SMART GRANTS PROGRAM

Downtown Brockton Transportation Technology Project

City of Brockton

PROJECT PARTNERS

Brockton DPW
Brockton Planning and Economic Development
Brockton Fire Department
Brockton Police Department
Brockton Area Transit
Old Colony Planning Council
CDM Smith
Ocean State Signal
Quantela

PROJECT CHALLENGE

Downtown Brockton has historically experienced poorly coordinated traffic signal operation and limited accommodations for emergency vehicles, buses, bicyclists, and pedestrians. To alleviate traffic congestion and improve safety the project includes a new traffic management system that will incorporate 360-degree cameras, transit signal priority, emergency vehicle preemption and remote programming. The project also implements sensors to monitor city infrastructure including street lighting, trash cans, road surface temperature and air quality.

IMPACT

The project will be deployed in Downtown Brockton along Warren Avenue, which will be converted from a one-way to two-way street in concurrence with the construction of a Public Safety Building. The traffic management system will allow for emergency vehicles to quickly depart from this new building. The technologies involved with this project will positively impact Brockton residents by improving overall traffic operations, emergency vehicle response time, public transit operations, and pedestrian and bicyclist safety.

CURRENT STATE OF THE ISSUE

The existing traffic signal systems along the corridor do not process emergency vehicle preemption properly nor is there any transit signal priority at all. The existing signals are a mixture of controller technologies and manufacturers, and they do not operate in a coordinated signal fashion resulting in poor level of service. At four of the intersections, pedestrian pushbuttons are not ADA compliant.

POLICY QUESTIONS

1. How can data be accessed and shared securely across various City departments to ensure maximum practical use of the collected data and analytics? 2. How and where will data from the web-based analytic platforms identified as part of the project, such as the traffic management software, be stored for long-term use by the City and/or regional planning agency?

STAGE 1 OUTCOMES

The sensor-based infrastructure analytics provide enough data to make changes to existing city processes (i.e., trash collection routes, etc.) that result in improvements in efficiency and cost savings. The traffic management system provides effective emergency vehicle preemption to improve traffic operations and decrease emergency response times from the Public Safety Building as well as effective transit signal priority.

STAGE 2 VISION

Under Stage 2, the same technology deployed along Warren Avenue would be expanded to all of Downtown Brockton. This expansion would include upgrading 10 signalized intersections and applying the sensor-based infrastructure to approximately 16,000 ft of roadway. This new technology would aim to improve safety and infrastructure in a historically disadvantaged area.