

Zero-Emission Areas: A Dramatic Shift to Sustainable Modes



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Zero-emission areas are an emerging urban planning tool that help reduce carbon emissions and improve mobility in public spaces by limiting all non-zero-emission transportation from a defined geographic area. These areas are ambitious investments by cities to promote sustainable modes of transportation like public transit, walking, and cycling. Cities need these models more than ever as climate change, air pollution, and unsafe streets are affecting millions of people’s health and daily lives. ITDP has been working with four cities—Los Angeles, Rio de Janeiro, Mexico City, and Jakarta—to support their unique efforts to plan clean mobility areas for their residents.

Zero-emission areas originated with low-emission zones. Hundreds of cities in Europe and Asia use them to reduce air pollution by penalizing or restricting polluting vehicles from entering city centers. Low-emission zones create impressive results. Seoul’s Green Transport Zone decreased polluting vehicles by almost 70%. In Stockholm,

four years after the start of its low-emission zone, particulate matter from heavy-duty vehicles decreased by 40% across the city. For many cities, low-emission zones are a starting point to address a lack of national or regional vehicle emission standards in heavily populated areas.

Many cities are moving forward with ambitious efforts to create lasting reductions in air pollution and greenhouse gas emissions. Some cities with low-emission zones are seeking more impactful reductions of air pollution and scaling up to stricter zero-emission standards. For example, Amsterdam currently has five low-emission zones that ban polluting vehicles. Their commitment to a zero-emission area will expand these zones to the whole city and gradually restrict all cars that use diesel or gas. Other cities with low-emission zones saw the early benefit of reduced congestion. However, over time, traffic returned to previous levels as the still banned polluting vehicles were replaced with cleaner vehicles. These cities are now looking to zero-emission areas to further reduce vehicles in specific areas.

The C40’s Green and Healthy Streets declaration has inspired over 30 cities

This rendering of South Alvarado Street demonstrates the potential of a pedestrian street in the neighborhood of Westlake-MacArthur Park, where public transit usage is six times higher and walking rates are three times higher than the Los Angeles County average.
Rendering: ITDP



Top: This rendering of Hollywood Boulevard in Los Angeles shows a portion of a proposed people-first street with key connections to public transit, space for micromobility in designated green lanes, and larger sidewalks for street vending. This area typically has heavy pedestrian traffic from tourism and residents accessing the entertainment and shopping amenities.

Rendering: ITDP

Middle: This shared trolley-bike lane along Eje Central in Mexico City's central district is part of the city's efforts to implement a low-emission zone.

Photo: ITDP Mexico

Bottom: In Rio de Janeiro, Avenida Rio Branco was pedestrianized to prioritize sustainable mobility, making the street calmer and more relaxing without the movement of traffic vehicles.

Photo: Stefano Aguiar

from around the world to “ensure a major area of our city is zero-emission by 2030.” This declaration is a commitment to reduce air pollution, but also supports the Paris Agreement and acknowledges the role fossil fuel vehicles play in greenhouse gas emissions globally. In the fall of 2020, California Governor Gavin Newsom ordered all new cars and passenger trucks in California to be zero-emission by 2035.

In Los Angeles, the site of ITDP’s newest office, ITDP is working with the mayor’s office to develop a zero-emission plan that adapts the zero-emission area model to the local context. California has emerged as a global leader in setting vehicle emission standards. If a zero-emission area in Los Angeles only transitioned vehicles to cleaner fuels, it would have little impact beyond the already high state standards. If a zero-emission area just focused on accelerating an electric vehicle transition, it would not solve one of Los Angeles’ largest challenges: traffic. A successful zero-emission area in Los Angeles would need to shift people out of cars and toward walking, cycling, and public transit. An iconic and transformative people-first street in Los Angeles would restrict vehicle access but also create a safer space for pedestrians, strollers, skateboards, longboards, and scooters to move around, while also providing opportunities to stop and talk with a neighbor. The zero-emission area is the start of this idealized, but possible, future.

ITDP is also working with Rio de Janeiro, Mexico City, and Jakarta to advance clean mobility area commitments. In Rio de Janeiro, city officials are in the first phase of designating an area in the central business district. Currently, Rio de Janeiro is working to ensure strong alternatives to driving—like a connected cycle network and reliable bus rapid transit service—are in place. In Mexico City, calling their area a low-emission zone, the city is bringing together many efforts to reduce demand for private vehicles, including bus electrification, parking management, and street improvements in the city center. Much of this work is similar to that of zero-emission areas. In Jakarta, city officials are piloting a zero-emission zone in Kota Tua, the city’s old town, by limiting car access to the area. Buses are allowed, but some traffic lanes have been repurposed to create a safe and popular environment for walking, cycling, and bike taxis.

As ITDP moves forward with these efforts, we’re also learning and sharing across cities. Challenges around equity, implementation, and political turnover echo across each region. For these projects to succeed, they must find champions at the ground level by improving the lives of residents in the city. ITDP believes that clean and safe streets and walking environments, high-quality public transit, and community car-free spaces will not only make cities more enjoyable places to live but make it easy to sustain local excitement and support.