

BEGIN

ALTERNATIVE
FUELS
CORRIDOR



2018 Alternative Fuels Corridor Request for Designation Nominations Webinar

November 14, 2018 - 1:00pm EST

Agenda

- AFC Program Overview
 - ✓ Results of Rounds 1 & 2
 - ✓ News and Updates
- 2018 / Round 3 Request for Nominations Process
- Alternative Fuels Data Center Station Locator and Corridor Tools
- Regional Alternative Fuel Corridor Convenings
- Q&A Discussion

Alternative Fuel Corridors Round 3 - Request for Nominations

DIANE TURCHETTA | U.S. DEPARTMENT OF TRANSPORTATION



Advancing transportation innovation for the public good

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

5

ALTERNATIVE FUELS CORRIDOR

- 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

Combined Results

- 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)

Updates and News

7

- Revised/updated FAQ's on AFC website:
 - ✓ https://www.fhwa.dot.gov/environment/alternative_fuel_corridors/resources/faq/index.cfm
- CMAQ funding eligibility for AFC signage
- MUTCD Update:
 - ✓ https://mutcd.fhwa.dot.gov/mutcd_news.htm



I-26 (South Carolina)

Updates and News

8

- MotorWeek segment
 - ✓ <https://www.youtube.com/watch?v=QZhLFqTXb-g>
- TRB Webinar Recording:
 - ✓ <http://www.trb.org/ElectronicSessions/Blurbs/178245.aspx>
- Three AFC Regional Convenings planned for 2019:
 - ✓ <http://altfueltoolkit.org/midwest-alternative-fuel-corridor-convening/>



Future of AFC Program

9

- Request for Nominations on an annual basis under life of FAST Act
- Possible inclusion in the next transportation reauthorization bill
- Enhanced coordination efforts with Clean Cities Program/NREL
- Enhanced collaboration with stakeholders including industry



2018 Request for Nominations

10

- Issued Round 3 request for nominations in October 5, 2018
- Distributed through FHWA Division Offices
- Nominations due the end of January 2019
- Designations made in spring 2019
- Some changes in shapefile submissions
- Request for Nominations posted on AFC website at:
 - ✓ https://www.fhwa.dot.gov/environment/alternative_fuel_corridors/nominations/index.cfm

Round 3 Request for Nominations

11

- Can be submitted by **ANY state or local official**
- Focus is on **Interstate highways** but allows for a compelling case to be made for other highways
- **State DOT** with jurisdiction over corridor must be aware and supportive of nomination
- **Multi-state and regional** applications/approaches are encouraged
- A **plan for signage** on the corridor is required
- **GIS Shapefile** information required:
 - ✓ Additional guidance in RFN

Corridor-Ready Criteria for Round 3 Nominations

12

EV	CNG	LNG	Hydrogen	Propane
DCFC only	150 miles between stations	200 miles between stations	100 miles between stations	150 miles between stations
50 miles between stations	5 miles from highway			5 miles from highway
5 miles from highway	Public stations only	5 miles from highway	5 miles from highway	Public stations only
Public stations only (no Tesla)	Fast fill, 3,600 psi	Public stations only	Public stations only	Primary stations only

Round 3 Request for Nominations

13

- **Corridor-ready** corridors should have a minimum of 2 stations. Final classifications will be made on a case-by-case basis
- **Corridor-pending** corridors – if no facilities, then must submit a plan/timeline for build-out
- **EV corridor** nominations:
 - ✓ Will only consider corridors with DC Fast Charge infrastructure
 - ✓ Tesla stations are excluded due to their proprietary status
 - ✓ Encourage coordination with **Electrify America** on targeted Interstates
- **Public and private sector coordination** – working with state and local agencies, Clean Cities Coordinators, and other stakeholders
- Coordinate with state **freight plans and/or long-range transportation plans**

Round 3 Request for Nominations

14

➤ Interface Between Previous Designations and Current Request for Nominations:

- ✓ If a corridor is extended beyond its starting or ending points, a formal designation proposal **is required** for the extension
- ✓ If additional fuel(s) are proposed for a designation on an existing corridor, a formal designation proposal **is required** for the additional fuel(s)
- ✓ If the number of stations along a designated corridor changes (i.e. new stations being added or existing stations being closed), which results in the classification of the corridor being changed from corridor-pending to corridor-ready (or vice versa), a formal designation proposal **is not required**
 - FHWA plans to update the status of Round 1 and 2 corridors when Round 3 is announced

Round 3 Request for Nominations

15

- Identifies the following **FHWA areas of interest** for nominations:
 - ✓ States that have no corridor designations (pending or ready)
 - ✓ States that have not submitted an application as a lead
 - ✓ States that currently have existing Interstates/highways that are corridor-ready for one or more alternative fuels, but have not submitted a nomination
 - ✓ Nominations that will complete the nation's longest and heavily traveled highways for one or more alternative fuels. For example, I-95, I-10, I-80, I-40, I-35, I-65, I-70, I-81, I-90
- Nominations that take into consideration the next fueling site over the state or international borders are encouraged

Round 3 Request for Nominations

16

- NREL has developed resources for nominating corridors which provides station data and shapefiles by state and fuel type. Additionally, a prototype mapping tool to explore potential corridors by fuel is available
 - ✓ <https://www.afdc.energy.gov/corridors>
- To submit your **nominations** and **shapefiles**, please email Sara.Secunda@dot.gov and instructions will be provided on how to upload these files

For More Information

17

DOT Alternative Fuel Corridor Team Contact Information

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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:

https://mutcd.fhwa.dot.gov/resources/policy/alt_fuel_corridors/index.htm

DOE/NREL Alternative Fueling Station Locator:

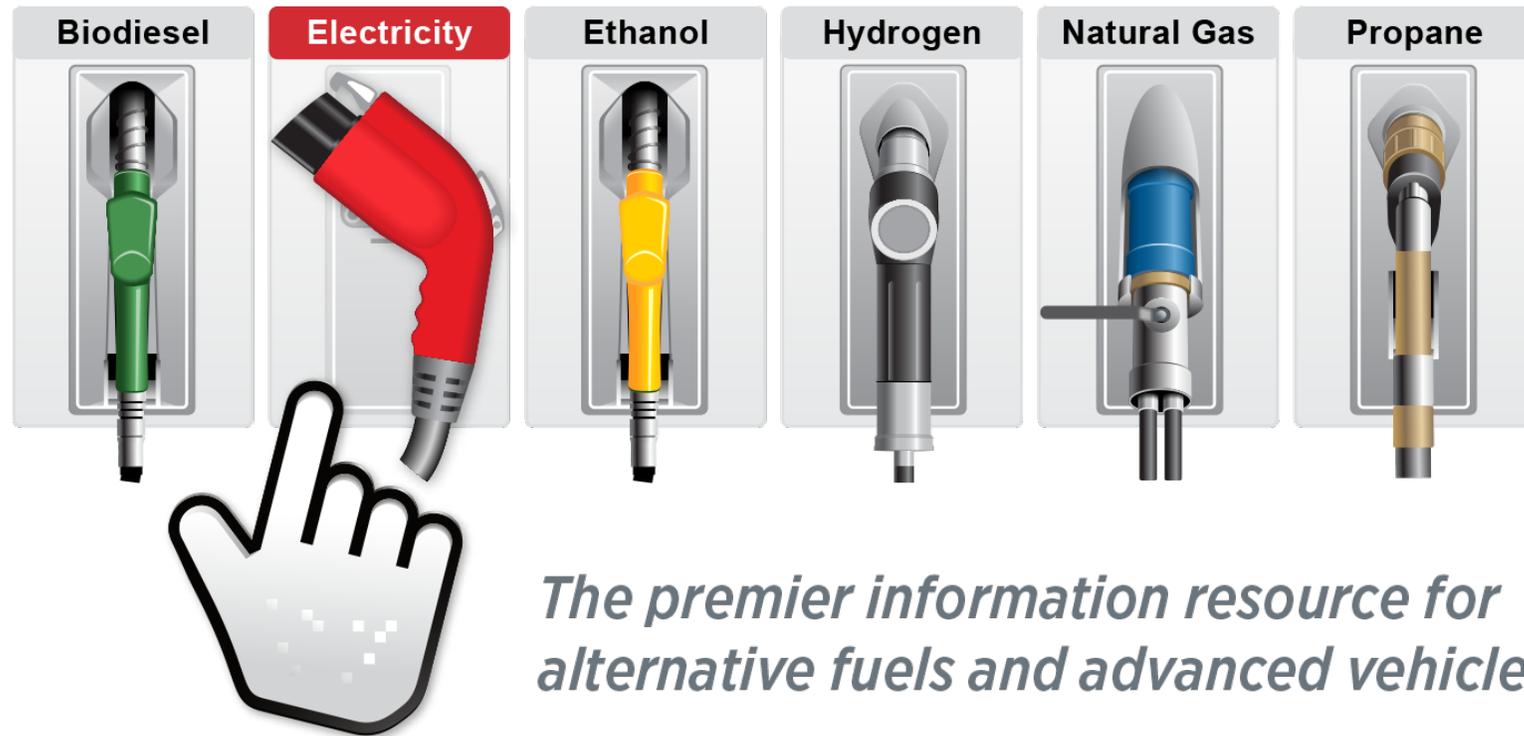
<https://www.afdc.energy.gov/locator/stations/>



Alternative Fuels Data Center Station Locator and Corridor Tools

Johanna Levene
November 14, 2018

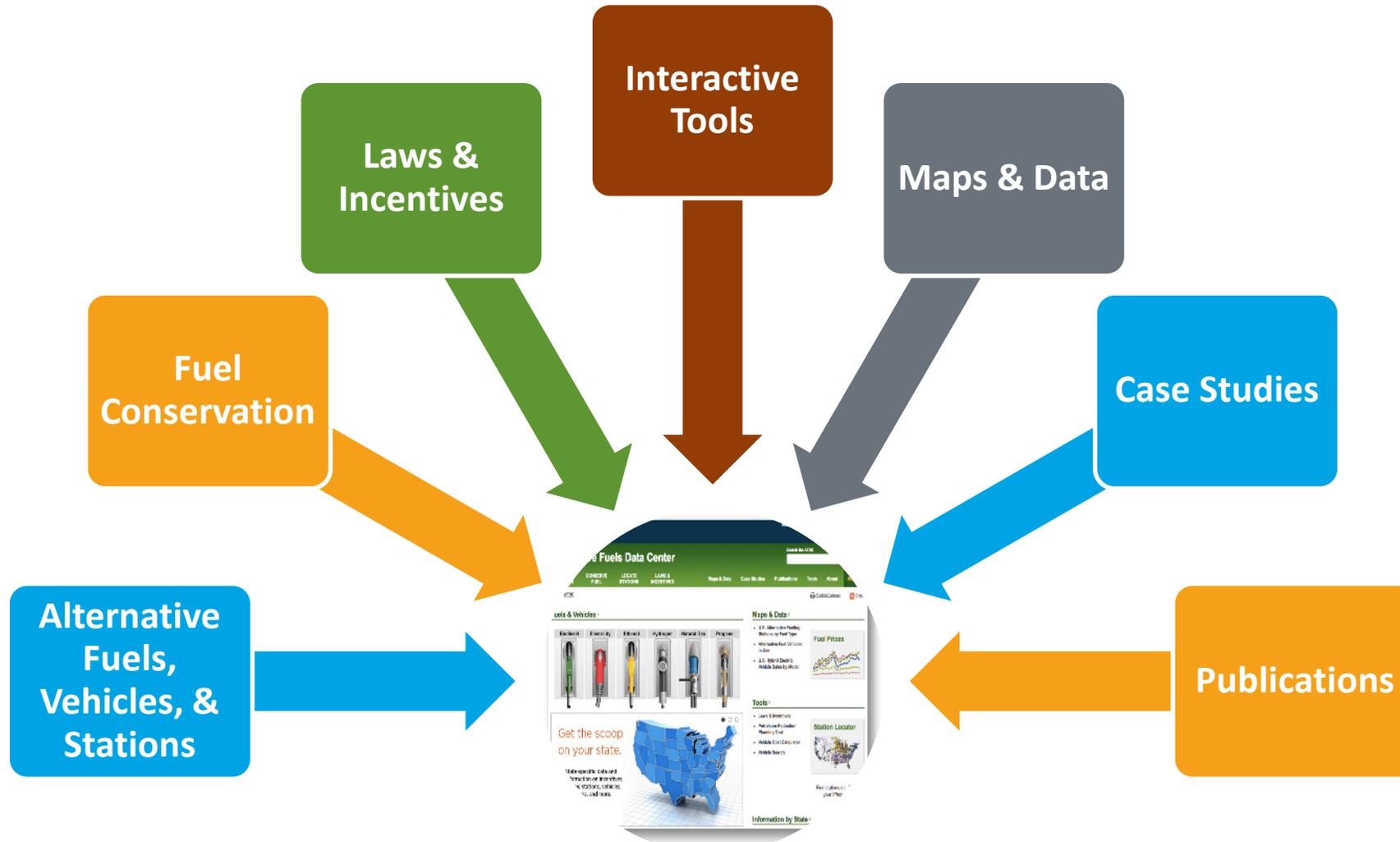
Alternative Fuels Data Center



*The premier information resource for
alternative fuels and advanced vehicles*

afdc.energy.gov

What does the AFDC provide?



Alternative Fuel Stations

U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

EERE Home | Programs & Offices | Consumer Information

Alternative Fuels Data Center

Search the AFDC

FUELS & VEHICLES | CONSERVE FUEL | **LOCATE STATIONS** | LAWS & INCENTIVES | Maps & Data | Case Studies | Publications | Tools | About | Home

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Alternative Fueling Station Locator

Find alternative fueling stations in the United States and Canada. For U.S. stations, see [data by state](#). For Canadian stations in French, see [Natural Resources Canada](#).

29,060 results in

Legend

- Biodiesel
- CNG
- Electric
- Ethanol
- Hydrogen
- LNG
- Propane

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<http://afdc.energy.gov/stations>

Alternative Fuel Stations

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Alternative Fueling Station Locator

Find alternative fueling stations in the United States and Canada. For U.S. stations, see [data by state](#). For Canadian stations in French, see [Natural Resources Canada](#).

Public Stations **Advanced Filters** 2,438 results in U.S. and Canada

Enter location Electric

Powered by Esri | Esri, HERE, Garmin, NGA, USGS

Alternative Fuel Stations

Alternative Fuels Data Center

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Data Downloads

To download data related to alternative fuels and advanced vehicles, follow the steps below.

Step 1. Choose data to download

Choose the dataset and file format you want to download.

Dataset: Alternative fuel stations

File Format: CSV (opens in Excel)

Read descriptions of the [data included in the alternative fuel stations download](#).

Data updated monthly. Last updated: 11/13/2018

Just looking for the closest alternative fuel station?

Use our [Alternative Fueling Station Locator](#) to find nearby stations.

Download Options

Fuel type: Electric

Access: Public

Status: Open

Step 2. Share your information

Provide the following contact and use information to download the data.

* First Name

Johanna

* Last Name

Levene

* E-mail Address

johanna.levene@nrel.gov

How will you use the data? (optional)

EHWA Demo

* Required fields

I have read and agree to the [terms and conditions](#).

Alternative Fuels Data Center

Search the AFDC

FUELS & VEHICLES

CONSERVE FUEL

LOCATE STATIONS

LAWS & INCENTIVES

Maps & Data

Case Studies

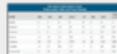
Publications

Tools

EERE » AFDC » Locate Stations

Search by Location

Map a Route



Station Data by State



Download Station Data

2,437 results in U.S.

Alternative Fueling

Find alternative fueling stations in the

Public Stations

Enter location



Electric

Level 1

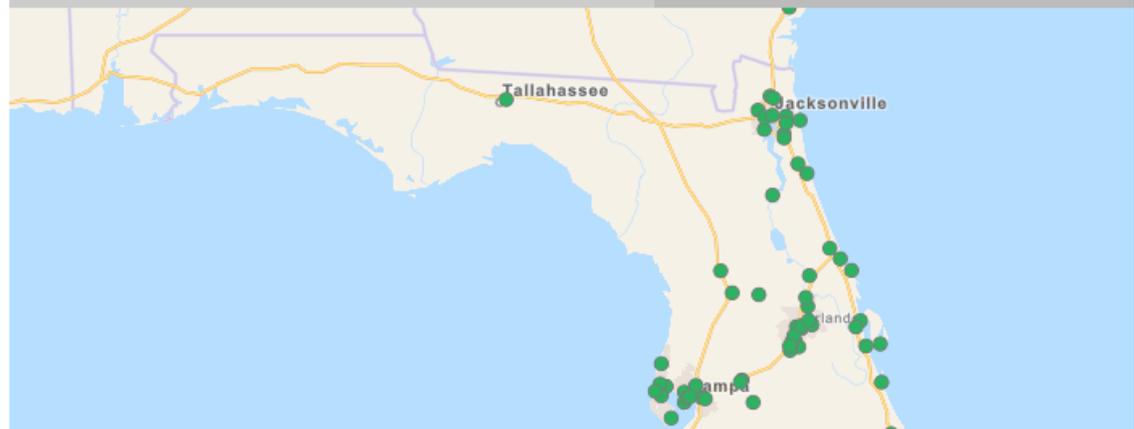
Level 2

DC Fast Charging

CHAdEMO

CCS

Tesla



Alternative Fuels Data Center

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Alternative Fueling Station Locator

Find alternative fueling stations in the United States and Canada. For U.S. stations, see [data by state](#). For Canadian stations in French, see [Natural Resources Canada](#).

- Public Stations**
- Advanced Filters

Edit Filters

92
stations

143
charging outlets

Filters chosen:

- Florida
- Electric
Types: DC Fast
Connectors/outlets: CHAdeMO, SAE CCS
- Access: Public
Status: Available, Planned

[Download Results](#)

Powered by Esri | Esri, HERE, Garmin, NGA, USGS



Public Stations | Advanced Filters | U.S. and Canada

Enter location All Fuels

Submit New Station

Use this form to suggest adding a station.

Your Contact Information

* First Name * Last Name
 * Email * Phone

Station Information

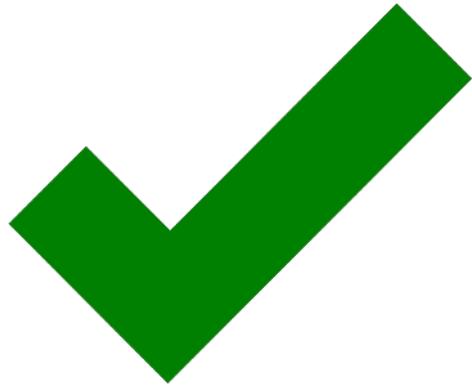
* Available Fuel(s)

- Biodiesel (B20 and above)
- Compressed Natural Gas (CNG)
- Electric
- Ethanol (E85)
- Hydrogen
- Liquefied Natural Gas (LNG)

[Map a Route](#)

Legend: Biodiesel, CNG, Electric, Ethanol, Hydrogen, LNG, Propane

Goals for the Mapping Tools



Ease Nomination
of Alternative
Fuel Corridors



Plan Fueling
Infrastructure
Development

Resources for Nominating Corridors

Alternative Fuels Data Center

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Station Data for Nominating Alternative Fuel Corridors

The table below provides station data and shapefiles by state and fuel type. These datasets include public stations with the following filters applied to meet the criteria for nominating alternative fuel corridors:

- **EV charging** – only DC fast electric vehicle (EV) charging stations, excluding Tesla
- **Hydrogen** – only retail stations (Non-retail stations may be used in corridor nominations if the stations are compliant with SAE J2601 standards and meet all of the criteria for a hydrogen corridor.)
- **Propane** – only "primary" liquefied petroleum gas (LPG) stations, which have fuel for vehicles and vehicle-specific fueling services that are consistently offered during business hours
- **CNG** – only fast-fill compressed natural gas (CNG) stations that offer a fill pressure of 3,600 psi
- **LNG** – all liquefied natural gas (LNG) stations

The data downloads are CSVs with current station data pulled automatically from the [Alternative Fueling Station Locator](#). The shapefiles are ZIP downloads with a static snapshot of the stations as of Sept. 5, 2018, including stations outside state borders within 25 miles.

Learn more about corridor designations from the [Federal Highway Administration](#).

Explore Potential Corridors

Use the prototype mapping tool to explore potential corridors by fuel:

- [EV charging](#)
- [Hydrogen](#)
- [Propane](#)
- [CNG](#)
- [LNG](#)

- CSV downloads
- Shapefiles
- Interactive maps

afdc.energy.gov/corridors

Stations by State and Fuel Type					
State	EV Charging	Hydrogen	Propane	CNG	LNG
Alabama	 data shapefile	 data shapefile	 data shapefile	 data shapefile	 data shapefile
Alaska	 data shapefile	 data shapefile	 data shapefile	 data shapefile	 data shapefile
Arizona	 data shapefile	 data shapefile	 data shapefile	 data shapefile	 data shapefile
Arkansas	 data shapefile	 data shapefile	 data shapefile	 data shapefile	 data shapefile
California	 data shapefile	 data shapefile	 data shapefile	 data shapefile	 data shapefile
Colorado	 data shapefile	 data shapefile	 data shapefile	 data shapefile	 data shapefile
Connecticut	 data shapefile	 data shapefile	 data shapefile	 data shapefile	 data shapefile

Interactive Maps

[Details](#) | [Basemap](#) | [Share](#) | [Print](#) | [Measure](#) |

[About](#) | [Content](#) | [Legend](#)

Legend

Designated Corridors (06/12/2018)

- Signage Ready
- - - Signage Pending

Potential Compressed Natural Gas Corridors - Areas with enough stations to nominate new corridors or where a single station would lead to an extension of an existing corridor or a new corridor.

National Highway Network

Interstates

0 150 300mi

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Corridor Nomination Tools

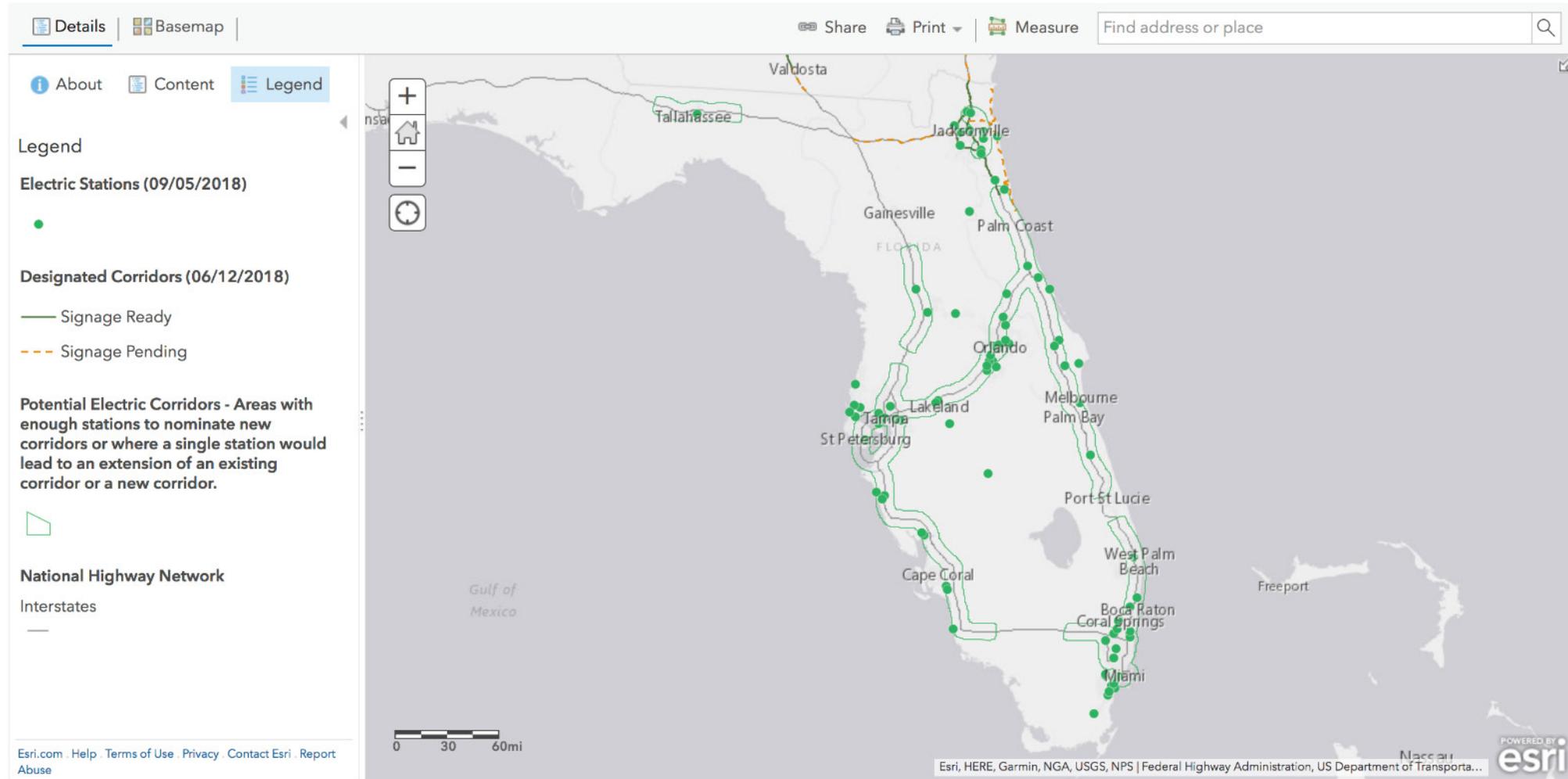
Demo



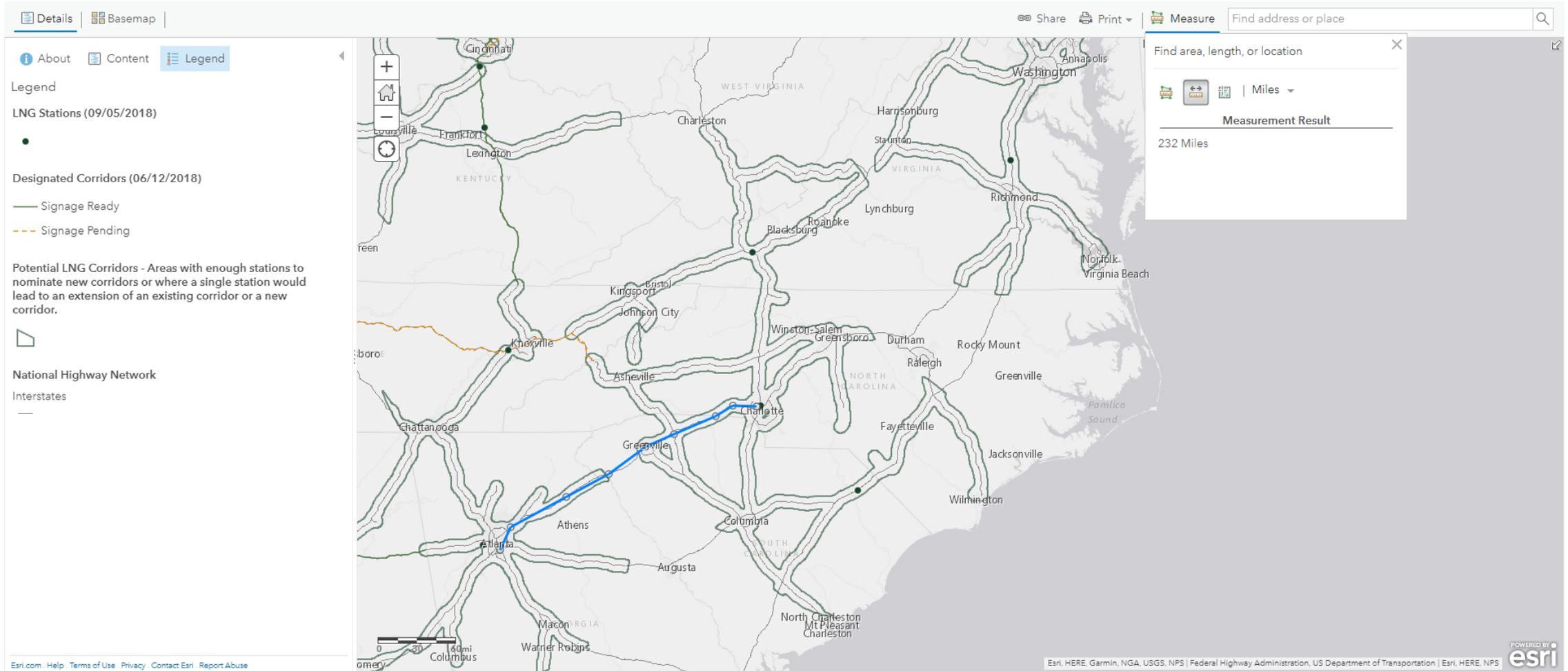
Stations Layer

ArcGIS ▾ Electric Corridor Map

Modify Map  Sign In



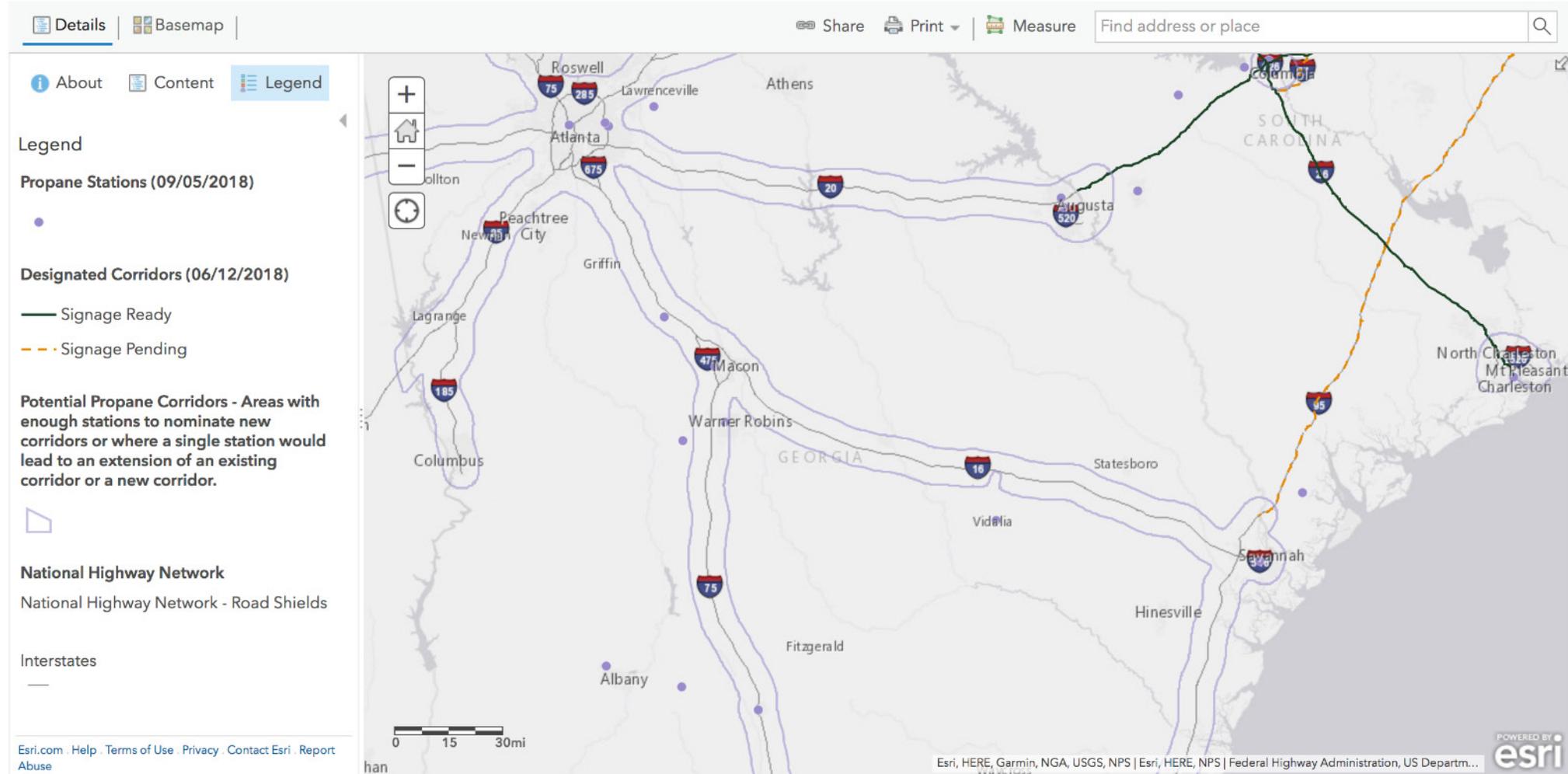
Potential Corridors



Potential Corridors

ArcGIS ▾ Propane (LPG) Corridor Map

Modify Map ⓘ Sign In



Future Mapping Tool

Electric **Ohio** **I-71**

Download Data Copy Map

I-71
Highway distance: 384 miles
Distance complete: 99 miles

Stations within
5 miles from the highway
50 miles from other stations

Layers
 Highways
 Vehicle density
 Stations
 CSS CHAdeMO Tesla
 Level 2 Planned Private
[Download stations](#)

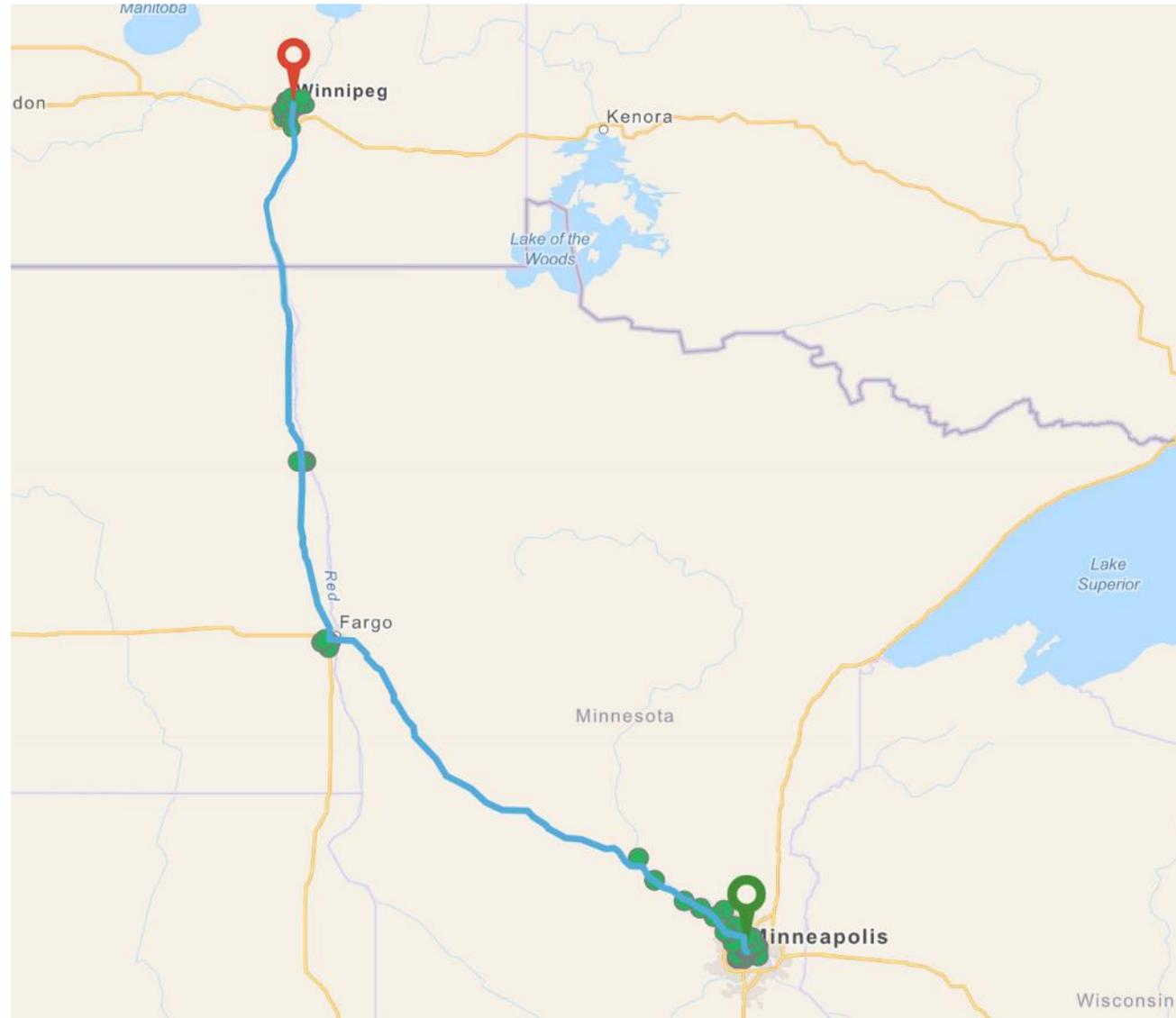
Legend
— Existing Corridor
... Pending Corridor
— Potential Corridor
— Planned Corridor
● Existing Station
● Planned Station

Test Proposed Stations [Run Analysis](#)
Add markers to test completing a corridor

Contact: [Kirsten Raymonds](#), ODOT

Powered by Esri | Esri, HERE, Garmin, NGA, USGS, NPS

Future International Corridors



Need Help?

For more information about station information email johanna.levene@nrel.gov.

Resources

Station Locator: <https://afdc.energy.gov/stations>

Station Data for Corridors: <https://afdc.energy.gov/corridors>

Shapefile/Nomination Upload Instructions

35

- To submit your **nominations** and **shapefiles**, please email Sara.Secunda@dot.gov.
- An email invite will then be sent to the submitter to upload nominations and shapefiles to the Box.com directory for their state.
- The name of each file should include the submitter's agency and the date.
Ex: EIPasoMPO_111318. The files upload can be .zip files.
- If a submission is a corridor in more than one state, please indicate one state for uploading the file.
- If there is an issue with Box.com, please email Sara.Secunda@dot.gov for alternative upload instructions.

Box.com Directory

36

The screenshot shows the Volpe Box.com directory interface. The browser address bar displays the URL `https://volpe.app.box.com/folder/52883504010`. The interface includes a menu bar (File, Edit, View, Favorites, Tools, Help) and a toolbar with 'Convert' and 'Select' options. The Volpe logo is on the left, and a search bar is in the top center. A left sidebar lists navigation options: All Files, Recents, Trash, Notifications, Notes, and Favorites. The main content area shows a breadcrumb path: 'All Files > Secunda_Sara > AF Corridors > ☆ MA'. Below this is a table of files and folders:

Name ^	Updated	Size
Nominations	Today by Sara Sec...	0 Files
Shapefiles	Today by Sara Sec...	0 Files

On the right side, there are buttons for 'New' and 'Upload'. Below these are 'Sharing' and 'Details' tabs. A red arrow points to the 'Details' tab. The sharing section lists users: 'BoxAdmin Owner' and 'Sara Secunda Editor'.



Federal Highway Administration Regional Alternative Fuel Corridor Convenings

- Team to hold 5 regional convenings.
 - To Date: Midwest (MN), Southeast (SC)
 - Next Up: Northeast/Mid-Atlantic (CT/NY), West (CO/UT) and South (TX)
- 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.

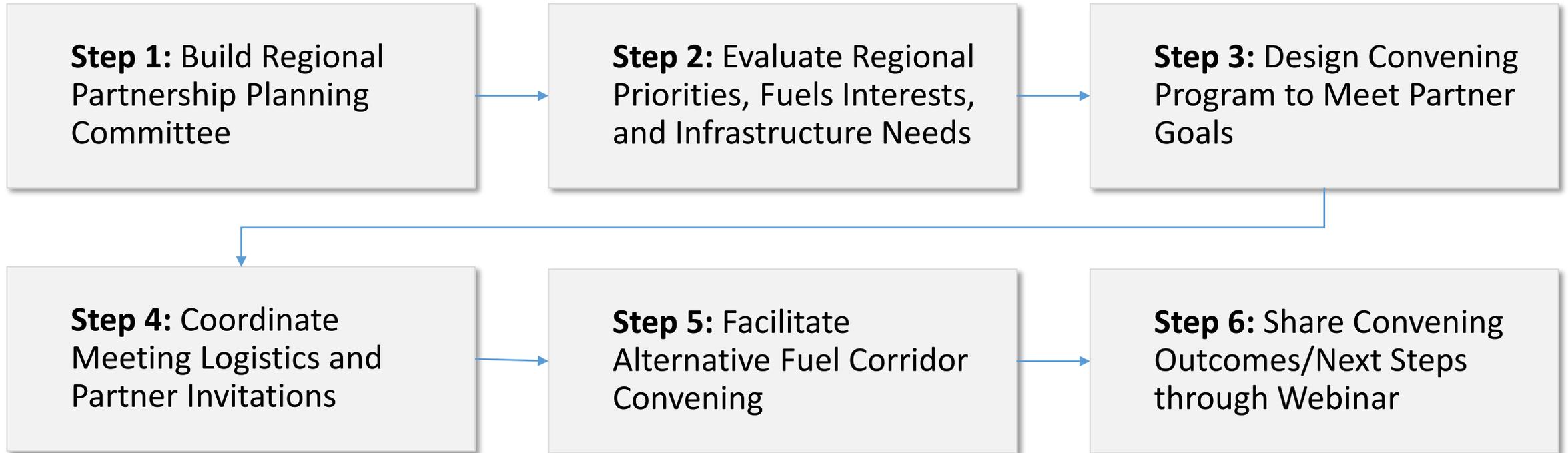
2 Regional Convenings to Date

Midwest AFC
St. Paul, MN
June 12, 2018



Southeast AFC
Charleston, SC
September 25, 2018

Convening Planning Process

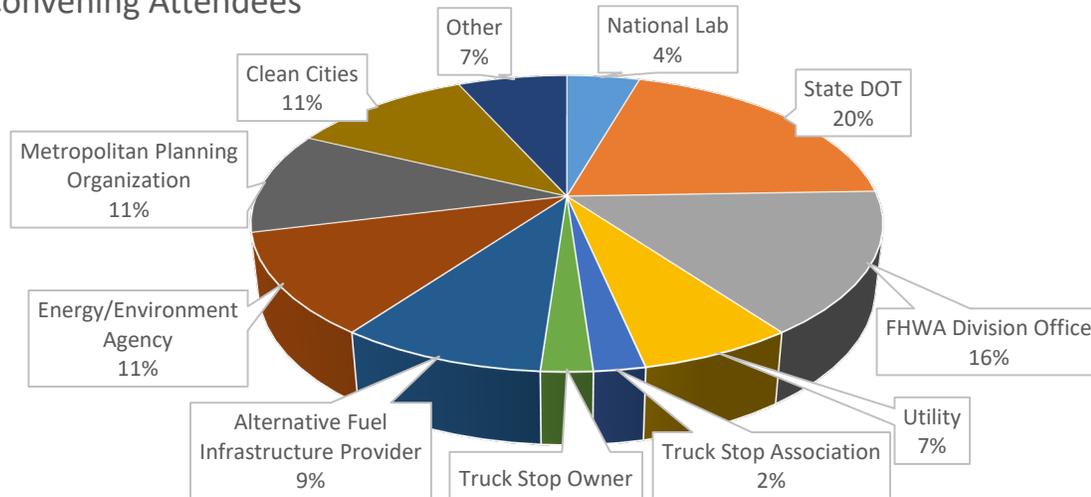


Convening Results

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)

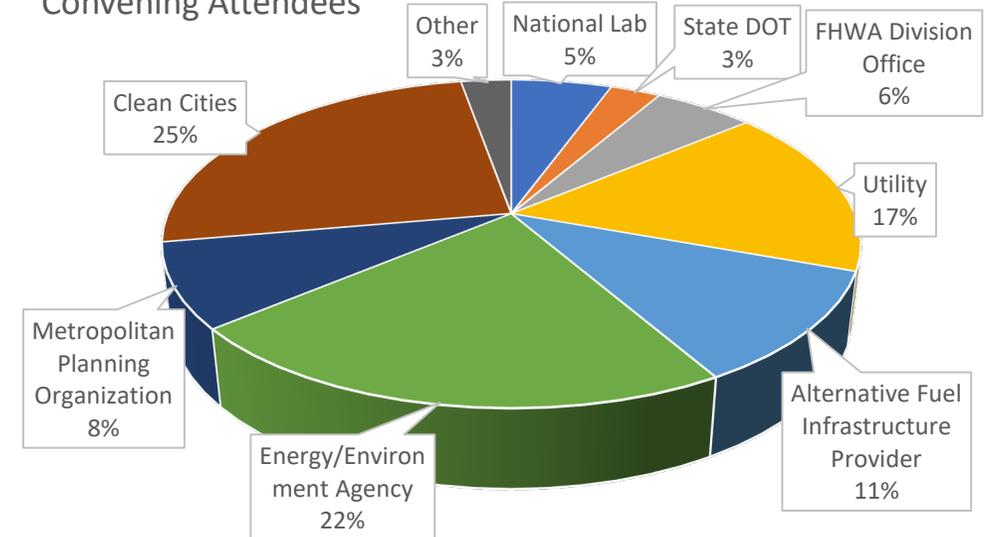
Convening Attendees



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)

Convening Attendees



Upcoming Convenings: Next Steps

Establish Timeline

- April/May 2019: South (TX)
- May/June 2019: Northeast/Mid-Atlantic (CT/NY)
- July/August 2019: West (CO/UT)

Build Planning Committee

- FHWA Division Offices, State DOTs, Energy/Environmental Agencies, MPOs
- Clean Cities Coalitions, Nonprofits
- Fuel/Infrastructure Providers, Utilities

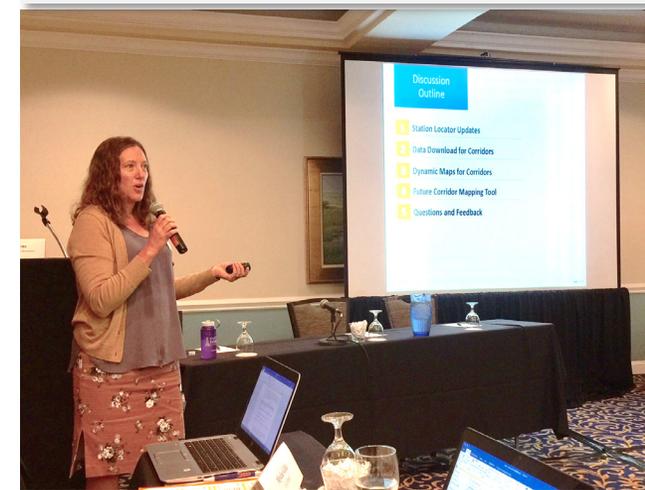
Breakout Groups



Panel Sessions



Presentations



Next Steps to Expand a National Network of AFCs

- **Corridor Funding:** Authorize a funding program to support infrastructure development and signage for FHWA Alternative Fuel Corridor program.
- **Regional Coordination:** Continue ongoing engagement and outreach with regional partnerships to ensure coordination, alignment of corridor priorities, and technical exchange.
- **Elevate Value Proposition:** Advance educational campaign amongst politicians, government and industry (dealers/fleets) on benefits/business case/availability of alternative fuel technologies and infrastructure.
- **Encourage Vehicle Incentives:** Provide voucher incentives for MD/HD alternative fuel vehicles (rural, urban & freight transportation).
- **Address Barriers:** Streamline Permitting Process, Building Codes, CMAQ Buy America Waiver, and Fuel Tax.

Convening Planning Team

