

Maude Avenue Roadway Allocation Study



Maude Avenue Roadway Allocation Study



Agenda

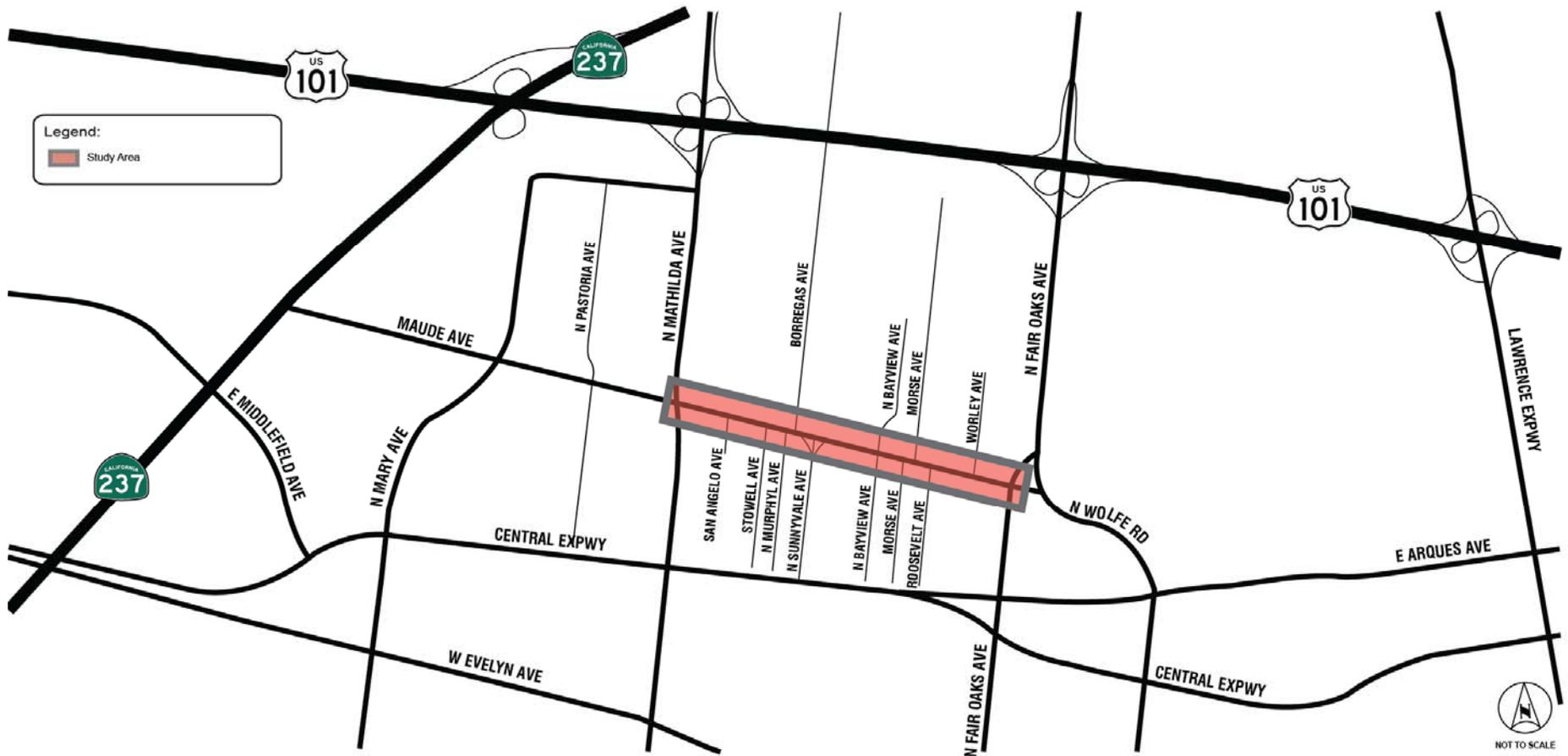
- Study Area
- Project Background
- Project Goals
- Existing Conditions
- Alternatives Discussion
- Staff Recommendations



Maude Avenue Roadway Allocation Study



Project Corridor

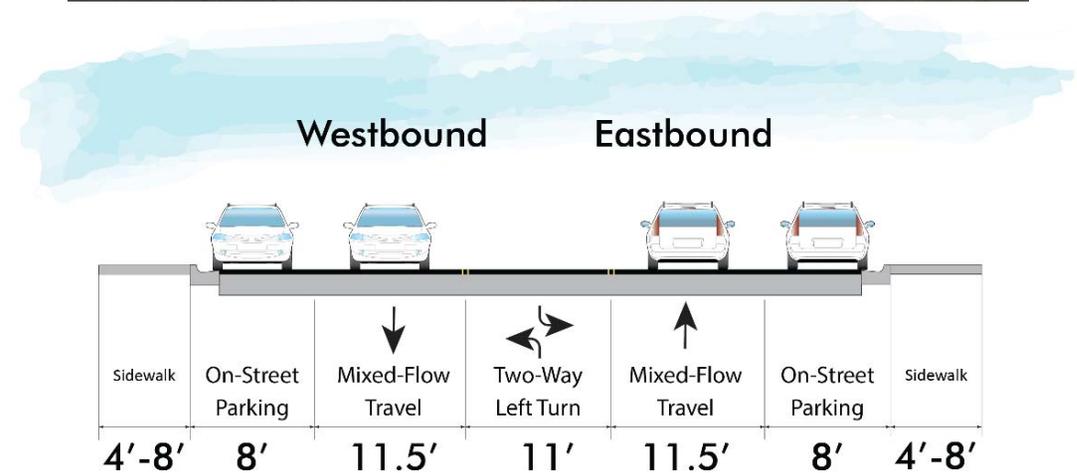


Maude Avenue Roadway Allocation Study



Maude Today

- Two travel lanes
- Parking on both sides
- Middle turn lane



Maude Avenue Roadway Allocation Study



Project History

- Bicycle Opportunities Study and Bicycle Capital Improvement Program
- 2006 Sunnyvale Bicycle Plan
- 2013 Resolution for OBAG Grant
- 2014 Appropriated OBAG funds
- City hired Kimley-Horn and Associates to complete a study



Maude Avenue Roadway Allocation Study



Project Objectives

- Provide bicycle and pedestrian improvements
- Support safe and efficient bicycle, pedestrian, and transit facilities
- Minimize effects on congestion
- No roadway widening



Maude Avenue Roadway Allocation Study



- Maude Avenue Project
- Existing Bike Lanes
- Approved/Upcoming Bike Lanes
- Bike Lanes Under Study
- Schools/Parks



Maude Avenue Roadway Allocation Study



Volumes

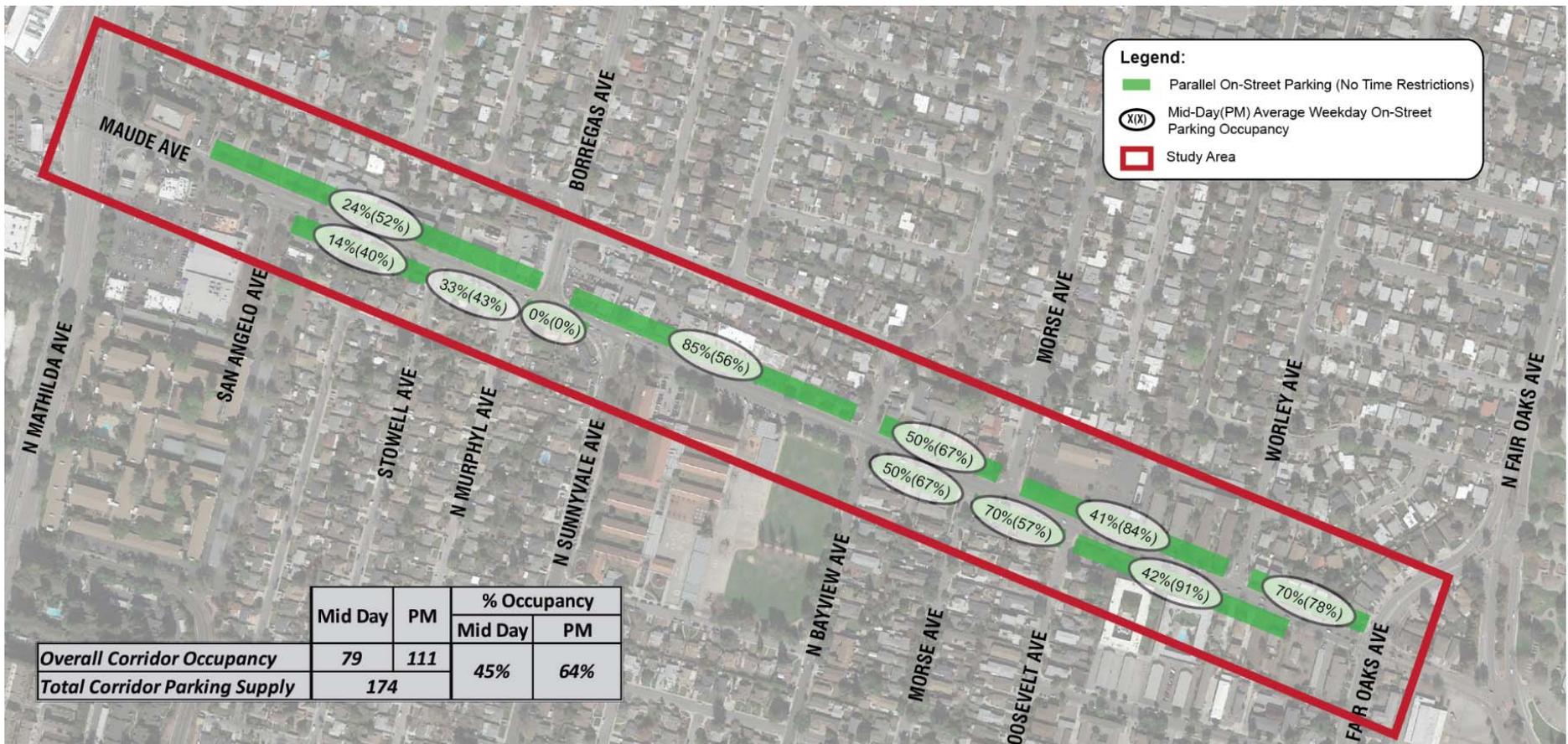
- Approximately 750 vehicles/hour near North Fair Oaks Avenue during peak
- Approximately 1,320 vehicles/hour near Mathilda Avenue during peak
- 40 bicycles at peak
- 40 pedestrians busiest locations
- Staff completed a CMBWR on Oct 22, 2015
- Another consultant also reviewed the corridor



Maude Avenue Roadway Allocation Study



On-Street Parking Utilization





Collision History (2012 to 2014)

- 79 total incidents along Maude Avenue between Mathilda and North Fair Oaks (inclusive)
- 34 total incidents excluding Mathilda and North Fair Oaks
- Maude Avenue Collision Rate (CR) is 2.85 and Injury/Fatality CR is 1.01
- State wide CR for similar roads are 1.37 and 0.57



Possible Council Actions

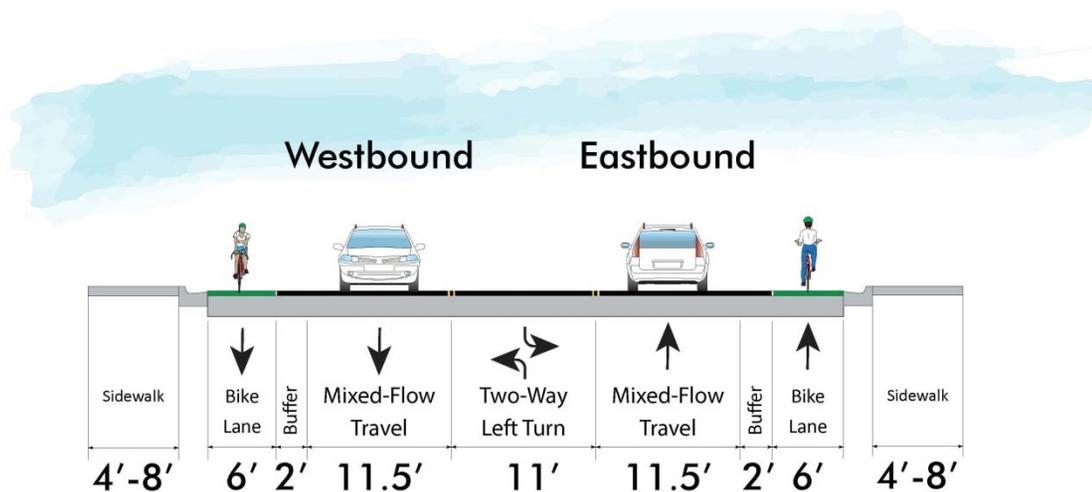
- Council will have 6 different alternatives
- Three Alternatives for Maude Between Fair Oaks and Borregas
- One additional Alternative for time limited bike lanes
- Pilot/Test improvements on Maude between Borregas and Mathilda
- Pedestrian improvements

Maude Avenue Roadway Allocation Study



Alternative 1

- Convert on-street parking to buffered bike lanes
 - Consistent with adopted Sunnyvale Bicycle Plan



Example of a Buffered Bike Lane

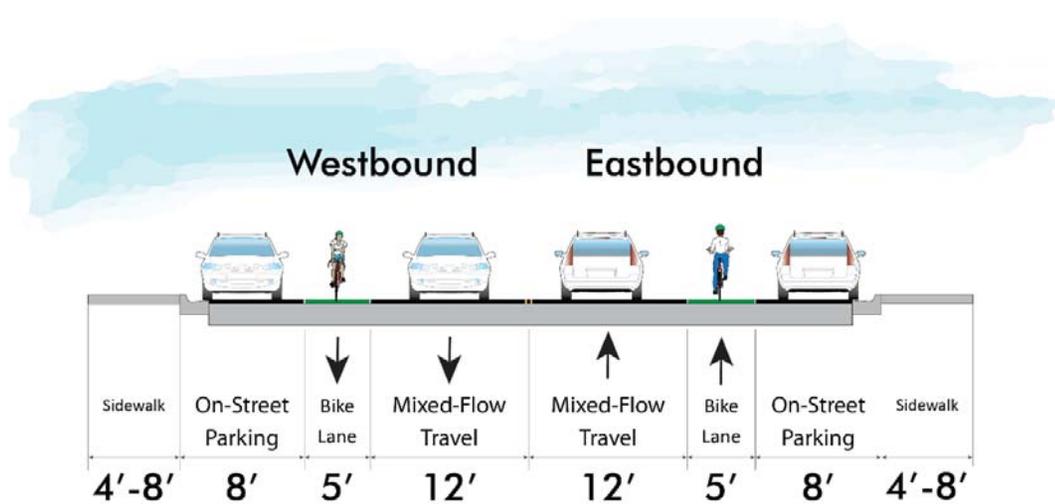


Maude Avenue Roadway Allocation Study



Alternative 2

- Convert center-turn into bike lanes
 - Maintain left-turn lanes at higher volume intersections by removing some on-street parking



Existing Center-Turn Lane Would be Removed

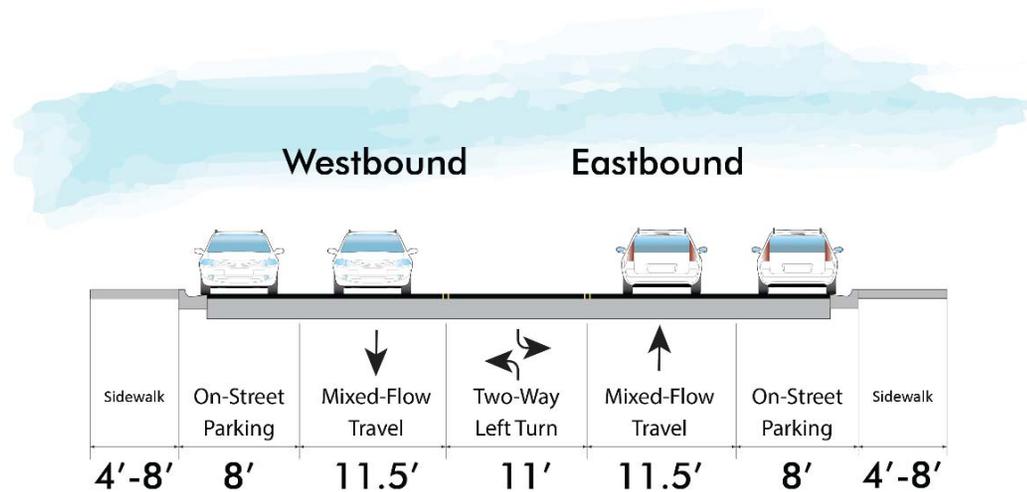


Maude Avenue Roadway Allocation Study



Alternative 3

- Maintain existing geometry – do not provide bicycle lanes
 - Limited additional striping and signage





Comparison of Alternatives - Bicycles

- Alternative 1 - provides bike lanes with a 2-foot buffer and no on-street parking
 - Separates bicycles from vehicles
 - Eliminates conflicts with parked cars
 - Should increase bicycle activity
- Alternative 2 - provides bike lanes adjacent to on-street parking
- Alternative 3 - does not provide bike lanes



Comparison of Alternatives - Parking

- Alternative 1 - eliminates 151 on-street parking spaces
 - 97 vehicles currently parking on-street
- Alternative 2 - eliminates 48 on-street parking spaces to provide limited left-turn lanes
- Alternative 3 - would not change on-street parking



Comparison of Alternatives – Traffic/Safety

- Alternative 1 - maintains center-turn lane
 - Facilitates turns from/to Maude
 - Maintains consistent flow of traffic
 - Safest design
- Alternative 2 - removes center-turn lane but keeps left-turn pockets at major intersection
 - Left-turn movements will need to occur from through lane
 - May be more difficult to turn onto Maude Avenue
 - Increase collisions
- Alternative 3 - does not change traffic patterns

Maude Avenue Roadway Allocation Study



Improvements West of Borregas

- Analyzed Multiple Times
 - Staff and two consultants reviewed
 - Volumes, queuing, and travel time
 - Queuing concerns approaching Maude/Mathilda
- Multiple Options
 - Add an additional thru-lane
 - Remove right turn and convert to thru-right
 - Remove second westbound left
 - Remove up to 56 parking spaces
- Depends on selected alternative
- Pilot/Test modifications



Maude Avenue Roadway Allocation Study



Pedestrian Improvements

- Eliminate channelized right-turn movements at Sunnyvale Avenue
- Relocate VTA bus stop to reduce mid-block crossings
- Fix sidewalks
- Add street trees

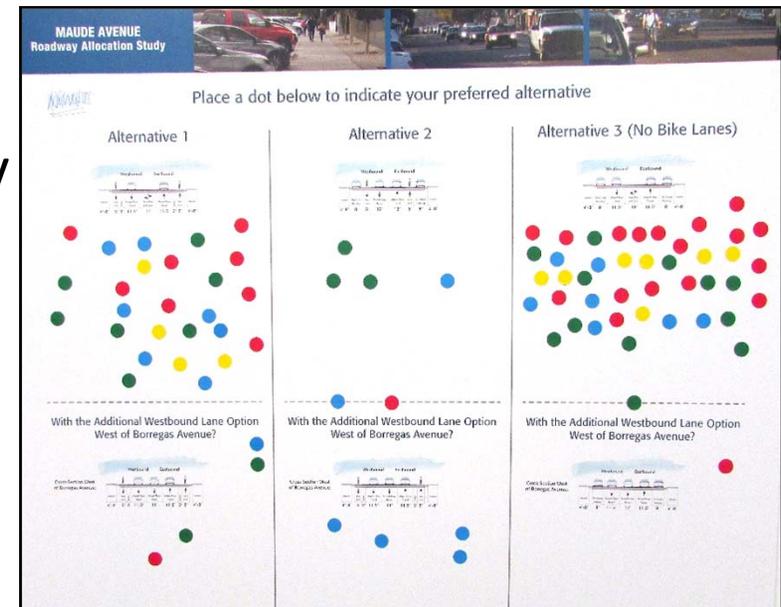


Maude Avenue Roadway Allocation Study



Community Meeting

- March 8th - Bishop Elementary
- Approximately 100 attendees
- Those in favor of bike lanes noted:
 - Benefits to safety, connectivity, multi-modal, increase bicycle activity
- Those opposed to bike lanes noted:
 - Impacts from parking removal and traffic/access





Alternatives for Implementation

Select one of the following alternatives for Maude between Borregas and Fair Oaks

1. Replace parking with buffered bike lanes
2. Replace center-turn lane and 30% of parking with bike lanes
3. No designated bike lanes (limited signage and striping)
4. Time-limited bike lanes that allow night and weekend parking

Additional elements/options:

5. Pilot/Test additional westbound improvements west of Borregas
6. Pedestrian improvements



Staff Recommendation

1. Replace parking with buffered bike lanes between Borregas and Fair Oaks
 - General Plan Goals
 - Bicycle Masterplan
 - Provide best bicycle connectivity
 - Maintains traffic capacity
 - Safest roadway design
5. Pilot/Test additional westbound improvements west of Borregas
6. Pedestrian improvements