

# Research Recap

## Travel Impacts of a Complete Street Project in a Mixed Urban Corridor

**Purpose:** To assess travel impact from an urban corridor street redesign, which involved a multi-modal transportation system and included new technologies and multiple measures to improve bike, pedestrian and vehicle safety on Forbes Avenue in Pittsburgh, PA.

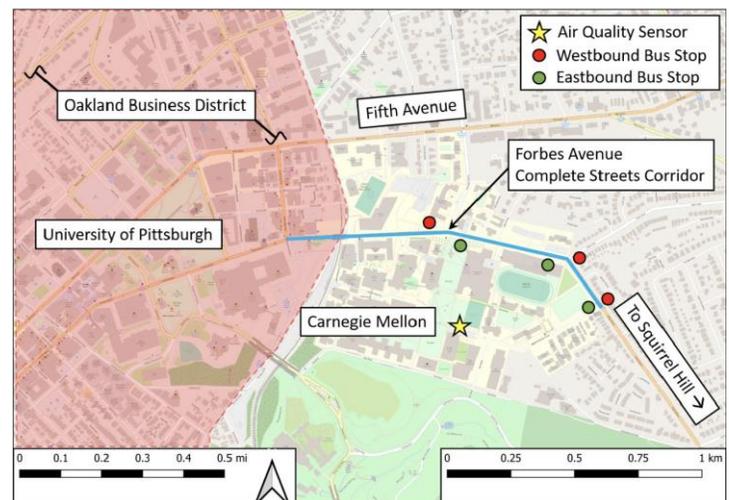
**Approach:** The project team used audio, video, and other devices along the Forbes Avenue corridor, and collaborated with the CMU Center for Atmospheric Particle Studies to leverage emissions and air quality data from sensors to measure the impact of the retrofit project. All of these efforts allowed for evaluation of reducing vehicle lanes from four (two lanes in each direction) to three (one lane in each direction with a center turn lane) and adding dedicated bike lanes in each direction. The project also included new traffic signals, one new pedestrian crossing, reconfiguration and relocation of several intersections, improved bus turnouts, new pavement, and street furniture.

### Key Findings:

- Reduced traffic volume in both directions during morning and evening peak hours.
- Decreased traffic speeds by 2.5 - 5.4 mph.
- Increased bicycle volumes (160% and 280% for morning and evening peaks, respectively) after completion of the retrofit, indicating that bicycle commuters feel safer within the corridor.
- Improved air quality with pollutant levels well below the national standard set by the EPA (Environmental Protection Agency).
- Decreased vehicle crash frequency with no incidents reported after retrofit (July 2019).

### Conclusion:

The research team concluded that by performing this complete street redesign project through a busy urban corridor, there was a significant reduction in traffic count and speed of vehicles, with an increase in bicycle and public transit commuters. This project served as a prototype of a 'smart mobility' implementation involving new technology, multiple modes, and measures to improve bike, pedestrian, and vehicle safety.



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### Project Record:

- <https://ppms.cit.cmu.edu/projects/detail/181>

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