Using Technology to Move Toward Zero Deaths

Safe & Smart Corridor – Fremont, CA

Background

The City of Fremont is investing in innovative corridor management technology, as exemplified by the Fremont Boulevard Safe & Smart Corridor project. One of the safety goals of this project is to reduce bicycle and pedestrian collisions. This will be achieved by developing projects that address specific safety risks identified in the City’s Vision Zero Action Plan. A defining characteristic of this project is the primary use of technology in project development; specifically, traffic detection and monitoring systems, coupled with artificial intelligence and advanced analytics, connected vehicle communications, and adaptive traffic signal control. The City will be able to easily integrate additional technologies in the future, as desired. While Fremont has experimented with some of these systems throughout the City in recent years, the scope of this project unifies these technologies within a major corridor for the first time. When complete, the corridor will cover 10 miles and incorporate 35 traffic signals.

Concept Development

A Vision Zero Implementation Assessment, including a review of the Fremont 2020 Vision Zero Plan, identified the following improvements to include in the project:

- Upgrade pedestrian signals with countdown timers at those locations not already included in the City’s standard maintenance program.
- Enhance pedestrian crossings by (1) installing conflict/near-miss video monitoring technology at uncontrolled crossings and signalized intersections, (2) adding Rectangular Rapid Flash Beacons at certain uncontrolled crossings, (3) extending pedestrian phase intervals at signalized intersections, and (4) considering application of the PED-X Connected Vehicle Application at signalized intersections.
- Provide smart lighting systems that can dim or brighten streetlights based on the presence of pedestrians.
- Install speed monitoring and driver feedback sign systems that could be converted to automated speed enforcement if/when that is deemed legal in California.
- Install detection systems at all signalized intersections with cyclist-detection capabilities, to enable bicycle-specific signal timing (e.g., extended change intervals) as needed.
The project team developed safety actions tied to specific safety objectives and brainstormed opportunities at stakeholder workshops and events. These workshops and events took place not only as dedicated public meetings but also at conferences and public festivals such as the Festival of the Arts. The team ultimately produced a concept report (cover shown below) that can be found here.

Implementation

As of this writing, most of the described concepts have been included in the design phase, which are expected in January 2021. Construction is expected to start in Spring 2021 and should be complete and operational by the end of 2021. The City intends to present the completed project through an open house and at meetings with groups such as the Chamber of Commerce. The City is excited and looking forward to the beneficial impact this technology will have on achieving their Vision Zero goals.

Funding

The project is funded in large part by Alameda County sales tax and local funds. The Alameda County Transportation Commission appropriated nearly $10 million in countywide Measure BB funds for the preliminary engineering, environmental review, design, and construction phases for the project.

For more information and updates, please visit the project web page: https://fremontsmartcorridor.org/