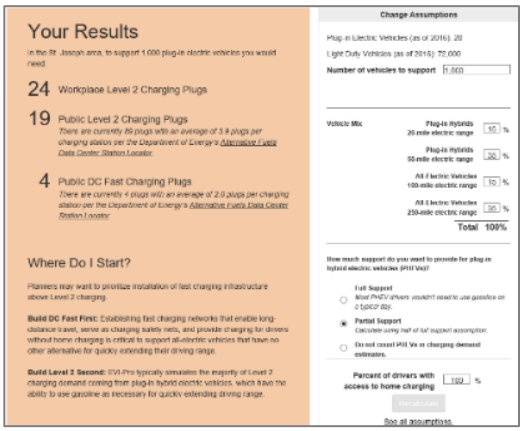
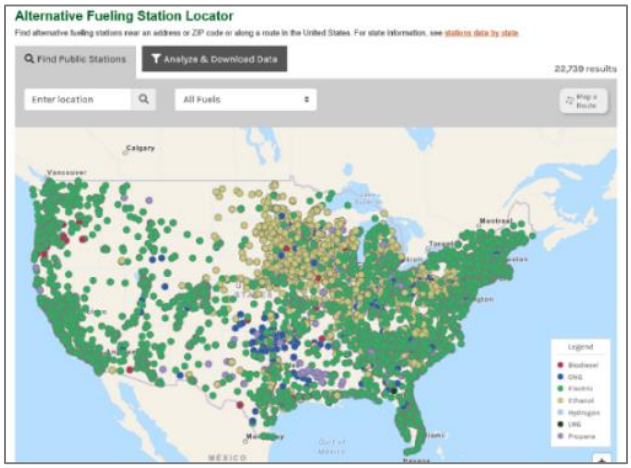
Northeast/Mid-Atlantic Alternative Fuel Corridor Convening

Helpful Tools for Alternative Fuel Corridor Planning

Electric Vehicle Infrastructure Projection Tool (EVI-Pro) Lite, National Renewable Energy Lab (NREL) and California Energy Commission (CEC)



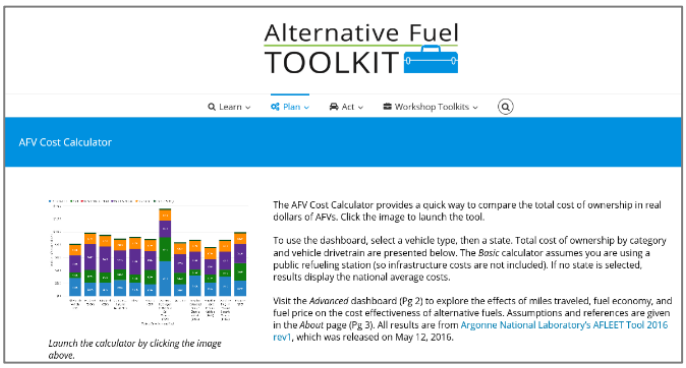
EVI-Pro Lite is an online tool for projecting consumer demand for electric vehicle (EV) charging infrastructure. The EVI-Pro Lite tool uses simulations to predict the type and quantity of charging infrastructure required to support different levels of EV adoption. Simulations use data on charging station characteristics, EV attributes, and personal vehicle travel patterns. The EVI-Pro Lite tool gives users the option to change assumptions about vehicle mix and electricity needs, and provides planners with suggested infrastructure priorities. The EVI-Pro Lite tool was developed through a collaboration between NREL and CEC, with support from the U.S. Department of Energy's (DOE) Vehicle Technologies Office.
Link: https://www.afdc.energy.gov/evi-pro-lite



Alternative Fuels Data Center Station Locator, U.S. Department of Energy

The U.S. DOE Alternative Fuels Data Center hosts an Alternative Fueling Station Locator on its website that allows users to enter their postal code to find the nearest alternative fueling station. This tool also allows users to map a travel route, or to filter by fuel type. The Alternative Fueling Station Locator provides downloadable data and results.
Link: https://www.afdc.energy.gov/stations/#/find/nearest

Alternative Fuel Toolkit, Federal Highway Administration (FHWA)



The Alternative Fuel Toolkit is an online platform designed to help state Departments of Transportation (DOTs) learn more about alternative fuels, plan alternative fuel vehicle infrastructure and explore funding sources, and take action to deploy alternative fuels and vehicles using an online action guide, set of facilitation materials, and other resources. The website

U.S. Department of Transportation
Federal Highway Administration

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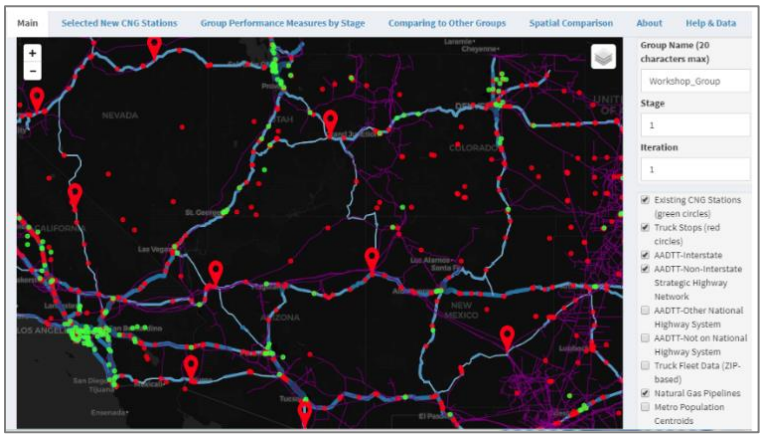
is the result of an effort led by the Oregon DOT and FHWA, and supported by nine other state DOTs.
Link: http://altfueltoolkit.org/

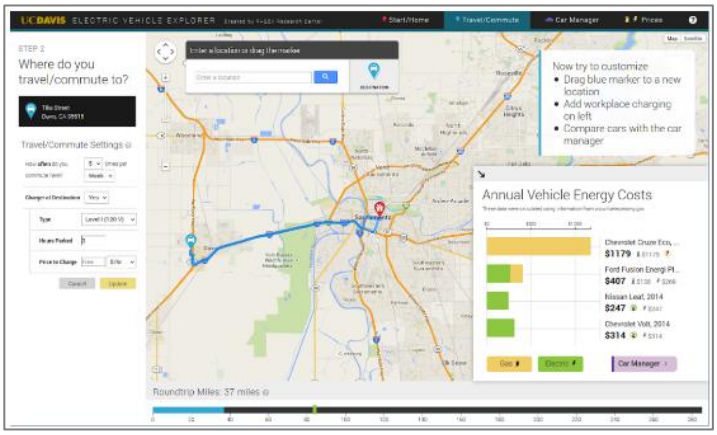


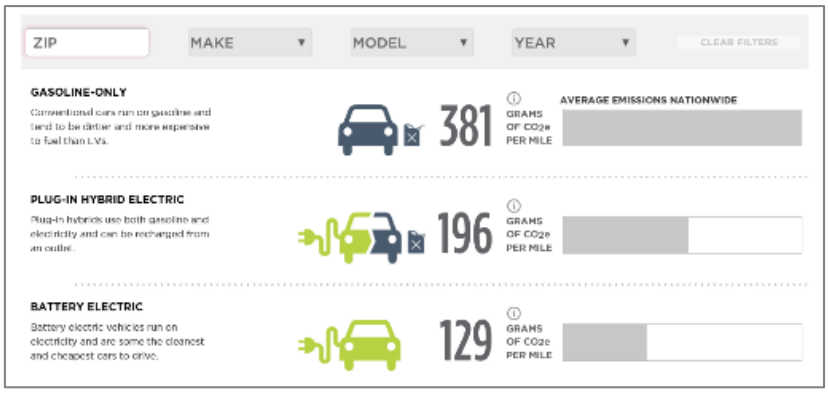
Collablocation, University of Arizona and Arizona State University

Rolling out alternative fuel stations is never a "one-size-fits-all" exercise. Acknowledging this reality, Collablocation is an online, open-source "geodesign" platform that allows multiple stakeholders (e.g., workshop attendees) to collaboratively and iteratively design a refueling station network. Developed by Arizona State University and the University of Arizona, this tool is currently only available for the Southwest United States, but developers have plans for enlarging the platform to a nation-level.
Link: https://collablocation.shinyapps.io/home/

EV Explorer, University of California Davis (UC Davis)

The EV Explorer is an online program designed by UC Davis to help users compare fuel costs of any type of gasoline or plug-in EV. The primary inputs for this tool are a vehicle's destination and frequency of travel, with annual costs produced as an output. The tool allows commuters to compare annual fuel costs based on their own specific geographic location, and allows for customization based on user preferences, with several other input options including regional prices of gasoline and electricity, duration of charging, and the level of charging power, among others.
Link: https://phev.ucdavis.edu/project/ev-explorer/





EV Emissions Tool, Union of Concerned Scientists

This EV Emissions Tool, developed by the Union of Concerned Scientists, is designed to allow users to compare greenhouse gas emissions from gasoline-only vehicles to those of plug-in hybrid electric vehicles and battery electric vehicles. This simple tool calculates grams of carbon dioxide (CO_2)-equivalent per mile of travel, comparing across the vehicle types using four inputs: a user's zip code, and the make, model, and year of the user's car.
Link: https://www.ucsusa.org/clean-vehicles/electric-vehicles/ev-emissions-tool#.WwVvgO4vztQ

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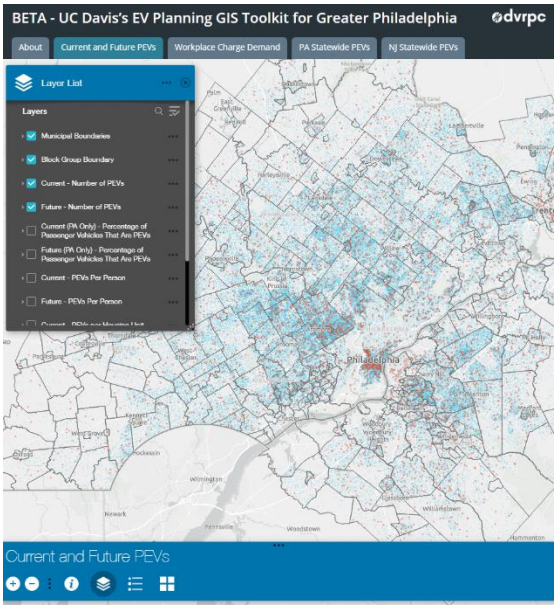
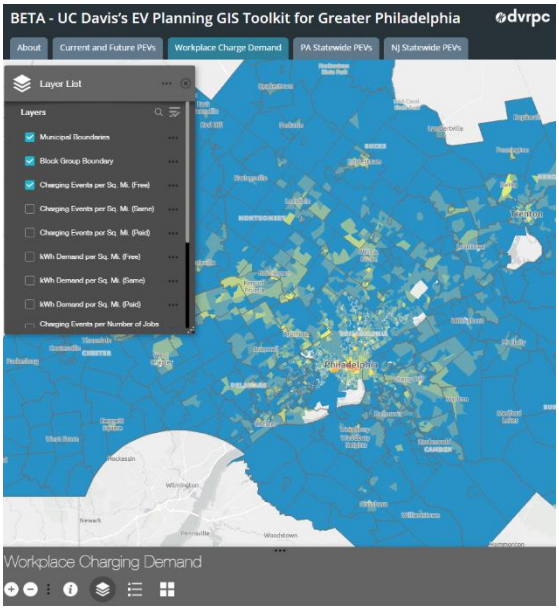
Delaware Valley Regional Planning Commission (DVRPC)/UC Davis EV Planning Toolkit



Over the past several years, DVRPC has been working with the UC Davis Plug-in and Hybrid Electric Vehicle Research Center to calibrate its EV Planning Toolkit to the Greater Philadelphia region. This toolkit is run in ArcGIS and allows users to project where EV owners will live, work, and charge. There are three distinct modules: Market Analysis, Workplace Charging, and Fast Charging Analysis.

The Market Analysis tool projects the geographic distribution of likely plug-in electric vehicle (PEV)-owner households at the Census block group level based on a variety of American Community Survey demographic factors (most notably income and housing type), current numbers of PEVs, and a user designated number of future PEVs to distribute. The Workplace Charging tool uses the projected PEV distribution, Longitudinal Employer-Household Dynamics Origin-Destination Employment Statistics home-work block group pairs and number of commuters, and the distance between each block group pair to determine the workplace charging demand at the Census block group level. This charging demand is provided in kilowatt hours and number of charging events. The user is able to create various scenarios based on charging cost (workplace charging is free, the same cost as home charging, or double the cost of home charging). Finally, the Fast Charging Analysis tool uses the Market Analysis tool's projected PEV distribution and long trip data from travel surveys to evaluate the demand for direct current fast charging along travel corridors, as well as fast charging demand for local users.



DVRPC has uploaded the tool's results to an ArcGIS online interface so that interested parties may use the results in their own analyses. DVRPC expects these results to be useful for electric distribution companies, businesses, developers, EV charging companies, and all levels of governments in their EV planning efforts. Please feel free to reach out to Rob Graff (rgraff@dvrpc.org) or Adam Beam (abeam@dvrpc.org) at DVRPC for more information.