DRAFT MEMORANDUM

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TO: John McDonald, ODOT Region 3

FROM: Bob Schulte, DKS Associates
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DATE: March 14, 2014

SUBJECT: **US 101 Corridor Plan**
Task 6 – Development and Analysis of Improvement Options P#09042-024

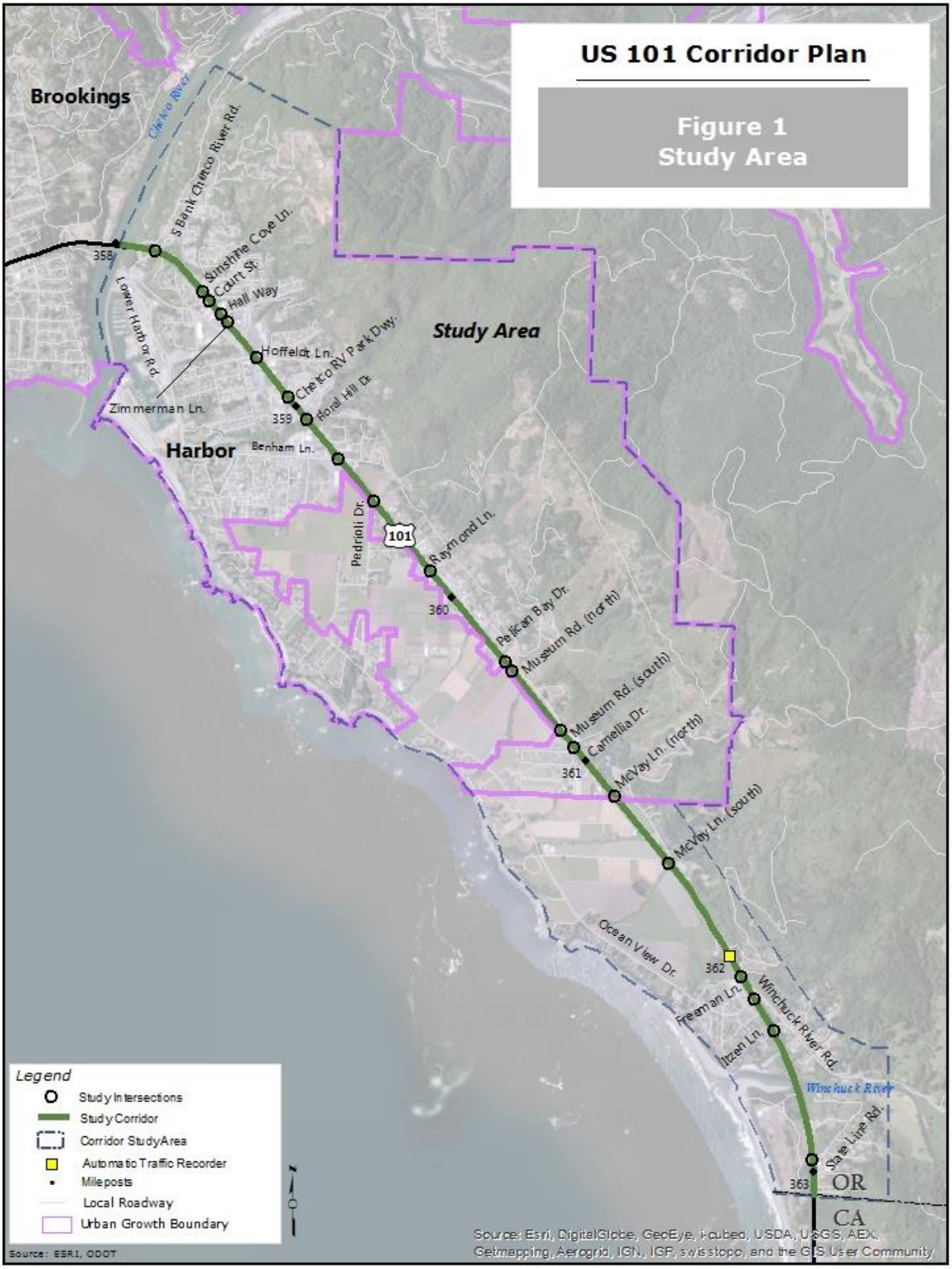
INTRODUCTION

This memo documents the development and analysis of preliminary improvement options within the US 101 Corridor Plan study area (see Figure 1). The findings of the analysis will serve as the basis for the selection of preferred options for the plan. The process included the following steps:

- Development of preliminary improvement options
- Development of data to support the evaluation of the options
- Evaluation of options

DEVELOPMENT AND ANALYSIS OF PRELIMINARY IMPROVEMENT OPTIONS

Preliminary improvement options were developed for each of the locations with needs identified in Task 4 – Corridor Inventory and Existing Conditions and Task 5 – Future System Conditions. The goals, objectives, and evaluation criteria defined in Task 3 – Policies, Goals and Objectives were used as a guide in the development of the options. The focus of the process was to identify options that will improve safety and maintain traffic operations while minimizing environmental and land use impacts. Another objective was to develop improvement packages for each location that will address not only the primary need, but secondary needs within the vicinity. This approach increases the cost-effectiveness of improvement projects because the total benefit is increased and the total cost is reduced compared to constructing separate improvements.


US 101 Corridor Plan
Figure 1
Study Area
Brookings
Chetco River
S Bank Chetco River Rd.
Sunshine Cove Ln.
Court St.
Hall Way
Lower Harbor Rd.
Zimmerman Ln.
Hoffelot Ln.
Chetco RV Park Dwy.
Floral Hill Dr.
Benham Ln.
Harbor
Study Area
Pedrioli Dr.
101
Raymond Ln.
Pelican Bay Dr.
Museum Rd. (north)
Museum Rd. (south)
Camellia Dr.
McVay Ln. (north)
McVay Ln. (south)
Ocean View Dr.
Freeman Ln.
Itzen Ln.
Winchuck River Rd.
Winchuck River
State Line Rd.
OR
CA
358
359
360
361
362
363
Legend
Study Intersections
Study Corridor
Corridor StudyArea
Automatic Traffic Recorder
Mileposts
Local Roadway
Urban Growth Boundary
Source: ESRI, ODOT
Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

In some cases, due to the type of need or specific characteristics of the location, only one improvement option was available. An example of this would be a location where there are conflicts between turning vehicles and through traffic. Here, the only option would be to provide a turn lane.

The preliminary improvement options were analyzed to develop information for the evaluation of the options. This information was used with the screening process developed in Task 3 to assess the relative effectiveness of the options.

For convenience, the evaluation data is organized within a cut sheet for each option (see Appendix A). This information includes:

- Improvement location
- Description of needs
- Description of improvement
- Concept design drawing
- Preliminary cost estimate
- Benefits
- Key considerations/notes

The improvement descriptions and concept design drawings define the basic features of the improvement and illustrate how it would be configured within the existing corridor. The drawings are not to scale, but provide a general indication of the project limits.

The cost estimates are planning level estimates indicating the order-of-magnitude costs of the improvements. They include all major cost categories except right-of-way acquisition. Right-of-way was not included because of the difficulty of obtaining accurate cost information and because it is not a significant cost component for any of the options.

The list of benefits includes all of the significant benefits of the improvement, described in either quantitative or qualitative terms. In the key considerations/notes section, special considerations for the improvement are identified, such as operational characteristics, environmental review requirements, impacts to adjacent parcels, and consistency with local plans.

The results of the screening process are included in the last section of the cut sheets. As defined in Task 3, the improvement options were evaluated by assigning point scores of

between zero and ten for each criterion. The point scores reflect the assessment, based on professional judgment, of how well an option satisfies the criteria. Not all of the criteria are applicable to each option. For example, the criterion for improved roadway geometrics would not apply to an option that does not change the existing geometrics.

The score for each criterion was multiplied by an associated weight. The weights were developed based on an assessment of the relative importance of each type of need by the Technical Advisory Committee. The weighted scores were then summed to produce a total weighted score for each alternative.

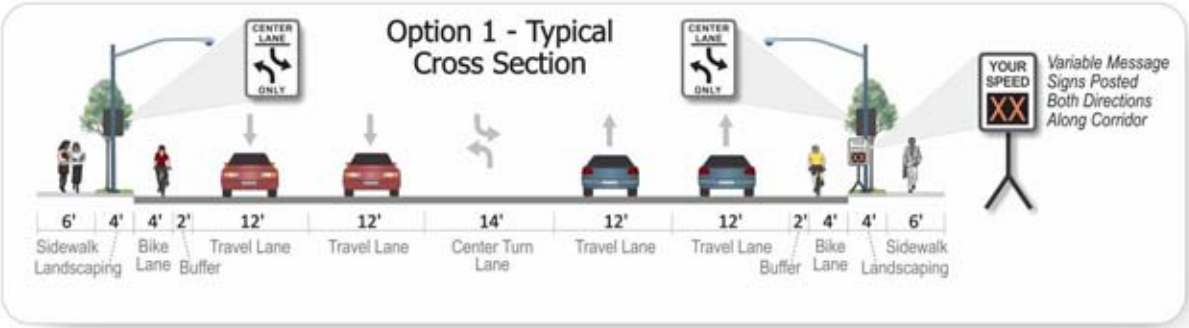
ANALYSIS RESULTS

Improvement options were developed that would extend the entire length of each corridor segment, as well as options for specific need locations within the segments. These are summarized below. Additional information can be found in the cut sheets in Appendix A.

Segment 1 – Chetco River Bridge to Zimmerman Lane

One option was developed for Segment 1 to address the higher-than-average crash rate, driver confusion with the two-way center turn lane, and sidewalk and lighting needs. To reduce speeds and improve safety, driver feedback signs would be placed along US 101 in both directions. A landscaped gateway median would be constructed between the abutment of the Chetco River Bridge and the end of the median traffic separator. This would create a sense of urban environment and the need to reduce speeds. A gateway sign would also be placed within the median to promote a sense of community.

Signage and striping would be used to improve the delineation of the two-way center turn lane. Lane control signs would be installed, together with reflectorized two-way left-turn pavement arrows. Pedestrian/bicycle improvements would include the addition of sidewalks where currently not available, buffered bike lanes with landscaping, and continuous street lighting. Details on how the bicycle and sidewalk facilities would fit into the existing network are included in the Bicycle and Pedestrian Network section at the end of the memo.



A Road Diet option was initially considered for the entire section between the Chetco River Bridge and Benham Lane, including Segment 1, which would eliminate a travel lane in each direction along US 101. Similar to Option 1, it would feature sidewalks, buffered bike lanes with landscaping, and continuous street lighting. A typical cross-section of this option is shown in Appendix B, together with a footprint map showing the reduced corridor width compared to the existing highway.

The potential benefits of the Road Diet option would be the reduction in travel speeds due to drivers' perception of a more constrained traffic operating environment, along with enhanced bicycle and pedestrian conditions (e.g., lower vehicle speeds and shorter crossing distances for pedestrians).

However, the highway capacity analysis performed for the 2034 forecast year indicated that future congestion levels with this option would be well above ODOT's mobility targets because of the reduced number of travel lanes. Therefore, it was not considered as a viable option.

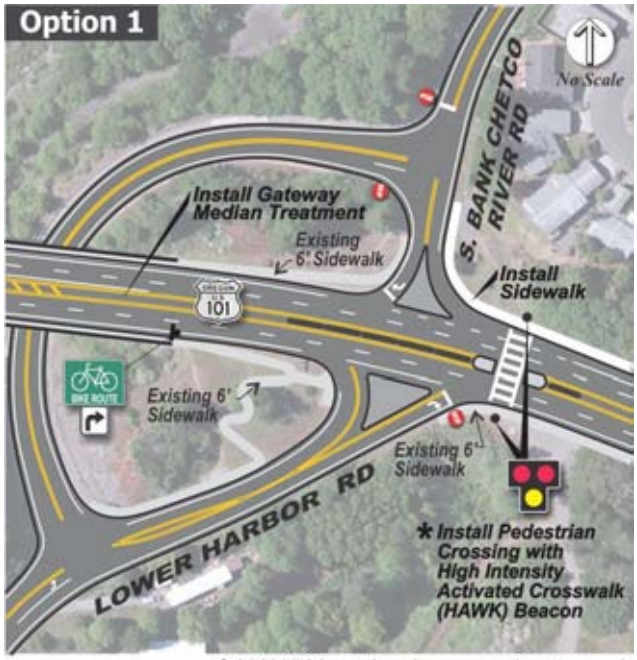
Lower Harbor Road/South Bank Chetco River Road Intersection

The existing needs at this intersection include a higher-than-average crash rate, skewed intersection angle, steep approach grade on the northbound approach of Lower Harbor Road, and the lack of street lighting, continuous sidewalks, and guide signs for drivers and bicyclists. There also will be a future mobility need.

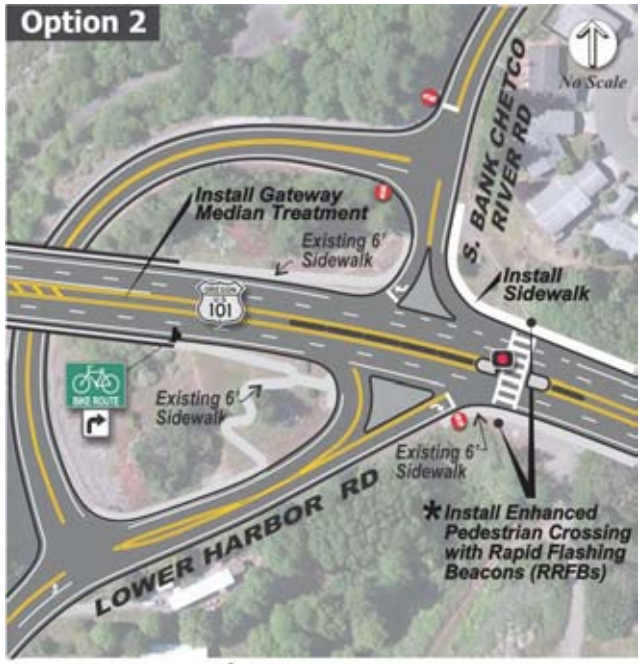
Three improvement options were developed to address these needs. With Option 1, the pedestrian improvements would include additional sidewalks, street lighting, and a signalized pedestrian crossing with a raised pedestrian refuge. The pedestrian signal would be a pedestrian-actuated HAWK (**H**igh-Intensity **A**ctivated cross**W**al**K)** beacon.

Signage would be installed along US 101 to direct drivers to Lower Harbor Road and South Bank Chetco River Road. This would help minimize the potential for rear-end collisions caused by drivers slowing down to decide how to access these roads. Guide signs would also be installed to direct bicyclists to the Oregon Coast bike route on Ocean View Drive.

Option 2 is the same as Option 1, except that an enhanced signalized pedestrian crossing would be constructed, featuring a raised pedestrian refuge and Rectangular Rapid Flashing Beacons.

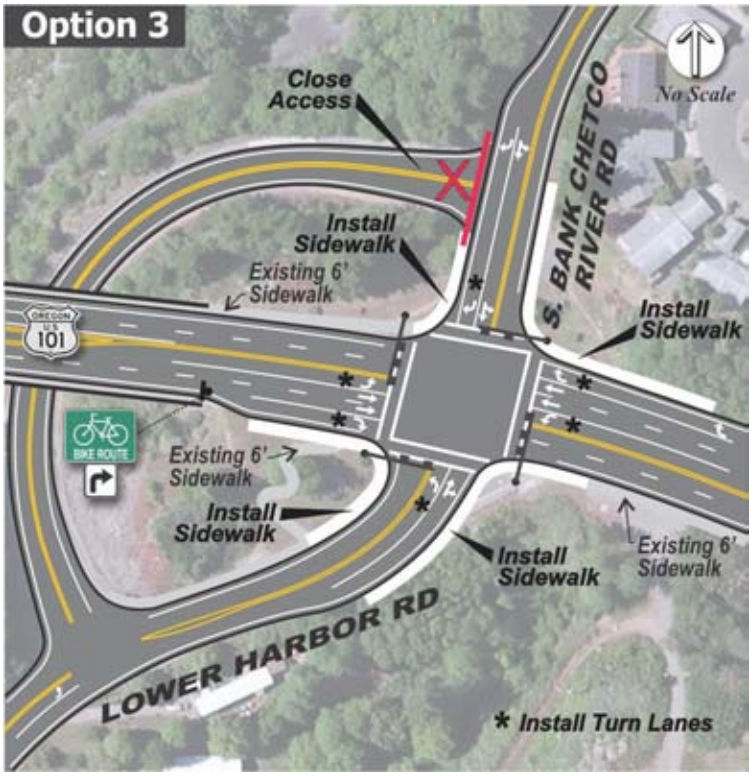


*HAWK location is approximate and would be determined based on additional analysis.



*RRFB location is approximate and would be determined based on additional analysis.

With Option 3, the existing intersection would be signalized[1], with turn lanes added. The additional turn lanes would include left- and right-turn lanes on US 101 in both directions, a left-turn lane on Lower Harbor Drive, and a right-turn lane on South Bank Chetco River Road. Additional sidewalks and street lighting would also be installed. As with Options 1 and 2, signage would be installed along US 101 to direct bicyclists to the Oregon Coast bike route. This is the only option that would address the future mobility need. With signalization, the south leg of the intersection would need to be realigned.



In the evaluation, Option 3 received the highest score, providing the largest benefits in the areas of potential crash reduction, geometrics, bicycle and pedestrian facilities, and congestion and delay. These benefits offset the higher construction cost. Option 1 scored slightly higher than Option 2, with a larger safety improvement and comparable cost. The scoring summary is shown in Appendix A at the bottom of the cut sheet for this intersection.

[1] This intersection would meet traffic signal warrants for the 2034 forecast year.

Sunshine Cove Lane Intersection

The existing needs at this intersection are the lack of a turn lane, a skewed intersection angle, and the lack of street lighting and continuous sidewalks.

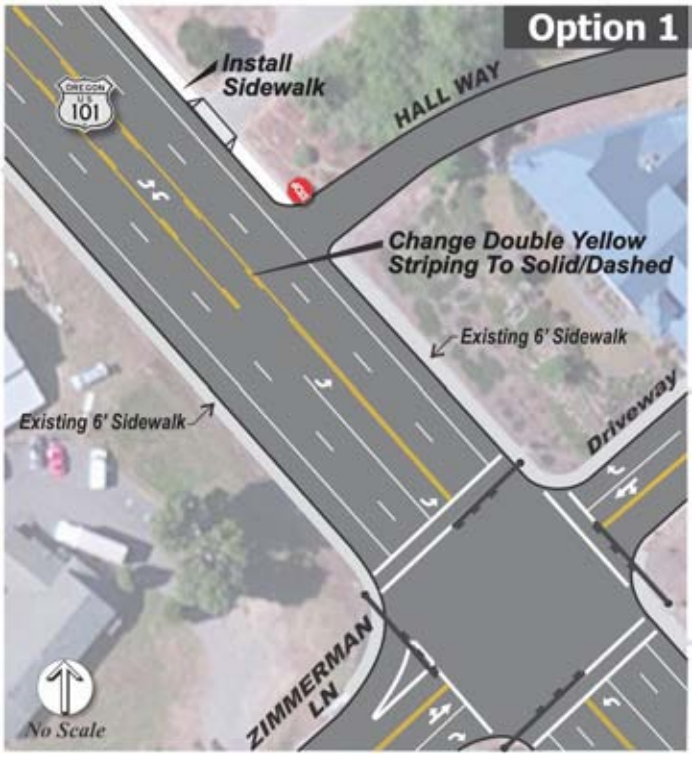
The pedestrian improvements would include additional sidewalks and street lighting. The Sunshine Cove Lane approach would be realigned to improve drivers' ability to see traffic on US 101. The addition of a southbound left turn lane would improve traffic operations and safety.

Court Street Intersection

Pedestrian improvements and turn lanes are needed at the US 101/Court Street intersection. The pedestrian improvements would include additional sidewalks and street lighting. The addition of a southbound left turn lane and a northbound right turn lane would improve traffic operations and safety.

Hall Way Intersection

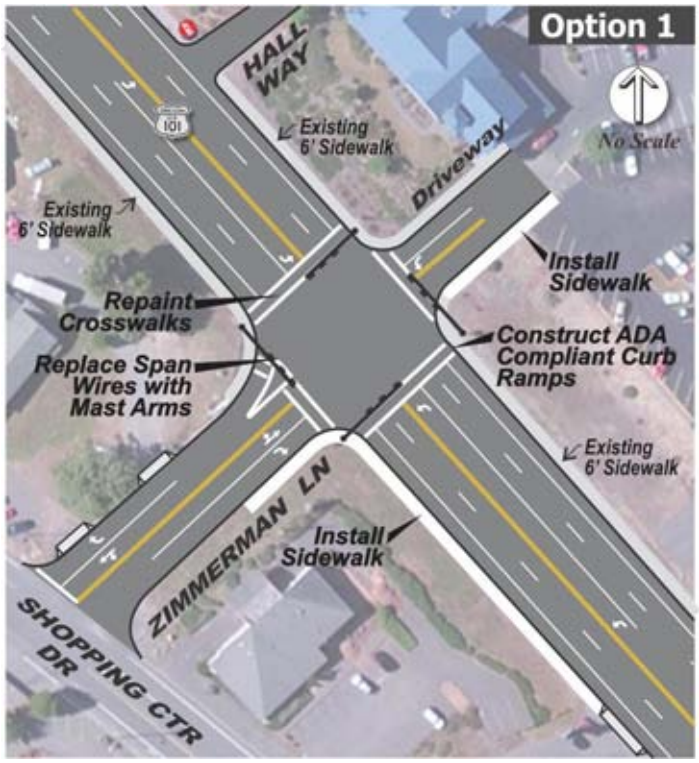
The existing needs at this intersection are the lack of a turn lane, street lighting, and continuous sidewalks. The pedestrian improvements would include the addition of sidewalks and street lighting. A southbound turn lane is needed, but the proximity of the Zimmerman Lane intersection would create the potential for the left-turn queue at Zimmerman Way to extend into the Hall Way intersection opening. As a partial solution, the existing double yellow striping for the two-way center turn lane on the north leg of US 101 would be changed to solid yellow/dashed striping to allow drivers to turn left legally onto Hall Way.



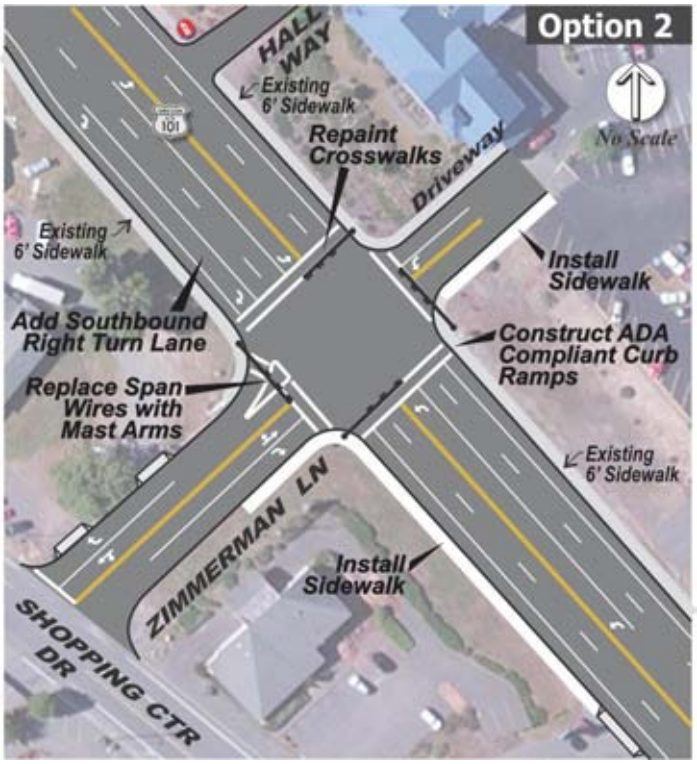
Zimmerman Lane Intersection

At Zimmerman Lane, the existing needs are a higher-than-average crash rate, curb ramps that do not comply with ADA requirements, signal timing that does not adequately serve pedestrians, and the lack of street lighting and continuous sidewalks. There also will be a future mobility need.

Two improvement options were developed to address these needs. With Option 1, the pedestrian improvements would include additional sidewalks, street lighting, ADA-compliant curb ramps on all intersection approaches, and pedestrian countdown timers. The safety improvements are related to drivers on southbound US 101



and Zimmerman Lane potentially having difficulty recognizing the upcoming intersection. Several countermeasures would be used to make the intersection more visible. A "Be Prepared to Stop" message sign would be installed on southbound US 101 that would be activated by the yellow phase of the signal. This would replace the existing "Signal Ahead" sign. Additional countermeasures to increase intersection visibility include repainting the crosswalks on all intersection approaches, installation of LED signal heads, placement of reflective tape around the border of the signal backplates, and replacement of the signal head span wires with mast arms.

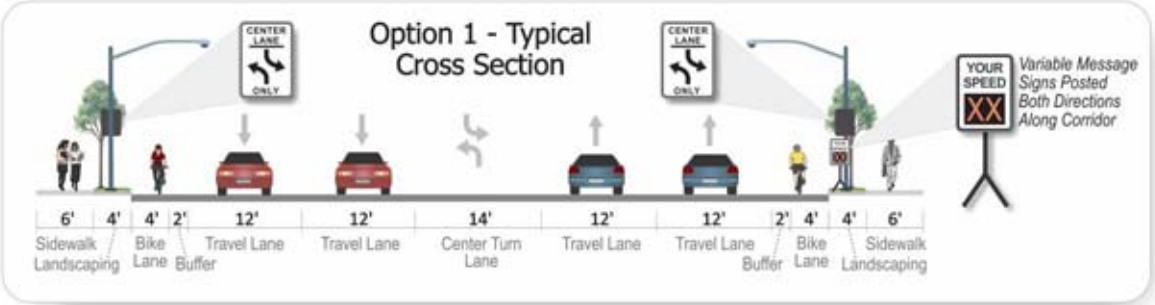


Option 2 is the same as Option 1, except that a southbound right turn lane also would be installed to address the future mobility need.

Although it has a higher estimated cost than Option 1, Option 2 received the highest evaluation score because of the added safety, geometric, and capacity benefits of the southbound right-turn lane (see cut sheet in Appendix A).

Segment 2 –Zimmerman Lane to Hoffeldt Lane

The needs along Segment 2 are the same as those for Segment 1, i.e., the existing crash rate exceeds the statewide average crash rate, driver confusion about the two-way center turn lane, and the lack of continuous sidewalks and lighting. Therefore, the same improvements proposed for Segment 1 would be extended to Segment 2. These include the placement of driver feedback signs along US 101 in both directions to reduce speeds and improve safety and the installation of lane control signs and reflectorized two-way left-turn pavement arrows to reduce driver confusion about the two-way center turn lane. Sidewalks, buffered bike lanes with landscaping, and continuous street lighting would be added to improve bicycle and pedestrian travel.



South Coast Center Section

The needs along the section of US 101 adjacent to the South Coast Center are non-ADA compliant curb ramps at the shopping center driveways, access management issues, and the lack of street lighting and continuous sidewalks. In addition, a bus shelter is needed at the shopping center.

Two improvement options were developed to address these needs. Both options include the installation of additional sidewalks, street lighting, ADA-compliant curb ramps, and a painted crosswalk and raised pedestrian median at the north driveway of the shopping center. The crosswalk would provide mid-block pedestrian access to the shopping center. A bus shelter also would be constructed at the shopping center.

The difference between the options is in the way the existing shopping center access would be modified. In the safety needs analysis, it was determined that the crashes at the driveways could be related, in part, to the proximity of driveways to the US 101/Hoffeldt Lane intersection. Northbound drivers on US 101 may not anticipate vehicles turning into the shopping center immediately north of the intersection and drivers at the driveways may have difficulty judging gaps in the traffic platoons formed by the intersection.

Therefore, for Option 1, the proposed change would be to close the south shopping center driveway and route all traffic to the north driveway.

For Option 2, the south driveway would be converted to right-in/right-out access only, with full access retained at the north driveway. A two-foot wide raised median and post-mounted delineators would be installed between the intersection and the north driveway to prevent left-turns at the south driveway.

Options 1 and 2 received similar evaluation scores (see cut sheet in Appendix A). Option 1 received the highest score, however, due to the greater reduction in traffic conflicts and fewer access points.

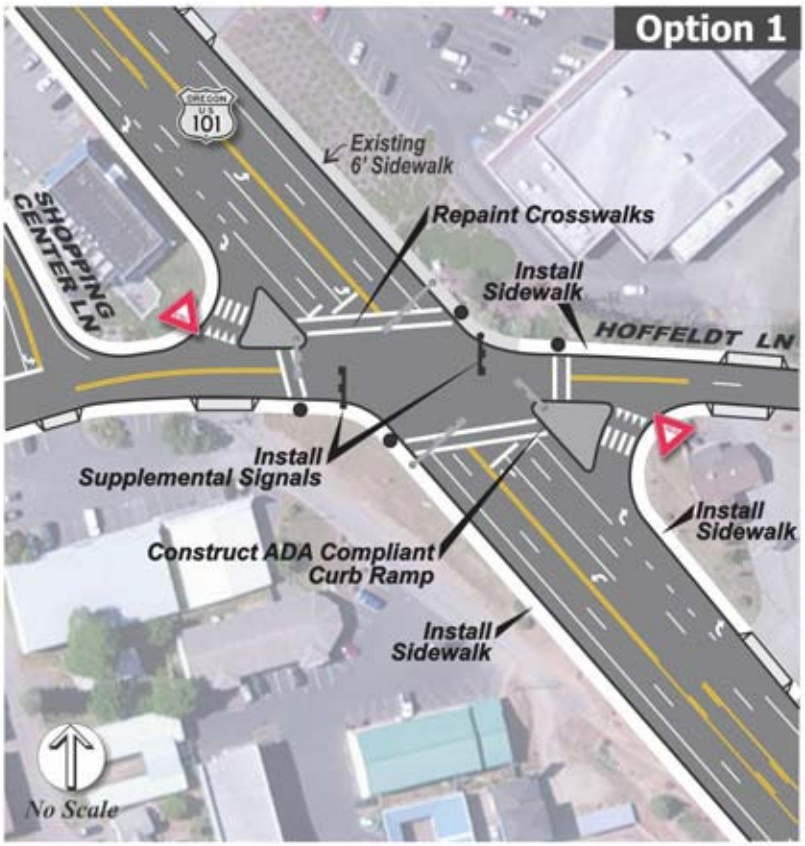
Hoffeldt Lane Intersection

At Hoffeldt Lane, there are multiple needs related to:

- Safety
- Intersection geometry
- Pedestrian accessibility

The safety needs analysis indicated that most of the crashes at this location may have been related to drivers failing to recognize the intersection. To increase the visibility of the intersection, several improvements are proposed:

- Install supplemental signals on the nearside intersection approaches of Hoffeldt Lane. This would address the problem of drivers being too far from the signal heads on Hoffeldt Lane because of the skew angle of the intersection.
- Install LED signal heads
- Place reflective tape around the border of the signal backplates
- Repaint the crosswalks on all intersection approaches



The geometric needs are the intersection skew angle and the difficulty of drivers recognizing the "pork chop" islands on the northwest and southwest corners of the intersection. The skew angle problem would be partially addressed with the installation of the supplemental signals. Two other options were investigated to correct this

problem with the realignment of the intersection. The first option would be to realign US 101 so that it intersects Hoffeldt Lane at a 90-degree angle (see Appendix B). An additional benefit of this option is that the curvature of the realignment would have the effect of slowing traffic speeds on US 101. The second option would be to realign Hoffeldt Lane to intersect US 101 at a 90-degree angle (see Appendix B). However, it was found that both of these options would have significant property impacts and so they were dropped from further consideration.

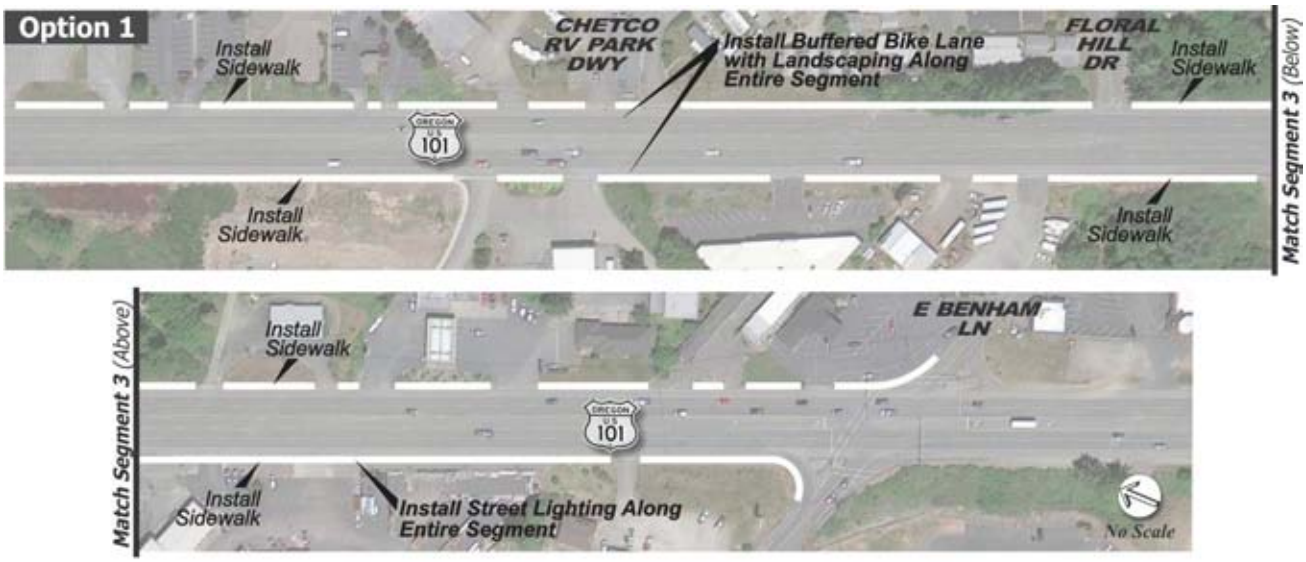
To increase the visibility of the "pork chop" islands, pavement markings would be added around the perimeter of the islands according to ODOT's typical markings. During the field reconnaissance, it was also noted that right-turn arrow pavement markings should be added on the US 101 approaches, together with yield signs and striping ("shark's teeth") on the right-turn slip lanes.

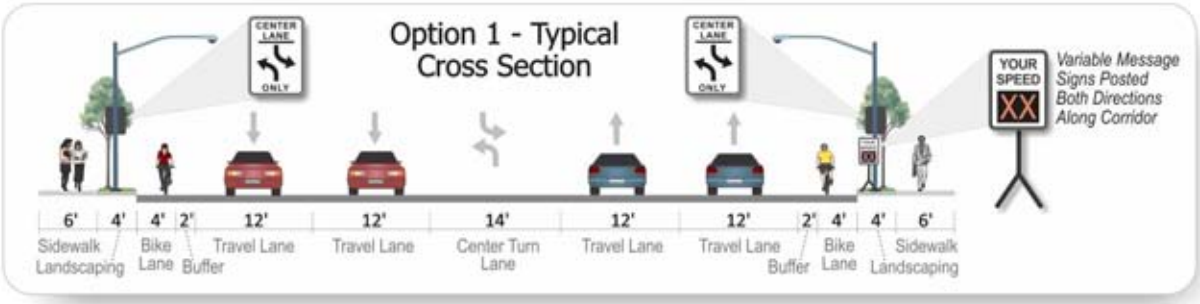
Pedestrian accessibility would be enhanced with the following improvements:

- Installation of LED street lighting
- Relocation of pedestrian push buttons
- Installation of pedestrian countdown timers
- Construction of ADA-compliant curb ramps on all intersection approaches, together with realignment of the crosswalks
- Placement of continental-style crosswalk markings between the corners of the intersection and the "pork chop" islands
- Addition of sidewalks

Segment 3 – Hoffeldt Lane to Benham Lane

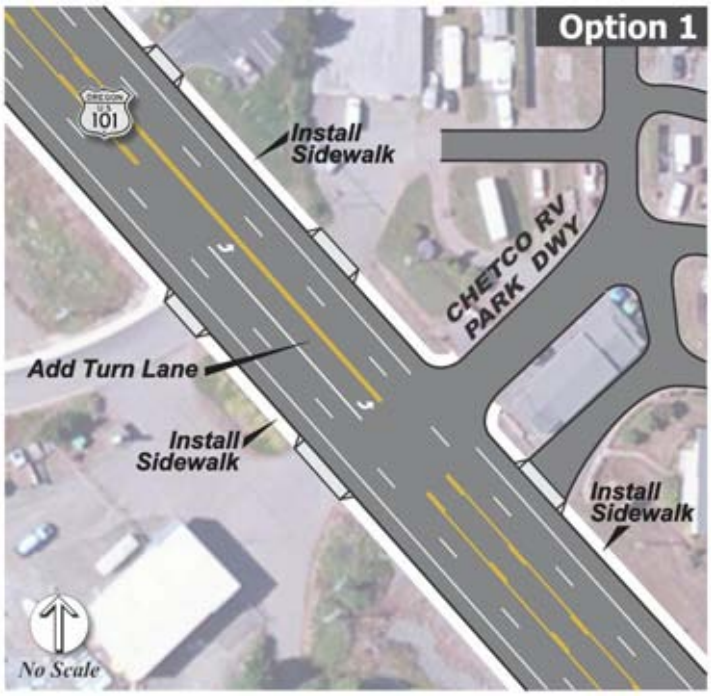
The needs along Segment 3 are the same as those for Segments 1 and 2 – the existing crash rate exceeds the statewide average crash rate, driver confusion with the two-way center turn lane, and the lack of continuous sidewalks and lighting. Therefore, the same improvements proposed for Segments 1 and 2 would be extended to Segment 3.





Chetco RV Park Driveway

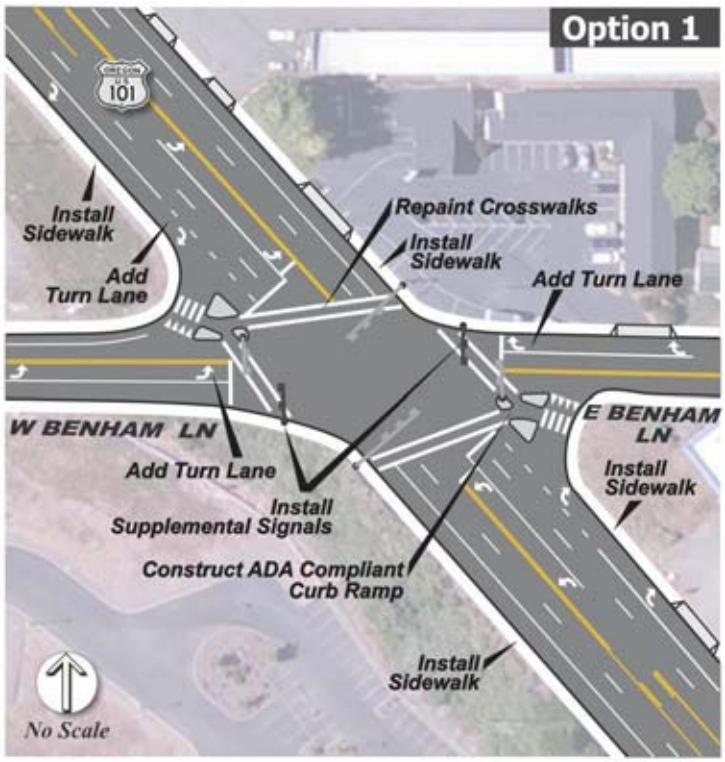
The existing needs at this intersection include the lack of a turn lane, street lighting, and sidewalks. The pedestrian improvements would include additional sidewalks and the installation of LED street lighting. The installation of a southbound left-turn lane would improve traffic operations and safety.

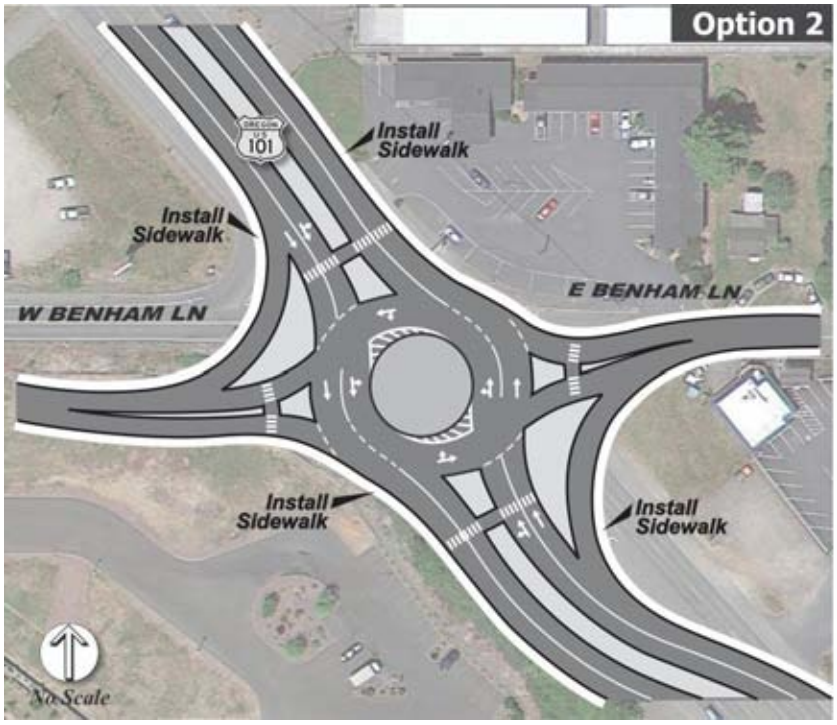


Benham Lane Intersection

Because of the close similarity of the Benham Lane intersection to the Hoffeldt Lane intersection, the safety, intersection geometry, and pedestrian accessibility needs are nearly the same as those at Hoffeldt Lane. The main difference in the needs is that ODOT's mobility target won't be met at Benham Lane for the 2034 forecast year.

Two improvement options were developed based on these needs. The first option includes the same types of safety, intersection geometry, and pedestrian facility improvements identified for Hoffeldt Lane. To meet ODOT's mobility target in the future, westbound and southbound right-turn lanes and an eastbound left-turn lane would also be added.





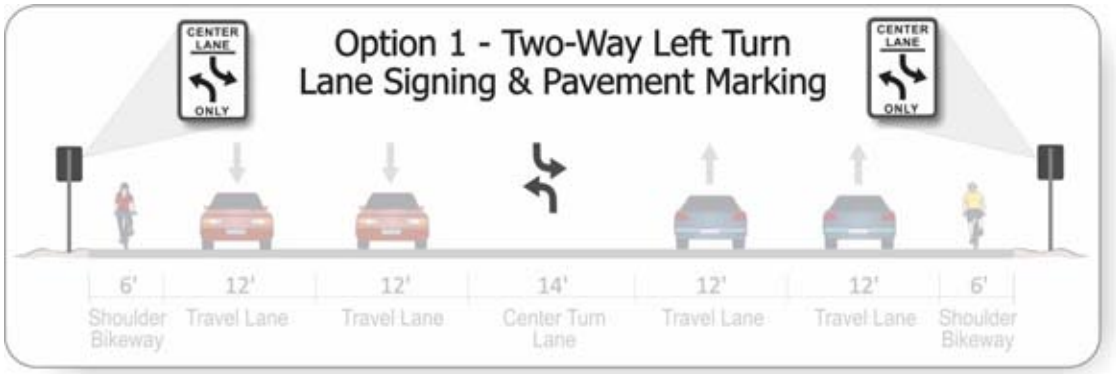
The second option would be to reconfigure the intersection as a roundabout. The roundabout would be two lanes, with separate slip lanes for northbound and southbound right turns from US 101 to Benham Lane. An additional benefit of the roundabout would be that the deflection on the US 101 entries would reduce traffic speeds. This would be particularly important for northbound traffic as it enters the more developed Harbor area north of Benham Lane. In addition to addressing the future mobility need, this option would also eliminate most of the non-mobility needs described above. The remaining needs would be met with the addition of street lighting and the installation of sidewalks on all intersection legs. A detailed layout drawing of Option 2 is included in Appendix C.

As for Hoffeldt Lane, realignment options for US 101 and Benham Lane were investigated for correcting the intersection skew angle problem (see Appendix B). It was found that both of these options would result in significant land use impacts to the parcels adjacent to US 101 and Benham Lane, and so they were dropped from further consideration.

Although Option 2 would have a significantly higher cost than Option 1, it received the highest evaluation score because of larger benefits in the areas of safety, geometrics, mobility, and reduction of access points.

Segment 4 – Benham Lane to Raymond Lane

The primary need for this segment of US 101 is driver confusion about the two-way center lane. As with Segments 1 – 3, this problem would be addressed with the placement of lane control signs, together with reflectorized two-way left-turn pavement arrows.



Pedrioli Drive to Raymond Lane Section

Within this short, 0.4 mile section, the shoulder would be widened on the east side of the highway to provide the standard six-foot width for bicyclists and pedestrians.

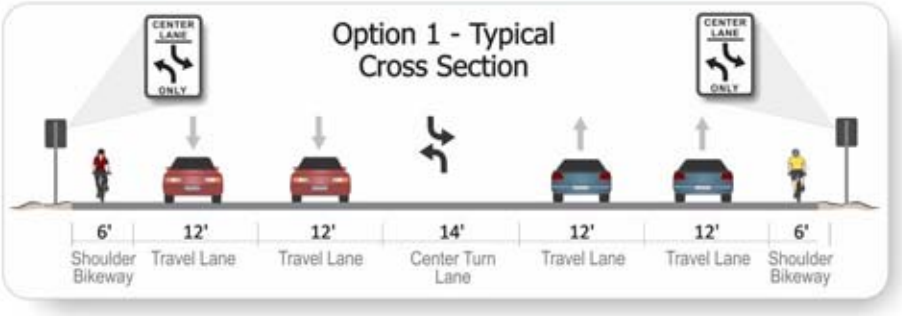
Pedrioli Drive Intersection

The only need at the Pedrioli Drive intersection is for a turn lane to improve traffic operations and safety. This would be addressed by installing a southbound right turn lane.

Segment 5 – Raymond Lane to McVay Lane (north)

Improvements are needed along this segment to address the higher-than-average crash rate. A majority of the crashes over the previous five-year period were rear-end collisions that may have been related to vehicles slowing to turn off the highway. There are also numerous accesses along this segment, together with a 55 mph speed limit. Based on these factors, it is likely that some potential crashes could be reduced with the extension of the two-way center turn lane that currently ends at Raymond Lane. This would also provide greater separation between the opposing traffic flows than the existing 4-foot wide painted median. The presence of two-way center turn lanes on multi-lane rural highways is generally recommended.[2] Highways with two-way center turn lanes have been found to have lower crash rates than undivided facilities.

The installation of a two-way center turn lane would be accompanied by the placement of lane control signs and reflectorized two-way left-turn pavement arrows.



Robin Lane Intersection

Roadway lighting would be needed to serve potential future pedestrian demand between the men's mission on the east side of the US 101 and the proposed women's mission on the west

[2] Transportation Research Board, NCHRP Report 240 – Impacts of Access Management Techniques, (1999).

side of the highway. Implementation of this improvement would be contingent on the opening of the women's mission.

Museum Road Intersections (North and South)

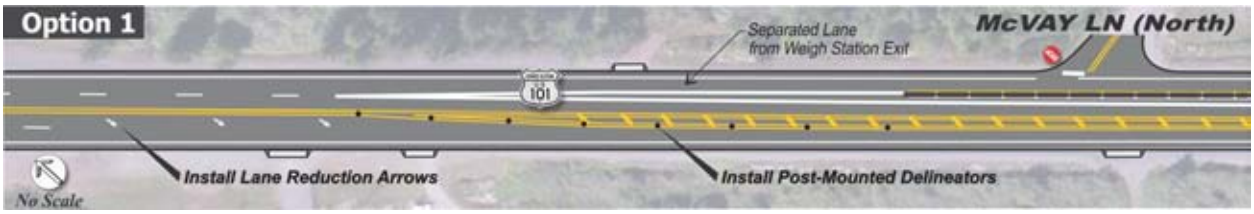
The existing needs at Museum Road are skewed intersections at US 101 and driver confusion with the loop configuration of Museum Road. These needs would be addressed with the following improvement:

- Extension of Emigrant Hill Road from the existing Museum Road/Emigrant Hill Road (south) intersection to US 101.
- Installation of left-turn and right-turn lanes at the new US 101/Emigrant Hill Road intersection.
- Closure of Museum Road to the north and south of the existing US 101 intersections.
- Minor realignment of the Museum Road approaches at US 101 to reduce the skew angle of the intersections.

The benefits of these improvements would include fewer turning conflicts, less traffic at the existing US 101 intersections and improved visibility of traffic on US 101, and less driver confusion with Museum Road.

McVay Lane Intersection (North)

In the area 1,000 feet to the north of the McVay Lane (north) intersection, southbound US 101 narrows from four lanes to two lanes. There is a need to make drivers more aware of this transition. Currently, the only indicators of the transition are a "Left Lane Ends" sign located roughly 700 feet north of the transition and a "Lane Ends" sign about 100 feet north of the transition. These signs should be supplemented with lane reduction pavement arrows prior to the start of the taper and post-mounted delineators within the median in the taper area.

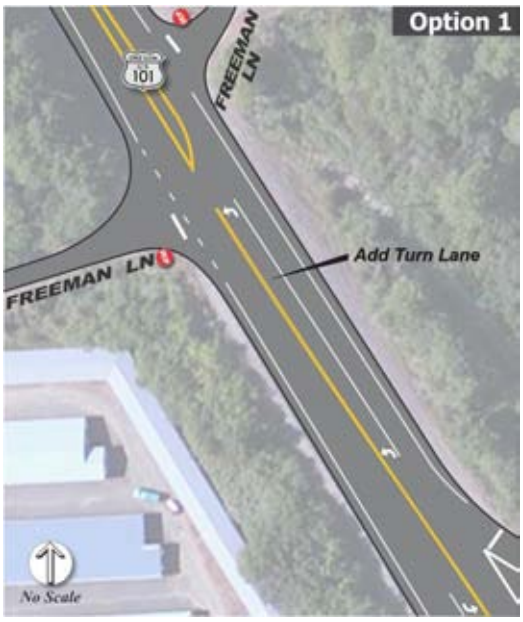


McVay Lane Intersection (South)

The existing turn lane need at the McVay Lane (south) intersection would be met by installing a southbound left turn lane to improve traffic operations and safety.

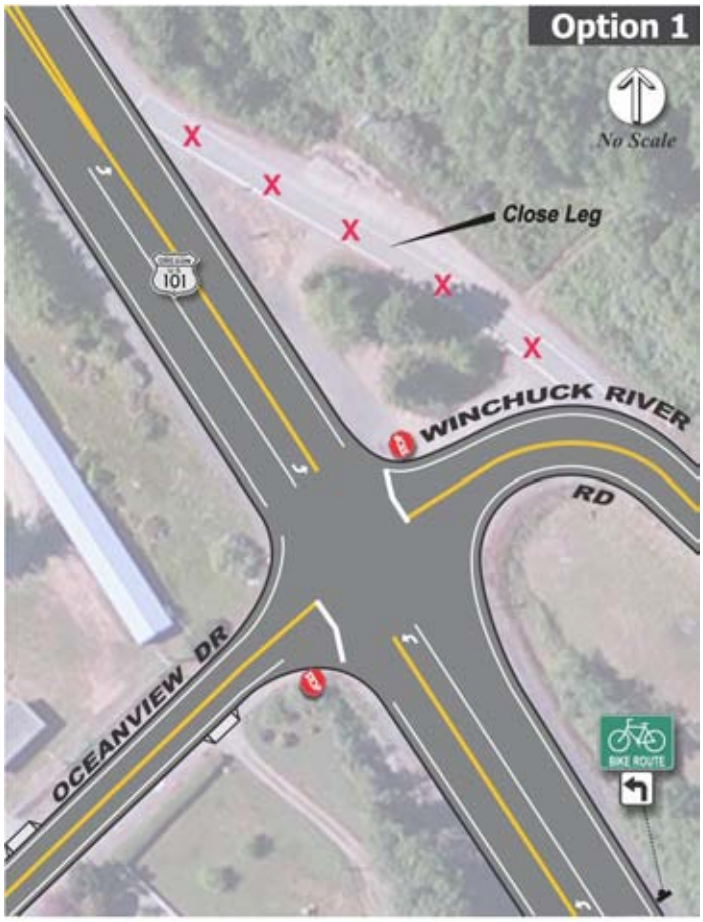
Freeman Lane Intersection

At the Freeman Lane intersection, a northbound left-turn lane would be installed to meet the existing turn lane need.



Ocean View Drive/Winchuck River Road Intersections

The US 101/Winchuck River Road intersection is skewed and located closely to the Ocean View Drive/Winchuck Road intersection (roughly 300 feet). Because all traffic movements to/from Winchuck River Road can be served via the Ocean View Drive/Winchuck Rd. intersection, the US 101/Winchuck River Road intersection could be closed. Existing right turns from Winchuck River Road onto US 101 would be routed through the Ocean View Drive/Winchuck Rd. intersection, improving traffic operations and the safety of right-turn movements.



In addition, there is a lack of designated bike route signage at Ocean View Drive. Therefore, signage would be installed on US 101 to direct bicyclists to the Oregon Coast bike route on Ocean View Drive.

State Line Road Intersection

At the State Line Road intersection, there is a higher-than-average crash rate, access management issues, restricted sight distance, and the lack of street lighting. Two improvement options were developed to address these needs. Both options include the installation of a northbound right-turn lane and street lighting. The sight distance restriction is caused by the guardrail on the southwest corner of the intersection that limits the ability of drivers on the eastbound approach of Ocean View Drive to see approaching traffic on northbound US 101. To eliminate this problem, the guardrail would be relocated further from the highway.

The two options differ in how the access need would be treated. Currently, there are two driveways for the Del-Cur Supply store located closely to intersection on the northbound approach. There have been two rear-end crashes at this location that may have been related to drivers slowing to turn into the driveways. With Option 1, the driveway closest to the intersection would be closed, with access provided by the second driveway to the south.

With Option 2, both driveways would be closed and access would be provided at the existing driveway on State Line Road. This modification, together with the addition of the northbound right-turn lane, would improve traffic operations and safety by routing turning traffic through the intersection.

The construction costs of Option 1 and 2 would be comparable. Option 2 received a higher evaluation score, however, because of the greater improvement in safety and decrease in access points resulting from the elimination of both driveways.

Bicycle and Pedestrian Network

The proposed buffered bicycle lanes and sidewalks along US 101 between the Chetco River Bridge and Benham Lane would fit well into the existing bicycle and pedestrian network, as shown in Figure 2.

Within Segment 1 between the Chetco River Bridge and Zimmerman Lane, the new bike lanes would connect to the existing bike lanes on Lower Harbor Road and Shopping Center Drive. There would be a gap in the bicycle network on Zimmerman Lane between US 101 and Shopping Center Drive. The new sidewalks would connect to the existing sidewalks on Lower Harbor Road, Shopping Center Avenue, South Bank Chetco River Road, and Zimmerman Lane.

For Segment 2 between Zimmerman Lane and Hoffeldt Lane, there would be a gap in the bicycle network on Hoffeldt Lane between US 101 and Shopping Center Avenue. The new sidewalks would join with the existing sidewalks on Zimmerman Lane, Hoffeldt Lane, and Shopping Center Avenue.

Along Segment 3 between Hoffeldt Lane and Benham Lane, the new bike lanes would connect to the existing bike lanes on Benham Lane, which connect to the bike lanes on Lower Harbor Road. The new sidewalks would be supported by the existing sidewalks on Hoffeldt Lane and Benham Lane.

US 101 Corridor Plan
Figure 2
Bicycle and
Pedestrian Network
Brookings
Chetco River
S Bank Chetco River Rd.
Sunshine Cove Ln.
Court St.
Hall Way
358
Lower Harbor Rd.
Hoffeldt Ln.
Kings Way
Rose Hill Dr.
Zimmerman Ln.
359
Benham Ln.
Harbor
Pedrioli Dr.
101
Raymond Ln.
360
Pelican Bay Dr.
Museum Rd. (north)
Museum Rd. (south)
Camellia Dr.
McVay Ln. (north)
361
McVay Ln. (south)
Ocean View Dr.
362
Freeman Ln.
Winchuck River Rd.
Itzen Ln.
Winchuck River
State Line Rd.
363
OR
CA
Source: ESRI, ODOT
Legend
Bicycle & Pedestrian Facilities
Existing Bike Lane
Existing Sidewalk
Existing Bike Lane & Sidewalk
Proposed Bike Lane & Sidewalk
Corridor StudyArea
Mileposts
Local Roadway
Urban Growth Boundary

APPENDIX A

CUT SHEETS

Location:

Segment 1 - US 101 from Chetco River Bridge to Zimmerman Lane

(Sheet 1 of 1)

Characteristics:

- Milepost: 358.02 - 358.57
- Speed Limit: 45 mph
- Existing Volume (AADT): 18,000
- Cross Section: 5-lane divided
- Average ROW Width: 140 feet
- Crashes/year: 3.5

Needs:

- Crash rate exceeds statewide average
- Confusion with two-way left turn lane (TWLTL)
- Sidewalks
- Street lighting

Improvement Option 1

Description:

(1) Add sidewalks
(2) Install buffered bike lanes with landscaping
(3) Install LED street lighting
(4) Add TWLTL signage
(5) Add reflectorized two-way turn pavement arrows
(6) Install speed feedback signs for drivers in both directions
(7) Install landscaped gateway median with gateway sign between bridge abutment and end of median traffic separator south of the Lower Harbor Rd./S. Bank Chetco River Rd. intersection

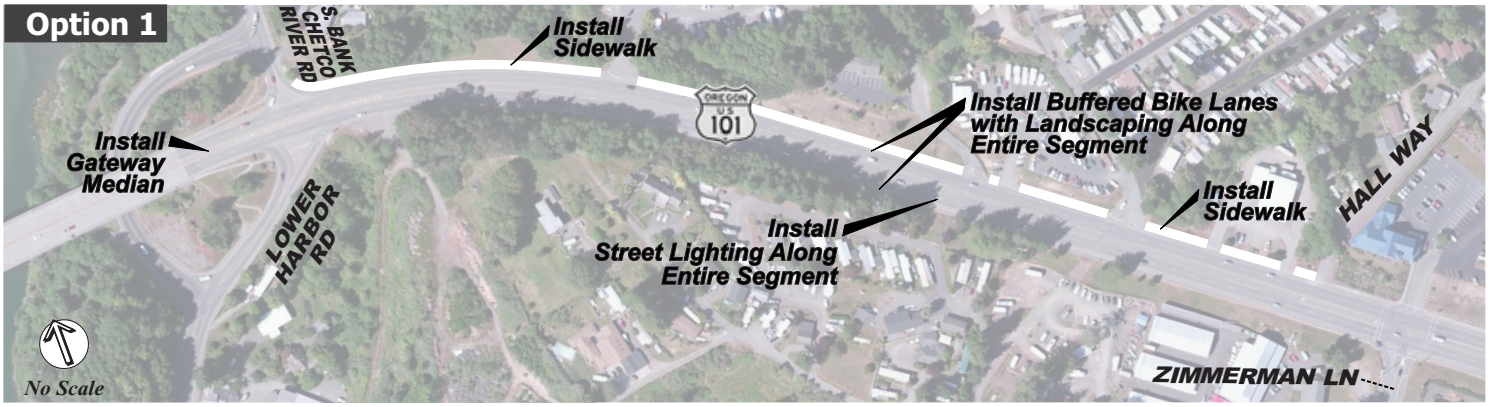
Preliminary Cost Estimate: $526,000

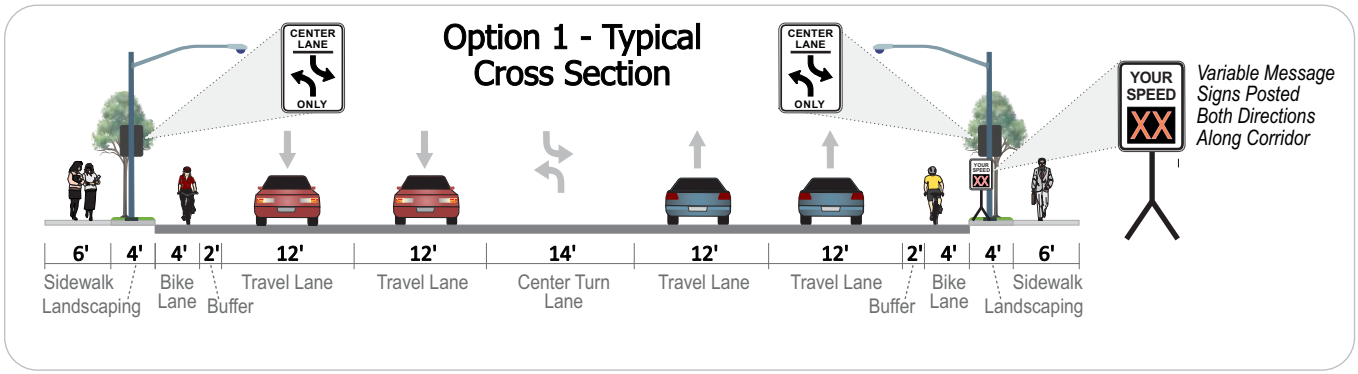
Benefits:

- Enhanced pedestrian and bicyclist environment
- Improved visibility for drivers and pedestrians
- Less driver confusion about TWLTL
- Reduced speeds along US 101
- Increased sense of community
- Lighting would result in potential 9% crash reduction

Key Considerations/Notes:

- No additional right-of-way would be needed for this improvement option
- Installation of street lighting subject to findings of lighting analysis





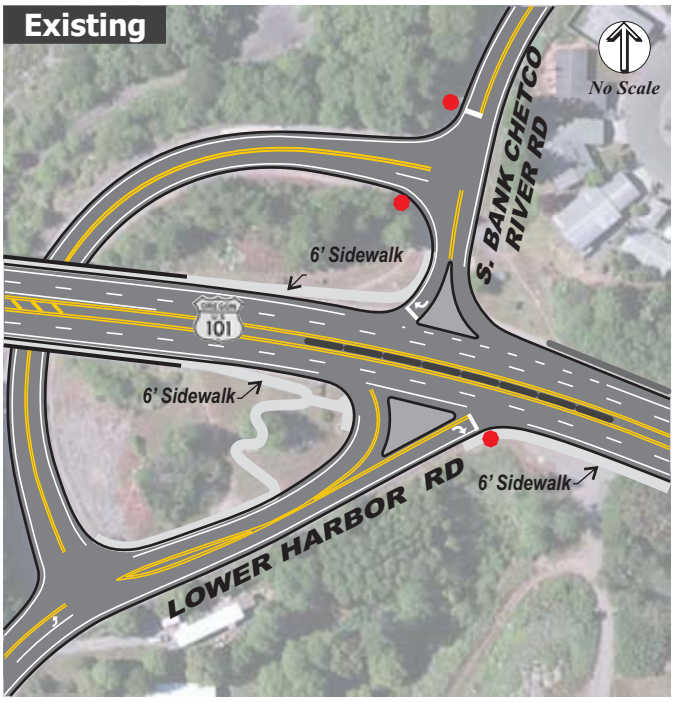
Location:
US 101/Lower Harbor Road/ South Bank Chetco River Road
(Sheet 1 of 3)

Characteristics:

- Milepost: 358.13
- Speed Limit: 45 mph
- Existing Volume (AADT): 19,000
- Cross Section: 5-lane divided
- ROW Width: 300 feet
- Traffic Control: Unsignalized
- Crashes/year: 1

Need(s):

- Crash rate exceeds statewide average
- Street lighting
- Sidewalks
- Mobility (future need)
- Bike route signage
- Skewed intersection
- Steep northbound approach grade



Improvement Option 1

Description:

(1) Add sidewalks
(2) Install LED street lighting
(3) Add signage for designated bike route to Ocean View Dr.
(4) Provide guide signs in both directions on US 101 to direct drivers to Lower Harbor Rd. and S. Bank Chetco River Rd.
(5) Install crosswalk with pedestrian activated High Intensity Activated Crosswalk (HAWK) beacon and raised pedestrian refuge
(6) Install gateway median treatment

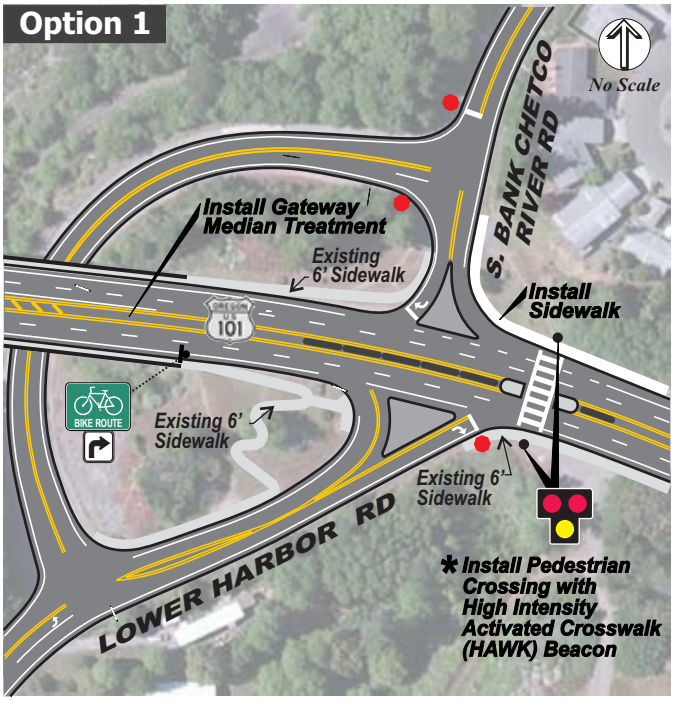
Preliminary Cost Estimate: $155,000

Benefits:

- Enhanced pedestrian environment
- Improved visibility for drivers and pedestrians
- Improved routing guidance for bicyclists
- Less driver confusion
- Greater sense of urban environment and community
- Lighting would result in potential 10% crash reduction

Key Considerations/Notes:

- No additional right-of-way would be needed for this improvement option
- Installation of street lighting subject to findings of lighting analysis
- Future mobility need would not be addressed



*HAWK location is approximate and would be determined based on additional analysis.

Location:
US 101/Lower Harbor Road/
South Bank Chetco River Road
(Sheet 2 of 3)

Improvement Option 2

Description:

(1) Add sidewalks
(2) Install LED street lighting
(3) Add signage for designated bike route to Ocean View Dr.
(4) Provide guide signs in both directions on US 101 to direct drivers to Lower Harbor Rd. and S. Bank Chetco River Rd.
(5) Install crossing with Rectangular Rapid Flashing Beacons (RRFBs) and raised pedestrian refuge
(6) Install gateway median treatment

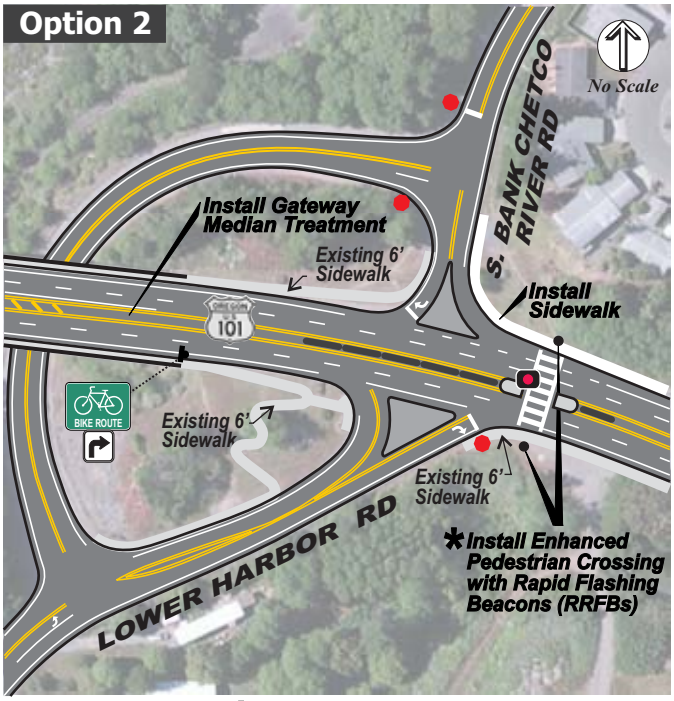
Preliminary Cost Estimate: $125,000

Benefits:

- Enhanced pedestrian environment
- Improved visibility for drivers and pedestrians
- Improved route guidance for bicyclists
- Less driver confusion
- Greater sense of urban environment and community
- Lighting would result in potential 10% crash reduction

Key Considerations/Notes:

- No additional right-of-way would be needed for this improvement option
- Installation of street lighting subject to findings of lighting analysis
- Future mobility need would not be addressed



**RRFB location is approximate and would be determined based on additional analysis.*

Location:
US 101/Lower Harbor Road/
South Bank Chetco River Road
(Sheet 3 of 3)

Improvement Option 3

Description:

(1) Add sidewalks and ADA-compliant curb ramps
(2) Install traffic signal
(3) Install LED street lighting
(4) Remove traffic separator
(5) Install left and right turn lanes on US 101, left turn lane on Lower Harbor Rd., and right turn lane on S Bank Chetco River Rd.
(6) Close access to Underpass Rd. from S. Bank Chetco River Rd. to provide additional southbound storage on South Bank Chetco River Rd.
(7) Add signage for designated bike route to Ocean View Dr.

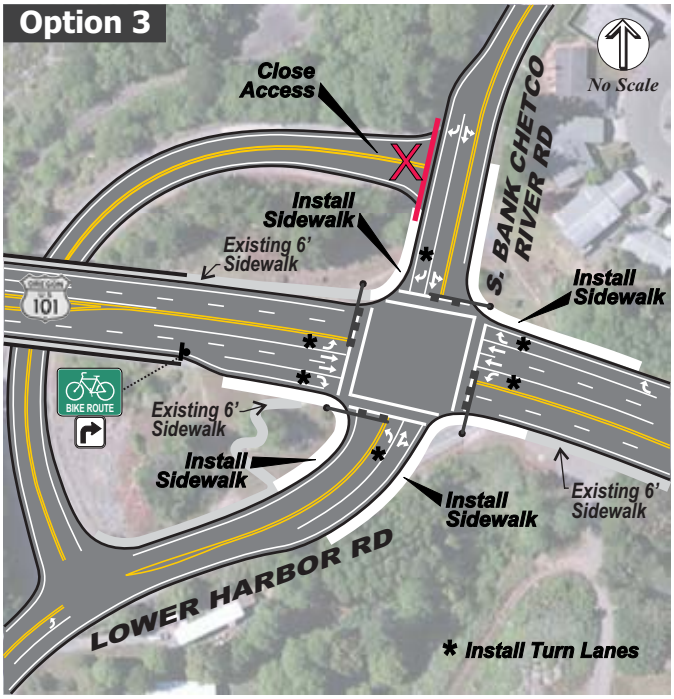
Preliminary Cost Estimate: $429,000

Benefits:

- Enhanced pedestrian environment
- Improved visibility for drivers and pedestrians
- Improved route guidance for bicyclists
- Improved mobility and traffic operations
- Reduced speeds along US 101
- Direct access to Lower Harbor Rd./S. Bank Chetco River Rd. from US 101
- Less driver confusion

Key Considerations/Notes:

- Intersection realignment on south leg would be required, with right-of-way impacts
- Future mobility need would be addressed



Scoring

Evaluation Criterion	Weight	Raw Score Option 1	Raw Score Option 2	Raw Score Option 3
1. Reduction in crash rate/severity	14	4	3	8
2. Type/level of geometric improvement	9	0	0	4
3. Type/level of bicycle/pedestrian improvement	9	4	4	7
4. Reduction in traffic conflicts	10	0	0	-3
5. Reduction in congestion and delay	5	0	0	4
6. Reduction in number of access points	9	0	0	0
7. Improvement in access design	8	0	0	0
8. Minimization of construction cost	13	7	7	4
9. Minimization of right-of-way	6	10	10	8
10. Number and size of project phases	8	0	0	0
11. Minimization of environmental impacts	3	10	10	10
12. Minimization of impacts to EEU and developed parcels	4	10	10	10
13. Consistency with ODOT standards, local plans and policies	2	10	10	10
	Total	*333*	*319*	*391*

Location:
US 101/Sunshine Cove Lane
(Sheet 1 of 1)

Characteristics:

- Milepost: 358.39
- Speed Limit: 45 mph
- Existing Volume (AADT): 17,000
- Cross Section: 5-lane divided
- ROW Width: 160 feet
- Traffic Control: Unsignalized
- Crashes/year: 0

Need(s):

- Turn lane
- Skewed intersection angle
- Street lighting
- Sidewalks

Improvement Option 1

Description:

(1) Add a southbound left turn lane
(2) Realign Sunshine Cove Lane approach
(3) Install LED street lighting
(4) Add sidewalks

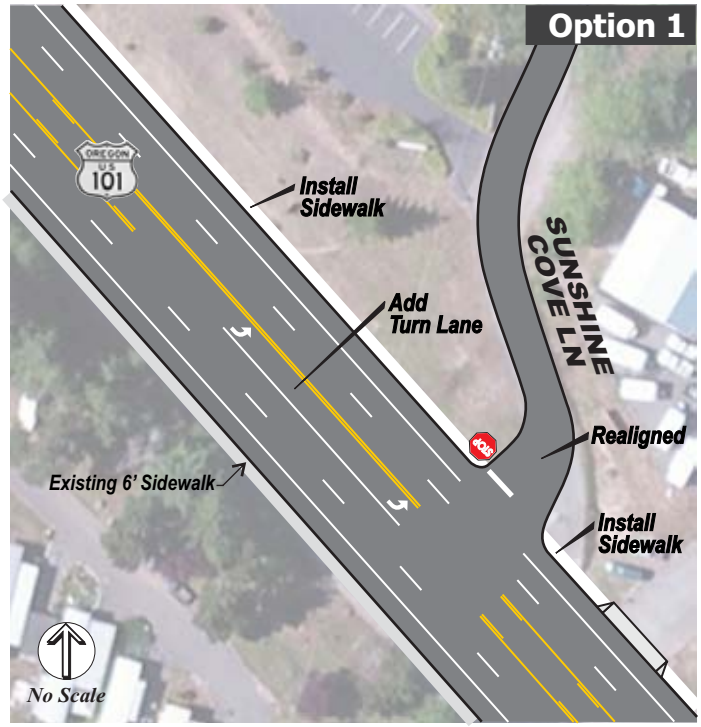
Preliminary Cost Estimate: $35,000

Benefits:

- Enhanced pedestrian environment
- Improved visibility for drivers and pedestrians
- Improved traffic operations and safety with designated southbound left-turn lane
- Realignment of Sunshine Cove Lane approach improves drivers' ability to see traffic on US 101 (particularly helpful for older drivers)
- Potential crash reduction of 53% due to lighting, approach realignment, and turn lane

Key Considerations/Notes:

- No additional right-of-way would be needed for this improvement option
- Installation of street lighting subject to findings of lighting analysis



Location:
US 101/Court Street
(Sheet 1 of 1)

Characteristics:

- Milepost: 358.45
- Speed Limit: 45 mph
- Existing Volume (AADT): 17,000
- Cross Section: 5-lane divided
- ROW Width: 160 feet
- Traffic Control: Unsignalized
- Crashes/year: <1

Need(s):

- Turn lane
- Street lighting
- Sidewalks

Improvement Option 1

Description:

(1) Add a southbound left turn lane
(2) Add a northbound right turn lane
(3) Install LED street lighting
(4) Add sidewalks

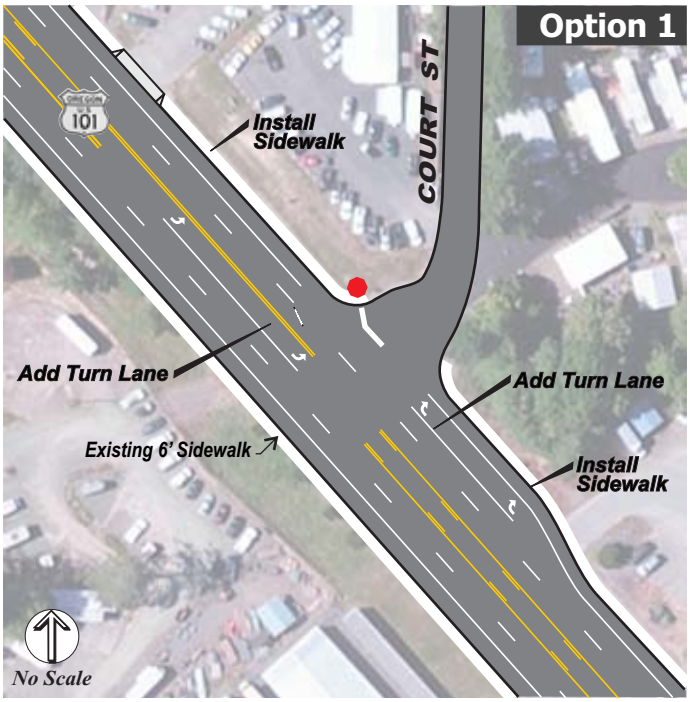
Preliminary Cost Estimate: $89,000

Benefits:

- Enhanced pedestrian environment
- Improved visibility for drivers and pedestrians
- Improved traffic operations and safety with designated southbound left-turn lane and northbound right-turn lane
- Potential crash reduction of 57% due to lighting and two turn lanes

Key Considerations/Notes:

- No additional right-of-way would be needed for this improvement
- Installation of street lighting subject to findings of lighting analysis



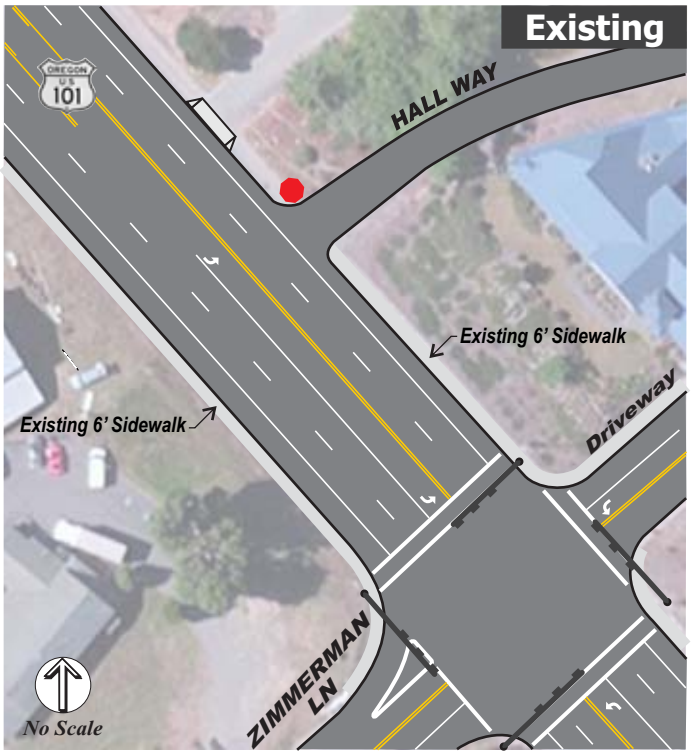
Location:
US 101/Hall Way
(Sheet 1 of 1)

Characteristics:

- Milepost: 358.52
- Speed Limit: 45 mph
- Existing Volume (AADT): 16,000
- Cross Section: 5-lane divided
- ROW Width: 215 feet
- Traffic Control: Unsignalized
- Crashes/year: <1

Need(s):

- Turn lane
- Street lighting
- Sidewalks



Improvement Option 1

Description:

(1) Change striping north of Zimmerman Lane from double-yellow to solid and dashed
(2) Install LED street lighting
(3) Add sidewalks

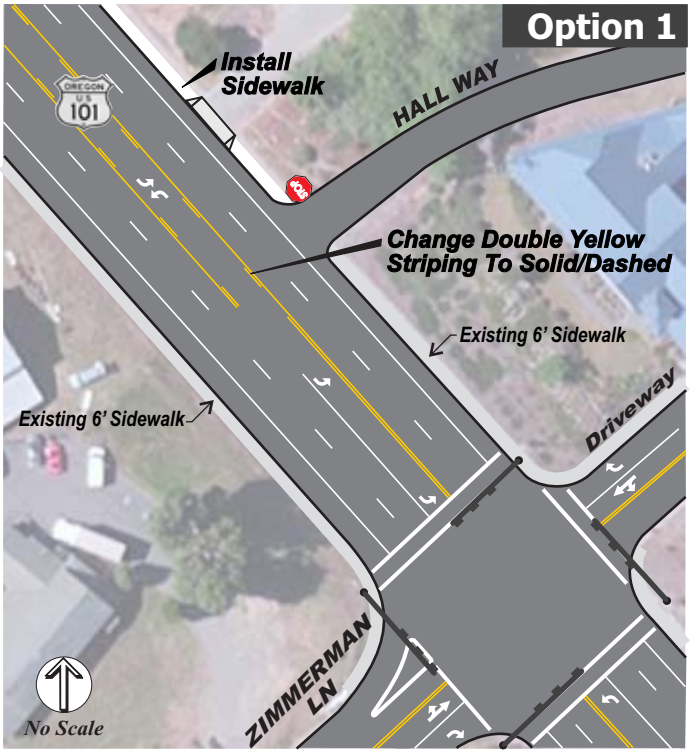
Preliminary Cost Estimate: $21,000

Benefits:

- Enhanced pedestrian environment
- Improved visibility for drivers and pedestrians
- Improved traffic operations and safety with restriping
- Potential crash reduction of 10% due to lighting

Key Considerations/Notes:

- No additional right-of-way would be needed for this improvement
- Restriping needed to make currently illegal southbound left turns legal
- Installation of street lighting subject to findings of lighting analysis
- Not enough distance between Zimmerman Lane and Hall Way for southbound turn lane at Hall Way



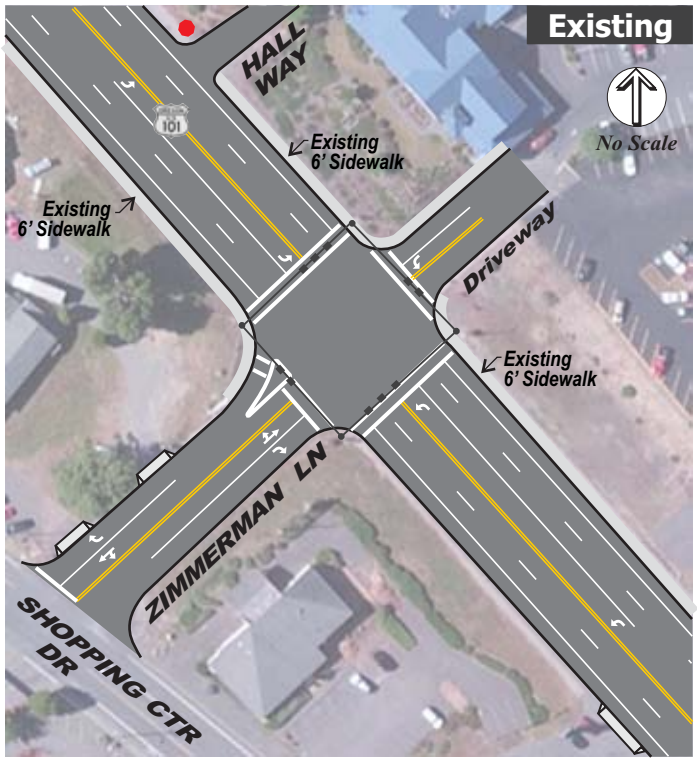
Location:
US 101/Zimmerman Lane
(Sheet 1 of 2)

Characteristics:

- Milepost: 358.57
- Speed Limit: 45 mph
- Existing Volume (AADT): 15,000
- Cross Section: 5-lane divided
- ROW Width: 205 feet
- Traffic Control: Signalized
- Crashes/year: 2

Need(s):

- ADA-compliant curb ramps
- Mobility (future need)
- Observed crash rate that exceeds the critical crash rate
- Signal timing that accommodates pedestrians
- Street lighting
- Sidewalk



Improvement Option 1

Description:

(1) Add LED street lighting
(2) Traffic signal improvements:
- Retime signal to better serve pedestrians
- Replace span wires with mast arms to increase signal conspicuity
- Install LED signal heads
- Place 3M reflective tape around border of signal backplates (front and back)

(3) Pedestrian improvements:
- Install pedestrian countdown timers
- Construct ADA-compliant curb ramps on all intersection approaches
- Add sidewalk

(4) Replace existing "Signal Ahead" sign with "Be Prepared to Stop" message sign in southbound direction that is activated by yellow phase of signal
(5) Repaint crosswalks on all intersection approaches

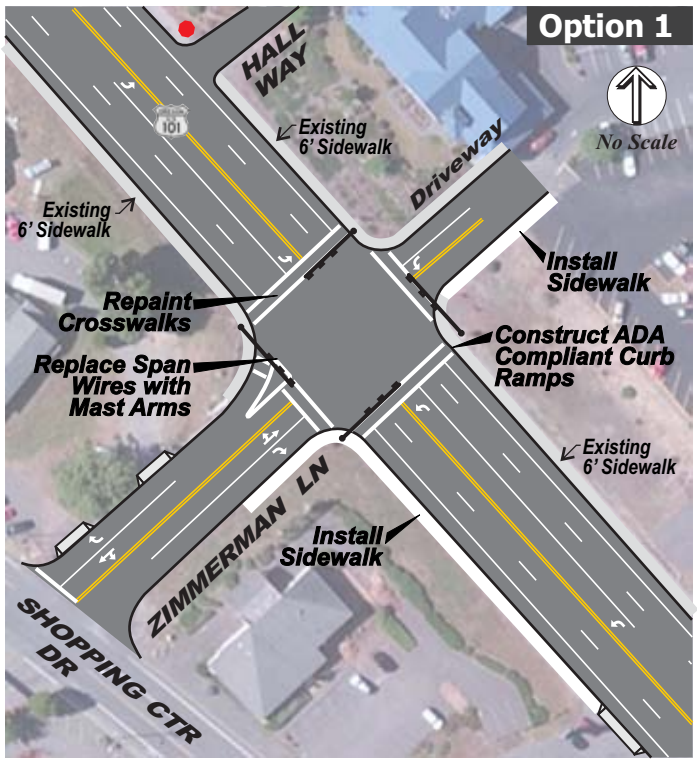
Preliminary Cost Estimate: $225,000

Benefits:

- Enhanced pedestrian environment
- Improved visibility for drivers and pedestrians
- Improved driver recognition of intersection

Key Considerations/Notes:

- Installation of street lighting subject to findings of lighting analysis
- Future mobility need would not be addressed



Location:
US 101/Zimmerman Lane
(Sheet 2 of 2)

Improvement Option 2

Description:

(1) Add LED street lighting
(2) Traffic signal improvements:
- Retime signal to better serve pedestrians
- Replace span wires with mast arms to increase signal conspicuity
- Install LED signal heads
- Place 3M reflective tape around border of signal backplates (front and back)

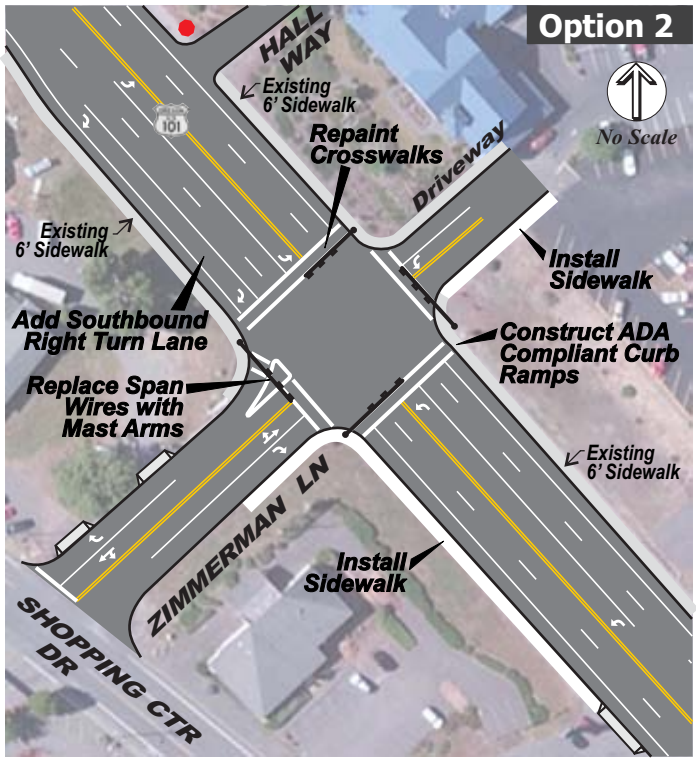
(3) Pedestrian improvements:
- Install pedestrian countdown timers
- Construct ADA-compliant curb ramps on all intersection approaches
- Add sidewalk

(4) Replace existing "Signal Ahead" sign with "Be Prepared to Stop" message sign in southbound direction that is activated by yellow phase of signal
(5) Repaint crosswalks on all intersection approaches
(6) Add a southbound right turn lane

Preliminary Cost Estimate: $272,000

Benefits:

- Enhanced pedestrian environment
- Improved visibility for drivers and pedestrians
- Improved driver recognition of intersection
- Improved traffic operations and safety with removal of turning vehicles from traffic stream
- Improved mobility



Key Considerations/Notes:

- Installation of street lighting subject to findings of lighting analysis
- Future mobility need would be addressed

Scoring

Evaluation Criterion	Weight	Raw Score Option 1	Raw Score Option 2
1. Reduction in crash rate/severity	14	5	6
2. Type/level of geometric improvement	9	0	2
3. Type/level of bicycle/pedestrian improvement	9	7	7
4. Reduction in traffic conflicts	10	0	0
5. Reduction in congestion and delay	5	0	2
6. Reduction in number of access points	9	0	0
7. Improvement in access design	8	0	0
8. Minimization of construction cost	13	6	5
9. Minimization of right-of-way	6	10	10
10. Number and size of project phases	8	7	7
11. Minimization of environmental impacts	3	10	10
12. Minimization of impacts to EEU and developed parcels	4	10	10
13. Consistency with ODOT standards, local plans and policies	2	10	10
	Total	*417*	*446*

Location:

Segment 2 - US 101 South of Zimmerman Lane to South of Hoffeldt Lane

(Sheet 1 of 1)

Characteristics:

- Milepost: 358.58 - 358.76
- Speed Limit: 45 mph
- Existing Volume (AADT): 13,500
- Cross Section: 5-lane divided
- Average ROW Width: 90 feet
- Crashes/year: 3.8

Needs:

- Crash rate exceeds statewide average
- Confusion with two-way left turn lane (TWLTL)
- Sidewalks
- Street lighting

Improvement Option 1

Description:

(1) Add sidewalks
(2) Install buffered bike lanes with landscaping
(3) Install LED street lighting
(4) Add TWLTL signage
(5) Add reflectorized two-way turn pavement arrows
(6) Install speed feedback signs for drivers in both directions

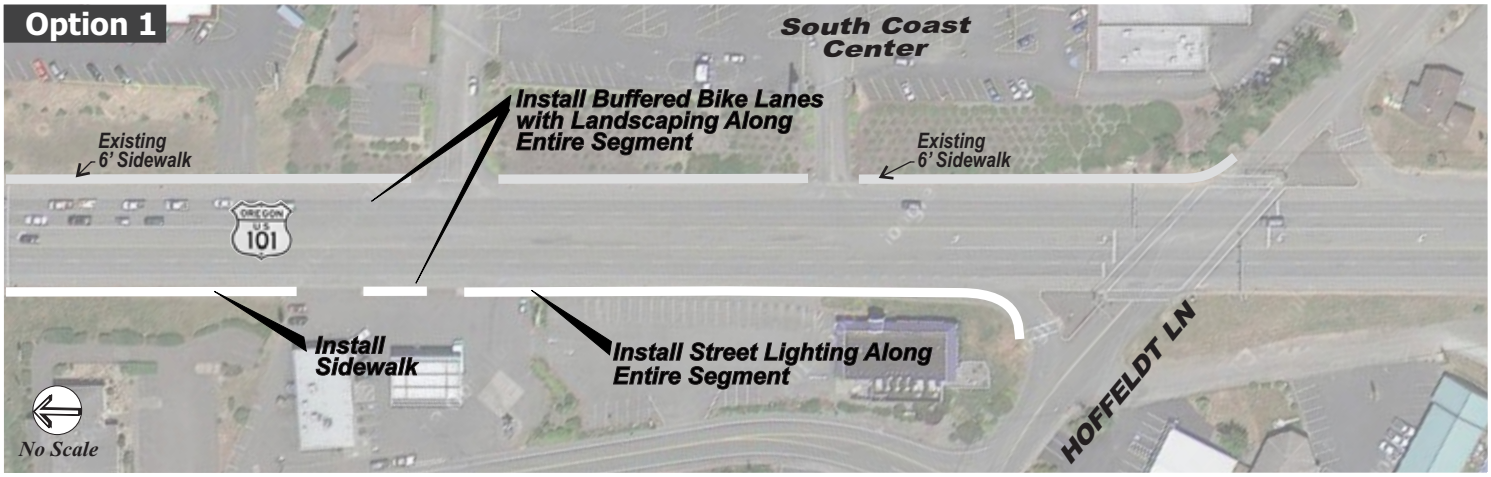
Preliminary Cost Estimate: $194,000

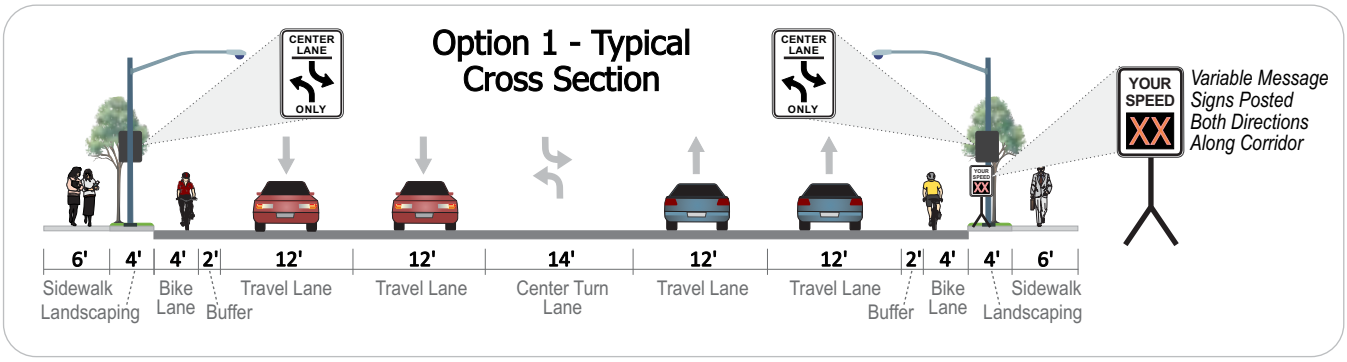
Benefits:

- Enhanced pedestrian and bicyclist environment
- Improved visibility for drivers and pedestrians
- Less driver confusion about TWLTL
- Reduced speeds along US 101
- Lighting would result in potential 9% crash reduction

Key Considerations/Notes:

- No additional right-of-way would be needed for this improvement option
- Installation of street lighting subject to findings of lighting analysis

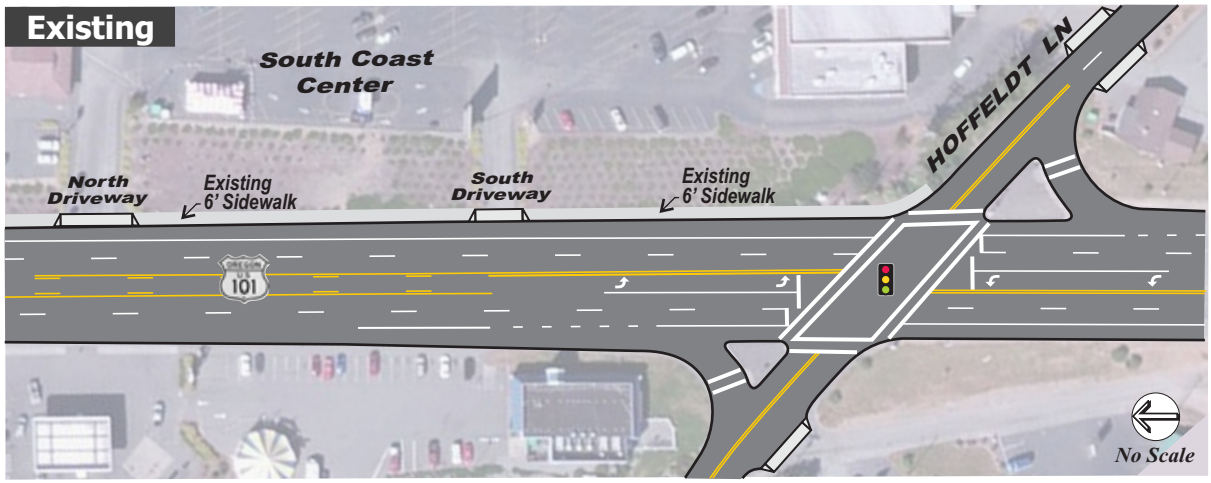




Location:
US 101/South Coast Center
(Sheet 1 of 2)

Characteristics:
- Milepost: 358.68
- Speed Limit: 45 mph
- Existing Volume (AADT): 13,000
- Cross Section: 5-lane divided
- ROW Width: 160 feet
- Crashes/year: 2

Need(s):
- ADA-compliant curb ramps
- Access management
- Street lighting
- Sidewalks



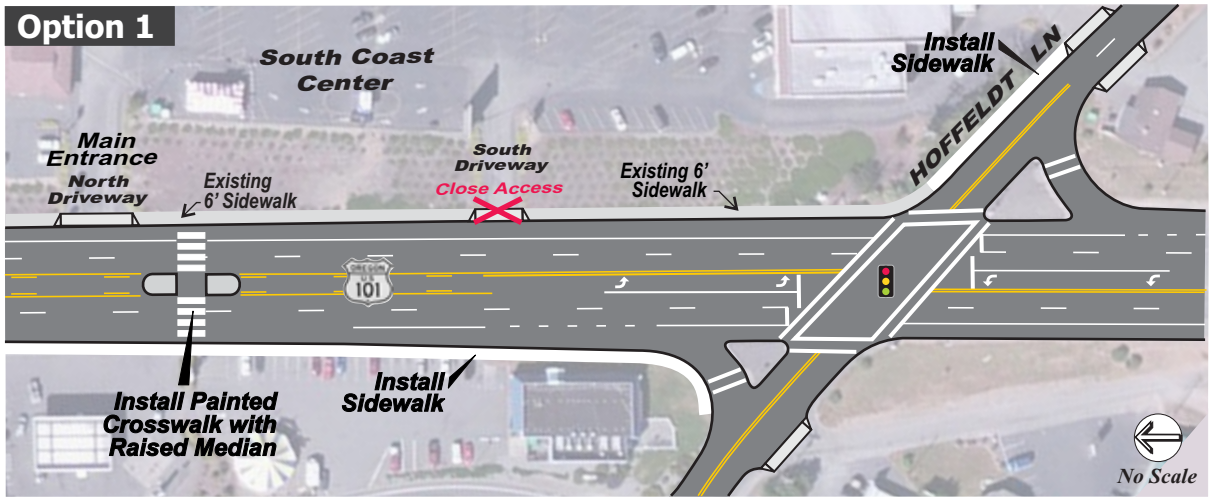
Improvement Option 1

Description:
(1) Add sidewalk on both sides of US 101 between South Coast Center north driveway and Hoffeldt Lane
(2) Install LED street lighting
(3) Install ADA-compliant curb ramps at shopping center north driveway
(4) Install painted crosswalk with raised pedestrian median on south side of north driveway
(5) Close south driveway (nearest to intersection of Hoffeldt Lane) and route all shopping center traffic to north driveway
(6) Install bus shelter (location to be determined)

Preliminary Cost Estimate: $171,000

Benefits:
- Enhanced pedestrian environment
- Improved visibility for drivers and pedestrians
- Reduced number of turning conflicts
- Lighting would result in potential 9% crash reduction

Key Considerations/Notes:
- No additional right-of-way would be needed for this improvement option
- Installation of street lighting subject to findings of lighting analysis



Location:
US 101/South Coast Center
(Sheet 2 of 2)

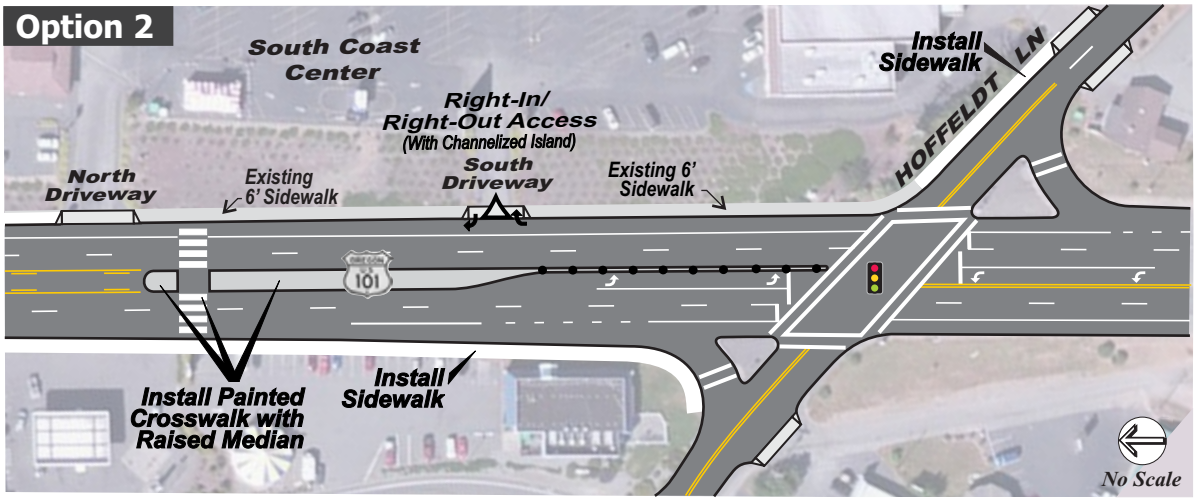
Improvement Option 2

Description:
(1) Add sidewalk on both sides of US 101 between South Coast Center north driveway and Hoffeldt Lane
(2) Install LED street lighting
(3) Install ADA-compliant curb ramps at north and south shopping center driveways
(4) Change access at shopping center south driveway to right-in/right-out
(5) Install a two foot wide raised median with post-mounted delineators between the north driveway and Hoffeldt Lane
(6) Install painted crosswalk with raised pedestrian median on south side of north driveway, connecting to raised median
(7) Install bus shelter (location to be determined)

Preliminary Cost Estimate: $174,000

Benefits:
- Enhanced pedestrian environment
- Improved visibility for drivers and pedestrians
- Reduced number of turning conflicts
- Lighting would result in potential 9% crash reduction

Key Considerations/Notes:
- No additional right-of-way would be needed for this improvement option
- Installation of street lighting subject to findings of lighting analysis



Scoring

Evaluation Criterion	Weight	Raw Score Option 1	Raw Score Option 2
1. Reduction in crash rate/severity	14	8	8
2. Type/level of geometric improvement	9	0	0
3. Type/level of bicycle/pedestrian improvement	9	6	8
4. Reduction in traffic conflicts	10	8	6
5. Reduction in congestion and delay	5	0	0
6. Reduction in number of access points	9	7	0
7. Improvement in access design	8	0	6
8. Minimization of construction cost	13	7	7
9. Minimization of right-of-way	6	10	10
10. Number and size of project phases	8	8	8
11. Minimization of environmental impacts	3	10	10
12. Minimization of impacts to EEU and developed parcels	4	10	10
13. Consistency with ODOT standards, local plans and policies	2	10	10
	Total	*614*	*597*

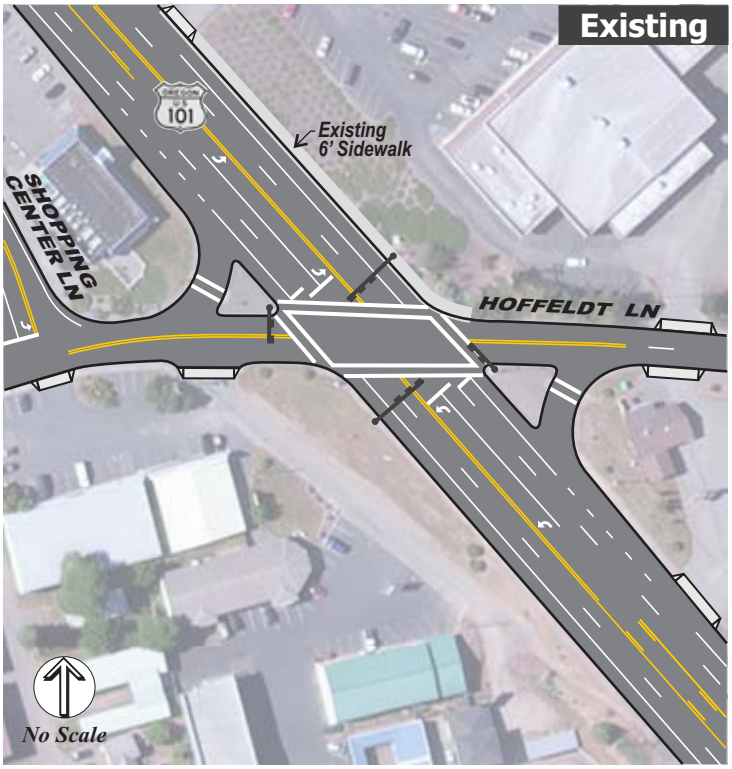
Location:
US 101/Hoffeldt Ln.
(Sheet 1 of 1)

Characteristics:

- Milepost: 358.76
- Speed Limit: 45 mph
- Existing Volume (AADT): 13,000
- Cross Section: 5-lane divided
- ROW Width: 250 feet
- Traffic Control: Signalized
- Crashes/year: 2

Need(s):

- ADA-compliant curb ramps
- Skewed intersection angle
- Observed crash rate exceeds critical crash rate
- Signal timing that better serves pedestrians
- Street lighting
- Sidewalks



Improvement Option 1

Description:

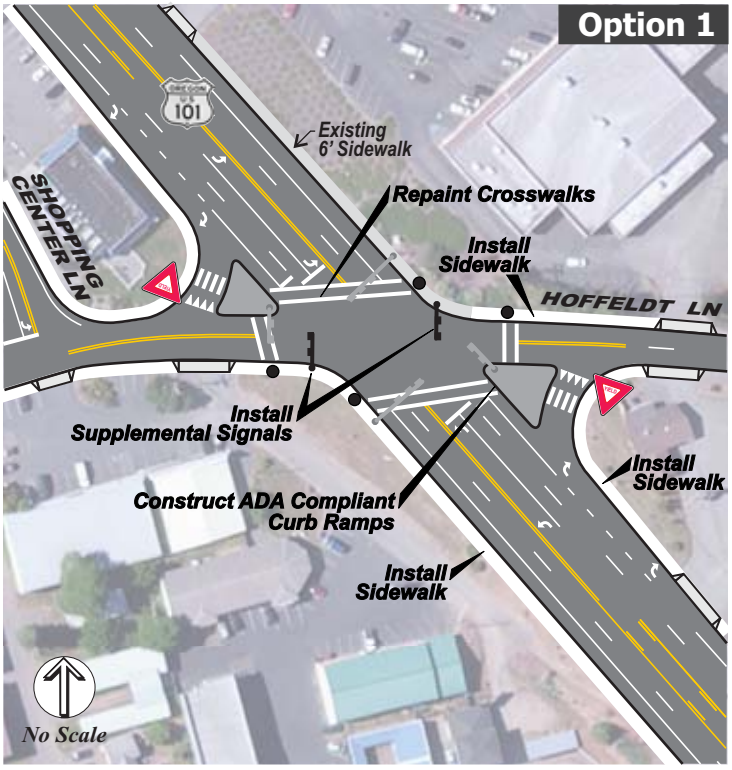
(1) Add LED street lighting
(2) Traffic signal improvements:
- Install supplemental signals on nearside approaches of Hoffeldt Ln.
- Install LED signal heads
- Place 3M reflective tape around border of signal backplates (front and back)

(3) Pedestrian improvements:
- Relocate pedestrian push buttons as shown (●)
- Install pedestrian countdown timers
- Construct ADA-compliant curb ramps/realign crosswalks on all intersection approaches
- Add continental style crosswalk markings across right-turn slip lanes between intersection corners and pork chop islands
- Add sidewalks

(4) Repaint crosswalks on all intersection approaches
(5) Add pavement markings around pork chop islands to match ODOT typical markings
(6) Add right-turn arrow pavement markings on US 101 approaches
(7) Install yield signs and striping for right-turn slip lanes from US 101 to Hoffeldt Lane

Benefits:

- Enhanced pedestrian environment
- Improved visibility for drivers and pedestrians
- Provide driver recognition of intersection
- Improved driver recognition of pork chop islands



Preliminary Cost Estimate: $191,000

Key Considerations/Notes:

- No additional right-of-way would be needed for this improvement
- Installation of street lighting subject to findings of lighting analysis

Location:

Segment 3 - US 101 South of Hoffeldt Lane to Benham Lane

(Sheet 1 of 1)

Characteristics:

- Milepost: 358.76 - 359.32
- Speed Limit: 45 mph
- Existing Volume (AADT): 14,000
- Cross Section: 5-lane divided
- Average ROW Width: 70 feet
- Crashes/year: 3.6

Needs:

- Crash rate exceeds statewide average
- Confusion with two-way left turn lane (TWLTL)
- Sidewalks
- Street lighting

Improvement Option 1

Description:

(1) Add sidewalks
(2) Install buffered bike lanes with landscaping
(3) Install LED street lighting
(4) Add TWLTL signage
(5) Add reflectorized two-way turn pavement arrows
(6) Install speed feedback signs for drivers in both directions

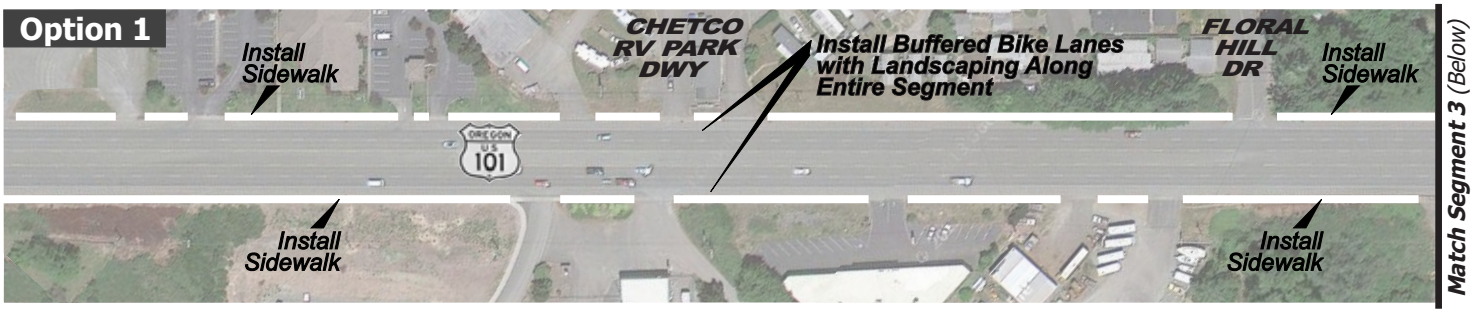
Preliminary Cost Estimate: $596,000

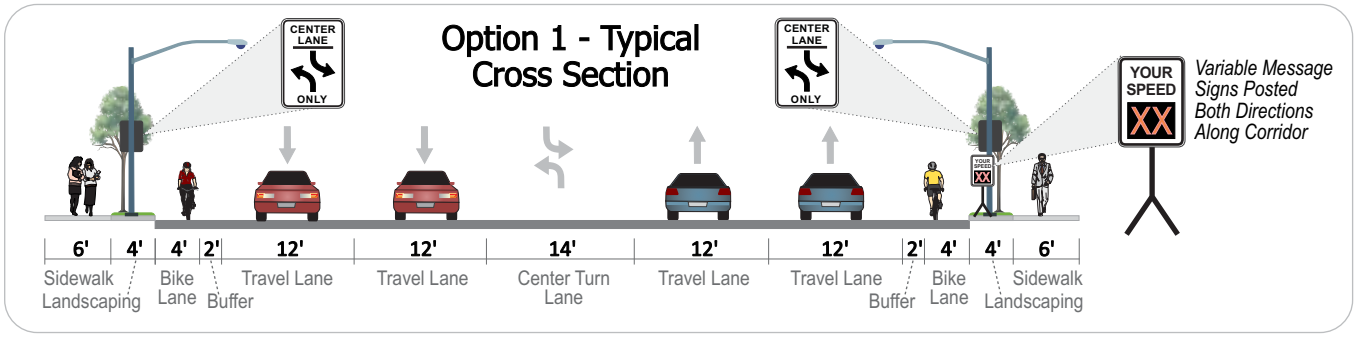
Benefits:

- Enhanced pedestrian and bicyclist environment
- Improved visibility for drivers and pedestrians
- Less driver confusion about TWLTL
- Reduced speeds along US 101
- Lighting would result in potential 9% crash reduction

Key Considerations/Notes:

- No additional right-of-way would be needed for this improvement option
- Installation of street lighting subject to findings of lighting analysis





Location:
US 101/Chetco RV Park Driveway
(Sheet 1 of 1)

Characteristics:
- Milepost: 358.97
- Speed Limit: 45 mph
- Existing Volume (AADT): 13,000
- Cross Section: 5-lane divided
- ROW Width: 105 feet
- Traffic Control: Unsignalized
- Crashes/year: 0

Need(s):
- Turn lane
- Street lighting
- Sidewalks

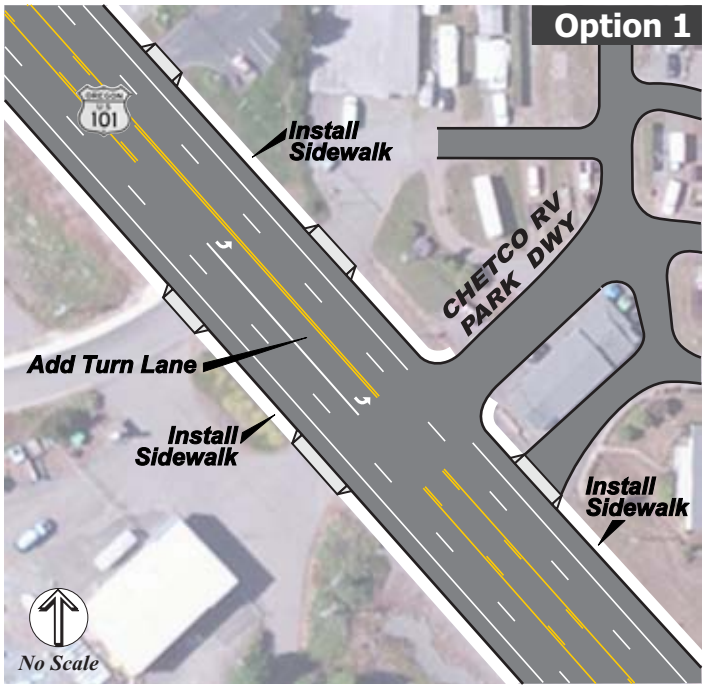
Improvement Option 1

Description:
(1) Add a southbound left turn lane
(2) Install LED street lighting
(3) Add sidewalks

Preliminary Cost Estimate: $59,000

Benefits:
- Enhanced pedestrian environment
- Improved visibility for drivers and pedestrians
- Improved traffic operations and safety with designated southbound left turn lane
- Potential crash reduction of 50% due to lighting and turn lane

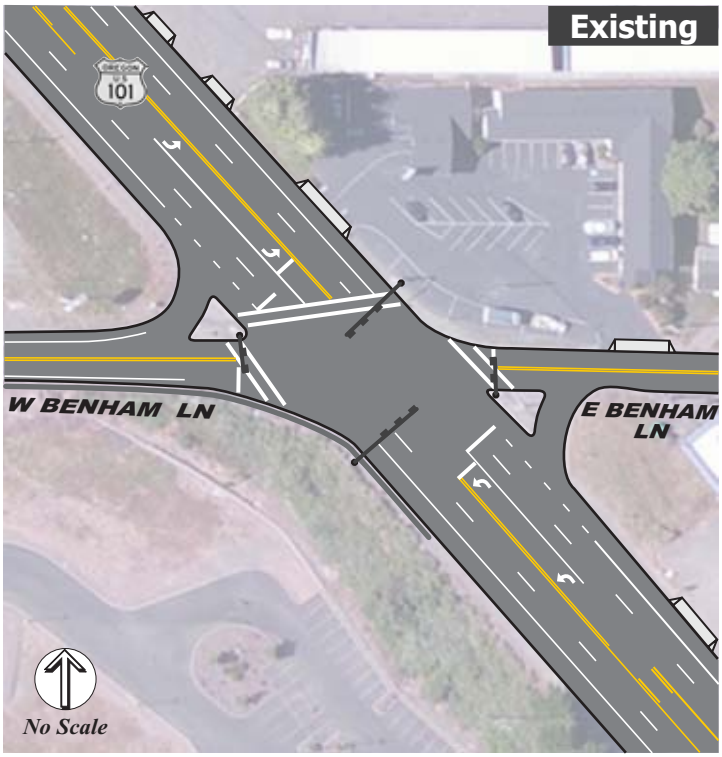
Key Considerations/Notes:
- No additional right-of-way would be needed for this improvement
- Installation of street lighting subject to findings of lighting analysis



Location:
US 101/Benham Lane
(Sheet 1 of 2)

Characteristics:
- Milepost: 359.32
- Speed Limit: 45 mph
- Existing Volume (AADT): 12,000
- Cross Section: 5-lane divided
- ROW Width: 250 feet
- Traffic Control: Signalized
- Crashes/year: 2.5

Need(s):
- ADA-compliant curb ramps
- Skewed intersection angle
- Observed crash rate that exceeds the critical crash rate
- Mobility (future need)
- Signal timing that better serves pedestrians
- Street lighting
- Sidewalks



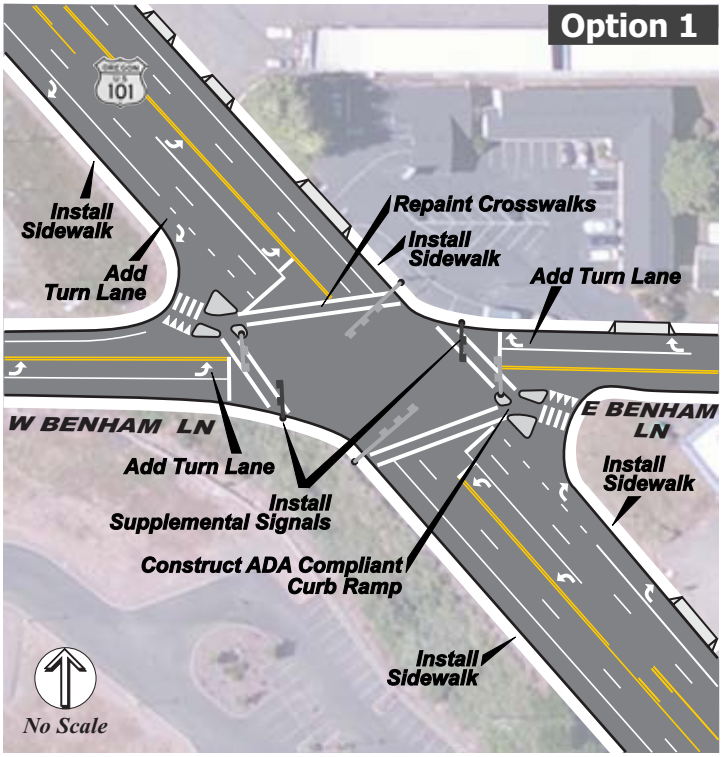
Improvement Option 1

Description:
(1) Add LED street lighting
(2) Traffic signal improvements:
- Install supplemental signals on nearside approaches of Benham Ln.
- Install LED signal heads
- Place 3M reflective tape around border of signal backplates (front and back)

(3) Pedestrian improvements:
- Relocate pedestrian push buttons
- Install pedestrian countdown timers
- Construct ADA-compliant curb ramps and add a crosswalk on the south approach
- Add sidewalks
- Add continental style crosswalk markings across right-turn slip lanes between intersection corners and pork chop islands

(4) Repaint crosswalks on all intersection approaches
(5) Add pavement markings around pork chop islands to match ODOT typical markings
(6) Install yield striping for right-turn slip lanes from US 101 to Benham Lane
(7) Install "Be Prepared to Stop" message sign in northbound direction prior to intersection that is activated by yellow phase of signal
(8) Add westbound right-turn lane
(9) Add southbound right-turn lane
(10) Add eastbound left-turn lane

Preliminary Cost Estimate: $377,000



Benefits:
- Enhanced pedestrian environment
- Improved visibility through lighting
- Provide advance driver notification
- Improved driver recognition of pork chop islands
- Improved mobility

Key Considerations/Notes:
- Possible right-of-way needed
- Installation of street lighting subject to findings of lighting analysis

Location:
US 101/Benham Lane
(Sheet 2 of 2)

Improvement Option 2

Description:

(1) Install roundabout
(2) Add LED street lighting
(3) Add sidewalks
(4) Install "Roundabout Ahead" signs prior to intersection

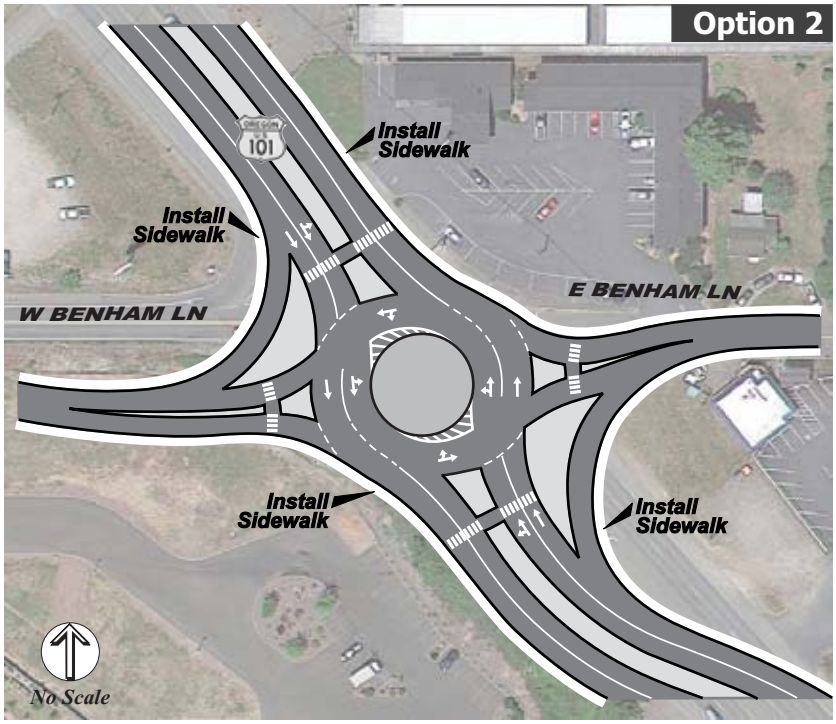
Preliminary Cost Estimate: $978,000

Benefits:

- Enhanced pedestrian environment
- Improved visibility for drivers and pedestrians
- Improved driver recognition of intersection
- Reduced speeds on US 101 on either side of roundabout

Key Considerations/Notes:

- Right-of-way may be needed
- Installation of street lighting subject to findings of lighting analysis
- Access modification may be required near the intersection due to roadway realignment from roundabout



Scoring

Evaluation Criterion	Weight	Raw Score Option 1	Raw Score Option 2
1. Reduction in crash rate/severity	14	4	8
2. Type/level of geometric improvement	9	4	8
3. Type/level of bicycle/pedestrian improvement	9	8	6
4. Reduction in traffic conflicts	10	0	2
5. Reduction in congestion and delay	5	7	8
6. Reduction in number of access points	9	0	7
7. Improvement in access design	8	0	0
8. Minimization of construction cost	13	5	2
9. Minimization of right-of-way	6	10	10
10. Number and size of project phases	8	8	0
11. Minimization of environmental impacts	3	10	10
12. Minimization of impacts to EEU and developed parcels	4	10	10
13. Consistency with ODOT standards, local plans and policies	2	10	10
	Total	*478*	*537*

Location:

Segment 4 - US 101 from South of Benham Lane to Raymond Lane

(Sheet 1 of 1)

Characteristics:

- Milepost: 359.32 – 359.94
- Speed Limit: 55 mph
- Existing Volume (AADT): 10,000
- Cross Section: 5-lane divided
- Average ROW Width: 100 feet
- Crashes/year: <1

Need(s):

- Driver confusion with two-way left turn lane (TWLTL)

Improvement Option 1

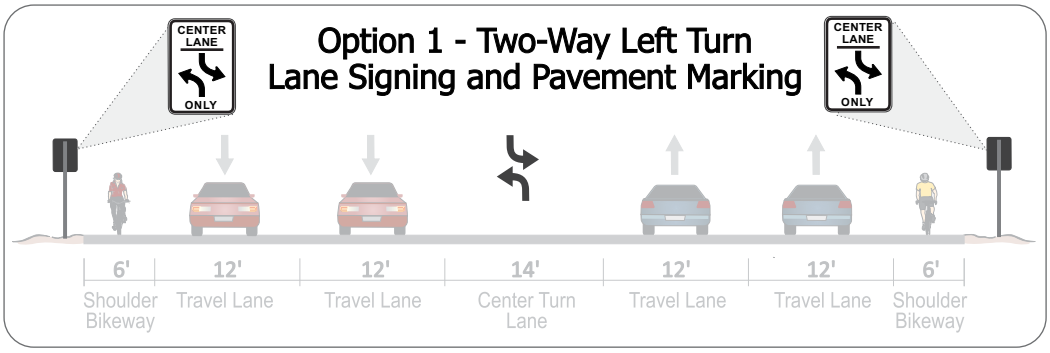
Description:

(1) Add TWLTL signage
(2) Add reflectorized two-way turn pavement arrows

Preliminary Cost Estimate: $10,000

Benefits:

- Less driver confusion about TWLTL



Location:

US 101 from Pedrioli Lane to Raymond Lane

(Sheet 1 of 1)

Characteristics:

- Milepost: 359.56 – 359.94
- Speed Limit: 55 mph
- Existing Volume (AADT): 10,000
- Cross Section: 5-lane divided
- ROW Width: 100 feet
- Crashes/year: <1

Need(s):

- Narrow shoulders for bicycle use

Improvement Option 1

Description:

(1) Widen shoulders on east side of US 101 to 6 feet

Preliminary Cost Estimate: $25,000

Benefits:

- Meets minimum width for a shoulder bikeway
- Potential crash reduction of 7% due to wider shoulder width

Key Considerations/Notes:

No additional right-of-way would be needed for this improvement

Location:
US 101/Pedrioli Dr.
(Sheet 1 of 1)

Characteristics:

- Milepost: 359.56
- Speed Limit: 55 mph
- Existing Volume (AADT): 10,000
- Cross Section: 5-lane divided
- ROW Width: 250 feet
- Traffic Control: Unsignalized
- Crashes/year: 0

Need(s):

- Turn lane

Improvement Option 1

Description:

(1) Add a southbound right turn lane

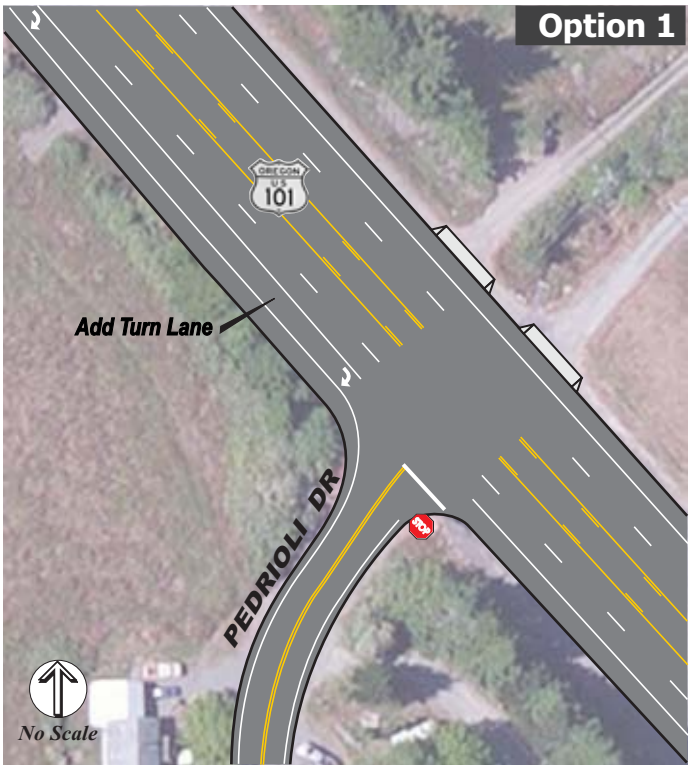
Preliminary Cost Estimate: $82,000

Benefits:

- Improved traffic operations and safety with removal of turning vehicles from traffic stream
- Potential crash reduction of 14% due to turn lane

Key Considerations/Notes:

No additional right-of-way would be needed for this improvement



Location:

Segment 5 - US 101 from Raymond Lane to McVay Lane (north)

(Sheet 1 of 1)

Characteristics:

- Milepost: 359.94 – 361.16
- Speed Limit: 55 mph
- Existing Volume (AADT): 10,000
- Cross Section: 4-lane undivided
- Average ROW Width: 100 feet
- Crashes/year: 3

Needs:

- Crash rate exceeds statewide average
- Access management

Improvement Option 1

Description:

(1) Convert painted median to two-way left-turn lane (TWLTL)
(2) Add TWLTL signage
(3) Add reflectorized two-way turn pavement arrows

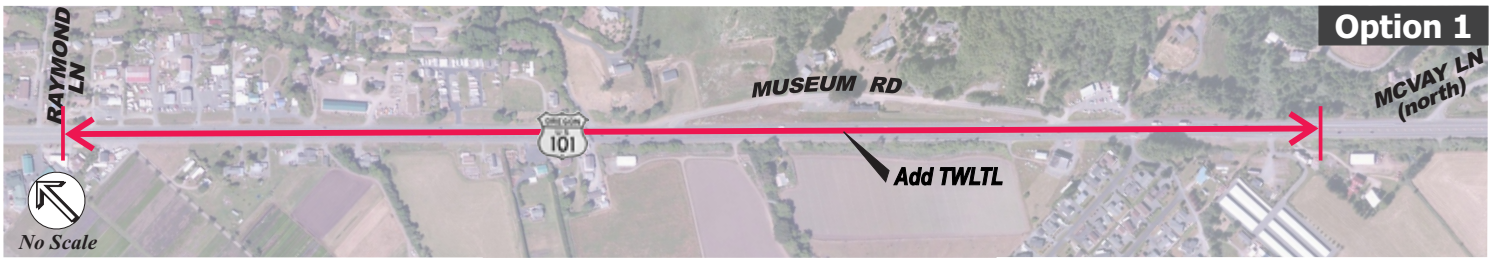
Benefits:

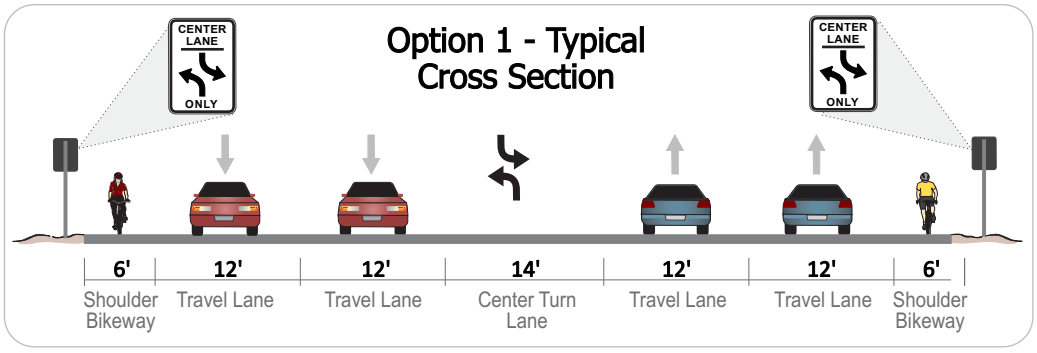
- Removes left-turning vehicles from traffic stream
- Provides greater separation between opposing traffic streams

Preliminary Cost Estimate: $18,000

Key Considerations/Notes:

No additional right-of-way would be needed for this improvement option.





Location:
US 101/Robin Lane
(Sheet 1 of 1)

Characteristics:

- Milepost: 359.99
- Speed Limit: 55 mph
- Existing Volume (AADT): 10,000
- Cross Section: 4-lane undivided
- ROW Width: 185 feet
- Traffic Control: Unsignalized
- No crashes

Need(s):

- Street lighting

Improvement Option 1

Description:

(1) Install LED street lighting

Preliminary Cost Estimate: $6,000

Benefits:

- Improved visibility for drivers and pedestrians
- Potential crash reduction of 10% due to lighting

Key Considerations/Notes:

- Installation of street lighting subject to findings of lighting analysis

Location:
US 101/Museum Road (North & South)
(Sheet 1 of 1)

Characteristics:
- Milepost: 360.48 – 360.85
- Speed Limit: 55 mph
- Existing Volume (AADT): 9,000
- Cross Section: 4-lane undivided
- ROW Width: 170 feet
- Traffic Control: Unsignalized
- Crashes/year: <1

Need(s):
- Driver confusion with loop road configuration of Museum Rd.
- Skewed intersection angles

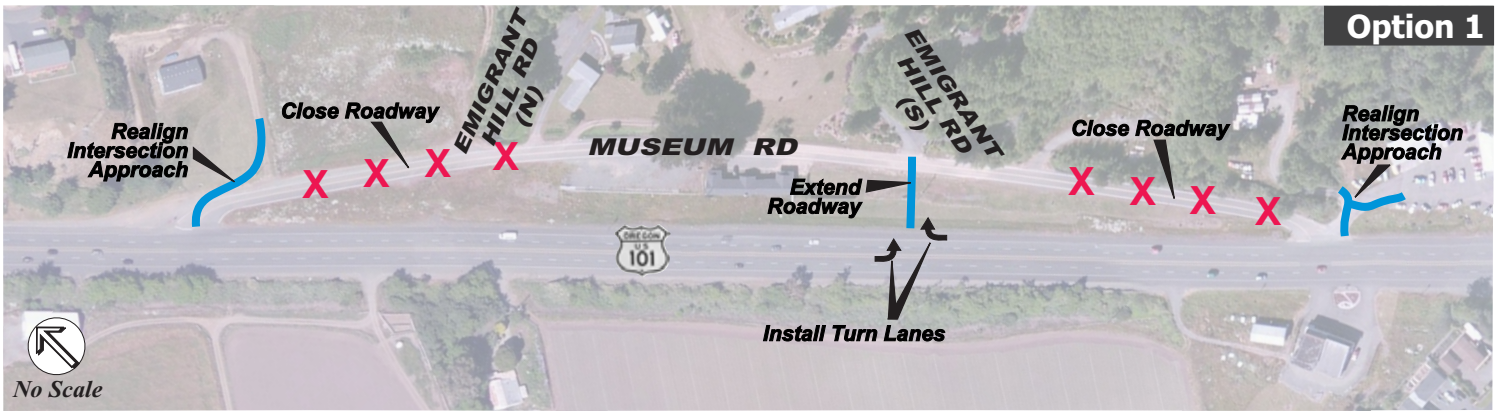
Improvement Option 1

Description:
(1) Extend Emigrant Hill Rd. from the existing Museum Rd./Emigrant Hill Rd. (south) intersection to US 101
(2) Install left-turn and right-turn lanes at new US 101/Emigrant Hill Road intersection
(3) Close Museum Road to the north and south of existing US 101 intersections
(4) Minor realignment of Museum Road approaches at US 101 to reduce skew angle of intersections

Preliminary Cost Estimate: $316,000

Benefits:
- Less driver confusion with Museum Rd. loop configuration
- Less traffic at existing US 101 intersections
- Fewer turning conflicts
- Improved visibility of traffic on US 101 from Museum Rd. approaches of existing intersections
- Potential crash reduction of 56% due to intersection realignment and two turn lanes

Key Considerations/Notes:
- Right-of-way may be needed for this improvement
- Turn lane warrants currently not met at either existing intersection



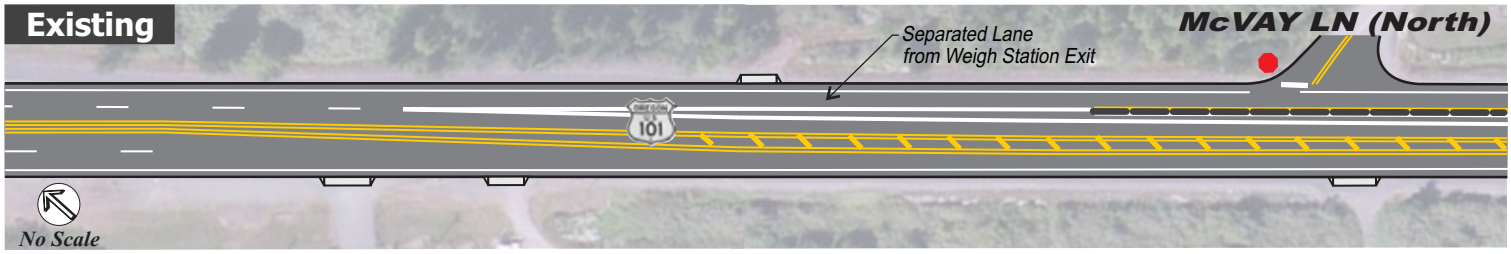
Location:
US 101/McVay Lane (north)
(Sheet 1 of 1)

Characteristics:

- Milepost: 361.16
- Speed Limit: 55 mph
- Existing Volume (AADT): 9,000
- Cross Section: 4-lane undivided
- ROW Width: 200 feet
- Crashes/year: <1

Need(s):

- Confusion with southbound lane drop



Improvement Option 1

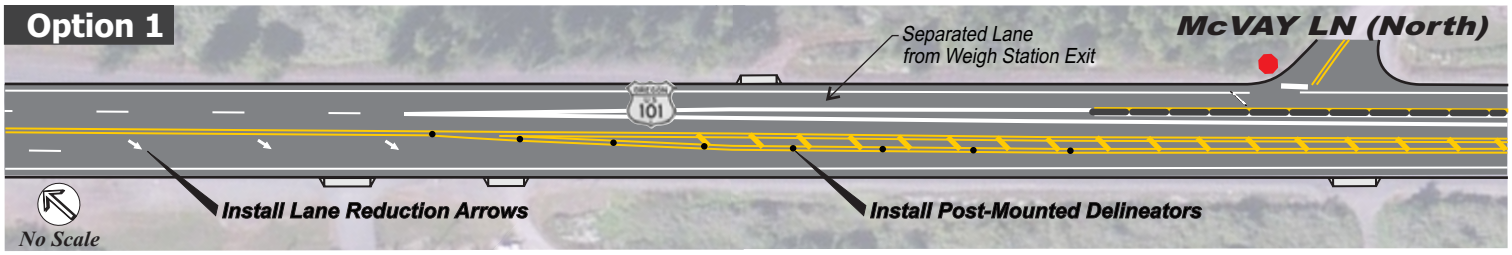
Description:

(1) Install lane reduction arrows consistent with MUTCD
(2) Install post-mounted delineators consistent with MUTCD

Preliminary Cost Estimate: $4,000

Benefits:

- Reduced merging conflicts at lane drop



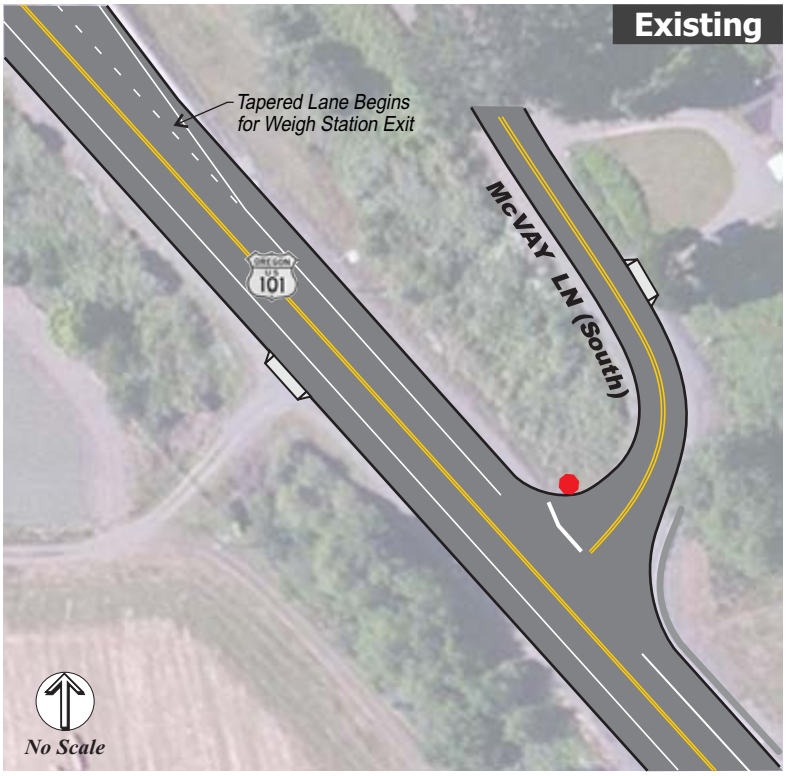
Location:
US 101/McVay Lane (South)
(Sheet 1 of 1)

Characteristics:

- Milepost: 361.52
- Speed Limit: 55 mph
- Existing Volume (AADT): 9,000
- Cross Section: 2-lane undivided
- ROW Width: 225 feet
- Traffic Control: Unsignalized
- Crashes/year: 0

Need(s):

- Turn lane



Improvement Option 1

Description:

(1) Add a southbound left turn lane

Preliminary Cost Estimate: $82,000

Benefits:

- Improved traffic operations and safety with removal of turning vehicles from traffic stream
- Potential crash reduction of 44% due to turn lane

Key Considerations/Notes:

No additional right-of-way would be needed for this improvement.

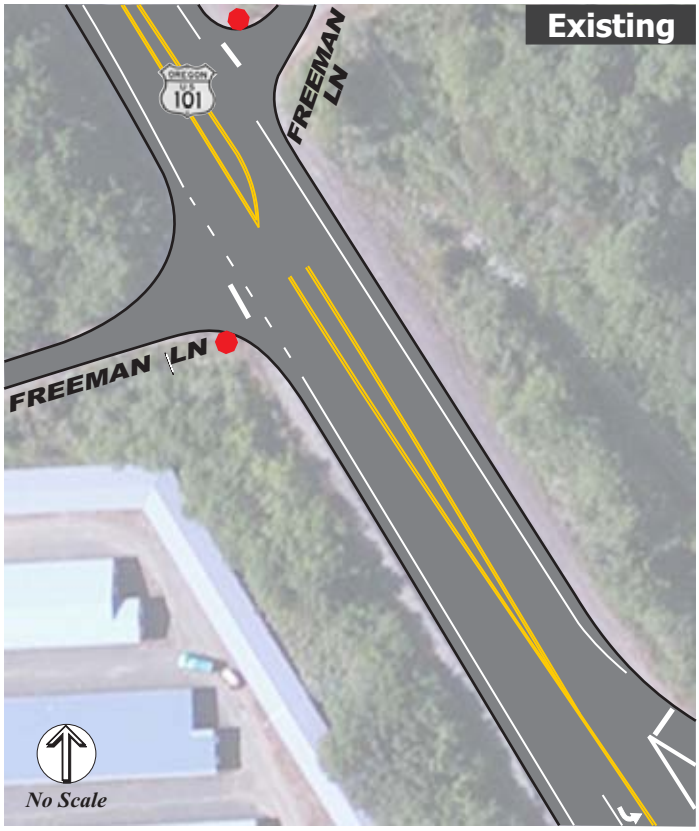
Location:
US 101/Freeman Lane
(Sheet 1 of 1)

Characteristics:

- Milepost: 362.10
- Speed Limit: 55 mph
- Existing Volume (AADT): 9,000
- Cross Section: 2-lane undivided
- ROW Width: 205 feet
- Traffic Control: Unsignalized
- Crashes/year: 0

Need(s):

- Turn lane



Improvement Option 1

Description:

(1) Add a northbound left turn lane

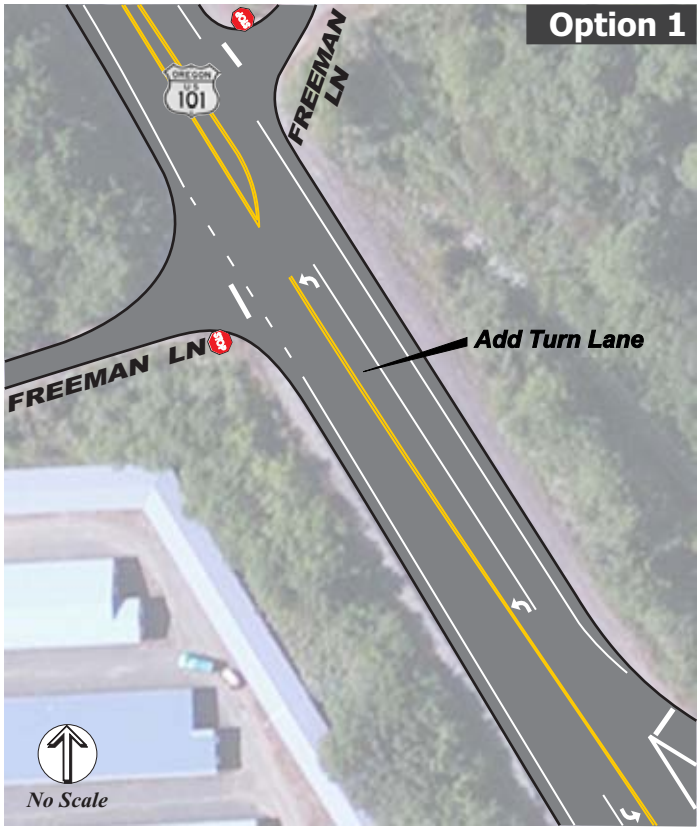
Preliminary Cost Estimate: $44,000

Benefits:

- Improved traffic operations and safety with removal of turning vehicles from traffic stream
- Crash reduction of 44% due to turn lane

Key Considerations/Notes:

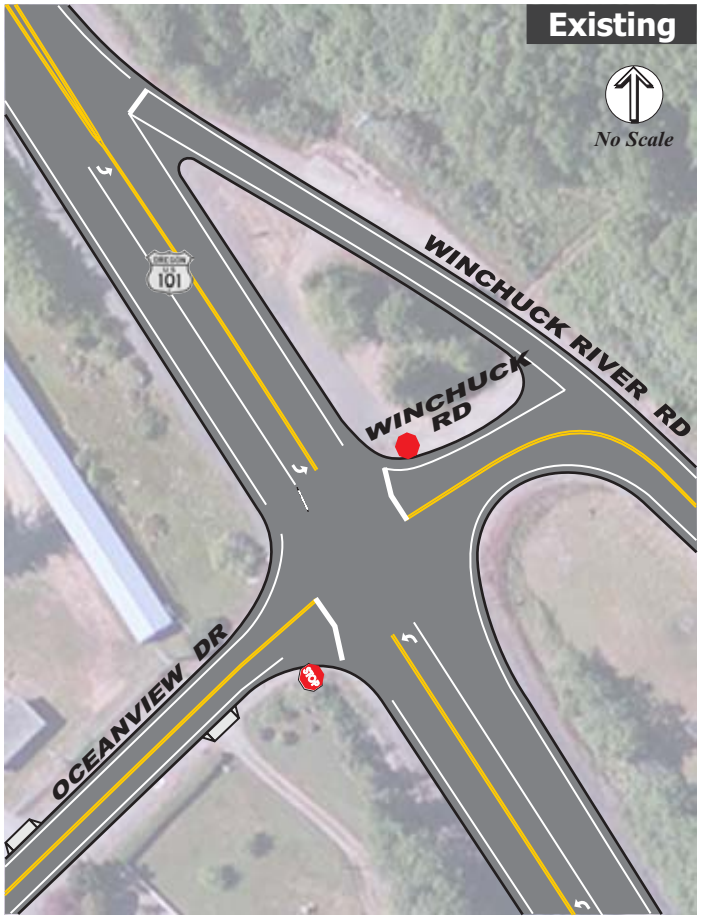
No additional right-of-way would be needed for this improvement
Turn lane length is constrained by intersection spacing to Oceanview Drive/Winchuck River Road



Location:
US 101/Ocean View Drive/ Winchuck River Road
(Sheet 1 of 1)

Characteristics:
- Milepost: 362.22
- Speed Limit: 55 mph
- Existing Volume (AADT): 9,000
- Cross Section: 2-lane undivided
- ROW Width: 185 feet
- Traffic Control: Unsignalized
- Crashes/year: <1

Need(s):
- Skewed intersection angle (north leg)
- Proximity of Ocean View Drive to north leg of Winchuck River Road
- Lack of designated bike route signage



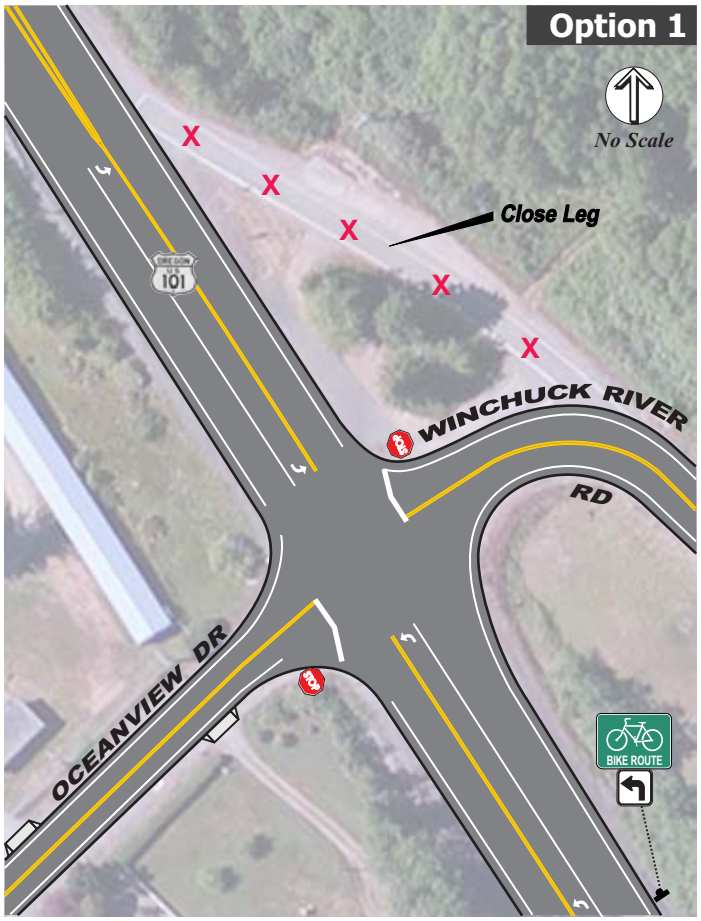
Improvement Option 1

Description:
(1) Install signage for designated bike route to Ocean View Drive
(2) Close northbound leg of Winchuck River Road and route right turns through Winchuck Road intersection

Preliminary Cost Estimate: $6,000

Benefits:
- Improved route guidance for bicyclists
- Improved traffic operations and safety with removal of merging traffic from north leg of Winchuck River Rd.
- Rerouting of northbound right-turn traffic to Winchuck Rd. improves drivers' ability to see traffic on US 101
- Potential crash reduction of 30% due to removal of skewed intersection angle

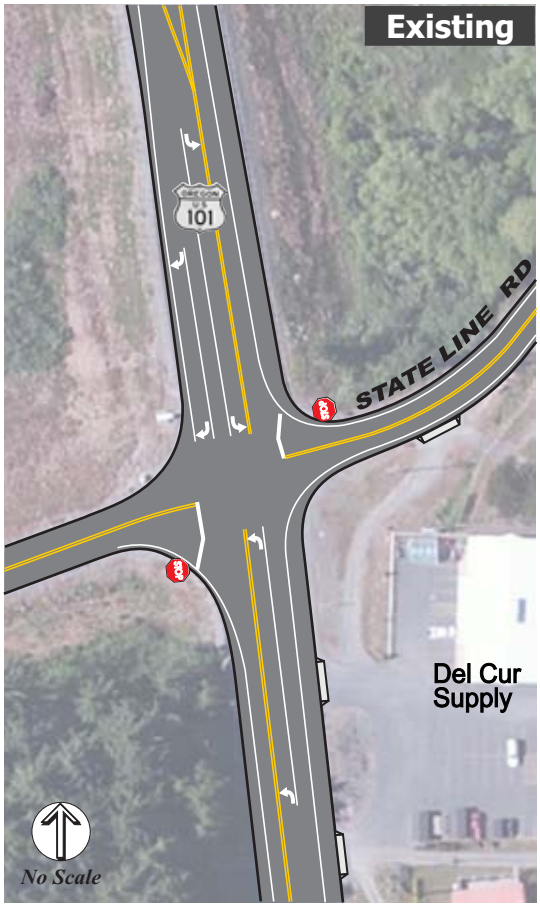
Key Considerations/Notes:
No additional right-of-way would be needed for this improvement.



Location:
US 101/State Line Road
(Sheet 1 of 2)

Characteristics:
- Milepost: 362.95
- Speed Limit: 55 mph
- Existing Volume (AADT): 8,000
- Cross Section: 2-lane undivided
- ROW Width: 150 feet
- Traffic Control: Unsignalized
- Crashes/year: <1

Need(s):
- Observed crash rate exceeds critical crash rate
- Street lighting
- Restricted sight distance
- Access management



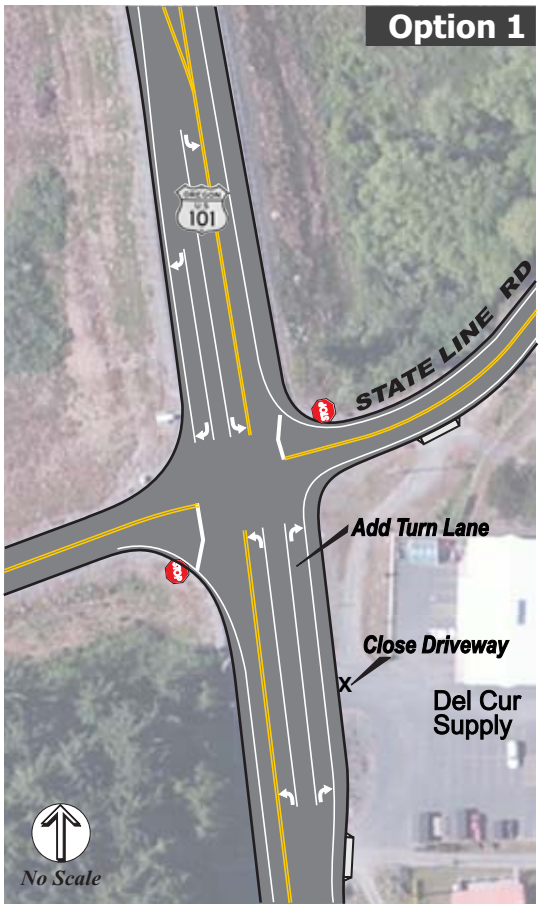
Improvement Option 1

Description:
(1) Install LED street lighting
(2) Close Del-Cur Supply driveway nearest to intersection
(3) Add northbound right turn lane
(4) Relocate guardrail on SW corner to west to improve sight distance from eastbound approach of State Line Road

Preliminary Cost Estimate: $107,000

Benefits:
- Improved visibility for drivers and pedestrians
- Reduced number of turning conflicts
- Improved sight distance from eastbound approach of State Line Road
- Lighting and turn lane would result in potential 22% crash reduction

Key Considerations/Notes:
- No additional right-of-way would be needed for this improvement option
- Relocation of guardrail would require fill and retaining wall
- Installation of street lighting subject to findings of lighting analysis



Location:
US 101/State Line Road
(Sheet 2 of 2)

Improvement Option 2

Description:

(1) Install LED street lighting
(2) Close both Del-Cur Supply driveways and provide access at driveway on State Line Rd.
(3) Add northbound right turn lane
(4) Relocate guardrail on SW corner to west to improve sight distance

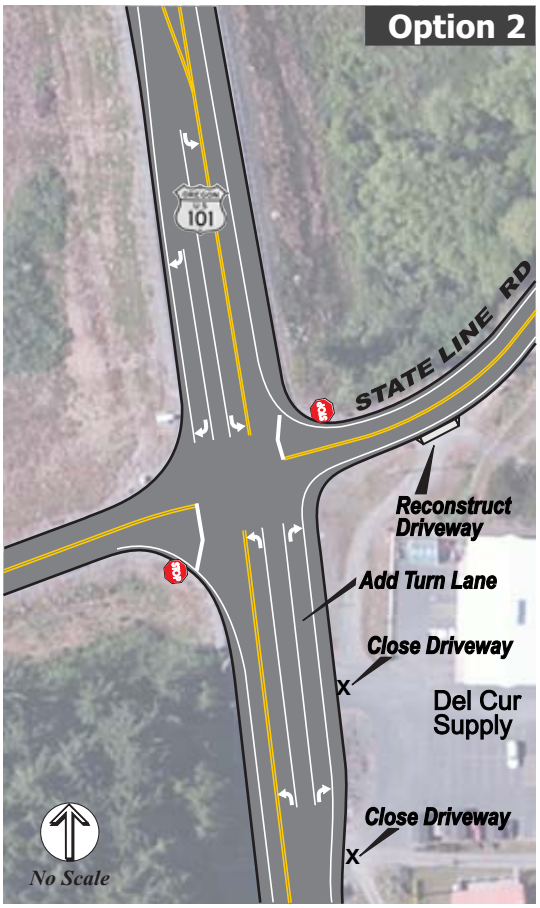
Preliminary Cost Estimate: $125,000

Benefits:

- Improved visibility for drivers and pedestrians
- Reduced number of turning conflicts
- Improved sight distance from eastbound approach of State Line Road
- Lighting and turn lane would result in potential 22% crash reduction

Key Considerations/Notes:

- No additional right-of-way would be needed for this improvement option
- Relocation of guardrail would require fill and retaining wall
- Installation of street lighting subject to findings of lighting analysis
- Provision of access via driveway on State Line Road would require reconstruction of driveway



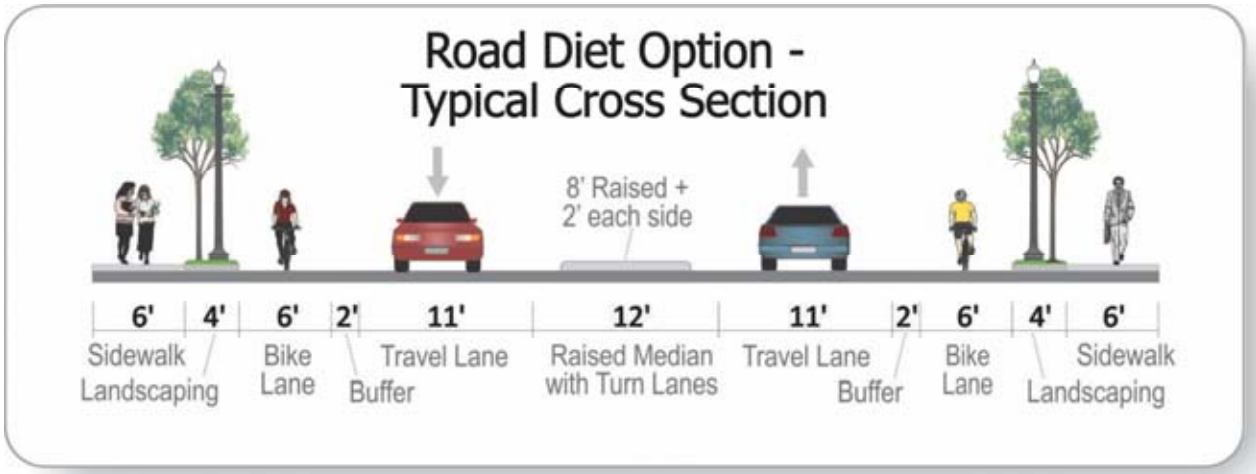
Scoring

Evaluation Criterion	Weight	Raw Score Option 1	Raw Score Option 2
1. Reduction in crash rate/severity	14	4	6
2. Type/level of geometric improvement	9	2	2
3. Type/level of bicycle/pedestrian improvement	9	0	0
4. Reduction in traffic conflicts	10	0	0
5. Reduction in congestion and delay	5	0	0
6. Reduction in number of access points	9	5	10
7. Improvement in access design	8	0	0
8. Minimization of construction cost	13	9	8
9. Minimization of right-of-way	6	10	10
10. Number and size of project phases	8	0	0
11. Minimization of environmental impacts	3	10	10
12. Minimization of impacts to EEU and developed parcels	4	10	10
13. Consistency with ODOT standards, local plans and policies	2	10	10
	Total	*386*	*446*

APPENDIX B

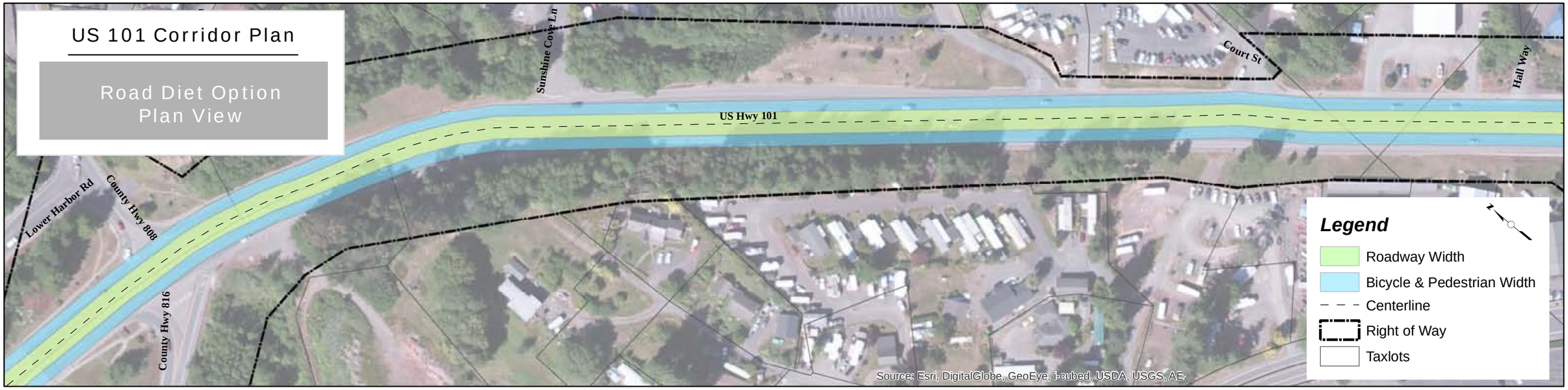
ADDITIONAL IMPROVEMENT OPTIONS CONSIDERED

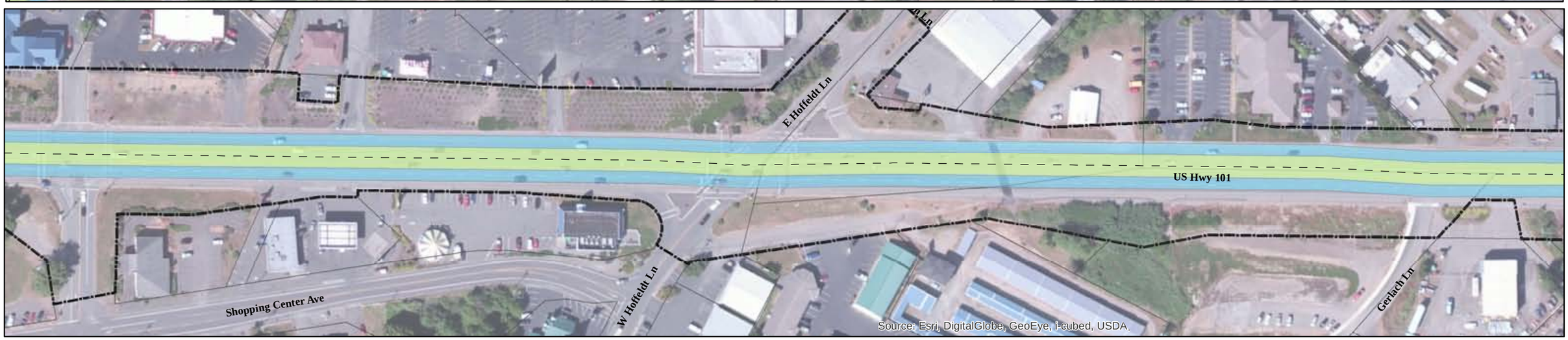
ROAD DIET OPTION

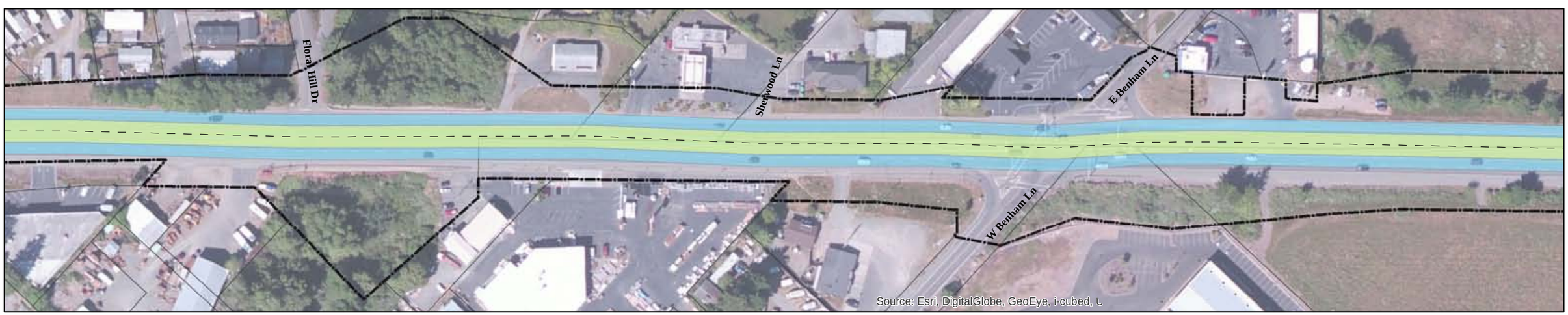


US 101 Corridor Plan

Road Diet Option Plan View







DKS

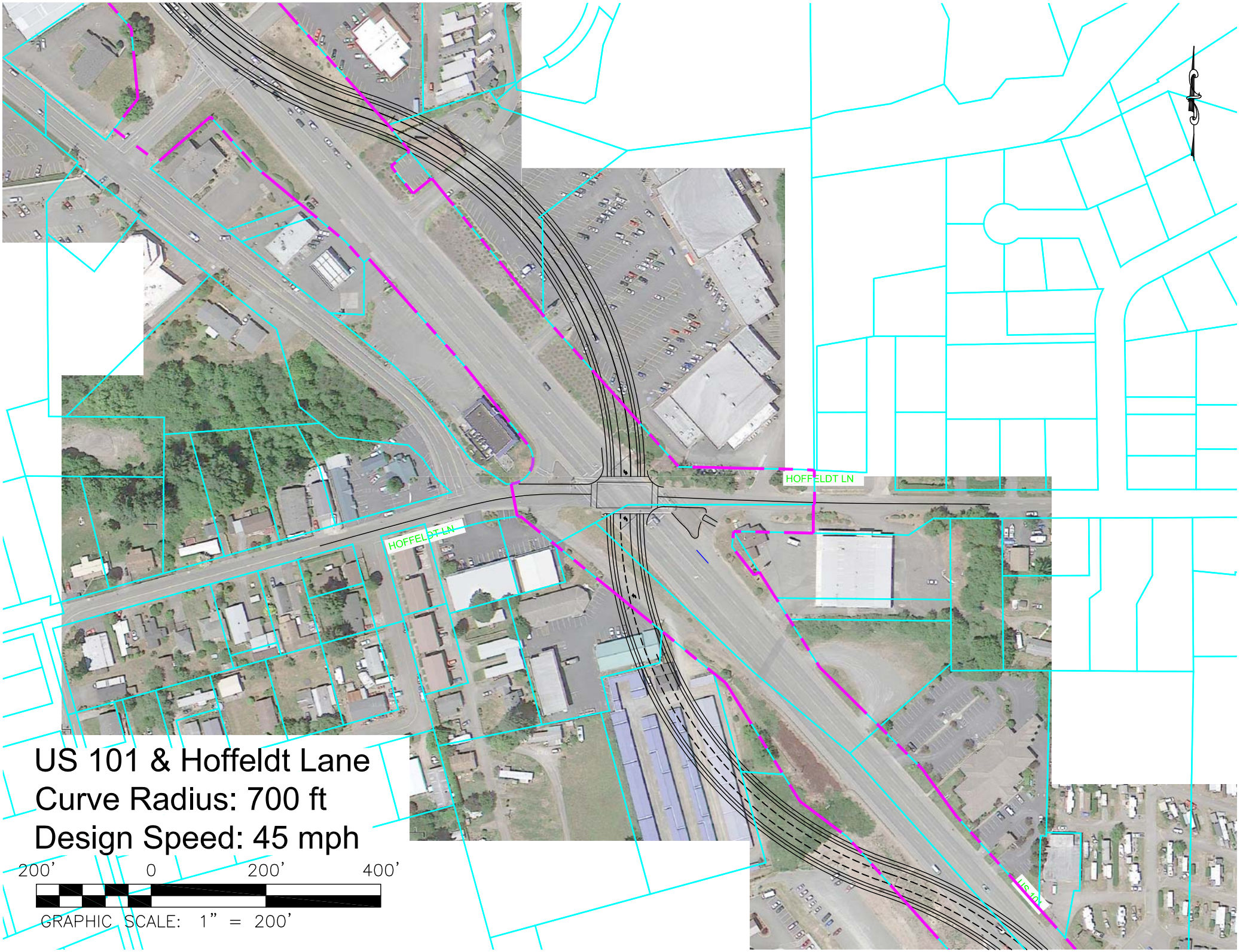
Road Diet Option – Traffic Operations for Existing Conditions (2012)

Location	Mobility Target (V/C Ratio)	US 101		Minor Road	
		V/C Ratio	LOS	V/C Ratio	LOS
US 101/Lower Harbor Dr-S Bank Chetco River Rd	0.90	-	-	**0.92**	**F**
US 101/Sunshine Cove Ln	0.90	0.05	B	0.11	C
US 101/Court St	0.90	0.05	B	0.24	C
US 101/Hall Way	0.90	0.02	B	0.11	C
US 101/Zimmerman Ln	0.80	0.72	B	-	-
US 101/Hoffeldt Ln	0.80	0.65	B	-	-
US 101/Chetco RV Park Dwy	0.90	0.01	B	0.04	C
US 101/Benham Ln	0.80	0.63	B	-	-
Segment 1: Chetco River Bridge - Zimmerman Ln	0.80	0.72	-	-	-
Segment 2: Zimmerman Ln - Hoffeldt Ln	0.80	0.72	-	-	-
Segment 3: Hoffeldt Ln – Benham Ln	0.80	0.65	-	-	-

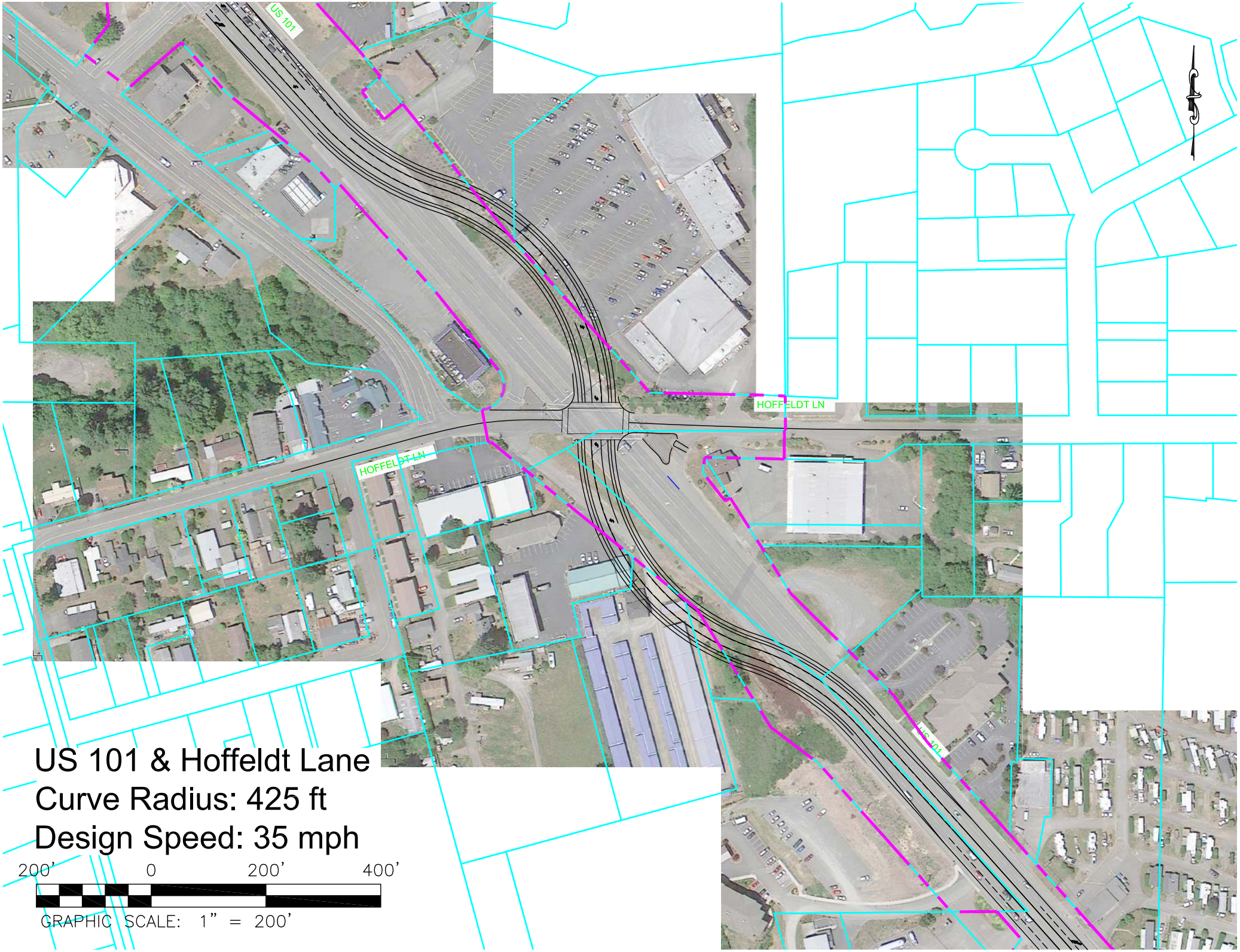
Road Diet Option – Traffic Operations for Future Conditions (2034)

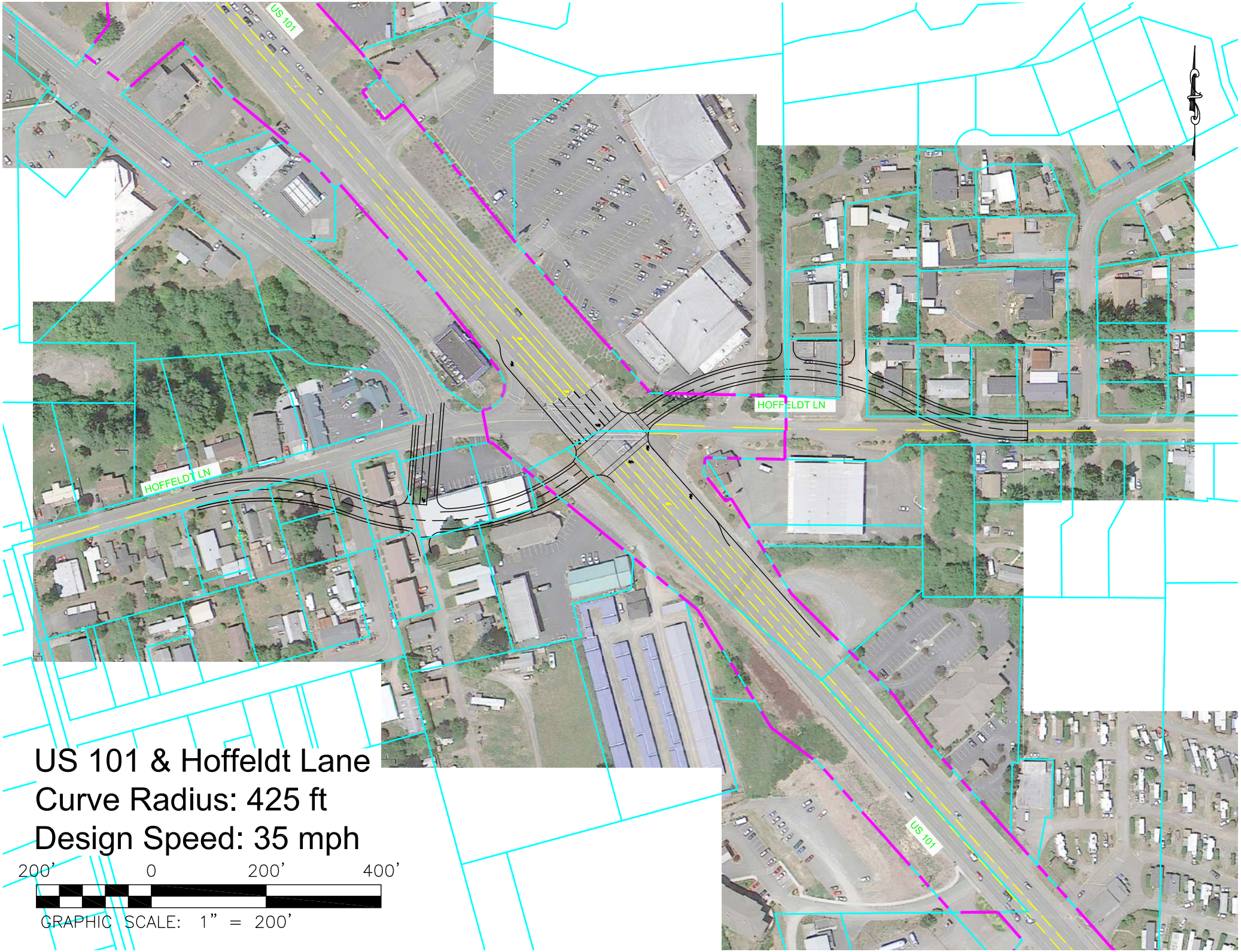
Location	Mobility Target (V/C Ratio)	US 101		Minor Road	
		V/C Ratio	LOS	V/C Ratio	LOS
US 101/Lower Harbor Dr-S Bank Chetco River Rd	0.90	-	-	**1.91**	**F**
US 101/Sunshine Cove Ln	0.90	0.09	B	0.25	E
US 101/Court St	0.90	0.09	B	0.58	F
US 101/Hall Way	0.90	0.05	B	0.25	E
US 101/Zimmerman Ln	0.80	**1.06**	**F**	-	-
US 101/Hoffeldt Ln	0.80	**0.98**	**D**	-	-
US 101/Chetco RV Park Dwy	0.90	0.02	B	0.09	D
US 101/Benham Ln	0.80	**0.95**	**D**	-	-
Segment 1: Chetco River Bridge - Zimmerman Ln	0.80	**1.06**	-	-	-
Segment 2: Zimmerman Ln - Hoffeldt Ln	0.80	**1.06**	-	-	-
Segment 3: Hoffeldt Ln – Benham Ln	0.80	**0.98**	-	-	-

US 101/HOFFELDT LANE DESIGN OPTIONS

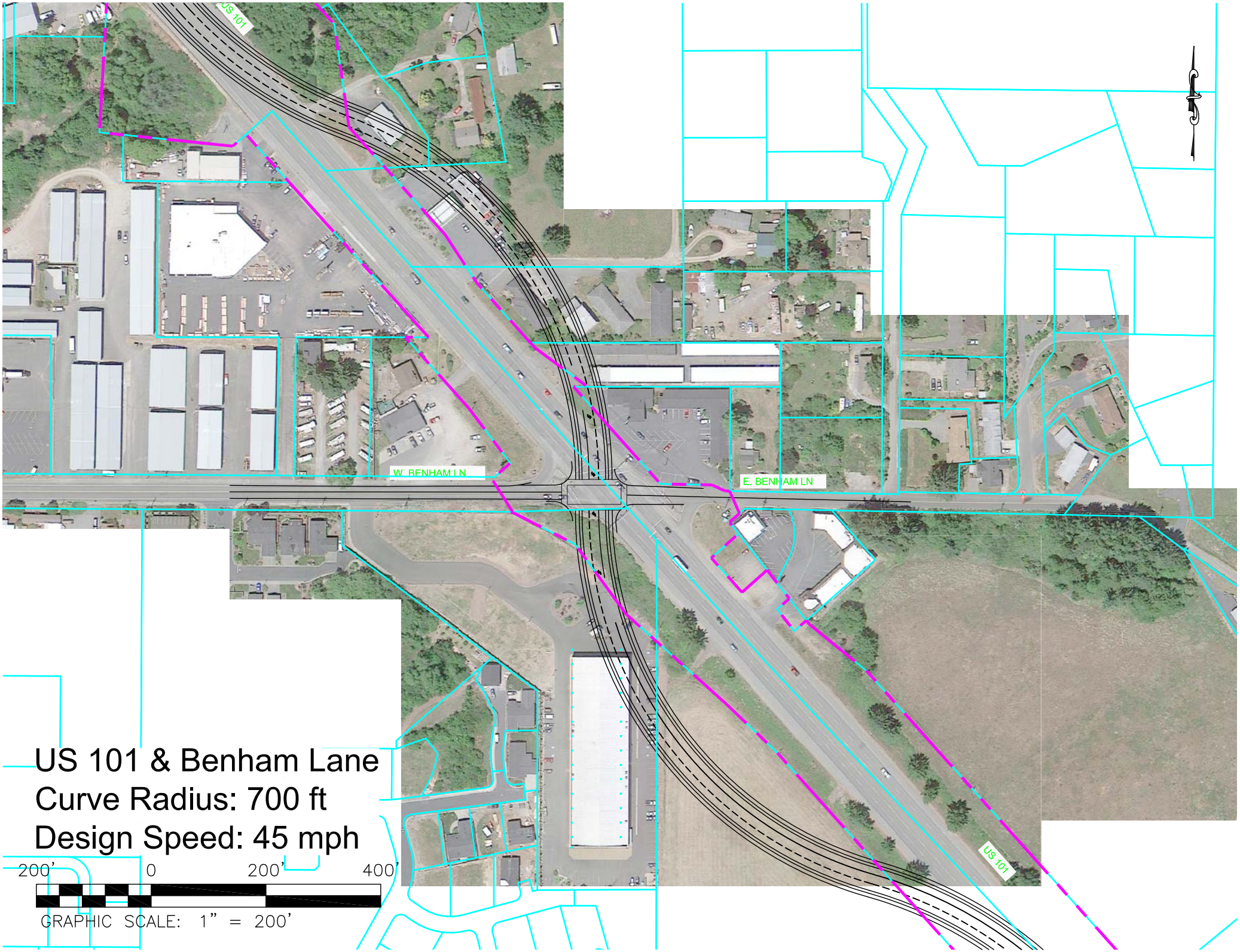


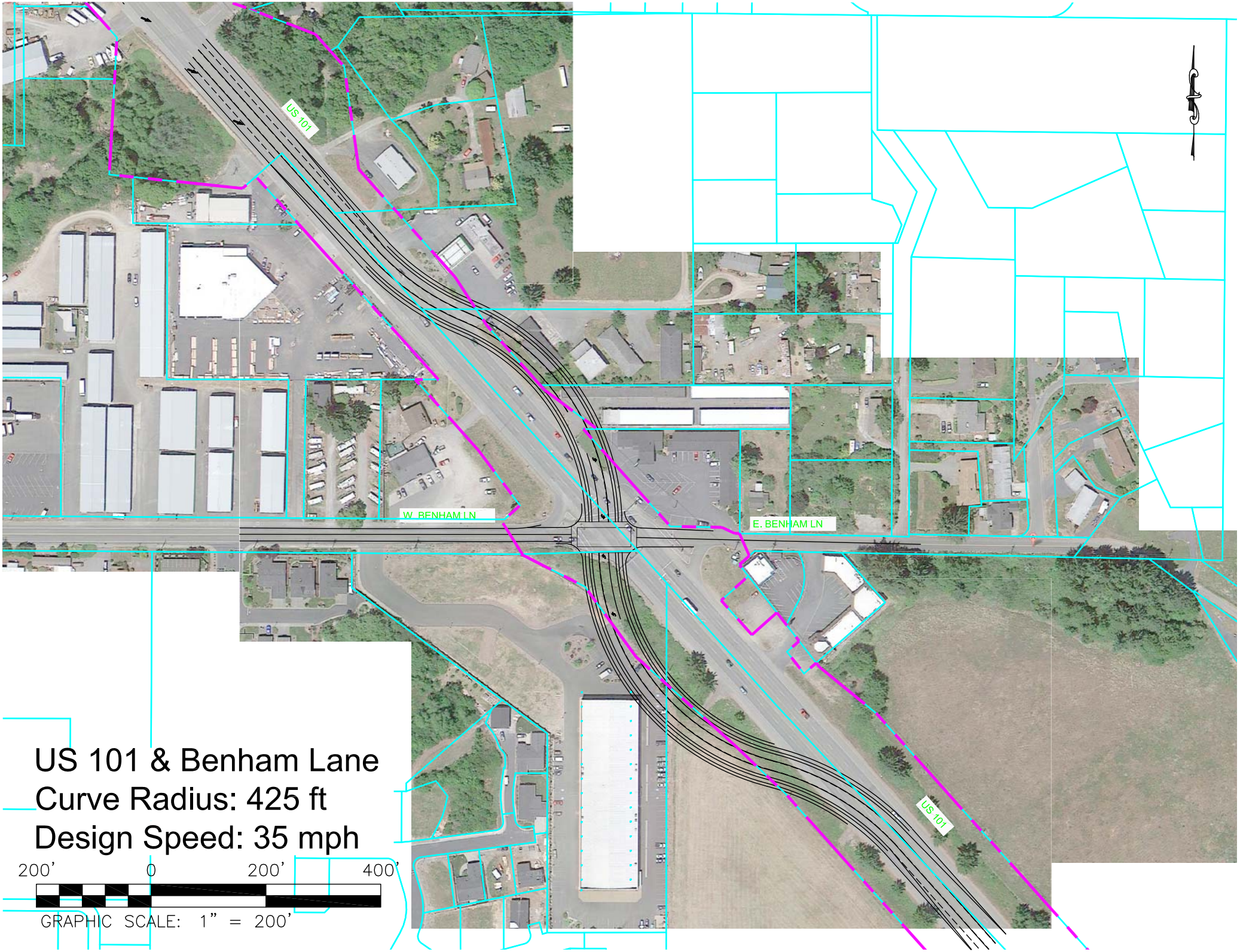
US 101 & Hoffeldt Lane
Curve Radius: 700 ft
Design Speed: 45 mph

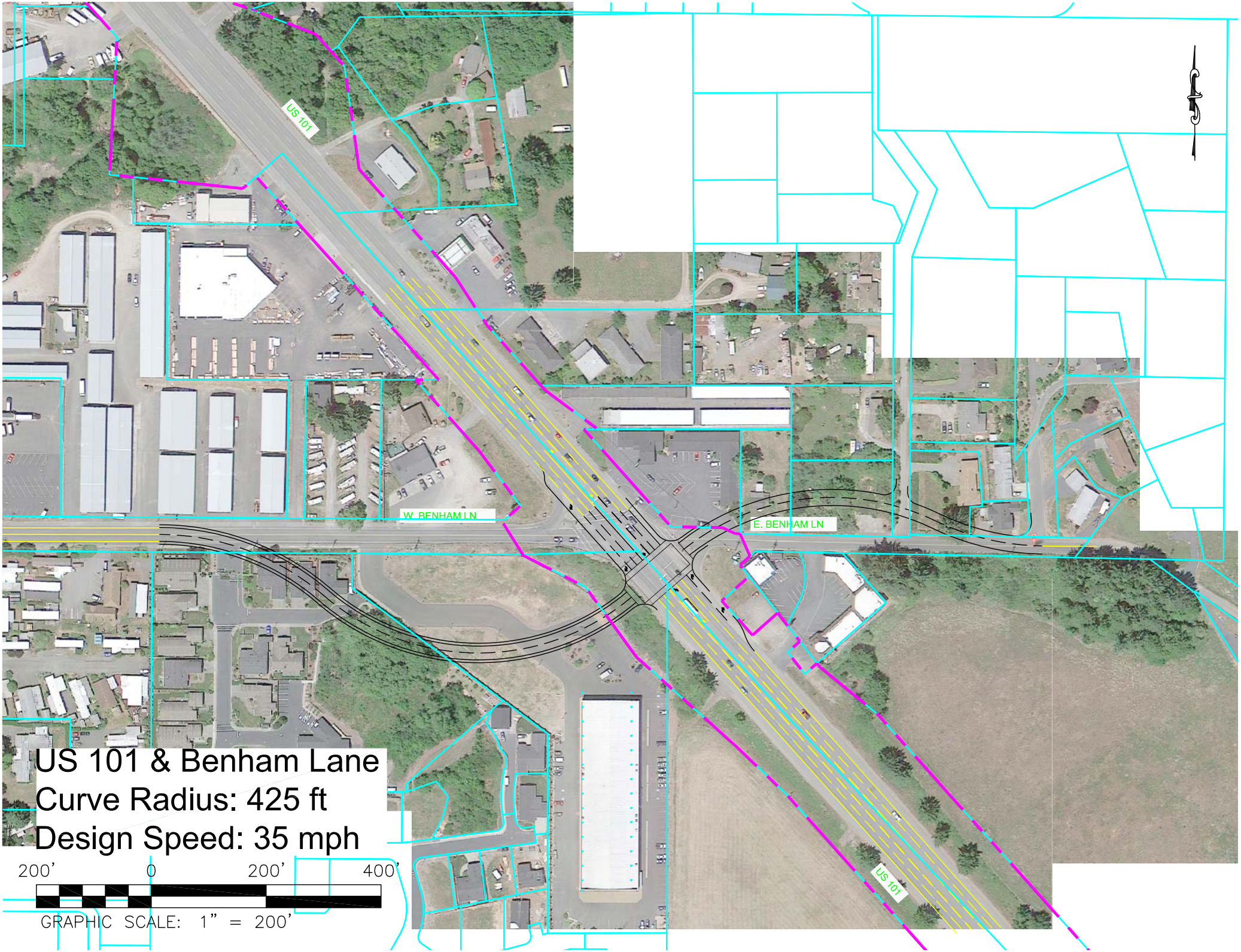

US 101
HOFFELDT LN
HOFFELDT LN
US 101
US 101 & Hoffeldt Lane
Curve Radius: 425 ft
Design Speed: 35 mph
200’
0
200’
400’
GRAPHIC SCALE: 1” = 200’


US 101
HOFFELDT LN
HOFFELDT LN
US 101
US 101 & Hoffeldt Lane
Curve Radius: 425 ft
Design Speed: 35 mph
200'
0
200'
400'
GRAPHIC SCALE: 1" = 200'

US 101/BENHAM LANE DESIGN OPTIONS

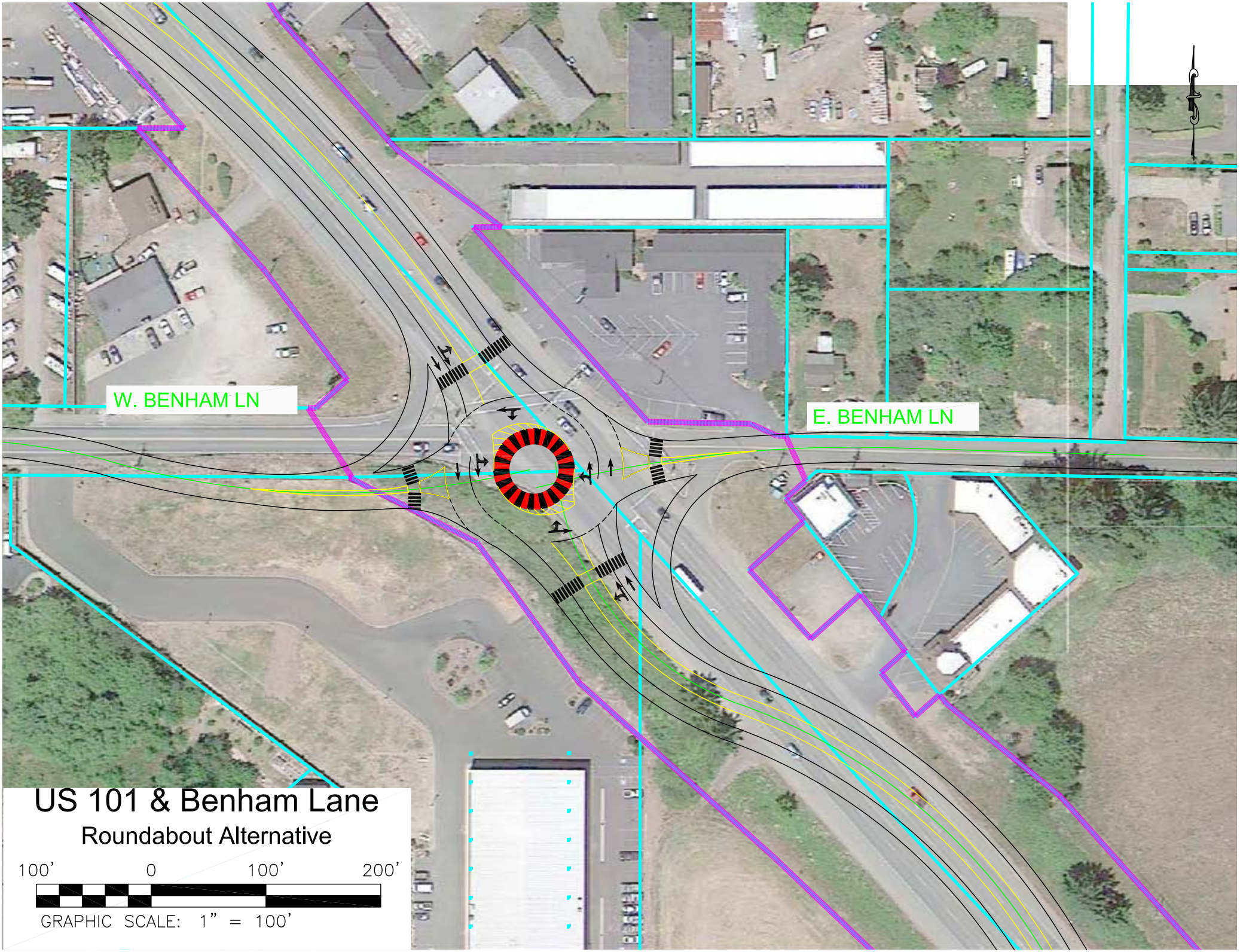

US 101
W. BENHAM LN
E. BENHAM LN
US 101
US 101 & Benham Lane
Curve Radius: 700 ft
Design Speed: 45 mph
200'
0
200'
400'
GRAPHIC SCALE: 1" = 200'


US 101
W. BENHAM LN
E. BENHAM LN
US 101
US 101 & Benham Lane
Curve Radius: 425 ft
Design Speed: 35 mph
200'
0
200'
400'
GRAPHIC SCALE: 1" = 200'


US 101
W. BENHAM LN
E. BENHAM LN
US 101
US 101 & Benham Lane
Curve Radius: 425 ft
Design Speed: 35 mph
200'
0
200'
400'
GRAPHIC SCALE: 1" = 200'

APPENDIX C

US 101/BENHAM LANE OPTION 2 - ROUNDABOUT


W. BENHAM LN
E. BENHAM LN
US 101 & Benham Lane
Roundabout Alternative
100'
0
100'
200'
GRAPHIC SCALE: 1" = 100'