

## **Accessible Bus Stops in the Presence of Bike Lanes**

### **Abstract [250 words]**

Floating bus stops are adjacent to protected bike lanes that go behind the boarding/alighting platform. This configuration separates the sidewalk from the platform by a bike lane, which results in bus passengers crossing the bike lane to get to or from the bus. This poses a challenge to all bus riders, and particularly to those who are visually impaired. Wheelchair users can also face difficulties at platforms with insufficient width. The integration of bus and bike infrastructure at floating bus stops lacks comprehensive research and guidance, raising concerns about accessibility and safety for all riders. This study investigates three types of floating bus stops in the Greater Boston area: full-width stops (8-ft platform width), partial-width stops (4 to 7.5-ft platform widths), and no-platform stops with bike lanes adjacent to the curb. This study first presents the results from focus group discussions, professional community outreach, and interviews with city representatives that have implemented floating bus stops. LiDAR and video cameras have been employed at five bus stops to capture trajectory data for both bicyclists and bus riders, along with detailed bus stop geometric data. The results of this study include an analysis of bus rider behavior at these bus stops while waiting, boarding, and alighting the bus. It also includes an in-depth investigation of how bus stop and bike lane design elements affect conflicts between riders and bicyclists. Finally, design recommendations are proposed to inform future implementations of bus stops adjacent to bike lanes and guide improvements in existing ones.