FREMONT SAFE & SMART CORRIDOR

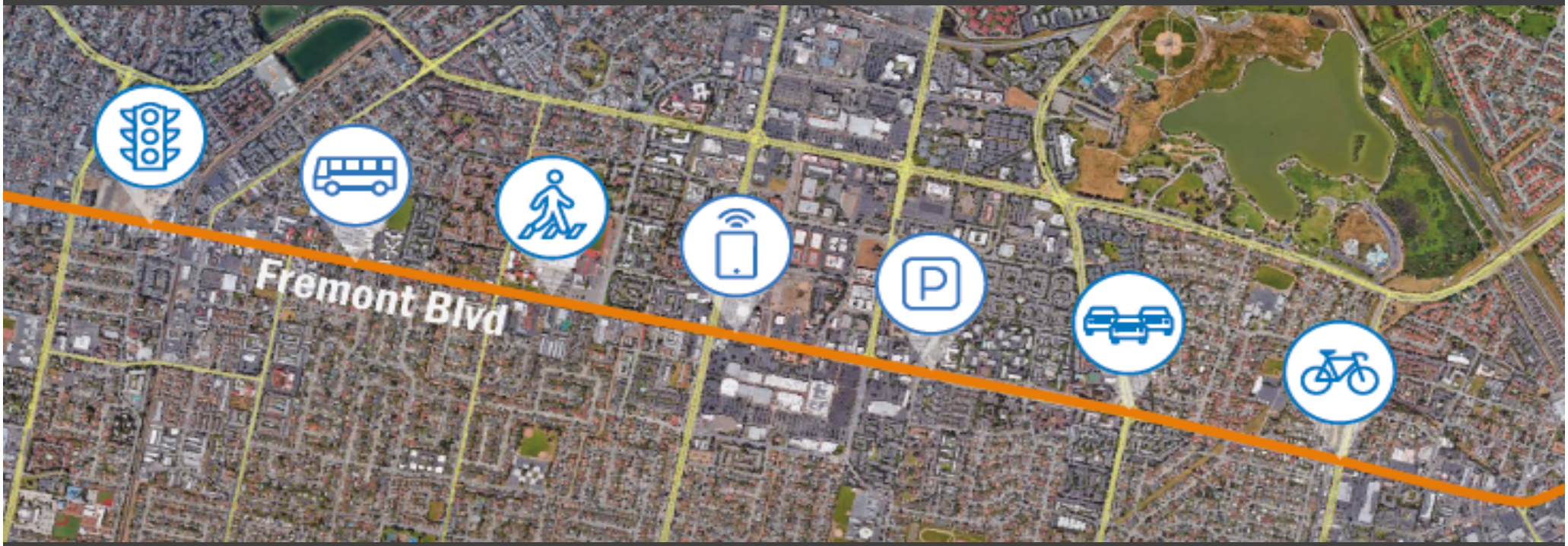
ITE WESTERN DISTRICT ANNUAL MEETING

FEHR PEERS

June 26, 2019

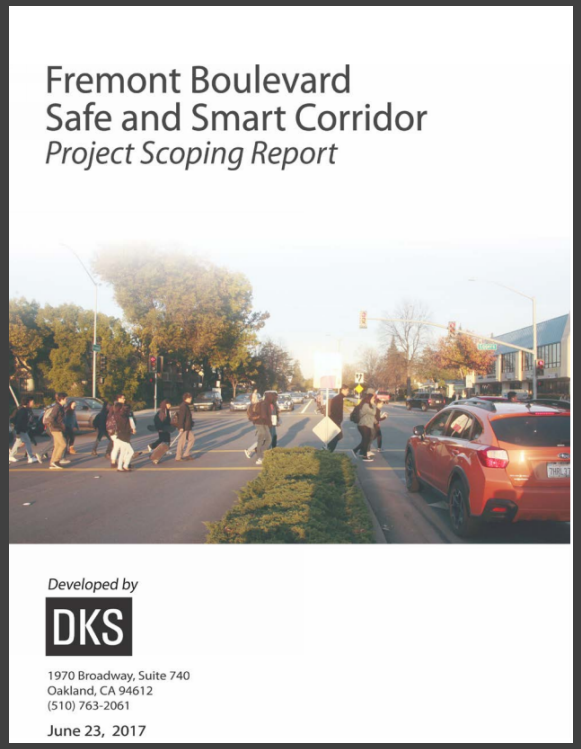
AGENDA.

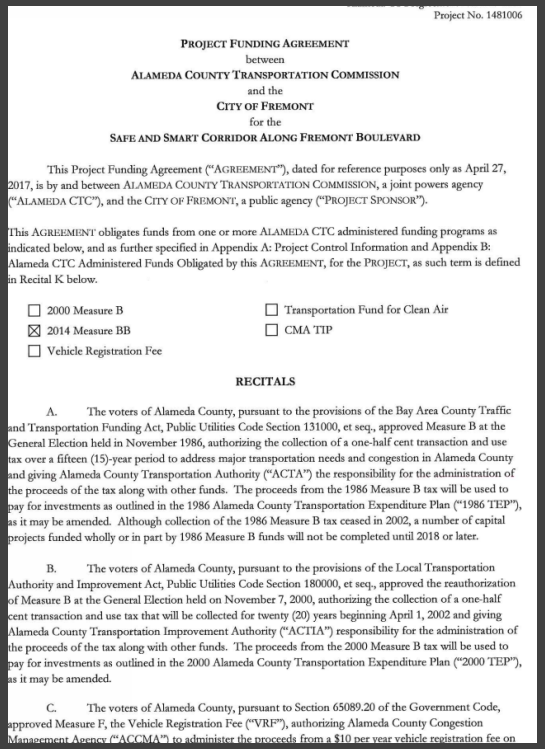
1. Project Overview
2. Objectives
3. Implementation Concepts



OVERVIEW.

1. Smart Cities Grant
2. Scoping Document
3. Alameda CTC Measure BB - $10M





Project No. 1481006

PROJECT FUNDING AGREEMENT
between
ALAMEDA COUNTY TRANSPORTATION COMMISSION
and the
CITY OF FREMONT
for the
SAFE AND SMART CORRIDOR ALONG FREMONT BOULEVARD

This Project Funding Agreement ("AGREEMENT"), dated for reference purposes only as April 27, 2017, is by and between ALAMEDA COUNTY TRANSPORTATION COMMISSION, a joint powers agency ("ALAMEDA CTC"), and the CITY OF FREMONT, a public agency ("PROJECT SPONSOR").

This AGREEMENT obligates funds from one or more ALAMEDA CTC administered funding programs as indicated below, and as further specified in Appendix A: Project Control Information and Appendix B: Alameda CTC Administered Funds Obligated by this AGREEMENT, for the PROJECT, as such term is defined in Recital K below.

- ☐ 2000 Measure B
- ☒ 2014 Measure BB
- ☐ Vehicle Registration Fee
- ☐ Transportation Fund for Clean Air
- ☐ CMA TIP

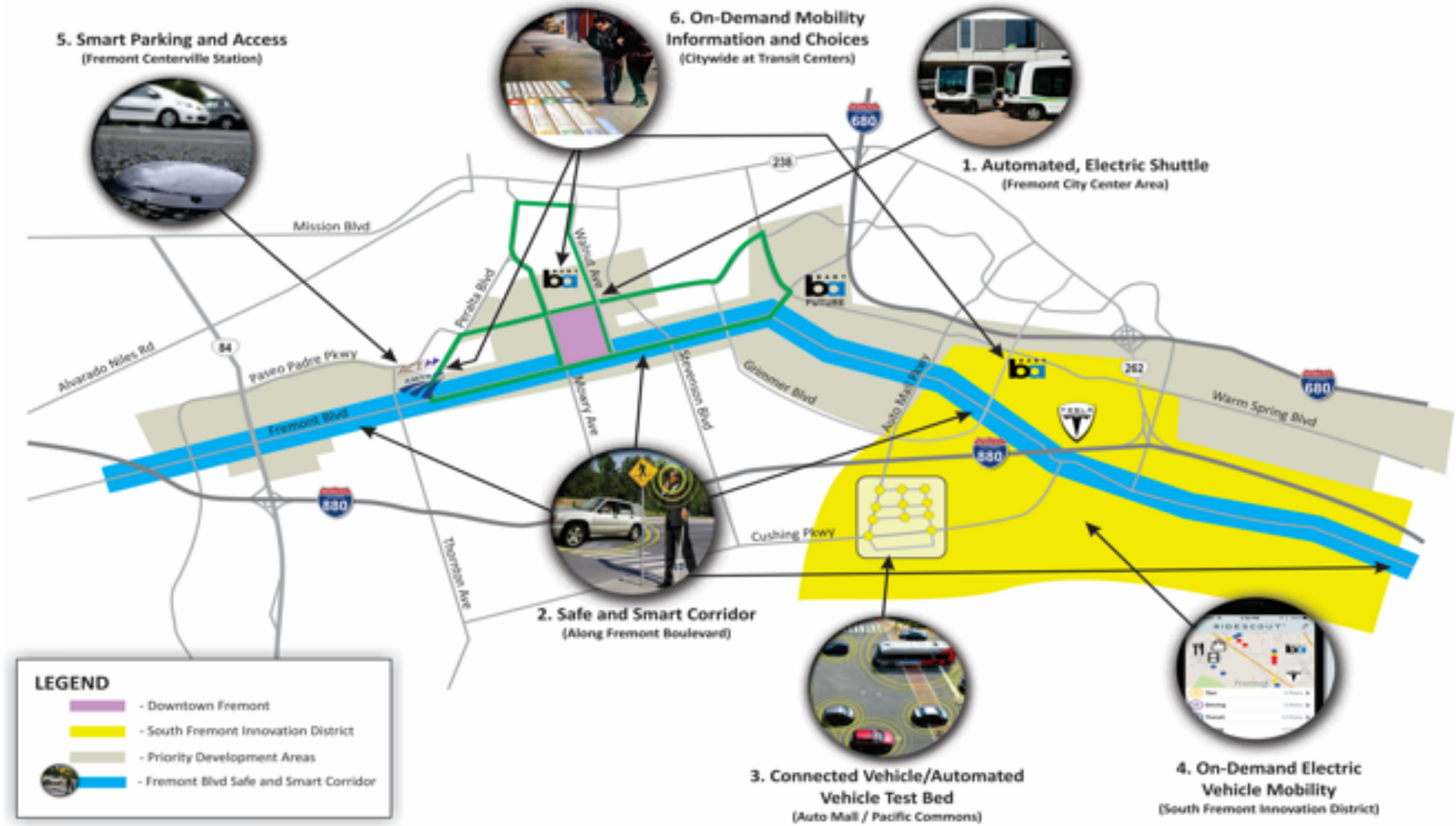
RECITALS

A. The voters of Alameda County, pursuant to the provisions of the Bay Area County Traffic and Transportation Funding Act, Public Utilities Code Section 131000, et seq., approved Measure B at the General Election held in November 1986, authorizing the collection of a one-half cent transaction and use tax over a fifteen (15)-year period to address major transportation needs and congestion in Alameda County and giving Alameda County Transportation Authority ("ACTA") the responsibility for the administration of the proceeds of the tax along with other funds. The proceeds from the 1986 Measure B tax will be used to pay for investments as outlined in the 1986 Alameda County Transportation Expenditure Plan ("1986 TEP"), as it may be amended. Although collection of the 1986 Measure B tax ceased in 2002, a number of capital projects funded wholly or in part by 1986 Measure B funds will not be completed until 2018 or later.

B. The voters of Alameda County, pursuant to the provisions of the Local Transportation Authority and Improvement Act, Public Utilities Code Section 180000, et seq., approved the reauthorization of Measure B at the General Election held on November 7, 2000, authorizing the collection of a one-half cent transaction and use tax that will be collected for twenty (20) years beginning April 1, 2002 and giving Alameda County Transportation Improvement Authority ("ACTIA") responsibility for the administration of the proceeds of the tax along with other funds. The proceeds from the 2000 Measure B tax will be used to pay for investments as outlined in the 2000 Alameda County Transportation Expenditure Plan ("2000 TEP"), as it may be amended.

C. The voters of Alameda County, pursuant to Section 65089.20 of the Government Code, approved Measure F, the Vehicle Registration Fee ("VRF"), authorizing Alameda County Congestion Management Agency ("ACCMA") to administer the proceeds from a $10 per year vehicle registration fee on

OVERVIEW.


5. Smart Parking and Access
(Fremont Centerville Station)
6. On-Demand Mobility Information and Choices
(Citywide at Transit Centers)
1. Automated, Electric Shuttle
(Fremont City Center Area)
2. Safe and Smart Corridor
(Along Fremont Boulevard)
3. Connected Vehicle/Automated Vehicle Test Bed
(Auto Mall / Pacific Commons)
4. On-Demand Electric Vehicle Mobility
(South Fremont Innovation District)
Mission Blvd
Alvarado Niles Rd
Paseo Padre Pkwy
Fremont Blvd
Peralta Blvd
Walnut Ave
Mowry Ave
Stevenson Blvd
Grimmer Blvd
Auto Mall Pkwy
Warm Spring Blvd
Cushing Pkwy
Thornton Ave
680
880
238
84
262
LEGEND
- Downtown Fremont
- South Fremont Innovation District
- Priority Development Areas
- Fremont Blvd Safe and Smart Corridor

OVERVIEW.

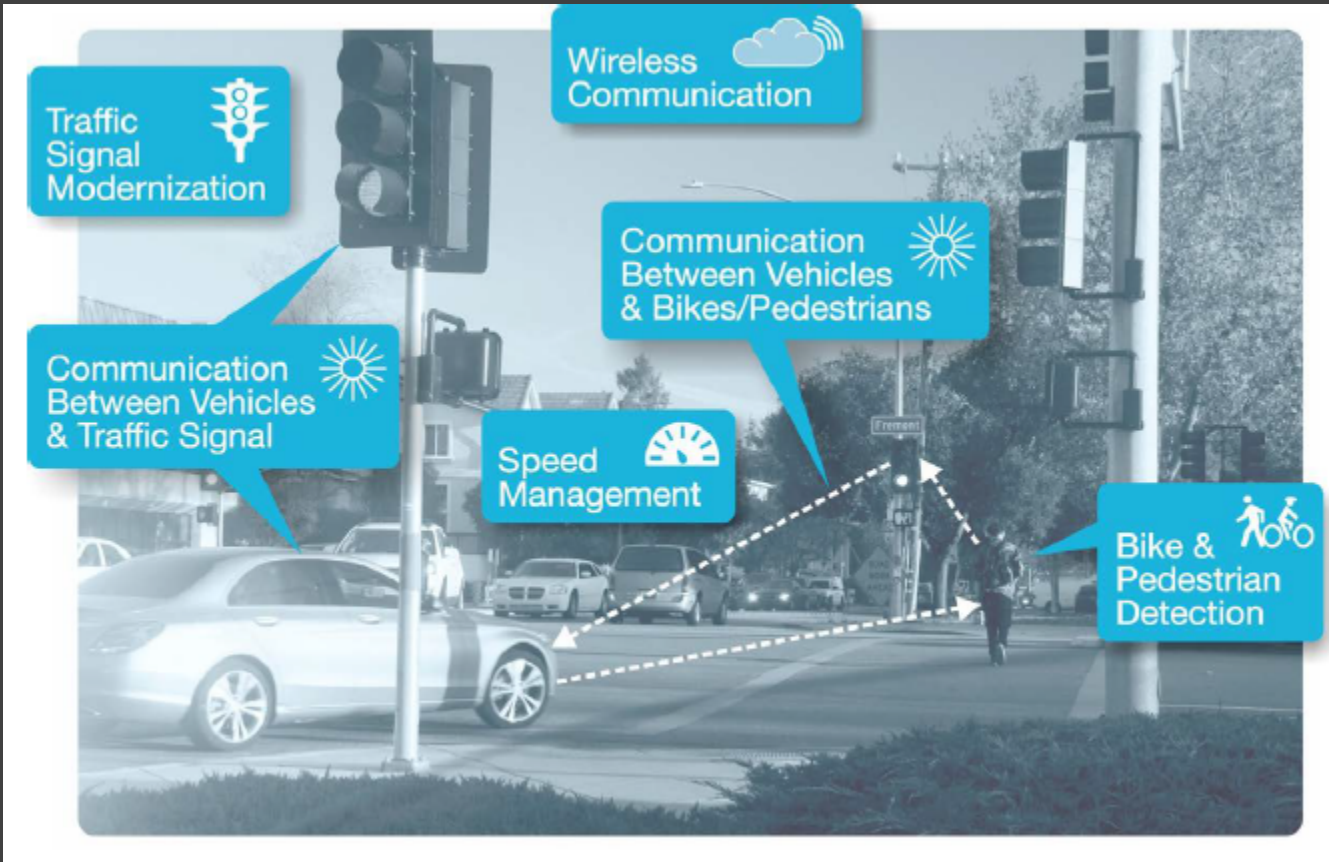
The Team

1. City of Fremont
2. Consultant Team:
   - Parsons
   - Fehr & Peers
   - Placeworks
3. Stakeholders:
   - City
   - Alameda CTC
   - AC Transit
   - Caltrans

OBJECTIVES.

The Starting Point

The Safe and Smart Corridor project will demonstrate “Complete Streets” design concepts, sensor-based infrastructure, communication systems, smart lighting, adaptive signal control and connected vehicles/infrastructure/ devices to achieve a number of objectives for the corridor.



OBJECTIVES.

Incorporate Transportation Goals

City of Fremont

Bicycle Master Plan

Adopted by City Council July 10, 2018

CITY OF Fremont

Prepared by

SAFER PEOPLE
FREMONT
VISION ZERO
2020
SAFER STREETS
SAFER VEHICLES

CITY OF Fremont

INSTALL DYNAMIC / VARIABLE SPEED WARNING SIGN

Speed feedback signs (dynamic speed warning signs) display vehicle speeds as vehicles appr
be useful for managing vehicle speeds in locations where people drive faster than desired
additional changes to the roadway or where changes to physical roadway characteristics (
reduction, road diet) are either infeasible or cost prohibitive.

Why was this selected for Fremont? Multilane roadways with posted speeds of 40 m
cited as a risk factor in Fremont. Additionally, arterials with curves were noted as a risk fa
feedback signs as part of a set of treatments (e.g., reducing lane width, turn warning signs)
prevalence of speed-related crashes.

Figure 27: Example of Variable Speed Warning Sign

Source: Kittelson and Associates, Inc.

City of Fremont
Climate Action Plan

November 2012

13, 2016

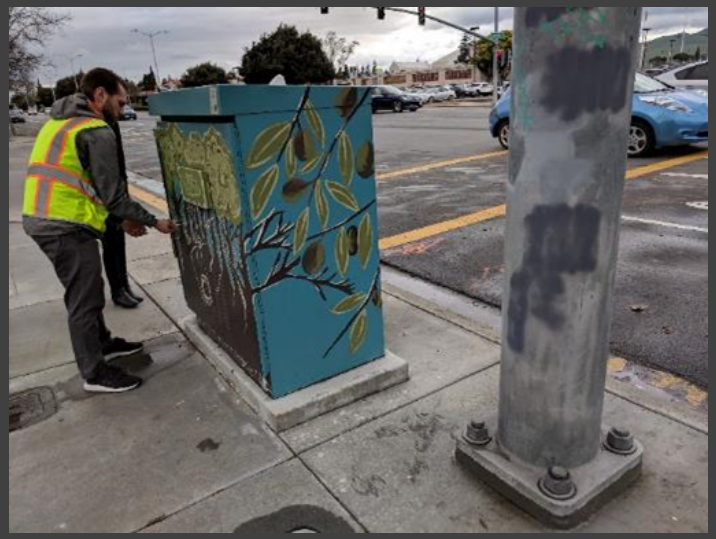
alta
PLANNING + DESIGN

CITY OF Fremont

OBJECTIVES.

Seek First to Understand…

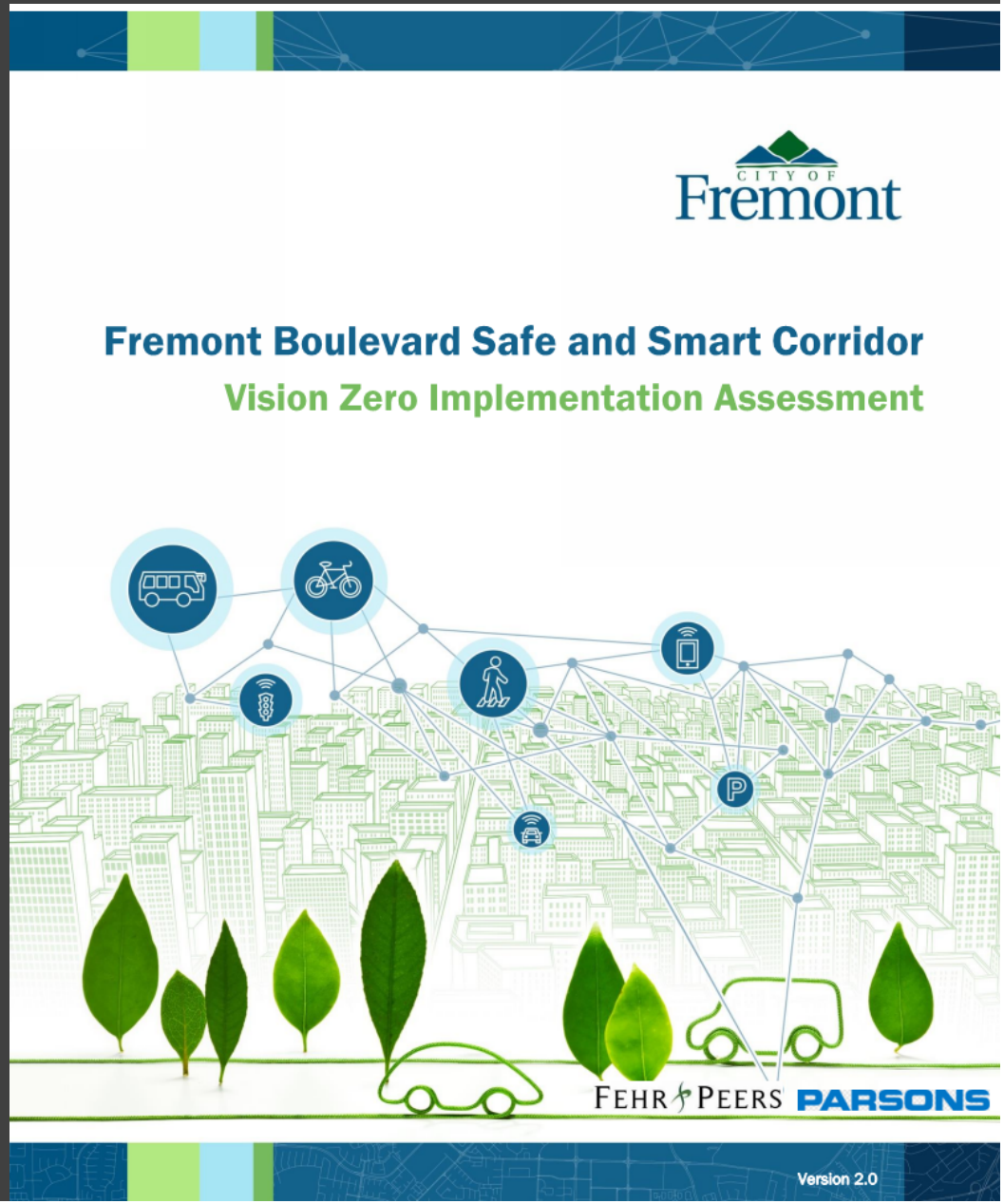
- Reviewed planning documents
- Reviewed collision data
- Reviewed travel behavior
- Inventoried transportation infrastructure
- Investigated other existing and planned projects



OBJECTIVES.

… Then to be Understood

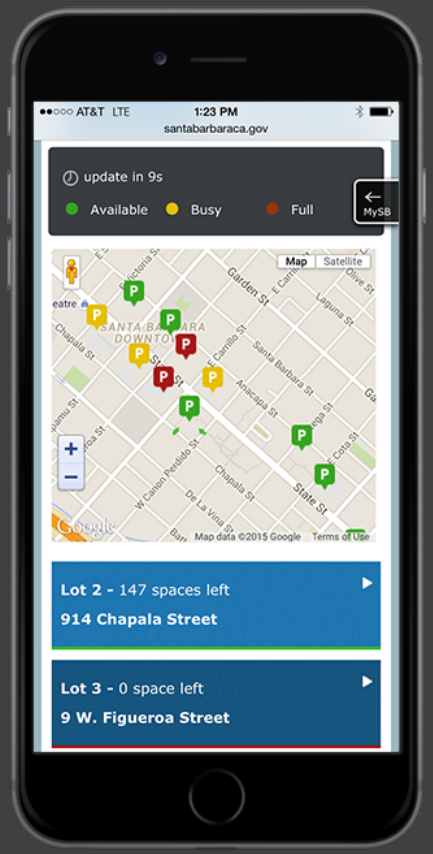
- Reviewed City's Vision Zero Action Plan
- Highlighted actions that this project could address: the "Vision Zero Implementation Assessment"
- Followed by Stakeholder workshop



OBJECTIVES.

... Then to be Understood

- Stakeholder Workshop
- Summarized existing conditions, public outreach process
- Introduced draft project objectives and planned system concepts



OBJECTIVES.

Final Objectives

Vision: The Safe and Smart Corridor project will demonstrate, primarily through technology applications at signalized intersections, Fremont's dedication to achieving its Vision Zero traffic safety goals, efficient multimodal mobility and sustainability goals.

Goals (General)

Improve safety and mobility for all modes

Contribute to the City's sustainability goals

Align project concepts with existing plans

Align project communication and management systems with similar systems also managed by the City

Provide accommodations for ongoing and future AC Transit and Alameda CTC projects planned for the corridor

Engage with the community and stakeholders

Keep the end in mind, i.e. ensure that operations and maintenance needs are a key consideration when developing projects.

Make Fremont Boulevard a "testbed" of sorts - Focus innovation on key issues, be flexible for future.

OBJECTIVES.

Specific Goals

Safety / VZ

Incentivize safer auto speeds, give City tools to monitor / address specific speed-related issues

Enhance controlled and uncontrolled pedestrian crossings with safety-focused technologies

Enable **enhanced monitoring** of pedestrian activity and behavior, allowing the City to target enhancements as specific locations.

Mobility

Deploy technologies to **assist mobility-impaired users** in the corridor

Modernize the traffic signal system to **achieve efficiency gains, reduce signal-related delay and enhance mobility** for all modes on the corridor

Allow for **transit reliability improvements** being considered by AC Transit

Parking

Expand Centerville Parking system with technology that will allow for **dynamic pricing**

Provide **dynamic wayfinding** to available parking supply at Centerville station, allow for future possibility of on-line reservation

Consider **dynamic curb space management** system for the on-street parking and loading that exists on the corridor.

OBJECTIVES.

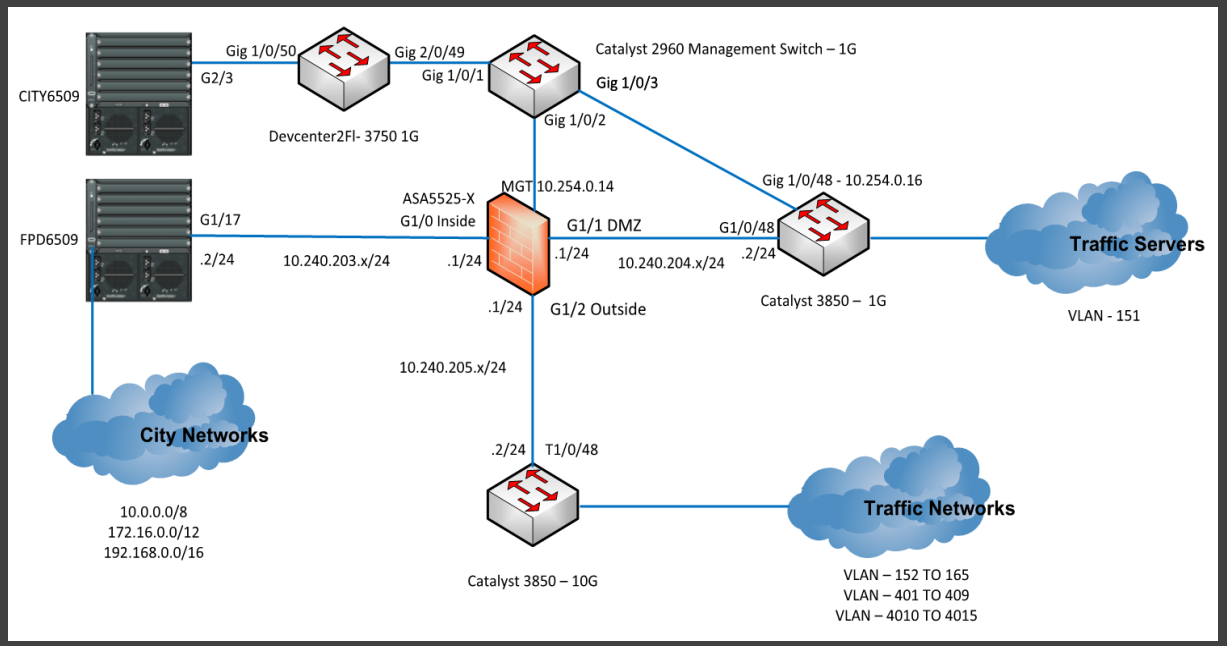
Specific Goals

Data Communications

Look into opportunities provided by license agreements with wireless carriers

Standardize data communications on the corridor, allowing for current and future bandwidth needs

Communicate signal system data in a format consistent with ITS standards, and with existing City protocols



IMPLEMENTATION.

Actions

Safety / Vision Zero	1	Provide incentives for safer auto speeds, provide the City with enhanced tools to monitor and address specific speed-related issues on the corridor
Safety / Vision Zero	2	Enhance controlled and uncontrolled pedestrian crossings with safety-focused technologies, while considering low-cost traditional enhancements as well.
Safety / Vision Zero	3	Enable enhanced monitoring of pedestrian activity and behavior, allowing the City to target enhancements as specific locations.
Mobility	4	Deploy technologies (traditional and innovative) to assist mobility-impaired users in the corridor
Mobility	5	Modernize the traffic signal system (detection and control) to achieve efficiency gains, reduce signal-related delay and enhance mobility for all modes on the corridor
Mobility	6	Allow for transit reliability improvements being considered by AC Transit
Parking	7	Expand beyond the planned paid parking and monitoring system at Centerville Station with technology that will allow for dynamic pricing
Parking	8	Provide dynamic wayfinding to available parking supply at Centerville station, allow for future possibility of on-line reservation
Parking	9	Consider dynamic curb space management system for the on-street parking and loading that exists on the corridor.
Data Communications	10	If possible, take advantage of license agreements with wireless carriers
Data Communications	11	Standardize data communications on the corridor, allowing for current and future bandwidth needs
Data Communications	12	Communicate signal system data in a format consistent with ITS standards, and with data communication standards for other City departments

IMPLEMENTATION.

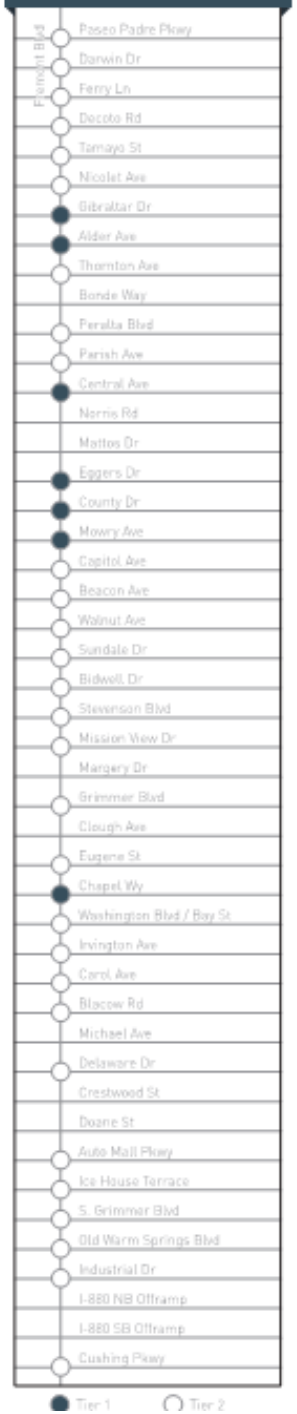
Concepts

- In Progress! 31 Concepts tied to 12 Actions. Each Concept is tied to overall goal of mobility, safety, innovation and sustainability

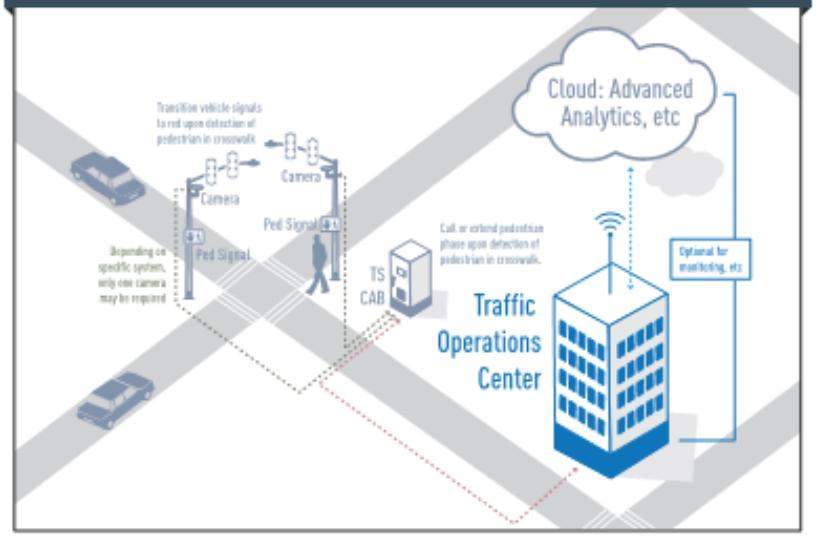
#	PROJECT CONCEPT	WHERE APPLIED	BRIEF DESCRIPTION	ACTIONS ADDRESSED	OBJECTIVES				COST	COMPLEXITY
					MOBILITY	SAFETY	SUSTAINBILITY	INNOVATION		
1	AI Video Analysis	Entire corridor	Utilize a cloud-based artificial intelligence platform to process video throughout the corridor to analyze traffic patterns and report of safety and operational metrics.	2, 3						
2	Signal Passive Pedestrian Detection	Tier 1: traffic signals with history of pedestrian collisions and near schools. Tier 2: all other signalized crosswalks	Implement passive detection to activate or extend traffic signal walk phases based upon pedestrian presence in signalized crosswalks.	2, 3, 4						
3	Ped-X CV Application	Tier 1: crosswalks with history of pedestrian collisions, in close proximity to schools, and where measured vehicle speeds exceed 40 MPH. Tier 2: all other crosswalks	Implement passive detection of pedestrian presence in crosswalks and provide a warning to approaching vehicles via V2I messaging.	2, 4						

CONCEPT DESCRIPTION | 2: SIGNAL PASSIVE PEDESTRIAN DETECTION

MAP



ILLUSTRATION



HIGH LEVEL COSTS

Tier 1 Intersections | Tier 1 & 2 Intersections | Tier 1 & 2 Intersections with Cloud

COMPLEXITY

Local Improvements | With Cloud

OBJECTIVES

Mobility

Safety

Sustainability

Innovation

ACTIONS

2 [Safety / Vision Zero]:
Enhance controlled and uncontrolled pedestrian crossings with safety-focused technologies, while considering low-cost traditional enhancements as well.

3 [Safety / Vision Zero]:
Enable enhanced monitoring of pedestrian activity and behavior, allowing the City to target enhancements as specific locations.

4 [Mobility]:
Deploy technologies (traditional and innovative) to assist mobility-impaired users in the corridor

DESCRIPTION

Detectors (video is preferred) are installed on poles and configured with detection zones within the crosswalk. Camera data is processed in a nearby cabinet. Upon detection of a pedestrian in the crosswalk, a walk call or extension is executed by the controller. Data can also be transmitted back to the Traffic Operations Center, where additional metrics can be analyzed.

LOCATIONS

Tier 1:
Based on collision history:

- Mowry Ave (7 ped collisions 2009-2015)
- Chapel Way (7 ped collisions 2009-2015)

Near schools (note that the ped collision report said that 1/3 of the ped collisions were in the 1-mile near the schools):

- Central Avenue
- Alder Avenue
- Gibraltar Drive
- Eggers Drive
- Country Drive

Tier 2:
Remaining signalized crosswalks:

- Paseo Padre Pkwy
- Darwin Dr
- Ferry Ln
- Decoto Rd
- Tamayo St
- Nicolet Ave
- Thornton Ave
- Peralta Blvd
- Capitol Ave
- Beacon Ave
- Walnut Ave
- Sundale Dr
- Bidwell Dr
- Stevenson Blvd
- Mission View Dr
- Grimmer Blvd
- Eugene St
- Washington Blvd / Bay St
- Irvington Ave
- Carol Ave
- Blacow Rd
- Delaware Dr
- Auto Mall Pkwy
- Ice House Terrace
- S. Grimmer Blvd
- Old Warm Springs Blvd
- Industrial Dr
- Cushing Pkwy

OTHER RELATED CONCEPTS

1: AI Video Analysis
Monitor crosswalk activity

3: Ped-X CV Application
Detection by other means

10: V2I Pilot
In-vehicle feedback of pedestrian presence

13: Fiber Optic Expansion
Increased bandwidth for video application

14: WiFi Travel Time
Certain pedestrian detectors also have built-in WiFi sensors

17: In-Pavement Warning Lights
May be similarly activated

29: Software Dashboard
Data access in TOC

IMPLEMENTATION.

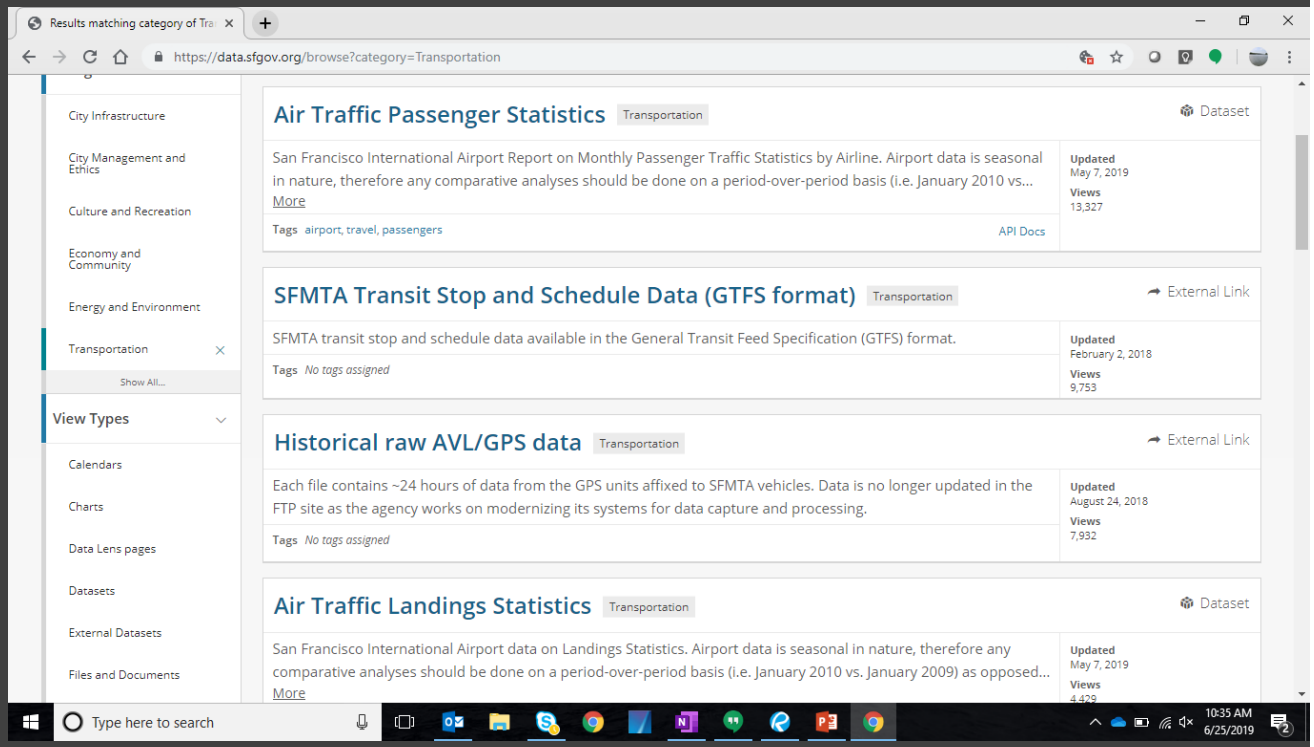
Concepts

- Video w/ AI: Hot Spots
- Passive ped detection
- Create CV Testbed
- Expand B2I Pilot
- PED-X CV Application
- PED-SIG CV Application
- Adaptive lighting
- Speed monitoring / feedback (future enforcement)
- Adaptive traffic signal timing based on speed
- Dynamic speed limits
- Leading Ped Intervals
- Integrate other MOE's into City DSS (e.g. LTS, Transit Reliability)
- Bike detection
- Improve EVP system
- Expand fiber optic connectivity
- Expand travel time / OD readers and/or Big Data
- Experiment with in-pavement lights at controlled / uncontrolled crossings
- Improve crosswalk lighting
- Consider variable lane assignment
- Expand Adaptive System, ATSPMs
- Expand AC Transit FLEX service, provide C2C connection
- Implement asset management / health monitoring

IMPLEMENTATION.

Concepts

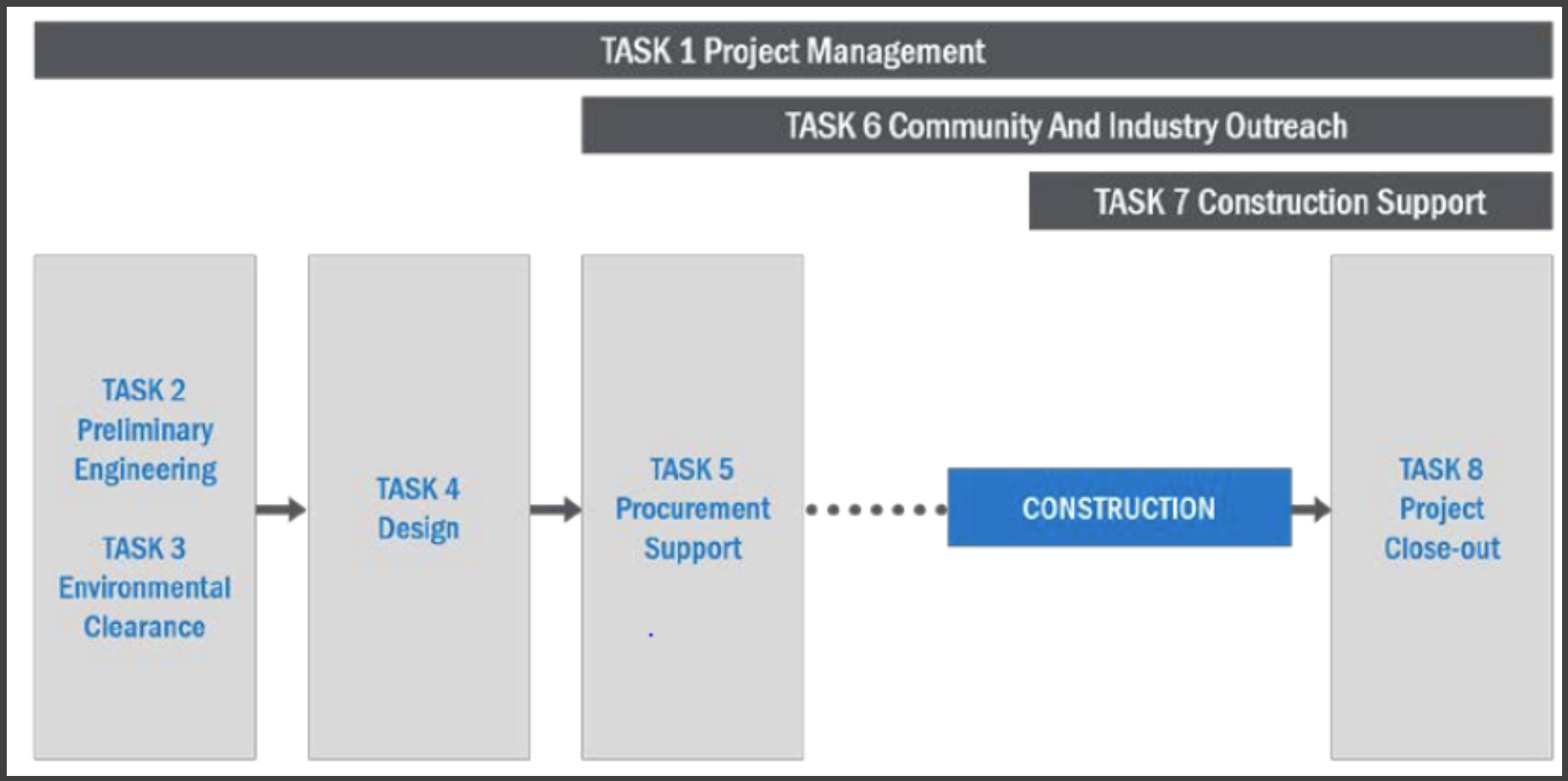
- Examine opportunities to use ACE parking video for monitoring and real-time info
- Open Data Portal
- Transportation Infrastructure Dashboard that links disparate software apps
- Map the corridor, build data sharing platform (e.g. LADOT MDS or SharedStreets)



IMPLEMENTATION.

Schedule

- Preliminary Design – wrap up in July
- SE process + Final Design – starts now, finishes Fall 2019
- Industry Outreach
- Construction starts in 2020



THANK YOU.

https://fremontsmartcorridor.org/

SPEED ENFORCEMENT.

Speed cameras may be on table

https://www.eastbaytimes.com/2019/06/25/speed-cameras-may-be-on-table-again-for-san-jose-and-san-francisco/

EAST BAY TIMES

Speed cameras may be on table again for South Bay

News > Transportation

Speed cameras may be on table again for San Jose and San Francisco

The Zero Traffic Fatalities Task Force could this week discuss a proposal to test automated cameras

By **GARY RICHARDS** | grichards@bayareanewsgroup.com |
PUBLISHED: June 25, 2019 at 7:00 am | UPDATED: June 25, 2019 at 10:28 am

As pedestrian, bicycling and auto fatalities continue to mount, California will convene a new Zero Traffic Fatalities Task Force this week to consider a variety of ways to slow drivers. That means a proposal to test automated cameras on city streets in San Francisco and Santa Clara County may be back on the table.

The group hopes to come up with possible solutions by December 2020. A proposal to conduct a five-year pilot automated camera project to catch speeders in the two counties two years ago failed when needed legislation was not approved in Sacramento.

"I know this will cause many to go berserk, but with speeders easily going 80 mph-plus and using emergency lanes on both sides of freeways to pass, it's time to install speed

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