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RESEARCH BRIEF SERIES

HEALTH AND EXTREME WEATHER

This research brief is part of an award program designed to address gaps in knowledge related to extreme weather disasters—such as wildfires, floods, extreme heat, and severe storms—that pose significant health risks, particularly for populations already experiencing health challenges.

HEALTH AND EVACUATION CHALLENGES FOR TRANSIT RIDERS DURING THE 2025 LOS ANGELES WILDFIRES

OVERVIEW

Wildfires threaten health when people are exposed to associated smoke and other toxic debris. Those who rely on public transit are potentially more exposed to these threats, yet little is known about how transit riders navigate this increased risk during wildfire evacuation and displacement.

Using the 2025 Los Angeles Wildfires as a case study, we provide one of the first systematic examinations of how transit riders in a major U.S. metropolitan region experienced evacuation, air pollution, and mobility disruption during fast-moving wildfires. We conducted a mixed-methods study, drawing on a survey and semi-structured interviews of riders sampled from Transit, a widely used real-time bus tracking app for transit riders.

Preliminary findings show that during the wildfire, many relied on informal rides, public transit, or walking to evacuate, leading to longer evacuation times and heightened exposure to smoke.

Equitable disaster planning requires acknowledging that tens of thousands of urban residents will not be evacuating by car, and their health and safety depend on proactive communication, community coordination, and resource distribution.

Our findings underscore the need for transportation planners and emergency managers to design evacuation and communication strategies that explicitly support transit-reliant residents and households without cars.

People rode bikes through a neighborhood in Huntington Palisades as wildfires approached on January 8, 2025.
Photo Credt: Draco Guan / Shutterstock.com

KEY FINDINGS

- Black, Latino, and low-income respondents were more likely to depend on non-automobile modes, which left them vulnerable to longer evacuation times and heightened exposure to smoke and other hazards. Conversely, White and higher-income respondents tended instead to evacuate by private vehicle.

- Over half of the evacuees interviewed for this study reported it taking over an hour to get to safety. Interviews further highlighted the precariousness of evacuation arrangements, with participants describing the unreliability of informal rides, the breakdown of official assistance, and in some cases, the necessity of walking out of danger zones when all other options failed.

- Nearly half of the Black/African American and Hispanic/Latino respondents had unhealthy levels of air pollution due to smoke (PM2.5) at their residences compared to between 33% and 42% of respondents of other races/ethnicities. Low-income respondents also had notably higher reported exposure than their counterparts.

- Nearly half of survey respondents described physical symptoms related to poor air quality or smoke inhalation. This exposure burden was reflected in interview accounts of physical symptoms like respiratory irritation, fatigue, and difficulty breathing, as well as mental health impacts like anxiety and depression.

- Riders adopted protective strategies like wearing masks and avoiding transit, but those without cars faced limited options.

Smoke from the Palisades Fire fills the sky near Santa Monica Beach. Photo Credit: Charles Ellinwood / Shutterstock.com

RESEARCH IMPLICATIONS

- Our findings demonstrate the urgent need for wildfire evacuation planning to move beyond car-centric assumptions and explicitly address the challenges faced by transit-dependent residents.

- Agencies should educate transit riders about the importance of having a personal evacuation plan, including identifying trusted neighbors, friends, or family members who could provide rides in an emergency. Outreach materials should normalize the idea that having a "ride plan" is essential as an earthquake kit.

- Riders often lacked reliable guidance during evacuations, prolonging their exposure to smoke. Proactively identifying households without reliable car access—through opt-in systems, partnerships with community organizations, social service providers, and transit agencies—would allow emergency managers to issue tailored alerts about transit disruptions and early evacuations for these residents.

- Protective health strategies must be integrated into emergency planning. Mask distribution at transit hubs, advance messaging about when and how to use protective equipment, and coordination with community-based organizations can help reduce respiratory harm when evacuation options are limited.

AUDIENCE

This research is relevant for local policymakers, transportation planners, and emergency managers looking to design more inclusive evacuation and communication strategies for wildfire-prone metropolitan regions.

Full Report: Palm, M., Grajdura, S., Dennis-Bauer, S., Kim, S., Brozen, M., Miller, R., Goddard, T., Lee, A., & Connaughton, S. (2026). *Health and Evacuation Challenges for Transit Riders During the 2025 Los Angeles Wildfires*. (Natural Hazards Center Health and Extreme Weather Report Series, Report 8). Natural Hazards Center, University of Colorado Boulder. **https://hazards.colorado.edu/health-and-extreme-weather-research/health-and-evacuation-challenges-for-transit-riders-during-the-2025-los-angeles-wildfires**

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