Industry Host: EPA

Title: More efficient transportation options for low-density cities

Challenge:
Devise a new system or service for transporting around people and/or goods in low-density cities where public transportation options are limited in order to be more efficient and cost-effective while also reducing emissions of GHGs and other pollutants.

Background:
Low-density cities often have fewer transportation options than extremely dense areas like Manhattan. When the population density drops below a certain point, it no longer becomes economical to have public mass transportation. Without other options, people are forced to drive their own personal vehicles, which can create local pollution problems and lead to more greenhouse gas emissions. Cities like Atlanta and Los Angeles are famous for their traffic jams in partly because lack high population densities that support alternative transportation options. While those cities are large examples of this issue, medium and smaller sized cities are facing similar problems that may be more readily addressable.

However, there may be other options that are suitable for these cities that could allow citizens to reduce their carbon footprint, reduce pollution, and potentially save money or time. Carpooling services like Via, ride sharing platforms like Uber, and bike sharing services like Citi Bike have emerged as private companies that serve as a public good, filling in gaps in mass transportation. These services are not ubiquitous, leaving many smaller cities still with few options. As an additional problem, it is important to know how people move around a given area to start these kinds of services. Therefore, the problem centers around not only what methods of transportation should be offered, but also where they should be offered and the data services needed to support new such endeavors.

Boundaries of Consideration:

- The definition of a low-density city is one that has fewer than 6,000 people per square kilometer.
- All states have State Implementation Plans (SIPs) that set pollution targets. Not all cities/states are in attainment for these plans. These cities may be an early place to conduct outreach, as their needs may be greater than some other low-density cities who are meeting their pollution targets.
- To demonstrate any reduction in GHG emissions and other pollutants, the impact of any solution will need to be quantifiable.
- Some cities have centers or other points that attract people to more regular routes while others have a much more free-flowing pattern where everyone moves in every direction. It is important to assess which kind of city you are dealing with before trying to develop a solution.