# Curry County Transportation System Plan

Technical Advisory Committee Meeting #3

July 13, 2023

# Meeting Agenda

- Introductions
- Project Update
- Tech Memo #5: Future Baseline (No Build)
- Tech Memo #6: Alternative Evaluation
- General Discussion
- Next Steps

# Introductions

CURRY COUNTY

# Project Update

CURRY COUNTY

# Project Schedule

| | | |
|---|---|---|
| 1 - Project Management | **Throughout** | 2022 |
| 2 - Public and Agency Involvement Plan | **Throughout** | |
| 3 – Definition and Background | **August - November** | |
| 4 – Update System Inventory | **November - March** | 2023 |
| 5 – Current Transportation System Operations | **November - March** | |
| 6 – Future Baseline (No Build) | **March - July** | |
| 7 – Alternative Evaluation | **March - October** | |
| 8 – Draft Policies, Ordinances, and Financially Constrained Plan | **August - January** | |
| 9 – Draft TSP | **January - March** | |
| 10 - Final TSP | **March - April** | 2024 |

**We are here**

# Meetings & Milestones

| | |
|---|---|
| **Definition & Background** (November 2022) | • **TAC Meeting #1** |
| **Update Inventory / Current Operations** (Today) | • **TAC Meeting #2** / Virtual Public Meeting #1 / Public Meeting #1<br>• County Board Meeting #1 |
| **Future Baseline / Alternative Evaluation** (July 2023) | • **TAC Meeting #3** / Planning Commission Meeting #1 |
| **Preferred Alternative** (October 2023) | • **TAC Meeting #4** / Virtual Public Meeting #2 / Public Meeting #2<br>• County Board Meeting #2 / Planning Commission Meeting #2 |
| **Draft Policies, Ordinances, and Financially Constrained Plan** (January 2024) | • **TAC Meeting #5**<br>• Joint County Board / Planning Commission Presentation |

# Tech Memo #5: Future Baseline (No Build)

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# Tech Memo #5: Future Baseline (No Build)

## Population Projections

- Population forecasts produced by Portland State University (PSU) Population Research Center (PRC).
- County's population estimated to grow by approximately 0.24% / year over next 20 years (mostly due to population increases within Brookings, Gold Beach, and Port Orford).

# Tech Memo #5: Future Baseline (No Build)

## Programmed Transportation Projects

### Statewide Transportation Improvement Program (STIP)

- ODOT's 4-year funding program for transportation improvement projects on state and regional transportation systems (see Table 2).
- 2021-2024 STIP projects primarily on US 101

### Curry County Capital Improvement Plan (CIP)

- County's guide for implementing essential improvements to its transportation system over 6-year cycle (see Attachment A).
- 2021-2027 CIP projects vary (retaining wall systems, drainage improvements, pavement repair, roadway widening and/or reconstruction, driveway repairs, and curb ramps, intersection improvements, traffic control improvements)


# Tech Memo #5: Future Baseline (No Build)

## Future Transportation System Operations

- Evaluates TSP study intersections in their current form under future year 2042 traffic conditions.
- Future 2024 traffic volumes developed with Statewide Integrated Model (SWIM); greatest traffic demand expected on US 101 between Brookings and Gold Beach.
- All study intersections **meet mobility targets** and have adequate vehicle storage during PM peak hour.
- US 101 / Winchuck River Road-Ocean View Drive experiences highest side-street delay.
- Non-motorized pedestrian and bicycle movements are expected to remain generally low at study intersections.


# Tech Memo #5: Future Baseline (No Build)

## Future Safety Conditions

Safety conditions could worsen if volumes increase and changes aren't made to transportation system.

- 59% of 928 reported crashes (2017-2021) resulted in injury, including **59 serious injury crashes**; 39% of all crashes were with fixed objects; 22 crashes included pedestrians / 8 included bicyclists (resulting in 5 fatal crashes)
- US 101 / Floras Creek Road is approaching its critical crash rate threshold.
- 44 roadway segments have observed crash rates that exceed statewide averages.


# Tech Memo #5: Future Baseline (No Build)

## Future Multimodal Conditions

- **Bicycle and Pedestrian Network**
  - Generally lacks walking and biking facilities.
  - Expected to remain the same through 2042 (except for bike lane / sidewalk projects in ODOT STIP and County CIP).
- **Bicycle Level of Traffic Stress (BLTS)**
  - Scores on most arterials / collectors expected to remain the same (primarily BLTS 2 and 3) through 2042.
  - Short sections of S Bank Chetco River Rd, N Bank Chetco River Rd, and Sixes River Rd expected to increase in BLTS.


# Tech Memo #5: Future Baseline (No Build)

## Future Multimodal Conditions

- **Pedestrian Qualitative Multimodal Assessment (QMA)**
  - Ratings on arterials / collectors expected to remain the same (generally "poor") if no changes are made to transportation system.
- **Bicycle and Pedestrian Safety Risk**
  - Expected to remain the same if no changes are made to transportation system.
  - Relatively high risk for bicyclists along US 101 and highest in Brookings.
  - Greatest risk for pedestrians on US 101 near Airport Road, within cities, and near Cape Sebastian and Pistol River.

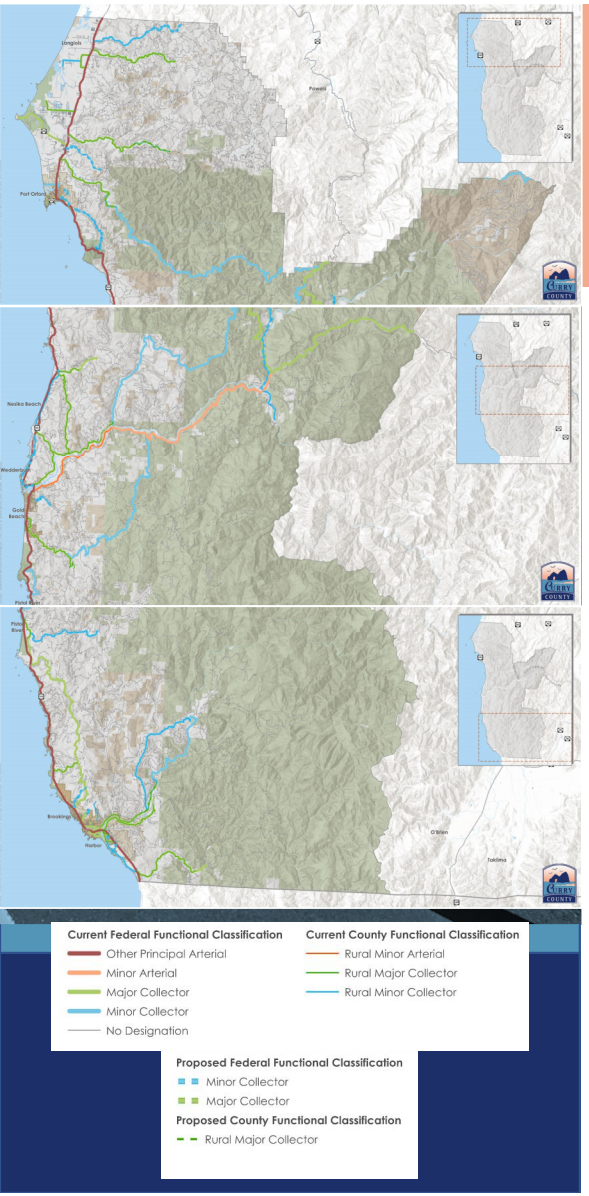

# Tech Memo #5: Future Baseline (No Build)

## Future Multimodal Conditions

- **Transit Services and Facilities**
  - Have a "Fair" Transit QMA rating primarily due to frequency of service.
  - Transit opportunities identified in recently adopted Curry Public Transit (CPT) Transit Development Plan (TDP) could affect/improve future transit operations.

# Tech Memo #6: Alternative Evaluation

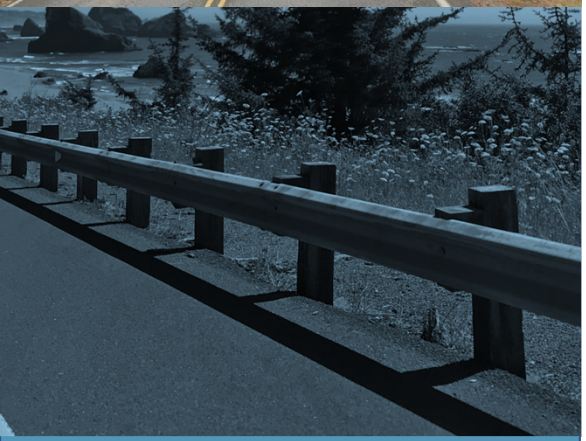
CURRY COUNTY




# Tech Memo #6: Alternative Evaluation

## **Roadway Network:** Functional Classifications

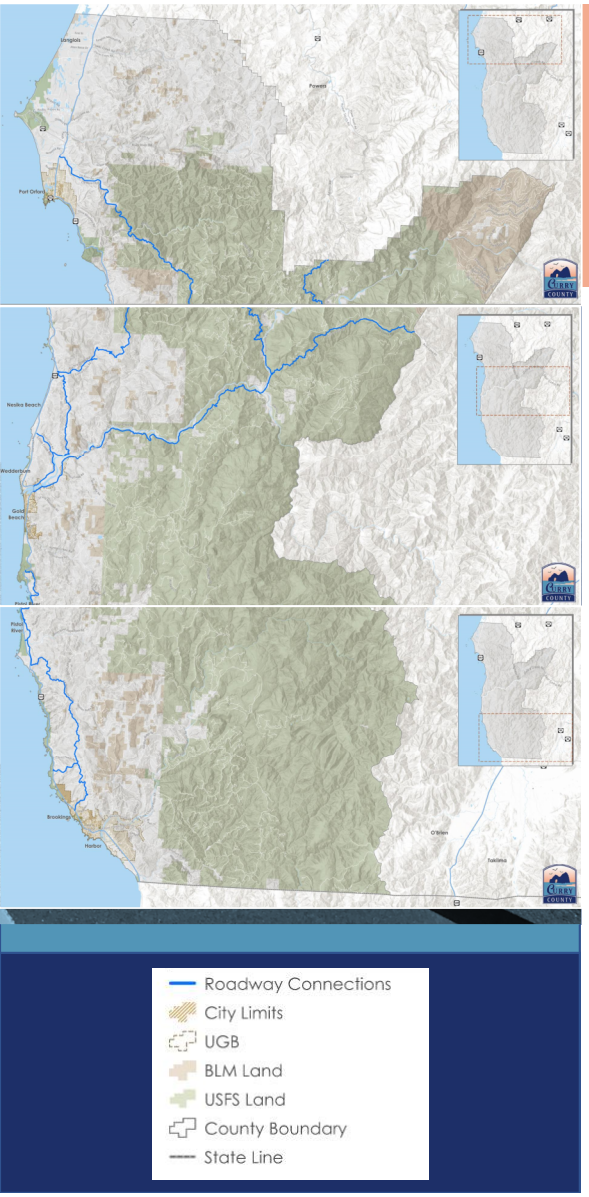
- Align Federal and County functional classifications.
- Consider other functional classification changes where appropriate.
- See Table 1 for potential changes.



# Tech Memo #6: Alternative Evaluation

## **Roadway Network:** Roadway Design Standards

- Update for County facilities in rural areas to include minimum paved shoulder width along collectors / arterials.
- Update for County facilities in incorporated cities to include sidewalks on all streets, bike lanes on arterials / collectors, and option to provide separation; otherwise, defer to standards of incorporated cities.
- Develop standards for County facilities in rural unincorporated communities that could include separate pedestrian / bicycle facilities.
- Develop standards for State facilities in unincorporated areas that could include shoulders in rural areas and separate pedestrian and bicycle facilities in rural unincorporated communities.




# Tech Memo #6: Alternative Evaluation

## **Roadway Network:** Roadway Connectivity

### US 101 Parallel Routes

- Elk River Road
- China Mountain Road
- Euchre Creek Road
- Cedar Valley Road
- Edson Creek Road
- N Bank Rogue River Road
- Pistol River Loop
- Carpenterville Highway (OR 255)
- Cape Ferello Road

### East-West Regional Route

- Jerry's Flat Road
- Agness Road
- Bear Camp Road
- Galice Creek Road

# Tech Memo #6: Alternative Evaluation

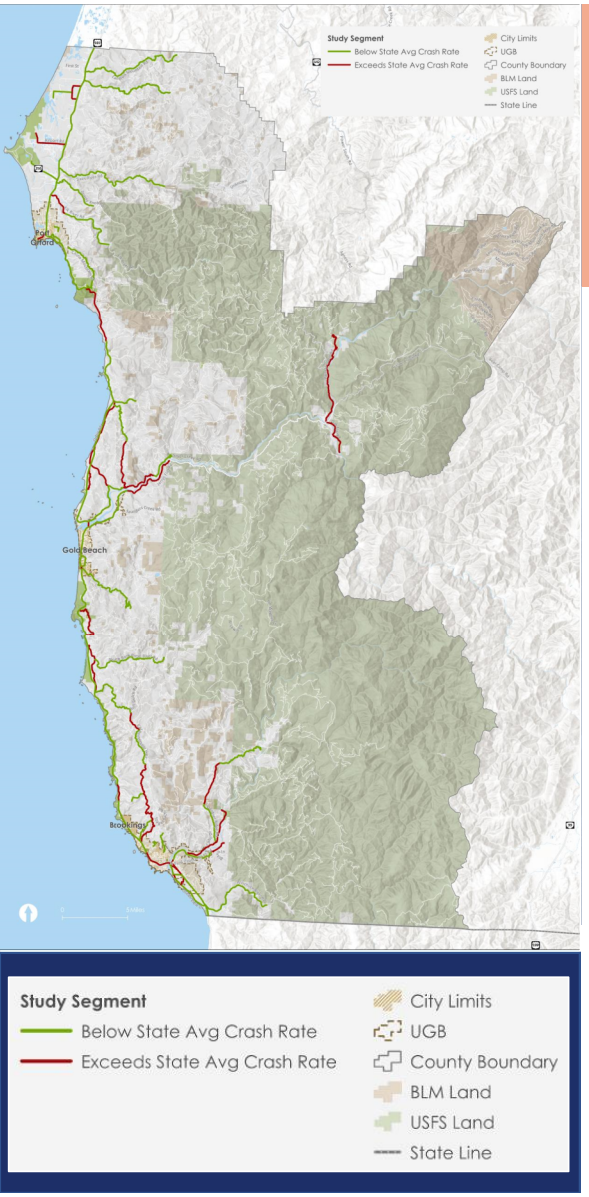
## **Roadway Network:** Pavement Preservation

- **Pothole repairs** fill holes along roadway; no broader resurfacing of roadway or structural component included.
- **Chip seal** combines asphalt / fine aggregate layer to repair minor cracks in roadway and provide even surface; does not provide any structural strength.
- **Blade patching** applies asphalt mix over top of existing pavement with motor grader / spreader box that spreads and compacts asphalt.
- **Overlay** layers cement or asphalt over existing pavement structure; provides structure and is typical for minor / modest pavement damage; should extend to pavement edge for bicycles.
- **Crack sealing** uses compressed air to blow/clean cracks in road and apply a rubberized asphalt emulsion.

# Tech Memo #6: Alternative Evaluation

## **Roadway Network:** Intersection Operations

- Current transportation network sufficient to support year 2042 traffic volumes (outside incorporated cities).
- No intersection operations alternatives evaluated.
- County intersections within incorporated cities might experience higher congestion and should be monitored.




# Tech Memo #6: Alternative Evaluation

## **Traffic Safety:** Roadway Segments

- 44 roadway segments had crash rates that exceed crash rates of similar facilities across Oregon.
  - Vary in length depending on roadway features / presence of major intersections.
  - Many exhibited less than 5 crashes over 5-year study period.
- Alternatives primarily focus on segments that exhibit more frequent crashes.
  - Majority of crashes considered "roadway departure."
  - Alternatives include systemic and site-specific treatments.

# Tech Memo #6: Alternative Evaluation

## **Traffic Safety:** Roadway Segments

### Systemic Treatments

**Safety Edge for Rural Pavement Edge Drop-Off**
(Source: FHWA)

- Crash Types: All
- Crash Severities: All
- Service Life: 10 Years
- Area Type: Rural
- CRF: 6%
- CRF Range: 5-15%

**Chevron Signs on Rural Horizontal Curves**
(Source: FHWA)

- Crash Types: Run off the Road
- Crash Severities: All Injury (Excludes PDO)
- Service Life: 10 Years
- Area Type: Rural
- CRF: 16%
- CRF Range: 16%

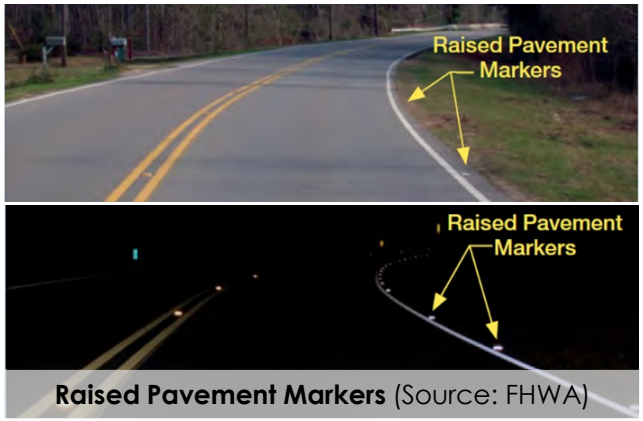
# Tech Memo #6: Alternative Evaluation

## **Traffic Safety:** Roadway Segments

### Systemic Treatments


**Static Combination Horizontal Alignment/ Advisory Curve Warning Sign** (Source: FHWA)

- Crash Types: All
- Crash Severities: All Injury (Excludes PDO)
- Service Life: 10 Years
- Area Type: Rural or Urban
- CRF: 13%
- CRF Range: 13-29%




**Raised Pavement Markers** (Source: FHWA)

- Crash Types: Night
- Crash Severities: All
- Service Life: 10 Years
- Area Type: Rural or Urban
- CRF: 15%
- CRF Range: 15%

# Tech Memo #6: Alternative Evaluation

## **Traffic Safety:** Roadway Segments

### Systemic Treatments

**Center Line Rumble Strips** (Source: FHWA)

- Crash Types: All / Head-On & Sideswipe
- Crash Severities: All (Excludes PDO)
- Service Life: 10 Years
- Area Type: Rural
- CRF: 12% / 45%
- CRF Range: 9-45% / 45%

**Shoulder Rumble Strips** (Source: FHWA)

- Crash Types: Run off the Road
- Crash Severities: All
- Service Life: 10 Years
- Area Type: Rural or Urban
- CRF: 22%
- CRF Range: 16-42%

# Tech Memo #6: Alternative Evaluation

## **Traffic Safety:** Roadway Segments

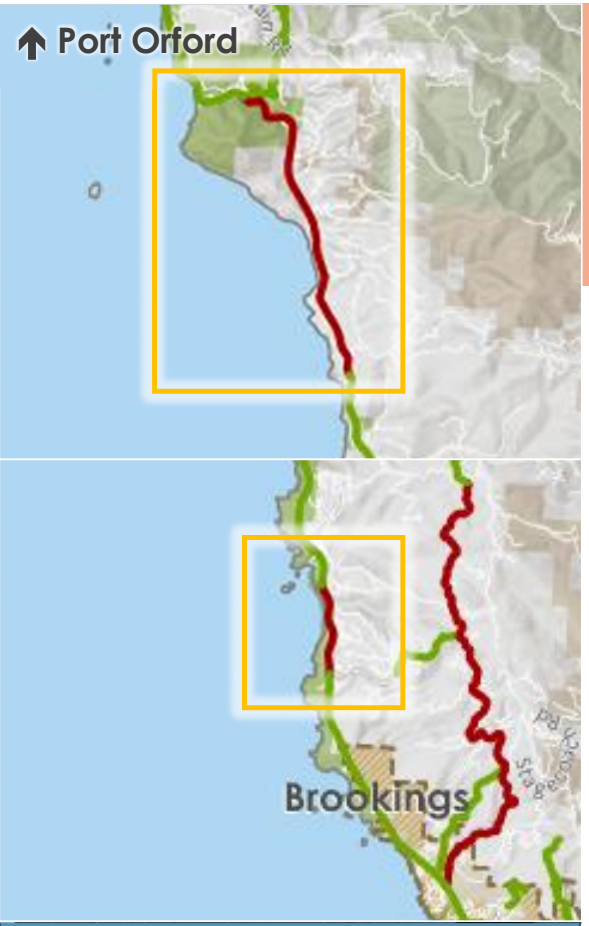
### Systemic Treatments

**Widened Paved Shoulder** (Source: FHWA)

- Crash Types: All
- Crash Severities: All
- Service Life: 20 Years
- Area Type: Rural or Urban
- CRF: 18%
- CRF Range: 6-18%

**Wider Edge Line Striping** (Source: FHWA)

- Crash Types: All
- Crash Severities: All
- Service Life: 10 Years
- Area Type: Rural
- CRF: 14%
- CRF Range: 17%




# Tech Memo #6: Alternative Evaluation

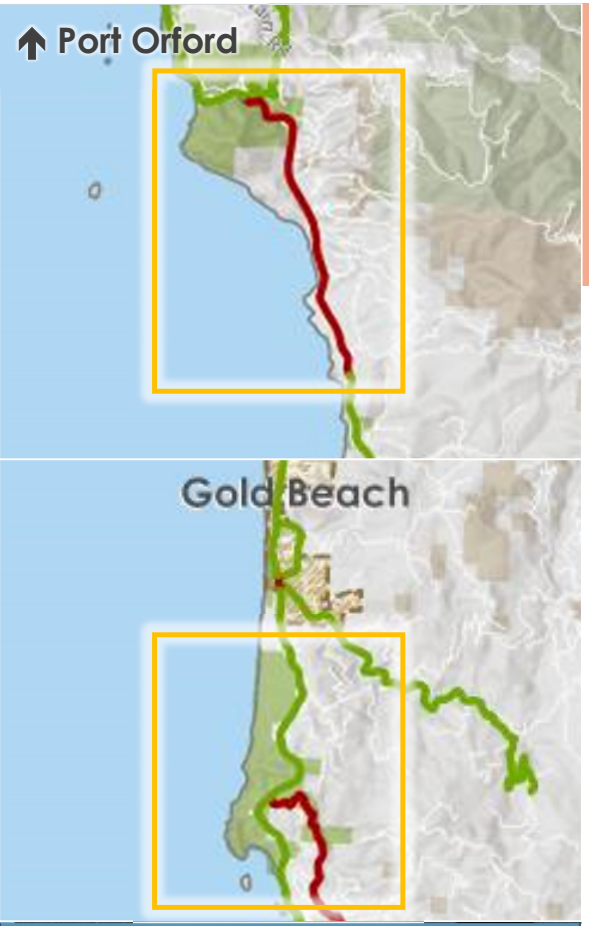
## **Traffic Safety:** Roadway Segments

### Site Specific Treatments

*Higher Proportion of Animal Crashes*

- US 101: Pacific Highland Dr/Reinhart Creek Frontage Rd to China Mountain Rd (Humbug Mountain State Park area)
- US 101: Cape Ferrelo Road to Martin Ranch Road (north of Brookings)

| Treatment | Crash Types | Crash Severities | Service Life | Area Type | CRF | CRF Range |
|---|---|---|---|---|---|---|
| Seasonal Wildlife Warning Signs | All | All | 20 Years | Rural | 26% | 26% |
| Wildlife Detection System | Wildlife | All | 20 Years | Rural | 87% | 87% |




# Tech Memo #6: Alternative Evaluation

## **Traffic Safety:** Roadway Segments

### Site Specific Treatments

*Unsafe Driving Conditions During Inclement Weather*

- US 101: Pacific Highland Dr/Reinhart Creek Frontage Rd to China Mountain Rd (Humbug Mountain State Park area)
- US 101: Cape Sebastian Scenic Corridor (south of Gold Beach)

| Treatment | Crash Types | Crash Severities | Area Type | CRF | ADT Range |
|---|---|---|---|---|---|
| Variable Speed Limit Signs | All (Winter Only) | All Injury (Excludes PDO) | Rural | 32% | 3,672 to 4,255 |
| Icy Curve Warning System | All | All | Rural | 18% | 2,850 to 2,950 |


# Tech Memo #6: Alternative Evaluation

## **Traffic Safety:** Roadway Segments

### Site Specific Treatments

*Urban Curve Crashes: Benham Lane*

| Treatment | Crash Types | Crash Severities | Service Life | Area Type | CRF | CRF Range |
|---|---|---|---|---|---|---|
| **High Friction Surface Treatment (for Pavement)** | Run Off the Road | All | 10 Years | Urban or Rural | 72% | 20-68% |
| **Oversized, Doubled Up and/or Fluorescent Yellow Sheeting for Advance Curve Warning Signs** | Run Off the Road | All | 10 Years | Urban or Rural | 20% | 20% |
| **Advance Curve Warning Flashers (Curve Warning Signs Exist)** | Curve | All | 10 Years | Urban or Rural | 10% | 10% |
| **Post-Mounted Delineators** | Curve Crashes at Night | All | 10 Years | Urban or Rural | 30% | 0-30% |



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# Tech Memo #6: Alternative Evaluation

## **Traffic Safety:** Intersections

### Shopping Center Avenue / Zimmerman Lane

*Angle and turning movement crashes*

| Treatment | Crash Types | Crash Severities | Service Life | Area Type | CRF | CRF Range |
|---|---|---|---|---|---|---|
| Right Turn Lane on One Major Road Approach | All | All | 20 Years | Urban or Rural | 14 | 14 - 26% |
| Right Turn Lane on Both Major Road Approaches | All | All | 20 Years | Urban or Rural | 26 | 14 - 26% |
| Roundabout from Minor Road Stop Control | All | All Injury (Excludes PDO) | 20 Years | Urban or Rural | 82 | 19 - 82% |
| Convert to All-Way Stop Control | Angle | All | 10 Years | Urban | 75 | 18 - 75% |
| Increase Triangle Sight Distance | All | All Injury (Excludes PDO) | 10 Years | Urban or Rural | 48 | 11 - 56% |



CURRY COUNTY

# Tech Memo #6: Alternative Evaluation

## **Traffic Safety:** Intersections

### US 101 / Nesika Road-Edson Creek Road

*Angle, turning movement, and rear-end crashes*

| Treatment | Crash Types | Crash Severities | Service Life | Area Type | CRF | CRF Range |
|---|---|---|---|---|---|---|
| Right Turn Lane on One Major Road Approach | All | All | 20 Years | Urban or Rural | 14 | 14 - 26% |
| Right Turn Lane on Both Major Road Approaches | All | All | 20 Years | Urban or Rural | 26 | 14 - 26% |
| Left Turn Lane on One Major Road Approach | All | All | 20 Years | Rural | 44 | 33 - 55% |
| Left Turn Lane on Both Major Road Approaches | All | All | 20 Years | Rural | 48 | 47 - 58% |
| Increased Triangle Sight Distance | All | All Injury (Excludes PDO) | 10 Years | Urban or Rural | 48 | 11 - 56% |



CURRY COUNTY

# Tech Memo #6: Alternative Evaluation

## **Traffic Safety:** Intersections

### US 101 / Nesika Road-Edson Creek Road (Continued)

*Angle, turning movement, and rear-end crashes*

| Treatment | Crash Types | Crash Severities | Service Life | Area Type | CRF | CRF Range |
|---|---|---|---|---|---|---|
| Reduced Intersection Skew Angle | All | All | 20 Years | Rural | ODOT CRF List | N/A |
| Flashing Beacons as Advance Warning at Intersections | All | All | 10 Years | Urban or Rural | 13 | 10.2 - 13.3% |
| Improved Intersection Warning: Stop Ahead Pavement Markings and Signs, Larger Signs, Additional Stop Signs, etc. | All | All | 10 Years | Urban or Rural | Varies | 11 - 55% |
| Increased Stop Sign retroreflectivity (sign post reflective strips optional) | Angle | All | 10 Years | Urban or Rural | 7 | 7% |



CURRY COUNTY

# Tech Memo #6: Alternative Evaluation

## **Traffic Safety:** Intersections

### US 101 / Nesika Road-Edson Creek Road (Continued)

*Angle, turning movement, and rear-end crashes*

| Treatment | Crash Types | Crash Severities | Service Life | Area Type | CRF | CRF Range |
|---|---|---|---|---|---|---|
| Flashing Beacons at Minor Road Stop Controlled Intersections | Angle | All | 10 Years | Urban or Rural | 13 | 5 - 58% |
| Actuated Flashing Beacons Triggered by Approaching Vehicles | All | All | 10 Years | Urban or Rural | 27 | 27 |
| Provide "Stop Ahead" Pavement Markings | All | All | 10 Years | Rural | 31 | 31% |


# Tech Memo #6: Alternative Evaluation

## **Traffic Safety:** Intersections

### US 101 / Del-Cur Supply Co-Op Site Access

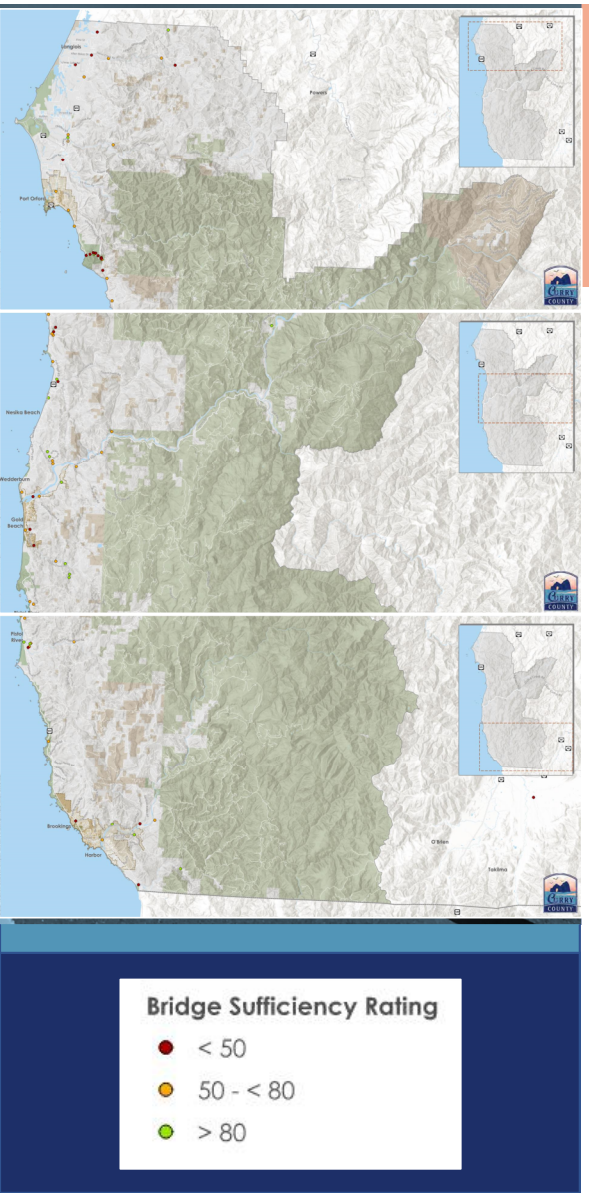
- Safety concerns identified by community regarding conflicts with adjacent intersection.
- ODOT may need to work with Del-Cur Supply Co-op to limit turning movements at existing driveways on US 101 to right-in/right-out and provide an additional access on Stateline Road.


# Tech Memo #6: Alternative Evaluation

## **Traffic Safety:** Pedestrians and Bicyclists

- Minor injury bicycle crashes in Humbug Mountain State Park area and near Seahorse Lane.
- Severe injury bicycle crash near Meyers Creek Road.
- Fatal bicycle crash near Whaleshead Road.
- Fatal pedestrian crash near Itzen Road.

| Treatment | Crash Types | Crash Severities | Service Life | Area Type | CRF | CRF Range |
|---|---|---|---|---|---|---|
| **Advance Pedestrian or Bicycle Warning Signs** | Pedestrian & Bicycle | All | 10 | Urban or Rural | 5 | 5 - 15% |
| **Bike Lanes** | Bicycle | All | 20 | Urban or Rural | 36 | 0 - 53% |




# Tech Memo #6: Alternative Evaluation

## Bridges and Culverts

- 25 bridges in Curry County's transportation network with sufficiency ratings below 50.
- ODOT and County will continue to monitor bridge system in study area.

# Tech Memo #6: Alternative Evaluation

## Non-Motorized Transportation Network

### Pedestrian Facilities

**Paved Shoulder** (Source: Rural Design Guide)

**Shared-Use Path** (Source: Rural Design Guide)

**Rectangular Rapid Flashing Beacons**

**Pedestrian Lane** (Source: Rural Design Guide)

**Side Path** (Source: Rural Design Guide)

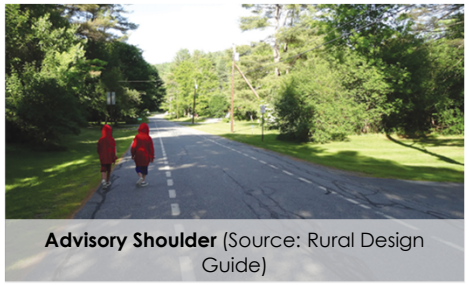
**Pedestrian Signal**

# Tech Memo #6: Alternative Evaluation

## Non-Motorized Transportation Network

### Bicycle Facilities

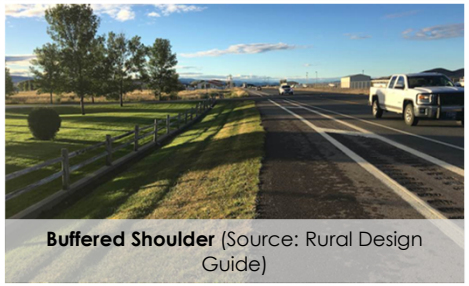
**Yield Roadway** (Source: Rural Design Guide)



**Advisory Shoulder** (Source: Rural Design Guide)

**Bike Lane**

**Shared-Lane Pavement Markings (Sharrows)**



**Buffered Shoulder** (Source: Rural Design Guide)

**Buffered Bike Lane**

# Tech Memo #6: Alternative Evaluation

## Non-Motorized Transportation Network

### Bicycle Facilities

Skip Striping through Conflict Area


**Combined Bike Lane/Right-turn Lane** (Source: NACTO)

# Tech Memo #6: Alternative Evaluation

## Non-Motorized Transportation Network

### Rural Unincorporated Areas

- Roadways with < 400 ADT
  - Examples: Gardner Ridge Rd, Agness Rd, Galice Creek Rd
  - BLTS and Ped QMA generally improve with 6-foot paved shoulders
- Roadways with 400-1,500 ADT
  - Examples: Winchuck River Rd, Oceanview Dr, N Bank Chetco River Rd
  - BLTS and Ped QMA generally improve with 6-foot paved shoulders

# Tech Memo #6: Alternative Evaluation

## Non-Motorized Transportation Network

### Urban Areas

- Roadways with < 400 ADT
  - Examples: W Hoffeldt Ln, Parkview Dr, Cemetery Loop Rd
  - BLTS and Ped QMA generally improve with 6-foot bike lanes and sidewalks
- Roadways with 400-1,500 ADT
  - Examples: Jerry's Flat Rd, Pedrioli Dr, Wedderburn Loop
  - BLTS and Ped QMA improves with either 7-foot buffered shoulder or 2- to 6-foot paved shoulder

# Tech Memo #6: Alternative Evaluation

## Non-Motorized Transportation Network

### Urban Areas

- Roadways with 1,500-3,000 ADT
  - Examples: Oceanview Dr, S Bank Chetco River Rd, Hunter Creek Rd
  - BLTS and Ped QMA generally improve with 7-foot buffered shoulders
- Roadways with > 3,000 ADT
  - Examples: Benham Ln, Lower Harbor Rd, Shopping Center Ave
  - BLTS and Ped QMA generally improve with 7-foot buffered bike lanes

# Tech Memo #6: Alternative Evaluation

## Non-Motorized Transportation Network

### US 101

- Oregon Coast Bike Route Plan (adopted in 2022) outlines recommendations for bicycle facilities.
- General Urban Recommendations
  - Road reconfigurations (reallocating roadway lane spacing);
  - Building off-road, shared use paths; and
  - Providing alternate routes for US 101 segments with limited space.
- General Rural Recommendations
  - Roadway widening to expand shoulder or add bike lanes;
  - Rest area pullouts for people biking to stop and rest; and
  - Improved / consistent signage with flashing beacons

# Tech Memo #6: Alternative Evaluation

## Non-Motorized Transportation Network

### US 101 (Continued)

- Specific Recommendations
  - **Gold Beach** – Reconfigure to allow six-foot wide bike lanes.
  - **Thomas Creek & Winchuck River Bridges** – Provide "share the road" signs leading to bridge; provide flashing beacon lights to indicate when bicyclists are on bridge; consider advisory speed signs.
  - **Brookings** – Reconfigure to make space for people biking. Reroute Oregon Coast Bike Route to use Railroad St (Pacific Ave to Oak St).

# Tech Memo #6: Alternative Evaluation

## Public Transit Network

Curry County Transit Development Plan (TDP) outlines key service / capital recommendations in the short-, medium-, and long-term for:

- Frequency and On-Time Reliability
- Schedule Speed & Travel Time
- Transit Stop Amenities and Connecting to Pedestrian & Bicycle Network

# Tech Memo #6: Alternative Evaluation

## Evaluation Matrix

| Objective | Evaluation Criteria | |
|---|---|---|
| **Mobility** | | |
| Motor Vehicle | Will the project help relieve congestion or reduce v/c? | Yes / Unknown/ No |
| Freight | Will the project improve freight movement or intermodal connectivity? | Yes / Unknown/ No |
| Ped/Bike | Does the project help encourage active transportation (walk, bike, transit)? | Yes / Unknown/ No |
| **Cost** | | |
| Cost Estimate | What is the Rough Order of Magnitude (ROM) cost estimate? | High / Med / Low |
| Existing Funding | Is there currently funding available to complete this project? | Yes / Unknown/ No |
| Potential Funding | Is it likely that the project will leverage alternate funding? | Yes / Unknown/ No |
| **Safety** | | |
| Identified Need | Will the project address an existing safety issue? | Yes / Unknown/ No |
| Crash Reduction | Does the project have a Crash Modification Factor (CMF) of < 1.0? | Yes / Unknown/ No |
| Safety Conflicts | Does the project reduce conflict points between modes? | Yes / Unknown/ No |

# Tech Memo #6: Alternative Evaluation

## Evaluation Matrix

| Objective | Evaluation Criteria | |
|---|---|---|
| **Land Use** | | |
| Economic Development | Does this project provide/improve access to an area identified for future growth? | Yes / Unknown/ No |
| Consistency | Is the project consistent with the comprehensive land use plan? | Yes / Unknown/ No |
| Compliance | Is the project supportive of County and/or State land use goals? | Yes / Unknown/ No |
| **Environmental Impacts** | | |
| Environmental Impact | Will the project impact an environmentally sensitive area? | Yes / Unknown/ No |
| Neighborhood Impact | Will the project impact an area with high concentrations of Title VI or Environmental Justice (EJ) populations? | Yes / Unknown/ No |
| Mode Choice | Will the project improve mode choice in an area with high concentrations of Title VI or Environmental Justice (EJ) populations? | Yes / Unknown/ No |

# General Discussion

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# Next Steps

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# Next Steps

1. TAC to provide comments on tech memos to County by Friday, July 21
2. Project team to finalize tech memos and begin work on preferred alternatives
3. Next TAC Meeting planned for October 2023