

# Pilot Test for Personal Signal Assistant (PSA) in New Jersey

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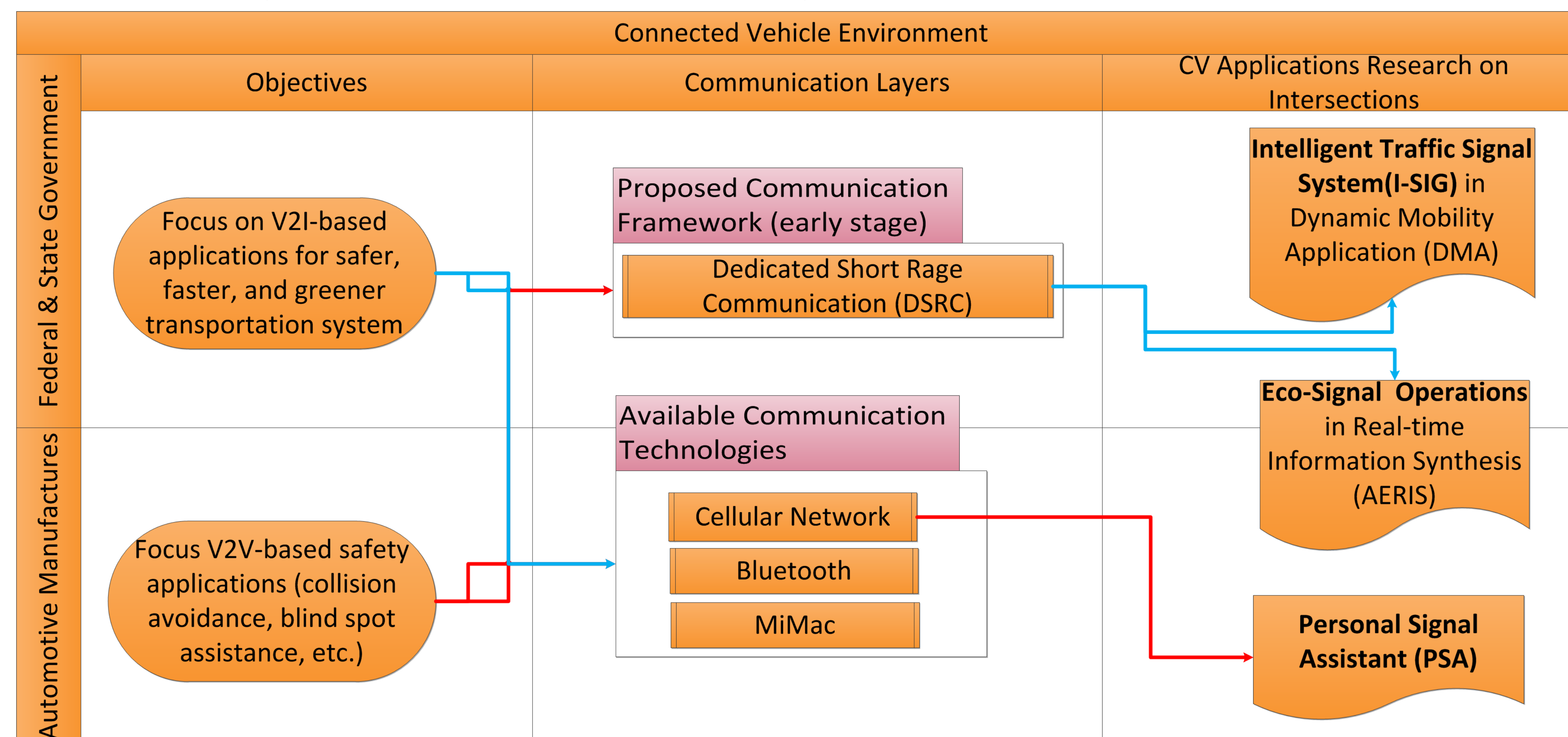
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## INTRODUCTION

### Connected Vehicle Technology

Recent advancements in mobile communications technologies enable vehicles to connect other adjacent vehicles and infrastructure in real-time, forming Connected Vehicle (CV) environment. By allowing two-way wireless communications links for vehicle-to-vehicle (V2V) and vehicle-to-infrastructure (V2I), CV is expected to dramatically improve the performance of safety, mobility, and sustainability of the nation's transportation system.



### Personal Signal Assistant (PSA)

Personal Signal Assistant (PSA) is one of the DSRC-free CV applications, implementation of which is viable in the near future without major infrastructure investment. PSA employs an opt-in communications device to provide individual drivers with optimal approach speed information to minimize delay time when crossing intersection.

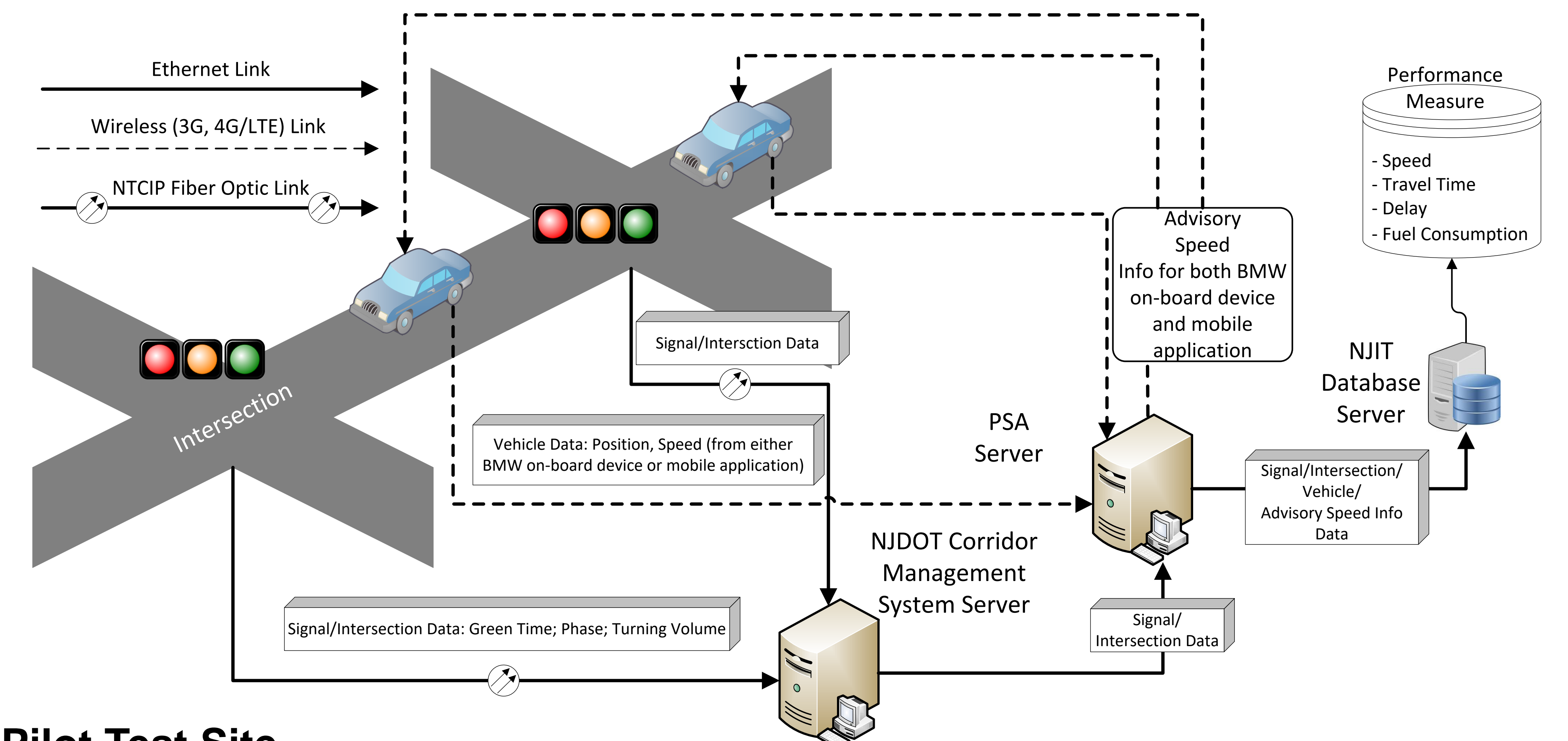
## OBJECTIVES

- To conduct field pilot test for PSA
- To enhance the optimal speed algorithm by incorporating mobility, safety, and environmental measure
- To develop a PSA-compatible mobile application for non BMW-equipped vehicles

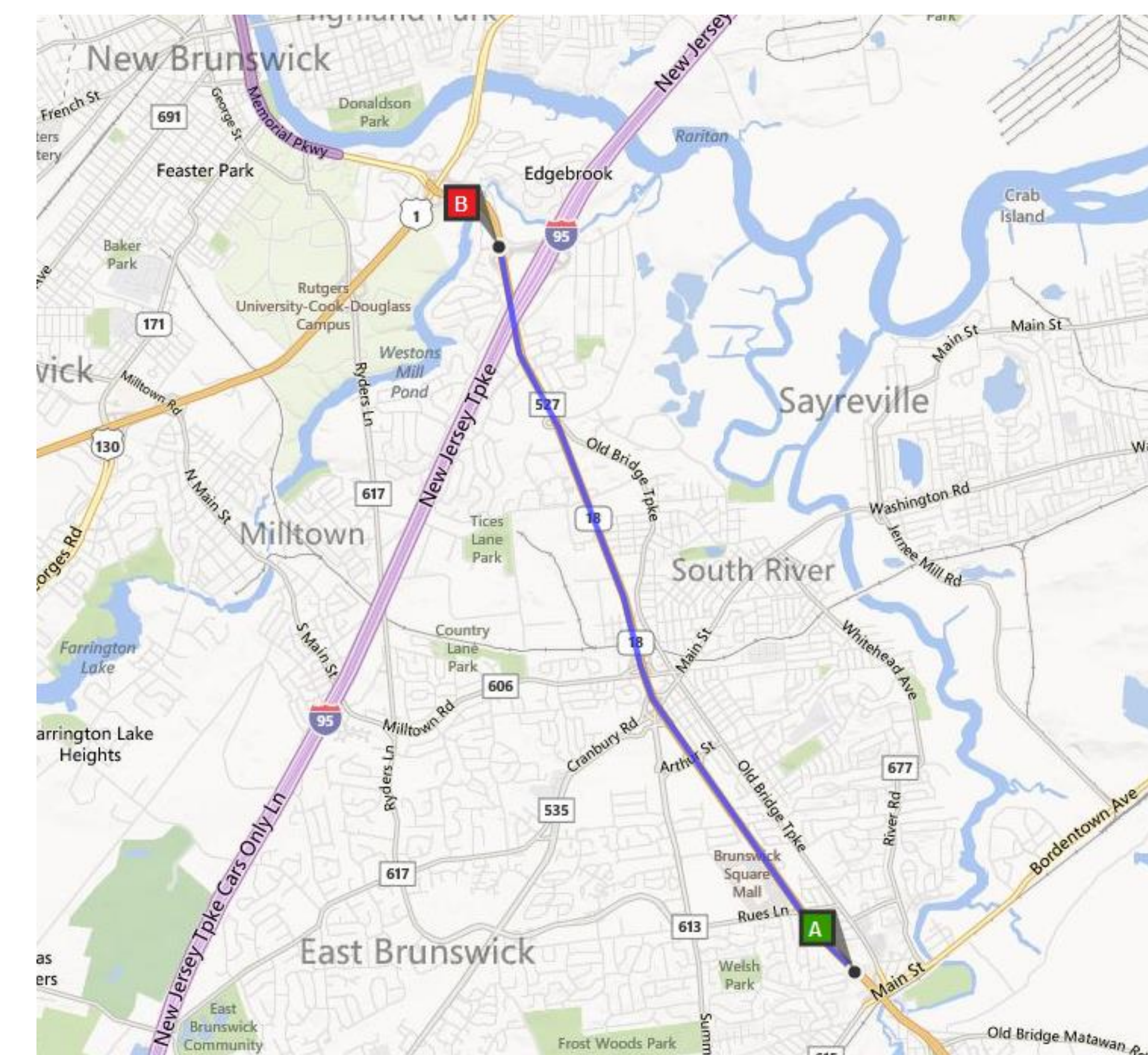


## DATA COLLECTION & PILOT TEST

### High-level PSA System Architecture



### Pilot Test Site



### Preliminary Test Bed

- NJ state highway 18 (mile marker 35.1 to 40.0)
- 4.9-mile stretch of roadway
- 11 semi-actuated & coordinated signalized intersections

### Evaluation Scenarios

- Traffic congestion level
- Day of week and time of day effect
- Type of turning movement
- PSA advisory speed
- Driver's compliance to PSA advisory

### Project Team

- NJIT ITS Resource Center (ITSRC)
- New Jersey Department of Transportation (NJDOT)
- BMW of North America, LLC (BMWNA)
- Traffic Technology Solutions (TTS)

