Deploying Intelligent Transit Signal Priority for SamTrans in East Palo Alto

SUSTAINABLE SILICON VALLEY · C/CAG City/County Association of Governments of San Mateo County · CITY OF EAST PALO ALTO INCORPORATED 1983 · samTrans · LYT.

NEED

The efficiency of local transit has a direct impact on residents of communities such as East Palo Alto. Designated as Equity Priority Community, the city's population consists of many bus-dependent residents. In fact, the number of Zero-Vehicle Households in the city is at 9%, compared to 6% countywide. Today, those bus-riding residents must stop at traffic signals 70% of the time, costing them valuable time on the way to work, school, or other obligations.
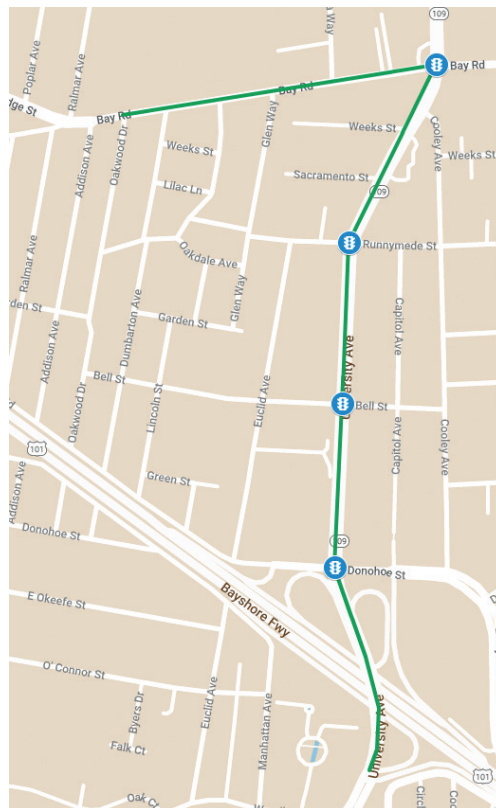
The City of East Palo Alto is one place where improvements in transit reliability and performance can improve the quality of life for residents. For example, slow bus travel speeds along University Avenue resulted in a consistently poor rider experience. The problem has forced residents to opt for other modes of transportation, which contribute to neighborhood traffic congestion. A transit-first solution needed to be found to break through the congestion and achieve equitable mobility solutions for area residents.

SCOPE

With over $178,000 in funding from City/County Association of Governments of San Mateo County (C/CAG), Sustainable Silicon Valley (SSV) formed a coalition of public and private stakeholders including San Mateo County Transit District (SamTrans), City of East Palo Alto and LYT to deliver intelligent transit signal priority (iTSP) along University Ave.

LYT's cloud-based platform allows SamTrans buses to leverage machine learning principles and artificial intelligence to provide green lights more precisely. This improved efficiency means buses can keep on schedule while LYT.transit minimizes the disruption to other vehicles and side streets.

iTSP Pilot Corridor

The corridor where iTSP was installed includes a subsection of SamTrans Route 281 in the following intersections:

- University Ave. & Bay Rd.
- University Ave. & Runnymede St.
- University Ave. & Bell St.
- University Ave. & Donohoe St.

What is iTSP?

Ordinary Transit Signal Priority (TSP) solutions helps traffic signals gives green lights to buses passing through by using hardware transceivers. Intelligent Transit Signal Priority (iTSP) offers the same basic benefit, while also taking into account current traffic conditions and other road-level data, harnessing the power of the cloud for faster and more detailed analysis. The end result are perfectly timed, intuitive green lights that minimize disruption to other road users while keeping buses moving through congested corridors.

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BENEFITS

The iTSP pilot deployment on University Ave. yielded a significantly positive impact on several key performance indicators:

Without iTSP, buses stop at traffic signals 70% of the time. With iTSP deployed at key traffic intersections, the pilot demonstrated that buses spent less time idling and got riders to their destinations faster and more efficiently.

Reduced northbound intersection delays by 45% and southbound intersection delays by 19%. **These reductions translate to 18% and 7% reductions in travel time for northbound and southbound respectively.**

Increased the average speed on the University Ave. corridor by 11% in the Northbound direction and 4% in the Southbound direction.

Offered a transformational opportunity for the county to make its transit system more intelligent and streamlined than ever before with a cost-efficient solution.

SCHEDULE

- Project Start: **May 2021**
- Pilot in Operation: **November 2021 - March 2022**
- Project End: **March 2022**

PROJECT CONTACT

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