

NREL OpenPATH: An Open-Source, Configurable Platform To Collect Travel Behavior Data



OpenPATH

For Individuals, Programs, and Communities

At the individual level, the National Renewable Energy Laboratory's Open Platform for Agile Trip Heuristics (NREL OpenPATH) enables users to track their travel, label it by mode—car, bus, bike, walking, etc.—and measure their associated energy use and carbon footprint.



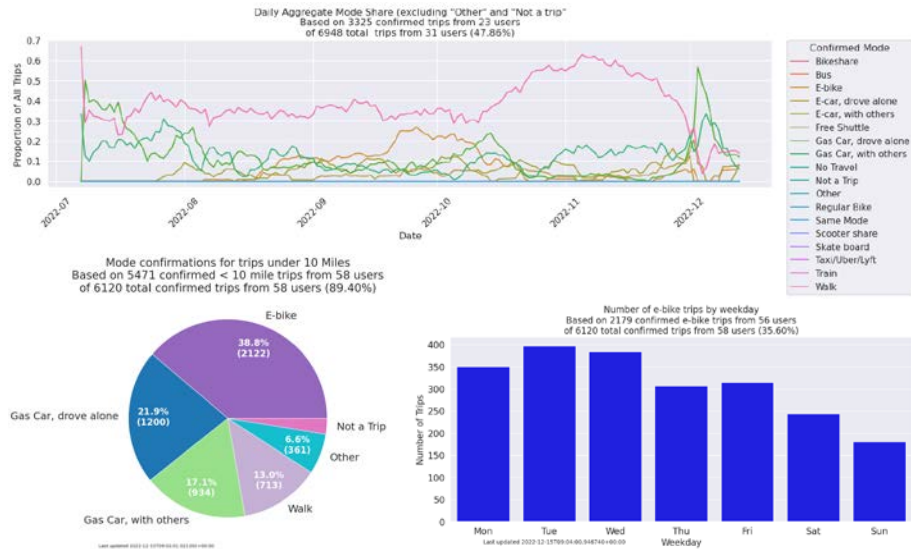
Individuals are welcome to join NREL's Open-Access Study by scanning this QR code and following the instructions.

The screenshot displays two travel logs in a mobile app. The top log shows a trip of 1 km in 17 minutes, starting at South Shoreline Boulevard, Mountain View and ending at Escuela Avenue, Mountain View. The mode is 'Walk' and the purpose is 'Access Recreation'. The time is 10:59 AM. The bottom log shows a trip of 0.825 km in 13 minutes on Saturday, Nov 2022, starting at Escuela Avenue, Mountain View and ending at South Shoreline Boulevard, Mountain View. The mode is 'Walk' and the purpose is 'Purpose'. The app interface includes a bottom navigation bar with 'Diary', 'Label', 'Dashboard', and 'Profile' options.

The screenshot displays summary charts from the OpenPATH app. The top chart, 'My Footprint', shows estimated CO₂ emissions for the week of 11/2 - 11/15, with a -16% decrease from the previous week. It includes a bar chart comparing 'Labeled' (orange) and 'Unlabeled' (grey) trips against a 200 kg CO₂ goal. The bottom chart, 'Active Minutes', shows weekly active minutes for 'Walk' (blue) and 'Regular Bike' (green) compared to a 'Weekly Goal' (dotted line). The bottom chart, 'Viajes', shows a 15-day bar chart of travel modes: 'Coche de Gas, Condujo solo' (dark red), 'Bicicleta' (green), 'Tren' (purple), 'Caminando' (blue), and 'Coche de Gas, Condujo con otros' (pink).

At a broader level, NREL OpenPATH empowers communities and programs to collect comprehensive, multimodal travel diaries, glean insight into travel mode choices and patterns, and experiment with options to support locally relevant sustainable mobility goals.

A customizable public dashboard shows aggregated community- or program-specific data on mode shares, trip frequencies, and carbon emissions.



How NREL OpenPATH Works

Free for public agencies, universities, and nonprofits, NREL OpenPATH incorporates continuous data collection and analysis via a smartphone app backed by a server and automated data processing. Program administrators are provided with secure access to siloed data throughout the collection process.

Its open nature enables transparent data collection and analysis, while allowing it to be configured for individual programs or studies.

Upon completion of a given program or study, datasets are archived in NREL's Transportation Secure Data Center to support travel behavior research.

Partner With Us

Once a signed agreement specifying desired customizations is in place, data collection can begin in about a month.

Learn More

Visit www.nrel.gov/openpath to learn more about NREL OpenPATH.