




Memorandum

Date: February 14, 2022
To: Mayor and Council Members
From: Michael Rogers, City Manager 
Via: William Dean, Interim Development Services Director
CC: Don Scholl, Public Works Director
Robert Armijo, P.E., City Engineer
Anju Pillai, P.E., Senior Civil Engineer
Subject: Crosswalk Safety Enhancement at 11th Street & F Street Intersection

The purpose of this memorandum is to provide to the City Council an update on the efforts on enhancing the safety of the marked uncontrolled yellow crosswalk at 11th & F Street Intersection.

Background

City Council requested that City staff prepare a presentation of the safety of uncontrolled marked pedestrian crosswalks in the City of Tracy. An uncontrolled marked pedestrian crosswalk is a crosswalk where there are no traffic control devices like a traffic signal, or a stop sign to stop the vehicles from proceeding across it. On July 18, 2017, City staff brought an agenda item to Council for discussing and reviewing improvement alternatives concerning uncontrolled pedestrian crosswalks in the City, including a possible annual pedestrian safety improvement program for uncontrolled pedestrian crosswalks. The staff report included three uncontrolled pedestrian crosswalks as priority locations for consideration, namely a) 11th Street at F Street, b) West Grant Line Road at O'Hara Drive, and c) Schulte Road at Amaretto Drive. Staff brought this agenda item for consideration and chose these locations based on Council direction and adhering to the public request. Council gave direction for staff to return to Council with a Capital Improvement Project(s) (CIP) for the suggested specific crosswalk improvements at suggested intersections, a proposed annual program, and to explore partnership with the School District.

CIP Creation

City staff created CIP 72116 with the mid-year budget update FY 2019-20 to conduct a study and prioritize the locations for safety improvements at the City's uncontrolled marked crosswalks. The project scope was updated with the FY 2020-21 Quarter 1 update to focus on the design and construction of appropriate safety enhancements at the uncontrolled marked crosswalk at the 11th Street & F Street intersection. The project scope was updated due to budget constraints, and staff decided to focus on enhancing 11th and F street intersection crosswalk as it was a priority location for City Council. Coincidentally, a fatal accident had occurred at 11th Street & F Street intersection in April 2018, when a man who was crossing 11th Street was hit by a car travelling east.

A pedestrian crossing review study was conducted for this intersection as shown in Exhibit A. The safety enhancements at 11th and F Street intersection crosswalk would include signage and striping updates, curb ramp modifications, and installation of overhead pedestrian flashing beacons on mast arms, shown as Alternative 4 in Exhibit A. An approximate total cost of installation of such an enhancement is \$115k. The flashing beacons would be pedestrian-activated and could be rectangular rapid-flashing beacons (RRFB) or LEDs imbedded into the school crossing signs. The design may also incorporate In-pavement roadway lighting.

Funding

The City was able to claim \$230,000 from SJCOG's Cycle One Measure K Bicycle, Pedestrian and Safe Routes to School Non- Competitive Program Funds for this project in 2020. These types of funds are intended to fund bicycle, pedestrian, and Safe Routes to School Projects, to provide matching funds for competitive grant opportunities, and to fund smaller projects that may not be competitive but are still important to a community. The current funding breakdown of CIP 72116 is as follows:

Measure K Bicycle, Pedestrian and Safe Routes to School - \$230,000
Gas Tax - \$50,000

Total - \$280,000

The current budget will cover all necessary pedestrian crossing enhancements at 11th & F Street intersection. However, it may not allow funding the study and installation of necessary enhancements at the other two locations mentioned in the July 2017 agenda report. The estimated budget needed for the other locations is between \$100K - \$400K each, depending on the exact improvements needed based on site conditions, which will be identified in the design phase. Staff has been in contact with the School District for items related to traffic safety near the schools and the District has been an active stakeholder in some of traffic safety projects within the City, the most recent being the Development of the Local Roadway Safety Plan (LRSP) which is currently being developed. With funding availability, Staff will be pursuing the enhancements for the other two locations, create an annual program for uncontrolled pedestrian crosswalks and explore partnership with the School District for identifying and prioritizing the crosswalks that need enhancement.

Project Design & Construction

The 11th Street & F Street uncontrolled pedestrian crosswalk enhancement project is anticipated to be designed and constructed in the next 18- 24 months. The delay in the project implementation is attributed to the lack of sufficient staffing in the Engineering Division. The Division had some retirements and other vacancies in 2020 (at the time COVID outbreak); the subsequent hiring freeze left the division short staffed with 50% staffing in two of its sections.

The City's Public Works Department replaced all crosswalk advanced warning signs and crosswalk location signs at 11th Street and F Street intersection on January 14, 2020. The thermo-plastic crosswalk lines were refreshed on October 28, 2021.

Attachments

Exhibit A : Traffic Memo – 11th Street and F Street Pedestrian Crossing Review

MEMORANDUM

From: Frederik Venter, P.E. and Colin Ogilvie, Kimley-Horn and Associates

To: Robert Armijo, P.E. and Anju Pillai, P.E., City of Tracy

Date: February 5, 2021

Re: Eleventh Street and F Street Pedestrian Crossing Review

1. Executive Summary

This report provides a review of the existing uncontrolled crossing at Eleventh Street and F Street and recommends four options for enhancing pedestrian safety. The City of Tracy has recently won a grant for approximately \$230,000 to apply to pedestrian improvements at this intersection. The following alternative improvements were studied for the existing Eleventh Street and F Street uncontrolled crossing:

- Alternative 1 – Remove the crosswalk
- Alternative 2 – Signing and striping improvements
- Alternative 3 – Post-mounted flashing beacons (plus signing and striping improvements)
- Alternative 4 – Overhead flashing beacons (plus signing and striping improvements) | **PREFERRED**
- Alternative 5 – Pedestrian hybrid beacons (also known as High Intensity Activated Crosswalk or HAWK)

The preferred alternative is Alternative 4, which includes the installation of overhead flashing beacons accompanied with signing and striping improvements. The reviewed alternatives are in order from lowest cost to highest cost. The estimated cost of each alternative is shown in **Table 1**.

Table 1 – Cost Estimate Comparison

Alternatives		Estimated Cost
1	Remove the crosswalk	\$10,000
2	Signing and striping improvements	\$25,000
3	Post-mounted flashing beacons	\$40-65,000
4	Overhead flashing beacons	\$115,000
5	Pedestrian hybrid beacons	\$300,000

2. Introduction

This report provides a review of the existing uncontrolled crossing at Eleventh Street and F Street and recommends four options for enhancing pedestrian safety.

3. Existing Conditions

The unsignalized side street stop-controlled intersection of Eleventh Street and F Street is located approximately 350 feet west of the signalized Eleventh Street and East Street intersection. Tracy High School is located on the northeast corner of the East Street intersection. At F Street, there is an existing uncontrolled school crosswalk across the west leg. See **Figure 1** for the existing conditions.

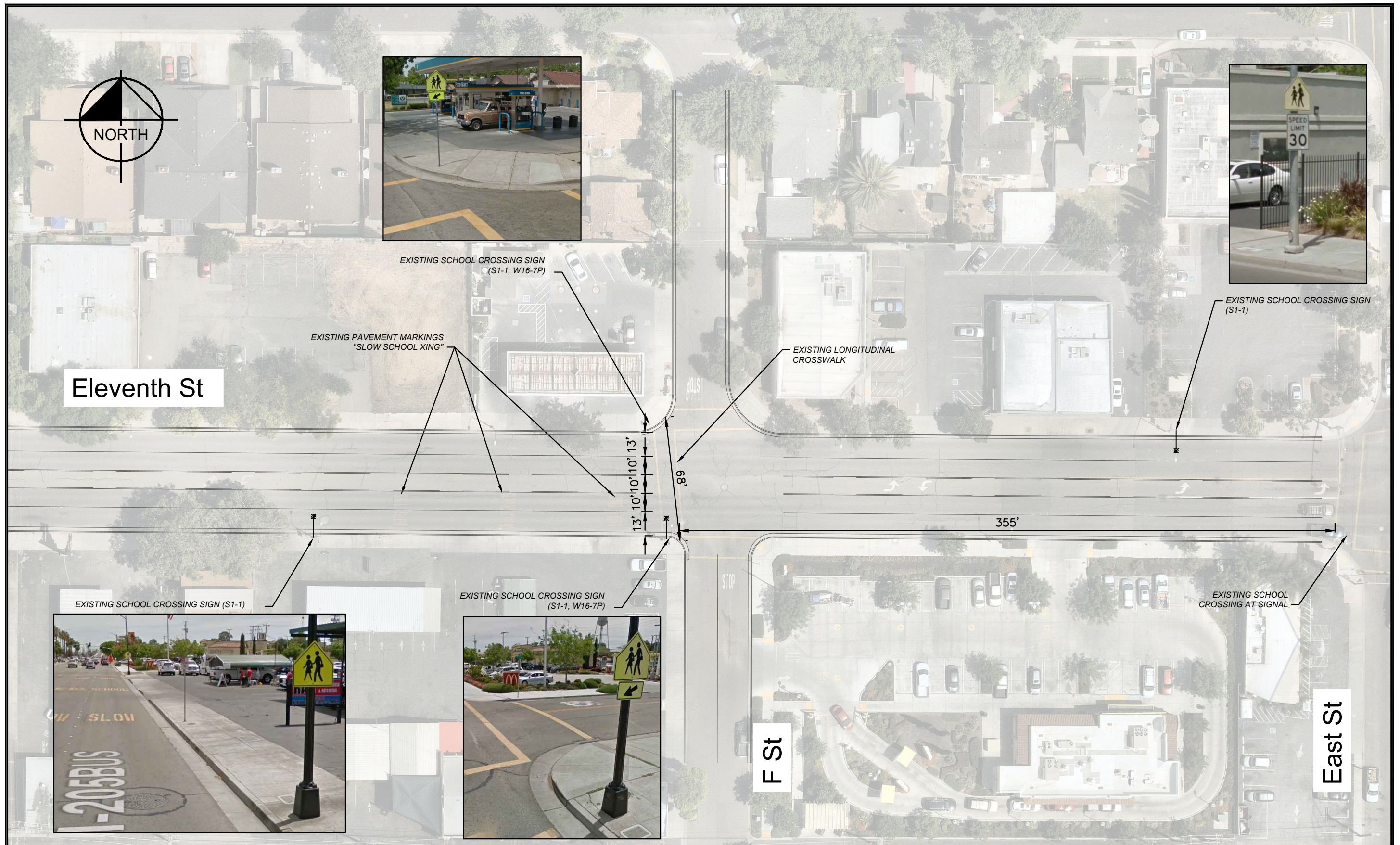
Eleventh Street has five lanes, two lanes in each direction and a two-way left turn lane (TWLTL). The crossing distance is approximately 68 feet. The speed limit on Eleventh Street is 30 mph. In 2016 Eleventh Street, just west of the crossing, had a daily volume of 19,000 vehicles. Historical vehicle turning movement and pedestrian counts at the intersection of Eleventh and F Streets are not available, and counts were not able to be collected at the time of this review due to abnormal traffic patterns during the COVID-19 pandemic.

Collision Data Review

City of Tracy staff provided Tracy Police Department collision data for the study intersection between May 31, 2017 and May 31, 2020. Four collisions occurred during the last three years with one fatality collision involving a pedestrian. The collision citations include excessive speed, improper vehicle spacing and improper stopping.

Table 2 – Collision Data

Collision Type	Number Involving Pedestrians	Total Number
Fatal	1	1
Injury	0	1
Non-Injury	0	2
Total	1	4



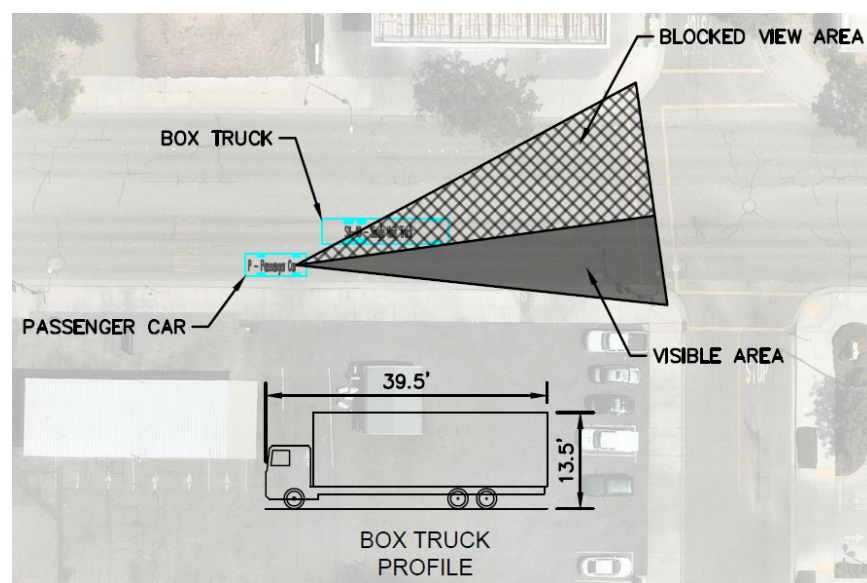
4. Proposed Improvements

Several improvement alternatives are proposed for the uncontrolled crossing that include various levels of enhancement as well as removal of the crosswalk.

Alternative 1 – Removal

The existing F Street uncontrolled school crossing is located approximately 350 feet west of the East Street signalized intersection. The existing crosswalk does not meet current CA MUTCD standards for signing and striping of uncontrolled crossings. Another concern with the crossing is the potential for reduced visibility between pedestrians and vehicles, if taller trucks or vans block the view of the curb ramps or portions of the crosswalk. See **Figure 2** for an example of reduced visibility.

Figure 2 – Visibility Issues



The crosswalk is signed and striped as a school crossing for the nearby Tracy High School. Since the existing crosswalk is not compliant to current standards and that the East Street signal is located closer to the school, one of the proposed alternatives is to remove the crosswalk. This would consist of grinding the existing crosswalk striping and advanced pavement markings and removing signs. The estimated cost of removal is \$10,000.

Other treatments for this alternative that may be considered include adding pedestrian barricades with signs directing pedestrians to cross at East Street and to reconstruct the northwest and southwest curb ramps to be directional facing east.

Alternative 2 – Signing and Striping

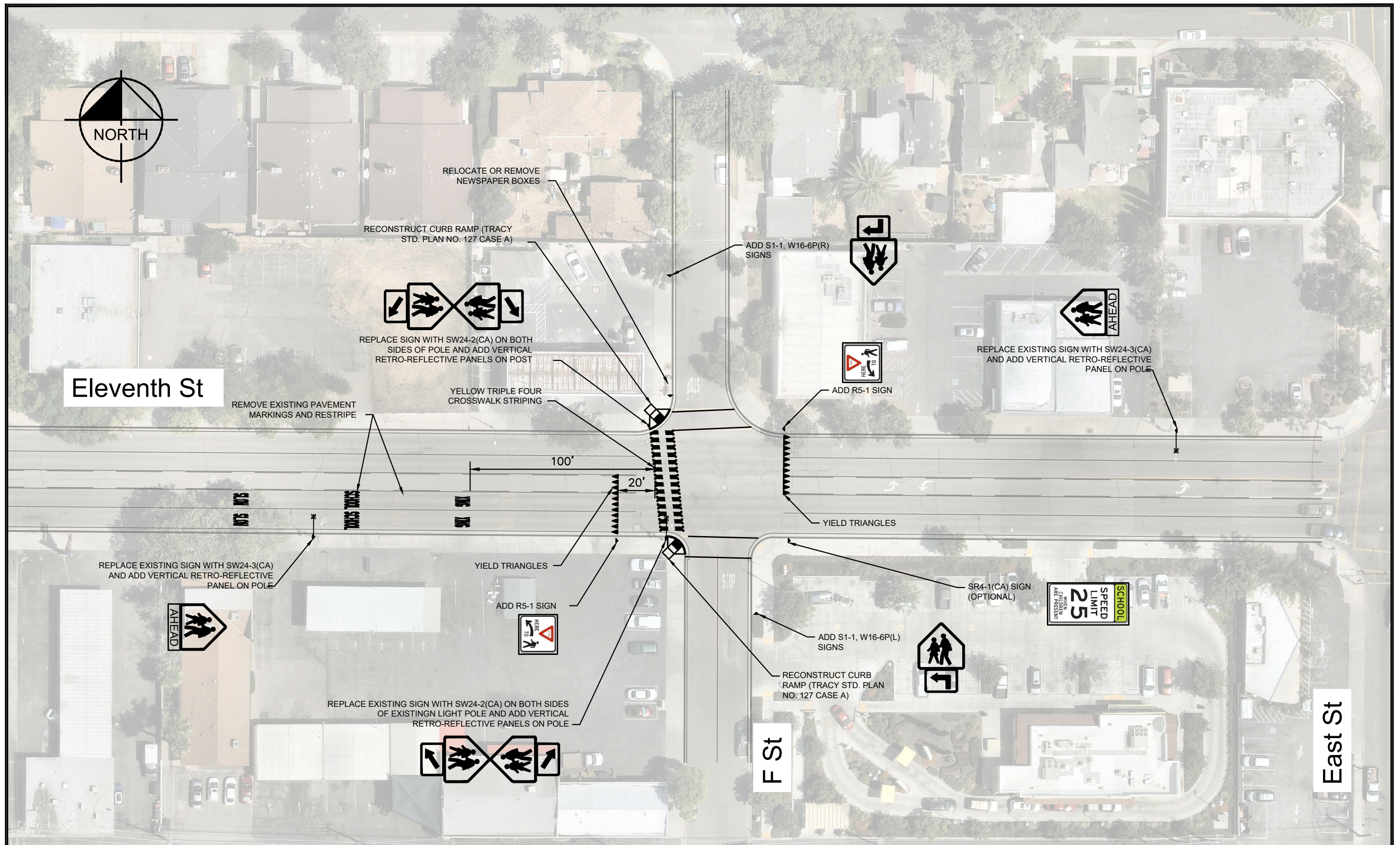
The first step to improve the uncontrolled crossing is to bring it into compliance with the latest CA MUTCD standards. CA MUTCD Figure 3B-17(CA) depicts the recommended signing and striping for uncontrolled crosswalks across multilane approaches. The key missing components of the existing crosswalk are the absence of yield triangles, R1-5 “Yield Here To Pedestrians” signs and second pedestrian/school crossing

signs at the crosswalk for each approach. See **Figure 3** for the recommended Alternative 2 signing and striping improvements.

Summary of Alternative 2 improvements:

1. Reconstruct northwest and southwest corner curb ramps.
2. Modify crosswalk striping to yellow triple four.
3. Add yield triangles in advance of crosswalk.
4. Replace existing signs and add several signs per Figure 3.
5. Relocate or remove newspaper boxes on northwest corner that obstruct view of curb ramp for southbound vehicles.

The estimated cost of Alternative 2 is \$25,000.



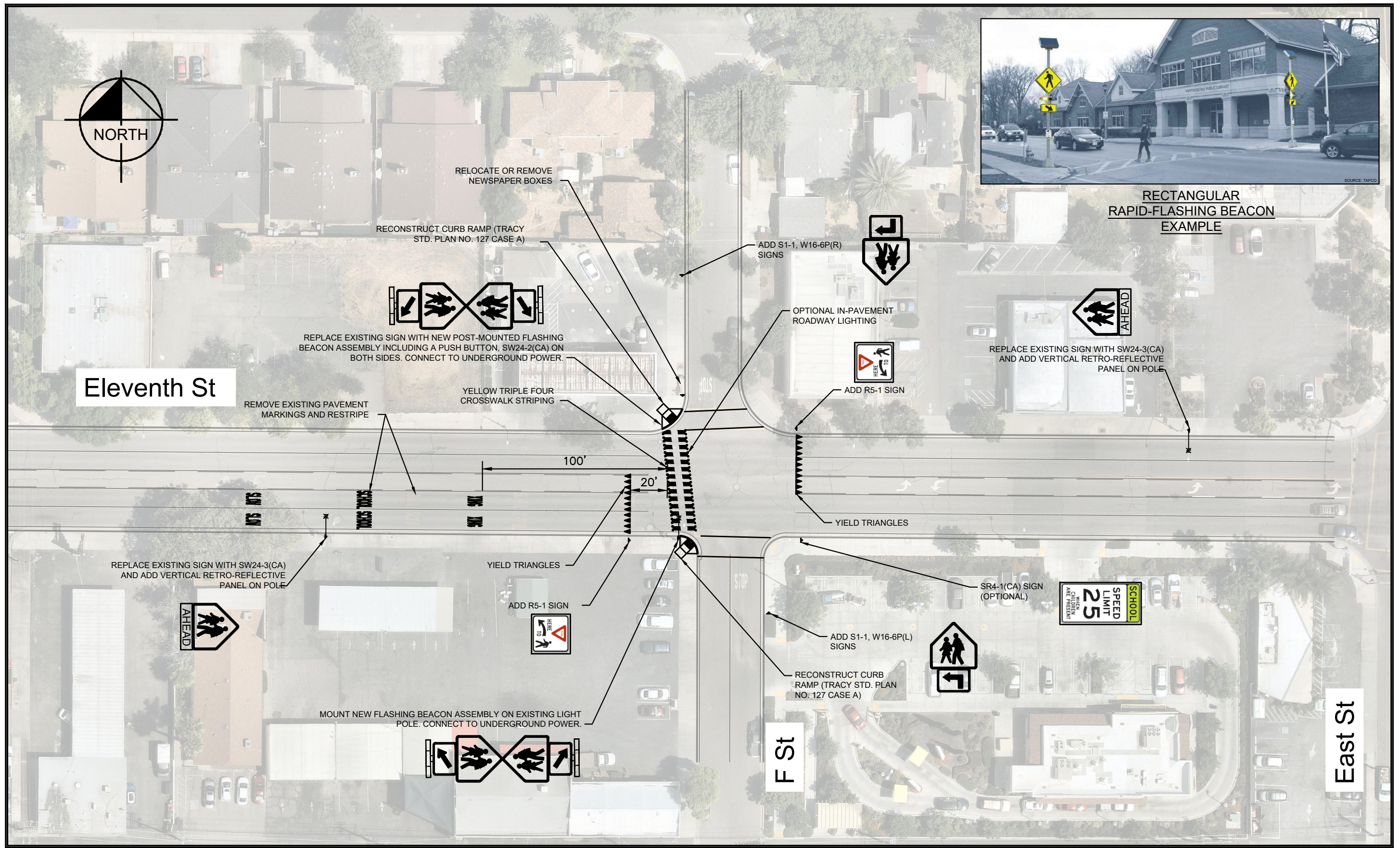
Alternative 3 – Flashing Beacon/Rapid-Flashing Beacon

One alternative to further enhance pedestrian visibility to vehicles beyond signing and striping could be to add flashing beacons at the crosswalk. The flashing beacons would be pedestrian-activated and could be rectangular rapid-flashing beacons (RRFB) or LEDs imbedded into the school crossing sign. In-pavement roadway lighting could also, optionally, be added. **Figure 4** depicts the recommended improvements for Alternative 3.

Summary of Alternative 3 improvements:

1. Include all improvements from Alternative 2.
2. Add a post-mounted flashing beacon assembly, with push button and signs, on the northwest corner.
3. Add a flashing beacon assembly on to the existing light pole on the southwest corner.

The estimated cost of Alternative 3 is between \$50,000 and \$65,000.



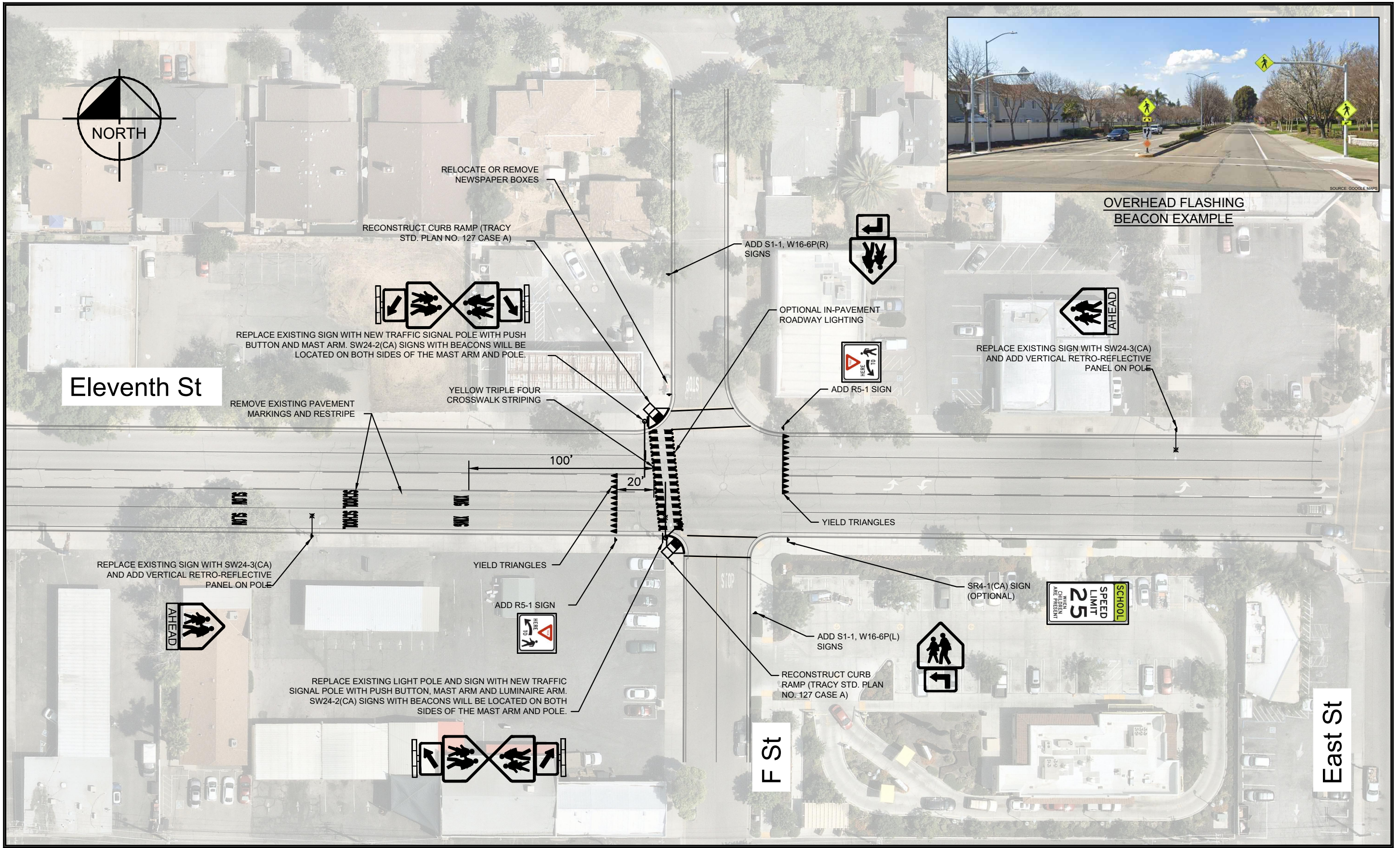
Alternative 4 – Overhead Flashing Beacon/Rapid-Flashing Beacon

Given that Eleventh Street is five lanes wide and the left hand-side post-mounted flashing beacon may be obstructed or not in a driver's central field of vision, a further enhancement of the crosswalk would be to add overhead flashing beacons to improve visibility. The flashing beacons would be pedestrian-activated and could be rectangular rapid-flashing beacons (RRFB) or LEDs imbedded into the school crossing sign. In-pavement roadway lighting could also, optionally, be added. **Figure 5** depicts the recommended improvements for Alternative 4.

Summary of Alternative 4 improvements:

1. Include all improvements from Alternative 2.
2. Add an overhead flashing beacon assembly with a mast arm on the northwest corner.
3. Remove the existing light pole on the southwest corner and add an overhead flashing beacon assembly with a mast arm and luminaire.

The estimated cost of Alternative 4 is \$115,000. This alternative is preferred for its enhancement of pedestrian connectivity and safety while remaining within budget.



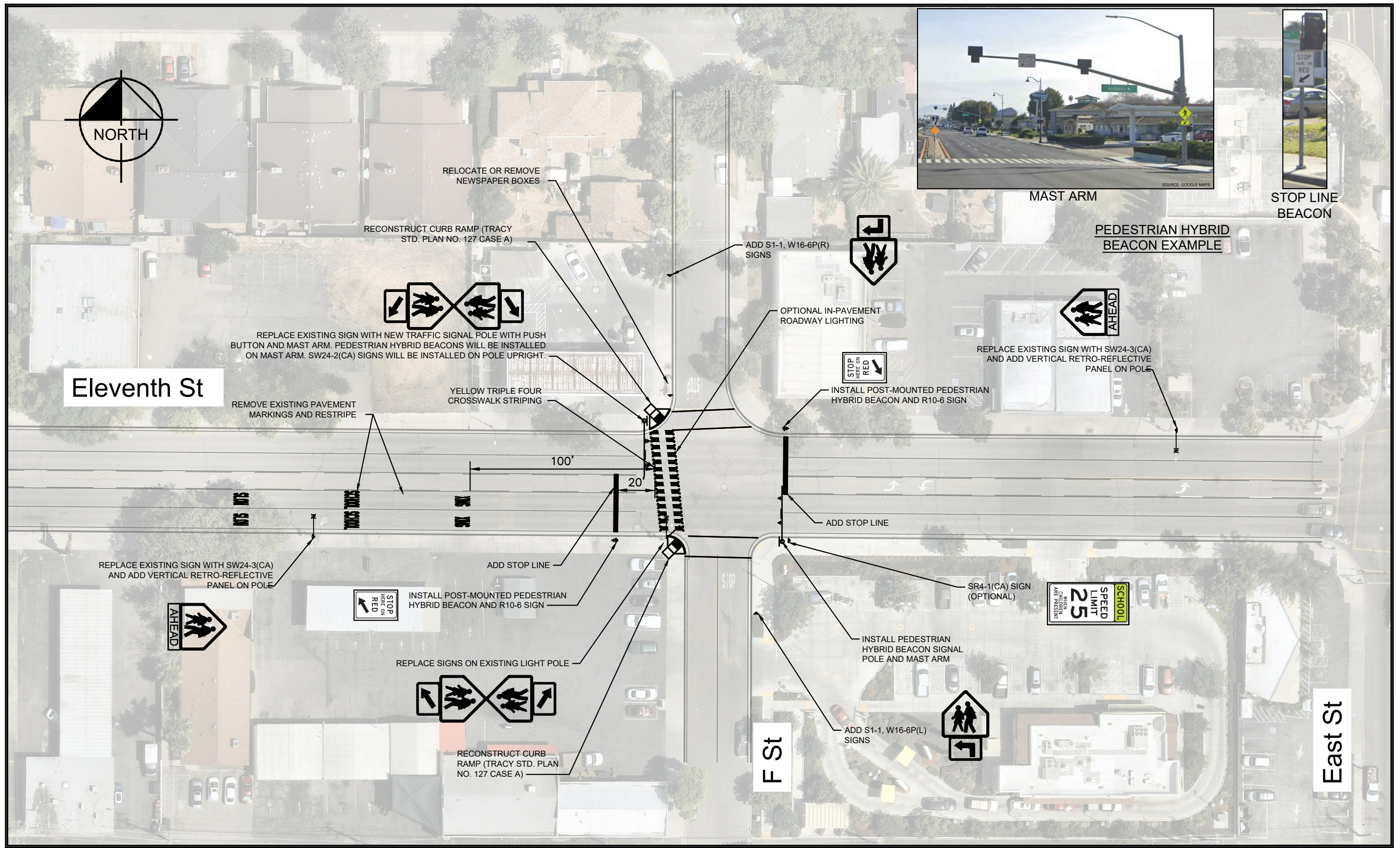
Alternative 5 – Pedestrian Hybrid Beacon

Pedestrian hybrid beacons, also known as High Intensity Activated Crosswalks or HAWK, are an additional alternative that provides enhanced pedestrian crossing visibility and acts as a traffic control device. Once the signal is activated by a pedestrian, the signals will go through a specific HAWK pattern that will then give a solid red stop to all traffic. After the pedestrian phase has ended, the signal will flash red allowing vehicles to proceed after coming to a stop if no pedestrians are present. The signal then switches off, resuming normal traffic conditions. HAWK signals are recommended to be interconnected with nearby signals in order to begin the pedestrian phase at the ideal time to fit the flow of traffic for the corridor. **Figure 6** depicts the recommended improvements for Alternative 5.

Summary of Alternative 5 improvements:

1. Similar to Alternative 4 - Overhead Flashing Beacon/Rapid-Flashing Beacon
2. Add “Stop Here on Red” signs and stop lines instead of yield signing and striping.
3. Add near-side, post-mounted signal heads at eastbound and westbound stop lines.
4. Add signal controller and interconnect

The estimated cost of Alternative 5 is \$300,000. This alternative is beyond the project budget, while Alternative 4 is within budget and meets the needs of the crossing.



MAST ARM



STOP LINE BEACON

PEDESTRIAN HYBRID BEACON EXAMPLE

Figure 6
Alternative 5: Pedestrian Hybrid Beacons
Eleventh Street and F Street Pedestrian Crossing