Driving the Future

Reshaping Boston's Urban Mobility with Autonomous Vehicles

Arya Appukkuttan	appukkuttan.a@northeastern.edu	002450883
Shubhi Sinha	sinha.shu@northeastern.edu	002201029
Sree Ramya Pasala	pasala.sr@northeastern.edu	002301508

06/02/2025

1. **Where can AVs most reduce Boston's urban congestion?**

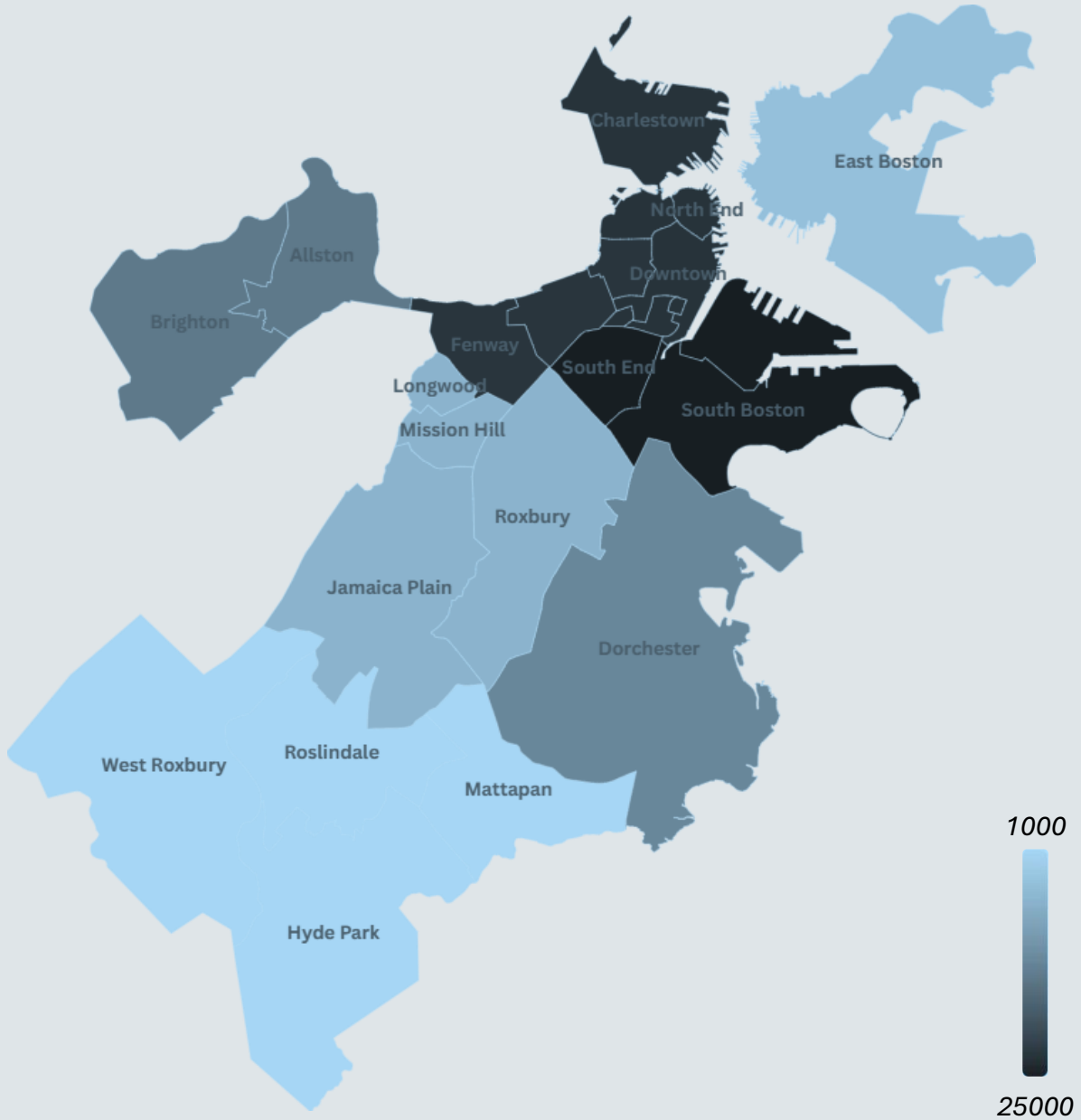
2. **Can AVs promote sustainable mobility?**

3. **How can cities and AV companies design operations to deliver the mobility?**

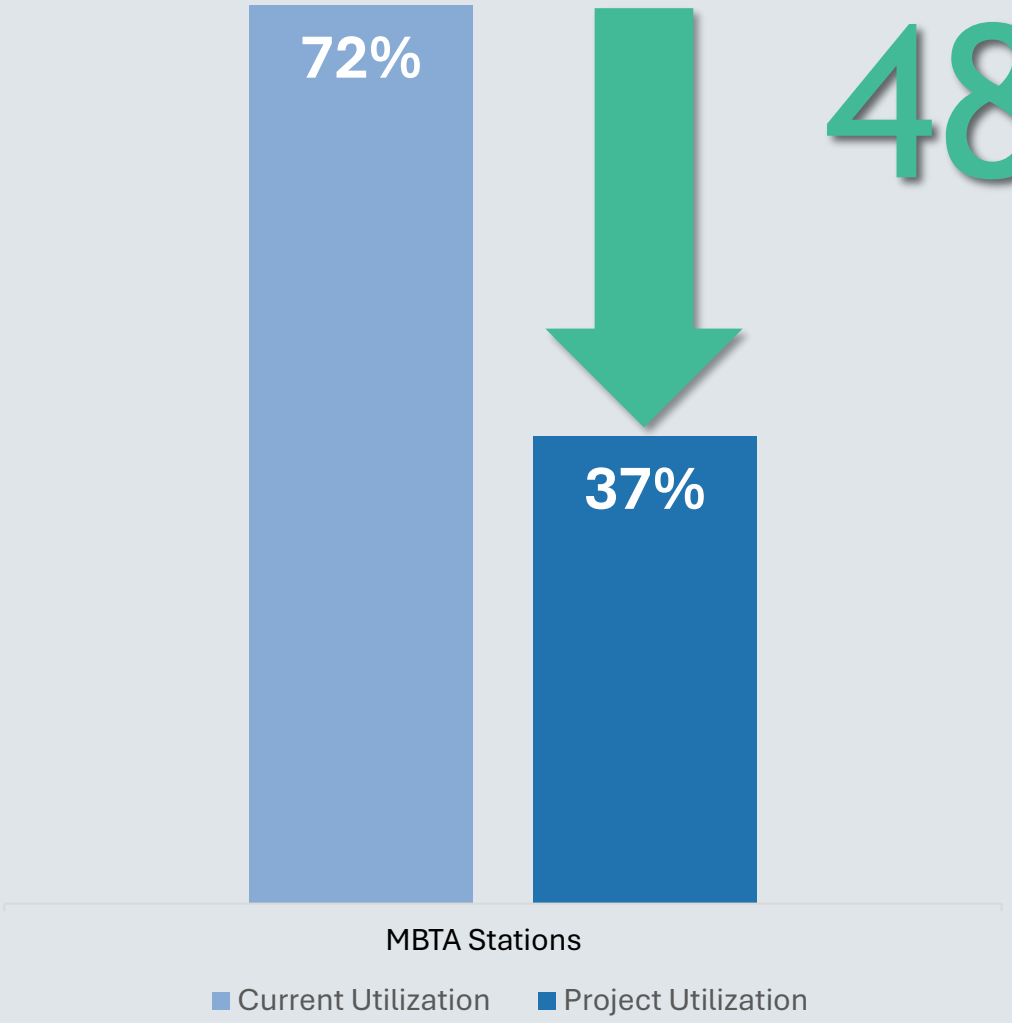
1

Understanding Boston's Congestion Landscape

A few northern neighborhoods consistently experience the city's highest traffic volumes - pinpointing where smarter mobility solutions can have the greatest impact



1



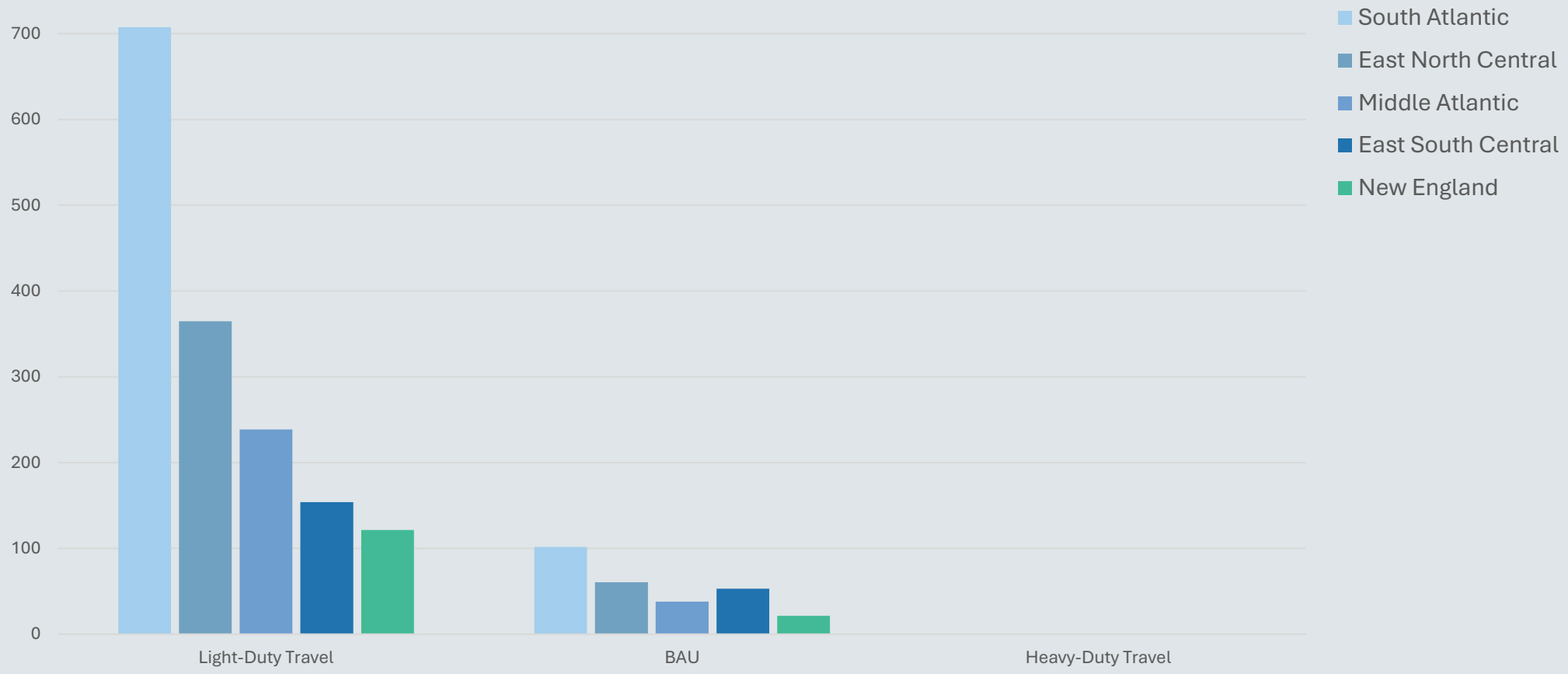
Parking Revolution with AVs

AVs could cut average parking utilization at all MBTA stations nearly in half - freeing up city land for housing, parks, or vibrant neighborhoods

2

East Coast Patterns in EV Miles Traveled

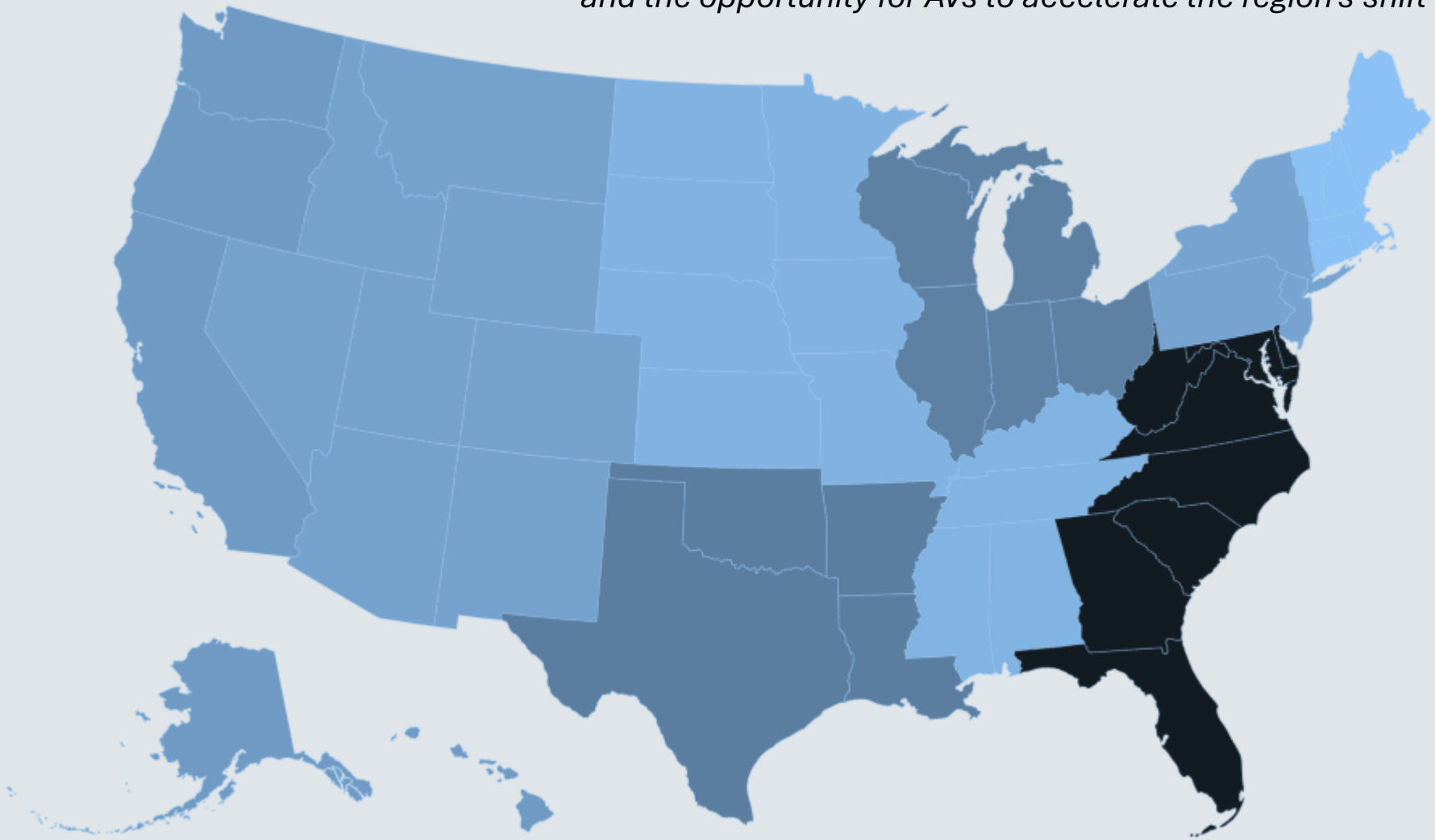
Light-duty EVs account for majority of electric miles across all U.S. regions, supporting the case that AVs can deliver the biggest sustainability benefits when focused on this vehicle class



2

EV Miles Driven by Region

EV adoption remains modest in New England, highlighting both the progress to be made and the opportunity for AVs to accelerate the region's shift toward sustainable mobility



150 miles

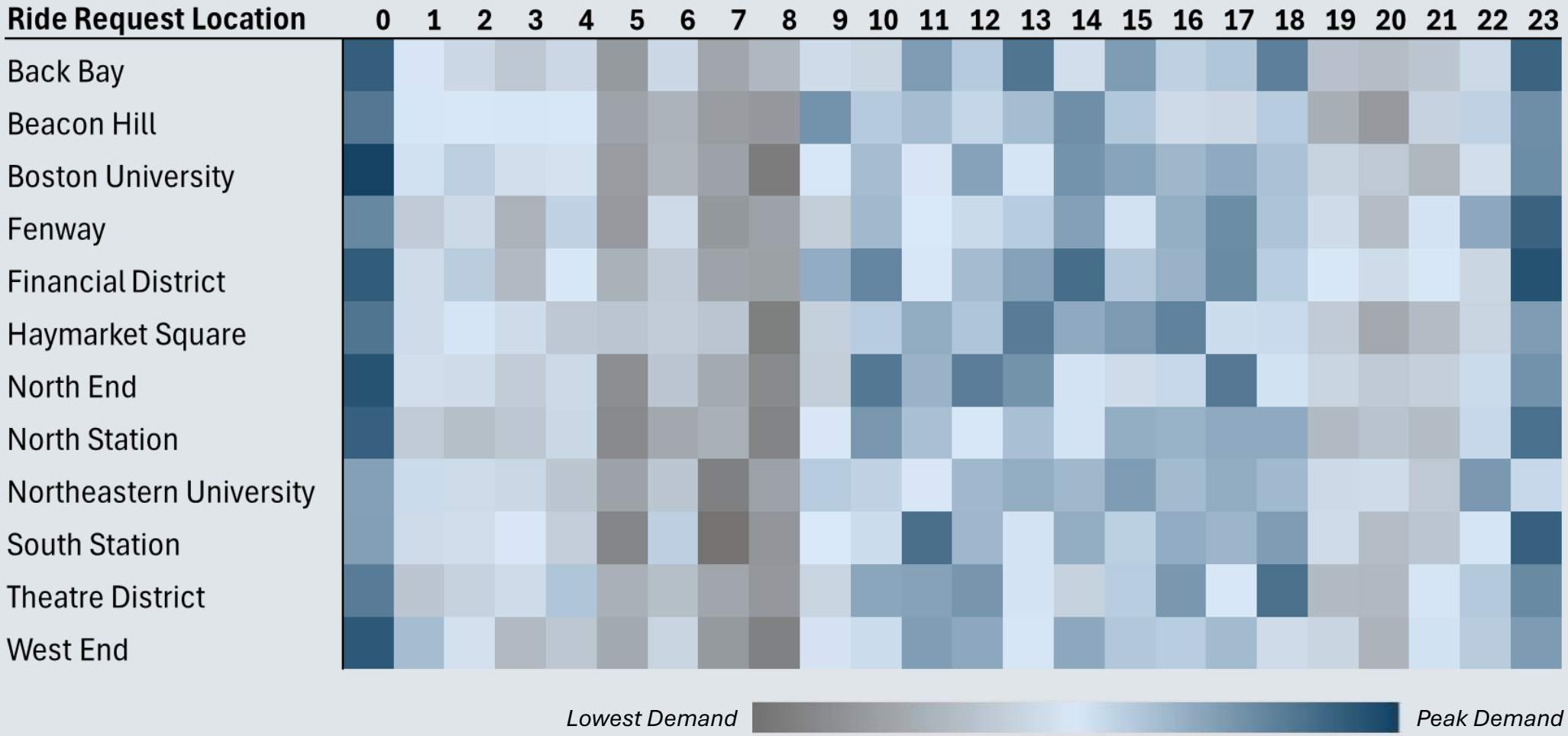
- New England
- East South Central
- West North Central
- Middle Atlantic
- Mountain
- Pacific
- East North Central
- West South Central
- South Atlantic

800 miles

3

Hourly Shared Ride Demand by Neighborhood

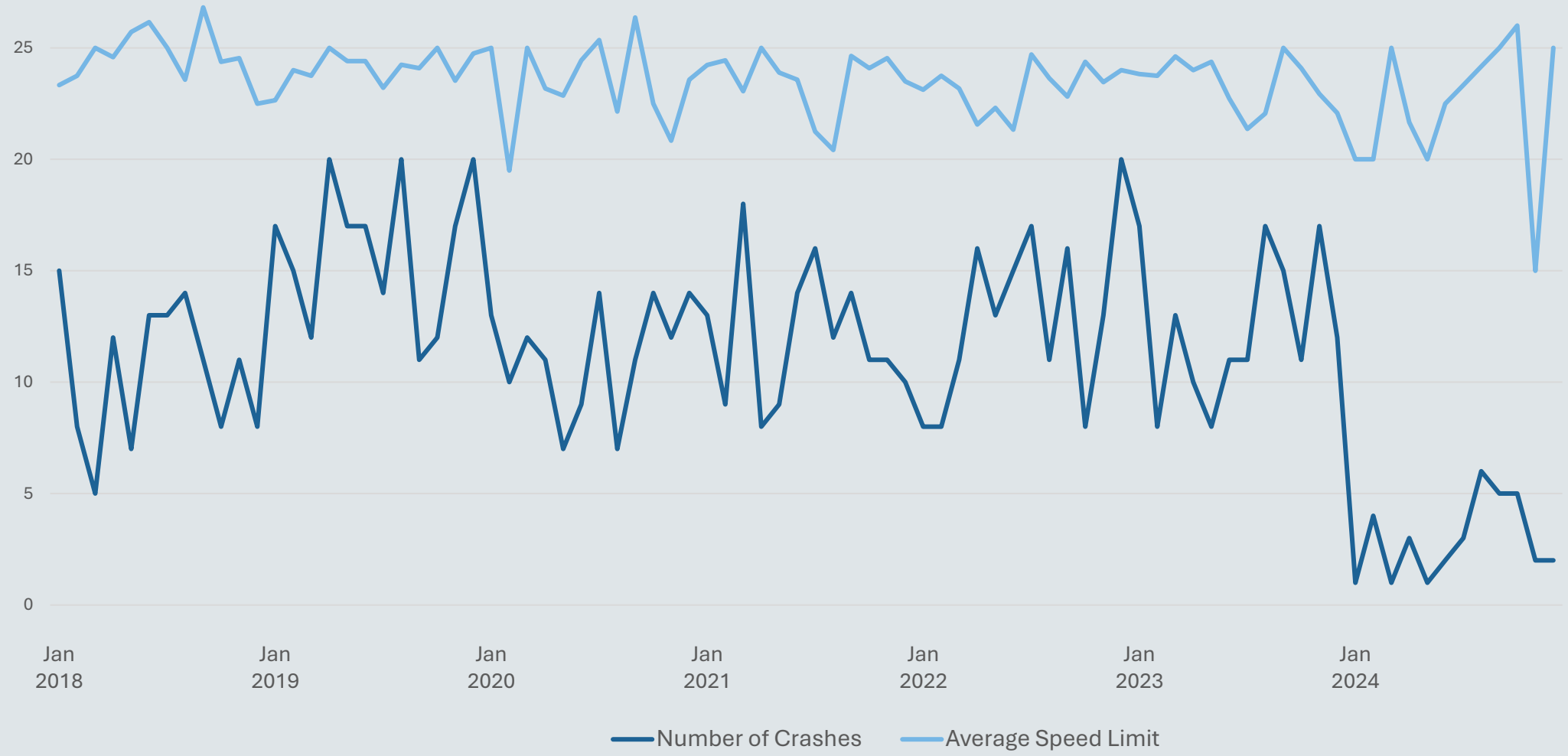
Demand for shared rides peaks in Back Bay, Fenway, and University areas during late afternoons and evenings, revealing optimal windows for AV deployment



3

Human-Driven Road Crash Trends in Somerville, MA

After the Vision Zero Program's citywide rollout in early 2024, crash counts dropped to their lowest levels in years



Team 6

References

1. World Economic Forum Study, 2018
2. Vision Zero Boston Action Plan, 2023
3. Understanding Parking Capacity and Use at MBTA Stations
4. Energy and Emissions Implications of Automated Vehicles in the U.S. Energy System