



APPENDIX D

# Alternatives Analysis



# Alternative Analysis

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This section documents the transportation improvement concepts, the Evaluation Framework and the alternatives evaluation process. Standards used to evaluate and select transportation alternatives are identified in OAR 660-012-0035. The process for decision-making will be described in this section including documentation of discussions and meetings where decisions were made. The subsections for the alternatives analysis will include: bicycle and pedestrian concepts, transit concepts, local roadway concepts, and highway concepts.

## Evaluation Framework

This evaluation framework is based on project goals as identified by the TSP's Project Management Team (PMT) at the outset of the TSP process. This group first translated project goals into evaluation criteria, and then identified performance measures to determine how each potential improvement functioned in relation to the project goals. The evaluation framework was developed prior to the development of potential improvements to encourage an open and unbiased evaluation process.

The general evaluation rating method is included in the table below. The scale is a 'consumer-reports style' scale used to show which alternatives meet the criteria, which alternatives partially meet the criteria, and which alternatives do not meet the criteria. Additionally, a N/A designation will be used where the criteria do not apply.

Rating	Description
●	Alternative directly and positively addresses the project goal
◐	Alternative partially meets the goal, addressing some but not all of the goal's objectives
○	Alternative does not support the intent of, or negatively impacts, the goal
N/A	Alternative is not applicable to the goal

The table below lays out the evaluation framework used for the Seaside TSP.

Goal	Rating	Performance Measure
<b>1. Safety for all modes</b>		
<p>Addresses safety issues for automobiles at known problem areas such as:</p> <p>Crossing US Highway 101</p> <p>Between Mile Post 19.58-22.12 along US Highway 101</p> <p>The intersection of US Highway 101 and Lewis and Clark</p>	<p>●</p> <p>◐</p> <p>○</p>	<p>Addresses known safety issue(s), and does not add new operational safety concerns. Moves towards design standards and does not require an exception.</p> <p>Addresses some known safety issue(s), and may decrease other operational safety concerns.</p> <p>Does not address known safety issue(s), and adds operational safety concerns, and may require an exception</p>
<p>Addresses bicycle and pedestrian safety at known (community identified) problem areas.</p>	<p>●</p> <p>◐</p> <p>○</p>	<p>Addresses known safety issue(s) and allows for safer walking and biking through facilities or strategies along and across US 101.</p> <p>Does not address known safety issue(s), but acknowledges the need for some shelter.</p> <p>Does not address known safety issue(s) and does not improve the safety for those walking along or across US 101.</p>
<b>2. Access for all modes</b>		
<p>Provides easy and clear access for visitors and residents to evacuation routes that increase in elevation out of the inundation zone</p>	<p>●</p> <p>◐</p> <p>○</p>	<p>Provides multiple alternatives, especially east-west connections to tsunami and other hazard evacuation routes. Clarifies routes for most residents and visitors in case of an emergency.</p> <p>Provides some additional alternatives, and may not clarify routes for some residents and visitors in case of an emergency.</p> <p>Does not address access to evacuation routes by providing alternate routes, does not provide east-west routes, and does not clarify routes for residents and visitors in case of an emergency</p>
<p>Reduces vehicle conflict points and moves towards ODOT access standards</p>	<p>●</p> <p>◐</p>	<p>Adds no new private access to US 101 and includes specific strategies for improving access spacing to improve compliance with access spacing standards.</p> <p>Adds no new private access to US 101, though does not include specific strategies for improving access spacing.</p>

Goal	Rating	Performance Measure
	○	Adds new private access to US 101, and does not include access spacing strategies.
Allows for emergency vehicle reliability and timely access	●	Reduces travel time for emergency vehicles, provides multiple routes, and minimizes out of direction travel.
	◐	Reduces travel time for emergency vehicles, provides multiple routes, or minimum out of direction travel.
	○	Does not change or increases travel time for emergency vehicles, does not provide multiple routes and increases out of direction travel.
<b>3. Mobility</b>		
Provides a viable transportation system that accommodates future growth, meeting appropriate mobility standards for the Highway, and addresses the regional and local travel needs of residents, businesses, and industries.	●	Volume/capacity ratio for traffic along US 101 and all but one of the study area intersections meets or exceeds ODOT standards.
	◐	Volume/capacity ratio for traffic along US 101 is improved compared to future no-build scenarios, and moves towards ODOT mobility standards.
	○	Volume/capacity ratio for traffic along US 101 and at three or more study area intersections is worse than acceptable OHP mobility standards.
Accommodates future and existing transit	●	Accommodates existing and future transit service, which may include bus pull-outs, shelters, timed transfers, and moving people to destinations in a timely manner, with schedules and routes reflecting known demands.
	◐	Accommodates some existing and future transit service and stops, which may include bus pull-outs, shelters, timed transfers, and moving people to destinations the study area.
	○	Does not accommodate future and hinders current transit service and stops, and leaves no area for future bus-pull outs and shelters.
<b>4. Connectivity</b>		
Improve street east-west connectivity and provides an alternative to US 101 for local trips	●	Provides new and/or improved east-west connections to local and regional destinations. Allows for local circulation with minimal out of direction travel, and reduces distance traveled along US 101 for local trips.

Goal	Rating	Performance Measure
	<ul style="list-style-type: none"> <li><input checked="" type="radio"/></li> <li><input type="radio"/></li> </ul>	<p>Provides some limited east-west connections to local and regional destinations, allows for limited local circulation with some out of direction travel, and may reduce distance traveled along US 101 for local trips.</p> <p>Does not provide new connection and/or reduces connectivity. Increases out of direction travel and distance traveled along US 101 for local trips.</p>
Improves bicycle and pedestrian connectivity by addressing gaps in the current network	<ul style="list-style-type: none"> <li><input checked="" type="radio"/></li> <li><input type="radio"/></li> <li><input type="radio"/></li> </ul>	<p>Greatly increases connections for bicycles and pedestrians and moves towards an interconnected system throughout the study area and addresses gaps in the bicycle and pedestrian network allowing bicyclists and pedestrians access to local destinations</p> <p>Slightly increases connections for bicycles and pedestrians and moves towards an interconnected system in some of the study area allowing bicyclists and pedestrians access to some local destinations. Some gaps remain in the existing system.</p> <p>Does not address bicycle and pedestrian connectivity.</p>
Provides for and supports a transit system that serves popular local and regional origins and destinations	<ul style="list-style-type: none"> <li><input checked="" type="radio"/></li> <li><input type="radio"/></li> <li><input type="radio"/></li> </ul>	<p>Allows for improved transit service and future development of an interconnected transit system that serves important local employment, residential, medical or social areas.</p> <p>Allows for development of a somewhat interconnected transit system that serves some important local employment, residential, medical or social areas.</p> <p>Does not allow for future transit service development, does not allow for a connected transit system.</p>
5. Cost		
The relative benefits outweigh the costs of the project, and are cost effective over the life cycle of the improvement	<ul style="list-style-type: none"> <li><input checked="" type="radio"/></li> <li><input type="radio"/></li> </ul>	<p>Provides a solution that is cost effective to design and construct, and maintains cost effectiveness over the life of the improvement.</p> <p>Provides a solution that is initially cost effective, but may require more funding over the life cycle of the facility which may not be cost-effective.</p>

Goal	Rating	Performance Measure
	○	Does not provide a solution that is cost effective to design and construct, costs exceed benefits, even over the life cycle of the improvement.
Alternative meets criteria for identified funding options	<input checked="" type="radio"/> <input type="radio"/> <input type="radio"/>	<p>Likely meets funding criteria and identifies readily available funding sources at the local, state, and/or federal level.</p> <p>Few funding options exist to cover the cost of the alternative, may meet some funding criteria.</p> <p>Does not provide any funding options at any level for the alternative.</p>
<b>6. Livability</b>		
Preserves current parking to serve local residents and visitors, as well as maintain the viability of local businesses	<input checked="" type="radio"/> <input type="radio"/> <input type="radio"/>	<p>Does not affect current parking amounts or totals, and maintains the viability of downtown businesses.</p> <p>Impacts some parking amounts or totals, though not expected to jeopardize the viability of downtown businesses.</p> <p>Has a large impact on parking amounts or totals, and may jeopardize the viability of downtown businesses.</p>
The community supports the alternative and it is line with future expectations of community stakeholders and leaders	<input checked="" type="radio"/> <input type="radio"/> <input type="radio"/>	<p>Expected to garner broad and/or strong support from community stakeholders and leaders.</p> <p>Support from community stakeholders and leaders is not expected to be strong, and/or is uncertain.</p> <p>Expected to receive limited or no support from community stakeholders and leaders.</p>
Supports economic development consistent with the community's vision for the future	<input checked="" type="radio"/> <input type="radio"/> <input type="radio"/>	<p>Creates an attractive, cohesive identity that preserves the vibrant nature of downtown and remains attractive and easily navigable to visitors. Allows for development and redevelopment supporting the community vision, identified in the community survey.</p> <p>Supports elements of an attractive, cohesive identity which may be confusing for visitors and allows for some development and redevelopment but may not be consistent with the community's vision.</p> <p>Does not create a cohesive identity or maintain a vibrant downtown. Does not allow for</p>

Goal	Rating	Performance Measure
		development and redevelopment consistent with the community's vision.
<b>7. Environmental Resources</b>		
Minimizes impacts to built environment resources	<ul style="list-style-type: none"> <li>●</li> <li>◐</li> <li>○</li> </ul>	<p>Does not displace private property.</p> <p>Less than three displacements to private property.</p> <p>More than three displacements to private property.</p>
Minimize impacts to areas of interest including fish-bearing streams, floodplain, and wetlands.	<ul style="list-style-type: none"> <li>●</li> <li>◐</li> <li>○</li> </ul>	<p>Benefits areas of interest/ does not have any negative impacts to areas of interest. May have minor impacts that can be mitigated.</p> <p>Creates minor impacts to some areas of interest that cannot be mitigated, or has major impacts that can be mitigated.</p> <p>Creates a major impact to areas of interest, which can not be mitigated.</p>
Consistency with OHP major improvement policy	<ul style="list-style-type: none"> <li>●</li> <li>○</li> </ul>	<p>Consistent with the OHP major improvement policy, including protecting the existing system, improving efficiency and capacity of existing highway facilities, adding capacity to the existing system, and adding new facilities to the system.</p> <p>Is not consistent with any actions and policies in the OHP major improvement policy.</p>

## Transportation Improvement Range of Alternatives

This subsection documents the transportation improvement concepts that were considered by the Seaside Transportation System Plan (TSP) technical team. The basis for these concepts came from three sources:

1. A design charrette involving the technical team held at CH2M HILL on October 15, 2008
2. Suggestions from the Project Management Team (PMT) provided during the last two weeks of October, 2008
3. Suggestions from the Seaside community as collected at and following a public workshop held November 7, 2008

The concepts described in this section are organized into sub-several sections: bicycle/pedestrian; transit; local roadway; highway; and other/policy. A set of improvement ideas submitted by a community member following the November workshop is included as attachment A. These concepts were also considered by the project team.



## Bicycle/Pedestrian Concepts

This section is organized into four types of treatments – on-street improvements, off-street paths, crossings, and bicycle parking.

### On-Street Improvements

1. Continuous bicycle lanes and sidewalks along US 101 between Avenue U and Lewis & Clark Road
2. Bicycle lanes, and/or sidewalks as room allows to improve north-south and east-west connectivity, on some or all of the following:
  - a. Holladay
  - b. Wahanna
  - c. Lewis & Clark
  - d. 15<sup>th</sup>
  - e. 12<sup>th</sup>
  - f. Broadway
  - g. Avenue A/B
  - h. Avenue F
  - i. Avenue G
  - j. Avenue S
  - k. Avenue U
  - l. Others (including Franklin, Downing, Columbia, Spruce)
3. Slow street or pedestrian only street, even if during the day only on Broadway west of Holladay
4. Boardwalk on Wahanna. If you can not do it on the street, go off street with an elevated board walk

### Off-Street Paths

5. Extend multi-use path parallel to US 101
6. Bike ped loop connecting park areas in Seaside
7. High ground path along eastern edge of UGB
8. Connection to bike paths to north (Gearhart) and south (Cannon Beach)

### Crossings

9. Consider crosswalks at:
  - a. US 101 at Lewis & Clark
  - b. US 101 at 12<sup>th</sup>
  - c. US 101 at 6<sup>th</sup>
  - d. US 101 at Safeway
  - e. US 101 at Broadway
  - f. US 101 at A
  - g. US 101 at Holladay
  - h. US 101 at Avenue S
  - i. US 101 at Avenue U
  - j. The new library (on Broadway)
10. Consider bike/ped bridges at:
  - a. Necanicum River
    - i. North end of town, corresponding to new creek crossing south of 24<sup>th</sup>

- ii. 4<sup>th</sup>
- iii. 6<sup>th</sup>
- iv. Avenue L
- v. Avenue P
- vi. Avenue S
- b. US 101
  - i. Between Broadway and the Safeway
  - ii. At high school
  - iii. Avenue U
  - iv. Avenue S
- c. Neawanna Creek
  - i. South of 24<sup>th</sup>
  - ii. 15<sup>th</sup>
  - iii. Avenue F

### **Bicycle Parking**

11. Identify locations for additional bicycle parking
12. Consider metered bike parking

### **Transit Concepts**

This section is organized into four types of improvements – routing, stop locations, service frequency, and new service.

#### **Transit Routing**

1. SETD – Extended express route S. to Broadway. NET to 12<sup>th</sup> via Wahanna
2. Route bus down Downing instead
3. Run bus line to North Gateway Park

#### **Transit Stop Locations**

4. US 101 express, add a stop at Broadway instead or in addition to current stop locations
5. The US 101/Broadway stop is too close to the intersection and blocks up traffic
6. Park-and-rides on north and south ends of town with shuttle bus service in summertime

#### **Service Frequency**

7. Weekday peak
8. Weekday off-peak
9. Weekend service

#### **Additional Service**

10. Shuttle buses
11. Trolley loop
12. Park-and-rides on north and south ends of town with shuttle bus service in summertime

### **Local Roadway Concepts**

Local roadway concepts are organized into three sections – intersection concepts, cross section concepts, and other/policy.

## Intersections

1. US 101 / Lewis & Clark Road
  - a. Signal and right turn pocket
  - b. Combine intersection with 24<sup>th</sup> Avenue
    - i. Roundabout
    - ii. Signal
2. Lewis & Clark Road / Wahanna Road
  - a. Roundabout
  - b. T-intersection (three-way stop)
3. US 101 / 24<sup>th</sup> Street
  - a. Restrict left turns out
  - b. Signal
  - c. Combine intersection with Lewis and Clark
    - i. Roundabout
    - ii. Signal
4. New intersection south of 24<sup>th</sup> Street
  - a. Roundabout
  - b. Signal
5. US 101 / 12<sup>th</sup> Street
  - a. EB right turn pocket
  - b. EB left turn pocket
  - c. Both left and right turn lanes
  - d. WB right turn pocket
6. US 101 / Broadway
  - a. Eastbound change right turn pocket to left turn pocket, and westbound add left turn pocket
  - b. Extend southbound left turn pocket (on US 101)
  - c. Adjust signal timing to flush out highway traffic
7. US 101 / Safeway Parking Lot
  - a. Restrict left turns from Safeway
  - b. Signal at Safeway
  - c. Channelized left turns and sheltered pedestrian movement
  - d. Remove highway access at Safeway and have U turns at Broadway and Ave F and G
8. US 101 / Avenue F / Avenue G
  - a. Combine Avenues F and G by realigning Avenue G to meet US 101 at Avenue F
  - b. Combine Avenues F and G by realigning Avenue F to meet US 101 at Avenue G
  - c. Combine Avenues F and G by realigning both
  - d. Add traffic signal at both Avenue F and Avenue G (do not realign either) and operate as one signal
9. US 101 / Holladay Drive
  - a. Extend northbound left turn lane pocket on US 101
  - b. Roundabout (or landscape island)
  - c. Realign intersection and add a signal
  - d. Restrict left turns from Holladay

10. Avenue S/US 101:
  - a. Separate the right- and left-turn lanes (no signal)
  - b. Separate the right- and left-turn lanes and add a signal
11. Avenue U/US 101:
  - a. Add a southbound right turn pocket on US 101
  - b. Adjust signal timing to allow more time for cars on US 101

### Street Cross Sections

12. 12<sup>th</sup> Street Cross Section
  - a. On-street parking and bike/ped
  - b. On-street parking one side with bike lane one side and sidewalk both sides
  - c. Analyze extent of wider cross section both east and west of highway (east to Wahanna, beyond? West to Holladay, Prom?)
13. Wahanna Rd Cross-Sections
  - a. Bicycle lanes both sides, sidewalk east side
  - b. Shared use shoulder both sides
  - c. Shared use shoulder west side
  - d. Shared use shoulder east side
  - e. Analyze extent of cross section (Lewis & Clark to Avenue S), does it need to be consistent for entire extension? Identify phasing.
  - f. Extend Wahanna Road to Beerman to Highway 26 and on US 101
14. Broadway Cross Section
  - a. On-street parking and bike/ped
  - b. On-street parking one side with bike lane one side and sidewalk both sides
15. Broadway/Downtown
  - a. Consider circulation issues with Broadway as a slow-street or as a pedestrian-only street
16. Avenue S Cross-section:
  - a. Bicycle lanes and sidewalks
  - b. Bicycle lanes, sidewalks, and parking on one side

### Other

17. Improved school zone signage
18. Consistency in placement of school zones
19. Motorcycle parking
20. Make Avenue B a one-way street

### Highway Concepts

Three alternatives will be explored along US 101 – a three-lane section; a five-lane section; and a modified five-lane section. Each alternative will consider variations between concrete median, landscape median, and pedestrian islands in the center lane.

#### 1. Alternative 1: Three Lane Section

- a) Three-lane section with concrete median and left turns at intersections, u-turns allowed at certain intersections
- a) Three-lane section with landscaped median and left turns at intersections, u-turns allowed at certain intersections

- b) Three-lane section with pedestrian islands at regular intersections, u-turns allowed at certain intersections
- 2. Alternative 2: Five Lane Section**
  - a) Five-lane section with concrete median and left turns at intersections, u-turns allowed at certain intersections
  - c) Five-lane section with landscaped median and left turns at intersections, u-turns allowed at certain intersections
  - d) Five-lane section with pedestrian islands at regular intersections, u-turns allowed at certain intersections
- 3. Alternative 3: Modified Five Lane Section**
  - a) Modified five-lane section with narrower travel lanes, narrower median, and consideration of available ROW for on-street parking, bicycle lanes, and sidewalks. This alternative consists of a concrete median and left turns at intersections, u-turns allowed at certain intersections
  - e) Modified five-lane section with narrower travel lanes, narrower median, and consideration of available ROW for bicycle lanes and sidewalks. This alternative consists of a landscaped median and left turns at intersections, u-turns allowed at certain intersections
  - f) Modified five-lane section with narrower travel lanes, narrower median, and consideration of available ROW for on-street parking, bicycle lanes, and sidewalks. This alternative consists of pedestrian islands at regular intersections, u-turns allowed at certain intersections

#### Other

1. Look at a bypass for long-long-range plan – what steps to consider in TSP within 20-year timeframe
2. Look at elevating US 101 south of Seaside and putting in culverts
3. Interconnect signals along the highway to minimize slowdowns for traffic moving through town.

## Alternatives Evaluation

The previous section documented the range of project alternatives that were identified to address transportation needs in Seaside. The team refined these concepts into alternatives based on feedback from the public. These concepts were further refined following a meeting with various technical disciplines from the Oregon Department of Transportation (ODOT). Recommendations and alternatives presented in this section reflect this refinement process.

This section is organized into four improvement types:

1. US 101 Cross Sections
2. Intersections and Local Roadway Concepts
3. Bicycle and Pedestrian Concepts
4. Transit Concepts

## US 101 Cross Sections

This section addresses three potential cross sections for US 101, which are illustrated in Figure 1 and evaluated in Table 1:

- *Standard Three-Lane*: Three-lane cross section designed to meet ODOT standards, with a center median (landscaped, concrete, or pedestrian island). Median treatment would allow left turns at intersections and U-turns at select intersections.
- *Standard Five-Lane*: Five-lane cross section designed to meet ODOT standards, with a center median (landscaped, concrete, or pedestrian island). Median treatment would allow left turns at intersections and U-turns at select intersections.
- *Modified Five-Lane*: Five-lane cross section designed to be narrower than ODOT standards, attempting to gain the advantages of a five lane section while minimizing impacts. This alternative also assumes that the center lane would be a landscaped or concrete median, or a system of pedestrian islands. Median width would be narrower than standard.

Of the US 101 cross sections, the five-lane cross section, standard or modified, provides the greatest safety and mobility benefits and would address community concerns about congestion. However, no alternatives meet ODOT mobility standards, and a five-lane cross section, even the modified version, would require acquisition of property and would likely contain moderate impacts to businesses on US 101. The modified five lane would require multiple deviations from ODOT design standards.

It is anticipated that the discussion of the highway cross section is not complete. Several other factors should be considered along with US 101 cross sections:

1. The need for one or two travel lanes in each direction varies depending on the location along US 101. The PMT could consider a hybrid cross section varying between three and five lanes.
2. Meeting ODOT mobility standards will be difficult regardless of cross section width. The team could analyze duration of traffic congestion, and consider applying for alternate mobility standards.
3. Developments along the highway create added trips on the highway. The team could consider focusing new development off the highway, into the historic downtown Seaside and/or other growth nodes.
4. Extending Wahanna Road to the south improved conditions along US 101 tremendously. If this improvement does not move forward, it will require another look at highway improvements.
5. Seaside's size and topography lends itself well to walking and bicycling. Investment in infrastructure to benefit these alternate modes is likely to further improve travel conditions along the highway.

**TABLE 1**  
US 101 Cross Section Alternatives

Alternative	Safety for Autos	Safety for Ped/Bikes	Access for All Modes	Mobility	Connectivity	Cost Effectiveness	Livability	Environmental Resources	Major Findings
1) Standard Three Lane Cross Section	◐	●	◐	○	N/A	○	●	●	<ul style="list-style-type: none"> <li>• Safety improved for pedestrians due to shorter crossing distance than other alternatives, and designed to meet HDM standards; slow speeds decrease severity of auto crashes, however automobile congestion related crash hazards still exist</li> <li>• Decreases travel time for emergency vehicles compared to no build</li> <li>• Mobility substantially improved over no build, but not close to meeting standards; five intersections on US 101 have v/c ratios higher than 1.0.</li> <li>• Construction staging could be difficult due to space constraints</li> <li>• Generally fits within existing right-of-way (ROW), with some exceptions south of Avenue G</li> </ul>
2) Standard Five Lane Cross Section	●	◐	◐	●	N/A	●	○	○	<ul style="list-style-type: none"> <li>• Safety improved for automobiles, because congested related hazards would be reduced; however, pedestrians would need to cross a longer distance with greater auto travel speeds</li> <li>• Reduces travel time for emergency vehicles compared to no build and three lane alternative</li> <li>• Mobility is most improved with a 5-lane cross section (substantial improvements over no build, all intersections under 1.0 v/c)</li> <li>• Potential ROW acquisition greatest under this alternative</li> <li>• Alternative allows more room for construction staging</li> </ul>
3) Modified Five Lane Cross Section	◐	◐	◐	●	N/A	◐	◐	◐	<ul style="list-style-type: none"> <li>• Safety improved for automobiles, because congested related hazards would be reduced; longer crossing distance for pedestrians</li> <li>• Reduces travel time for emergency vehicles compared to no build and three lane alternative</li> <li>• Mobility is most improved with a 5-lane cross section (substantial improvements over no build, all intersections under 1.0 v/c)</li> <li>• ROW acquisition less than Alternative 2: Standard Five Lane Cross Section; this alternative would allow for room for staging</li> </ul>

<sup>1</sup> V/C = Volume-to-capacity ratio. A value of 1.0 means that traffic volumes are at capacity, and congested conditions would occur in the 30th highest hour.

## Intersections and Local Roadway Concepts

This section addresses intersections both on US 101 and local streets and other roadway improvement concepts off the highway. Alternatives are organized into three segments – the North Segment (Lewis & Clark Road to 12<sup>th</sup> Avenue); the Central Segment (12<sup>th</sup> Avenue to Avenue G); and the South Segment (Avenue G to Avenue U). Concepts are depicted in three figures, Figures 2, 3, and 4, and are evaluated in three tables, Tables 2, 3, and 4.

### North Segment

Alternatives considered at the north segment include:

- Vicinity of Lewis & Clark and 24<sup>th</sup> Avenues
- Lewis & Clark and Wahanna Road
- US 101 and 12<sup>th</sup> Street
- 12<sup>th</sup> Street Cross Section
- Wahanna Road Cross Section



**TABLE 2**  
Intersections and Local Roadway Alternatives (North Segment)

Alternative	Safety for Autos	Safety for Ped/Bikes	Access for All Modes	Mobility	Connectivity	Cost Effectiveness	Livability	Environmental Resources	Notes/Major Findings
<b>1. 24<sup>th</sup> Ave./Lewis &amp; Clark/US 101</b>									
Alt. A: Signal at Lewis & Clark (restrict access at 24 <sup>th</sup> )	●	●	◐	◐	◐	◐	◐	●	<ul style="list-style-type: none"> <li>Addresses safety issues related to safety for all modes</li> <li>Improves mobility at intersection (v/c of 1.04)</li> <li>Does not provide easy and clear east-west connectivity compared to other options for evacuation routes and daily bicycle, pedestrian, and auto traffic. Access restrictions at 24<sup>th</sup> reroute traffic west of highway down to 12<sup>th</sup>.</li> </ul>
Alt. B: Combine 24 <sup>th</sup> and Lewis & Clark Intersections: Roundabout (restrict access at current Lewis & Clark)	●	◐	●	○	●	○	◐	◐	<ul style="list-style-type: none"> <li>Improved safety for autos associated with reduced conflict points and slower speeds at roundabouts</li> <li>Reduced safety for bikes/peds associated with potential conflicts with turning vehicles</li> <li>Mobility is poor compared to signal option (v/c of 1.86)</li> <li>Combining 24<sup>th</sup> and Lewis and Clark intersections greatly improves east-west connectivity at north end of town</li> <li>Roundabout structure at or very close to creek challenging for both design and construction</li> <li>Could serve as a gateway to Seaside from the north</li> <li>Structure would need to span Neawanna Creek to avoid impact to fish bearing stream</li> <li>Property impacts associated with this option are higher than other options at north end</li> </ul>
Alt. C: Combine 24 <sup>th</sup> and Lewis & Clark Intersections: Signal (restrict access at current Lewis & Clark)	●	●	●	●	●	●	●	◐	<ul style="list-style-type: none"> <li>Addresses safety issues related to safety for all modes</li> <li>Improved mobility compared to other options (v/c of 0.78)</li> <li>Provides clear and direct east-west connectivity compared to other options for evacuation routes and daily bicycle, pedestrian, and auto traffic.</li> <li>Some right of way would be required.</li> <li>Structure would need to span Neawanna Creek to avoid impact to fish bearing stream</li> </ul>

**TABLE 2**  
Intersections and Local Roadway Alternatives (North Segment)

Alternative	Safety for Autos	Safety for Ped/Bikes	Access for All Modes	Mobility	Connectivity	Cost Effectiveness	Livability	Environmental Resources	Notes/Major Findings
Alt. D: New Road at High School Connecting Holladay and Wahanna (Restrict access at current 24 <sup>th</sup> , Lewis & Clark)	●	●	●	●	●	○	●	○	<ul style="list-style-type: none"> <li>• Would only be done in conjunction with high school relocation. Connection could serve property redevelopment efforts.</li> <li>• Provides clear and direct east-west connectivity and improves safety for auto traffic and emergency access</li> <li>• Improved mobility, but additional queues at signal could impact overall mobility on US 101</li> <li>• Structure would need to span Neawanna Creek to avoid impact to fish bearing stream. Creek is wider at this location than it is at 24<sup>th</sup></li> <li>• More property acquisitions needed as compared to other options at north end</li> </ul>
<b>2. Lewis &amp; Clark Rd./Wahanna Rd.</b>									
Alt. A: Roundabout	●	◐	◐	*	◐	◐	●	○	<ul style="list-style-type: none"> <li>• Improved safety for autos associated with related to sight distance, geometric deficiencies, and reduced conflict points/slower speeds at roundabouts</li> <li>• Reduced safety for bikes/peds associated with potential conflicts with turning vehicles</li> <li>• Minimal improvement to emergency response times</li> <li>• Not a study intersection – unable to assess mobility impacts</li> <li>• Facilitates easier connection between Wahanna and Lewis &amp; Clark Road though no new connection. Improves neighborhood access to US 101</li> <li>• Minor parking impacts would occur to North County Fellowship Church</li> <li>• Potential right of way impacts to mobile home park</li> </ul>

**TABLE 2**  
Intersections and Local Roadway Alternatives (North Segment)

Alternative	Safety for Autos	Safety for Ped/Bikes	Access for All Modes	Mobility	Connectivity	Cost Effectiveness	Livability	Environmental Resources	Notes/Major Findings
Alt. B: T-intersection	●	●	◐	*	◐	◐	◐	◐	<ul style="list-style-type: none"> <li>Addresses safety issues related to sight distance and geometric deficiencies for all modes</li> <li>Minimal improvement to emergency response times</li> <li>Not a study intersection – unable to assess mobility</li> <li>Facilitates easier connection between Wahanna and Lewis &amp; Clark Road though no new connection. Would improve neighborhood access to US 101</li> </ul>
<b>3. 12<sup>th</sup> St. Cross Sections</b>									
Alt. A: On-street parking and “sharrow,” shared lane marking for bicycles	◐	◐	◐	*	◐	●	●	◐	<ul style="list-style-type: none"> <li>Better-defined space for bicycles and autos than existing condition, though facilities are still shared.</li> <li>Improves an existing east-west connection and minor improvements to emergency service travel times</li> <li>Provides sidewalks on both sides</li> <li>Added width and improved definition of space expected to improve mobility</li> <li>Relatively low cost improvement</li> <li>Could require additional easement to construct</li> </ul>
Alt. B: Bicycle lanes	●	●	◐	*	◐	●	●	◐	<ul style="list-style-type: none"> <li>Better-defined space for bicycles and autos than existing condition, with separated facilities for autos, bicycles, and pedestrians.</li> <li>A bicycle lane on 12th Avenue creates an important east-west connection at the north end of Seaside. This street is selected because it connects all of the major north-south routes, including Wahanna, US 101, Holladay, Franklin and the Promenade.</li> <li>Added width and improved definition of space expected to improve mobility</li> <li>Improves an existing east-west connection and minor improvements to emergency service travel times</li> <li>Relatively low cost improvement</li> <li>Could require additional easement to construct</li> </ul>

**TABLE 2**  
Intersections and Local Roadway Alternatives (North Segment)

Alternative	Safety for Autos	Safety for Ped/Bikes	Access for All Modes	Mobility	Connectivity	Cost Effectiveness	Livability	Environmental Resources	Notes/Major Findings
<b>4. Wahanna Rd. Cross Sections</b>									
Alt. A: Bike lanes and sidewalk one side	◐	◐	●	*	◐	●	◐	◐	<ul style="list-style-type: none"> <li>Provides bicycle and pedestrian facilities for identified deficient route; however pedestrians must cross because sidewalk is one side only</li> <li>Added width and improved definition of space expected to improve mobility</li> <li>Improvements to an important alternate access route to US 101, and route to higher ground during emergencies</li> <li>Some right of way would need to be acquired</li> <li>Greater width provides better emergency vehicle access</li> </ul>
Alt. B: Shared use shoulder both sides	◐	○	◐	*	◐	◐	◐	◐	<ul style="list-style-type: none"> <li>Some right of way would need to be acquired</li> <li>Added width and improved definition of space expected to improve mobility</li> <li>Does not provide standard bike/ped facilities, requiring bikes and peds to share a shoulder with disabled vehicles. With increased traffic along this roadway in future this was flagged as a safety issue for bikes and peds.</li> </ul>
Alt. C: Bike lanes and sidewalks on both sides	●	●	●	*	●	●	◐	◐	<ul style="list-style-type: none"> <li>Provides bicycle and pedestrian facilities for identified deficient route; separated facilities on both sides of the street, improving safety over other options</li> <li>Improvements to an important alternate access route to US 101, and route to higher ground during emergencies</li> <li>Added width and improved definition of space expected to improve mobility</li> <li>Greater amount of curb, gutter, and sidewalk increases costs; however this option was considered an effective long-term solution</li> <li>Some right of way would need to be acquired</li> </ul>

**TABLE 2**  
Intersections and Local Roadway Alternatives (North Segment)

Alternative	Safety for Autos	Safety for Ped/Bikes	Access for All Modes	Mobility	Connectivity	Cost Effectiveness	Livability	Environmental Resources	Notes/Major Findings
<b>5. 12<sup>th</sup> Ave./US 101</b>									
Alt. A: Right turn pocket	●	◐	●	◐	◐	◐	●	●	<ul style="list-style-type: none"> <li>Option retains safety at this intersection for autos. Right turn pocket for autos could create a conflict with bicyclists and pedestrians crossing US 101.</li> <li>Important emergency evacuation route and east-west connection for all modes</li> <li>Mobility improved substantially over no build; does not meet mobility standards and little differential between alternatives at 12<sup>th</sup>.</li> <li>Potential to fit within current right of way or with little impact on adjacent properties.</li> </ul>
Alt. B: Left Turn Pocket	●	●	●	◐	◐	◐	●	●	<ul style="list-style-type: none"> <li>Important emergency evacuation route and east-west connection for all modes</li> <li>Mobility improved substantially over no build; does not meet mobility standards and little differential between alternatives at 12<sup>th</sup>.</li> <li>Potential to fit within current right of way or with little impact on adjacent properties.</li> </ul>
Alt. C: Right and left turn pocket	●	◐	●	●	◐	●	●	◐	<ul style="list-style-type: none"> <li>Option retains safety at this intersection for autos. Right turn pocket for autos could create a conflict with bicyclists and pedestrians crossing US 101.</li> <li>Important emergency evacuation route and east-west connection for all modes</li> <li>Mobility improved; slightly greater mobility than with the addition of left or right turn pockets individually</li> <li>Limited ROW at west side of intersection; structures are a constraint. This alternative is wider than others at this location and property acquisitions would occur</li> <li>Although property acquisition would occur, this better meets future needs and is more cost-effective</li> </ul>

### Central Segment

Alternatives considered at the central segment include: combining Avenues F and G; the US 101 and Broadway intersection; and the cross section of Broadway.

**TABLE 3**  
Intersections and Local Roadway Alternatives (Central Segment)

Alternative	Safety for Autos	Safety for Ped/Bikes	Access for All Modes	Mobility	Connectivity	Cost Effectiveness	Livability	Environmental Resources	Notes/Major Findings
<b>6. Combine F&amp;G</b>									
Alt. A: Realign F	●	●	●	*	●	●	◐	○	<ul style="list-style-type: none"> <li>Combining streets and adding a signal near Safeway provides clearer definition of traffic flow and direction, improving safety for autos, bikes, and peds.</li> <li>Combining streets creates a new east-west connection, and better serves emergency vehicles as well as pedestrians during emergency evacuation</li> <li>Not a study intersection – unable to assess mobility</li> <li>Additional traffic queues at signal could impact overall mobility on US 101</li> <li>Property impacts and displacements would occur</li> </ul>
Alt. B: Realign G	●	●	●	*	●	●	◐	○	<ul style="list-style-type: none"> <li>Combining streets and adding a signal near Safeway provides clearer definition of traffic flow and direction, improving safety for autos, bikes, and peds.</li> <li>Combining streets creates a new east-west connection, and better serves emergency vehicles as well as pedestrians during emergency evacuation</li> <li>Not a study intersection – unable to assess mobility</li> <li>Additional traffic queues at signal could impact overall mobility on US 101</li> <li>Property impacts and displacements would occur</li> </ul>

**TABLE 3**  
Intersections and Local Roadway Alternatives (Central Segment)

Alternative	Safety for Autos	Safety for Ped/Bikes	Access for All Modes	Mobility	Connectivity	Cost Effectiveness	Livability	Environmental Resources	Notes/Major Findings
Alt. C: Realign Both	●	●	●	*	●	●	◐	◐	<ul style="list-style-type: none"> <li>Combining streets and adding a signal near Safeway provides clearer definition of traffic flow and direction, improving safety for autos, bikes, and peds.</li> <li>Combining streets creates a new east-west connection, and better serves emergency vehicles as well as pedestrians during emergency evacuation</li> <li>Not a study intersection – unable to assess mobility</li> <li>Additional traffic queues at signal could impact overall mobility on US 101</li> <li>Property impacts would occur though displacements could be avoided</li> </ul>
Alt. D: Operate as one intersection	◐	◐	●	*	●	◐	◐	●	<ul style="list-style-type: none"> <li>Would create a long intersection requiring access control on US 101 between Avenue F and Avenue G</li> <li>No right on red from US 101 onto Avenue F and G would be needed to realize improved safety for bikes and pedestrians</li> <li>Additional traffic queues at signal could impact overall mobility on US 101</li> <li>Does not impact property</li> <li>Does not address need in long run and defers the cost to acquire property</li> </ul>
7. Broadway as slow street	●	●	●	*	●	●	◐	●	<ul style="list-style-type: none"> <li>Broadway in this section already attracts many pedestrians and functions as a lower traffic volume street</li> <li>Acceptability of concept from local businesses is uncertain</li> </ul>
8. Broadway/US 101	◐	◐	◐	●	◐	●	●	●	<ul style="list-style-type: none"> <li>Slight safety improvements to autos, bikes, peds, and emergency vehicles recognized due to decreased congestion</li> <li>Mobility would improve for eastbound and westbound traffic though intersection still does not meet mobility standard (v/c 1.01)</li> <li>Minor property impacts likely (no displacements)</li> </ul>
9. Broadway St. Cross sections									

**TABLE 3**  
Intersections and Local Roadway Alternatives (Central Segment)

Alternative	Safety for Autos	Safety for Ped/Bikes	Access for All Modes	Mobility	Connectivity	Cost Effectiveness	Livability	Environmental Resources	Notes/Major Findings
Alt. A: On-street parking and sharrows	◐	◐	◐	*	◐	●	●	◐	<ul style="list-style-type: none"> <li>Better-defined space for bicycles and autos than existing condition, though facilities are still shared.</li> <li>Improves an existing east-west connection and minor improvements to emergency service travel times</li> <li>Provides sidewalks on both sides</li> <li>Added width and improved definition of space expected to improve mobility</li> <li>Relatively low cost improvement</li> <li>Could require additional easement to construct</li> </ul>
Alt. B: Bicycle lanes	●	●	◐	*	◐	●	●	◐	<ul style="list-style-type: none"> <li>Better-defined space for bicycles and autos than existing condition, with separated facilities for autos, bicycles, and pedestrians.</li> <li>A bicycle lane on 12th Avenue creates an important east-west connection at the north end of Seaside. This street is selected because it connects all of the major north-south routes, including Wahanna, US 101, Holladay, Franklin and the Promenade.</li> <li>Improves an existing east-west connection and minor improvements to emergency service travel times</li> <li>Added width and improved definition of space expected to improve mobility</li> <li>Relatively low cost improvement</li> <li>Could require additional easement to construct</li> </ul>



### South Segment

Alternatives considered at the south segment included two main scenarios at Holladay Drive - improvements to the existing intersection, and a flyover. Associated with each scenario are concepts at US 101 / Holladay Drive; US 101 / Avenue S, and US 101 / Avenue U. In addition, this segment includes concepts for the Avenue S cross section and a southerly extension of Wahanna Road.

**TABLE 4**  
Intersections and Local Roadway Alternatives (South Segment)

Alternative	Safety for Autos	Safety for Ped/Bikes	Access for All Modes	Mobility	Connectivity	Cost Effectiveness	Livability	Environmental Resources	Notes/Major Findings
<b>Scenario 1: No Flyover at Holladay</b>									
10. Holladay Dr./US 101									
Alt. A: Extend left turn pocket on US 101	◐	N/A	◐	◐	N/A	◐	●	●	<ul style="list-style-type: none"> <li>Provides space for more left-turning vehicles to pull out of travel lane, moderately improving safety for vehicles</li> <li>Does not change conditions for bikes and peds</li> <li>More space provided for emergency vehicles to pull around left-turning or through vehicles</li> <li>Mobility on US 101 could improve with additional northbound left turn storage distance (queues would not block northbound through traffic),</li> <li>As demand increases, would likely require additional improvements to meet needs</li> <li>Does not impact adjacent properties</li> </ul>
Alt. B: Roundabout	●	◐	◐	○	N/A	○	◐	○	<ul style="list-style-type: none"> <li>Improved safety for autos associated with reduced conflict points/slower speeds at roundabouts</li> <li>Reduced safety for southbound bikes/peds associated with potential conflicts with turning vehicles</li> <li>Minimal improvement to emergency response times</li> <li>Mobility on US 101 not improved</li> <li>Potential gateway to Seaside for northbound travelers</li> <li>Requires greater property impacts than other options and would potentially impact access for several businesses</li> </ul>

**TABLE 4**  
Intersections and Local Roadway Alternatives (South Segment)

Alternative	Safety for Autos	Safety for Ped/Bikes	Access for All Modes	Mobility	Connectivity	Cost Effectiveness	Livability	Environmental Resources	Notes/Major Findings
Alt. C: T-intersection and signal	●	●	◐	◐	N/A	◐	●	○	<ul style="list-style-type: none"> <li>Signal better defines traffic movements, improving safety for autos, bikes, and peds as compared to no build</li> <li>Traffic signal should have a leading pedestrian phase for crossing US 101 to realize bike and ped safety benefits</li> <li>Minimal improvement to emergency response times</li> <li>Mobility improves for eastbound traffic though does not meet mobility standards (v/c 0.99)</li> <li>Displaces gas station, which is likely to require substantial environmental cleanup.</li> </ul>
11. Avenue S/US 101: Add signal	●	●	◐	◐	N/A	◐	◐	●	<ul style="list-style-type: none"> <li>Signal better defines traffic movements, improving safety for autos, bikes, and peds as compared to no build</li> <li>Minimal improvement to emergency response times</li> <li>Mobility improves for westbound traffic though does not meet mobility standards. Concern about close signal spacing between Avenue U, Avenue S, and Holladay.</li> <li>Support for signal at this location is uncertain</li> <li>Property impacts are minor</li> </ul>
12. Avenue U/US 101 Right turn pocket on Avenue U and adjust signal timing	●	◐	◐	●	N/A	●	◐	●	<ul style="list-style-type: none"> <li>Safety benefits for autos associated with reduced congestion. Right turn pocket could make crossing highway more difficult for bikes and peds</li> <li>Minimal improvement to emergency response times</li> <li>Mobility improves for eastbound traffic. Overall v/c of intersection meets standards (v/c 0.7).</li> <li>Construction staging may be difficult due to need to keep road open during construction.</li> <li>Property impacts are minor.</li> </ul>

**TABLE 4**  
Intersections and Local Roadway Alternatives (South Segment)

Alternative	Safety for Autos	Safety for Ped/Bikes	Access for All Modes	Mobility	Connectivity	Cost Effectiveness	Livability	Environmental Resources	Notes/Major Findings
<b>Scenario 2: Flyover at Holladay</b>									
10. Holladay Dr. / US 101	●	●	●	●	●	◐	◐	○	<ul style="list-style-type: none"> <li>Provides new east-west connection point and improves connection north-south and addresses safety issues for all modes and emergency access at intersection</li> <li>Moderate improvements to travel times for emergency vehicles between highway and Holladay</li> <li>Removes at grade connection, reducing congestion</li> <li>Cost is high</li> <li>Property impacts and displacements would occur, greater ROW acquisition costs</li> </ul>
11. Avenue S/US 101: Restrict Access	●	●	◐	◐	N/A	●	●	●	<ul style="list-style-type: none"> <li>Restricting left turns from Avenue S reduces potential conflicts for autos, bikes, and peds</li> <li>Emergency response times unaffected</li> <li>Southbound trips are diverted away from Avenue S. This intersection operates well within standard (V/C 0.49)</li> </ul>
12. Avenue U/US 101 Create a four way intersection with signal	●	●	●	◐	●	◐	◐	○	<ul style="list-style-type: none"> <li>Signal better defines traffic movements, improving safety for autos, bikes, and peds as compared to no build</li> <li>Provides new connection between Avenue U and points east (including indirect new connection to Wahanna).</li> <li>Emergency response times moderately improved.</li> <li>Mobility is still of concern. Trips from Holladay and Avenue S are diverted to Avenue U and signal operates well above standard (v/c 1.08)</li> <li>Construction staging may be difficult due to need to keep road open during construction.</li> <li>Substantial property impacts assumed.</li> </ul>

**TABLE 4**  
Intersections and Local Roadway Alternatives (South Segment)

Alternative	Safety for Autos	Safety for Ped/Bikes	Access for All Modes	Mobility	Connectivity	Cost Effectiveness	Livability	Environmental Resources	Notes/Major Findings
<b>Other South Segment Concepts</b>									
13. Avenue S Cross section	●	●	●	*	●	●	●	◐	<ul style="list-style-type: none"> <li>• Better-defined space for bicycles and autos than existing condition, with separated facilities for autos, bicycles, and pedestrians.</li> <li>• A bicycle lane on Avenue S creates an important east-west connection at the south end of Seaside.</li> <li>• Improves an existing east-west connection and minor to moderate improvements to emergency service travel times</li> <li>• Important emergency evacuation route and east-west connection for all modes</li> <li>• Added width and improved definition of space expected to improve mobility</li> <li>• Acquisition of property minor, though environmental unknown</li> </ul>
14. Extend Wahanna Rd. to south	●	●	●	●	●	◐	◐	○	<ul style="list-style-type: none"> <li>• Safety benefits associated with reduced congestion on US 101, new facilities on Wahanna Road that serve autos, bikes, and peds</li> <li>• New route for emergency service providers</li> <li>• Mobility benefits realized on US 101 associated with allowing local trips to use Wahanna</li> <li>• Would require a Urban Growth Boundary expansion and potential natural resources impact</li> <li>• Provides an alternate route in southern end of study area to US 101, especially in the event of flooding</li> <li>• High cost</li> </ul>

## Bicycle and Pedestrian Improvements

This section evaluates a network of potential bicycle and pedestrian improvements throughout the study area, both on US 101 and along city streets. Alternatives are depicted in Figure 5, and are evaluated in Table 5 below.

**TABLE 5**  
Bicycle and Pedestrian Improvement Concepts

Alternative	Safety for All Modes	Access for All Modes	Mobility	Connectivity	Cost Effectiveness	Livability	Environmental Resources	Major Findings
16. Holladay: A bicycle lane on Holladay	●	●	●	●	●	●	●	<ul style="list-style-type: none"> <li>Provides an alternative to traveling on US 101</li> <li>Could be signed a scenic route, encouraging bicycle travelers to diver from US 101</li> </ul>
17. Avenue U: A bicycle lane on Avenue U	●	●	●	●	●	●	●	<ul style="list-style-type: none"> <li>Provides an east-west connection at the south end of town between the Promenade and US 101</li> </ul>
18. Franklin, 9th Avenue, Downing, Columbia, and Ocean Vista: Signed Bicycle/Pedestrian Route	●	●	●	●	●	●	●	<ul style="list-style-type: none"> <li>Creates a north-south route for bicycles and pedestrians on the west side of town</li> </ul>
19. 15th Avenue and 17th Avenue: Signed Bicycle/Pedestrian Route	●	●	●	●	●	●	●	<ul style="list-style-type: none"> <li>Provides a signed connection between Holladay and US 101</li> </ul>
20. 1st Avenue, Broadway, Avenue A/B, Avenue F, Avenue G, Avenue S (west of US 101) and Lewis and Clark Way: Signed Bicycle/Pedestrian Route	●	●	●	●	●	●	●	<ul style="list-style-type: none"> <li>Provides signed connections as part of a comprehensive bicycle and pedestrian network</li> </ul>
21. Lincoln, Cooper, Alder, Hilltop and Aldercrest: Signed Bicycle/Pedestrian Route	●	●	●	●	●	●	●	<ul style="list-style-type: none"> <li>Provides connections between US 101 and proposed high ground pathway</li> </ul>
22. High ground pathway along eastern edge of UGB	●	●	●	●	●	●	○	<ul style="list-style-type: none"> <li>Provides a north-south connection on the east end of town, out of the Tsunami zone</li> <li>Easements needed and environmental impacts could be minor but unknown</li> </ul>

**TABLE 5**  
**Bicycle and Pedestrian Improvement Concepts**

Alternative	Safety for All Modes	Access for All Modes	Mobility	Connectivity	Cost Effectiveness	Livability	Environmental Resources	Major Findings
23. Shared use pathway creating connections between Wahanna and high ground pathway	●	●	●	●	●	●	○	<ul style="list-style-type: none"> <li>Provides connections between US 101 and proposed high ground pathway</li> <li>Easements needed and environmental impacts could be minor but unknown</li> </ul>
24. Bike and pedestrian loop connecting parks areas in Seaside	●	●	●	◐	○	●	○	<ul style="list-style-type: none"> <li>This is not recommended as an end in itself</li> <li>The comprehensive recommended bicycle and pedestrian network will provide good access to Seaside parks as well as other destinations</li> </ul>
25. Connection to bike paths to north (Gearhart) and south (Cannon Beach)	●	●	●	○	○	●	○	<ul style="list-style-type: none"> <li>Would provide safer connections to neighboring towns, but could be extremely costly to implement</li> </ul>
26. US 101 at Lewis & Clark: Crosswalks	●	●	●	●	●	●	●	<ul style="list-style-type: none"> <li>Provides a safer crossing environment at this complicated intersection. Recommend trying to whichever roadway improvement is recommended at this end.</li> </ul>
27. US 101 at 17th Avenue, 15th Avenue, 9th Avenue, 6th Avenue, 3rd Avenue: Crosswalks	●	●	●	●	●	●	●	<ul style="list-style-type: none"> <li>Provides frequent pedestrian crossings, approximately every three blocks</li> <li>A crosswalk serving Safeway is particularly important to improve pedestrian safety at this very busy intersection</li> </ul>
28. US 101 at 12th Avenue, 1st Avenue, Avenue A, Avenue F, Avenue S, and Avenue U: Crosswalks	●	●	●	●	●	●	●	<ul style="list-style-type: none"> <li>These intersections are part of the network of frequent crossings of US 101</li> <li>Crosswalks at these intersections connect to bicycle/pedestrian routes originating at the beach.</li> <li>Construct as part of roadway improvement projects in these areas</li> </ul>
29. US 101 at Holladay: Crosswalks	●	●	●	●	●	●	●	<ul style="list-style-type: none"> <li>If Holladay is signalized, crosswalks are recommended</li> </ul>
30. The new library (on Broadway): A mid-block crossing on Broadway	●	●	◐	●	●	●	●	<ul style="list-style-type: none"> <li>Provide for safer pedestrian travel between the new library and Broadway Middle School, the Parks Department, the skate park and the community center</li> <li>May cause auto-traffic delays on Broadway east of US 101; however proximity of school and library make this an important pedestrian crossing point</li> </ul>

**TABLE 5**  
Bicycle and Pedestrian Improvement Concepts

Alternative	Safety for All Modes	Access for All Modes	Mobility	Connectivity	Cost Effectiveness	Livability	Environmental Resources	Major Findings
31. Necanicum River at Avenue S: Bicycle/Pedestrian Bridge	●	●	●	●	●	●	◐	<ul style="list-style-type: none"> <li>In combination with recommended improvements (22 &amp; 28), would provide a continuous non-motorized connection from the beach and Promenade all the way to high ground</li> </ul>
32. Neawanna Creek at 15th Avenue: Bicycle/Pedestrian Bridge	●	●	●	●	●	●	◐	<ul style="list-style-type: none"> <li>Provides a connection to Seaside High School</li> <li>Provides an additional route to access high ground by way of Wahanna and a proposed shared use pathway</li> </ul>
33. Neawanna Creek at Avenue F: Bicycle/Pedestrian Bridge	●	●	●	●	●	●	◐	<ul style="list-style-type: none"> <li>In combination with recommended improvements (22 &amp; 28), will provide a continuous non-motorized connection from the beach and Promenade all the way to high ground</li> </ul>
34. Neawanna Creek, south of 24th Avenue: Bicycle/Pedestrian Bridge	◐	◐	●	○	○	●	◐	<ul style="list-style-type: none"> <li>Not recommended as it will not create an evacuation route to high ground</li> </ul>
35. Necanicum River at north end of town, corresponding to new pedestrian creek crossing south of 24th Avenue: Bicycle/Pedestrian Bridge	◐	◐	●	○	○	●	◐	<ul style="list-style-type: none"> <li>Not recommended as it will not create an evacuation route to high ground</li> </ul>
36. Identify locations for additional bicycle parking	●	●	●	●	●	●	●	<ul style="list-style-type: none"> <li>Bicycle parking is an essential element of a bicycle network</li> <li>Concern about theft is one of the reasons most frequently cited by people that do not bicycle</li> </ul>
16. Holladay: A bicycle lane on Holladay	●	●	●	●	●	●	●	<ul style="list-style-type: none"> <li>Provides an alternative to traveling on US 101</li> <li>Could be signed a scenic route, encouraging bicycle travelers to diver from US 101</li> </ul>

## Transit Service Improvements

This section evaluates potential transit improvements throughout the study area. Alternatives are depicted in Figure 6, and are evaluated in Table 6 below. Most improvements would be implemented by Sunset Empire Transit District (SETD). These potential transit improvements were developed in coordination with SETD.

**TABLE 6**  
Transit Improvement Concepts

Alternative	Safety for All Modes	Access for All Modes	Mobility	Connectivity	Cost Effectiveness	Livability	Environmental Resources	Major Findings
Route bus down Downing Street	●	●	●	●	●	●	●	<ul style="list-style-type: none"> <li>• SETD has been exploring this, and will likely change route</li> <li>• Greater ridership potential than existing route</li> </ul>
Move current US 101/Broadway stop away from intersection	●	●	●	●	●	●	●	<ul style="list-style-type: none"> <li>• Current bus stop location causes traffic queues at US 101/Broadway</li> </ul>
Park-and-rides on north and south ends of town with shuttle bus service in summertime	●	●	●	●	◐	●	●	<ul style="list-style-type: none"> <li>• Depending on funding, SETD could implement within a few years</li> </ul>
Increase weekday service frequency	●	●	●	●	◐	●	●	<ul style="list-style-type: none"> <li>• SETD will consider depending on ridership demand</li> </ul>
Weekend/Sunday service	●	●	●	●	○	●	●	<ul style="list-style-type: none"> <li>• Funding and ridership are limited; SETD may be able to implement in five years or later</li> </ul>
Trolley loop	●	●	●	●	○	●	●	<ul style="list-style-type: none"> <li>• SETD will consider depending on availability of funding; would require public-private partnership</li> </ul>



## Next Steps

The evaluation conducted to date is preliminary and will be modified by the PMT to reflect the common understanding of that group. Benefits and tradeoffs of the various roadway, bicycle, pedestrian, and transit concepts will be discussed with the community at a series of two workshops in winter 2010. This process will allow for new concepts, modifications of existing concepts, and hybrids of concepts. Recommendations of projects to include in the TSP will be made by the PMT following these workshops.



ATTACHMENT A

# Project Ideas Received From Community Members

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## PEDESTRIAN MODE

- COMPLETE SIDEWALKS ON HWY 101 THROUGH ENTIRE CITY
- COMPLETE SIDEWALK ALONG SUNSET ON INLAND SIDE FROM HIGHLAND TO AVE U
- IN CONJUNCTION WITH STATE ON THE OCEAN SIDE OF SUNSET CREATE NEW SIDEWALK AND ACCESS STEPS TO THE BEACH IN THE PUBLIC USE AREA OF THE COVE
- EXTEND FROM SOUTH FROM AVE U TO PUBLIC USE AREA OF THE COVE

## BICYCLE MODE

- CREATE TWO NEW BIKEWAYS THROUGH THE CITY, ONE ALONG THE RIVER AND ONE ALONG THE CREEK
- COMPLETE BIKEWAY ALONG HWY 101 THROUGH THE ENTIRE CITY
- IN CONJUNCTION WITH THE STATE, CREATE NEW BIKEWAY FROM THE SOUTH END OF SUNSET TO CANNON BEACH
- IDENTIFY EXISTING BIKEWAY ALONG SUNSET AND COMPLETE BETWEEN AVE U AND THE END OF SUNSET

## MOPEDS/ELECTRIC CARTS

- CREATE CAPABILITY FOR RESIDENTS TO USE THESE ON PUBLIC STREETS
- CREATE PARKING AND ACCESS FOR RESIDENTS TO USE THESE VEHICLES FOR SHOPPING AT SAFEWAY/RITE AIDE SITE

## AUTO MODE

- IMPROVE SIGNALIZED INTERSECTIONS ON 101 TO DESIGN IDENTIFIED BY ODOT PLAN TO INCREASE TRAFFIC FLOW
- COMPLETE 101 TURNING LANE THROUGH CITY
- ELIMINATE LEFT TURNS TO AND FROM SAFEWAY/RITE AIDE AND 101 AND REPLACE WITH NEW STREET BEHIND STRIP COMMERCIAL ON 101 SOUTH TO AVE F. ELIMINATE LEFT TURN AND ACROSS ACCESS TO 101 FROM 1<sup>ST</sup> AVE, AVE A, AVE B, AND AVE C BUT CONTINUE TO ALLOW RIGHT TURN ACCESS FROM 101 TO THOSE TO/FROM THOSE STREETS. CONSTRUCT LANDSCAPED MEDIAN ON 101 TO PREVENT LEFT TURNS AND ACROSS TRAFFIC IN THIS AREA.
- REBUILD NORTH END OF 101 BRIDGE OVER CREEK TO IMPROVE SAFETY BY INCREASING WIDTH
- APPLY PRESSURE TO POST OFFICE TO RELOCATE TO WEST SIDE OF HWY 101 BETWEEN AVE B AND BROADWAY USING OLD LIBRARY /BANK SITES

### AUTO MODE (CONTINUED)

- IMPROVE LINE OF SIGHT BETWEEN EDGEWOOD AND OCEAN VISTA, BEACH, AND COLUMBIA BY EXPANDING EDGEWOOD TO ITS FULL RIGHT-OF-WAY WIDTH AND RESTRIPIING IN THAT AREA
- CREATE EMERGENCY EGRESS FOR SOUTH PART OF CITY BY EXTENDING HIGHLAND (GRAVEL) TO RIPPERT WITH A BREAKAWAY BARRIER TO ALLOW USE ONLY IN EMERGENCY
- INSTALL A REFUELING SYSTEM FOR ELECTRIC/ HYDROGEN VEHICLES

### TRUCK MODE

- MAKE SEASIDE TRAFFIC BYPASS SHOWN IN CITY AND COUNTY MASTER PLAN MANDATORY ONLY FOR TRUCKS AND ROUTE ALONG WAHANNA ROAD, LIMIT SPEED TO 30 MPH.
- INSTALL A COMPRESSED NATURAL GAS TRUCK REFUELING STATION ALONG TRUCK ROUTE.

### BUS MODE

- PROVIDE CONNECTION TO HILLSBOROUGH MAX STATION AND 185<sup>TH</sup> ST SHOPPING CENTER THREE ROUND TRIPS A DAY
- PROVIDE CONNECTION TO ASTORIA AIRPORT FOR SEATTLE AND PORTLAND SERVICE

### WATER MODE

- RESTORE OCEAN PIER AT AVE U TO ALLOW FISHING/PLEASURE AND CRUISE BOAT ACCESS TO VISITORS AND RESIDENTS. USE AS LOCATION FOR OCEAN VIEW DINING ESTABLISHMENTS AND BOAT TOURS TO ASTORIA OVER THE BAR.
- PROMOTE KAYAK RENTALS AND PLEASURE BOAT MOORING AT RIVER/CREEK/ OCEAN ESTUARY
- PROMOTE BOAT LAUNCH AND UPRIVER ACCESS TO AVE U

### AIR MODE

- CENTRALIZE HELICOPTER AND FIXED WING SIGHTSEEING FLIGHTS AT SEASIDE AIRPORT
- ESTABLISH A FLY-IN RESTAURANT, HOTEL SHUTTLE, AND CAR RENTAL AT AIRPORT