Alternative Fuel Corridors and Signage

Tonia Buell, Project Development Manager, Washington Department of Transportation

#WeTheStates
EV CHARGING CORRIDORS

FHWA ALTERNATIVE FUEL CORRIDORS & SIGNAGE

TONIA BUELL, PROJECT DEVELOPMENT MANAGER
NGA Transportation Electrification Workshop, West Regional
Seattle, WA
April 5, 2019
TODAY’S HIGHLIGHTS

• EV Charging Corridors
  – West Coast Electric Highway
  – Electrify America Corridor Charging Investments
  – Regional Electric Vehicle West (REV West)
• FHWA National Alternative Fuel Corridors and Signage
PROMOTING CLEAN FUELS BC TO BC

• Promotes petroleum reduction and sustainable transportation solutions on I-5 / Hwy 99 corridor

• Provides travelers with alternative fuel infrastructure
  o CNG
  o Hydrogen
  o Biodiesel
  o Electricity

• Green Highway from British Columbia, Canada to Baja California, Mexico “BC to BC”

• West Coast States, Province, and Cities
HIGHWAY CORRIDOR CHARGING

Accelerating EV adoption by promoting robust charging corridors.

Connecting Communities and Enabling Long Distance Travel

Seamless EV Driver Experience
• Equipment Specifications
• Highway Signs
• Branding and Marketing

I-5, Hwy 99, US 101, and other major highway corridors

Common vision, patchwork of funding and projects

www.westcoastgreenhighway.com
STATE FUNDS ENCOURAGE INVESTMENT IN DC FAST CHARGING

- Washington’s Electric Vehicle Infrastructure Pilot Program uses a portion of the annual electric vehicle registration fee to provide matching grants.
- $1M in state funding used to encourage private sector investment for 15 new locations totaling $2.5M in investments.

www.wsdot.wa.gov/funding/partners/evib
EVIPP STATION REQUIREMENTS

Projects shall provide safe, convenient, cost-competitive, reliable, and easy access for drivers to recharge mass-produced plug in electric vehicles.

Locations
• Located every 40-50 miles along the corridor within a half mile (max 3 miles) from a highway interchange

Sites and Equipment
• Each site must include CHAdeMO and SAE Combo System Charging (CCS) DC fast charging capabilities (50kW) and Level 2 Electric Vehicle Supply Equipment (EVSE)
• All stations must be certified, stationary, connected to the grid, and networked
• Multiple charging/parking stalls, stubbed out with conduit and power access sufficient to accommodate future 150kW DC fast charging
Electric Vehicle Infrastructure Pilot Program (EVIPP)
ENERGY NORTHWEST / EVITA

Linking Eastern and Western Washington
Project Lead: Energy Northwest on behalf of Electric Vehicle Infrastructure Transportation Alliance (EVITA)
In collaboration with Greenlots and EV4
$405,000 EVIPP Grants
$1,071,000 Total Projects

- Provides network of DC fast chargers in 9 communities along I-82, US 395, and I-90
- Bridges the charging gap between Tri-Cities and I-90 to both the west and north-east of Tri-Cities.

Planned Locations:
- Cle Elum (OPEN)
- Connell (OPEN)
- Ellensburg (OPEN)
- Kennewick (OPEN)
- Moses Lake
- Pasco (OPEN)
- Prosser
- Richland
- Yakima (OPEN)
Electric Vehicle Infrastructure Pilot Program (EVIPP)
ENERGY NORTHWEST / EVITA
I-5 Corridor Project
Project Lead: Forth
In collaboration with EVgo

$595,000 EVIPP Grant
$1,461,689 Total Project
- Bolsters existing fast charging infrastructure along I-5 by providing 9 DC fast charging stations in 6 communities.
- Fills in gaps and provides redundancy

Planned Locations:
- Bellingham x2 DCFC (April 6)
- Lynnwood
- SeaTac x2 DCFC
- Tacoma x2 DCFC (OPEN)
- DuPont
- Chehalis
Electric Vehicle Infrastructure Pilot Program (EVIPP)
INNOVATIVE PARTNERSHIPS

Public-Private Partnerships with electric utilities, nonprofits, businesses, federal/state/city governments, car manufacturers and dealers, researchers, associations, EVSE providers, and host site businesses.
SIGNAGE IS STATE LAW

Roadway Directional Signs
State Highways, Local Roads, City Streets

Regulatory Signs & Striping
“No Parking Except Electric Vehicle Charging”

D9-11b (alternate) EV Charging Station Symbol
British Columbia
Washington state law “de-ICEing bill” (SB 5849)

Source: www.westcoastgreenhighway.com/evsigns.htm
WA HIGHWAY CORRIDOR GAP MAP

[Map showing various highways and cities in Washington State, with symbols indicating different types of charging locations, emissions areas, and other features.]
ELECTRIFY AMERICA PLANS

Cycle 2 National ZEV Investment Plan: July 2019 – December 2021

$300M nationally to increase ZEV adoption

Source: https://www.electrifyamerica.com/our-plan
ELECTRIFY AMERICA PLANS

Cycle 2 National ZEV Investment Plan: July 2019 – December 2021

Routes in the Pacific Northwest support travel to key destinations

Cycle 1 Corridors:
- WA/OR I-5
- WA I-90
- OR I-84

Cycle 2 Corridors:
- WA I-5
- WA US 101
- WA 12/8
- OR 26/29

Source: https://www.electrifyamerica.com/our-plan
ELECTRIFY AMERICA PLANS

Cycle 2 National ZEV Investment Plan: July 2019 – December 2021

Source: https://www.electrifyamerica.com/our-plan
Regional Electric Vehicle West (REV West)

• Signed by 8 Western Governors
  • CO, UT, NV, WY, NM, AZ, ID, MT

• Establishes a framework for collaboration on an Intermountain West Electric Corridor.

• Develop best practices/voluntary minimum standards for stations, expand access to new EVs, and create consistent driver experience.
REV West: Policy Baseline

Other updates:

• The Regional Electric Vehicle West (REV West) states released a policy baseline as a foundation to develop and coordinate best practices and infrastructure investment.

• REV West states released an RFI to assist in development of voluntary minimum guidelines for station development. States are currently working to finalize standards.

• CDOT updated its signing policy and guide for informational highway exit signing of DCFC that meet the same minimum criteria of gasoline and other fueling stations.
WEST REGIONAL EV CORRIDORS
Alternative Fuel Corridors

NATIONAL GOVERNORS ASSOCIATION
TRANSPORTATION ELECTRIFICATION WORKSHOP
APRIL 4 & 5, 2019
SEATTLE, WA

DIANE TURCHETTA | U.S. DEPARTMENT OF TRANSPORTATION
National Alternative Fuel Corridors

To improve the mobility of alternative fuel vehicles, the U.S. Department of Transportation (DOT) has designated national corridors in strategic locations along major highways for:

- Plug-in electric vehicle charging
- Hydrogen fueling
- Propane (LPG) fueling
- Natural gas (CNG, LNG) fueling
Benefits of a National System

- Allows for inter-city, regional, and national travel using clean-burning fuels
- Addresses range anxiety
- Integrates with existing transportation planning processes
- Accelerates public interest and awareness of alternative fuel availability
## Corridor-Ready Criteria

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<th></th>
<th>EV</th>
<th>CNG</th>
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<th>Hydrogen</th>
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<td></td>
<td>DCFC only</td>
<td>150 miles between stations</td>
<td>200 miles between stations</td>
<td>100 miles between stations</td>
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<td>50 miles between stations</td>
<td>5 miles from highway</td>
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<tr>
<td></td>
<td>5 miles from highway</td>
<td>Public stations only</td>
<td>Public stations only</td>
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<td>Public stations only</td>
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<tr>
<td></td>
<td>Public stations only (no Tesla)</td>
<td>Fast fill, 3,600 psi</td>
<td>Public stations only</td>
<td>Public stations only</td>
<td>Primary stations only</td>
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Highway Signage

➢ MUTCD Memorandum – Signing for Designated Corridors
  ✓ Provides guidance to State DOTs
  ✓ First corridor signs installed on I-94 and I-26
  ✓ FHWA developed FAQs to address commonly asked questions (see AFC website)

I-94 (Minnesota)

I-26 (South Carolina)

Pictured from left, Louisiana Department of Natural Resources Secretary Tom Harris, Louisiana Department of Transportation and Development (DOTD) Secretary Shawn Wilson, Gov. John Bel Edwards and #LDEQ Secretary Chuck Carr Brown.
Combined Results
Rounds 1&2

- Designations....
  - 58 nominations
  - Includes portions/segments of 84 Interstates, along with 43 US highways/state roads
  - Comprise 44 states plus D.C.
  - Covers over 100,000 miles of the National Highway System (all fuels combined)
FY 2018 Request for Nominations

- Round 3 request for nominations - October 2018
- Distributed through FHWA Division Offices
- Nominations due the end of January 2019
- Designations made in spring 2019
- No change in designation criteria
- Some changes in shapefile submissions
Federal Highway Administration
Regional Alternative Fuel Corridor Convenings

- Team to hold 5 regional convenings:
  - To Date: Midwest (MN), Southeast (SC)
  - Next Up: South Central (TX) Northeast/Mid-Atlantic (RI) and REV West (Salt Lake City)
- Strengthen coordination b/w states, public and private partners
- Evaluate regional priorities & needs, programs, and resources to expand corridors
- Identify critical infrastructure gaps
- Discuss a regional strategy to promote clean vehicle adoption and corridor growth
- Foster partnership development

2 Regional Convenings to Date

Midwest AFC
St. Paul, MN
June 12, 2018

Southeast AFC
Charleston, SC
September 25, 2018
Convening Results

MIDWEST – St. Paul, MN (June 12, 2018)
- 9 States: ND, SD, MN, WI, MI, OH, IL, IN, IA
- 52 stakeholders
- Fuels of Interest: EV, CNG and H2
- # of Designated Corridors: 26 (SD none)

SOUTHEAST – Charleston, SC (Sept. 25, 2018)
- 8 States: KY, TN, NC, SC, AL, MS, GA, & FL
- 45 stakeholders
- Fuels of Interest: EV, CNG, LNG and LPG
- # of Designated Corridors: 30 (MS none)
Alternative Fuels Data Center

afdc.energy.gov

The premier information resource for alternative fuels and advanced vehicles
Embeddable Application

afdc.energy.gov/corridors

1 Alternative Fuels Data Center
The corridor mapping tool will be available as a third tab on the Alternative Fuelling Station Locator.

2 Federal Highway Administration
The corridor mapping tool can be embedded as a standalone application on the FHWA website or any other website.
Resources for Nominating Corridors

afdc.energy.gov/corridors

- Shapefiles
- Interactive maps
- CSV downloads
Interactive Map
afdc.energy.gov/corridors
Stations Layer - FL
afdc.energy.gov/corridors
Future of AFC Program

- Request for Nominations on an annual basis under life of FAST Act
- Possible inclusion in the next transportation reauthorization bill or other legislation
- Enhanced coordination efforts with Clean Cities Program/NREL
- Enhanced collaboration with stakeholders including industry
Rounds 1 & 2 EV Map for HI - Corridor Ready and Pending
Rounds 1 & 2 CNG Map – Corridor Ready and Pending
Rounds 1 & 2 LNG Map – Corridor Ready and Pending
Rounds 1 & 2 LPG Map – Corridor Ready and Pending
Rounds 1 & 2 HYD Map – Corridor Ready and Pending
For More Information

DOT Alternative Fuel Corridor Team Contact Information

<table>
<thead>
<tr>
<th>Diane Turchetta</th>
<th>Mike Scarpino</th>
<th>Stephen Costa</th>
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<tr>
<td>U.S. Department of Transportation</td>
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<td>Federal Highway Administration</td>
<td>Volpe Center</td>
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<tr>
<td>202-493-0158</td>
<td>617-494-3373</td>
<td>617-494-3852</td>
</tr>
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<td><a href="mailto:diane.turchetta@dot.gov">diane.turchetta@dot.gov</a></td>
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<td><a href="mailto:stephen.costa@dot.gov">stephen.costa@dot.gov</a></td>
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Resources

FHWA Alternative Fuel Corridor website:
http://www.fhwa.dot.gov/environment/alternative_fuel_corridors/

MUTCD Memorandum – Signing for Designated Alternative Fuel Corridors:

DOE/NREL Alternative Fueling Station Locator:
https://www.afdc.energy.gov/locator/stations/
THANK YOU

For information on the West Coast Electric Highway or WSDOT’s Electric Vehicle Infrastructure Partnerships Program (EVIPP), please contact:

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