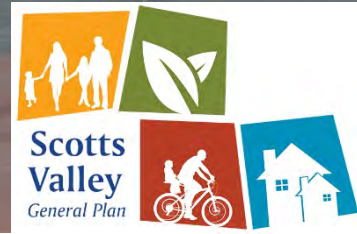


# Mobility 101

GPAC Meeting #10  
February 11, 2019



# Vision Zero

- Based on an underlying ethical principle that "it can never be ethically acceptable that people are killed or seriously injured when moving within the road transport system."



# Presentation Outline

- **Transportation Concepts**
  - Vision Zero
  - Transportation Demand Management
  - Complete Streets
  - Level of Service
  - Vehicle Miles Traveled
- **Scotts Valley Mobility**
- **Key Issues & Discussion**

# Vision Zero

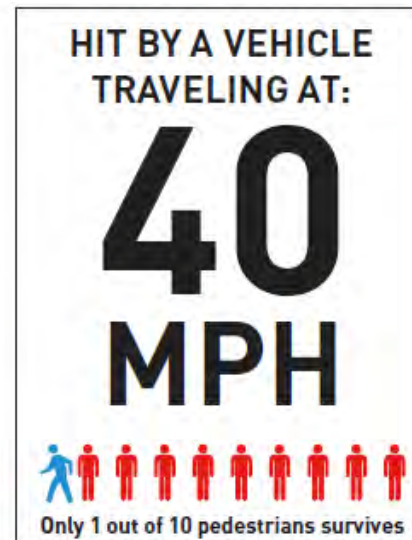
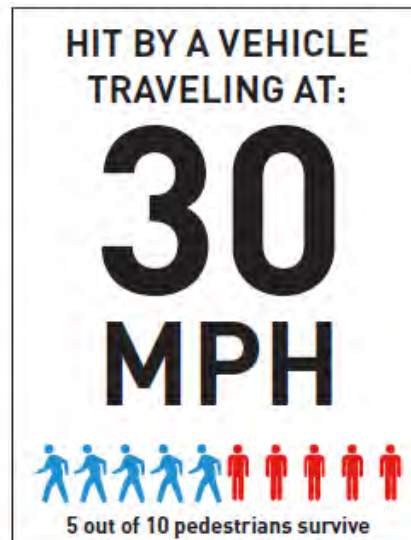
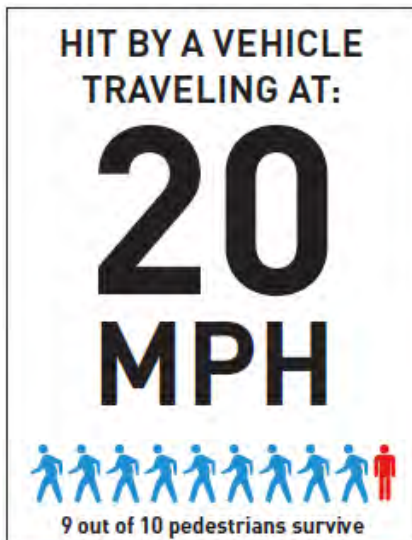




# Vision Zero

## Possible Maximum Travel Speeds

Type of infrastructure and traffic	Possible travel speed (km/h)
Locations with possible conflicts between pedestrians and cars	30 km/h (19 mph)
Intersections with possible side impacts between cars	50 km/h (31 mph)
Roads with possible frontal impacts between cars, including rural roads <sup>[6]</sup>	70 km/h (43 mph)
Roads with no possibility of a side impact or frontal impact (only impact with the infrastructure)	100 km/h (62 mph)+



# Complete Streets

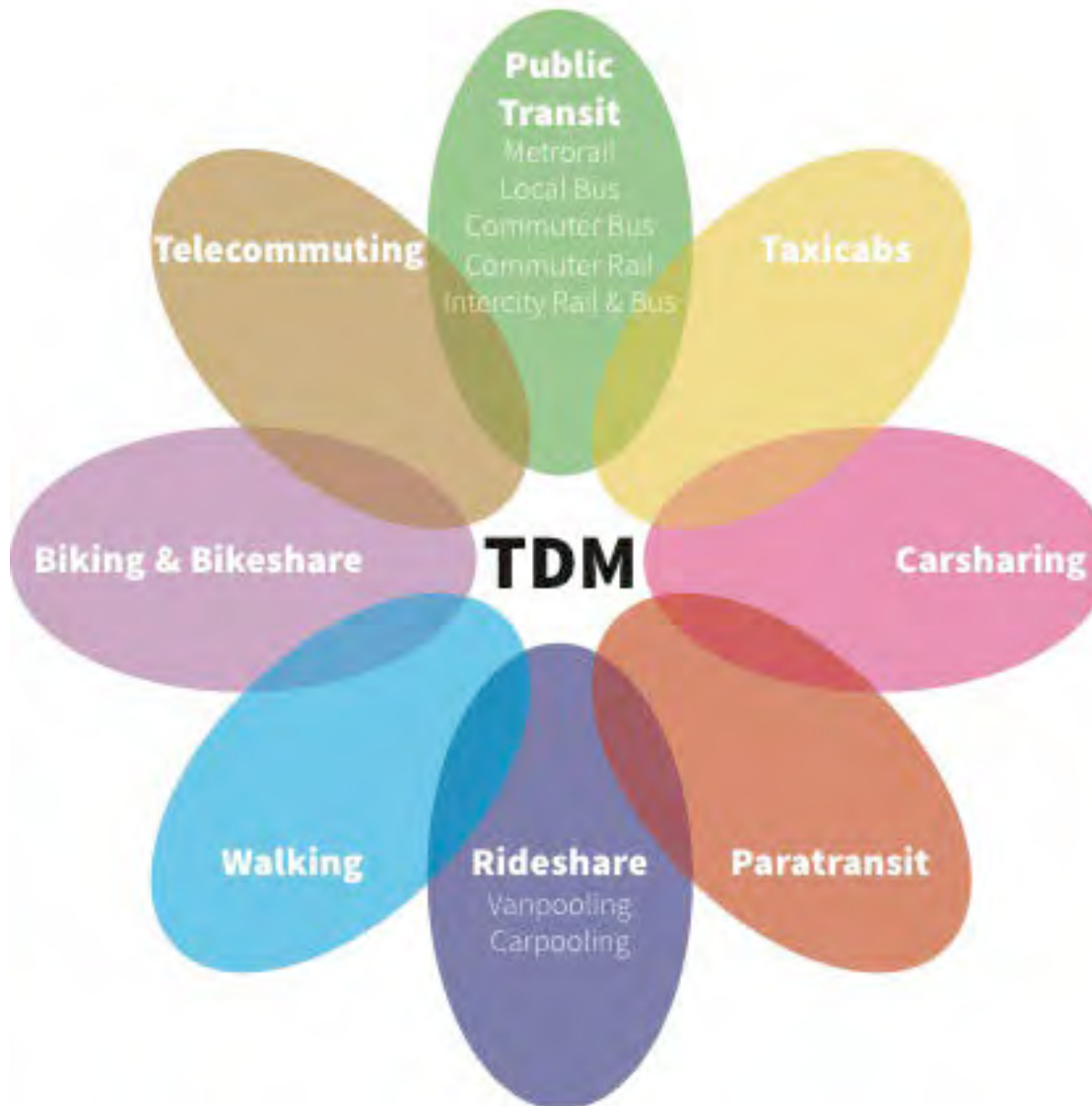
## Federal Complete Streets Act of 2009

*A roadway that accommodates all travelers, particularly public transit users, bicyclists, pedestrians, and motorists, to enable all travelers to use the roadway safely and efficiently.*

## AB 1358 – California Complete Streets Act

*Requires all CA cities and counties to consider complete streets when next updating their General Plan.*

# Transportation Demand Management



# Complete Streets

## WHAT IS A COMPLETE STREET?



### ACTIVE SIDEWALKS

Sidewalks should be smooth, wide, feel safe, and have appropriate transitions to the street, making them easy to walk or use a wheelchair on

### DEDICATED BIKE LANES

Simple pavement markings creating a dedicated bike lane make both motorist and bicycle movement more predictable, and therefore safer for both. They may increase the likelihood of casual riders using bicycles for transportation

### ACTIVE ROADWAY

One lane of car traffic going in each direction with a two-way-left-turn-lane (TWLTL) in the center would reduce the amount of car crashes on Government Street by providing turning vehicles a refuge from through traffic, while keeping through traffic moving more efficiently

### SAFE CROSSWALKS

Clearly marked crosswalks allow pedestrians and wheelchair users to cross streets safely, while making sure cars know where to expect them

### PLANTING STRIP

Street trees and landscaping slow speeding traffic, improve the aesthetics of the roadway, provide shade, and create a buffer between cars and people, making a more inviting environment for pedestrians

### GREEN SPACES

Parks and public green spaces create a destination, encouraging community interaction and providing a rest from the surrounding urban environment



# Complete Streets



# Complete Streets

North Market Street (BEFORE)



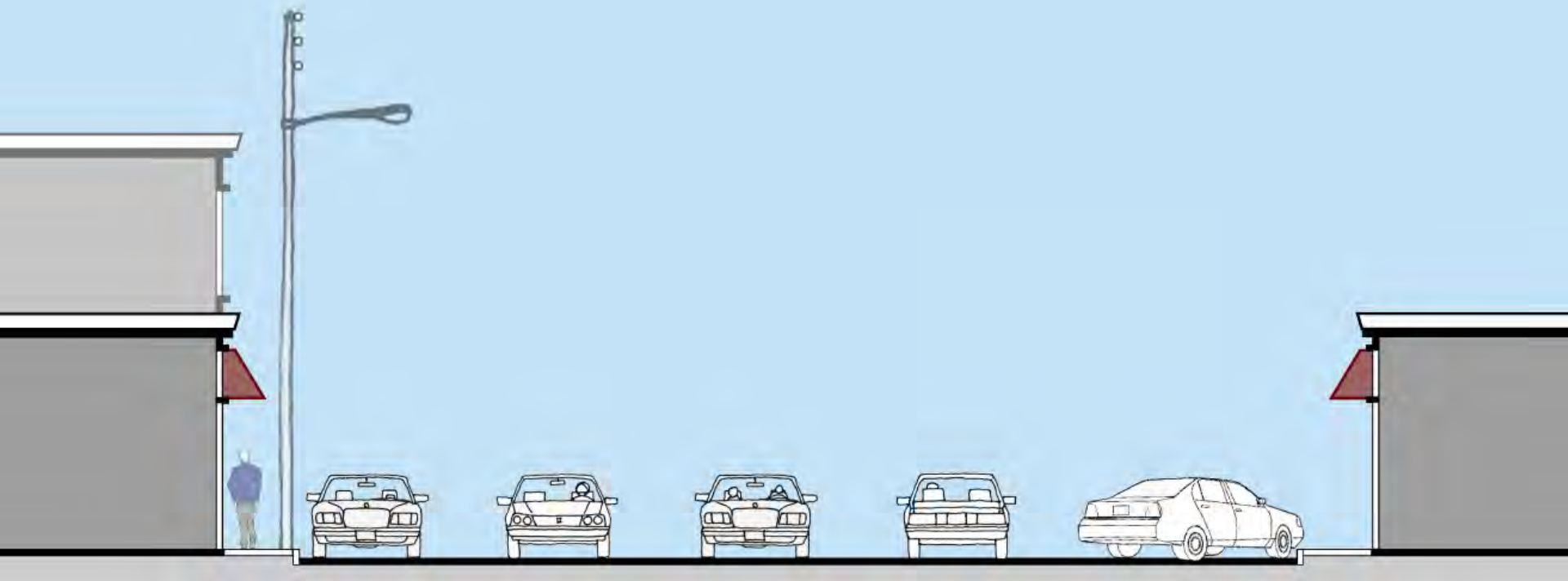


# Complete Streets

North Market Street (AFTER)

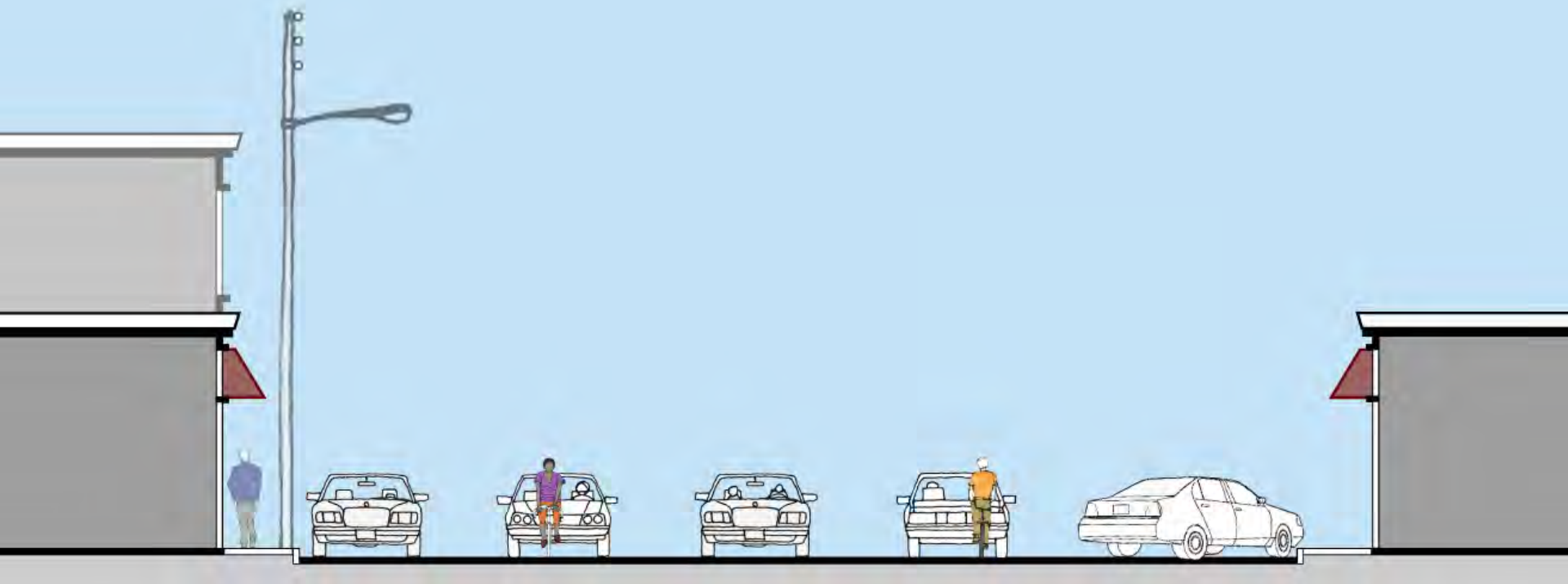


# Davis - Typical East Section - Existing

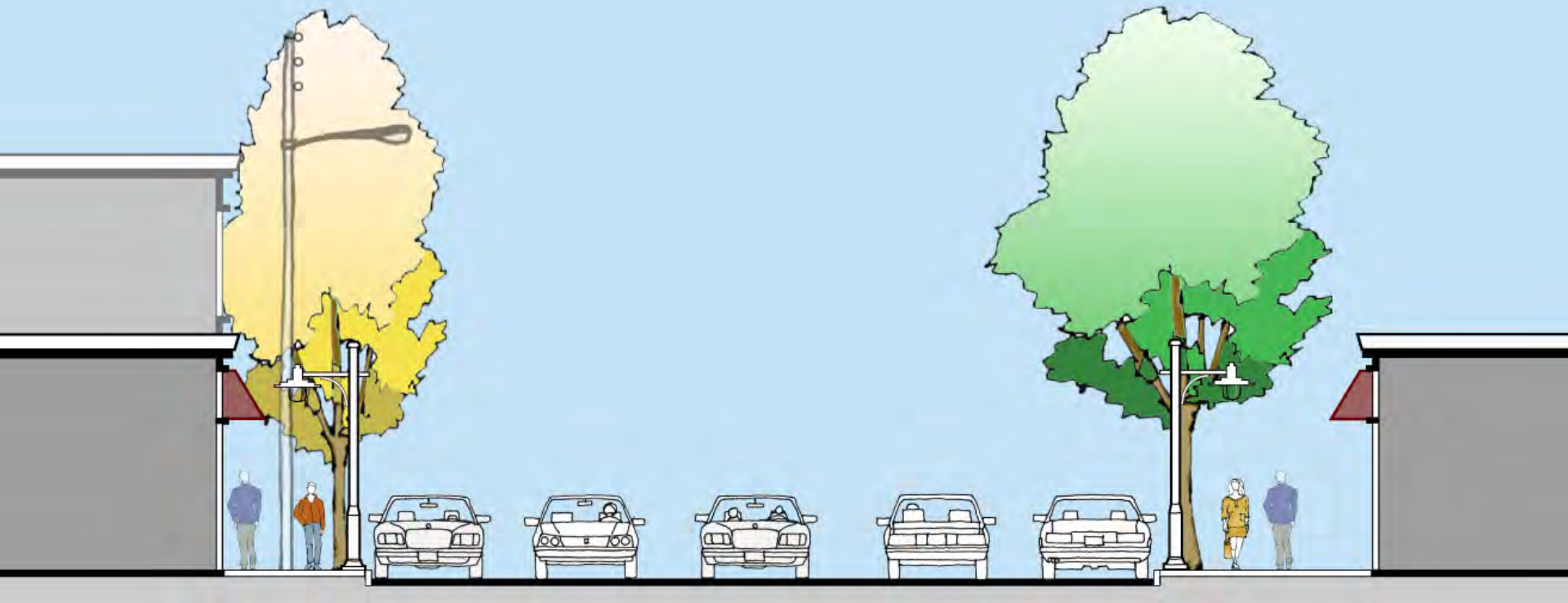










# Davis - Typical East Section - Short Term Future



# Davis - Typical East Section - 60' ROW - Future

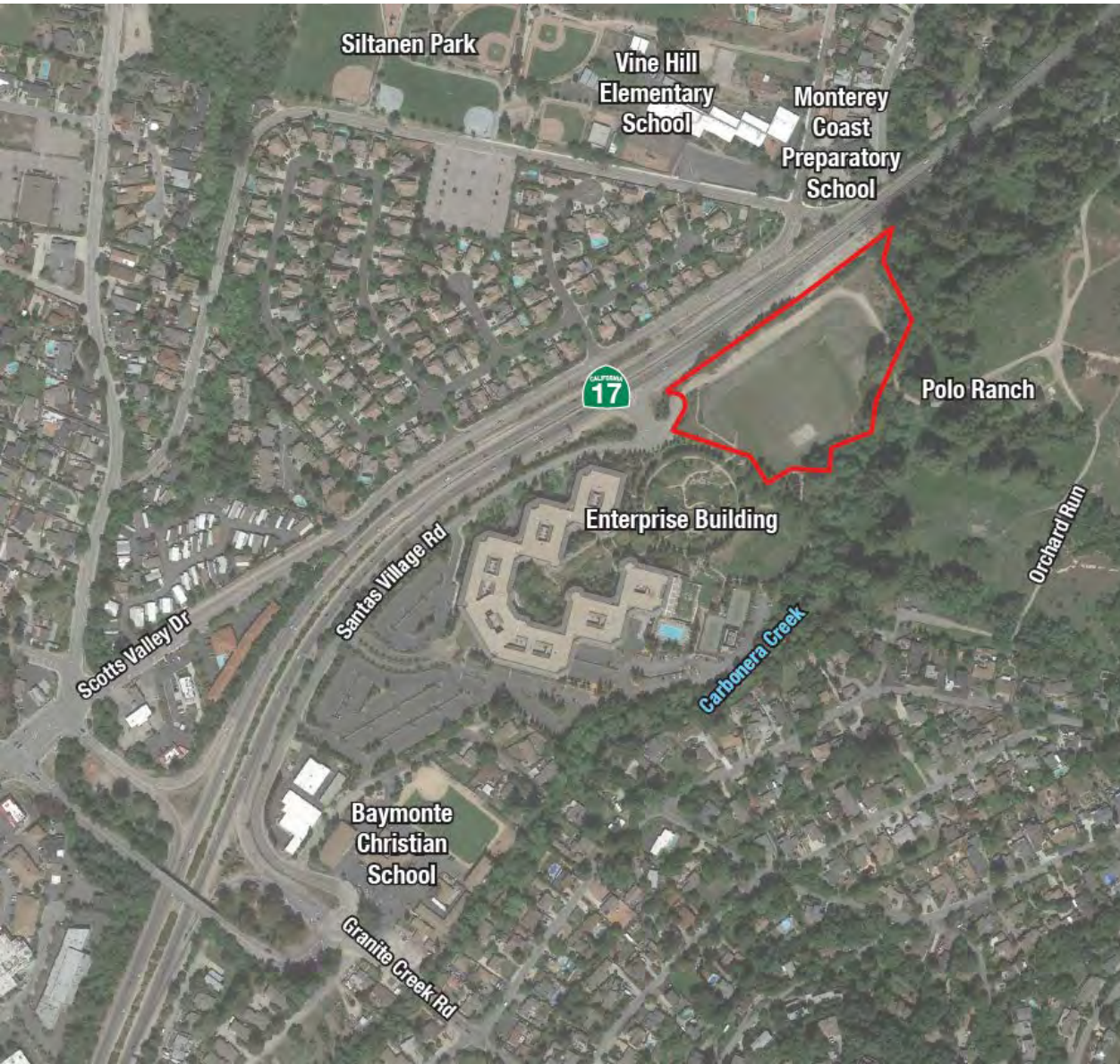


# Level of Service

<b>FREE FLOW</b> Low volumes and no delays.	LOS <b>A</b>	
<b>STABLE FLOW</b> Speeds restricted by travel conditions, minor delays.	LOS <b>B</b>	
<b>STABLE FLOW</b> Speeds and maneuverability closely controlled because of higher volumes.	LOS <b>C</b>	
<b>STABLE FLOW</b> Speeds considerably affected by change in operation conditions. High density traffic restricts maneuverability; volume near capacity.	LOS <b>D</b>	
<b>UNSTABLE FLOW</b> Low speeds; considerable delay; volume at or slightly over capacity.	LOS <b>E</b>	
<b>FORCED FLOW</b> Very low speeds; volumes exceed capacity; long delays with stop-and-go traffic.	LOS <b>F</b>	



# Transportation Impact Analysis



- 120-room hotel
- 50 townhomes
- 9-acres

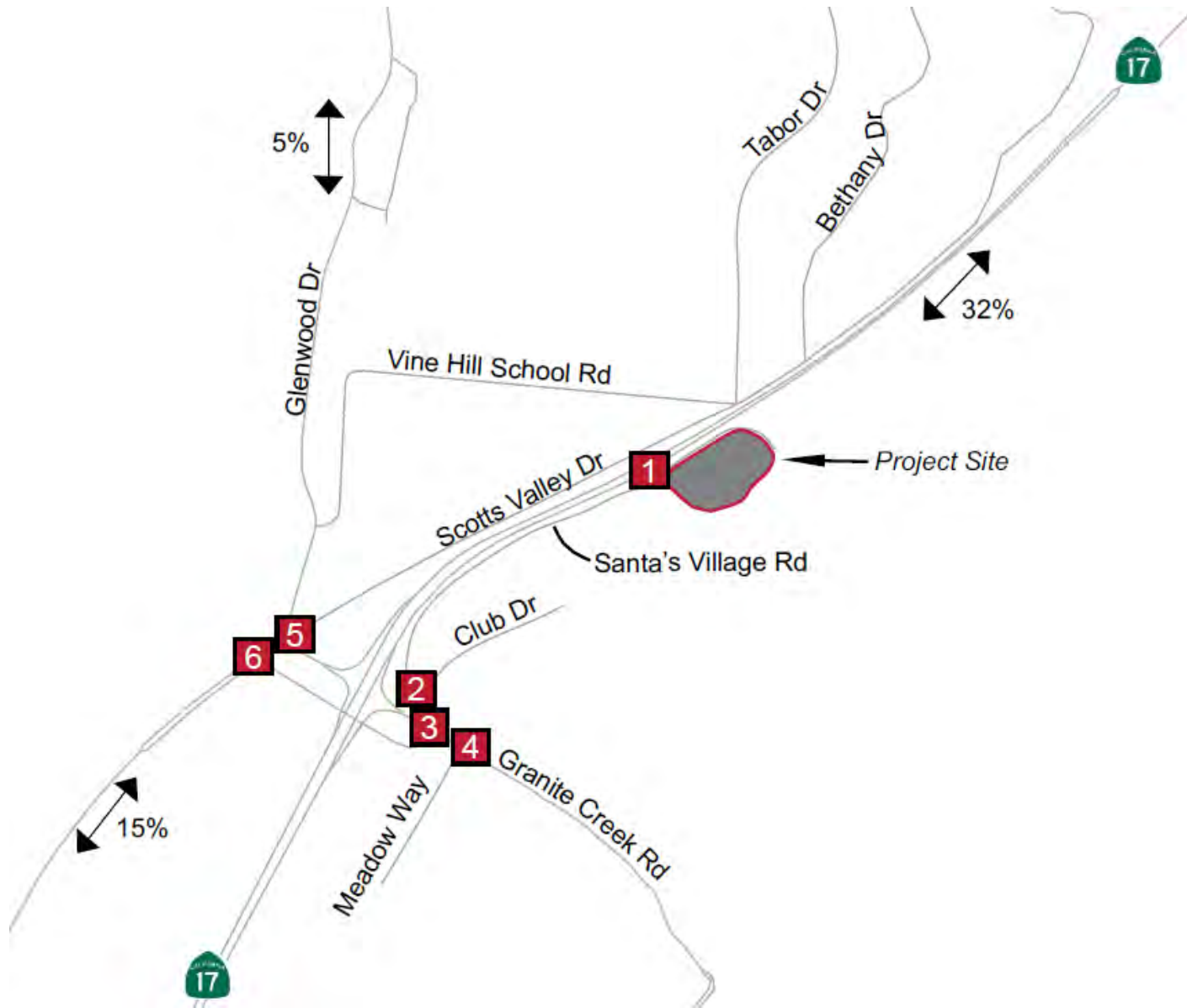


Enterprise Way  
DRAFT EIR





# Study Intersections & Distribution



# Trip Generation

**Table 15-3: Proposed Project Weekday Trip Generation**

Land Use	ITE Land Use Code	Size	Daily		AM Peak Hour				PM Peak Hour			
			Rate	Trips	Rate	In	Out	Total	Rate	In	Out	Total
Residential Townhouse <sup>1</sup>	230 <sup>1</sup>	50 DU	7.04	352	0.60	5	25	30	0.68	23	11	34
Hotel <sup>2</sup>	310 <sup>2</sup>	121 Rooms <sup>3</sup>	8.17	989	0.53	38	26	64	0.60	37	36	73
<b>Net New Project Trips</b>			-	<b>1341</b>	-	<b>43</b>	<b>51</b>	<b>94</b>	-	<b>60</b>	<b>47</b>	<b>107</b>

Notes:

1. ITE Code 230; Based on ITE equation.

2. ITE Code 310; Based on average rate.

3. The hotel plans envision 120 hotel rooms. To provide a conservative estimate of trip generation, 121 rooms are included in the analysis.

Source: Kimley-Horn & Associates, 2015

# Impact Analysis – Existing + Project

Table 15-4: Existing and Existing + Project Transportation Delay & LOS

	Intersection	Control Type	Agency	LOS Threshold	Existing						Existing + Project					
					AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour		
					Movement	Delay (sec)	LOS	Movement	Delay (sec)	LOS	Movement	Delay (sec)	LOS	Movement	Delay (sec)	LOS
1	Santa's Village Road / CA 17 Hwy Ramps	SSSC	Caltrans	C/D	-	0.0	A	-	0.0	A	-	0.0	A	-	0.0	A
	Worst Approach				NB/SB	0.0	A	NB/SB	0.0	A	NB/SB	0.0	A	NB/SB	0.0	A
2	Santa's Village Road / Club Drive	SSSC	City	C/D	-	0.9	A	-	4.6	A	-	0.8	A	-	3.9	A
	Worst Approach				SB	9.8	A	SB	9.6	A	SB	9.7	A	SB	9.8	A
3	Santa's Village Road / Granite Creek Road / Hwy 17 NB Ramps	Signal	Caltrans	C/D	-	<b>58.1</b>	<b>E</b>	-	<b>46.4</b>	<b>D</b>	-	<b>58.3</b>	<b>E</b>	-	<b>46.8</b>	<b>D</b>
4	Granite Creek Road / Meadow Way	SSSC	City	C/D	-	1.6	A	-	1.3	A	-	1.6	A	-	1.3	A
	Worst Approach				EB	15.1	C	EB	13.4	B	EB	15.1	C	EB	13.4	B
5	Scotts Valley Drive / Glenwood Drive / Hwy 17 SB Ramps	Signal	Caltrans	C/D	-	<b>39.4</b>	<b>D</b>	-	<b>39.3</b>	<b>D</b>	-	<b>39.8</b>	<b>D</b>	-	<b>39.5</b>	<b>D</b>
6	Scotts Valley Drive / Granite Creek Road	Signal	Caltrans	C/D	-	34.5	C	-	29.8	C	-	34.9	C	-	31.4	C

Notes:

1. NB, SB, EB, WB = Northbound, Southbound, Eastbound, Westbound

2. Analysis performed using 2010 Highway Capacity Manual methodologies.

3. Each study intersection is controlled by a traffic signal, a side-street stop-controlled (SSSC), or an all-way stop-controlled (AWSC).

4. Delay refers to the average control delay for the entire intersection measured in seconds per vehicle. According to HCM methodology, overall LOS is not defined for side street stop controlled intersections, instead the worst approach control delay is used in seconds.

5. If a specific movement has a delay less than the approach or intersection average, and the trips are increased for this movement, the overall intersection delay is decreased.

6. Intersections that are operating below acceptable levels are shown in **BOLD** and shaded light blue.

Source: Kimley-Horn & Associates, Inc. 2015



# Impact Analysis – Cumulative + Project

Table 15-5: Cumulative and Cumulative + Project Transportation Delay & LOS

	Intersection	Control Type	Agency	LOS Threshold	Cumulative						Cumulative + Project					
					AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour		
					Movement	Delay (sec)	LOS	Movement	Delay (sec)	LOS	Movement	Delay (sec)	LOS	Movement	Delay (sec)	LOS
1	Santa's Village Road / CA 17 Hwy Ramps	SSSC	Caltrans	C/D	-	0.0	A	-	0.0	A	-	0.0	A	-	0.0	A
	Worst Approach				NB/SB	0.0	A	NB/SB	0.0	A	NB/SB	0.0	A	NB/SB	0.0	A
2	Santa's Village Road / Club Drive	SSSC	City	C/D	-	1.0	A	-	3.6	A	-	1.0	A	-	3.4	A
	Worst Approach				SB	10.2	B	SB	10	B	SB	10.3	B	SB	10.7	B
3	Santa's Village Road / Granite Creek Road / Hwy 17 NB Ramps	Signal	Caltrans	C/D	-	<b>59.8</b>	<b>E</b>	-	<b>49.1</b>	<b>D</b>	-	<b>60.1</b>	<b>E</b>	-	<b>49.9</b>	<b>D</b>
4	Granite Creek Road / Meadow Way	SSSC	City	C/D	-	1.8	A	-	1.3	A	-	1.8	A	-	1.3	A
	Worst Approach				EB	16.3	C	EB	15.5	C	EB	16.3	C	EB	15.5	C
5	Scotts Valley Drive / Glenwood Drive / Hwy 17 SB Ramps	Signal	Caltrans	C/D	-	<b>43.2</b>	<b>D</b>	-	<b>42.9</b>	<b>D</b>	-	<b>43.7</b>	<b>D</b>	-	<b>43.1</b>	<b>D</b>
6	Scotts Valley Drive / Granite Creek Road	Signal	Caltrans	C/D	-	<b>39.9</b>	<b>D</b>	-	29.7	C	-	<b>40.1</b>	<b>D</b>	-	30.9	C

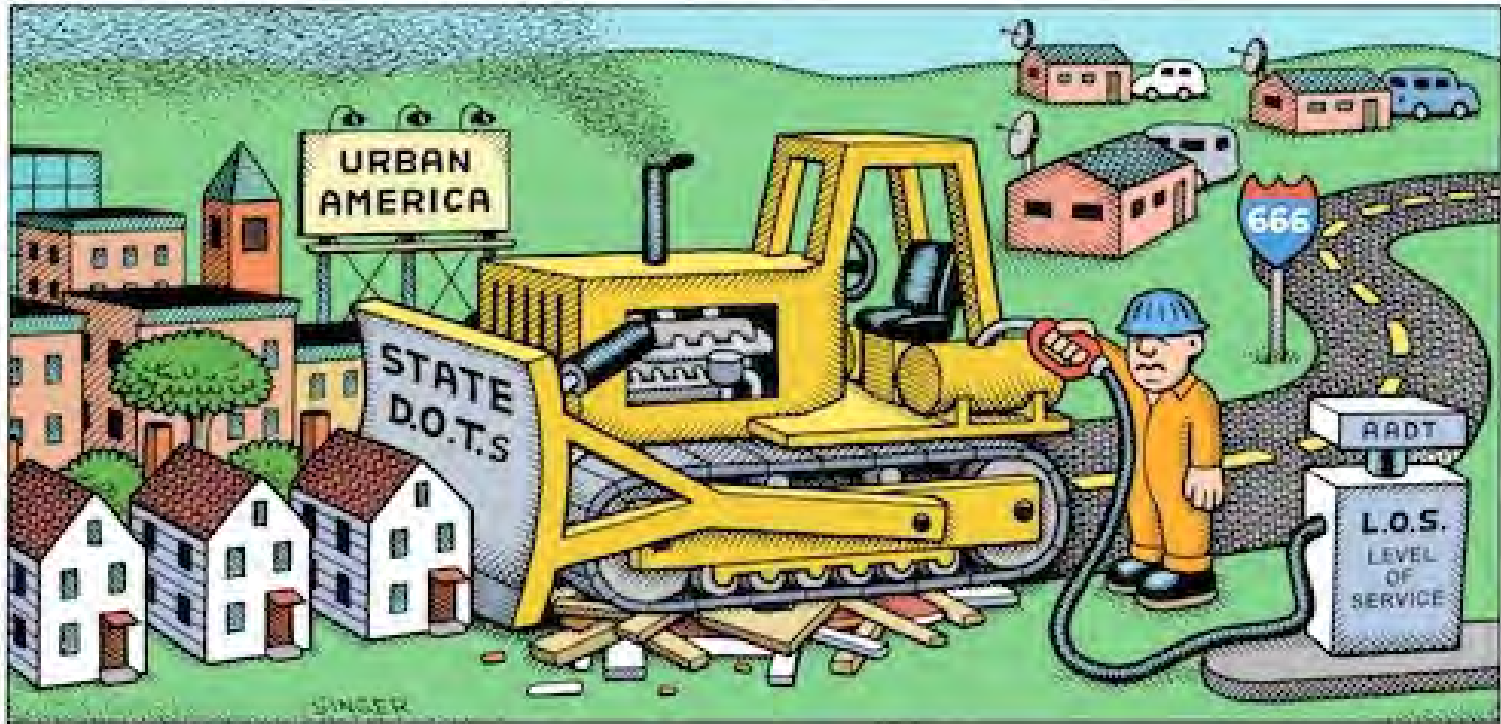
Notes:

1. NB, SB, EB, WB = Northbound, Southbound, Eastbound, Westbound
2. Analysis performed using 2010 Highway Capacity Manual methodologies.
3. Each study intersection is controlled by a traffic signal, a side-street stop-controlled (SSSC), or an all-way stop-controlled (AWSC).
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Source: Kimley-Horn & Associates, Inc. 2015



# Level of Service

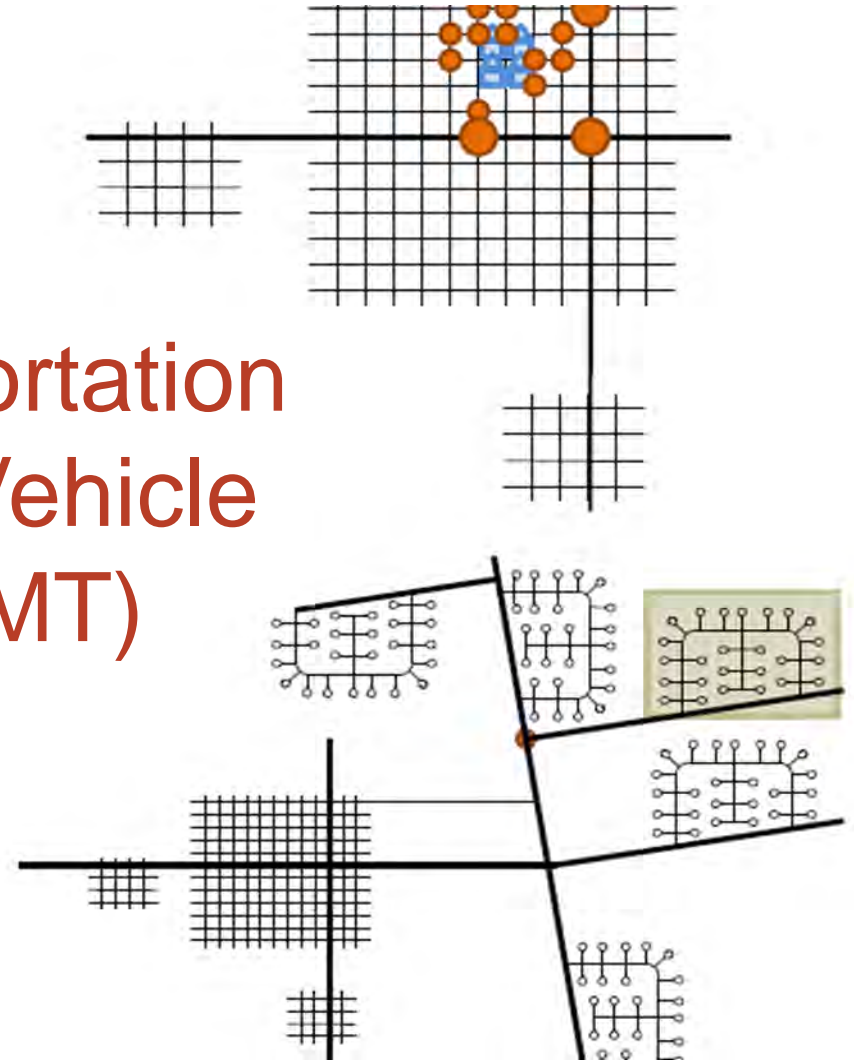


"Level of Service" is the metric that, perhaps more than any other, fuels the decimation of walkable streets.

# Level of Service - Limitations

1. Punishes last-in, inhibits infill, pushes development outward
2. “Solves” local congestion but exacerbates regional congestion
3. Inhibits transit and active transportation
4. Measures mobility, not access; shows failure when we succeed
5. Measures mobility poorly; fails to optimize network even for autos
6. Forces more road construction that is expensive to maintain
7. Hard to calculate and is inaccurate

# Shift in CEQA transportation metric from LOS to Vehicle Miles Traveled (VMT) SB 743



# SB 743 – Legislative Intent

More appropriately balances the needs of congestion management with statewide goals related to:

- ❑ Infill development
- ❑ Promotion of public health through active transportation
- ❑ Reduction of greenhouse gas emissions



# SB 743 Background

- Replaces LOS with Vehicle Miles of Travel (VMT) in CEQA Analysis (July 2020)
- LOS is not required for a CEQA document but can still be used for planning purposes

# Vehicle Miles Traveled (VMT)

- Promote In-fill development near transit
- Reduce VMT to comply with other regulations (15% reduction is typical)
- Promote active transportation projects
- Promote transit use

$$\text{VMT} = \sum (\text{Volume (vehicles/day)} * \text{Segment Length (miles)})$$

# SB 743 – Initial State Guidelines

- Less than significant impact
  - Developments near transit
  - Developments generating <100 daily trips
- Residential and Office Development
  - Office – 15% lower than the regional average
  - Residential – 15% lower than the regional or city average
- Retail Development
  - Focus on VMT change (based upon modeling)
- Industrial / Other Development
  - No guidance given yet



# SB 743 Concept Map for SANDAG Region

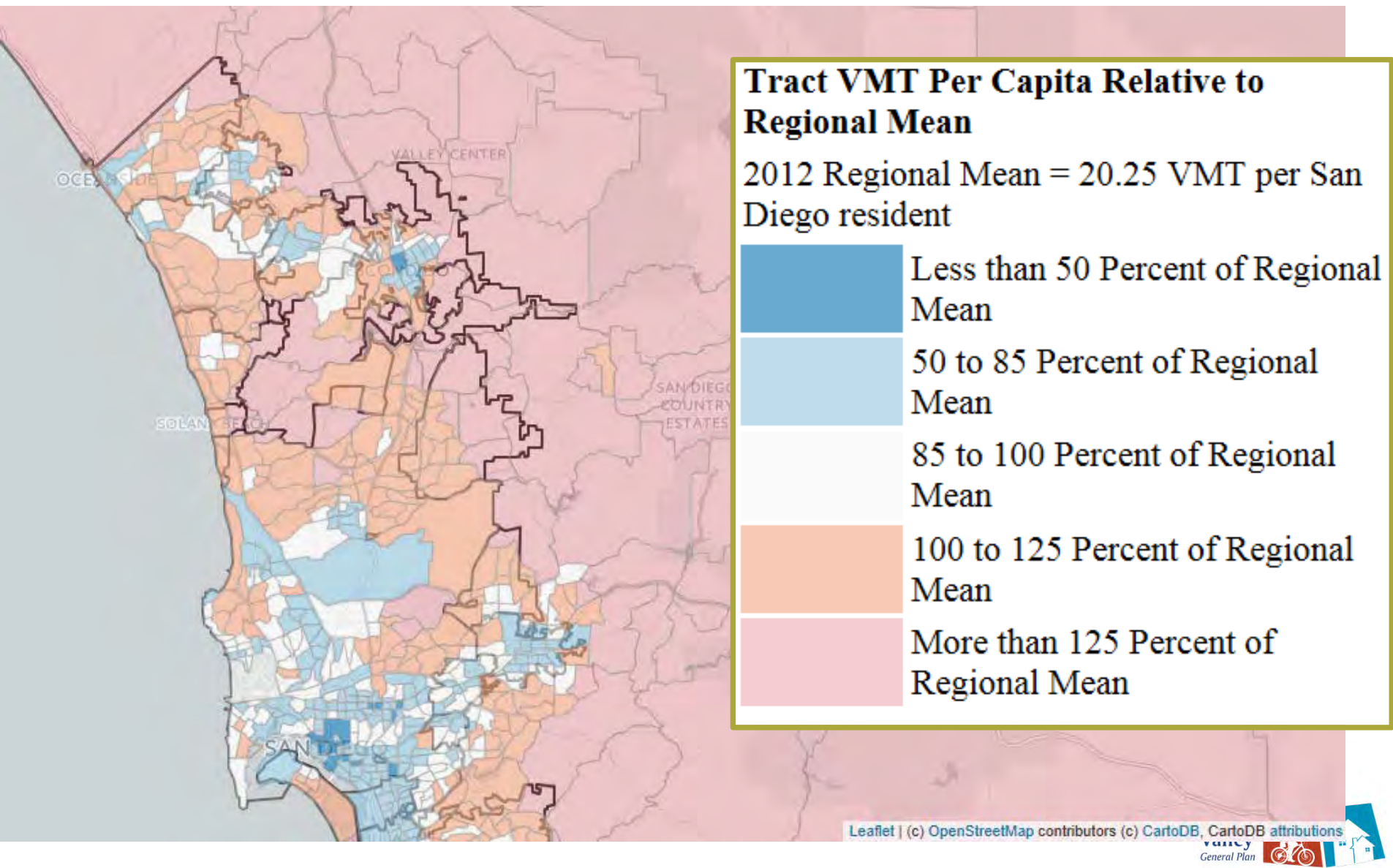
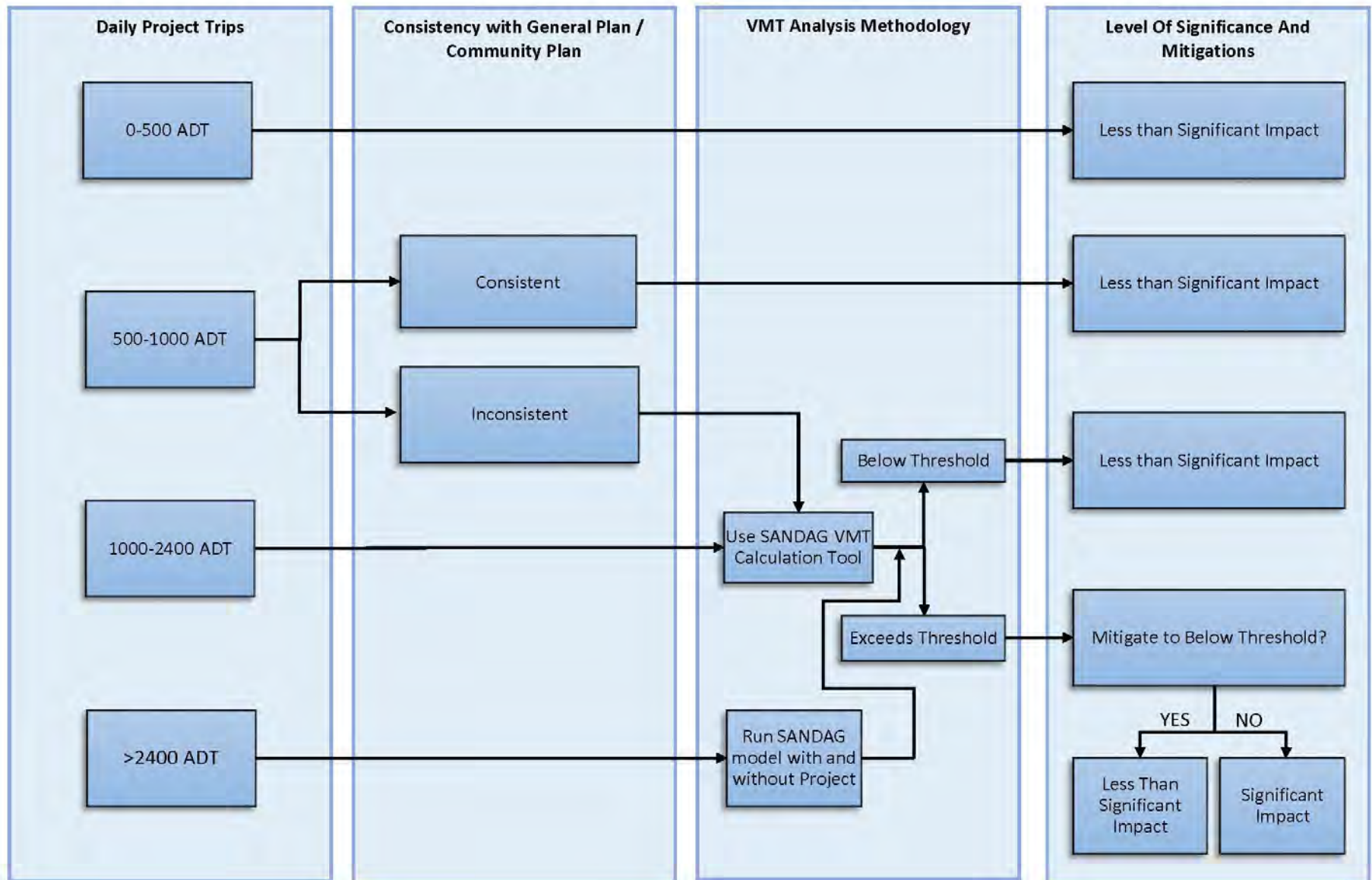


Figure 4-1  
VMT Analysis for Individual Land Development Projects



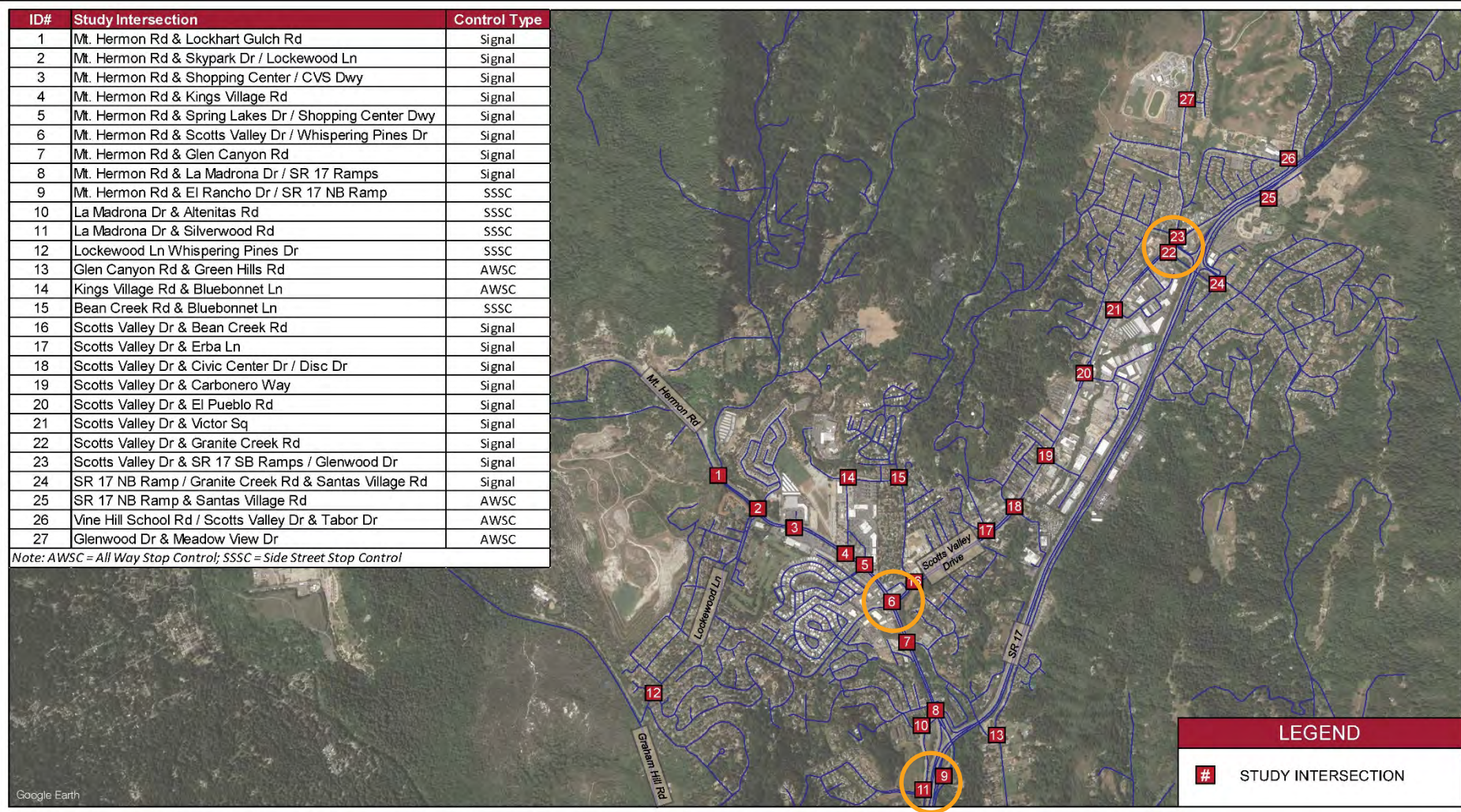


# Scotts Valley Mobility

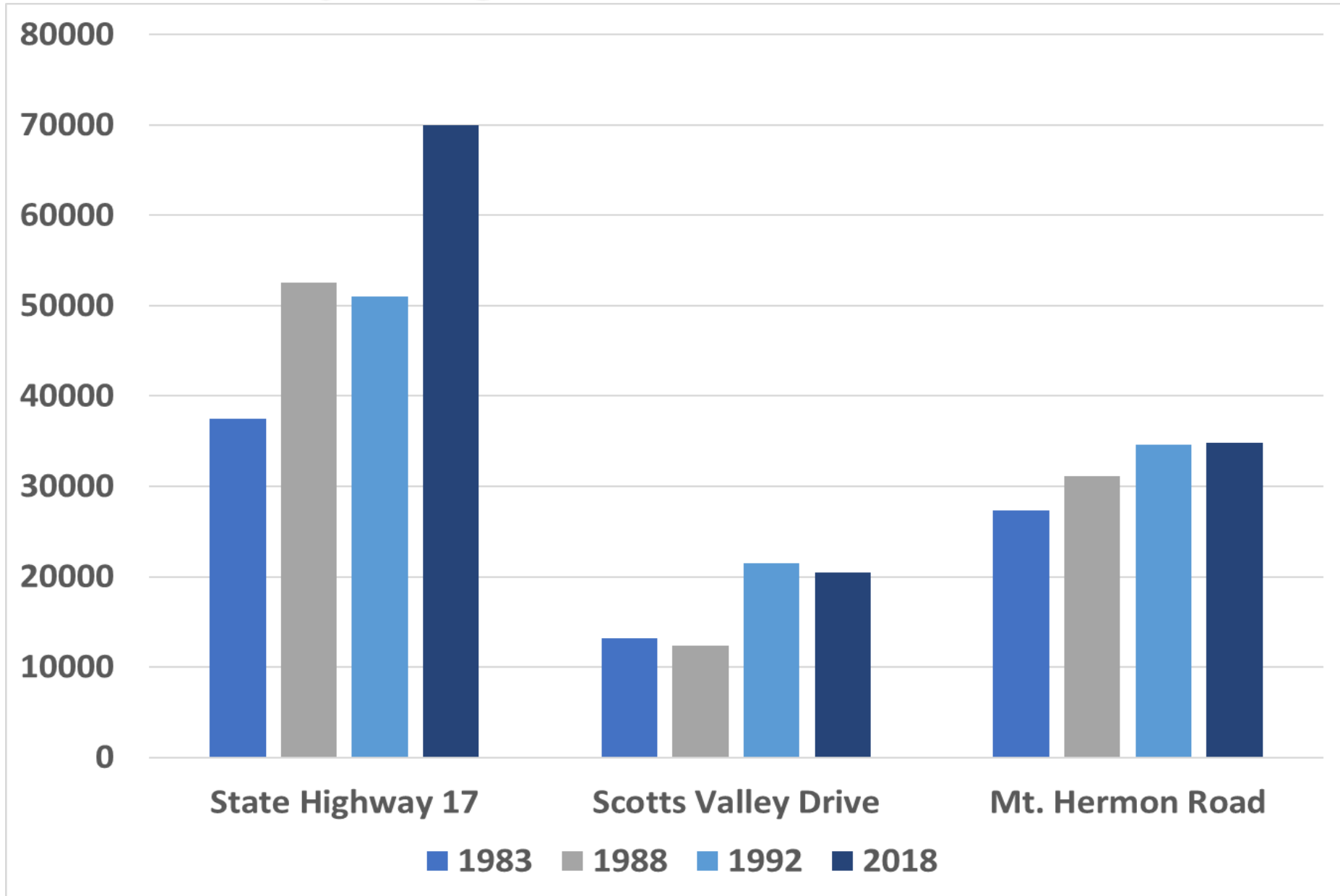




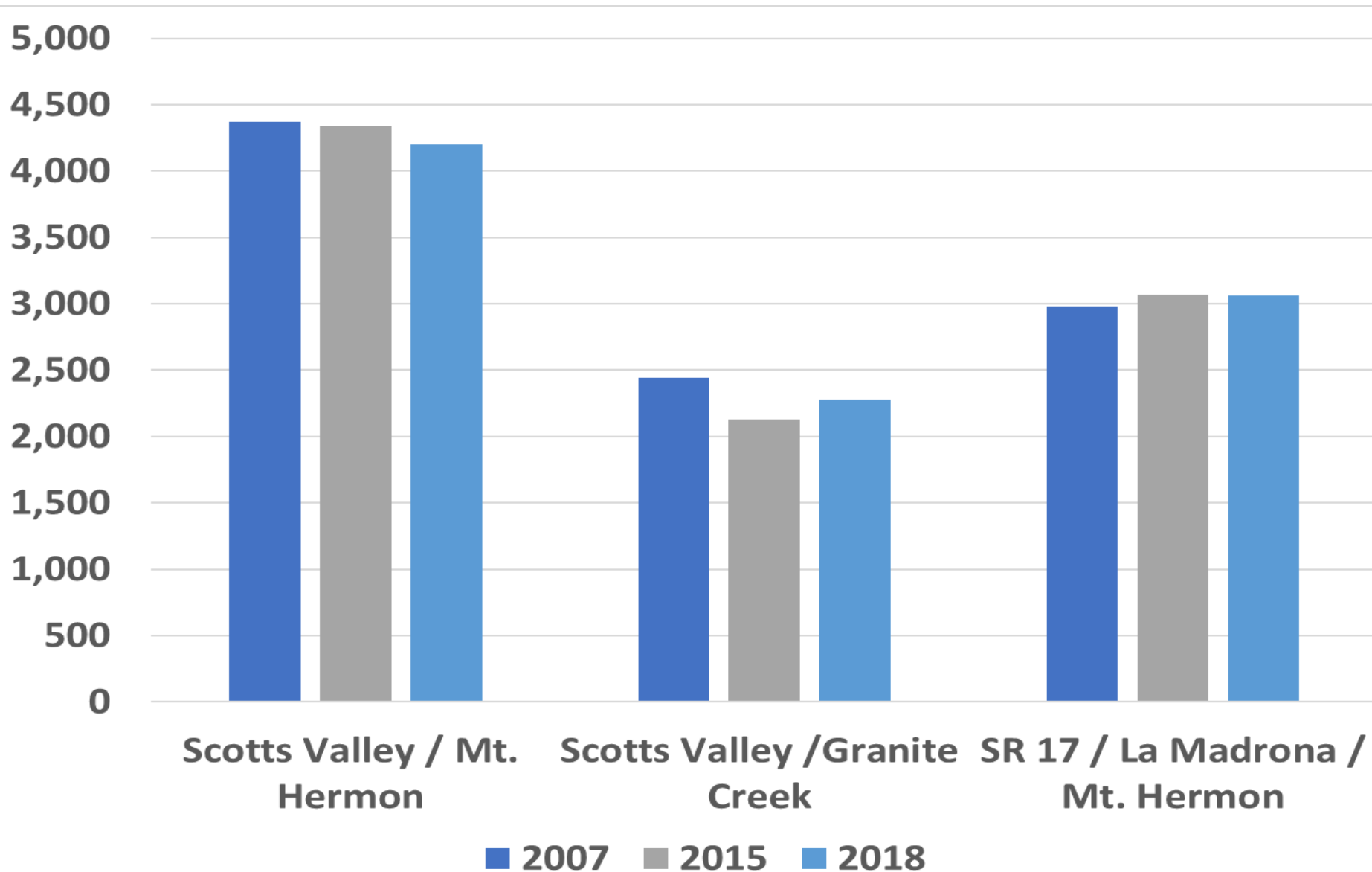
# Scotts Valley Study Intersections



# Roadway Segment Volumes



# Intersection Volumes (PM Peak)





# Issues to Address in Mobility Element

- Regional coordination regarding VMT thresholds
- Policy direction regarding LOS
- Priority improvements:
  - Vehicular
  - Bicycle
  - Pedestrian
- Recommendations regarding Highway 17
- Land Use designations



# Questions / Discussion