

# CITY OF CUPERTINO LOCAL ROAD SAFETY PLAN

2ND COMMUNITY WORKSHOP

JULY 11, 2022



CITY OF  
CUPERTINO



# PURPOSE OF TODAY'S MEETING

- Project Status and Milestones
- Collision Analysis Findings
- Emphasis Areas
- Draft Engineering & Non-Engineering Countermeasures
- Questions/Comments
- Implementation/Next Steps



# WHAT IS A LOCAL ROAD SAFETY PLAN (LRSP)?

## ■ Overarching Goals:

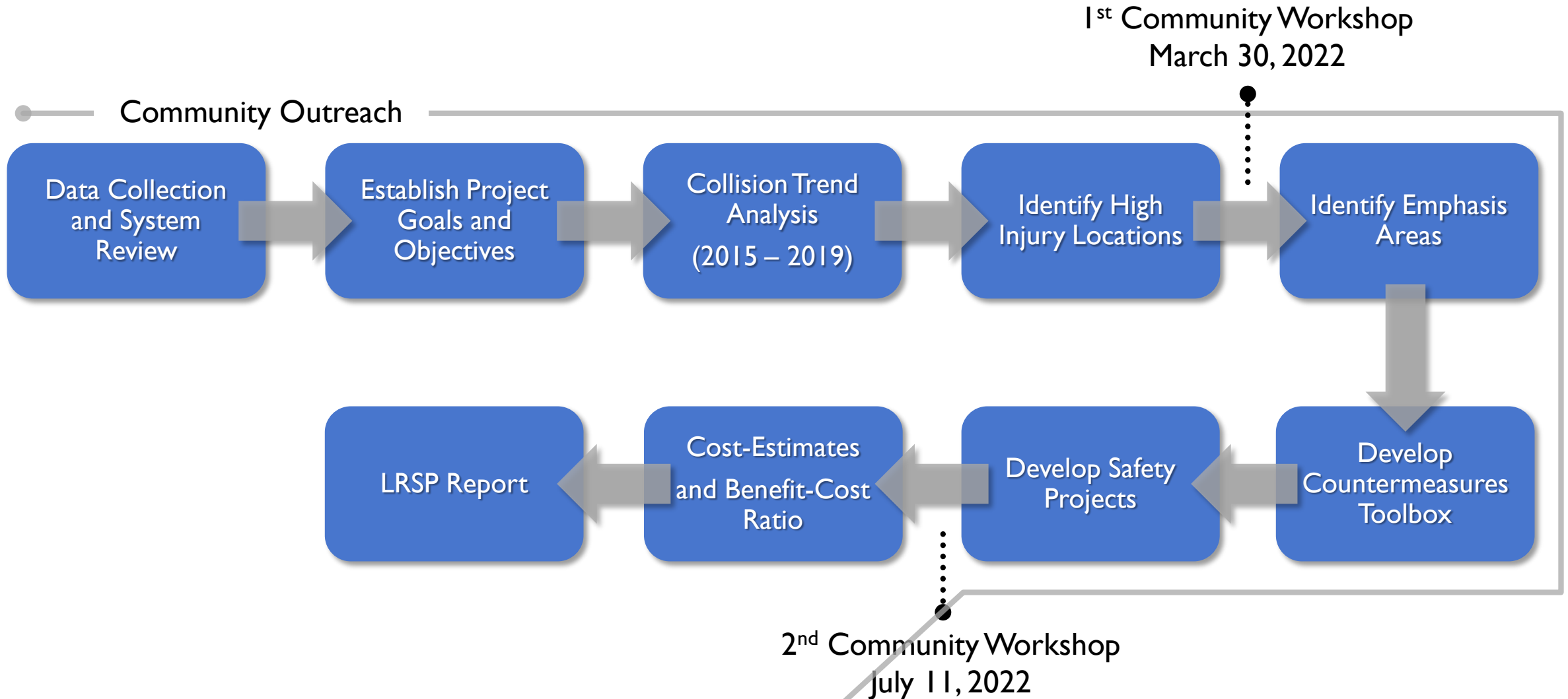
- To reduce fatalities and severe injuries (F+SI) on the City's roadways and intersections
- To identify, analyze and prioritize roadway and intersection safety improvements on local roads
- A required document to be eligible for the Highway Safety Improvement Program (HSIP) grant funding

## ■ Considers Engineering and Non-engineering Strategies

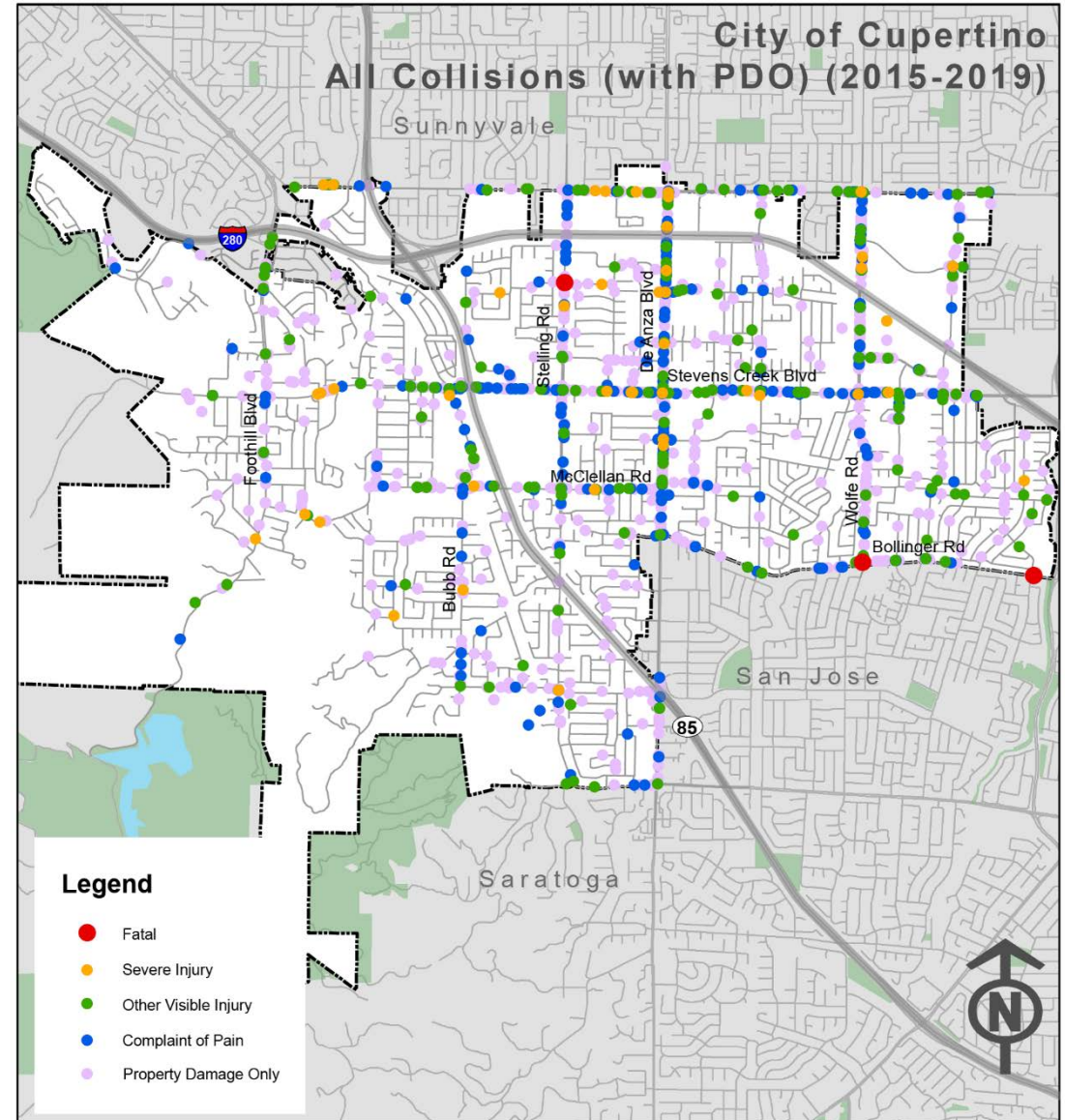
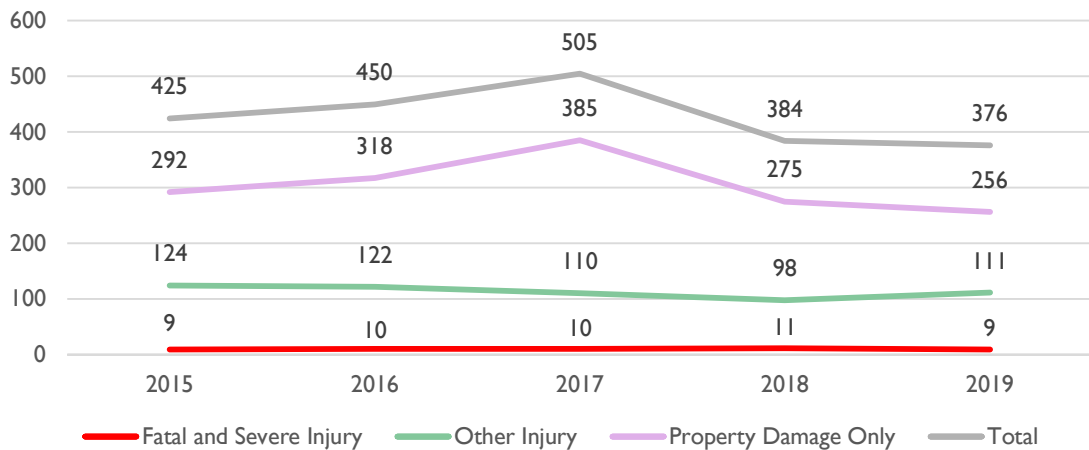
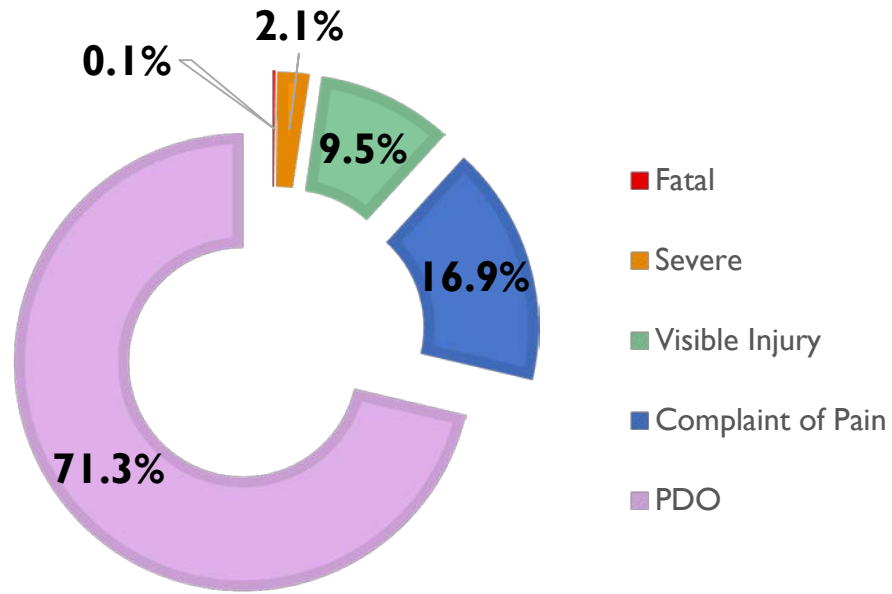
- **4 E's of Traffic Safety:** Education, Enforcement, Engineering and Emergency Medical Services (EMS)



# PROJECT STATUS AND MILESTONES

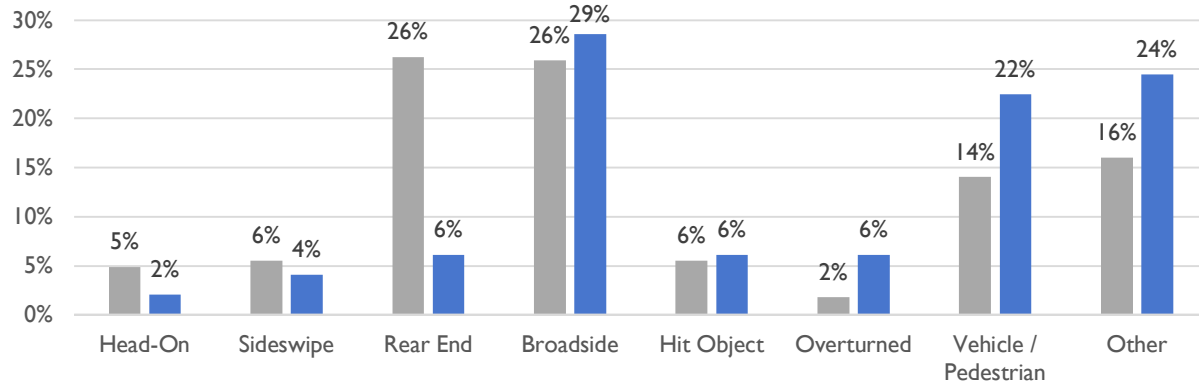


# ANALYSIS FINDINGS (2015 – 2019): ALL COLLISIONS

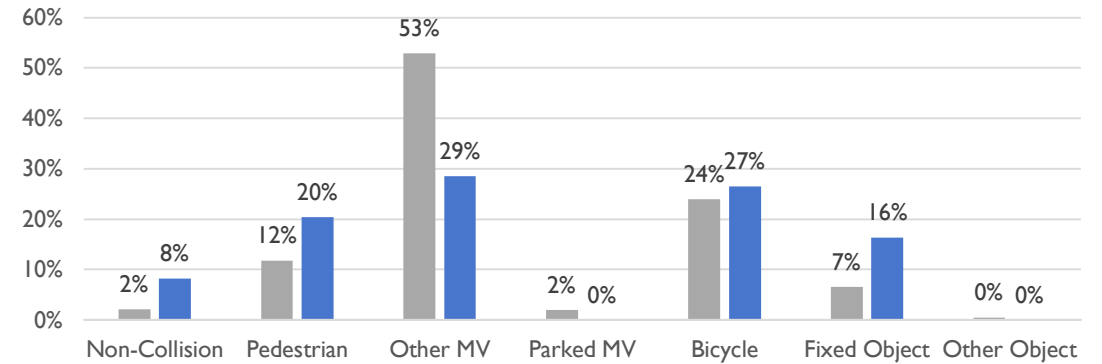


# ANALYSIS FINDINGS (2015 – 2019): INJURY COLLISIONS

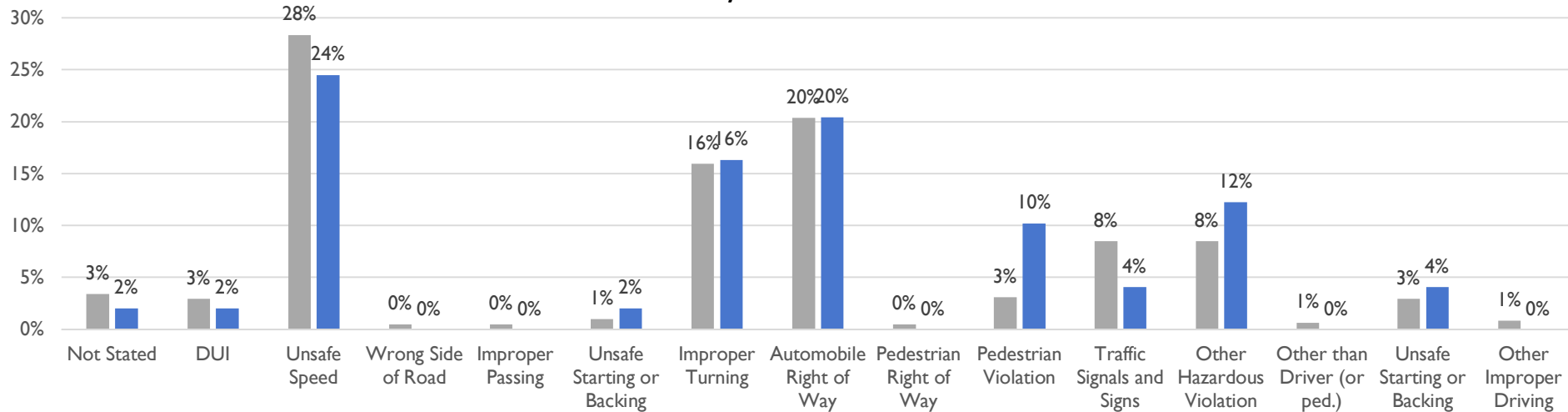
### Collisions by Type



### Motor Vehicle Involved With



### Primary Collision Factor



**Note:**

- Injury Collisions – fatal, severe injury, other visible injury and complaint of pain collisions
- F+SI – fatal and severe injury collisions

# EPDO SCORE

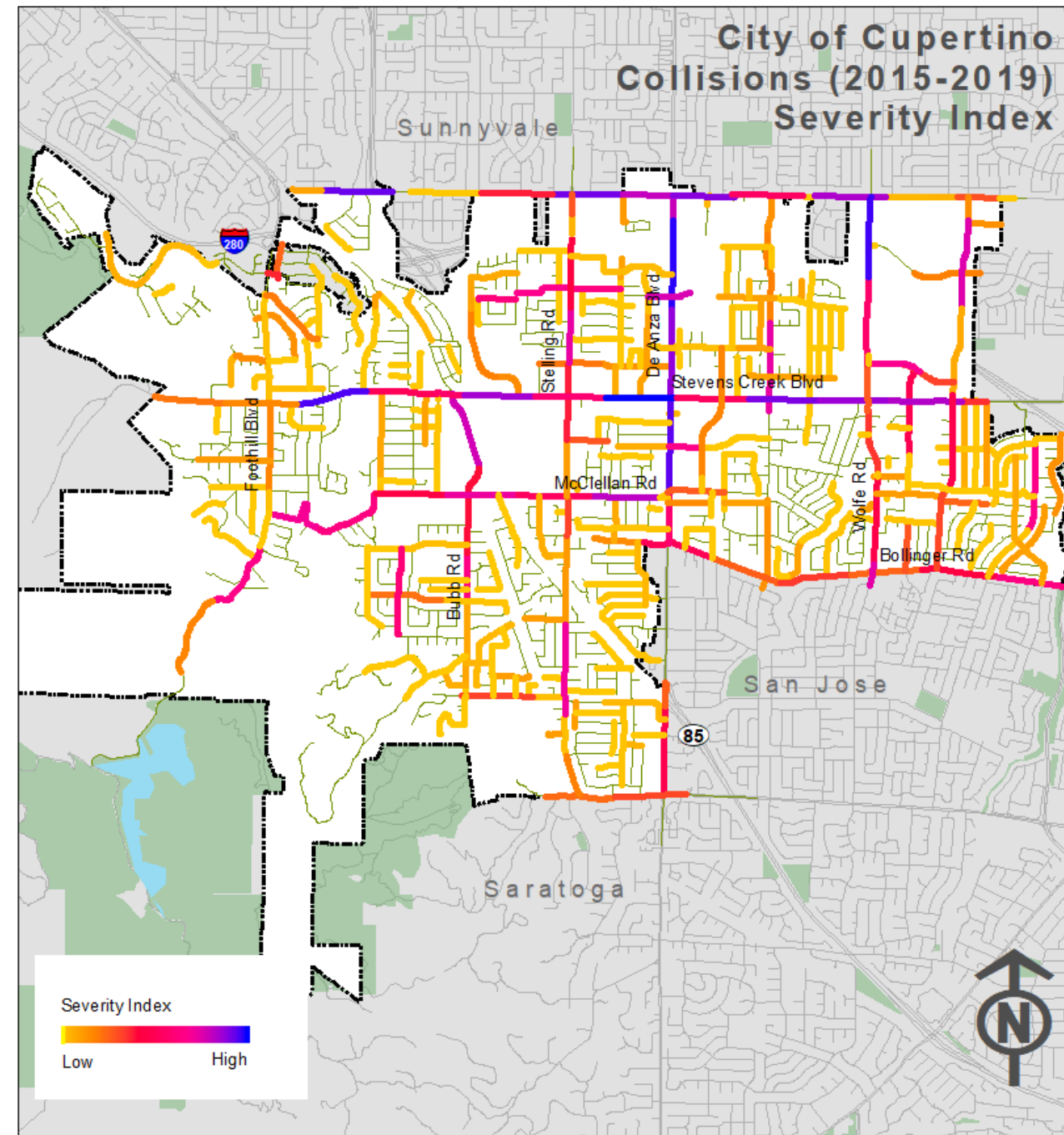
SOURCE : LOCAL ROAD SAFETY MANUAL 2020, CALTRANS

Equivalent property damage only (EPDO) methodology calculates a weighted score to identify locations that are experiencing more severe crashes. Methodology used to prioritize high risk intersections and roadway segments.

Collision Severity	EPDO Score
Fatal and Severe Injury Combined	165*
Visible Injury	11
Complaint of Pain	6
PDO	1

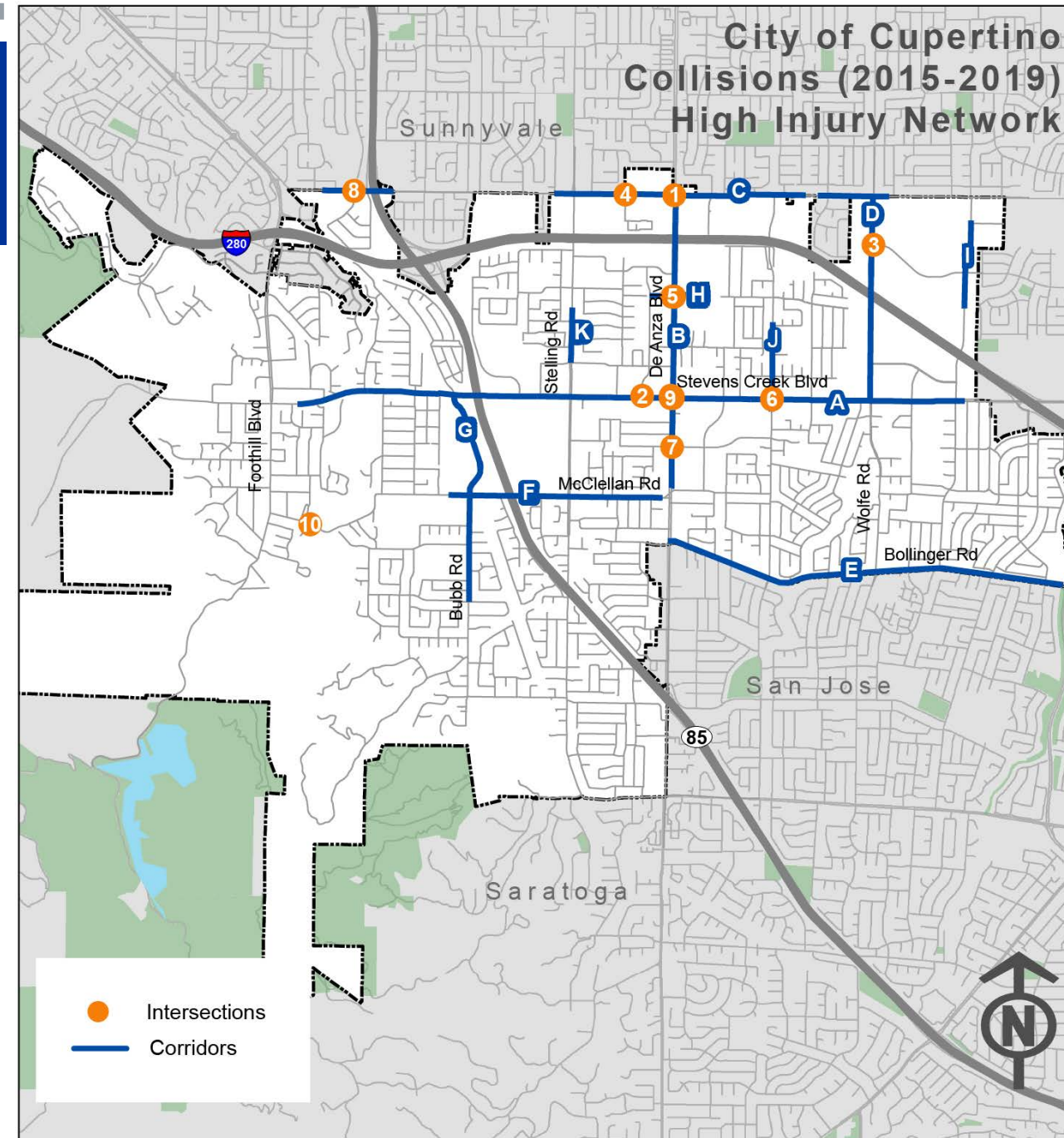
EPDO Score (HSIP Cycle 10) = (165 x Fatal) + (165 x Severe Injury) + (11 x Other Visible) + (6 x Complaint of Pain) + (1 x PDO)

- **STEP 1:** Divide each roadway into 0.3 mile segments
- **STEP 2:** Find the total number of collisions by severity on each segment
- **STEP 3:** Calculate each segment's EPDO Score
- **STEP 4:** Assign EPDO Score to each roadway segment
- **STEP 5:** Find locations with high severity and most frequency



# HIGH-INJURY INTERSECTIONS

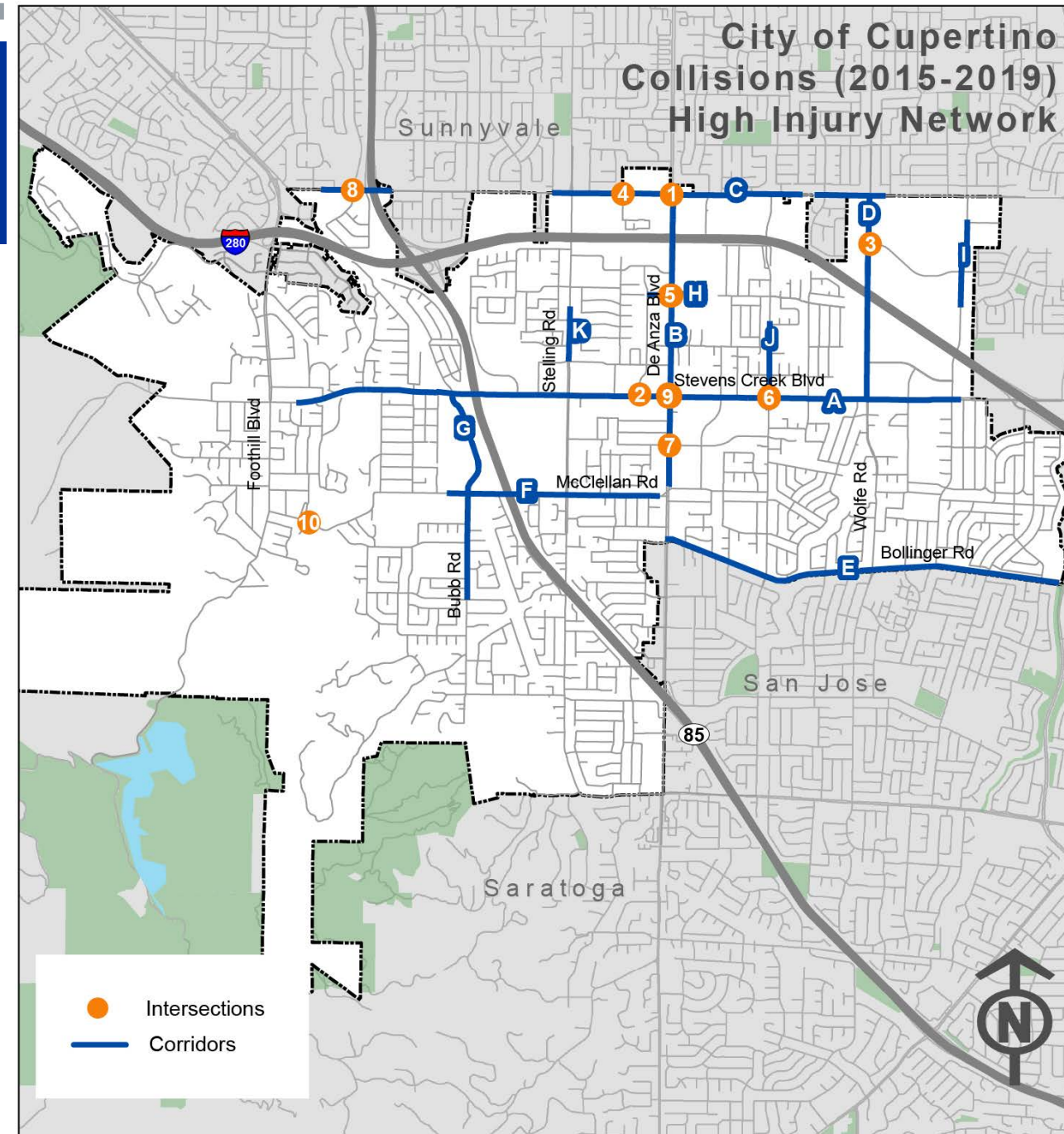
ID	Intersection	EPDO Score
1	De Anza Blvd and Homestead Rd	1,028
2	Bandley Dr and Stevens Creek Blvd	800
3	Prunridge Ave and Wolfe Ave	546
4	Franco Ct/Forge Way and Homestead Rd	545
5	De Anza Blvd and Mariani Ave	465
6	Blaney Ave and Stevens Creek Blvd	400
7	S De Anza Blvd and Rodrigues Ave	388
8	Barranca Dr and Homestead Rd	373
9	De Anza Blvd and Stevens Creek Blvd	373
10	McClellan Rd and Clubhouse Ln	349





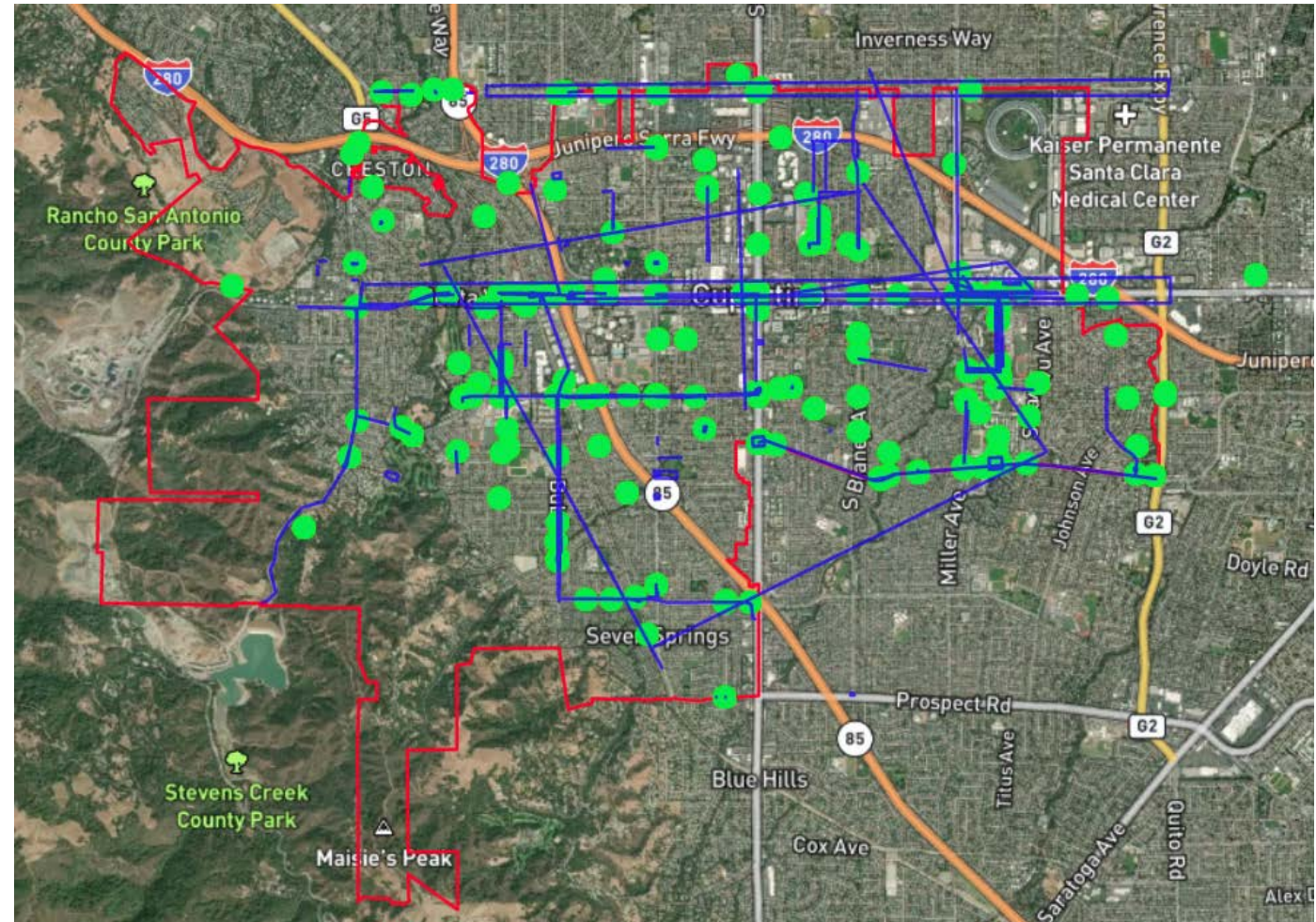
# HIGH-INJURY CORRIDORS

ID	Corridors	EPDO Score
A	Stevens Creek Blvd: Janice Ave to Judy Ave	3,139
B	De Anza Blvd: Pacifica Dr to Homestead Rd	2,096
C	Homestead Rd: Fallen Leaf Ln to Wolfe Rd	1,666
D	Wolfe Rd: Homestead Rd to Bollinger Rd	729
E	Bollinger Rd: Lawrence Expy to De Anza Blvd	562
F	McClellan Rd: Imperial Ave to De Anza Blvd	490
G	Bubb Rd: Stevens Creek Blvd to Columbus Ave	436
H	Mariani Ave: Bandy Dr to Infinite Loop	209
I	Tantau Ave: Forge Dr to Pruneridge Ave	208
J	Blaney Ave: Pear Tree Ln to Stevens Creek Blvd	192
K	N Stelling Rd: Alves Dr to Greenleaf Dr	192



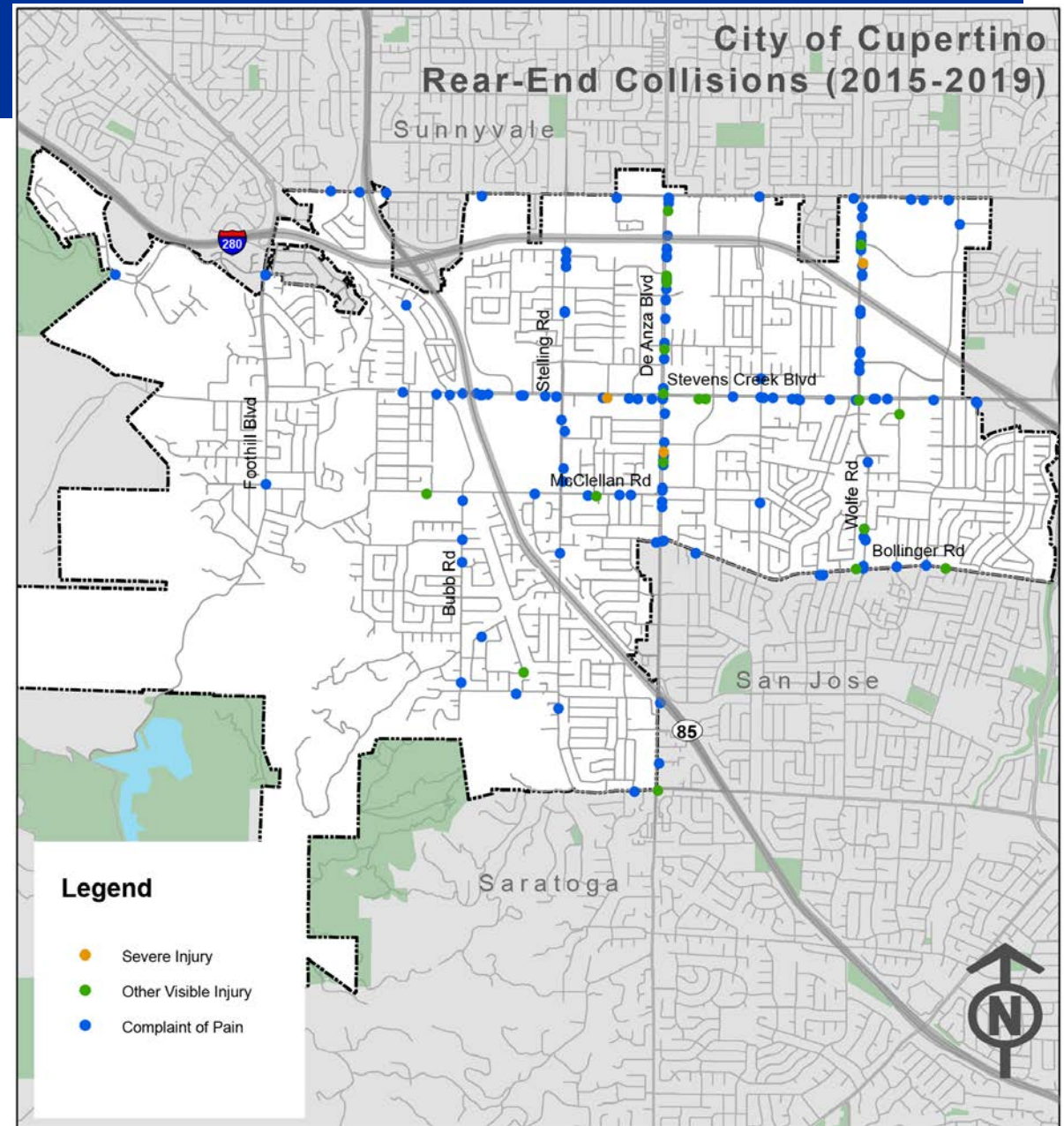
# PROJECT WEBSITE

- 390 comments received on interactive map
  - 243 points
  - 147 lines
- Many comments concentrated on Stevens Creek Blvd corridor



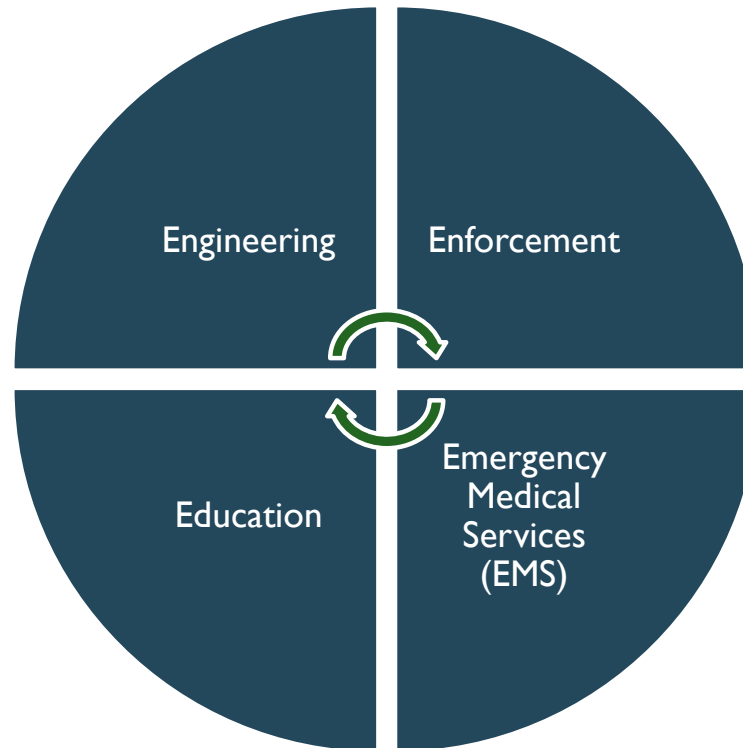
# TOP EMPHASIS AREAS

- Improve Intersection Safety
- Reduce Unsafe Speed Collisions
- Reduce Automobile Right-of-Way Violations
- Improve Pedestrian and Bicyclist Safety
- Reduce Nighttime Collisions
- Reduce Rear End Collisions
- Reduce Broadside Collisions
- Reduce Improper Driving Collisions
- Reduce Collisions near Schools



# THE 4 E'S OF TRAFFIC SAFETY

- HSIP eligible countermeasures
- E.g.: Improve intersection lighting, install median refuge island, install bulb outs, improving signs and striping
- Conduct focused public information and education campaigns
- Create pocket guides and informational fliers with pedestrian laws, stop sign violations, etc.
- Safe Routes to School education programs



- Targeted enforcement at high risk intersections
- Place high priority on enforcement of violation type that contribute to the most fatalities and severe injuries
- Improve deployment to collision sites
- Ensure emergency routes are defined and clear

# EMPHASIS AREAS STRATEGIES

**Table 2. Emphasis Area 1 Strategies**

Objective:			
To reduce the number of fatal and severe injury collisions at intersections.			
	Strategies	Performance Measure	Agencies/ Organizations
Education	Conduct public information and education campaign for intersection safety laws regarding traffic signals, stop signs, and turning left or right.	Number of education campaigns	City/School District/ Sheriff's Department
Enforcement	Targeted enforcement at high-risk intersections to monitor traffic law violations, right-of-way violations, speed limit laws and other violations that occur at intersections.	-	Sheriff's Department
Engineering	<ul style="list-style-type: none"> <li>S01, Install intersection lighting</li> <li>S02, Improve signal hardware: lenses, back-plates with retroreflective borders, mounting, size, and number</li> <li>S03, Improve signal timing (coordination, phases, red, yellow, or operation)</li> <li>S06, Install left-turn lane and add turn phase (signal has no left-turn lane or phase before)</li> <li>S07, Provide protected left turn phase (left turn lane already exists)</li> <li>S08, Convert signal to mast arm (from pedestal-mounted)</li> <li>S09, Install raised pavement markers and striping (Through Intersection)</li> <li>S16/NS04/NS05, Convert intersection to roundabout</li> </ul>	Number of intersections improved.	City

# DRAFT COUNTERMEASURE TOOLBOX – SIGNALIZED INTERSECTIONS

HSIP Code	Countermeasure
S02	Improve signal hardware: lenses, back-plates with retroreflective borders, mounting, size, and number
S03	Improve signal timing (coordination, phases, red, yellow, or operation)
S04	Provide Advanced Dilemma Zone Detection for high speed approaches*
S07	Provide protected left turn phase (left turn lane already exists)
S08	Convert signal to mast arm (from pedestal-mounted)
S09	Install raised pavement markers and striping (Through Intersection)
S11	Improve pavement friction (High Friction Surface Treatments)
S12	Install raised median on approaches (signalized intersection)
S13PB	Install pedestrian median fencing on approaches
S20PB	Install advance stop bar before crosswalk (Bicycle Box)
S21PB	Modify signal phasing to implement a Leading Pedestrian Interval (LPI)

# DRAFT SIGNALIZED INTERSECTION IMPROVEMENTS



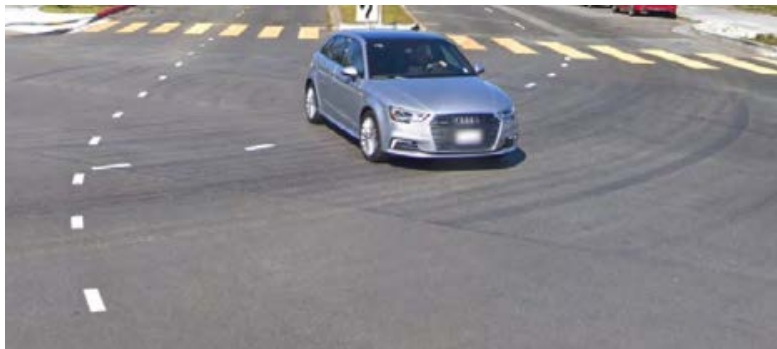
Improve Signal Hardware  
& Timing



Improve pavement friction



Convert signal to mast arm



Install raised pavement markings



Advance Stop Bar (Bicycle Box)



Modify signal phasing to implement a  
Leading Pedestrian Interval (LPI)

# DRAFT COUNTERMEASURE TOOLBOX – UNSIGNALIZED INTERSECTIONS

HSIP Code	Countermeasure
NS06	Install/upgrade larger or additional stop signs or other intersection warning/regulatory signs
NS07	Upgrade intersection pavement markings (NS.I.)
NS08	Install Flashing Beacons at Stop-Controlled Intersections
NS09	Install flashing beacons as advance warning (non-signalized intersection)
NS10	Install transverse rumble strips on approaches
NS11	Improve sight distance to intersection (Clear Sight Triangles)
NS12	Improve pavement friction (High Friction Surface Treatments)
NS14	Install raised median on approaches (NS.I.)
NS21PB	Install/upgrade pedestrian crossing at uncontrolled locations (with enhanced safety features)



# DRAFT UNSIGNALIZED INTERSECTION IMPROVEMENTS



Improve sight distance



Install/upgrade larger or additional stop signs or other intersection warning/regulatory signs



Install flashing beacons as advance warning



Install/upgrade pedestrian crossing (with enhanced safety features)



Improve pavement friction

# DRAFT COUNTERMEASURE TOOLBOX – ROADWAY SEGMENTS

HSIP Code	Countermeasure
R01	Add Segment Lighting
R08	Install raised median
R10PB	Install pedestrian median fencing
R14	Road Diet (Reduce travel lanes from 4 to 3 and add a two way left-turn lane and bike lanes)
R13	Add two-way left-turn lane (without reducing travel lanes)
R14	Road Diet (Reduce travel lanes from 4 to 3 and add a two way left-turn and bike lanes)
R21	Improve pavement friction (High Friction Surface Treatments)
R22	Install/Upgrade signs with new fluorescent sheeting (regulatory or warning)
R23	Install chevron signs on horizontal curves
R25	Install curve advance warning signs with flashing beacon
R26	Install dynamic/variable speed warning signs
R27	Install delineators, reflectors, and object markers

# DRAFT COUNTERMEASURE TOOLBOX – ROADWAY SEGMENTS

HSIP Code	Countermeasure
R30	Install centerline rumble strips/stripes
R33PB	Install Separated Bike Lanes
R35PB	Install/upgrade pedestrian crossing (with enhanced safety features)

# DRAFT ROADWAY SEGMENT IMPROVEMENTS



Install/Upgrade signs with new fluorescent sheeting (regulatory or warning)



Improve pavement friction



Install delineators, reflectors, and/or object markers



Install/upgrade pedestrian crossing (with enhanced safety features)



Install Separated Bike Lane



Install centerline rumble strips

# DRAFT NON ENGINEERING STRATEGIES

## ■ Education

- Conduct public information and education campaign for intersection safety laws, unsafe speeds, distracted driving, improper turning and driving under the influence.
- Conduct bicycle and pedestrian safety campaigns and outreach to raise their awareness of bicycle and pedestrian safety needs through media outlets and social platforms in Cupertino every 3-5 years

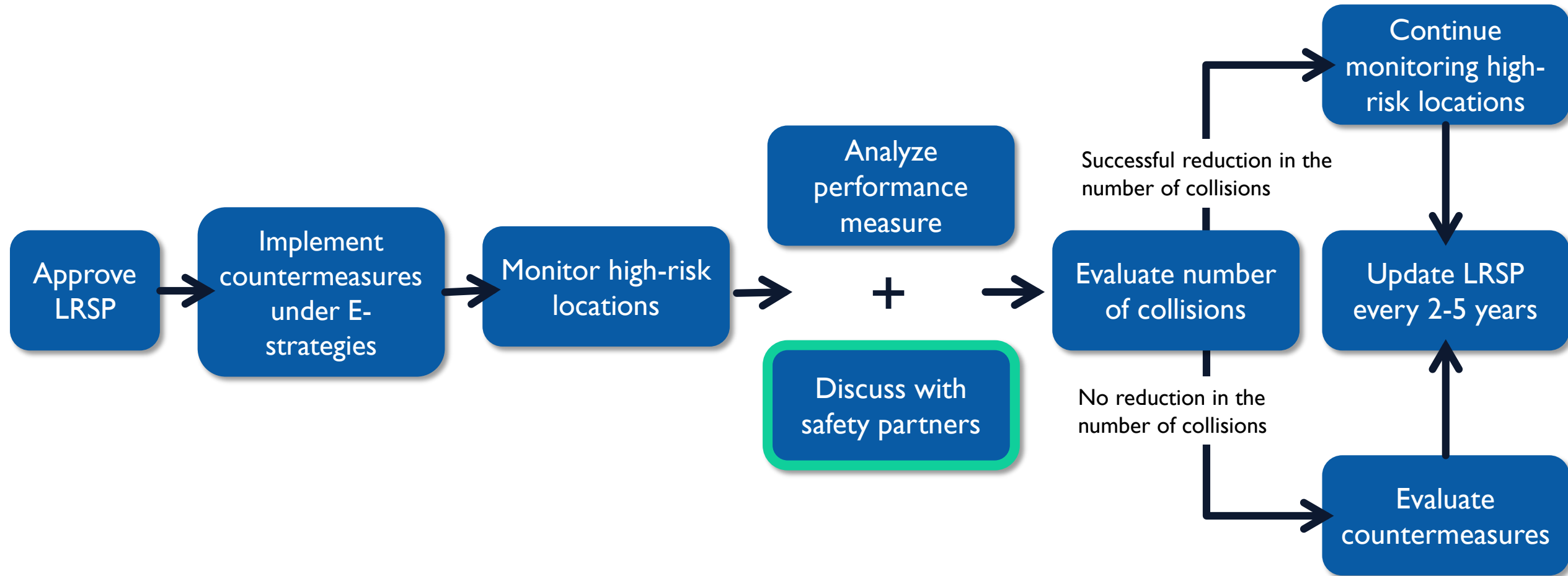
## ■ Enforcement

- Targeted enforcement at high-injury locations.
- Increase the number of personnel who have completed Advanced Roadside impaired Driving Enforcement (ARIDE) training

## ■ EMS

- Install emergency vehicle pre-emption systems
- Increase the number of EMS/fire control personnel taking Traffic Incident Management Training

# IMPLEMENTATION



# NEXT STEPS

- Finish developing safety projects for all high-injury locations
- Draft Report
- HSIP Applications



# OPEN DISCUSSION

- Questions or comments on the Emphasis Areas and proposed countermeasures



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**THANK YOU!**



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