



Planning for EVs in Kentucky

Kentucky's Electric Vehicle Infrastructure Deployment Plan



Today's Agenda

- Electric Vehicles (EV) and EV Charging Stations
- Barriers to EV Adoption and EV Infrastructure Deployment
- EV Sales and Registration Trends
- Federal Funding for EV Infrastructure
- Alternative Fuel Corridors
- EV Infrastructure Deployment Plan
- How Can you Get Involved and Prepared?
- Schedule

Electric Vehicle (EV) Types



Battery Electric Vehicle (BEV)

- Battery Power Only
- Typical Battery Range 150-400 miles



Plug-In Hybrid Electric Vehicle (PHEV)

- Battery Power and Internal Combustion Engine (ICE)
- Typical Battery Range 20-40 miles



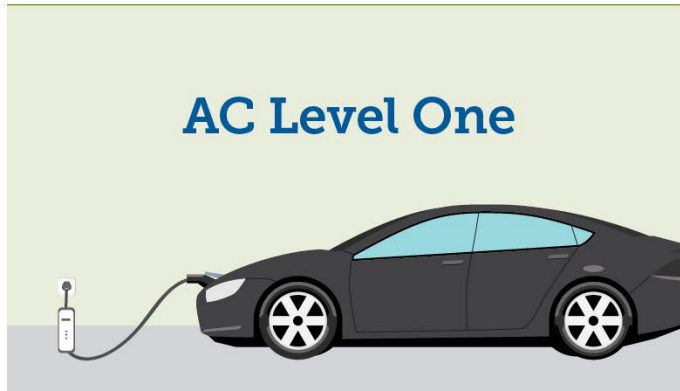
Hybrid Electric Vehicle (HEV)

- Internal Combustion Engine (ICE) Only
- Battery Charges by Regenerative Braking or Using Engine as a Generator
- Battery Allows for Smaller Engine, Powers Auxiliary Loads, and Reduces idling



EV Charging Stations

Level 1



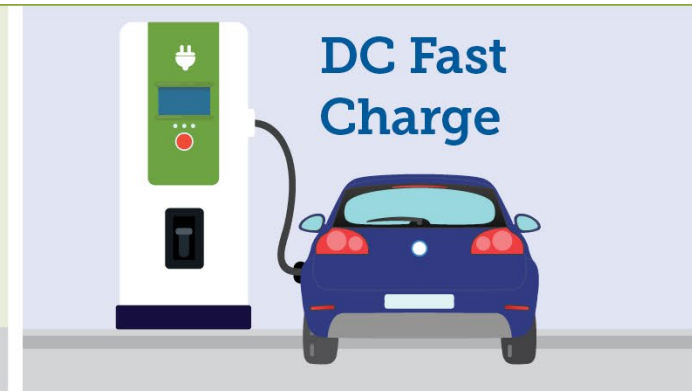
- Standard Outlet
- Slowest Charging
- 250 miles in 48-72 hrs
(~5 miles/hr of charge)

Level 2



- “Dryer Outlet”
- Slow Charging
- 250 miles in 10 hours

Level 3



- Direct Current Fast Charging (DCFC)
- Fastest Charging
- 250 miles in 30 minutes



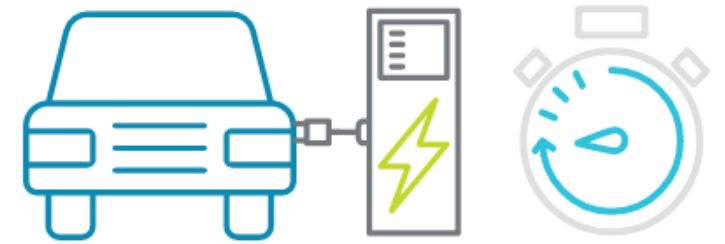
Barriers to EV Adoption



Lack of Charging Infrastructure



Range Anxiety for Long Trips



Long Recharging Times



Barriers to EV Infrastructure Deployment



**Limited
Utility Infrastructure**



**Utility Demand
Charges**



**Rural/Underserved
Infrastructure Gaps**

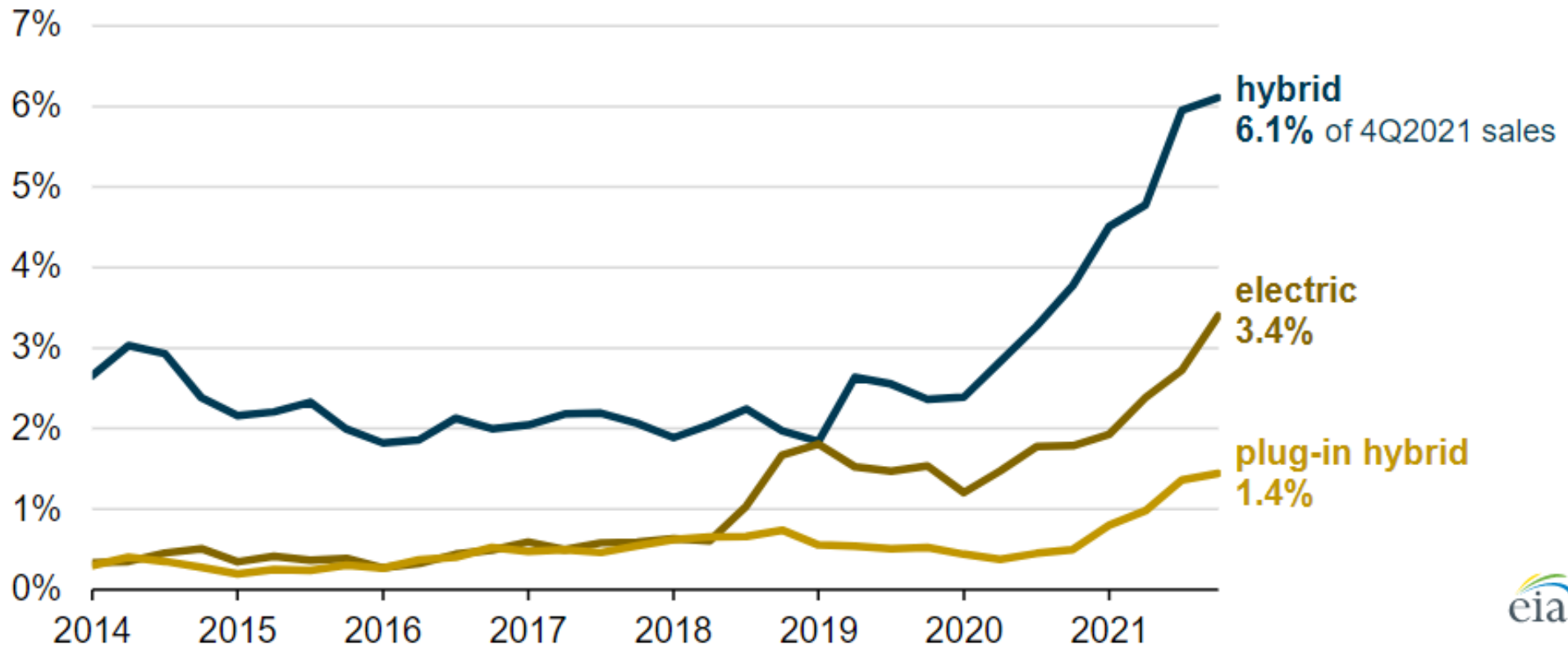


**Planning and Zoning Approvals
Building Codes
Other Codes and Regulations**



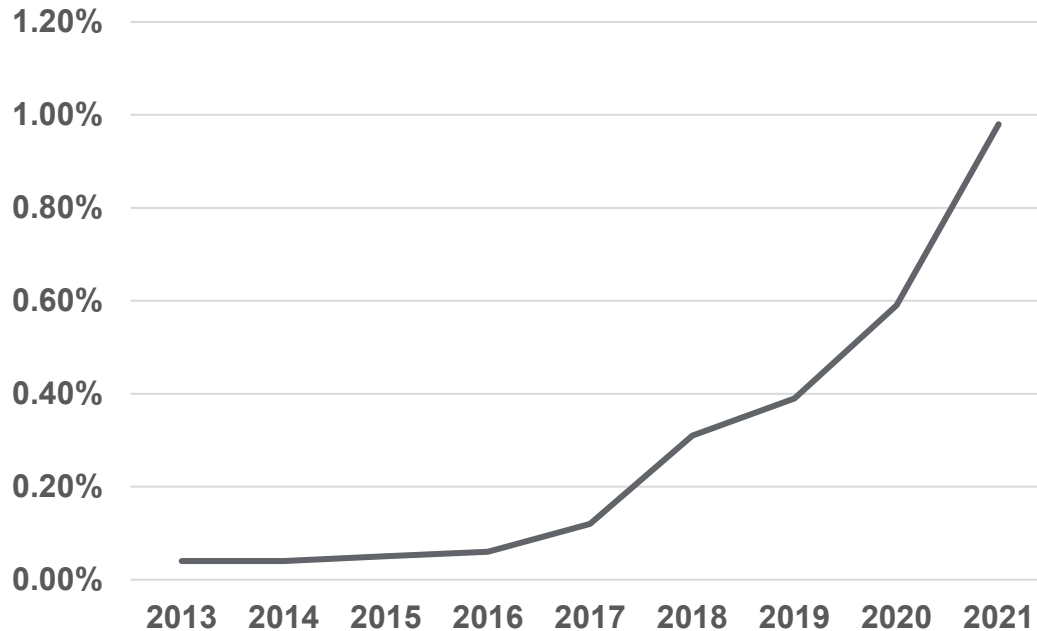
National EV Trends

Quarterly Light-Duty Vehicle Sales by Powertrain (2014-2021)



Current Light-Duty EVs in Kentucky

Battery Electric Vehicle (BEV) Sales in Kentucky



Light-Duty Vehicles Registered by Type

BEV	PHEV/ HEV	Gasoline	Other	Total
3,618	44,440	3,257,913	1,062	3,307,033
0.11%	1.34%	98.51%	0.03%	

As of December 2021

It can take 20 years for 90% of a vehicle fleet to turn over



Federal Funds for EV Infrastructure

2021 Infrastructure Investment and Jobs Act (IIJA)

- National Electric Vehicle Infrastructure (NEVI) formula funds
- Discretionary funds (competitive grants)



NEVI Formula Funds in Kentucky

Purpose of NEVI Formula Funds:

- National network of fast chargers to support travel on major corridors
- **Focused on Build-Out of Alternative Fuel Corridors (prioritizing Interstates)**

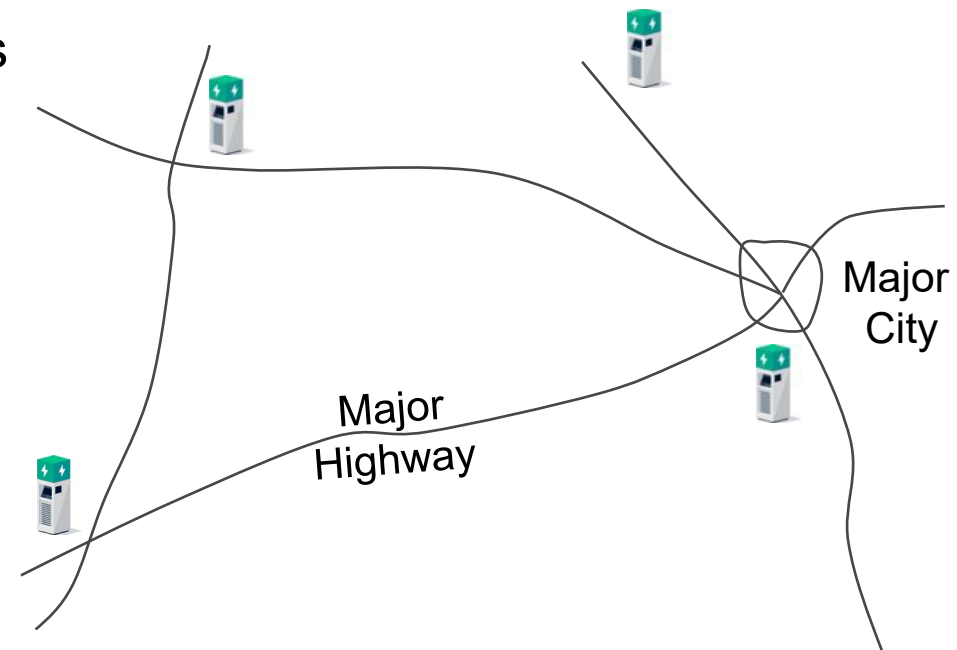
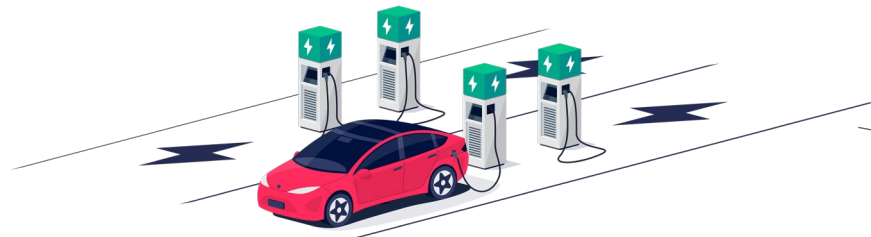
Kentucky will receive:

- **\$69M** for EV charging infrastructure over 5 years
- **\$10M** in Fiscal Year 2022; **\$10-\$15M/yr** for next 4 years

Requires EV Infrastructure Deployment Plan by August 1



Kentucky's Electric Vehicle Infrastructure Deployment Plan



EV Discretionary Funds (Competitive Grants)

- **Guidance coming out later in 2022**
- A total of \$2.5B to be distributed nationally over all 5 years
- **Grant applicants should be ready to submit later this year**
- Community charging stations are expected to be eligible
- Can be used for other fuel types (hydrogen, propane, and natural gas)



Alternative Fuel Corridors (AFCs)

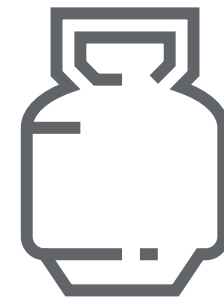
USDOT designates AFCs based on state nominations

- Four fuel types: electric, hydrogen, propane, and natural gas

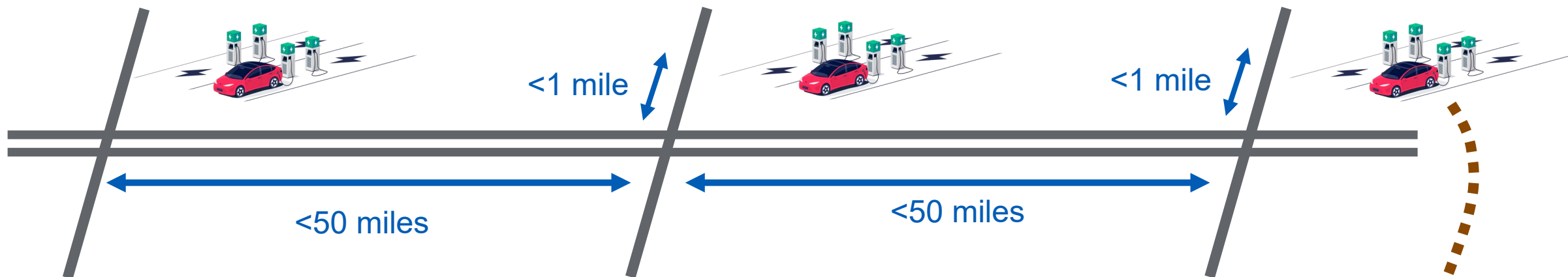
New round of nominations **due May 13, 2022**

Current emphasis on EV charging corridors

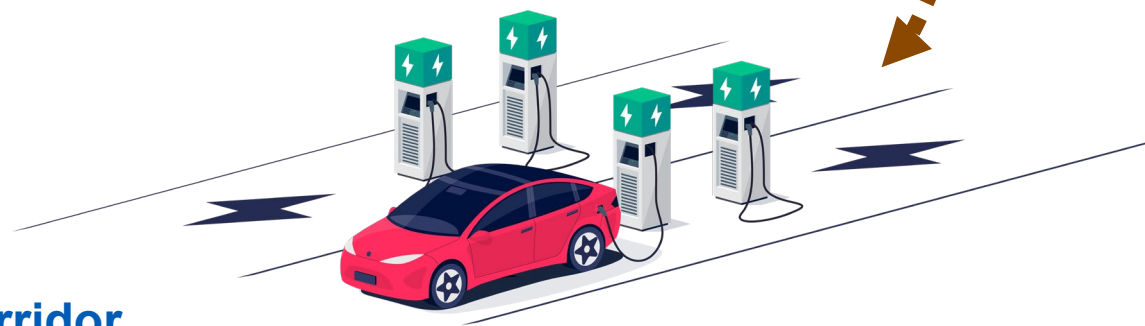
USDOT prioritized Interstates



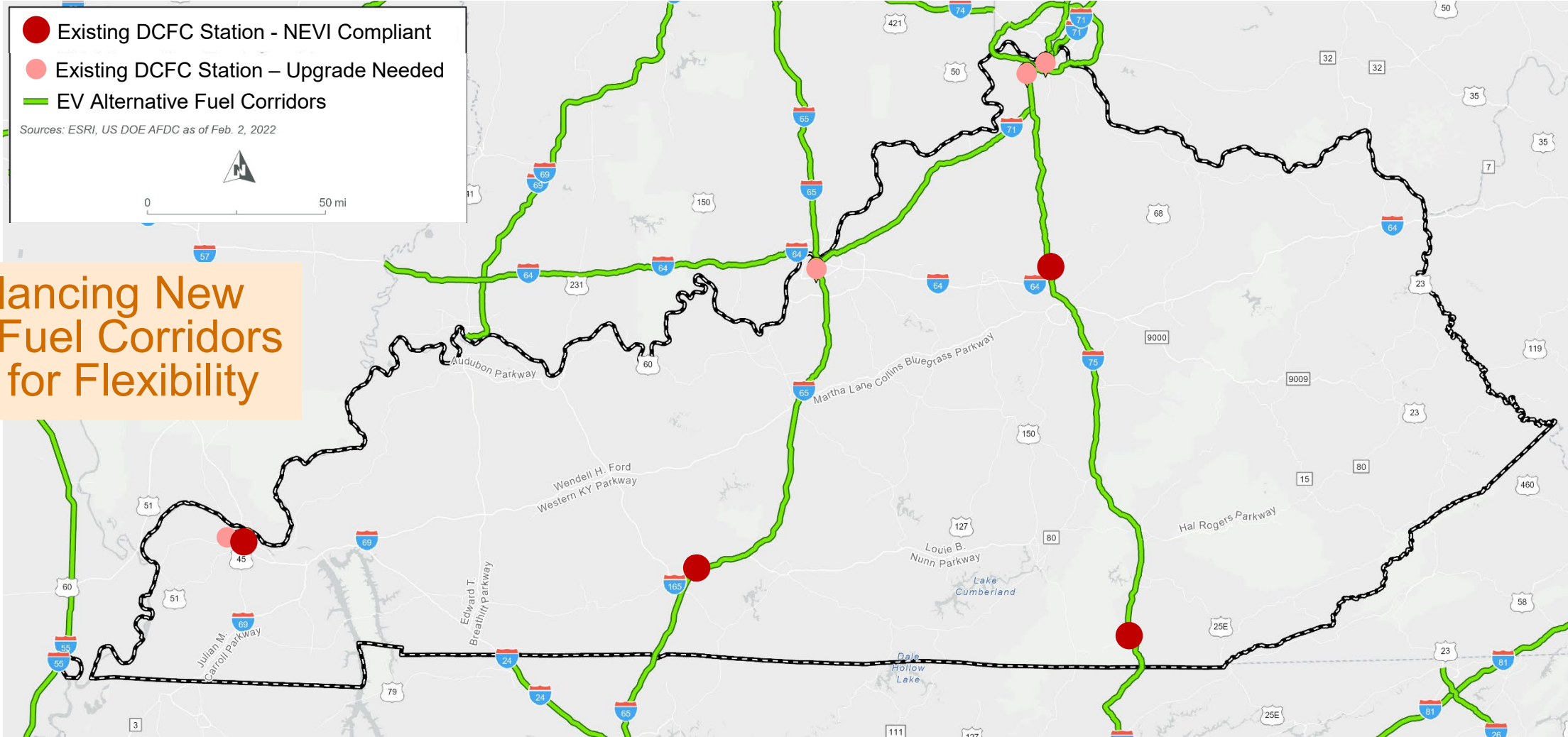
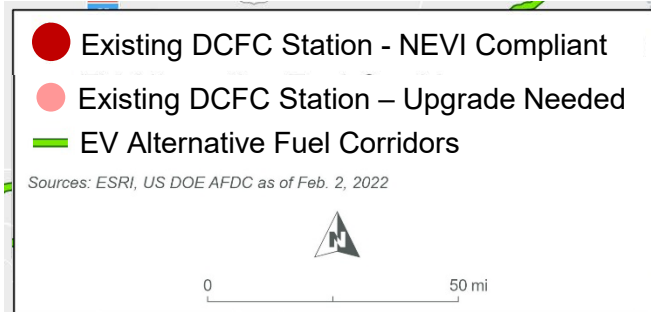
DCFC Stations on Alt Fuel Corridors



- Along Alternative Fuel Corridors
 - <50 mile spacing; <1 mile away
- At least four 150 kW DC Fast Charging ports
- Open to general public (not proprietary)
- **Need to build-out corridors before going off-corridor**



NEVI Funds to Fill in the Gaps First

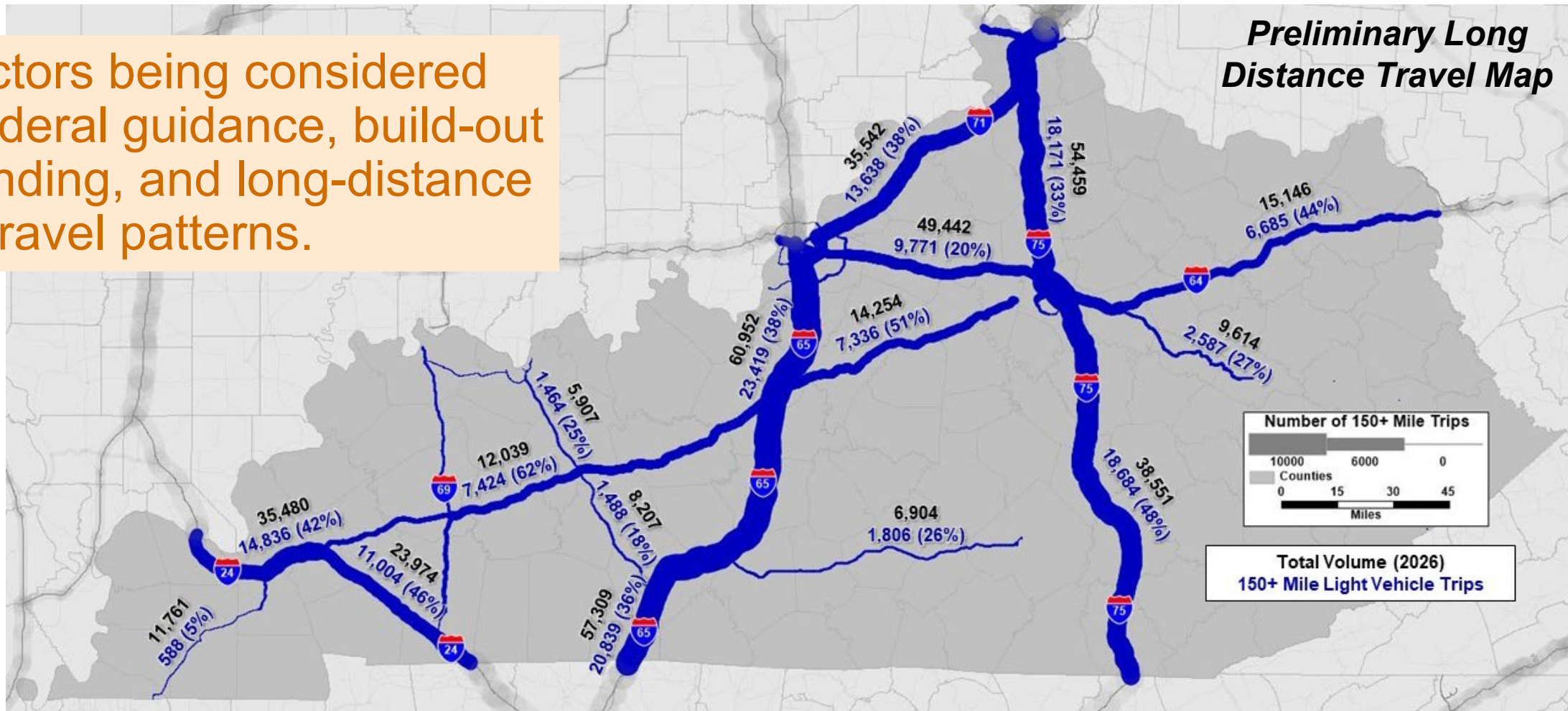


KYTC Balancing New Alternative Fuel Corridors with Need for Flexibility



AFCs - Key Considerations

Many factors being considered such as Federal guidance, build-out cost vs. funding, and long-distance travel patterns.



Summary: NEVI Funding & AFCs

- **Build-Out Means NEVI Compliance**
 - Such as Station Size and Spacing
- **NEVI Requires Build-Out of Alternative Fuel Corridors**
- **Adding AFCs in May Would Increase the Build-Out Requirement**
- **Once Build-Out is Approved, NEVI Funding Becomes Flexible**
- **NEVI Build-Out Challenges and Issues**
 - Supply Chain Issues
 - Buy America Requirements
 - USDOT Guidance Prioritizes Build-Out on the Interstate System



State EV Plan Requirements

Key Takeaways

- Maximum 80% Federal Share
- Private Entities can be Involved
 - Construction, Operations and Ownership
- Guidance Outlines Many Siting Considerations
 - Examples: electric grid, nearby services, rural/underserved community needs



How Can Your Community Get Ready?

- **Prepare for Discretionary Grant Applications**
 - DCFC and Level 2
 - Some Opportunities Now – More Coming
- **Identify Barriers to Station Permitting and Implementation**
 - Planning and Zoning
 - Building Codes
 - Other Codes and Regulations
- **Consider EV Related Model Codes**
- **Develop a Plan to Support Local EV Charger Deployment**
 - Consider Community Needs and Opportunities (Tourist Attractions, Underserved Areas, etc.)



Plan Schedule

Meeting or Submittal	Month
Stakeholder Meeting (Held)	March
Stakeholder Meeting	May
<i>Alternative Fuel Corridor Nominations to USDOT</i>	<i>May 13, 2022</i>
Stakeholder Meeting	June
Final Plan	July
EV Infrastructure Deployment Plan to USDOT	Prior to August 1, 2022



**[Transportation.ky.gov/Planning/
Pages/EVPlan.aspx](https://Transportation.ky.gov/Planning/Pages/EVPlan.aspx)**

**Plan Contact Email:
EVPlan@ky.gov**



Questions?



Kentucky's Electric Vehicle Infrastructure Deployment Plan