TAMC
Board of Directors
August 23, 2017
Scenic Highway Plan

Holistic Analysis of the Corridor
Funding
Timeline Recap

- **Summer 2015** – Received Grant
- **December 2015** – Study starts
- **2016** – Existing Condition and modeling
- **Spring 2016** – Phase 1 Public Outreach
- **Spring 2017** – Concept development
- **Spring-Summer 2017** Phase 2 Public Outreach
- **June 2017** – Preferred concept identified
- **August 2017** – Plan Approval
Benefit & Cost

- Travel Time & Buffer Savings
- Reduce VMT
- Enhance Safety
- Emissions
- Health

Construction
Capital Support
Right-of-Way

Estimated $ Spent

Policy Consistency
Environmental Sensitivity
Community Support
Social Equity
Ancillary Benefits
Wildlife Connections
Map of Roadkill Data & Wildlife Cameras Stations on the Highway 68 Transportation Corridor.
Wildlife Recommendations

10 locations for improved connectivity

Example: Colorado State Highway 9 Safety Project
Transportation Studies

- Intersection & Segment Operations
- Multimodal Operations
- Safety Analysis
- Travel Time Reliability Analysis
- Emissions Analysis
- Performance Summary

http://www.sr68sceniccorridorstudy.com
What the Analysis Says
What the Public Says

[Diagram showing traffic patterns along various roads and highways in Monterey County, California, highlighting issues like safety and congestion.]
Analysis + Data
Travel Pattern Analysis: Westbound
Travel Pattern Analysis: Eastbound
Delay and Buffer Time

Eastbound PM

<table>
<thead>
<tr>
<th>Day</th>
<th>Free Flow</th>
<th>Delay</th>
<th>Buffer</th>
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<td>15:16</td>
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<td>1:22</td>
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<td>8:20</td>
<td>12:48</td>
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<td>Saturday</td>
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Legend: Blue = Free Flow, Gray = Delay, Orange = Buffer
Intersection Evaluation

Benefits:
- Safety Benefit
- Delay Reduction Benefit
- Emission Reduction Benefit

Costs:
- Initial Capital Cost
- Operations and Maintenance Cost
## Intersection Evaluation

<table>
<thead>
<tr>
<th>Study Intersection</th>
<th>Int ID #</th>
<th>B/C Ratio</th>
<th>Preferred Control</th>
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<td>SR 68/Josselyn:</td>
<td>INT-01</td>
<td>0.83</td>
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<td>SR 68/Olmstead:</td>
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<td>SR 68/SR 218:</td>
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<td>SR 68/York Road:</td>
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<td>SR 68/Pasadera:</td>
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<td>SR 68/Laureles Grade:</td>
<td>INT-07</td>
<td>1.13</td>
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<tr>
<td>SR 68/Corral De Tierra:</td>
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<td>SR 68/San Benancio Rd:</td>
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<td>SR 68/New Torero Drive</td>
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<td>SR 68/Blanco Road:</td>
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Roundabouts - Concept 1

- INT 05: RAB at York Rd
- INT 06: RAB at Pasadera Dr
- INT 07: RAB at Laureles Grade Rd
- INT 08: RAB at Corral De Tierra Rd
- INT 09: RAB at San Benancio Rd
- INT 10: RAB at Torero Dr
Segment Widening & Roundabouts - Concept 2
Adaptive Signals - Concept 3
## Comparing the Concepts

<table>
<thead>
<tr>
<th>Alternative</th>
<th>Safety</th>
<th>Delay</th>
<th>Environment</th>
<th>Operation and Maintenance Costs</th>
<th>Cost ($Millions)</th>
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<td>Widening Concept 2</td>
<td>Signals Concept 3</td>
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<td>Ancillary Benefits</td>
<td>●</td>
<td>●</td>
<td>●</td>
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<td>Plan Consistency</td>
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<td>Policy Consistency</td>
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<td>● (Red)</td>
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<td>Environmental / Institutional Sensitivity</td>
<td>● (Green)</td>
<td>● (Red)</td>
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<td>Community Acceptance</td>
<td>● (Green)</td>
<td>● (Yellow)</td>
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<tr>
<td>Social Equity</td>
<td>● (Green)</td>
<td>● (Green)</td>
<td>● (Green)</td>
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## Benefit Cost Analysis

<table>
<thead>
<tr>
<th>MOE Type</th>
<th>Life Cycle Value ($)</th>
<th>Roundabouts</th>
<th>Widening</th>
<th>Signals</th>
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<tr>
<td>Travel Time Benefit ($)</td>
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<td>Delay Time</td>
<td>49,310,218</td>
<td>67,070,254</td>
<td>31,132,299</td>
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<td>Buffer Time</td>
<td>42,064,449</td>
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<td>Safety Benefit ($)</td>
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<td>Intersections¹</td>
<td>31,291,187</td>
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<td>Segments</td>
<td>97,503,871</td>
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<td>Emission Reduction Benefit ($)</td>
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<td>Health Based Emissions¹</td>
<td>308,884</td>
<td>308,884</td>
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<td>Climate Change Emissions²</td>
<td>-6,361</td>
<td>117,113</td>
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<td>Total Monetized Benefit ($)</td>
<td>220,472,248</td>
<td>232,965,031</td>
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<td>Improvement Cost ($)</td>
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<td>Initial Capital</td>
<td>48,200,000</td>
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<td>Initial Capital–Safety</td>
<td>563,000</td>
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<td>Operations &amp; Maintenance Segment Sections</td>
<td>-</td>
<td>4,286,750</td>
<td>893,550</td>
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<td>Total Cost ($)</td>
<td>51,237,030</td>
<td>114,423,780</td>
<td>39,602,970</td>
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<td>Benefit-Cost Ratio</td>
<td>4.30</td>
<td>2.04</td>
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Survey Says

- Roundabouts
- Widening
- Adaptive Signals
- Do Nothing

1st Choice
2nd Choice
3rd Choice
4th Choice
Outreach Takeaways

• Strong public interest
• Strong support for roundabouts
• Keep Highway 68 scenic
• Strong opinions for & against widening
• A lack of support for Signals
### Comparing the Concepts

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Concepts Not Selected

• Fort Ord Bypass
• Full Widening
• Reversible Lane
• Corral De Tierra Bypass
• Modified Corral De Tierra bypass
• Grade-separated Intersections — “Parkway”
Modified Corral Bypass
Recommended Concept

• Roundabouts – Concept 1
• Wildlife Crossings
• + Planned Ferrini Ranch Improvements
• + Study Spot Widening @
  – Corral de Tierra and San Benancio
• + Evaluate improved access to Laguna Seca
• $ 81 million
- Visual of Preferred Concept

Areas for Additional Study
- SR 68 at Blanco
- Airport Access
- State Route 68: Corral de Tierra to San Benancio Roads
- Laguna Seca/SPCA Access

- Multi-lane roundabout
- Replace culvert
- Install directional fencing with jump-out gates
Total Delay Comparison

Scenario

Baseline
Baseline Future
Roundabout Corridor (Concept 1)
Preferred Concept (Concept 1-A)
Widening and Roundabout Concept (Concept 2)
ICM - Adaptive Signal Concept (Concept 3)

Total Delay (Hours)

PM Peak Hour
AM Peak Hour

Baseline: 282 hours (PM), 174 hours (AM)
Baseline Future: 480 hours (PM), 351 hours (AM)
Roundabout Corridor (Concept 1): 308 hours (PM), 287 hours (AM)
Preferred Concept (Concept 1-A): 298 hours (PM), 286 hours (AM)
Widening and Roundabout Concept (Concept 2): 268 hours (PM), 242 hours (AM)
ICM - Adaptive Signal Concept (Concept 3): 365 hours (PM), 317 hours (AM)
Comments Since Release

• Why not more design or Environmental Review?

• A more detailed analysis of the Corral De Tierra Bypass or “modified” Corral De Tierra bypass is needed.

• Can frontage roads be considered to connect some of the driveways?
More Comments

• Will non-commute travel times be slower than with lights?

• How will emergency response times be affected?

• Concerns about construction impacts

• General concerns about how roundabouts work
Roundabouts
Roundabouts

<table>
<thead>
<tr>
<th>Convert two-way stop to roundabout</th>
<th>Convert signalized to roundabout</th>
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<tbody>
<tr>
<td>All crashes</td>
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<tr>
<td>44%</td>
<td>48%</td>
</tr>
<tr>
<td>Fatal/injury crashes in rural area</td>
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</tr>
<tr>
<td>87%</td>
<td>78%</td>
</tr>
<tr>
<td>Fatal/injury crashes in urban area</td>
<td></td>
</tr>
<tr>
<td>78% 1-lane</td>
<td>72% 2-lane</td>
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<tr>
<td>60%</td>
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</table>

Source: 2010 US Department of Transportation: Federal Highway Administration
Roundabout Corridors in US (as of 2011)
Roundabouts

**Public Attitude Towards Roundabouts**

(Before and After Construction)

- **Very Negative**
- **Negative**
- **Neutral**
- **Positive**
- **Very Positive**

![Bar chart showing public attitude before and after construction](chart.png)
Simulation for 68 @ 218
Next Steps

• August: Plan Adoption

• After: The Work Continues
  – Project Study Report
  – Fund in State Program (STIP)
  – Environmental Review
    • Further analysis
    • More public review and input
  – Construction