PRESENTATION FOR

St. Mary's Road Roundabouts Project

JULY 20, 2017

Kimley»Horn
Expect More. Experience Better.

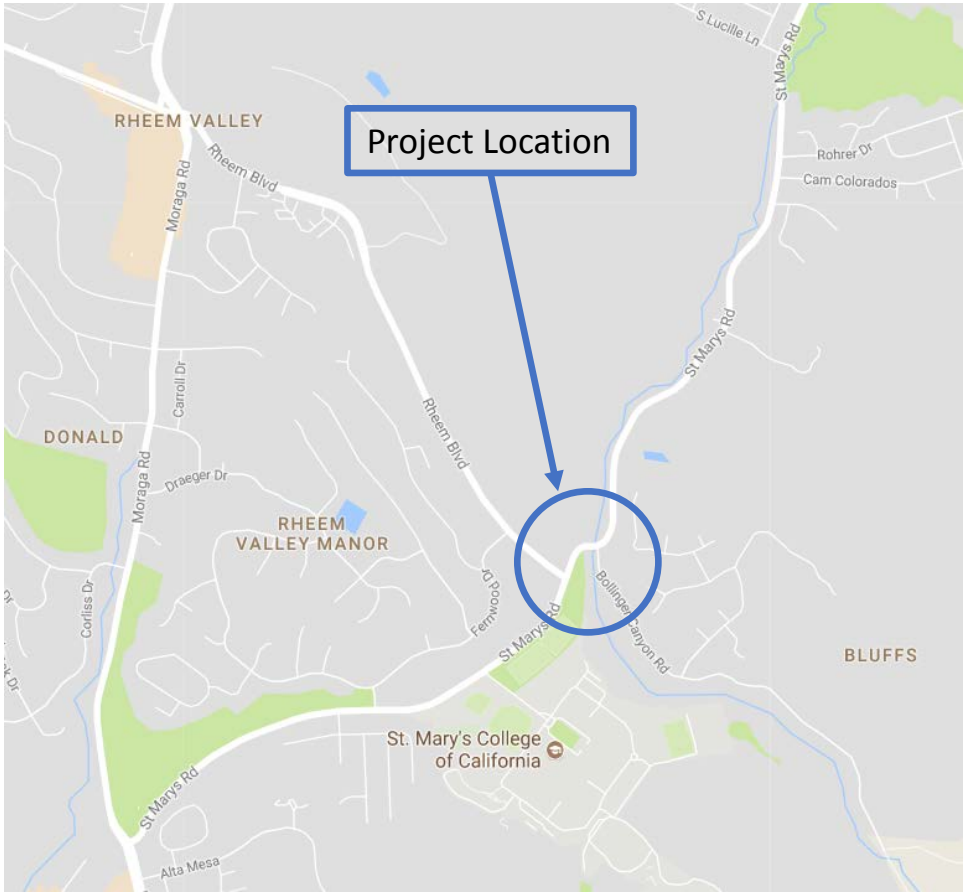
Welcome and Introductions

- Edric Kwan, Town of Moraga
  - Public Works Director/Town Engineer
- Shawn Knapp, Town of Moraga
  - Senior Civil Engineer, Project Manager
- John Pulliam, Kimley-Horn and Associates
  - Consultant Project Manager
- Sean Houck, Kimley-Horn and Associates
  - Consultant Roundabout Design Engineer

Agenda

- Project Overview, Objectives and History (Edric)
- Current Engineering and Alternatives Analysis (John)
- Visual Simulations (Sean)
- Benefits of Roundabouts (Sean)
- Landscaping, Bike, and Pedestrian Opportunities (John)
- Next Steps/Schedule (Shawn)
- Feedback and Open Discussion (All)

Project Overview and Need



Both intersections are challenged with:

- Insufficient stopping sight distance and visibility issues
- Insufficient capacity to accommodate planned future growth

Project Constraints

Project Objectives

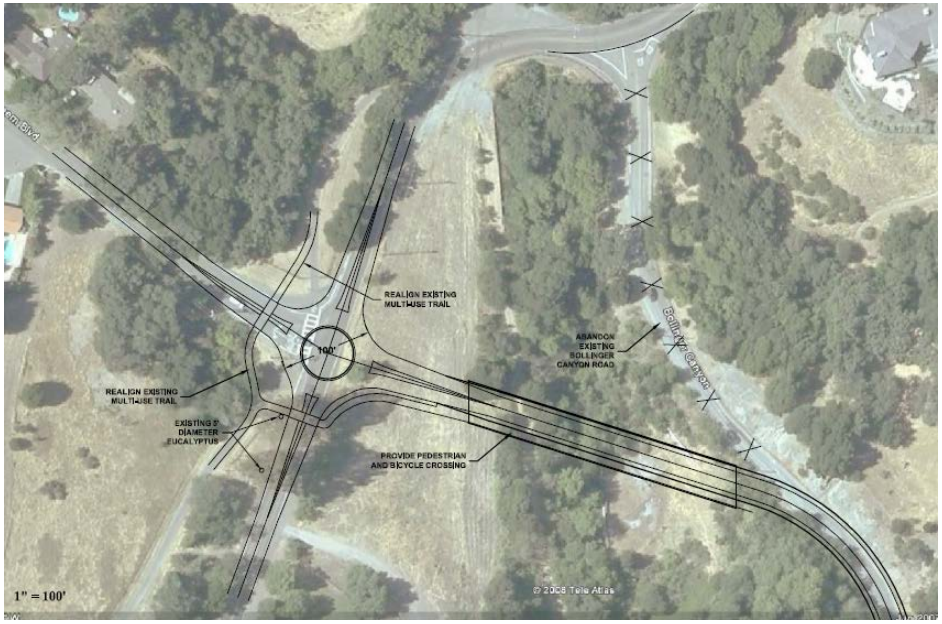
- Improve the safety and operations for pedestrians, cyclists, and vehicles
- Improve the EBRPD trail crosswalk
- Minimize impact to private property
- Minimize impact to environment/open space
- Minimize construction cost
- Maintain rural character
- Incorporate Green Streets components
- Incorporate Complete Streets components

Project History

2008/2009 –Consultant report evaluated physical and operational characteristics of project area.

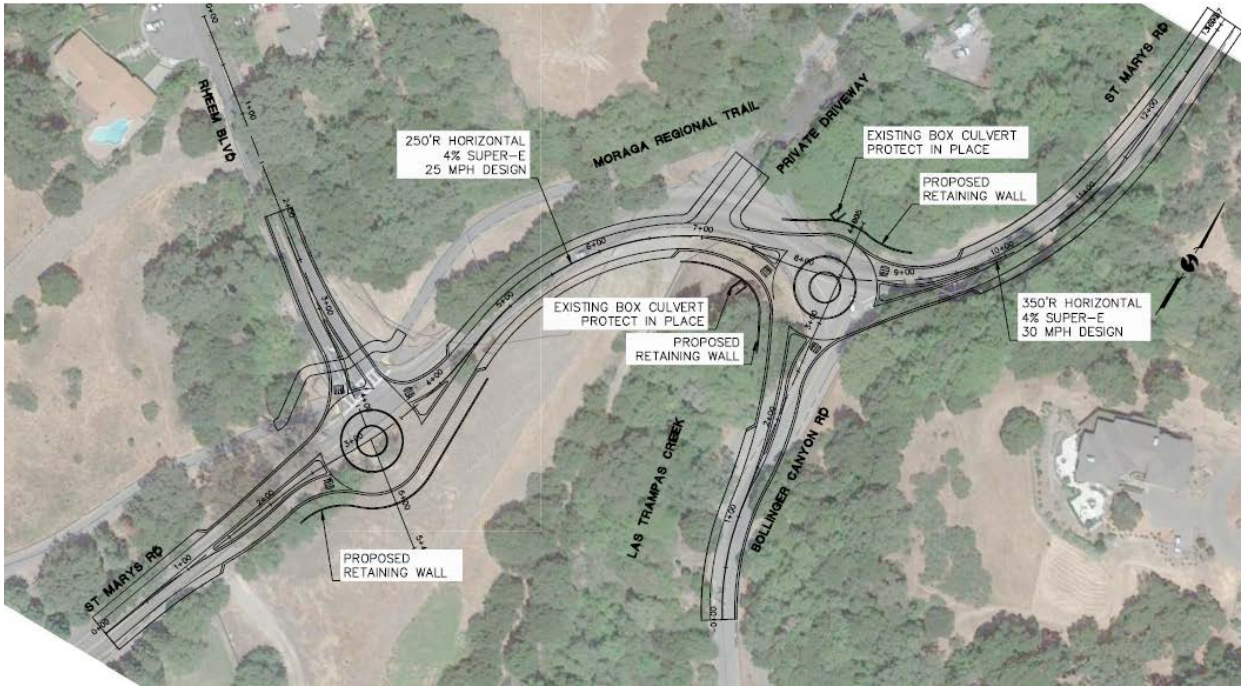
Evaluated options to improve and address:

- Existing geometric challenges / sight distance
- Traffic volumes and queuing



Project History

2015 – Based on the results of 2008/2009 report, Town directed another Consultant team to evaluate the feasibility of constructing full-size roundabouts at both intersections.



Project History

2016—Based in part on the 2015 report, Town Council directed Kimley-Horn to further evaluate roundabouts at Rheem Blvd intersection, and to consider alternative intersection improvements at Bollinger Canyon Road.

Kimley-Horn will then develop preliminary design plans based on the Town's selected alternative.

Status of Current Efforts

The team has been developing and evaluating different concepts at the 2 intersections:

- Rheem Boulevard intersection
  - Roundabout
  - Traffic signal
- Bollinger Canyon Road intersection
  - Roundabout
  - Mini-roundabout
  - 3-way stop

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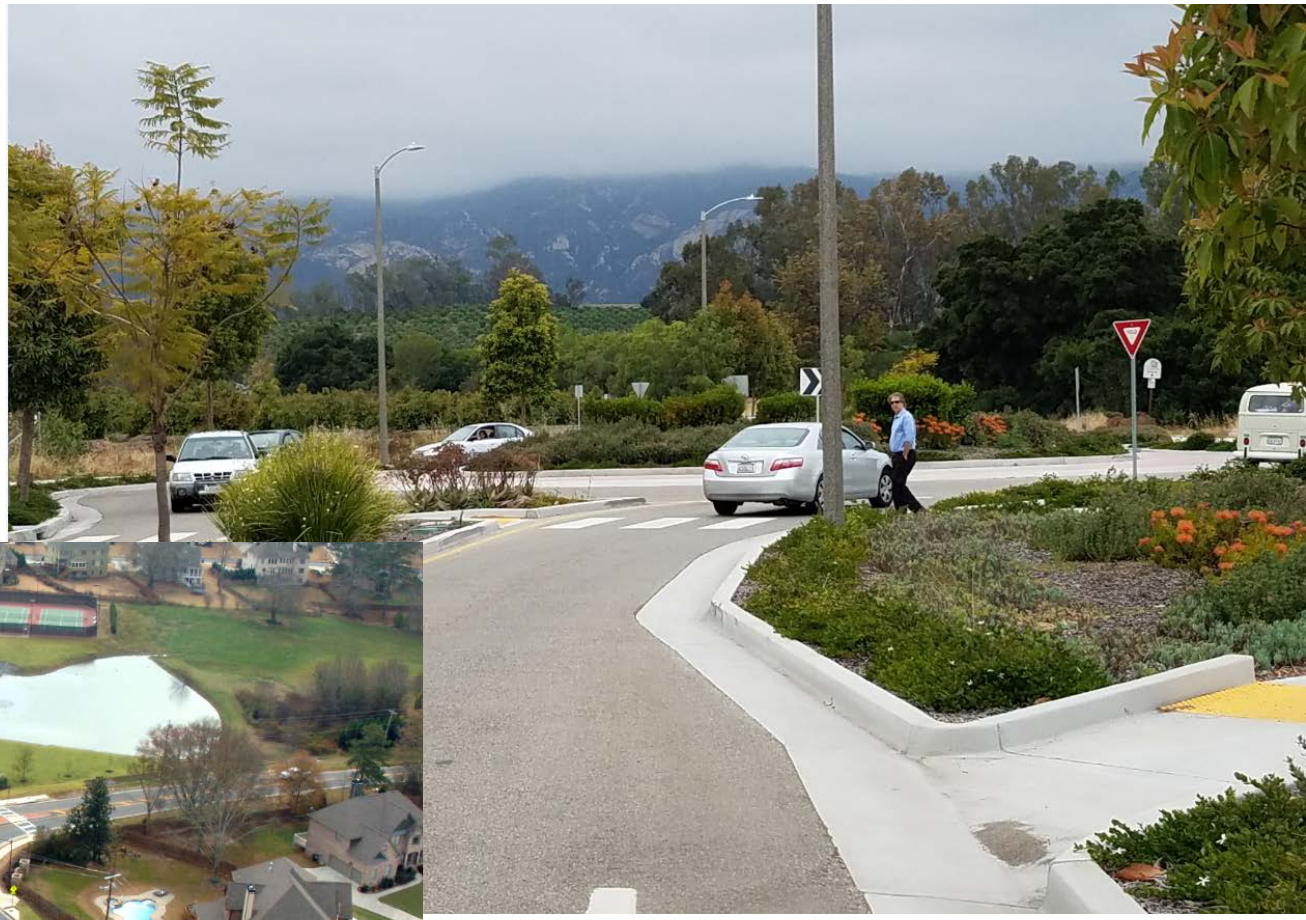

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Rheem Boulevard Intersection

Roundabout	Traffic Signal
Safer for all modes of transportation; lower vehicular speeds will reduce hazards associated with constrained sight distance	Greater number of injury collisions compared to roundabout; higher vehicular speeds; additional mitigation for inadequate sight distance would be required
Existing roadway between Rheem and Bollinger Canyon does not require modification due to lower vehicle speeds	Roadway between Rheem and Bolliger Canyon would need to be reconstructed to address higher speeds
Impacts localized to the intersection	Impacts extend well beyond intersection along St. Mary's Road
Improved operations, less delay	Increased congestion, longer queues, more delay
Lower annual operational costs	Higher annual operational cost
Construction cost similar to traffic signal	Construction cost similar to roundabout

Bollinger Canyon Road Intersection

Roundabout	Mini-Roundabout	3-way Stop
Safer for all modes of transportation; lower vehicular speeds	Safer for all modes of transportation; lower vehicular speeds	Requires all modes to come to a complete stop
Requires larger footprint with significant impact on creek and environmental resources, along with expensive retaining walls	Can fit within the existing intersection footprint, but also requires reconstruction of St. Mary's Road	Can fit within the existing footprint, but also requires significant reconstruction of St. Mary's Road
Efficient operations, minimal queues	Efficient operations, minimal queues	Very long queues backing into Rheem Blvd intersection; significant delay
Construction cost = $$$$	Construction cost = $$	Construction Cost = $$$

Simulations of Traffic Operations

- 2 Scenarios
  - Roundabout at Rheem Blvd and Mini-Roundabout at Bollinger Canyon Road
  - Traffic Signal at Rheem Blvd and 3-way stop at Bollinger Canyon Road

- Scenarios prepared using 2035 AM and PM peak hour volumes
  - Volumes come from the 2008 study and represent the future scenario that assumes complete development of City-approved projects, and general build-out for Lamorinda area

Traffic Signal + 3-way Stop (AM)

Roundabout + Mini-Roundabout (AM)

Preferred Concept

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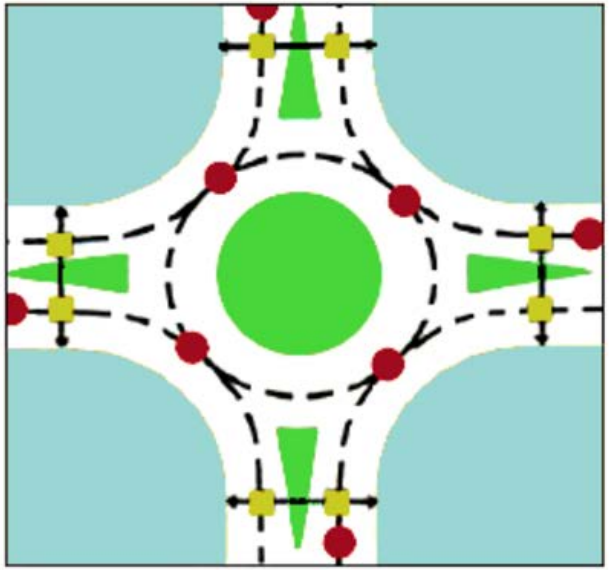
Conflict Points

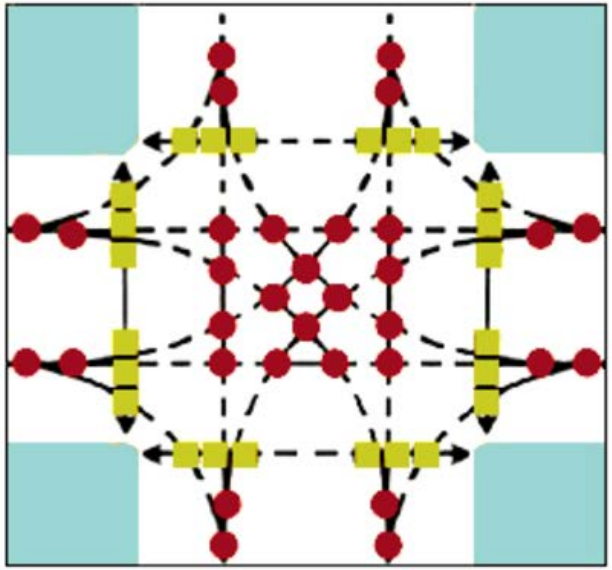
Roundabout



8 Vehicle conflicts

8 Pedestrian conflicts

Intersection



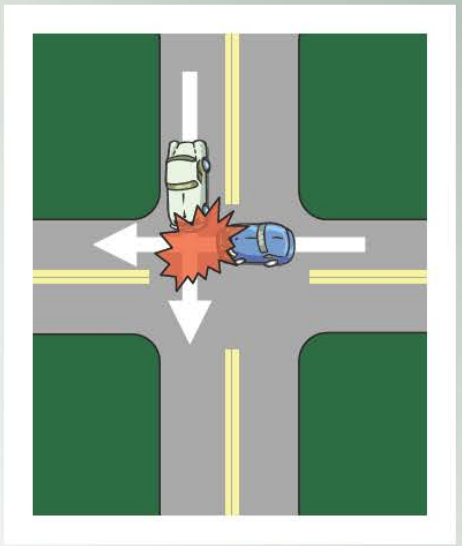
32 Vehicle conflicts

24 Pedestrian conflicts

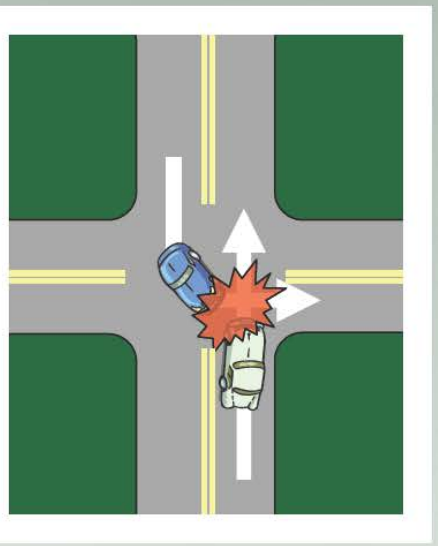
Type of Crashes

Typical 4-leg intersection

Angle

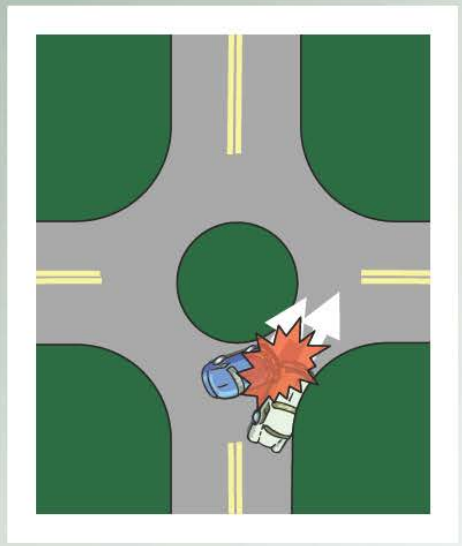


Left turn



Roundabout

Sideswipe



40 mph

30 mph

20 mph

15 mph

Figure 5.9. Driver focus at different speeds (Source: TGM 1999)

Safety Characteristics of Modern Roundabouts

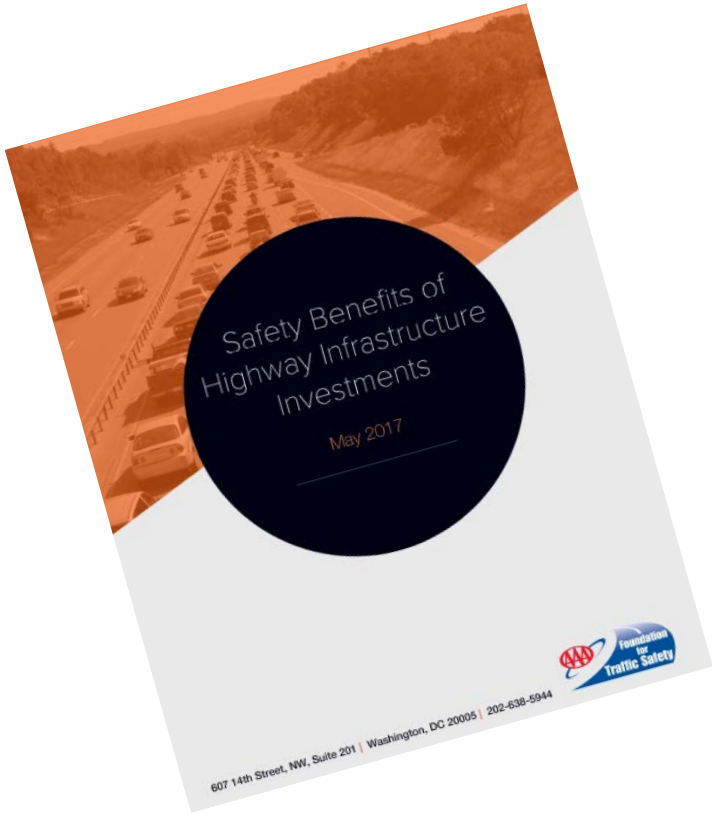
	Convert two-way stop to roundabout	Convert signalized to roundabout
All crashes	44%	48%
Fatal/injury crashes in rural area	87%	78%
Fatal/injury crashes in urban area	78% (1-lane), 72% (2-lane)	60%

Source: 2010 US Department of Transportation: Federal Highway Administration

AAA Endorsement

AAA Safety Benefits of Highway Infrastructure, May 2017

- Safer Roads Investment Plan identified six categories of countermeasures that collectively will provide nearly 95% of the anticipated crash reductions.
- 30% of the overall fatality and serious injury reductions could come from intersection improvements.
- The intersection improvement with the greatest potential for fatality and serious injury reduction is



CONVERSION OF EXISTING INTERSECTIONS TO ROUNDABOUTS

"Older Americans, in particular, are supportive of roundabouts."
- Federal Highway Administration

Jana Lynott, President of AARP

AARP

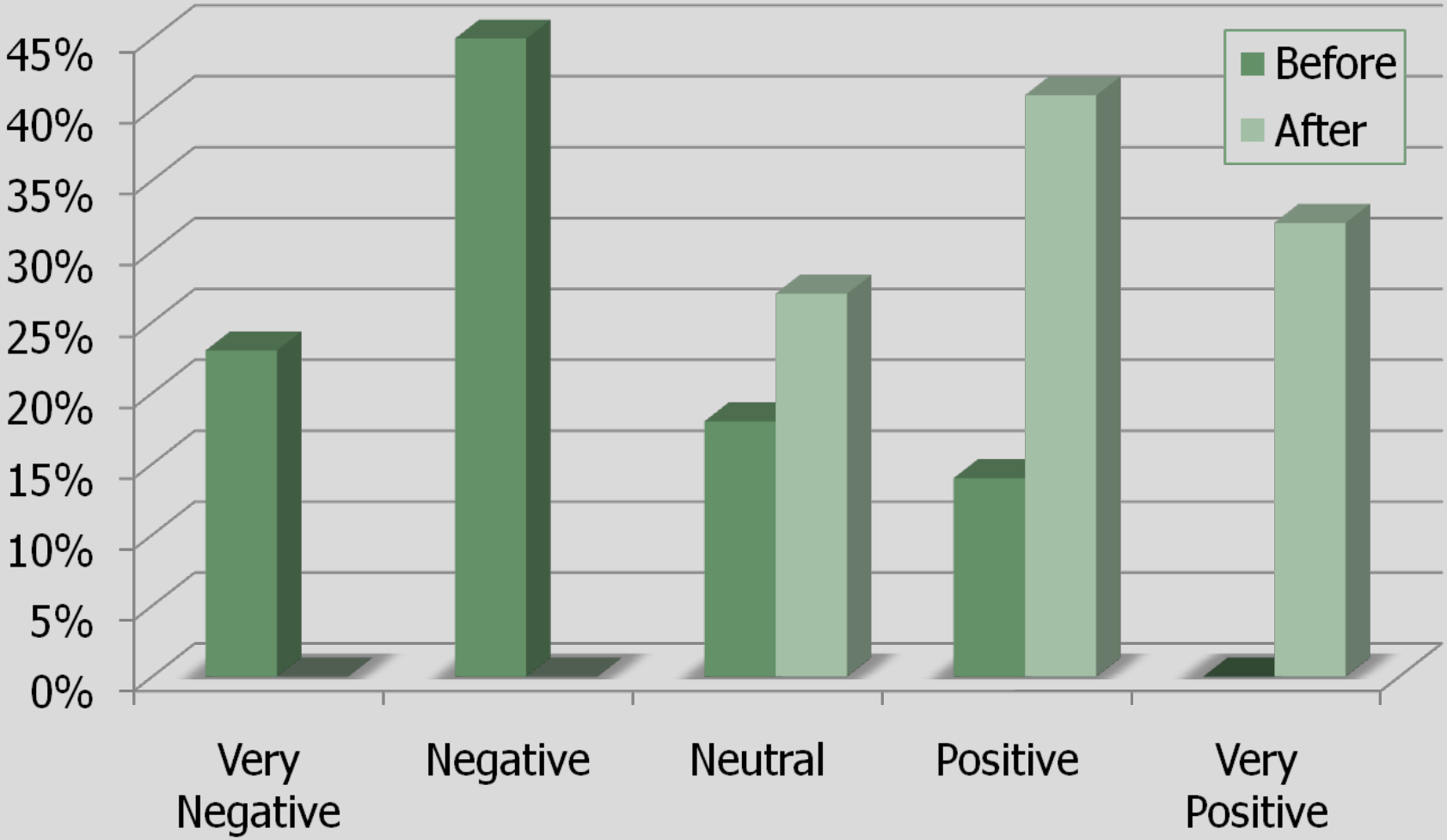
Advocacy

We stand up for our members and society as a strong nonpartisan advocate for social change. We work on the issues that matter,

"By 2025, a quarter of all drivers in the United States will be over the age of 65. Intersections are the single most dangerous traffic environment for drivers of any age with left-hand turns being the single most dangerous traffic maneuver that any of us can make. Forty percent of all crashes that involve drivers over the age of 65 occur at intersections. This is nearly twice the rate of experienced younger drivers.

"AARP would like to see more roundabouts constructed because of the many safety benefits that they present for drivers of all ages."

Public Attitude Towards Roundabouts
(Before and After Construction)



Source: US Department of Transportation: Federal Highway Administration

Opportunities for bicycle, ped, and landscaping

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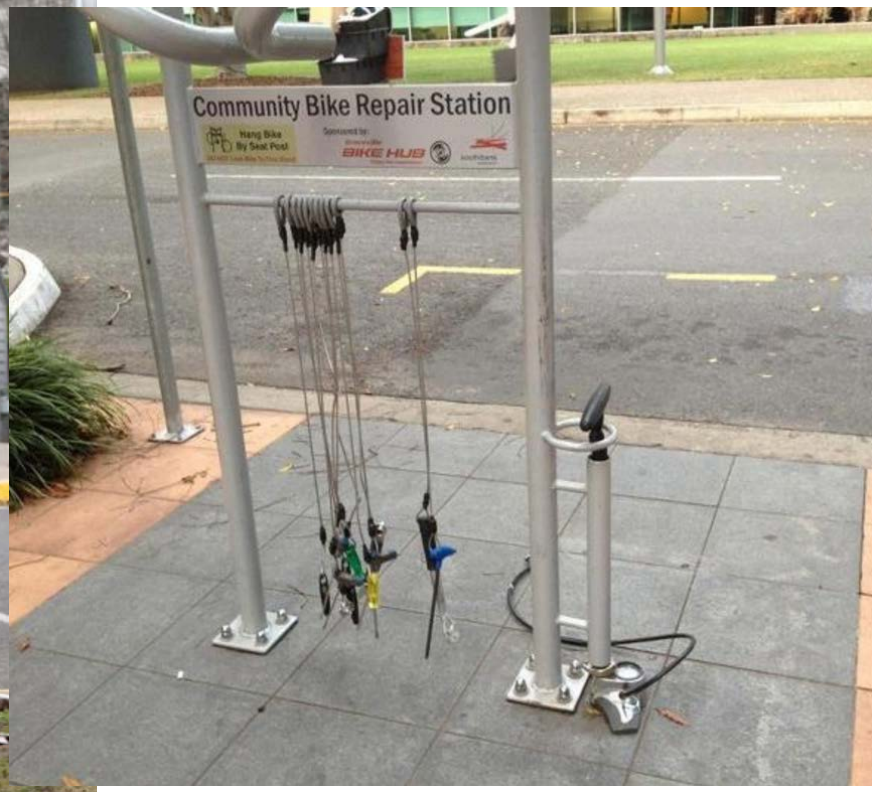
Opportunities for bicycle and ped improvements

- Slowing cyclists

Opportunities for bicycle and ped improvements

- Bike repair station



Opportunities for bicycle and ped improvements

- Water fountain

Opportunities for bicycle and ped improvements

- Wayfinding/trail map

Opportunities for bicycle and ped improvements

- Pocket parks

Opportunities for landscaping

Funding Opportunities

- Estimated cost to complete design and construction:
  - Roundabouts Alternative: $3.7M
  - Traffic Signal and 3-way Stop Alternative: $3.3M

- Kimley-Horn to complete objective analysis of the Town's Return On Investment for both scenarios, through the design life (typically 20 years)

- These efforts will position Town to better compete against other agencies for grant funding

Schedule

Fall 2017
- Refine Concepts based on public feedback and present to Town Council

Fall/Winter 2017
- Complete Preliminary Design to determine right-of-way needs and construction costs

Spring 2018
- Complete CEQA environmental process

2018
- Prepare and submit for grant funding to complete design and construct project

TBD
- Construction

For more information or additional comments:

Shawn Knapp
(925) 888-7027
sknapp@moraga.ca.us

Project website: www.moraga.ca.us/roundabouts

Deadline to submit feedback forms from those that attended this presentation is September 4, 2017