



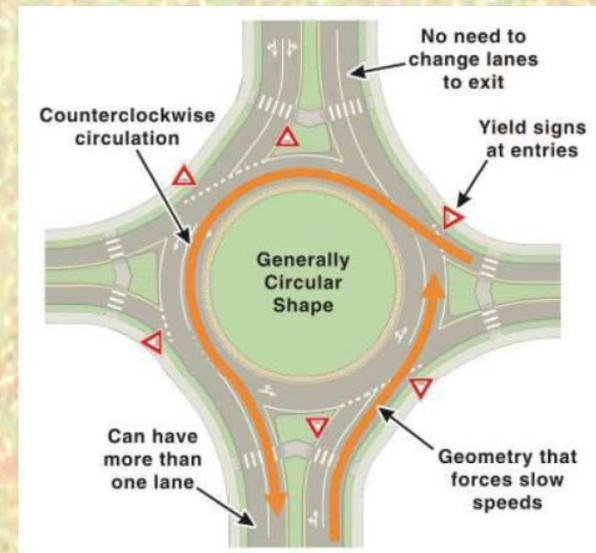
Roundabouts on the State Highway System

Presentation by Caltrans District 5 at Route 154/246 Public Informational Meeting, June 22, 2011

What are Roundabouts?

Modern roundabouts are circular intersections:

- Promote safe/efficient traffic flow
- Traffic moves in one direction
- Circulating traffic has right of way
- Channelized approaches
- Slower entry speeds
- Entering traffic yields
- Lower number of conflict points
- Accommodate peds/bikes



Public Opinion of Roundabouts

Anxious at the thought of driving through a roundabout?

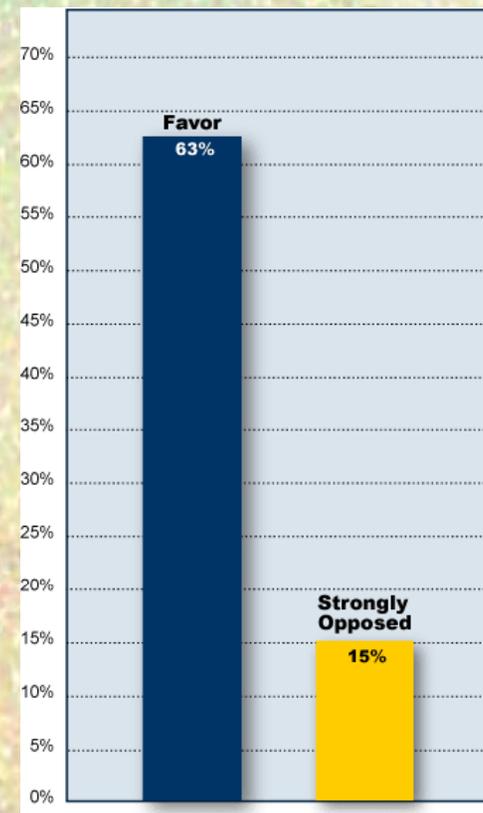
Do I now have to stop?

When can I go?

What if I miss my exit?

After driving roundabouts most are in favor of them

Anticipate slowing but not being delayed



Benefits of a Roundabout

- Increase safety
- Increase capacity / reduce delay
- Accommodate larger vehicles
- Less maintenance
- Reduce vehicle emissions
- Reduce construction and right of way cost

Safety of a Roundabout

- Roundabouts are a proven intersection safety improvement
- Reduce number of collisions
- Reduce the severity of collisions and associated fatalities/injuries
- Improved geometry and lower speeds through the intersection

Reduced Number and Severity of Collisions

2007 NCHRP Report 572, 55 U.S. intersections were converted from signal or stop control to roundabouts.

Collision data showed the following:

- Collisions were reduced by 35%
- Injury collisions were reduced by 76%
- Compared to a suburban signalized intersection, the collisions were reduced by 67%
- Compared to a rural two-way stop controlled intersection, collisions were reduced by 87%

Improves Operations

- Reduce average vehicle delay
- Traffic does not stop most of the time
- Can improve overall operation of roadway
- Local example – Route 217/Hollister Avenue, Goleta
 - Dual roundabouts planned at Route 217 on- and off-ramps
 - Replacement of bridge over Hollister Avenue avoided
 - Increasing number of lanes on Hollister Avenue avoided



Accommodate Larger Vehicles

A truck apron accommodates vehicles with large turning radii, such as buses, trucks, tractor trailers, farm equipment, and emergency vehicles.



Maintenance Needs

- Signals require routine inspection
- Signals require a human response for a malfunction
- Landscape maintenance cost of a roundabout, is less than the lifetime maintenance cost for a signal

Sustainability

Supports Santa Barbara County Air Quality Program:

- Reduce Carbon Monoxide Emissions by 32%
- Reduce Nitrous Oxide Emissions by 34%
- Reduce Carbon Dioxide Emissions by 37%
- Reduce Hydrocarbon Emissions by 42%
- Reduce Fuel Consumption by 30%

Roundabouts on High Speed Roadways

Successfully used on high speed roadways in California, Kansas and Washington



Route 138/47th St. Palmdale, CA - 2009



Route 169, Garnett, KS - 2006



K-68 & Old K.C. Road, North of Paola, KS - 2001

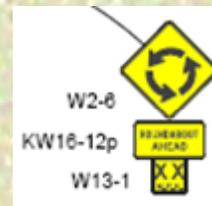


SR 203/124th St., near Duvall, WA - 2004

Roundabouts on High Speed Roadways

Treatments to Transition to Roundabout

- Signing and Markings
- Long Splitter Islands
- Curvature on Approaches



SR 154/SR 246

Safety Improvement Project

Project Purpose, Need, and Status

- *Need:* Collision rate is 2.4 times state average
- *Purpose:* Eliminate potential for broadside collisions, and reduce severity of collisions
- *Status:* Project is in the preliminary design and environmental study phase (PA&ED)
- *Solution:* Signalization and roundabout alternatives considered

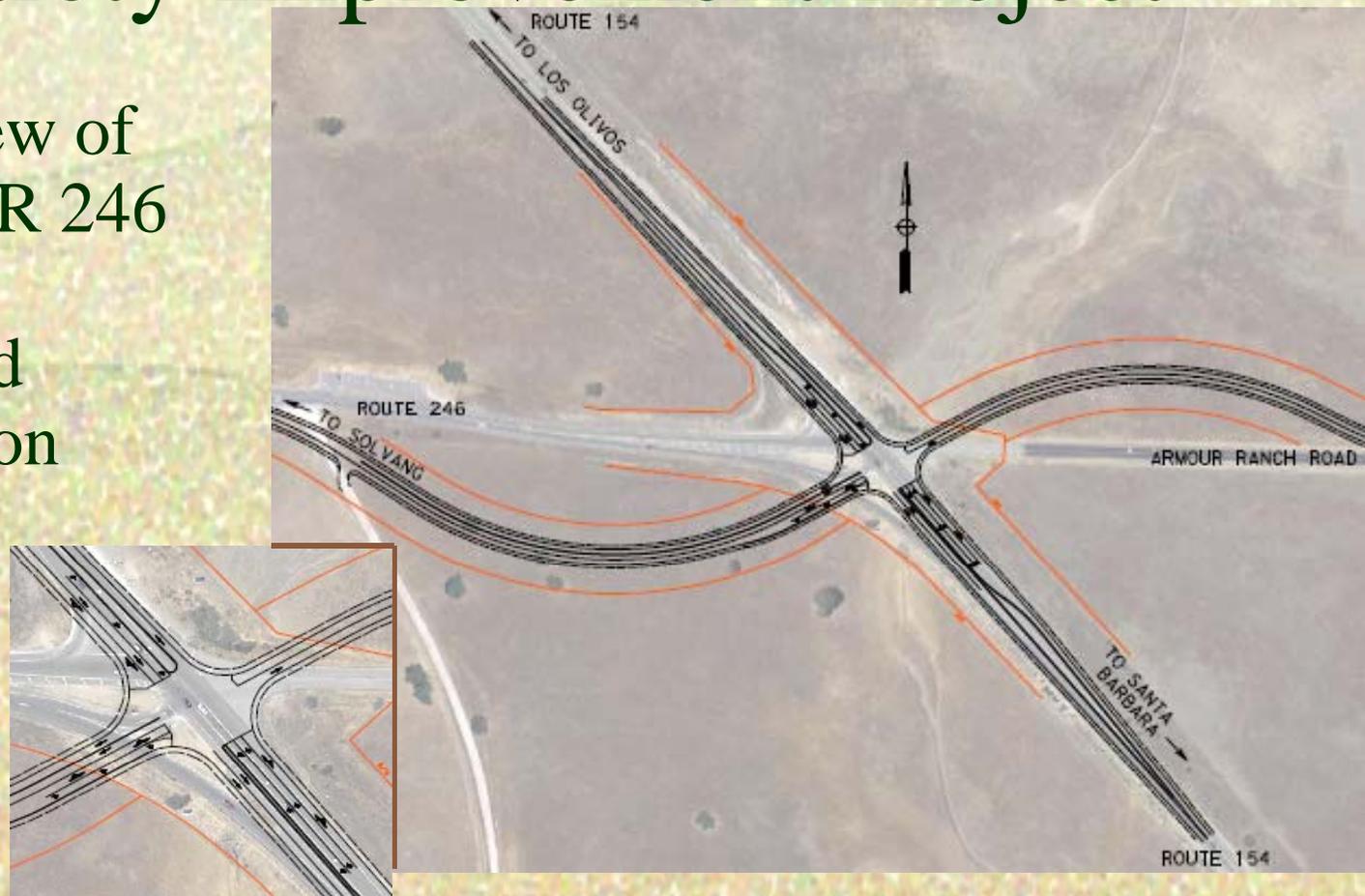
SR 154/SR 246 Safety Improvement Project

Aerial view of
SR 154/SR 246
Proposed
Roundabout
Design



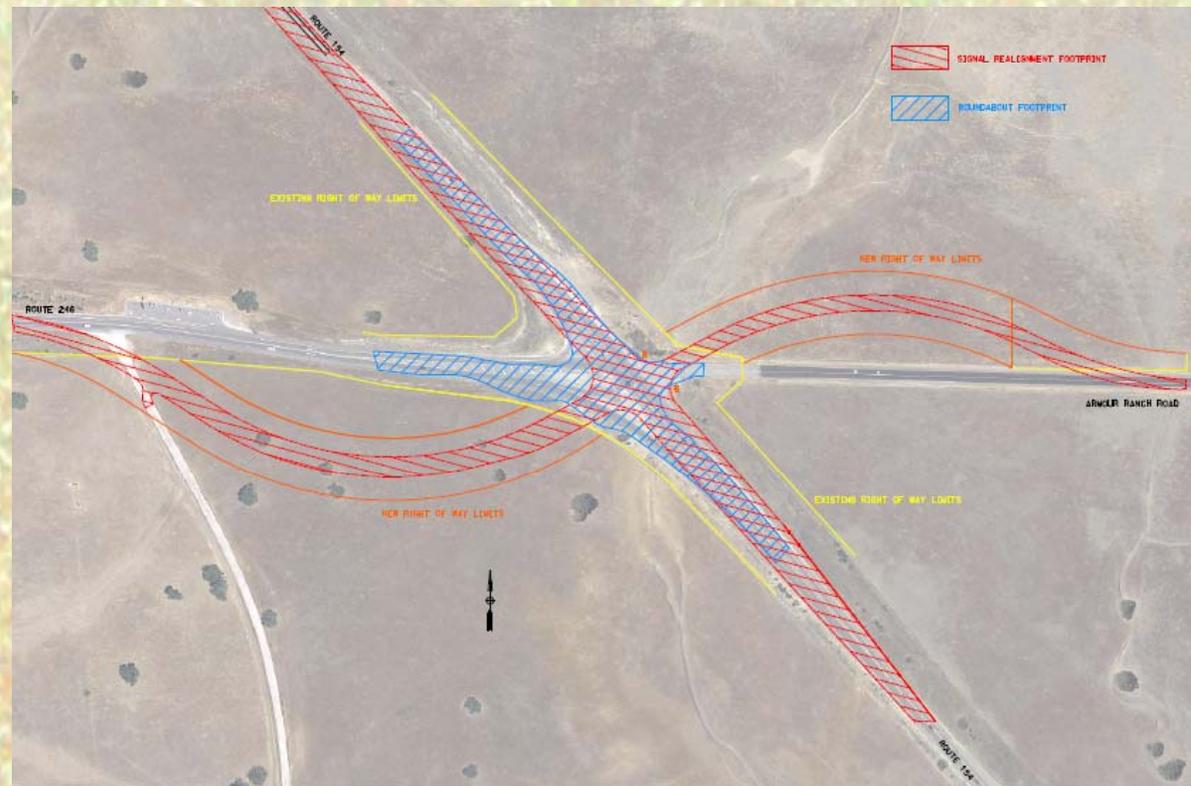
SR 154/SR 246 Safety Improvement Project

Aerial view of
SR 154/SR 246
Proposed
Signalized
Intersection
Design



SR 154/SR 246 Safety Improvement Project

Comparison of
alternative
footprints



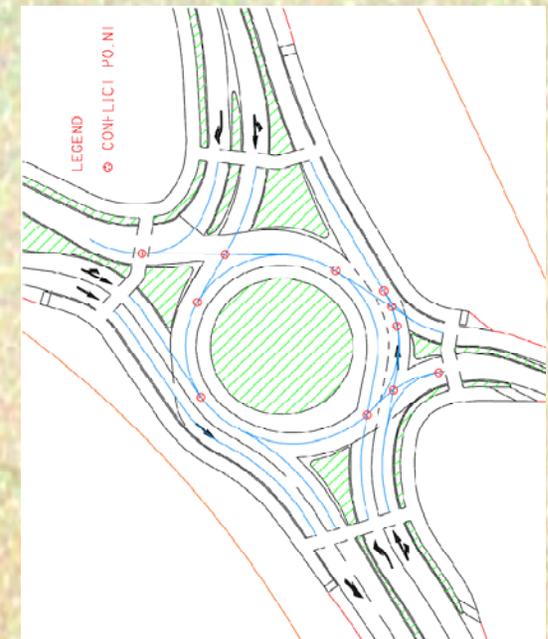
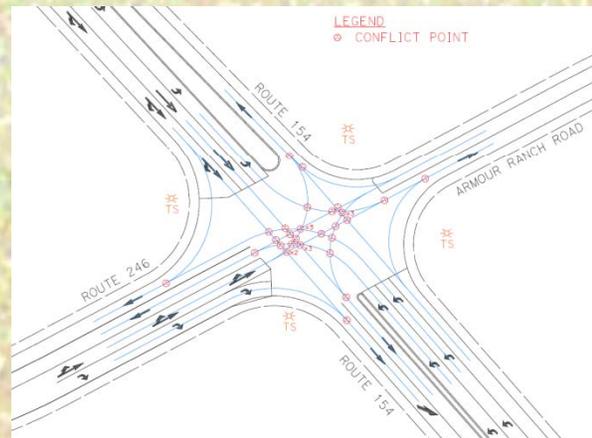
SR 154/SR 246 Safety Improvement Project

Safety:

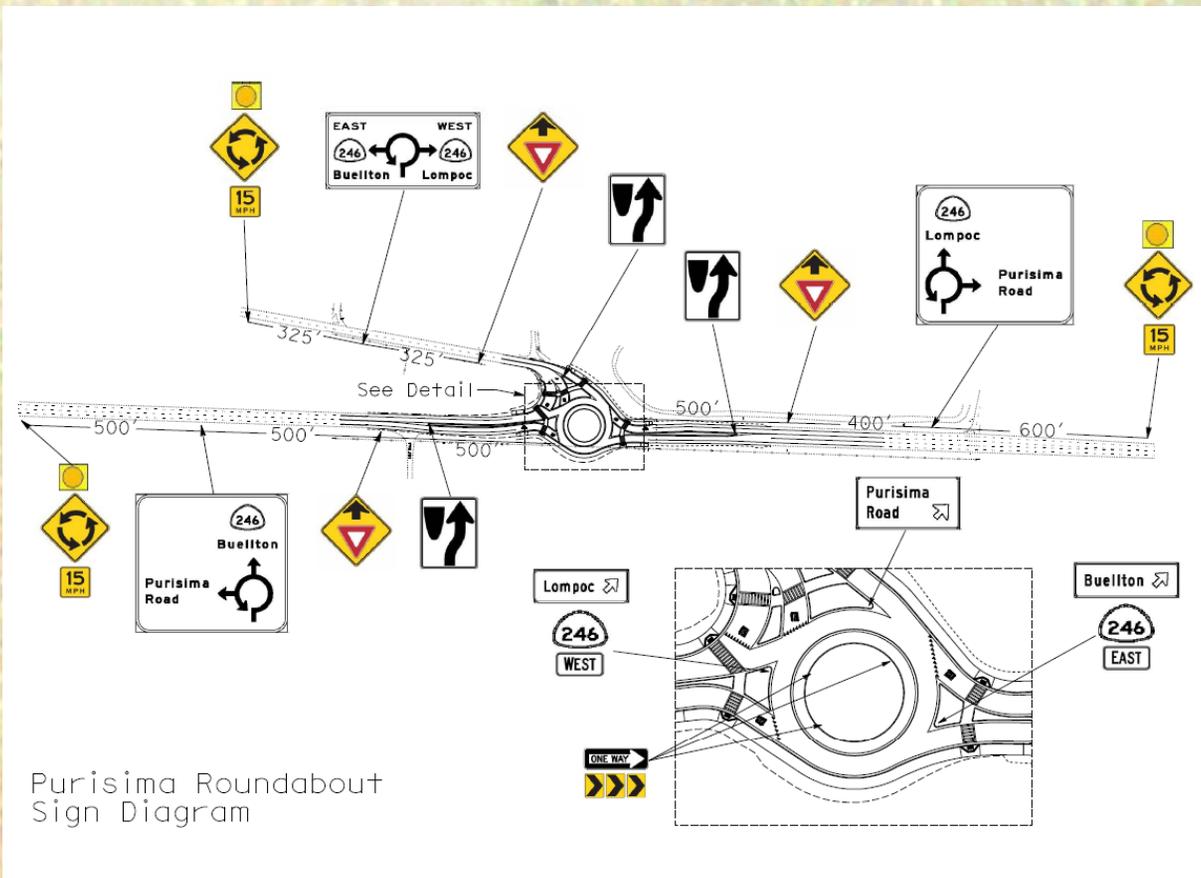
- Reduces conflict points from 34 to 11

Operations:

- 2035 traffic volumes will nearly double current volumes
- Roundabout LOS A/A
- Signal LOS B/C



SR 246/Purissima Road Safety Improvement Project



SR 154/SR 246

Safety Improvement Project

Schedule:

- Complete Environmental/Engineering Studies
 - Oct 2011–2013 based on impact avoidance and public input
- Begin Construction: Spring 2014 – 2016

Cost:

- Roundabout \$3.5 million
- Signal \$5.0 million

Public Outreach

- Public information meeting June 2011
- Potential for driver education



For More Information

Project information on Caltrans District 5 website:

<http://www.dot.ca.gov/dist05/projects/>

or contact

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