portland, oregon

using technology to advance climate action

Decarbonizing Goods Movement: A Technology-Enabled Zero-Emission Delivery Zones Pilot

The Portland Bureau of Transportation (PBOT) was awarded a nearly $2 million Strengthening Mobility and Revolutionizing Transportation (SMART) Grant by the US Department of Transportation (USDOT) in Fall 2023 to pilot the country's first regulated Zero-Emission Delivery Zone (ZEDZ) in downtown Portland and test digital infrastructure tools. This project will test an innovative set of incentives and regulations to better understand what technology and strategies municipalities can use to support and decelerate greenhouse gas emissions in the freight sector.

The ZEDZ will test a variety of regulatory- and incentive-based interventions to promote sustainable freight and create safer streets in Portland, Oregon. This pilot project directly responds to the City's 2040 Freight Plan and has three key objectives to help reach this goal:

1. Pilot a regulated ZEDZ;
2. Use curb data specification and sensor technology to gain a better understanding of curb usage; and
3. Increase micro-delivery hub operations and the use of electric-cargo tricycles as a "last-mile" delivery solution.

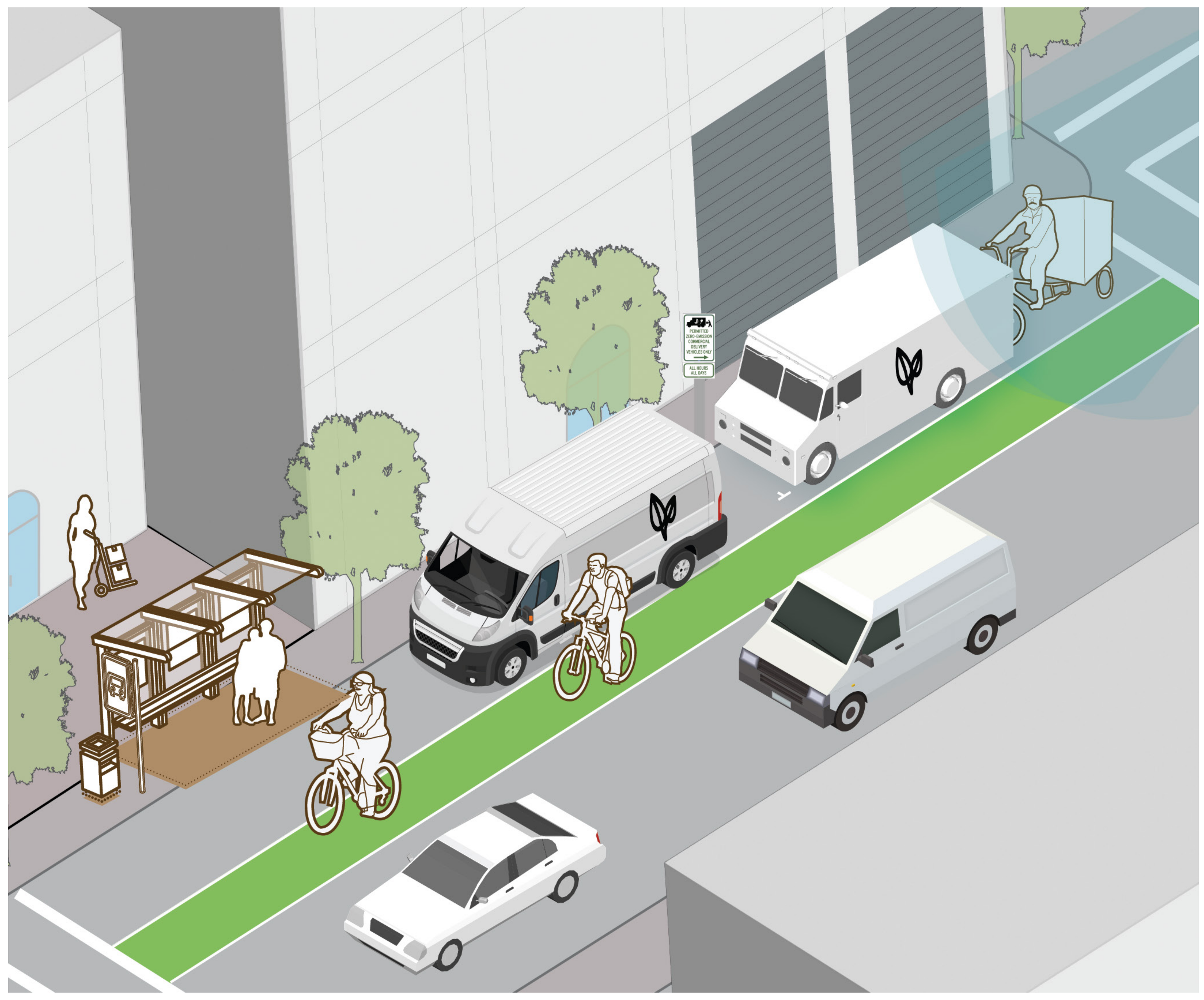
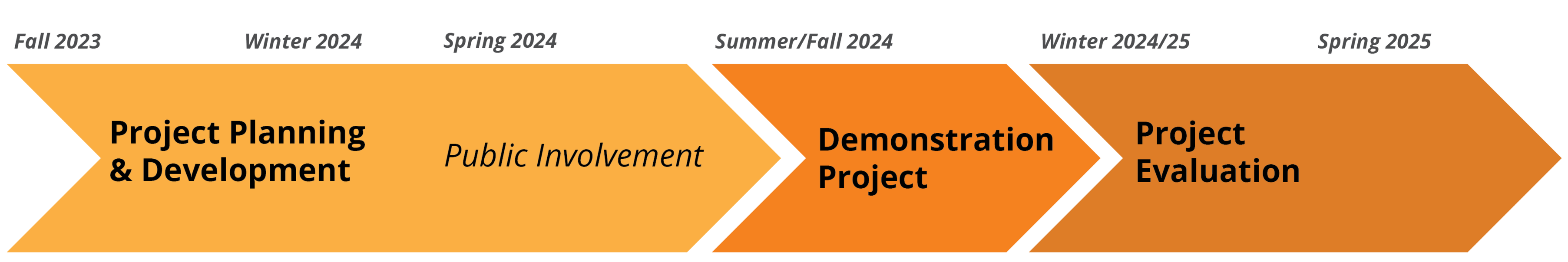


Figure 1. Mock-up graphic of the possible outcomes for deliveries in a Zero-Emission Delivery Zone on a fictional Portland street.



Truck loading zones within the ZEDZ will be reprioritized for zero-emission commercial vehicles only for six months as the City continues to collect data, test incentives, and work with stakeholders to understand challenges and opportunities of this approach. At the end of the pilot project, the City will prepare a final report with key findings and recommended next steps.

The role of technology is multi-faceted for this pilot. PBOT is partnering with INRIX to achieve technology goals including, but not limited to:

1. Bringing last-mile delivery data into MDS + CDS via B-Line Urban Freight.
2. Sharing citywide curb data and visualization via CDS API and visualizations software with private operator stakeholders.
3. Capturing all curb interactions and sharing data from camera-based parking sensors.
4. Incentivizing last-mile delivery companies to transition to zero-emission vehicles to be tracked and delivered digitally.

Project Boundary Map

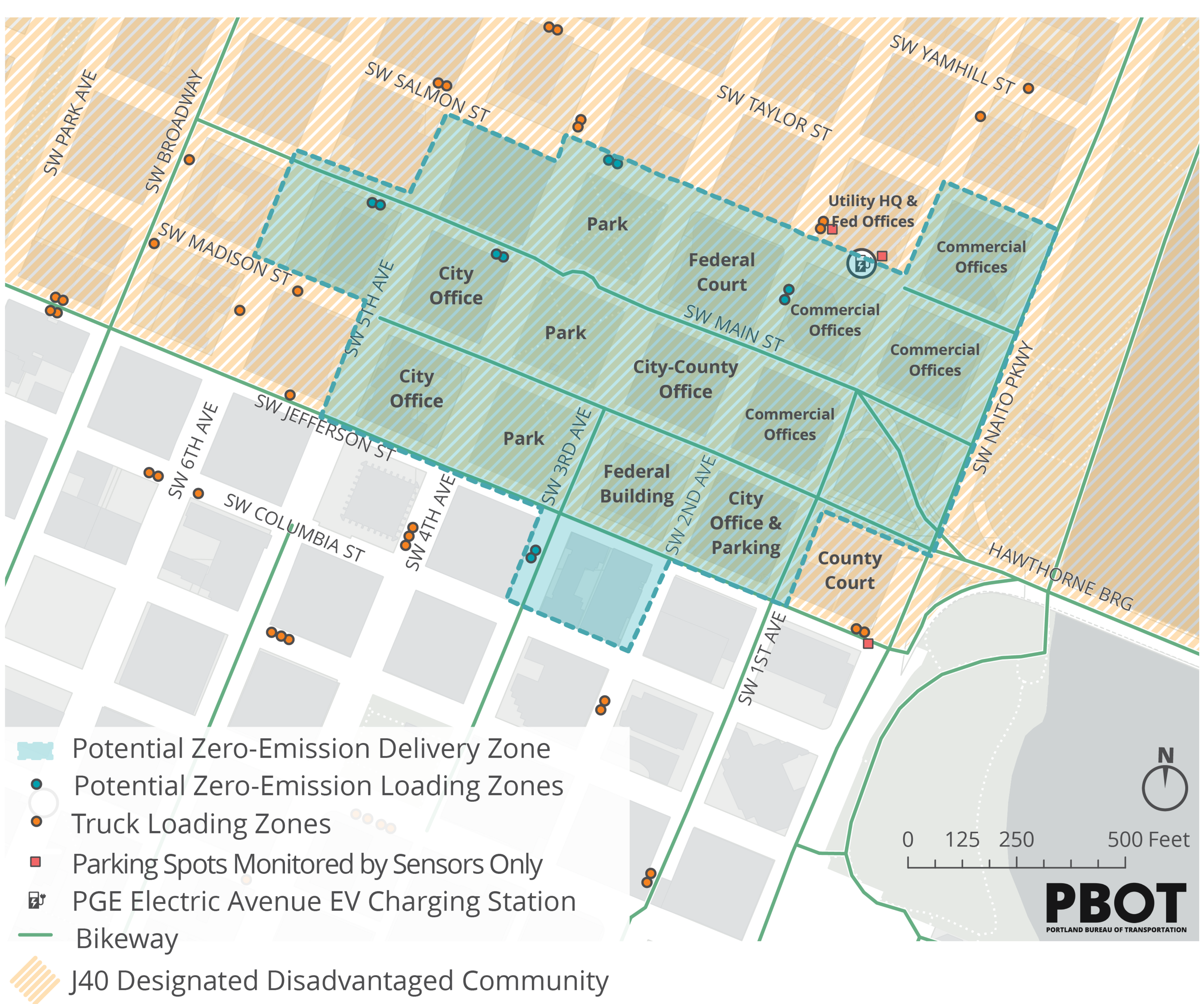


Figure 2. Draft map of project area showing proposed zero-emission load zones updated in early June 2024. Loading zone site selection will be refined with stakeholder input in early July 2024.

Before the Zero-Emission Delivery Zone launch, the project team will open a free permit for commercial companies with zero-emission delivery vehicles to apply. The permit will ask for license plate data in hopes to connect the license plate to the camera sensor. The sensor will use this information to compile compliance data, as well as vehicle type, mode, and occupancy.

PBOT
PORTLAND BUREAU OF TRANSPORTATION
INRIX
U.S. Department of Transportation