County Road 98
Motor Vehicle and Bicycle Safety Project – Phase 2

Public Meeting #3

September 5, 2018;
6:00 PM to 7:30 PM
County Road 98

Functional Classification:

• Federal Aid Classification
  – Minor Rural Arterial
• Yolo County General Plan and Master Plan Designations
  – Major Two-Lane County Road
• Yolo County Bikeway Master Plan
  – Class 2 Bike Lane
1. Widen roadway/improve shoulders to provide:
   • Safer access for wide and slow farm vehicles
   • Improved visibility for vehicles entering County Road 98
   • Provide vehicle clear recovery zones
   • Areas for safer bicycle travel

2. Modify intersections to improve operations
Phase 1 Project Corridor
Construction Limits

County Road 29
County Road 27
County Road 25A

Woodland City Limit

Construction Limits
Phase 1 Project Results

Three years “prior” to the Phase 1 project, there were 17 non-intersection accidents along the corridor.

Three years “after” the Phase 1 project, the non-intersection accidents dropped to 5 - a 70% reduction.

Non-intersection injuries dropped from 16 to 1 - a 94% reduction.

Intersection accidents continued to increase, which is why the Phase 2 project has special emphasis on intersection improvements.
County Road 98
Motor Vehicle and Bicycle Safety Project

Phase 2 Project:
• The overall project continues the phase 1 improvements
• Our current focus is on identifying and developing Intersection Improvements at these Major Corridor Intersections:
This portion of the **Phase 2 Project effort** centers on the **intersections and coordinating intersection improvements** with existing and planned corridor bicycle and pedestrian improvements.

The Main Objective of the our effort, as a part of this of the Phase 2 project, is to **identify** and **develop** intersection **“safety” and “capacity” Improvements.**
The Alternatives we are considering for each intersection include:

1. Traffic Signalization
2. Roundabouts
Improvement Options

Traffic Signals

Pros:
• May improve vehicular safety
• Enhances pedestrian and bicycle safety
• Minimizes construction traffic control

Cons:
• Can cause excessive delay
• May increase accident frequency
• Can cause traffic route diversion
Improvement Options

Roundabouts

Pros:
• Improve intersection vehicular safety
• Enhance pedestrian and bicycle safety
• Can/will reduce operating speeds
• Minimizes traffic delays
• Environmentally friendly (GHG emissions)

Cons:
• Complex design process
• Complex construction and traffic handling
• May require more right of way
Geometric Considerations

The following design elements are being considered:

• Capacity and Operations
• Bikes and Pedestrian Facilities
• Way Finding
• Fast Paths Analysis
• Large Truck and Farm Equipment Needs
• Right of Way Requirements
Bicycle Accommodation

Objectives:

• Minimize exposure to conflicts
• Reduce speeds at conflict points
• Communicate presence of cyclists and routing
Minimize Exposure to Conflicts

Bicycle Design Objectives:

• Minimize transition and mixing zones
• Simplify turning movements
• Continuity in routing of various experience levels
• Conform to existing with provisions for future planned facilities
Continuity in Bicycle Routing

- Acknowledgement of various cyclist skill levels.
- **Connection to existing** pedestrian and bike facilities
- Provisions for **connection to planned** facilities
Communicate Presence of Cyclists Using Signing and Striping

• Use of **sharrows** where bikes will occupy the lane

• Use **guide and regulatory signing** to strengthen vehicle lane discipline
Accommodate Large Vehicles

• Accommodate all **Legal** Vehicles.

• Accommodate **Farm Equipment**
Accommodate Large Farm Equipment
Accommodate All Legal Vehicles
Improvement Concepts – CR 98 and Hutchinson

Roundabout

Traffic Signal
Improvement Concepts – CR 98 and CR 32

Roundabout

Traffic Signal
Improvement Concepts – CR 98 and CR 31

Roundabout

Traffic Signal
Traffic Signals v. Roundabouts
Evaluation Process

Intersection Control Evaluation (ICE)

Sample ICE Metrics

- Operations
- Safety
- Neighborhood Impacts
- Phased Approach
- Environmental Impacts
- Water Quality Benefits
- Benefit/Cost
- Others
## Lifecycle Benefit/Cost Analysis

### Example Analysis

<table>
<thead>
<tr>
<th>Life Cycle Costs (Interim design)</th>
<th>Roundabouts</th>
<th>Signals</th>
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</thead>
<tbody>
<tr>
<td>Benefits - due to reduced Collision and Mobility Costs (Roundabout VS Signals)</td>
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<td></td>
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<tr>
<td>Collision Costs of predicted crashes</td>
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<tr>
<td>Delay Costs</td>
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<tr>
<td>Fuel and GHG Costs</td>
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<tr>
<td>Total Benefit (due to reduced costs)</td>
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<tr>
<td>Project Costs including design, construction and maintenance (Roundabouts VS Signal)</td>
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<tr>
<td>Operations and Maintenance Costs</td>
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<td>Project Costs (including soft costs)</td>
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<tr>
<td>Total Costs</td>
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<tr>
<td>Total Life Cycle Costs (Opening Year $) - Net Present Value</td>
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### Life Cycle Benefit/Cost Ratio

| Benefit (Total Benefit Signal - Roundabout) |             |
| Costs (Total Costs Roundabout - Signal) |             |
| B/C Ratio (Roundabout to Signal) |             |
Open House

Please Proceed to the Individual Intersection Exhibit Stations:

1. Please note on the Exhibits, or on the Comment Cards any specific issues you would like this project to address.

2. We will be available to discuss any issues you wish to have addressed.