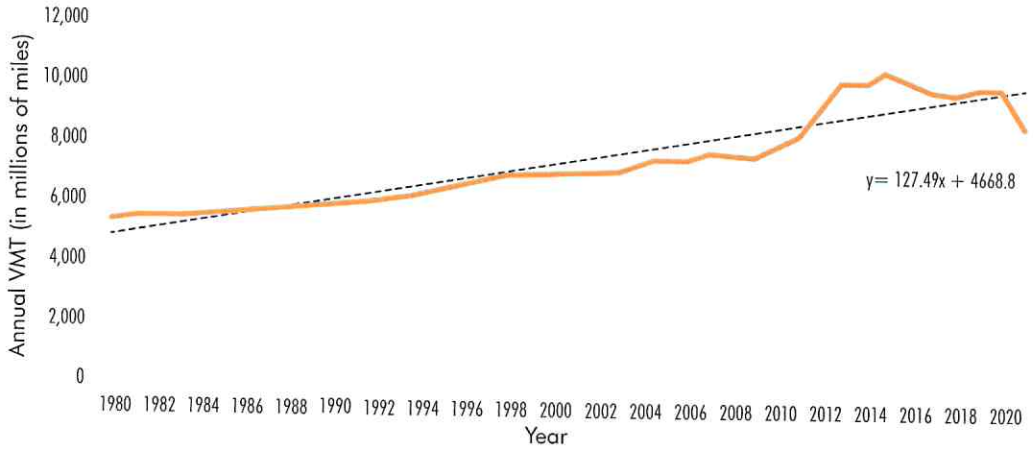
Annual Vehicle Registration

This chart shows the trends of vehicle registrations within North Dakota back to 2006 for passenger vehicles, pickup trucks, and commercial trucks. Overall, the state has averaged an additional 10,259 vehicle registrations per year. This number also accounts for the transfer of vehicles which would count the registration of the same vehicle twice.



Annual Vehicle Miles Traveled (VMT)

This chart shows the growth of annual vehicles miles traveled (VMT), which shows a growth of 127 million miles per year on average since 1980.



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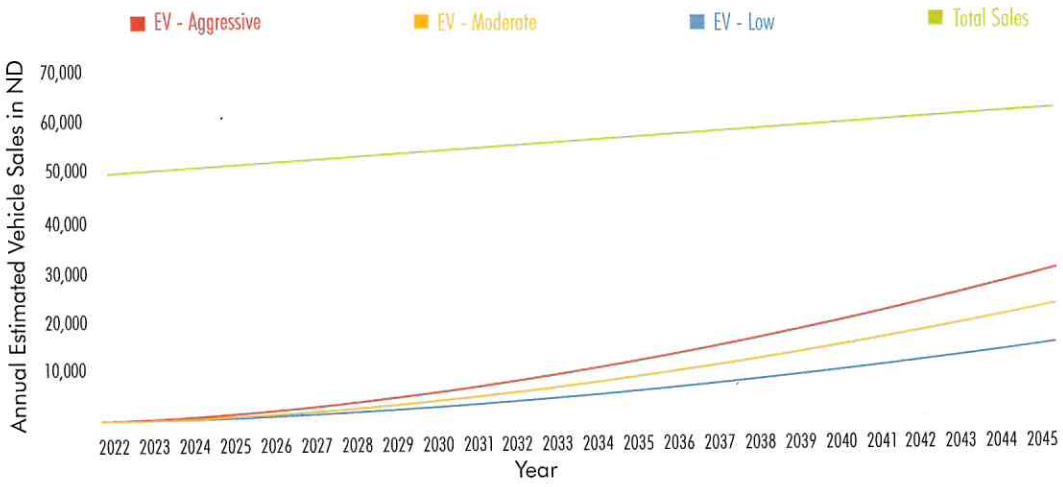
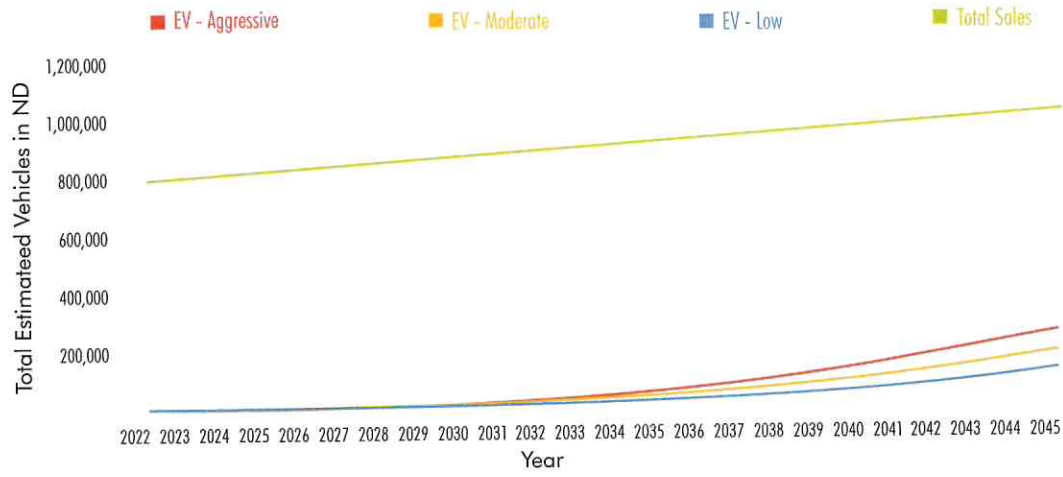
ND Vehicle Sales Projection

This chart shows the estimated growth of EVs within North Dakota, assuming an aggressive, moderate, and low adoptions scenario. The national average of EV adoption was assumed to be the most aggressive North Dakota would experience, moderate growth is 75%, and low growth is 50% of the national average.



ND Vehicle Makeup Projection

This chart shows the impact on the total number of vehicles in North Dakota. While EV sales are projected to grow, so too is the growth of the overall number of vehicles. The number of EVs in North Dakota will lag behind vehicle sales, as vehicles purchased today may last 15 years. As of December 1, 2022 there are 537 EVs registered in North Dakota.



Annual Impact On Revenue Due To EV Adoption

On average, North Dakota collects more money per EV through its EV fee than it receives from the MFT generated by the average registered vehicle. Under the following assumptions, EV's net effect on road fee collections (including MFT and EV registration fees) has been calculated in the table below and the following annual registration fee assumptions have been used for the estimate:

Passenger: $120 **Pickup:$120** **Commercial Truck: $1,090**
(estimated to be revenue-neutral)

	Aggressive EV Adoption	Moderate EV Adoption	Low EV Adoption
2030	+$279k	+$210k	+$142k
2045	+$4.1M	+$3.1M	+$2.0M

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REVENUE

WHAT OPTIONS DOES NORTH DAKOTA HAVE TO SUPPLEMENT THE LOSS IN MOTOR FUEL TAX?

TRANSPORTATION CONNECTION

As EV purchases increase, most states are considering options to replace lost motor fuel tax revenues.

Implemented Fee Collection Approaches Throughout the U.S. in 2022

Mileage Based Fee

Oregon and Utah

OBD-II device, In-Vehicle Telematics, Annual odometer check *(can be visual inspection during registration or captured via smartphone).*

Benefits: Proportional to road usage. Captures actual EV driving.

Drawbacks: Does not capture out of state driving. Can be difficult/expensive to collect. Privacy concerns.

Electric Vehicle Registration Supplemental Fee

31 States

Fee paid during vehicle registration.

Benefits: Easy to collect.

Drawbacks: May charge drivers more or less than actual vehicle use. Does not capture out of state driving.

Electric Vehicle Registration Fee By Weight

Oklahoma and Michigan

Fee paid during vehicle registration.

Benefits: Easy to collect. Fees determined by vehicle weight recognize the efficiency differences between lighter and heavier vehicles.

Drawbacks: May charge drivers more or less than actual vehicle use.

Electricity Fee (per kWh) For Public Chargers

Kentucky

Wholesale from EVSE provider.

Benefits: Captures out of state driving.

Drawbacks: Double taxation for in-state drivers who already pay registration fee. Only captures public charging, not private charging.

Additional Fee Collection Approaches to Consider

Further EV fee approaches can be explored and customized to determine the best fit for North Dakota's priorities as EV adoption is anticipated to grow. Those options can be combined to provide flexibility. For example, Utah issues a supplemental registration fee for EV drivers but allows users to opt into a mileage-based fee that caps out at the original EV supplemental fee.

Depending on the fee structure, states may experience a net increase in revenue from their EV fees. Some states are using a portion of the EV supplemental funding for the deployment of electric vehicle infrastructure. This allocation has the potential to cover the 20% non-federal match in funding required for NEVI charging deployment projects. Alabama dedicates 25% of its EV fee revenue to the Rebuild Alabama Fund, which funds electric vehicle charging infrastructure until EV registrations exceed 4% of total vehicle registrations.

Peg Fees To Inflation

Inflation can erode the effectiveness of any fee or tax. Some states have pegged their EV fees to inflation, allowing an annual increase of the fee without annual legislation needed for the increase.

Fees Can Be Tiered

Many states have tiered fees for hybrids, plug-in hybrids, and full battery electric vehicles differently. This approach recognizes that fees are not "one size fits all" and can be adjusted as needed.

Approaches Can Be Combined

Approaches do not need to be a singular solution. North Dakota can explore a combination of approaches such as vehicle registration fees and consumption fees that are calibrated to replace any offset in motor fuel tax collection.

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Electric Vehicle Fees by State (2022)

Though flat supplemental registration fees are most common in the application, some states are exploring additional fee mechanisms based on miles traveled, vehicle weight, electricity consumption, etc. Data was obtained October, 2022 and may be subject to change.

BEV = Battery Electric Vehicle PHEV = Plug-In Electric Vehicle HEV = Hybrid Electric Vehicle AFV = Alternative Fuel Vehicle

Alabama
$200 BEV
$100 PHEV
Annual Fee

Arkansas
$200 EV
$100 Hybrid EV
Annual Fee

California
$100 BEV
Annual Fee

Colorado
$50 BEV, PHEV
Annual Fee

Georgia
$212.78 non-commercial AFVs
Annual Fee

Hawaii
$50 EV
Annual Surcharge

Idaho
$140 BEV
$75 PHEV
Annual Fee

Illinois
$100 EV
Annual Fee

Indiana
$150 BEV
$50 PHEV, HEV
Annual Inflation-Indexed Fee

Iowa
$65 BEV
$32 PHEV
Annual Fee

Kansas
$100 EV
$50 PHEV, HEV
Annual Fee

Louisiana
$110 BEV
$60 PHEV, HEV
Annual Fee

Michigan
$135 BEV <8,000 lbs.
$47.50 PHEV <8,000 lbs.
$235 BEV >8,000 lbs.
$117.50 >8,000 lbs.
Annual Fee

Minnesota
$75 BEV
Annual Fee

Mississippi
$150 BEV
$75 PHEV, HEV
Annual Fee

Missouri
$75 Passenger AFV
$37.50 PHEV
Annual Fee

N. Carolina
$130 BEV, PHEV
Annual Fee

N. Dakota
$120 EV
$50 PHEV
$20 EV Motorcycle
Annual Road Use Fee

Ohio
$200 BEV, PHEV
$100 HEV
Annual Fee

Oklahoma
$110/$82 Under 6000 lbs. BEV/PHEV (Class 1)
$158/$118 6000-10000 lbs. BEV/PHEV (Class 2)
$363/$272 10000-26000 lbs. BEV/PHEV (Class 3-6)
$2250/$1687 Over 26000 lbs. BEV/PHEV (Class 7-8)
Annual License Fee by Weight

Oregon
$110 EV
Annual Fee

S. Carolina
$120 AFV
$60 PHEV, HEV
Biennial Fee

S. Dakota
$50 BEV
Annual
Registration Fee

Tennessee
$100 EV
Annual Fee

Utah
$90 BEV. AFV
$39 PHEV
$15 HEV
Annual Consumer
Indexed Fee

Virginia
$64 AFV
(Non-Hybrid)
Annual License Tax

W. Virginia
$200 EV
$100 PHEV, HEV
Annual Fee

Wisconsin
$75 PHEV, HEV
$100 BEV
Annual Fee

Wyoming
$200 BEV, PHEV
Annual Fee

Washington
$150 BEV
$75 PHEV, HEV
Annual Fee

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CONTRACTING

WHAT ARE THE CONTRACTING OPTIONS TO IMPLEMENT THE NEVI PROGRAM?

The North Dakota DOT (NDDOT) is in the process of reviewing state laws to determine which contracting mechanisms are currently permissible and which will need legislation passed to be considered. NDDOT would prefer to enter into agreements with third party businesses to provide operation and maintenance of charging infrastructure and sites, and ultimately to delegate ownership to those same parties.

Grant Program

Rather than procure the contractors and manage all of the work themselves, the DOT could instead award one or more grants to other entities to take on that role. The DOT would establish the goals and objectives for the EV program based on the federal requirements and release a notice of funding opportunity for one or more entities to procure design, construction, and operations and maintenance for a statewide EV charging network.

Traditional Design-Bid-Build Contracting Approach

The North Dakota Department of Transportation typically uses Design-Bid-Build (DBB) for its infrastructure projects. Though DBB is normally a low bid process driven primarily by price, it is possible to set a high bar for experience and qualifications that would guarantee a level of EV charging expertise for a winning proposer. DBB steps could include the procurement of design services, procurement of construction and installation services, procurement of operations and maintenance services, and long-term ownership.

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CONTRACTING

EV Design-Build-Finance-Operate Maintain or DBFOM

The unique aspects of EV charging also provide the opportunity for an alternative delivery model tailored more specifically to developing an EV system. There are at least two potential ways to approach this effort:

Master Developer

Under a DBFOM approach, it would be possible for the developer to group the project by corridor segment or geographic area and serve as a "master developer" that manages multiple smaller design-build projects. Each small contractor could be responsible for operations and maintenance, or it could revert to th master developer. The developer would retain responsibility for the overall financial approach, and would retain ownership of the chargers at the end of the program.

Franchise Operator

This approach would result in the developer serving as more of a franchise operator, securing final plans and bids from contractors to design, install, operate, maintain, and own stations within major corridors or geographic areas. The DBFOM developer would be responsible for managing the overall system and developing the agreements, including financial agreements, with the smaller franchisees. Once the franchise operator takes on ownership, NDDOT would no longer have responsibility for the charging system.