

## Access to Alternative Fuel Infrastructure

### Session 2A Overview Worksheet

#### Session Summary

The growth of alternative fuels is dependent on drivers' ability to access fueling infrastructure to meet their travel needs. In recent years, fueling infrastructure has grown considerably, but gaps remain to accommodate widespread freight travel for alternative fuel vehicles. In particular, key routes in the Northeast may still be inaccessible to these vehicles due to a lack of publicly available infrastructure. In this session, we'll identify the factors that help prioritize new infrastructure deployment for use in a clean corridor freight plan. Chuck Feinberg, Clean Cities Coordinator from New Jersey Clean Cities, will give an overview of his agency's experience on improving access to alternative fuel infrastructure.

#### Strategic Siting

Access to alternative fuels throughout the Northeast depends on the fuel type. The maps on the following page show publicly available fueling stations for biodiesel, CNG, propane, and electric vehicles with DC fast charging capability. As shown, many parts of New York and New England are inaccessible to vehicles relying only on publicly available infrastructure.

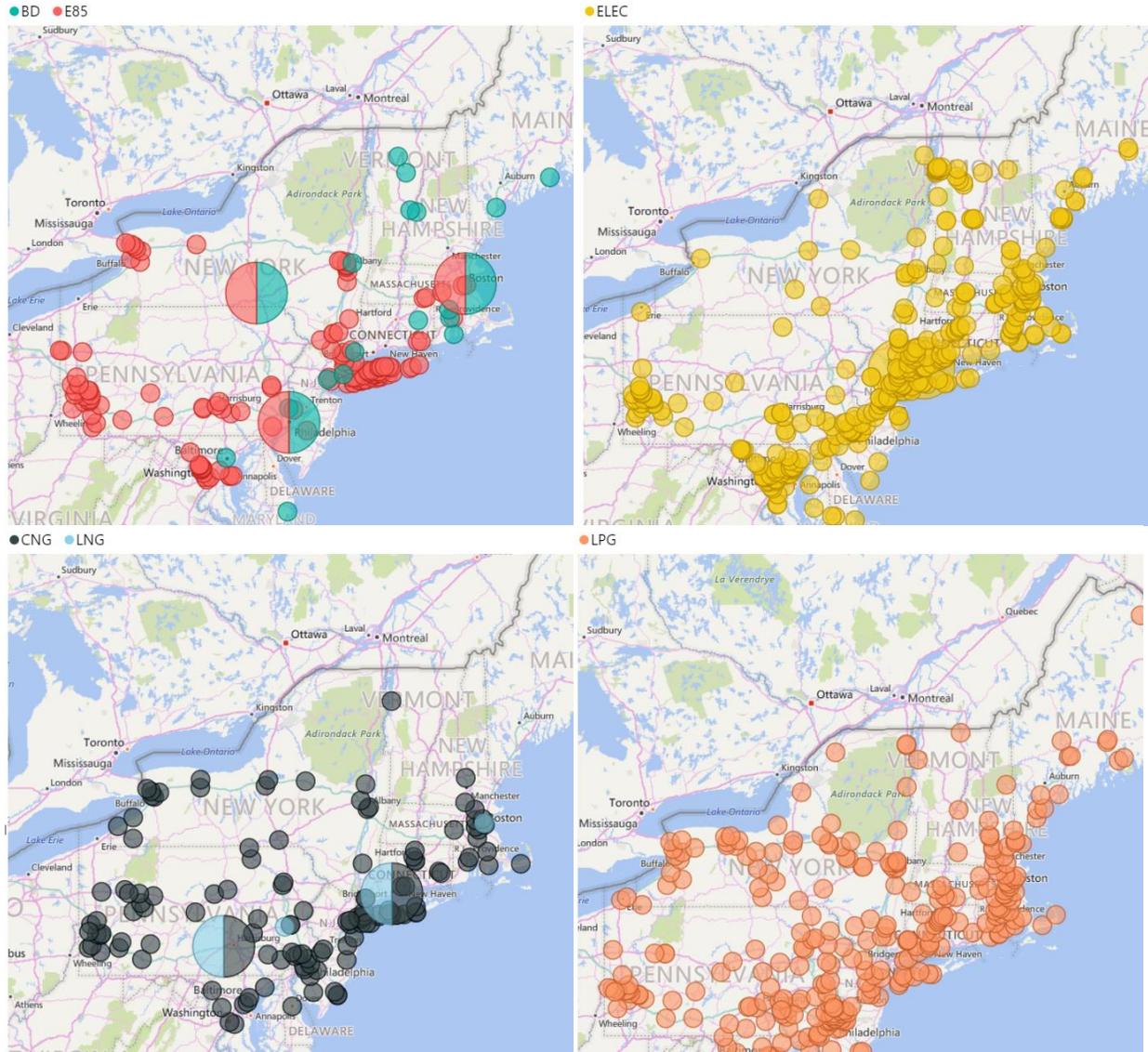
#### Other Factors: Redundancy, Reliability, and Compatibility

Even if stations are sited to adequately support long distance travel, other factors can hinder access, including station redundancy, reliability, and compatibility. For fueling sites with only one station, drivers may need 100 percent up-time and 24/7 access to complete trips. Drivers will likely become discouraged the first time they encounter a station that is unavailable, especially if no nearby stations exist and trip travel is disrupted. By comparison, many gasoline stations have 5 or more pumps and allow for 24/7 access through credit card machines affixed to the pumps. Some alternative fuels can also have different fueling requirements. For example, the type of natural gas refueling nozzle that a vehicle needs may depend on its use. Vehicles that need higher volume can use the CT5000 nozzle (3/8-inch tubing), while other vehicles use the CT1000 nozzle (1/4-inch tubing). These nozzle standards are not compatible and fueling stations may not support both types. For electric vehicles, automakers currently support three connectors for DC fast charging (SAE Combo, CHAdeMO, and Tesla's proprietary system).

#### Key Discussion Questions

1. What alternative fuel(s) have the greatest access for long distance travel? The least?
2. What fraction of refueling stations need to offer a given alternative fuel for it to reach mainstream acceptance?
3. Are current market conditions a major barrier to improving alternative fuel access and what can government do to help overcome potential short term issues?
4. What are the most important factors that determine which fuels policymakers should prioritize in a clean corridor freight plan?
5. How can multi-jurisdictional collaboration improve access to alternative fuels along key corridors?
6. How can technology (such as the [AFDC station locator](#)) improve information access related to alternative fuel infrastructure availability?
7. What are the key elements of an online toolkit for improving access to alternative fuels along corridors?

Figure 1: Publicly available fueling stations for biodiesel and E85 (TOP LEFT); DC fast charging (TOP RIGHT); CNG and LNG (BOTTOM LEFT); and Propane (BOTTOM RIGHT) as of October 2016



Source: Atlas Public Policy analysis of data from <http://www.afdc.energy.gov>

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