TECH MEMO #6: PREFERRED ALTERNATIVES

Date: September 6, 2019 Project #: 22254.0

To: Larry Lewis and Kerry Kemp, City of Waldport
David Helton, Oregon Department of Transportation

From: Susan Wright, Matt Bell, Krista Purser, Alicia Hunter, Kittelson & Associates, Inc.

Project: Waldport Transportation System Plan (TSP) Update

Subject: Tech Memo #6: Preferred Alternatives

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INTRODUCTION

This memorandum identifies the preferred alternatives that form the basis for the transportation system improvement projects included in the planned and financially constrained transportation systems for the Waldport Transportation System Plan (TSP) update. Previous technical memorandums documented existing and future transportation system conditions and potential alternatives to address the gaps and deficiencies. The information provided in these and other tech memos was combined to develop projects for the planned transportation system and identify priorities for the financially constrained transportation system based on the goals and objectives and evaluation criteria. The information provided in this memo will be updated based on input from the project team, the project advisory committees and the general public. The projects identified in this memorandum for the planned and financially constrained transportation systems will be incorporated in the Waldport TSP update.

ROADWAY PLAN

The roadway system within Waldport consists of two state highways (US 101 and OR 34) and several city streets. The streets located east of US 101 and north of OR 34 are based on a grid system while the streets located throughout the rest of the city reflect natural, environmental, and topographical constraints. Based on a review of the roadway system, there are several areas where existing roadways could be improved and where new roadways could be constructed to increase the efficiency of the transportation system as well as improve access and circulation for all travel modes. The roadway plan includes projects to increase the efficiency of the transportation system through changes in the functional classification of roadways, development of roadway standards and standard cross sections, and improvements in connectivity.

FUNCTIONAL CLASSIFICATION

Potential changes to the functional classification of roadways within Waldport were determined based on a review of the federal, state, and local functional classification plans. The changes are intended to better align the classifications and provide a plan that aligns with the intended use of the roadways. Figure 1 and Table 1 summarize the proposed changes in functional classification.

Table 1: Proposed Changes in Functional Classification

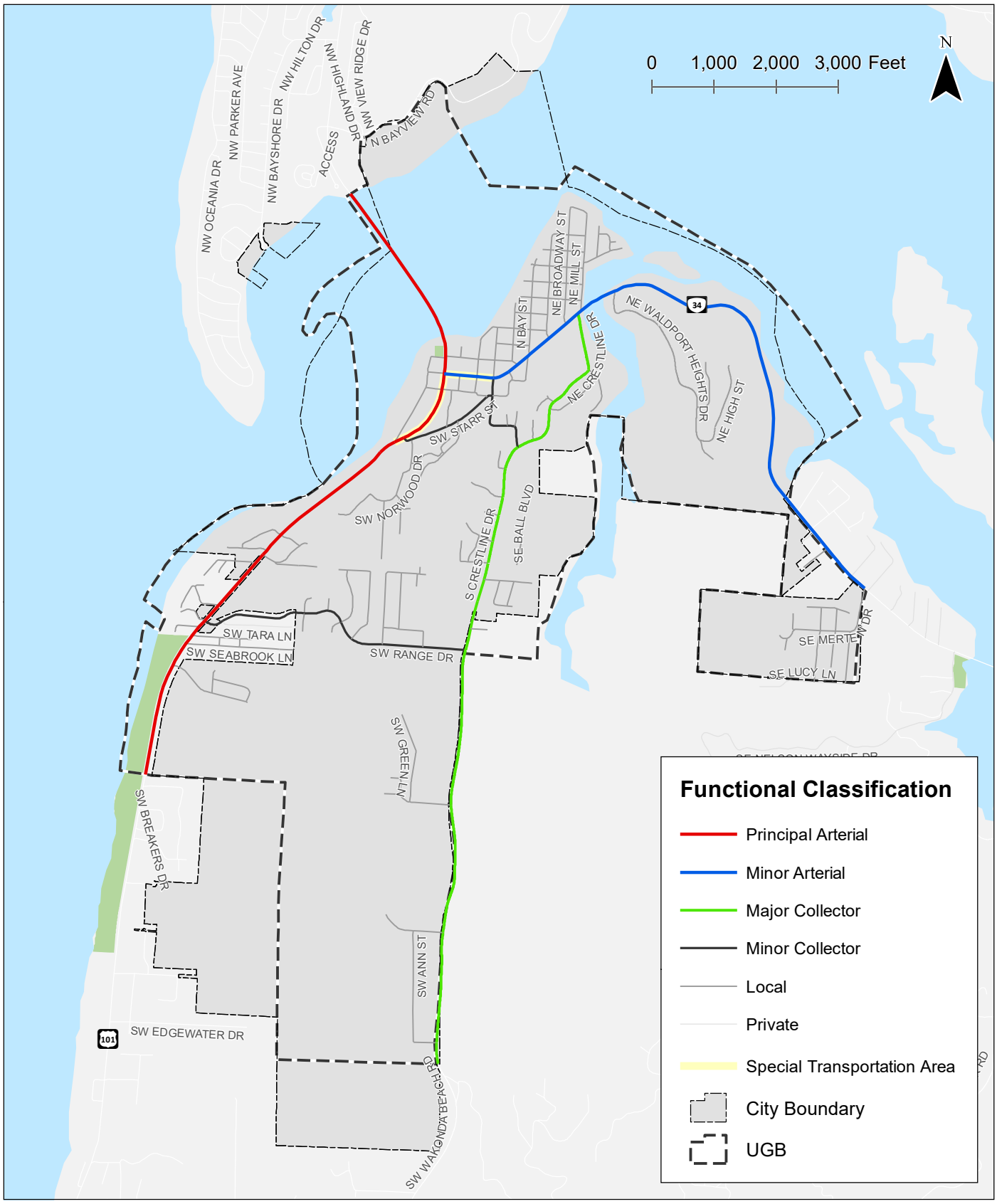
Street	Segment	Existing Classification	Future Classification
OR 34	US 101 to east City Limits	Principal Arterial	Minor Arterial
Crestline Drive	OR 34 to south City Limits	Minor Collector	Major Collector
Starr Street	US 101 to Cedar Street	Local Street	Minor Collector

In addition to the changes shown in Table 1, the federal functional classifications of Cedar Street and Range Drive should be updated to align with the City functional classification plan, which designates both streets as minor collectors. The proposed changes in functional classification shown in Figure 1 and Table 1 will impact the design and function of the roadways and the types of treatments that can be considered to manage traffic. The proposed changes in functional classification will be evaluated further by the project team and approved by the City prior to inclusion in the TSP update.

ROADWAY CROSS SECTIONS

Roadway cross sections were developed for Waldport based on the existing physical characteristics of roadways within the city. The design of a roadway can (and will) vary from street to street and segment to segment due to natural, environmental, and topographical constraints as well as adjacent land use and demand. The roadway cross sections are intended to define a system that allows standardization of key characteristics to provide consistency, but also to provide criteria for applications that provide some flexibility while meeting the design standards. Exhibits 1 through 5 illustrate the cross sections for each functional classification. The cross sections will be evaluated further by the project team and approved by the City prior to inclusion in the TSP update.

Unless prohibited by significant natural, environmental, and/or topographical constraints, newly constructed streets should meet the maximum standards indicated in the cross sections. When widening an existing street, the City may use lesser standards than the maximum to accommodate existing development constraints where determined to be appropriate. In some locations "green streets" (those that utilize vegetation or pervious material to manage drainage) may be appropriate due to design limitations or adjacent land use.



Functional Classification
Waldport, Oregon

Figure
1

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Coordinate System: NAD 1983 StatePlane Oregon North FIPS 3601 Feet Intl

Table 2 summarizes the characteristics of the cross-section elements by functional classification.

Table 2: Cross Section Standards

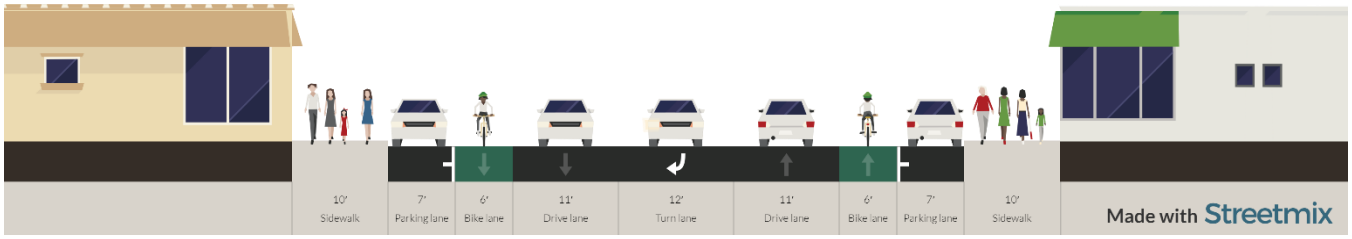
Cross Section Element	Functional Classification	Width/Option
Right-of-Way	Principal Arterial	80 Feet
	Minor Arterial	80 Feet
	Major Collector	60 Feet
	Minor Collector	60 Feet
	Local Street	50-60 Feet
Surface Width	Principal Arterial	30-60 Feet
	Minor Arterial	34-50 Feet
	Major Collector	26-47 Feet
	Minor Collector	26-47 Feet
	Local Street	20-36 Feet
Vehicle Travel Lane	Principal Arterial	11-12 Feet
	Minor Arterial	11-12 Feet
	Major Collector	10-11 Feet
	Minor Collector	10-11 Feet
	Local Street	10-11 Feet
Median/Turn Lane	Principal Arterial	13-14 Feet
	Minor Arterial	13-14 Feet
	Major Collector	12-13 Feet
	Minor Collector	12-13 Feet
	Local Street	None
On-street Parking	Principal Arterial	7-8 Feet (Commercial)
	Minor Arterial	7-8 Feet (Commercial)
	Major Collector	None
	Minor Collector	None
	Local Street	7-8 Feet
Bike Lane/Shoulder	Principal Arterial	6 Feet
	Minor Arterial	6 Feet
	Major Collector	6 Feet
	Minor Collector	6 Feet
	Local Street	None

Cross Section Element	Functional Classification	Width/Option
Sidewalk	Principal Arterial	6 Feet; 10 feet (Commercial)
	Minor Arterial	6 Feet; 10 feet (Commercial)
	Major Collector	6 Feet
	Minor Collector	6 Feet
	Local Street	6 Feet
Landscape Strip	Principal Arterial	0-4 Feet[1]
	Minor Arterial	0-4 Feet[1]
	Major Collector	0-4 Feet
	Minor Collector	0-4 Feet
	Local Street	0-4 Feet
Surface Type	Principal Arterial	(See Note #2)
	Minor Arterial	(See Note #2)
	Major Collector	3" AC
	Minor Collector	3" AC
	Local Street	3" AC
Base Depth	Principal Arterial	(See Note #3)
	Minor Arterial	(See Note #3)
	Major Collector	8"
	Minor Collector	8"
	Local Street	6"
Maximum Grade	Principal Arterial	6%
	Minor Arterial	6%
	Major Collector	15%
	Minor Collector	15%
	Local Street	15%
Design Speed, Minimum Tangent, Minimum Curve	Principal Arterial	(See Note #2)
	Minor Arterial	(See Note #2)
	Major Collector	(See Note #3)
	Minor Collector	(See Note #3)
	Local Street	(See Note #3)
Curb Type	Principal Arterial	16"
	Minor Arterial	16"

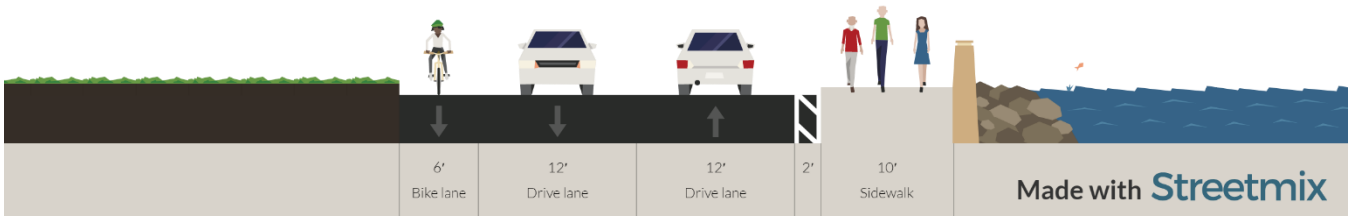
Cross Section Element	Functional Classification	Width/Option
	Major Collector	16"
	Minor Collector	16"
	Local Street	12"
Neighborhood Traffic Management	Principal Arterial	Not Appropriate
	Minor Arterial	Not Appropriate
	Major Collector	Not Appropriate
	Minor Collector	Use Discretion
	Local Street	Appropriate
Transit/Freight Traffic	Principal Arterial	Appropriate
	Minor Arterial	Appropriate
	Major Collector	Appropriate
	Minor Collector	Local Service Only
	Local Street	Local Service Only

Notes:
The City may require green street variations of each cross section. These variations may include installing rain gardens or swales, using pervious material for the sidewalks, and in some cases providing a sidewalk on only one side of the street.
1. Tree wells/planter boxes are sufficient in commercial areas.
2. Design shall be in accordance with Oregon Department of Transportation Design standards.
3. Design shall be in accordance with AASHTO standards.

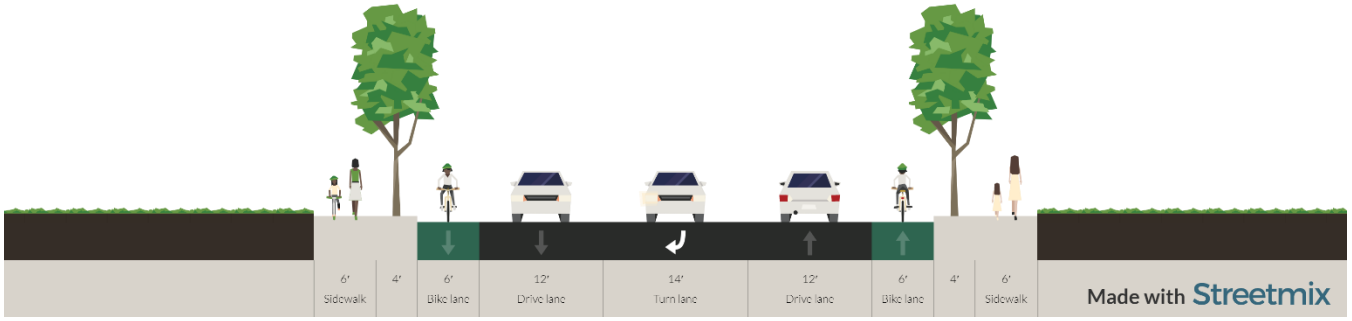
Exhibit 1: Principal Arterial Cross Sections



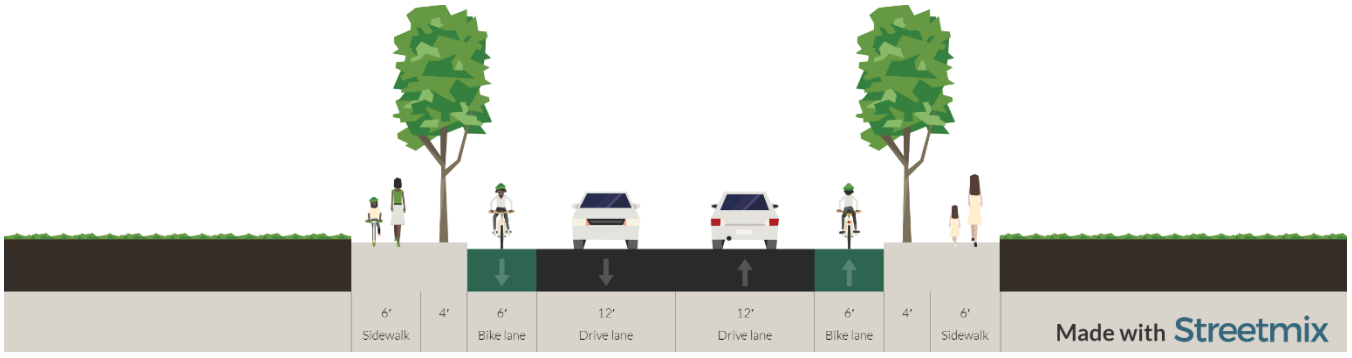
US 101 Downtown Waldport



US 101 South of Downtown Waldport – Seawall

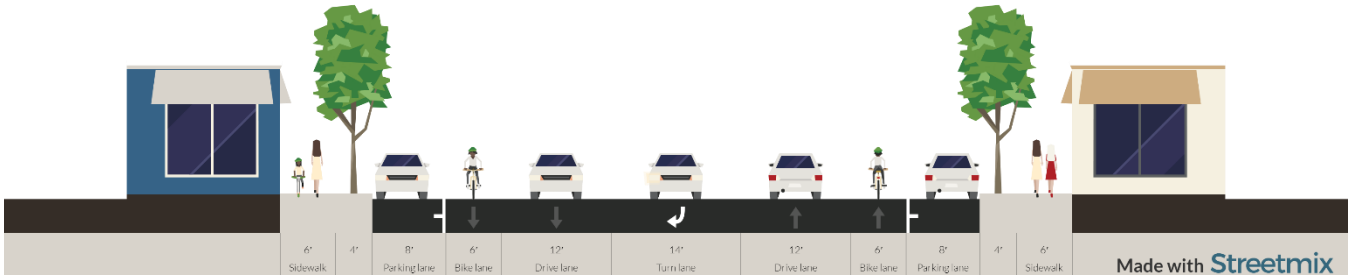


US 101 South of Downtown Waldport – Median/Turn Lane

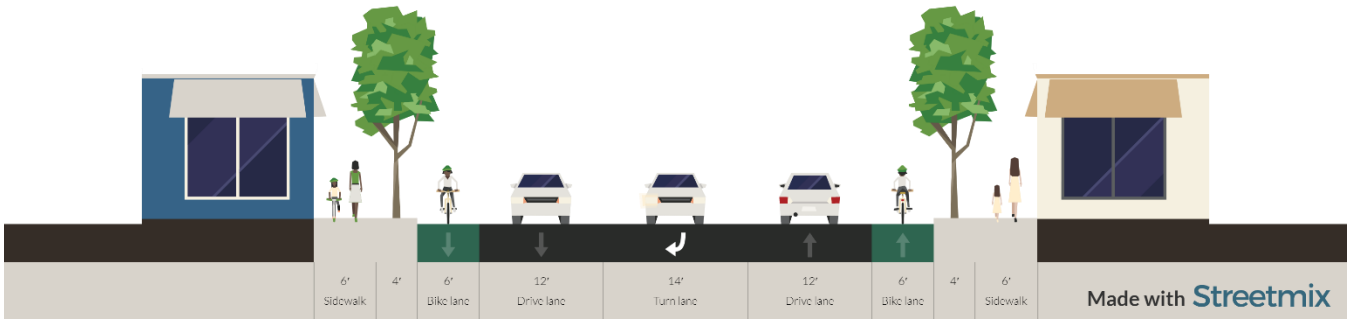


US 101 South of Downtown Waldport

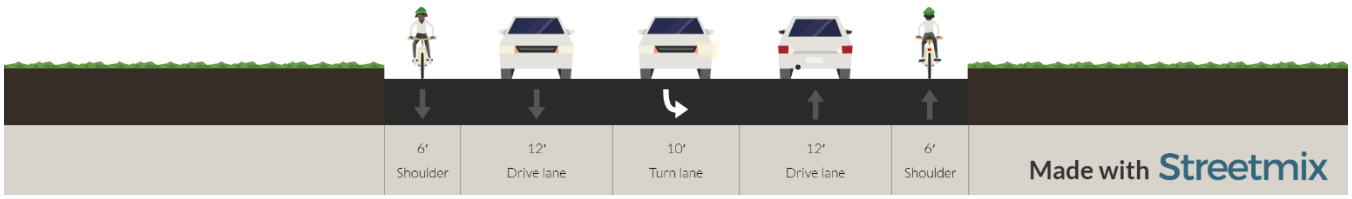
Exhibit 2: Minor Arterial Cross Sections



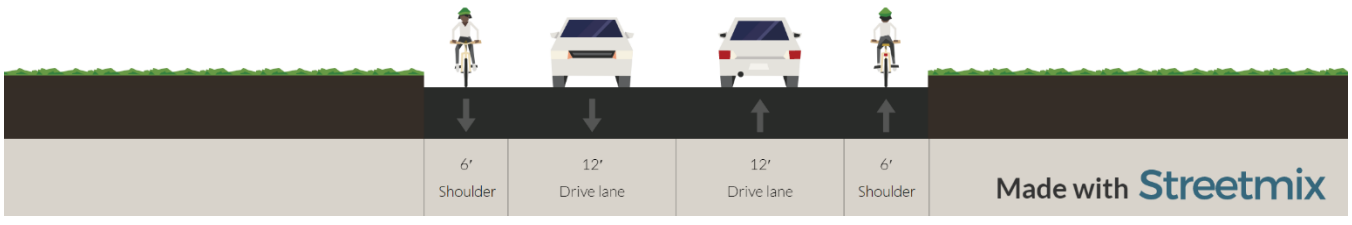
OR 34 Downtown Waldport (US 101 to Cedar Street)



OR 34 Downtown Waldport (Cedar Street to Mill Street)

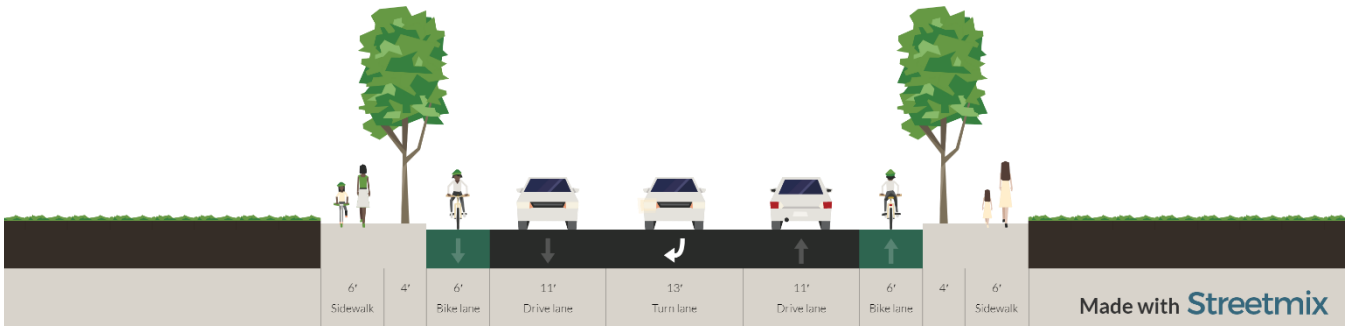


OR 34 East of Downtown Waldport – Median/Turn Lane

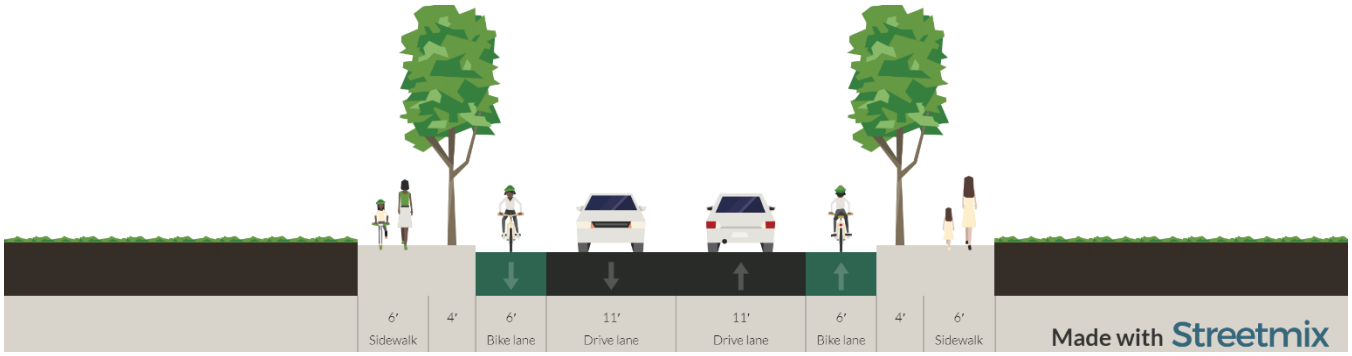


OR 34 East of Downtown Waldport

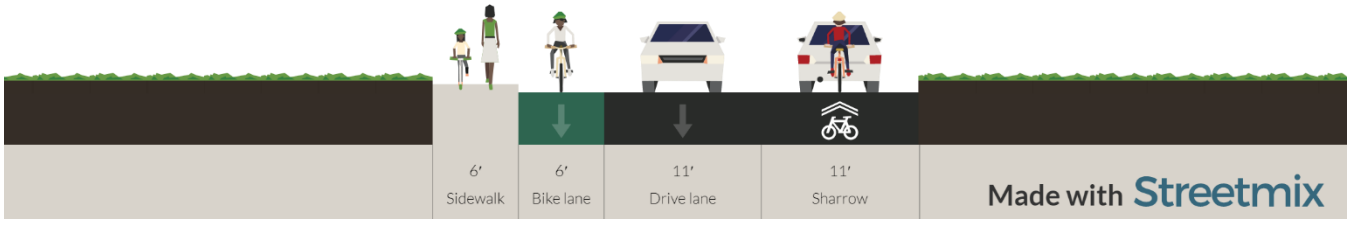
Exhibit 3: Major Collector Cross Sections



Crestline Drive – Medial/Turn Lane

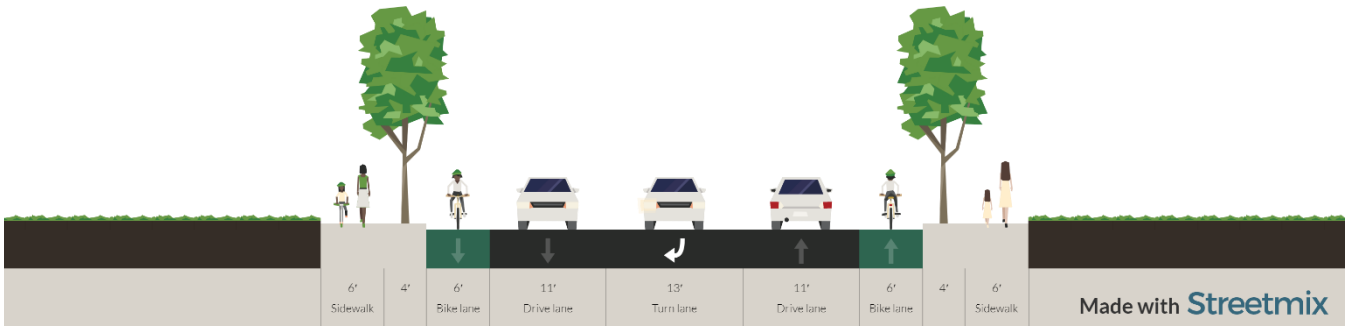


Crestline Drive

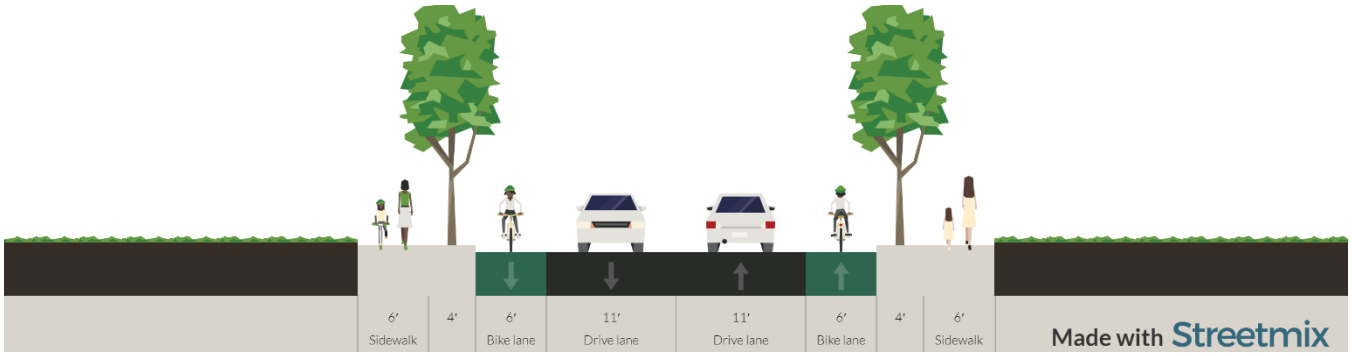


Crestline Drive (Lint Slough Road to Cedar Street)

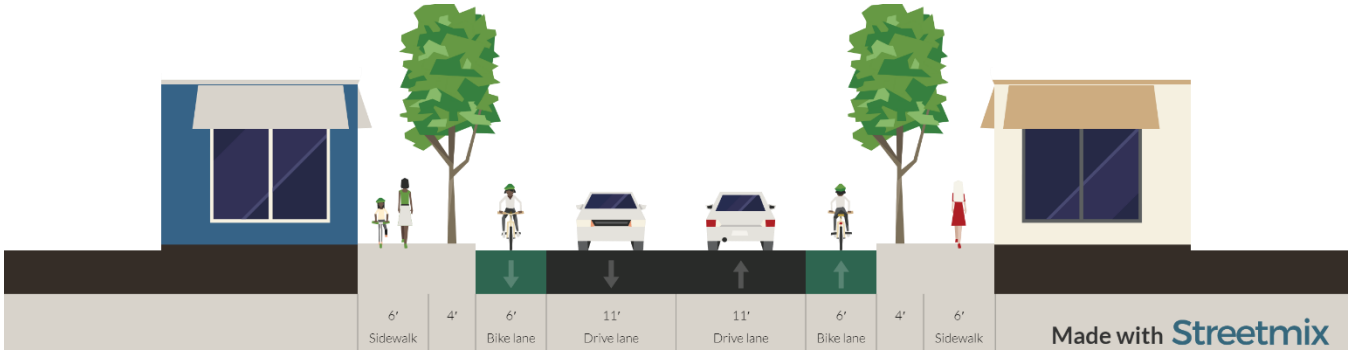
Exhibit 4: Minor Collector Cross Sections



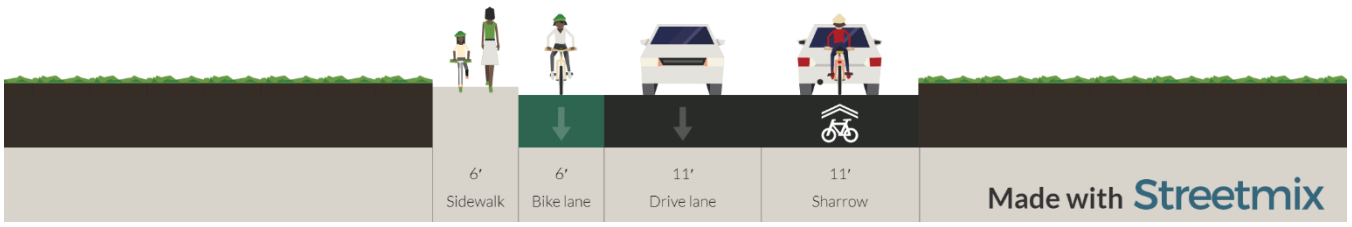
Range Drive/Star Street – Medial/Turn Lane



Range Drive/Star Street

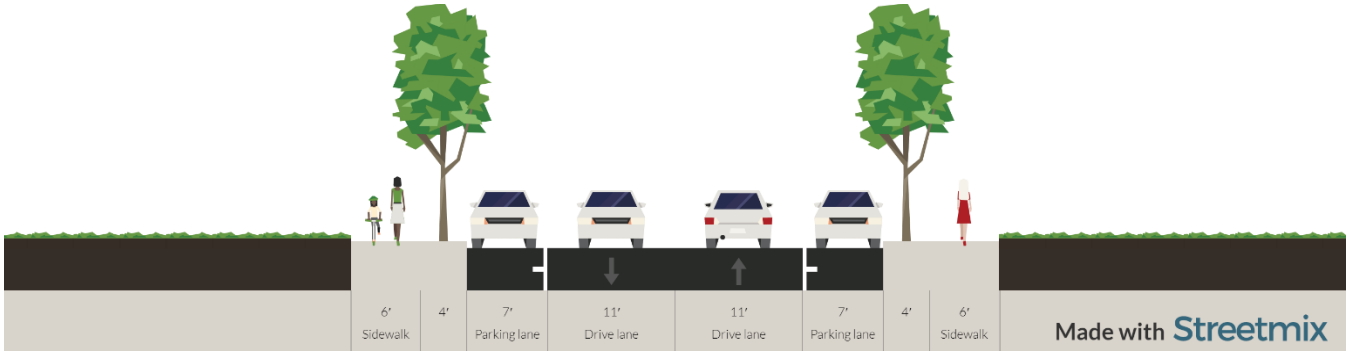


Cedar Street Downtown Waldport

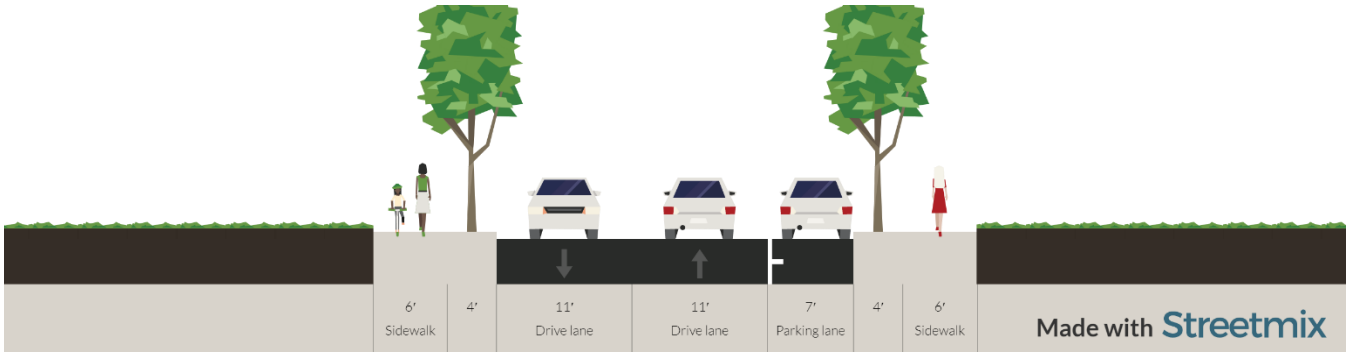


Cedar Street (Star Street to Crestline Drive)

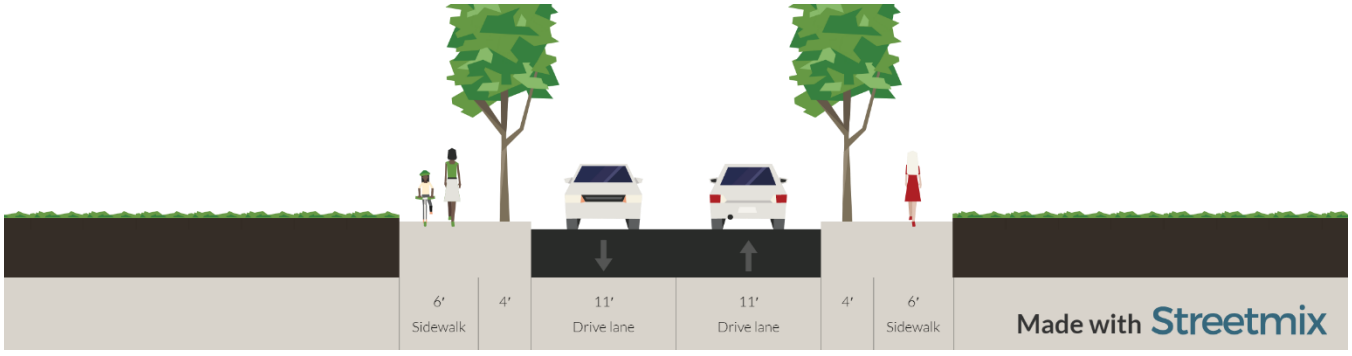
Exhibit 5: Local Street Cross Sections



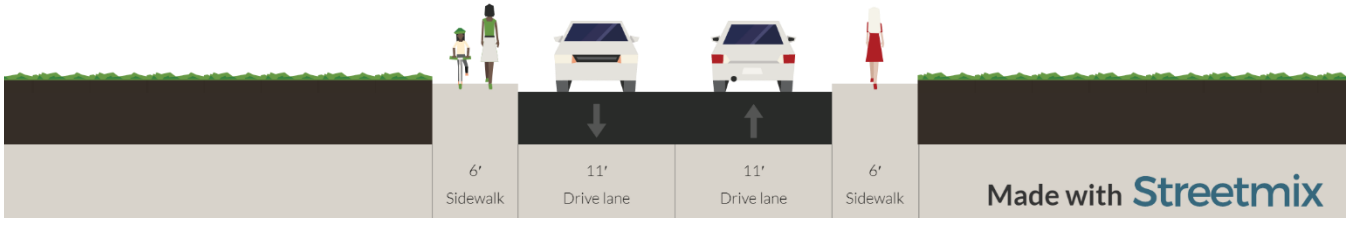
Local Street



Local Street – Parking on One Side



Local Street – No Parking



Local Street - Constrained

STREET CONNECTIVITY

In addition to the local street connectivity and extensions discussed later in this report, several major street connections were identified for the Waldport TSP update. Table 3 identifies the street connectivity projects for the Waldport TSP update. The priorities shown in Table 3 are based on the project evaluation criteria and will be updated based on input from the project team, advisory committee, and the general public. The cost estimates are based on average unit costs for similar roadway improvements and on the Industrial Park Master Plan cost estimates. The cost estimates do not include right-of-way.

Table 3: Street Connectivity Projects

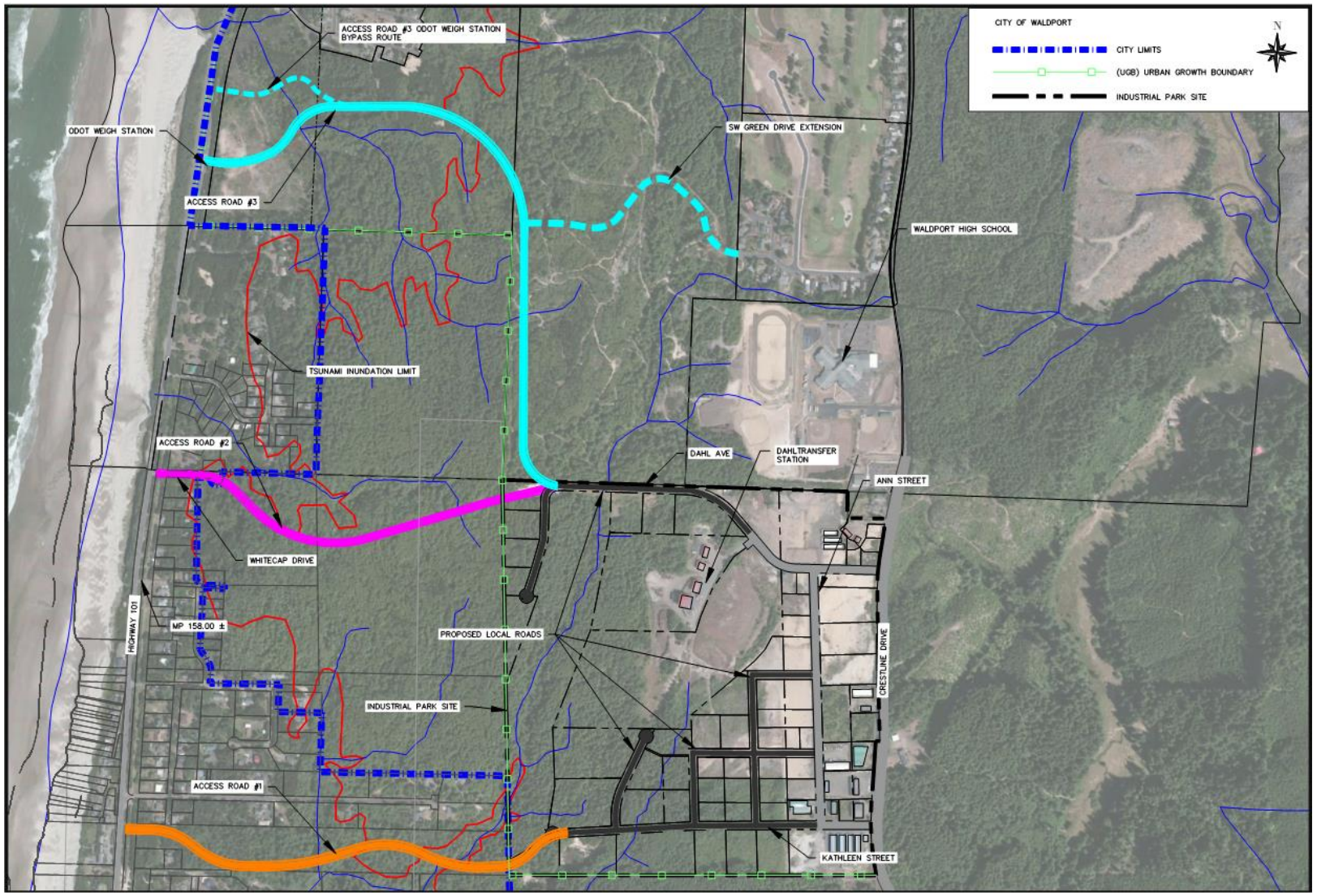
Map ID	Location	Project	Priority	Cost
A1[1]	Crestline Drive	Convert Crestline Drive to a one-way, southbound (lowland to upland) roadway with pedestrian and bicycle access in both directions	High	$25,000
A2	Crestline Drive	Widen and convert Crestline Drive to a two-way facility with pedestrian and bicycle access in both directions	Medium	$1,905,000
A3	Access Road #1	Connect US 101 near SW Sitka Ridge Court and to the Industrial Park at an extension of SW Kathleen Street (See exhibit 6 below)	Low	$5,220,000
A4	Access Road #2	Connect US 101 at SW Whitecap Drive and to the Industrial Park at an extension of SW Dahl Avenue (See exhibit 6 below)	Medium	$4,535,000
A5	Access Road #3	Connect US 101 at the weigh station and to the Industrial Park at an extension of SW Dahl Avenue (See exhibit 6 below)	Low	$8,440,000
			Total Low Priority Project Costs	$13,660,000
			Total Medium Priority Project Costs	$6,440,000
			Total High Priority Project Costs	$25,000
			Total Street Connectivity Plan Project Costs	**$20,125,000**

1. This project is only needed to address potential slide activity prior to redevelopment of the roadway.

STREET CAPACITY

Street capacity was evaluated to consider automobile, pedestrian, bicycle, and transit needs. Table 4 identifies the street capacity projects for the Waldport TSP update. The priorities shown in Table 4 are based on the project evaluation criteria and will be updated based on input from the project team, advisory committee, and the general public. The cost estimates are based on average unit costs for similar roadway improvements. The cost estimates do not include right-of-way, though right-of-way impacts are anticipated to be minimal. Figure 2 illustrates the schematic of project A6, which includes considerations of pedestrian, bicycle, and transit projects identified later in this memorandum.

Exhibit 1: Industrial Area Access Road Alternatives



– Access Road #3

– Access Road #2

– Access Road #1

H:\22\22254 - Waldport TSP Update\dwgs\Conceptual Designs\Concepts_V4.dwg Sep 13, 2019 - 10:39am - kpurser Layout Tab: Overall Layout

SCHEMATIC LAYOUT ONLY. NOT ALL DRIVEWAYS, STREETS, FACILITIES, OR CROSSINGS ARE SHOWN.

US 101 & OR 34 Conceptual Design
Waldport, OR

Figure
2

KITTELSON & ASSOCIATES

Table 4: Street Capacity Projects

Map ID	Location	Project	Priority	Cost
A6	US 101	Reconfigure US 101 from the Alsea Bridge to Maple Street with a three-lane section	High	$10,000[1]
A7	US 101/ Range Drive	Reduce the curb radius at the northeast and southwest corners of the intersection	Low	$5,000[1]
A8	US 101	Install a continuous two-way left turn lane along US 101 from the seawall to Patterson Memorial State Park Entrance-Ocean Hills Drive	Low	$145,000[1]
A9	US 101/State Park Entrance	Realign Patterson State Park Entrance with Ocean Hills Drive	Low	$25,000[1]
A10	Broadway Street	Install an 8-foot shoulder/parking lane on the east side of the roadway north of Spencer Street to provide staging for trucks with trailers waiting to access the boat launch	Medium	$175,000
			Total Low Priority Project Costs	$175,000
			Total Medium Priority Project Costs	$175,000
			Total High Priority Project Costs	$10,000
			Total Street Capacity Costs	**$360,000**

1. The cost reflects the City's likely contribution (10%) to the overall project cost.

ACCESS MANAGEMENT PLAN

The City's current access management policy is limited; however, it maintains and enhances the integrity (capacity, safety, and level of service) of city streets. Consolidating or eliminating driveways or street connections can reduce the potential for conflicts, including bicycle and pedestrian conflicts, and improve safety, mobility, and traffic flow. The city needs a balance of streets that provide access with streets that serve mobility. A number of potential access management techniques and strategies were identified to continue to preserve transportation system investments and guard against deteriorations in safety and increased congestion. Table 5 summarizes the Access Management policy recommendations for the TSP update.

Table 5: Access Management Plan Projects

Map ID	Location	Project	Priority	Cost
AM1	Access Spacing Standards	Modify city access spacing standards according to a roadway's functional classification	Medium	TBD
AM2	Access Variance Process	Define a variance process for when the standard cannot be met	Medium	TBD
AM3	Access Consolidation	Establish an approach for access consolidation over time	Medium	TBD
			Total Low Priority Project Costs	$0

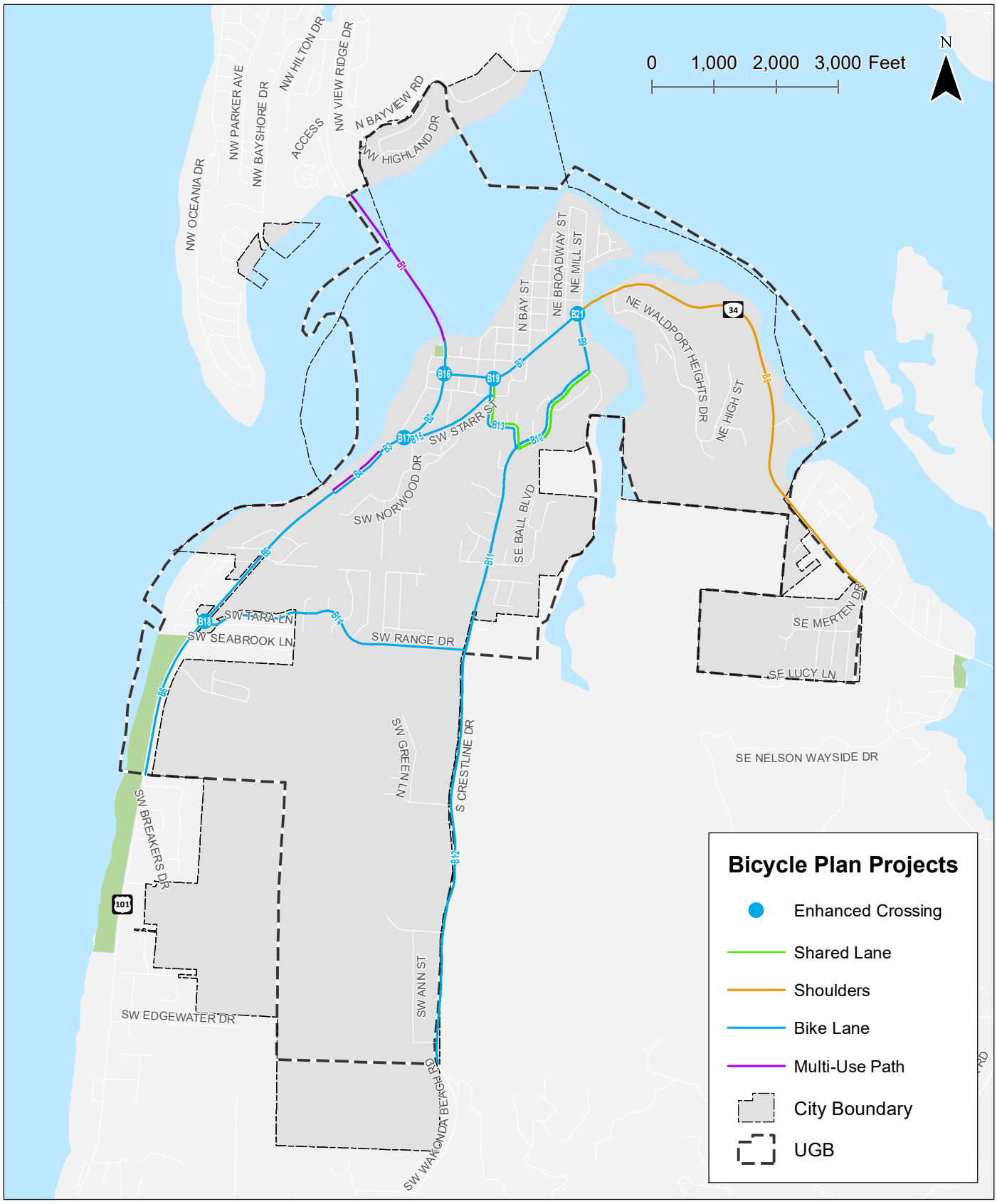
Total Medium Priority Project Costs	TBD
Total High Priority Project Costs	$0
Total Access Management Plan Project Costs	**TBD**

BICYCLE PLAN

Bicycle facilities within Waldport primarily consist of shared roadways and shoulder bikeways as well as bicycle parking. Table 6 identifies the bicycle plan projects for the Waldport TSP update. As shown, the projects are separated into projects along street segments and at intersections. The priorities shown in Table 6 are based on the project evaluation criteria and will be updated based on input from the project team, advisory committee, and the general public. The cost estimates are based on average unit costs for similar roadway improvements. The cost estimates do not include right-of-way. Figure 3 illustrates the location of the bicycle plan projects.

Table 6: Bicycle Plan Projects

Map ID	Location	Project	Priority	Cost
Street Segments				
B1	US 101	Install 10-foot multi-use paths on both sides of the Alsea Bridge	Medium	$190,000[1]
B2	US101	Install 6-foot bike lanes on both sides of the roadway from the Alsea Bridge to Maple Street – coordinate with Project A6	High	0[1,2]
B3	US 101	Install 6-foot bike lanes on both sides of the roadway from Maple Street to the Seawall	High	<$5,000[1]
B4	US101	Install a 10-foot multi-use path on the west side of the roadway and a 6-foot bike lane on the east side of the roadway along the Seawall[3]	High	$85,000[1]
B5	US 101	Install 6-foot bike lanes on both sides of the roadway from the Seawall to Range Drive	Medium	$45,000[1]
B6	US 101	Install 6-foot bike lanes on both sides of the roadway from Range Drive to the south city limits	Low	$55,000[1]
B7	OR 34	Install 6-foot bike lanes on both sides of the roadway from US 101 to Mill Street	High	$5,000[1]
B8	OR 34	Install 6-foot shoulders on both sides of the roadway from Mill Street to east city limits	Medium	$105,000[1]
B9	Crestline Drive	Install a 6-foot bike lane on the east side of the roadway from OR 34 to Lint Slough Road	Medium	$340,000
B10	Crestline Drive	Install shared lane pavement markings (sharrows) and signs in the northbound (downhill) direction and a 6-foot bike lane in the southbound (uphill) direction from Lint Slough Road to Cedar Street	Low	$1,005,000



Bicycle Plan Projects
Waldport, Oregon

Figure
3

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KITTELSON & ASSOCIATES

Coordinate System: NAD 1983 StatePlane Oregon North FIPS 3601 Feet Intl

Map ID	Location	Project	Priority	Cost
B11	Crestline Drive	Install 6-foot bike lanes on both sides of the roadway from Cedar Street to Range Drive	Medium	$1,420,000
B12	Crestline Drive	Install 6-foot bike lanes on both sides of the roadway from Range Drive to the south city limits	Low	$1,765,000
B13	Cedar Street	Install shared lane pavement markings (sharrows) and signs in the northbound (downhill) direction and install a 6-foot bike lane in the southbound (uphill) direction	Medium	$345,000
B14	Range Drive	Install 6-foot bike lanes on both sides of the roadway from US 101 to Crestline Drive	Medium	$1,875,000
B15	Starr Street	Install 6-foot bike lanes on both sides of the roadway from US 101 to Cedar Street	Low	$740,000
Intersections				
B16	US 101/ OR 34	Install skip striping along US 101 with green paint in the conflict areas[4]	High	<$5,000[1]
B17	US 101/ Starr Street	Install skip striping along US 101 with green paint in the conflict areas[4]	High	<$5,000[1]
B18	US 101/ Range Drive	Install an enhanced bicycle crossing with median refuge island on US 101 at Range Drive[4]	Medium	$15,000[1]
B19	OR 34/ Cedar Street	Install skip striping along OR 34 with green paint in the conflict areas[4]	High	<$5,000[1]
B20	OR 34/ Cedar Street	Install an enhanced bicycle crossing with supplemental signs on OR 34 at Cedar Street[4]	High	$5,000[1]
B21	OR 34/ Crestline Drive	Install skip striping along OR 34 through the intersection with green paint in the conflict areas[4]	High	<$5,000[1]
B22	OR 34/ Crestline Drive	Install an enhanced bicycle crossing with supplemental signs on OR 34 at Crestline Drive[4]	High	<$5,000[1]
			Total Low Priority Project Costs	$3,565,000
			Total Medium Priority Project Costs	$4,335,000
			Total High Priority Project Costs	$125,000
			Total Bicycle Plan Project Costs	**$8,025,000**

1. The cost reflects the City's likely contribution (10%) to the overall project cost.
2. The cost is included in the roadway plan.
3. The 6-foot bike lane on the east side of the roadway may not be feasible, and therefore may be limited to a four-foot shoulder or eliminated during the design process.
4. Installation of enhanced crossings requires coordination with ODOT on the location and type of crossing treatments.

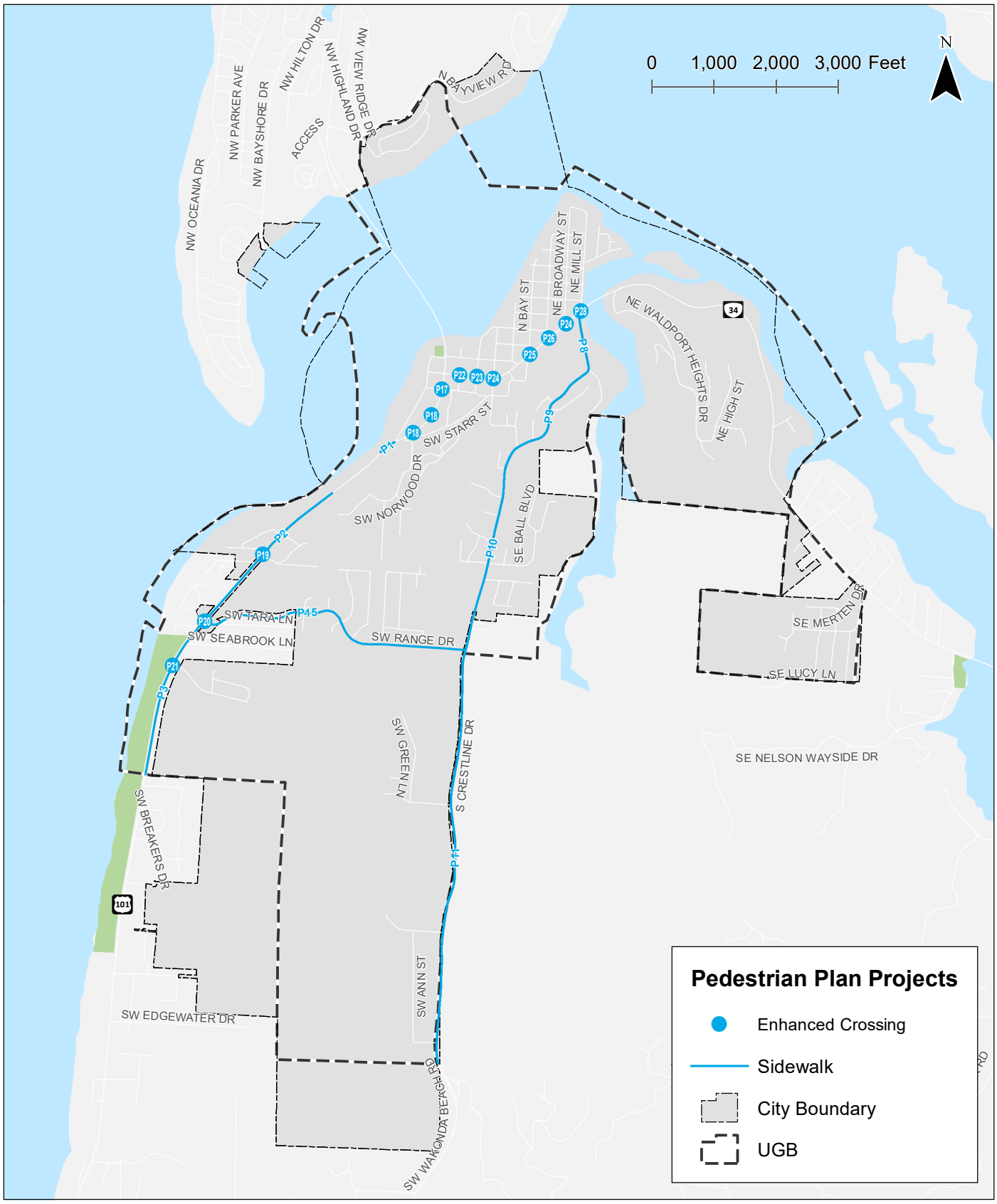
PEDESTRIAN PLAN

Pedestrian facilities within Waldport are primarily located within the downtown area along US 101 and OR 34 as well as several nearby or adjacent streets. Pedestrian facilities are also located along other major roadways adjacent to more recent development. The facilities primarily consist of sidewalks, crosswalks, and multi-use paths and trails, which are addressed below.

Table 7 identifies the pedestrian plan projects for the Waldport TSP update. As shown, the projects are separated into projects along street segments and at intersections. The priorities shown in Table 7 are based on the project evaluation criteria and will be updated based on input from the project team, advisory committee, and the general public. The cost estimates are based on average unit costs for similar roadway improvements. The cost estimates do not include right-of-way. Figure 4 illustrates the location of the pedestrian plan projects.

Table 7: Pedestrian Plan Projects

Map ID	Location	Project	Priority	Cost
Street Segments				
P1	US 101	Install 6-foot sidewalks on both sides of the roadway from Maple Street to the Seawall	High	$15,000[1]
P2	US 101	Install 6-foot sidewalks on both sides of the roadway from the Seawall to Range Drive	Medium	$115,000[1]
P3	US 101	Install 6-foot sidewalks on both sides of the roadway from Range Drive to the south city limits	Low	$130,000[1]
P4[2]	US 101	Install street lighting at regular intervals from Maple Street to Range Drive	High	$40,000[1]
P5[2]	US 101	Install street lighting at regular intervals from Range Drive to the south city limits	Low	$30,000[1]
P6[2]	OR 34	Install pedestrian-scale lighting from US 101 to Mill Street	High	$25,000[1]
P7[2]	OR 34	Install street lighting at regular intervals from Mill Street to the east city limits	Medium	$55,000[1]
P8	Crestline Drive	Install a 6-foot sidewalk on the east side of the roadway from OR 34 to Lint Slough Road	Medium	$215,000
P9	Crestline Drive	Install a 6-foot sidewalk on the west side of the roadway from Lint Slough Road to Cedar Street	Low	$0[2]
P10	Crestline Drive	Install 6-foot sidewalks on both sides of the roadway from Cedar Street to Range Drive	Medium	$1,555,000
P11	Crestline Drive	Install a 6-foot sidewalk on the west side of the roadway from Range Drive to the south city limits	Low	$1,540,000



Pedestrian Plan Projects
Waldport, Oregon

Figure
4

Coordinate System: NAD 1983 StatePlane Oregon North FIPS 3601 Feet Intl

KITTELSON & ASSOCIATES

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Map ID	Location	Project	Priority	Cost
P12[2]	Crestline Drive	Install street lighting at regular intervals from OR 34 to Range Drive	Medium	$60,000
P13[2]	Crestline Drive	Install street lighting at regular intervals from Range Drive to the south city limits	Low	$65,000
P14[2]	Cedar Street	Install street lighting at regular intervals from OR 34 to Crestline Drive	Medium	$120,000
P15	Range Drive	Install 6-foot sidewalks on both side of the roadway from US 101 to Crestline Drive	Medium	$1,025,000
P16[2]	Range Drive	Install street lighting at regular intervals from US 101 to Crestline Drive	Medium	$45,000
Intersections				
P17	US 101/ Willow Street	Enhance existing crossing with Rectangular Rapid Flashing Beacons (RRFBs)audible push buttons[3]	High	$5,000[1]
P18	US 101/Mid-block Crossing (2-locations)	Enhance existing crossings with raised median islands and pedestrian refuges in the center two-way left-turn lane – coordinate with Project A6; additional pedestrian crossing signs in the raised median islands consistent with the US 101/Willow Street crossing; and RRFBs with audible push buttons[3]	High	$30,000[1]
P19	OR 34/ Forestry Way	Install an enhanced crossing on the south leg of the intersection when warranted[3]	Low	$15,000[1]
P20	OR 34/ Range Drive	Install an enhanced crossing on the south leg of the intersection when warranted[3]	Low	$15,000[1]
P21	OR 34/ Ocean Hills	Install an enhanced crossing on the south leg of the intersection when warranted[3]	Low	$15,000[1]
P22	OR 34/ Verbena Street	Enhance the existing crossing with high visibility pedestrian crossing signs and curb extensions[3]	High	$5,000[1]
P23	OR 34/ John Street	Enhance the existing crossing with high visibility pedestrian crossing signs and curb extensions[3]	High	$5,000[1]
P24	OR 34/ Cedar Street	Enhance the existing crossing with high visibility pedestrian crossing signs and curb extensions[3]	High	$5,000[1]
P25	OR 34/ Bay Street	Enhance the existing crossing with high visibility pedestrian crossing signs[3]	High	<$5,000[1]
P26	OR 34/ Commerce Street	Install an enhanced crossing on the east leg of the intersection when warranted[3]	High	$5,000[1]

Map ID	Location	Project	Priority	Cost
P27	OR 34/ Broadway	Install an enhanced crossing on the east leg of the intersection when warranted[3]	High	$5,000[1]
P28	OR 34/ Crestline Drive	Install high visibility pedestrian crossing signs on both sides of the crossings and in both directions[3]	High	<$5,000[1]
			Total Low Priority Project Costs	$1,810,000
			Total Medium Priority Project Costs	$3,190,000
			Total High Priority Project Costs	$150,000
			Total Pedestrian Plan Project Costs	$5,150,000

1. The cost reflects the City's likely contribution (10%) to the overall project cost.
2. This project is not shown on the Map
3. Installation of enhanced crossings requires coordination with ODOT on the location and type of crossing treatments.

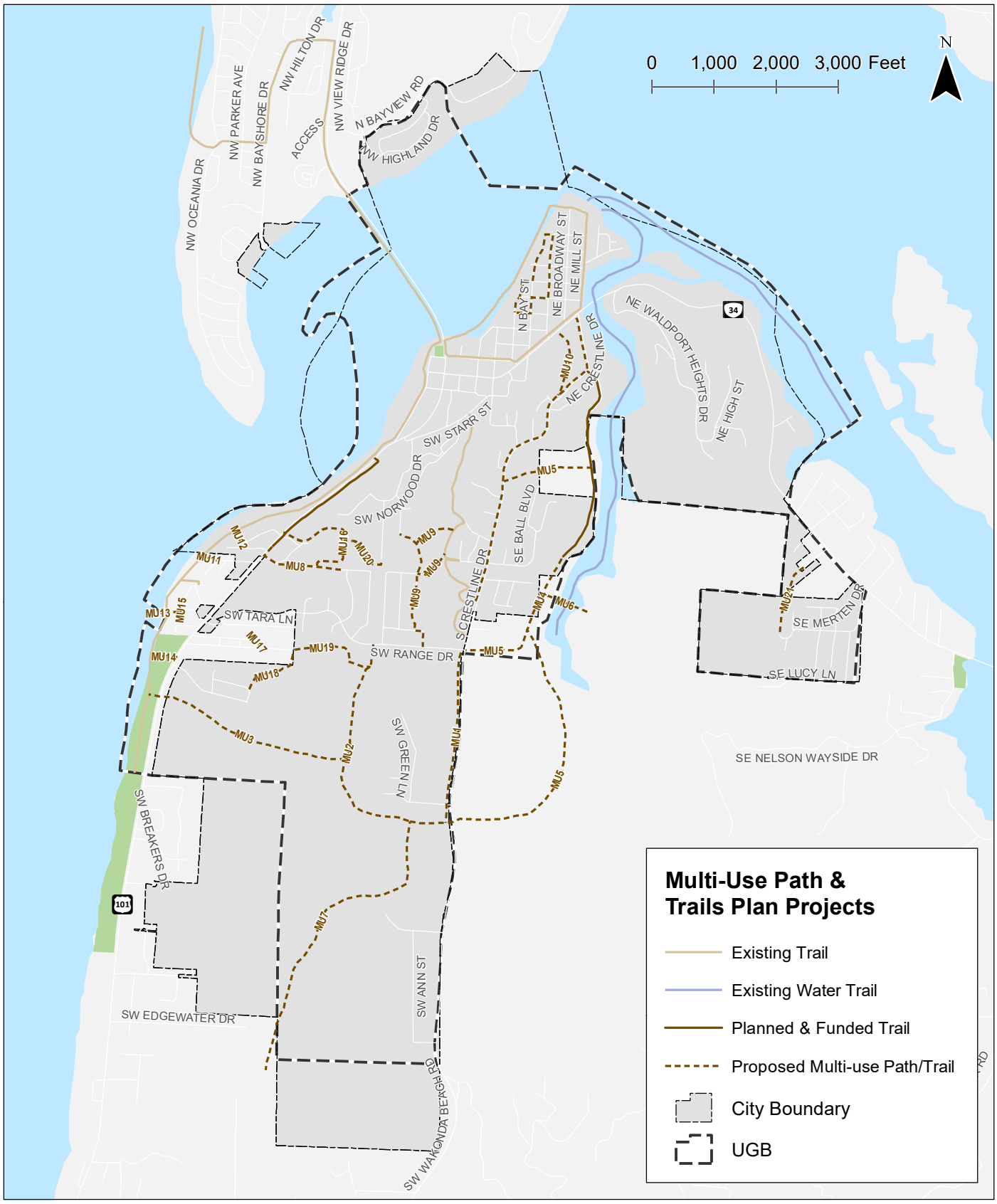
MULTI-USE PATH AND TRAILS PLAN

There are several existing multi-use paths and trails located throughout Waldport that augment and support the pedestrian and bicycle systems. The following identifies the location of several new multi-use paths and trails as identified in the Waldport Parks, Recreation & Trails Master Plan and the Yaquina John Point Land use and Transportation Plan. Additional multi-use paths and trails identified through the TSP update are also provided below.

Table 8 identifies the multi-use path and trail plan projects for the Waldport TSP update. The priorities shown in Table 8 are based on the project evaluation criteria and will be updated based on input from the project team, advisory committee, and the general public. The cost estimates are based on average unit costs for similar roadway improvements. The cost estimates do not include right-of-way. Figure 5 illustrates the location of the multi-use path and trails plan projects.

Table 8: Multi-use Path and Trails Plan Projects

Map ID	Location	Project	Priority	Cost
MU1	Crestline Trail	Install a multi-use path or trail along the west side of Crestline Drive that connects the Waldport School campus to Range Drive	High	$140,000
MU2	Crestview Golf Club Trail	Install a multi-use path or trail west of the Crestview Golf Club that connects the Waldport School campus to Range Drive	Medium	$185,000
MU3	Range Drive Trail	Install east-west oriented multi-use paths or trails south of Range Drive that connect US 101 to the trail between the Waldport School campus and Range Drive	Medium	$170,000
MU4	Lint Slough Trail Extension	Extend the Lint Slough Trail south to align with Range Drive	Medium	$80,000



Multi-Use Path and Trails Plan Projects
Waldport, Oregon

Figure **5**

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Coordinate System: NAD 1983 StatePlane Oregon North FIPS 3601 Feet Intl

Map ID	Location	Project	Priority	Cost
MU5	Lint Slough Trail (West)	Install multi-use path or trail connections from the Lint Slough Trail west to Crestline Drive between Cedar Street and Crestline Park, to Range Drive, and to Crestline Drive near the Waldport School campus	Medium	$380,000
MU6	Lint Slough Trail (East)	Install a multi-use path or trail from the Lint Slough Trail to the east	Low	$40,000
MU7	Little Creek Trail	Install a multi-use path or trail from the school campus south along the Little Creek Tributary	Low	$260,000
MU8	Forestry Lane Trail	Install trails east from the Bridgeview Trail and along Forestry Lane	Low	$75,000
MU9	Cedar Heights Park Trail	Install Trails connecting the Woodland Trail to Range Drive through the Land & Sea and Cedar Heights Park subdivisions	Low	$170,000
MU10	Former School Site Trail	Install a multi-use path or trail connecting OR 34 to Crestline Drive through the open space site (former high school property)	High	$55,000
MU11	Corona Beach Access	Improve/sign existing access trail to beach from Corona Court	Medium	$10,000
MU12	Waziyata Beac h Access	Improve/sign existing access trail to beach from Waziyata Avenue	Medium	$10,000
MU13	Sherwood Beach Access	Improve/sign existing access trail to beach from Sherwood Lane	Medium	$15,000
MU14	State Park Beach Access	Improve/sign existing access trail to beach from state park	Medium	$10,000
MU15	Seawoods Terrace to Sherwood Lane Trail Connection	Improve/sign existing access trail to beach from Seawoods Terrace to Sherwood Lane	Medium	$10,000
MU16	Forest Service North Multi-Use Path to US 101	Install multi-use path to connect with Norwood Drive extension (S4) to US 101	Medium	$70,000
MU17	Southmayd Lane to Seabrook Lane Trail	Improve existing trail on city easement from eastern terminus of Southmayd Lane to Seabrook Lane	Low	$20,000

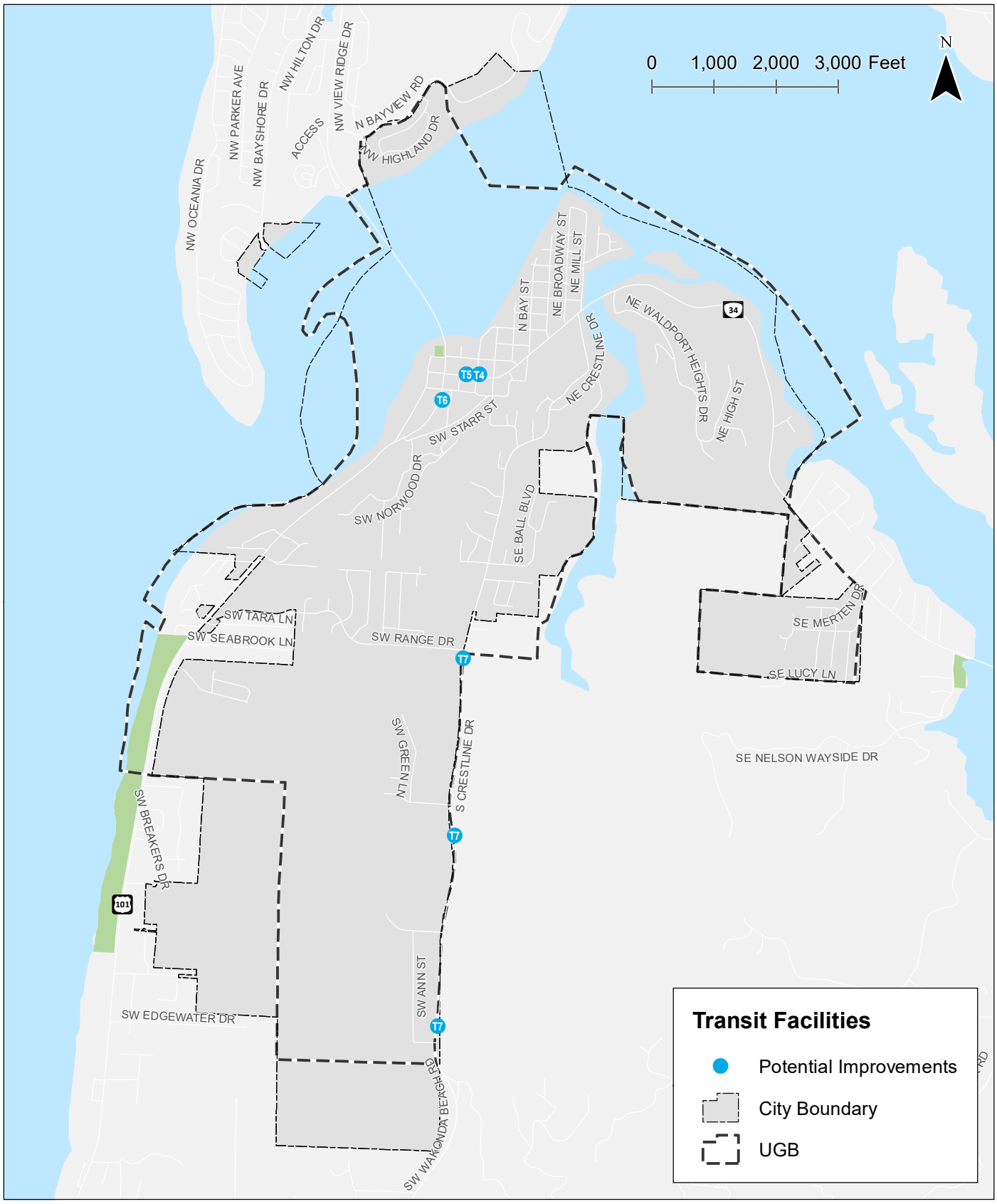
Map ID	Location	Project	Priority	Cost
MU18	Sailfish Loop to Seabrook Lane Nature Trail	Improve/sign existing nature trail from Sailfish Loop to Seabrook Mane Trail	Medium	$65,000
MU19	Seabrook Lane to Range Drive Nature Trail	Improve/sign existing nature trail from Seabrook Lane to Range Drive	Medium	$125,000
MU20	Skyline Drive Trail	Improve/sign existing nature trail from Skyline Drive south terminus to 500' westward	Medium	$30,000
MU21	Merten Drive Trail	Install a multi-use path or trail connecting Clover Lane to Merten Drive	High	$60,000
			Total Low Priority Project Costs	$565,000
			Total Medium Priority Project Costs	$1,150,000
			Total High Priority Project Costs	$255,000
			Total Multi-use Path and Trails Plan Project Costs	**$1,970,000**

TRANSIT PLAN

Public transit service is provided within Waldport by Lincoln County Transportation Service District (LCTSD). The projects identified Table 9 consider projects previously identified within LCTSD's Transit Development Plan as well as throughout the Waldport TSP update project. The priorities shown in Table 9 are based on the project evaluation criteria and will be updated based on input from the project team, advisory committee, and the general public. The cost estimates are based on average unit costs for similar transit improvements. Figure 6 illustrates the location of the transit plan projects.

Table 9: Transit Plan Projects

Map ID	Location	Project	Priority	Cost
T1[2]	City-wide	Increase South County route frequency	Medium	$0[1]
T2[2]	City-wide	Increase South County route service hours	Medium	$0[1]
T3[2]	City-wide	Provide dial-a-ride service in Waldport, includes two New Buses to be funded by others	Medium	$10,000[3]
T4	OR 34/NW John Street	Relocate Waldport Library Stop to Dollar General and install bus shelter	Medium	$10,000
T5	OR 34/NW Verbana Street	Install bus shelter at Waldport Library stop	Medium	$10,000
T6	Along US 101 and OR 34	Install benches at Espresso 101, Hi-School Pharmacy, Ray's Market, and Lakeside Market stops	Medium	$5,000



Transit System Plan
Waldport, Oregon

Figure
6

KITTELSON & ASSOCIATES

Coordinate System: NAD 1983 StatePlane Oregon North FIPS 3601 Feet Intl

Map ID	Location	Project	Priority	Cost
T7[2]	Crestline Drive	Install bus stops on Crestline Drive should South County Route be rerouted. Potential locations include industrial-zoned lands, schools, and Crestview Golf Club	Medium	$5,000
			Total Low Priority Project Costs	$0
			Total Medium Priority Project Costs	$40,000
			Total High Priority Project Costs	$0
			Total Transit Plan Project **Costs**	**$40,000**

1 Project to be funded by others.
2 Project not shown on map.
3 Project to be partially funded by others.

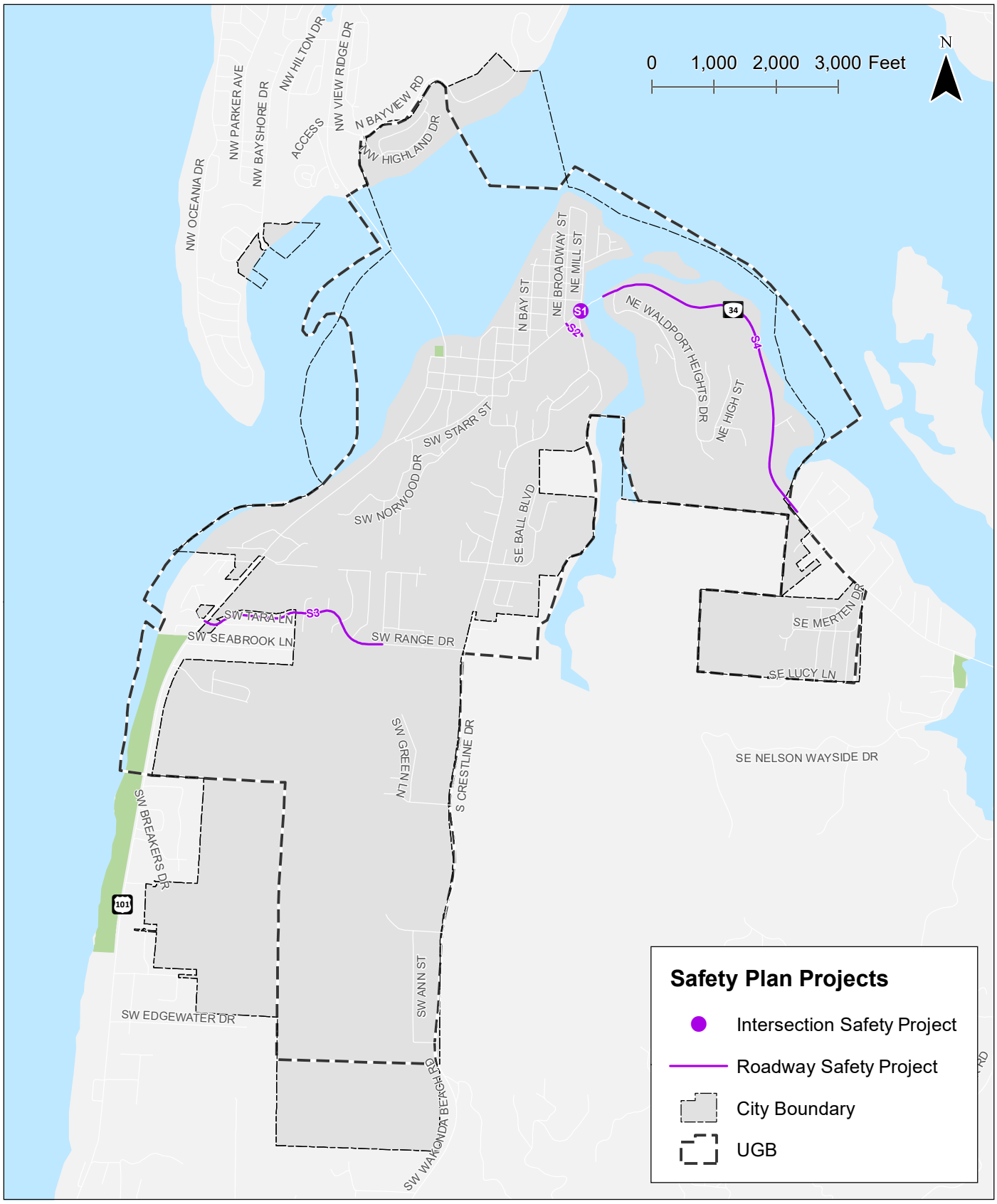
SAFE ROUTES TO SCHOOL PLAN

Safe Routes to School (SRTS) is a program aimed at making it safer for students to walk, bike, or take public transit to school. Waldport does not have a SRTS program; however, there are elements of a SRTS plan in place, such as pedestrian and bicycle facilities along Crestline Drive, Range Drive and other roadways around local schools and active monitoring of traffic conditions. While no specific SRTS projects are identified for the TSP update, the City should collaborate with the Lincoln County School District and local schools to develop and implement other elements of a SRTS plan, including:

- Develop education and encouragement programs that provide students and residents with information on transportation options and generate excitement and interest in walking and biking.
- Continue to implement physical improvements to the transportation system aimed at addressing specific needs which make walking and biking to school safer, more comfortable and convenient.
    - Several projects are identified within the pedestrian and bicycle sections of this memorandum that could help the city further enhance the transportation system around school. The projects include pedestrian and bicycle improvements along Crestline Drive and Range Drive and several multi-use path and trail projects located north, east, and west of Waldport schools.
- Develop an evaluation program that assesses which strategies and approaches are successful, ensures that initiatives support equitable outcomes, and identifies unintended consequences or opportunities.
- Develop an equity program that ensures that program initiatives are benefiting all demographic groups.

TRAFFIC SAFETY PLAN

Traffic safety has a significant impact on how people use the transportation system, particularly in areas where real or perceived safety risks prevent people from using more active travel modes, such as walking, biking, and taking transit. Several of the traffic safety alternatives identified in *Tech Memo 5: Alternatives Analysis* for US 101 and OR 34 are addressed under the roadway, bicycle, and pedestrian plans described above. These alternatives include the roadway reconfiguration and crosswalk enhancements along US 101 and the bicycle lane/shoulder and crosswalk enhancements along OR 34. Table 10 summarizes the preferred traffic safety alternatives that are not addressed under other plans. Figure 7 illustrates the traffic safety plan projects.



Safety Plan
Waldport, Oregon

Figure
7

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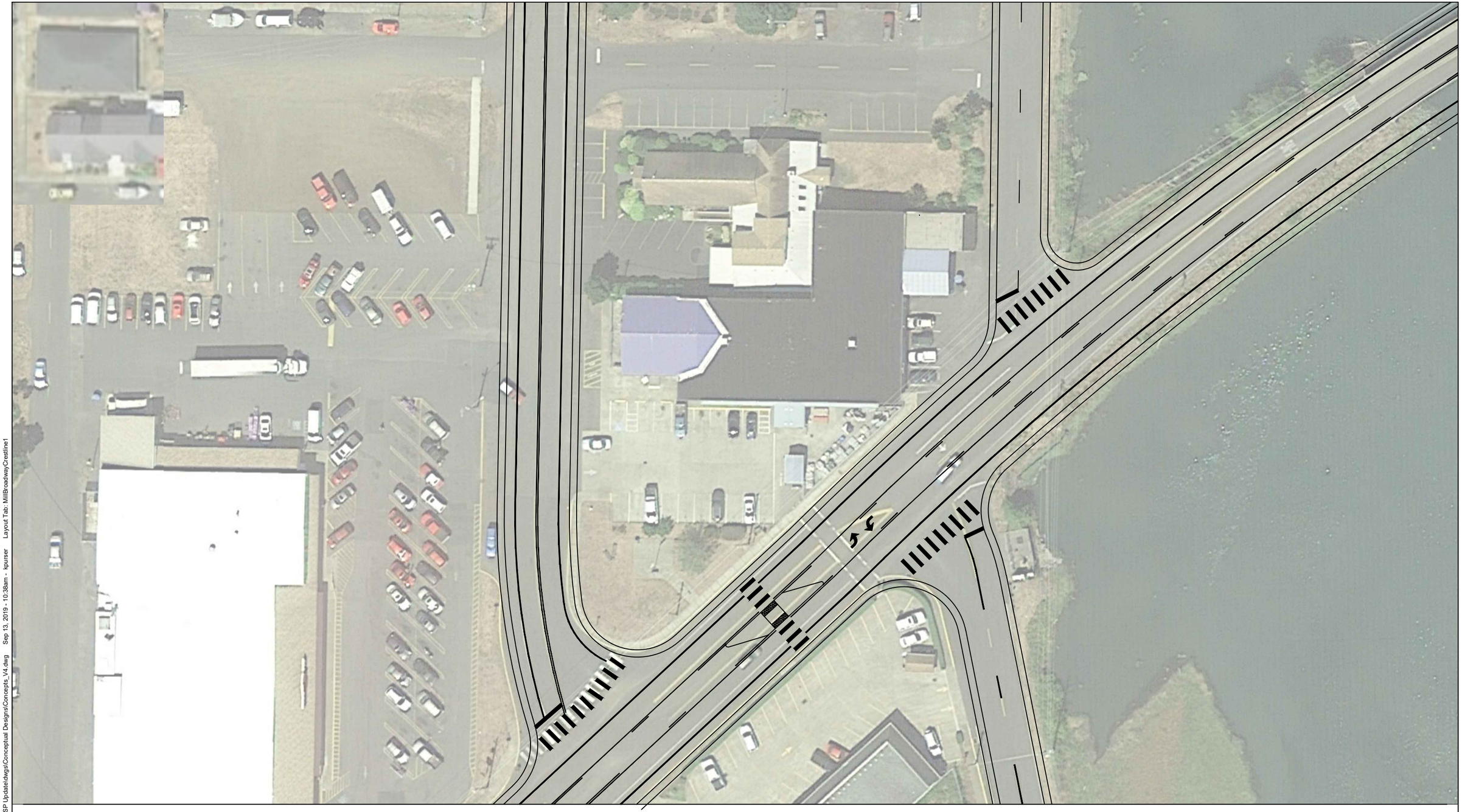
KITTELSON & ASSOCIATES

Coordinate System: NAD 1983 StatePlane Oregon North FIPS 3601 Feet Intl

The traffic safety plan also includes intersection alternatives for the Mill/Crestline/Broadway area of OR 34. Figure 8 through Figure 12 show the alternatives in this area, which include modifications to turn lanes along OR 34 and realignments of Mill Street or Crestline Drive. The preferred alternatives include Alternative 1 – Two-Way Left-Turn Lane in the short-term and Alternative 5 – Crestline Realigned to Broadway in the long-term.

Table 10: Traffic Safety Plan Projects

Map ID	Location	Description	Priority	Cost
S1	OR 34/ Mill Street	Reconfigure the median striping to provide a continuous two-way left-turn lane along OR 34 through the intersections	High	$50,000
S2	OR 34/ Mill Street	Realign Crestline Drive to align with Broadway Street	Low	$420,000
S3	Range Drive	Install enhanced curve warning signs and chevrons along range Drive from US 101 to SW Forest Parkway	High	$50,000
S4	OR 34	Install enhanced curve warning signs and chevrons along OR 34 and install shoulder rumble strips along both sides of the roadway from the east side of the Lint Slough bridge to SE Gibson Road	High	$50,000
			Total Low Priority Project Costs	$420,000
			Total Medium Priority Project Costs	$0
			Total High Priority Project Costs	$150,000
			Total Safety Plan Project Costs	**$570,000**



Mill/Crestline/Broadway Alternative 1 - Two-Way Left-Turn Lane
Waldport, OR

Figure
8

SCHEMATIC LAYOUT ONLY. NOT ALL DRIVEWAYS, STREETS, FACILITIES, OR CROSSINGS ARE SHOWN.

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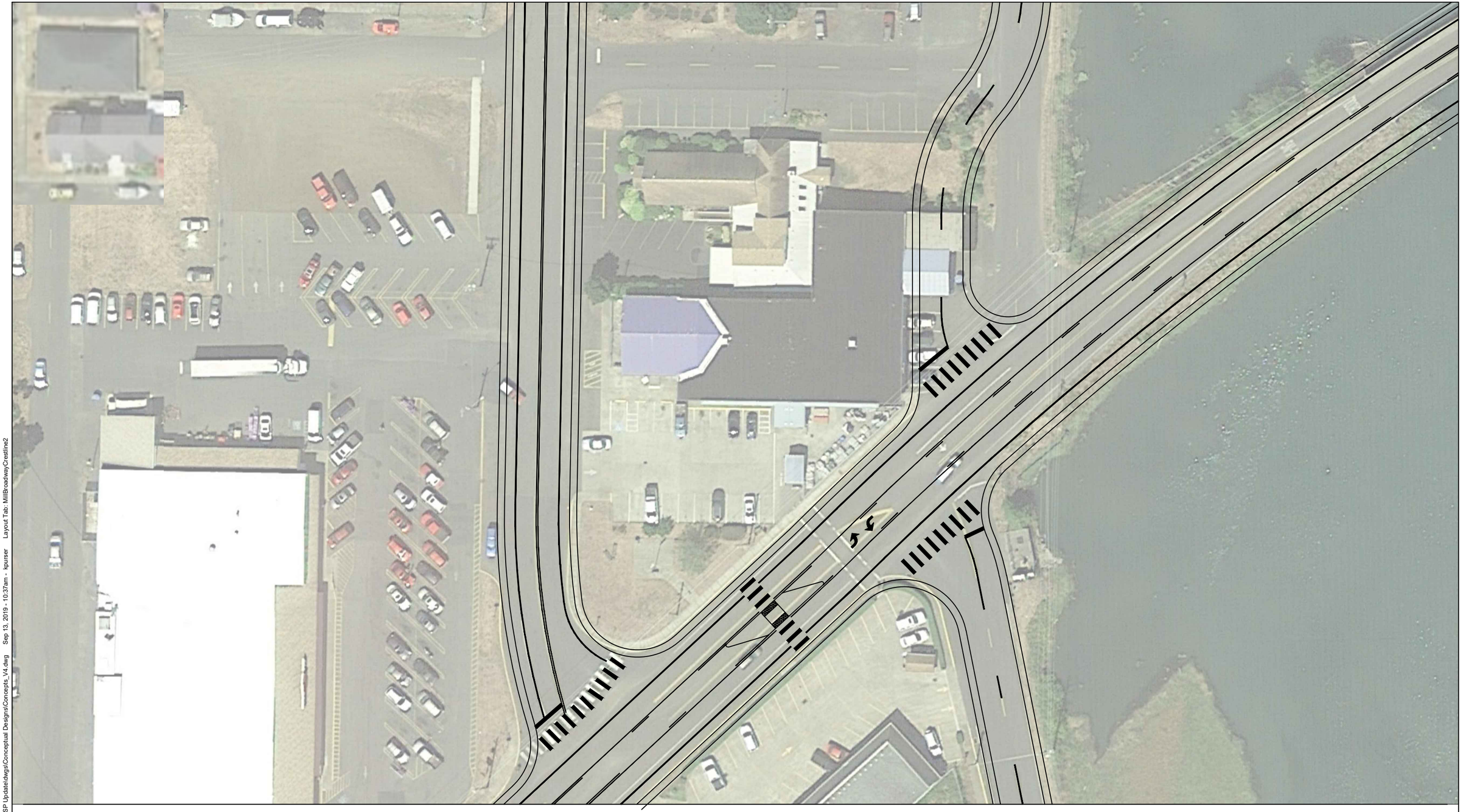

Mill/Crestline/Broadway Alternative 2 - Realigned Mill
Waldport, OR

Figure
9

SCHEMATIC LAYOUT ONLY. NOT ALL DRIVEWAYS, STREETS, FACILITIES, OR CROSSINGS ARE SHOWN.

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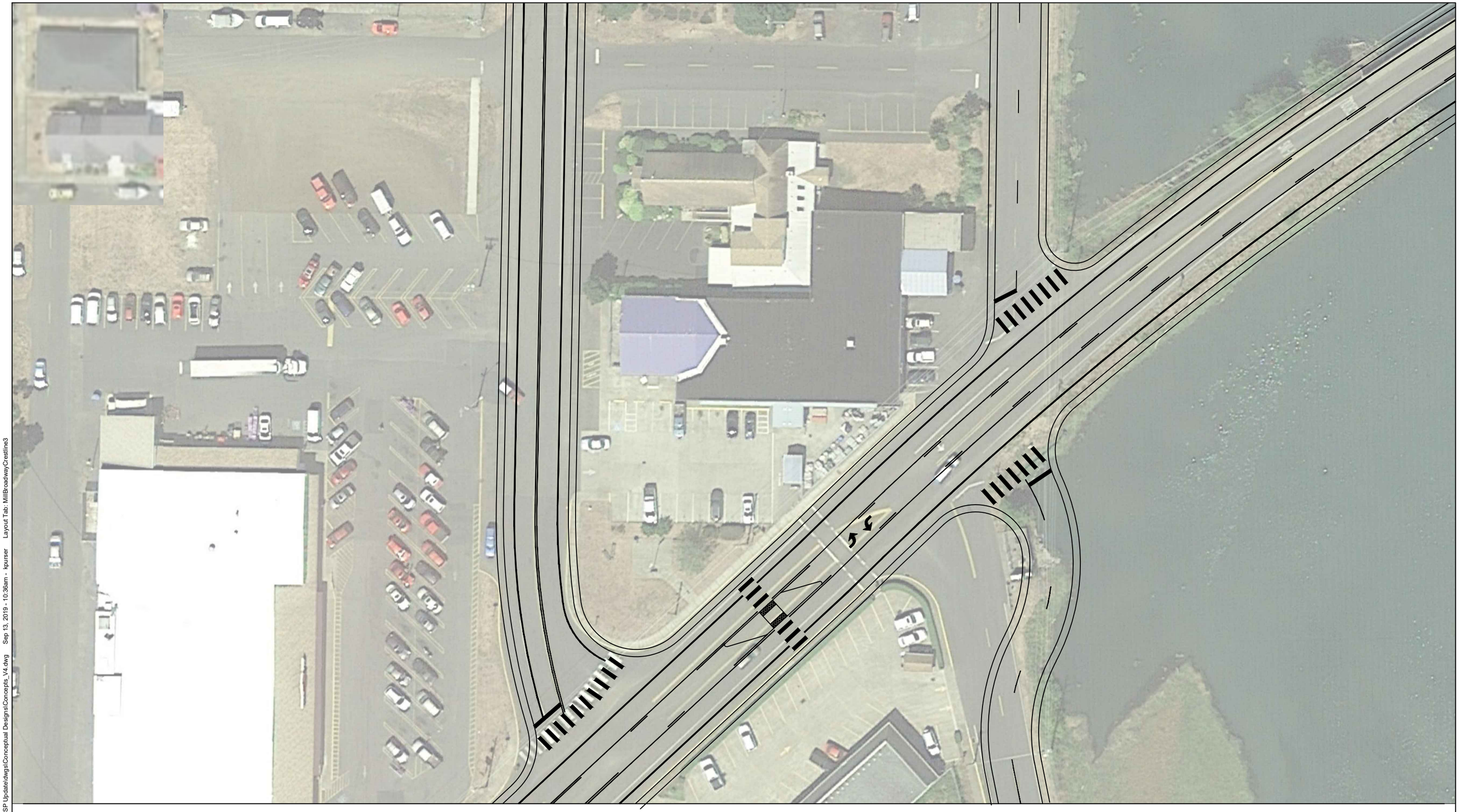
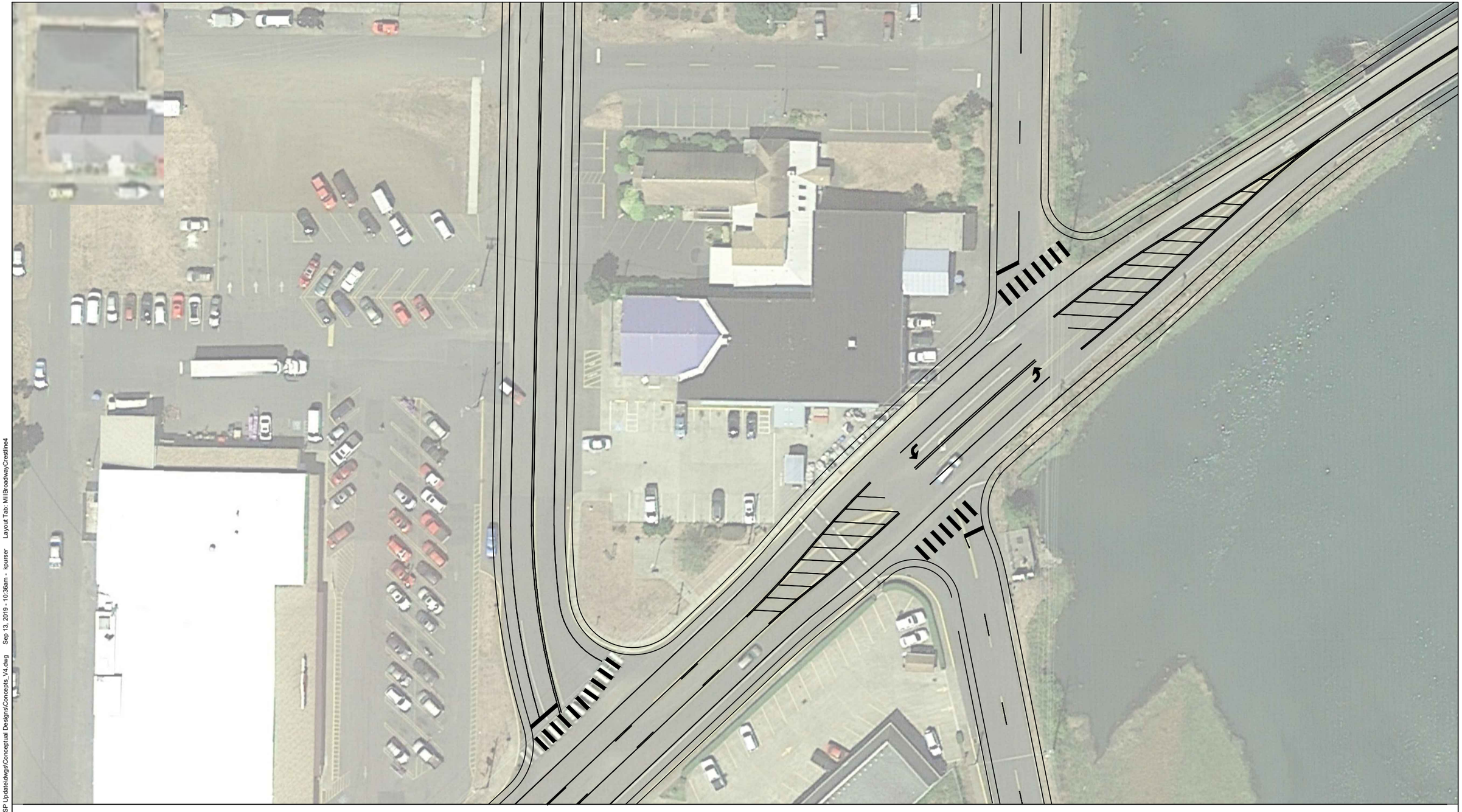


Mill/Crestline/Broadway Alternative 3 - Realign Crestline
Waldport, OR

Figure
10

SCHEMATIC LAYOUT ONLY. NOT ALL DRIVEWAYS, STREETS, FACILITIES, OR CROSSINGS ARE SHOWN.

KITTELSON & ASSOCIATES



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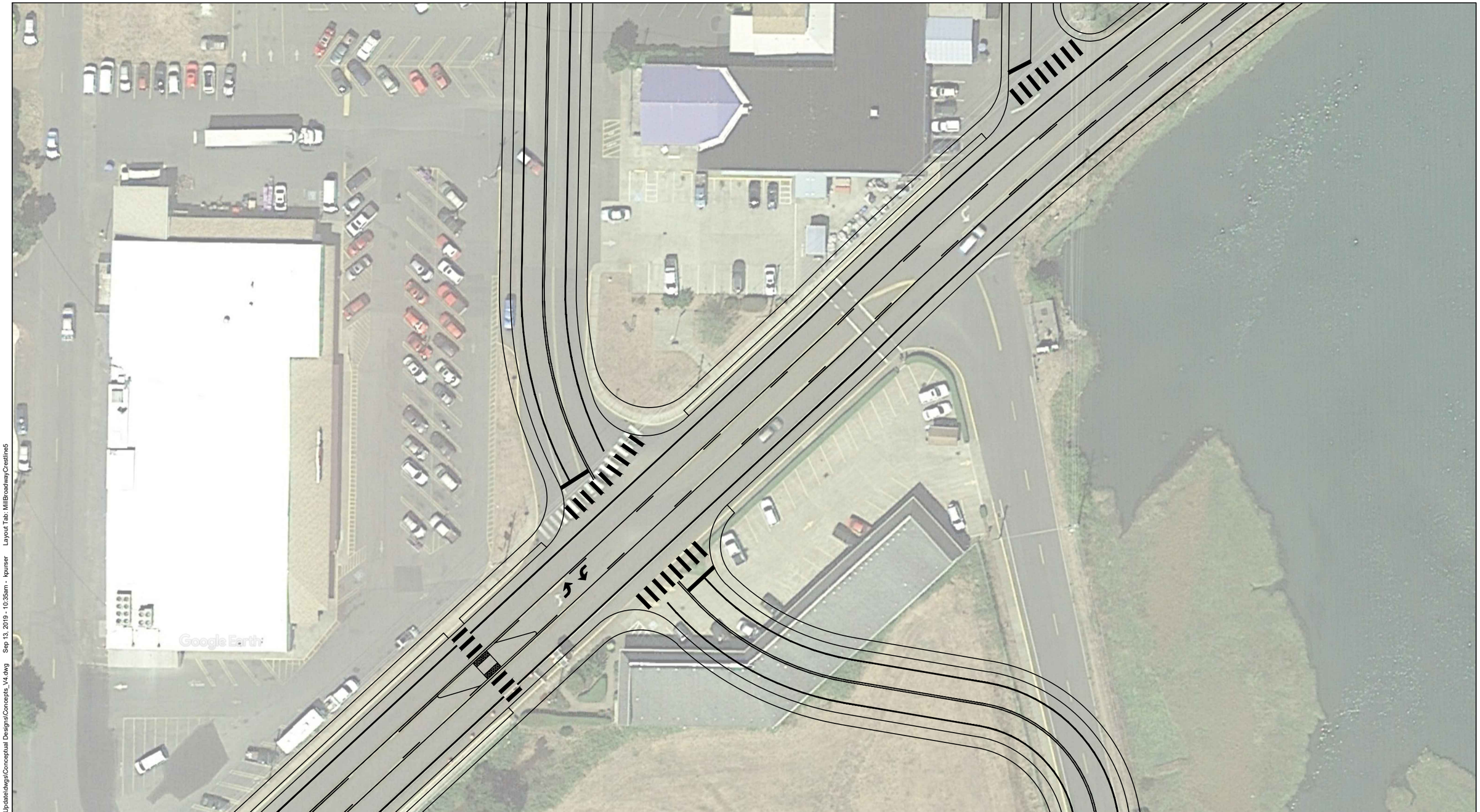
Mill/Crestline/Broadway Alternative 4 - Side-by-Side Lefts
Waldport, OR

Figure
11

SCHEMATIC LAYOUT ONLY. NOT ALL DRIVEWAYS, STREETS, FACILITIES, OR CROSSINGS ARE SHOWN.

KITTELSON & ASSOCIATES



Mill/Crestline/Broadway Alternative 5 - Crestline Aligned to Broadway
Waldport, OR

Figure
12

SCHEMATIC LAYOUT ONLY. NOT ALL DRIVEWAYS, STREETS, FACILITIES, OR CROSSINGS ARE SHOWN.

KITTELSON & ASSOCIATES

TSUNAMI EVACUATION PLAN

As indicated in *Tech Memo 5: Alternatives Analysis and Funding Program*, evaluation of tsunami evacuation routes conducted by the Oregon Department of Geology and Mineral Industries as part of their Beat the Way initiative, indicates that most of the Yaquina John Point area, downtown Waldport, and the east side of town are located within a slow walk (0-1.4 mph) or walk (1.4-2.7 mph) distance of a safety destination. Projects that provide improved or increased tsunami evacuation routes include two trail connections identified in the multi-use path and trails plan and several roadway improvements identified in the roadway plan.

- Trail connections include:
  - MU1: A multi-use path or trail connecting OR 34 to Crestline Drive through the open space site (former high school property). This potential trail connection could also provide redundancy to Crestline Drive should it fail during an earthquake.
  - MU22: A multi-use path or trail connecting Clover Lane to Merten Drive.
- Crestline Drive serves as a critical connection for emergency access and tsunami evacuation. Maintaining the roadway as a two-way connection or as a one-way southbound (lowland to upland) connection would benefit tsunami evacuation.
- Range Drive also serves as a critical connection for emergency access and tsunami evacuation. Improvements along Range Drive, including the elimination or mitigation of curves and provision of pedestrian and bicycle facilities on both sides of the street would promote faster emergency response times and tsunami evacuation.
- A new east-west road to the industrial park in South Waldport, connecting US 101 and Crestline Drive would provide an additional evacuation route.

PARKING PLAN

As indicated in *Tech Memo 5: Alternatives Analysis and Funding Program*, parking is provided within downtown Waldport along both sides of most streets, including US 101 and OR 34. Parking is also provided in several public and private off-street parking lots. The are no limitations or restrictions on the on-street or off-street parking stalls, in terms of who can park there or for how long. Also, a study conducted in 2002 found that parking occupancy (the percent of parked cars versus parking stalls) is well below capacity during peak time periods; the area with the highest occupancy rates (on-street and off-street) are located along US 101. Tech Memo 5 identifies several potential alternatives to address parking within the city, many of which could be further evaluated as an update to the 2002 parking study. Table 11 summarizes the preferred parking plan alternative.

Table 11: Parking Plan Projects

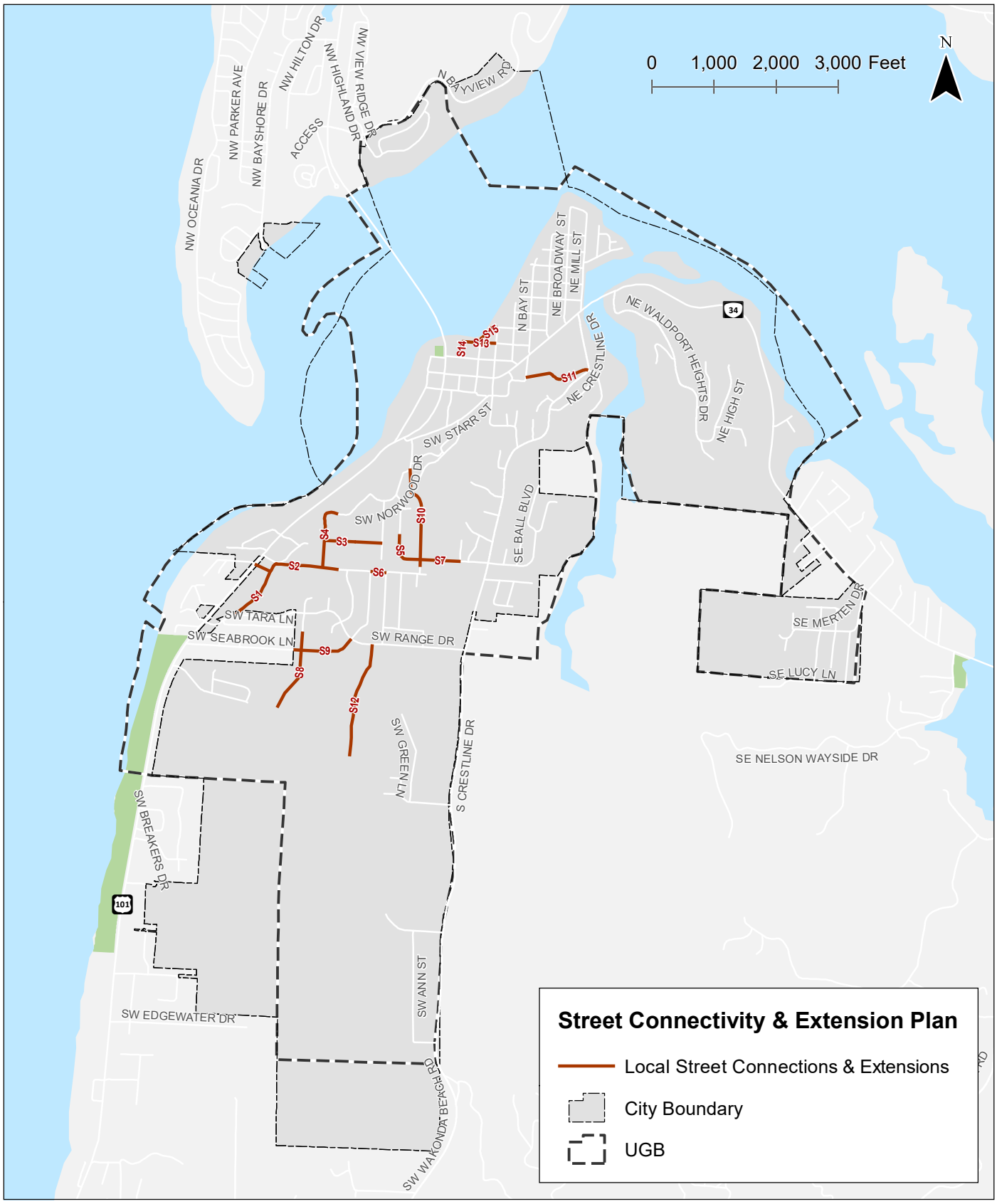
Map ID	Location	Description	Priority	Cost
N/A	Downtown Waldport	Update the 2002 Parking Management Plan	High	$30,000
			Total Low Priority Project Costs	$0
			Total Medium Priority Project Costs	$0
			Total High Priority Project Costs	$30,000
			Total Parking Plan Project Costs	**$30,000**

LOCAL STREET CONNECTIVITY AND STREET EXTENSION PLAN

There are several areas within Waldport where existing roadways could be improved, and others where new roadways could be constructed to increase the efficiency of the transportation system as well as improve access and circulation for all travel modes. Table 12 summarizes local street connectivity and street extension projects for the Waldport TSP. Figure 13 illustrates the location and general orientation of the local street connections and street extensions. All local street connections and extensions shown in Figure 8 are conceptual. Several of the projects reflect the Yaquina John Point Land Use and Transportation Plan.

Table 12: Local Street Connectivity and Street Extension Plan Projects

Map ID	Location	Description	Priority	Cost
S1	Alley from Range Drive to New Kelsie-Forestry Way Connection	Provide a 20' alley "backage road" for adjacent property access from Range Drive to new Kelsie Lane-Forestry Way extension	Medium	$245,000
S2	Kelsie- Lane Forestry Way Extension to US 101	Extend Kelsie Lane from its current wester terminus via Forestry Way to intersect with US 101 directly opposite Corona Court	Medium	$1,080,000
S3	Norwood Drive to Skyline Terrace Connection	Provide a new local street connection from Norwood Drive Extension (Project S4) to Skyline Terrace	Low	$650,000
S4	Norwood Drive Extension	Provide a new north-south connection from the south terminus of Norwood Drive to the new Forestry Way-Kelsie Way extension	Low	$790,000
S5	Dolores Drive Extension to New Wedge Drive to Norwood Connection	Extend Dolores Drive from its current southern terminus south and east to connect to a new north-south street between Norwood Drive and Wedge Drive	Low	$505,000
S6	Wedge Drive Connection from Fairway to Forest	Connect Wedge Drive from its eastern terminus west of Fairway Drive to Forest Parkway	Low	$110,000
S7	Park Drive Extension	Extend Park Drive westward to Wedge Drive to Norwood Drive extension – coordinate with Project S11	Medium	$470,000
S8	Ocean Terrace Extension	Extend Ocean Terrace southward to vacant undeveloped land to south	Low	$720,000
S9	Seabrook Lane Extension to Range Drive	Extend Seabrook Lane eastward to connect with Range Drive opposite Fairway Drive	Low	$720,000



Local Street Connectivity and Street Extension Plan
Waldport, Oregon

Figure
13

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KITTELSON & ASSOCIATES

Coordinate System: NAD 1983 StatePlane Oregon North FIPS 3601 Feet Intl

Map ID	Location	Description	Priority	Cost
S10	Wedge Drive to Norwood Connection	Provide connection from Wedge Drive to Norwood Drive	Low	$1,115,000
S11	New Local Street Connection 1	Provide a new local street connection from Bay Street to Crestline Drive	Low	$755,000
S12	New Local Street Connection 2	Provide a new local street connection from Access Road #3 (Project A5) north to Range Drive	Low	$1,330,000
S13	Spruce Street Extension	Extend Spruce Street west to NW Verbena Street	Low	$395,000
S14	Verbena Street Extension	Extend NW Verbena Street north to Spruce Street	Low	$70,000
S15	Huckleberry Street Extension	Extend Huckleberry Street west to NW John Street	Low	$180,000
S16	NW John Street Extension	Extend NW John Street north to Huckleberry Street	Low	$180,000
			Total Low Priority Project Costs	$7,520,000
			Total Medium Priority Project Costs	$1,795,000
			Total High Priority Project Costs	$0
			Total Local Street Connectivity and Street Extension Plan Project Costs	**$9,315,000**

In addition to the local street connections and street extensions described above, there are several parking lots within the downtown area that serve a similar function to local streets, such as the parking area located along Willow Street between John Street and Cedar Street. As redevelopment occurs, these parking areas could be converted to local streets to improve local street connectivity.

FUNDING PLAN

The TSP will include planned and financially constrained transportation improvement projects. The planned projects will consist of all projects identified throughout the TSP planning process needed to address gaps and deficiencies within while the financially constrained projects will consist of the projects the City anticipates being able to fund over the next 21 years (2019 through 2040). Based on a review of existing and potential future revenue sources, the amount of revenue expected to be available for capital projects in the TSP is approximately **$1 million** over the next 21 years.[1]

[1] This does not account for potential funding from State sources, such as the Statewide Transportation Improvement Program (STIP). While it is likely that the STIP will be used to fund some transportation improvements within the city over the next 21 years, there is some uncertainty in acquiring these funds. Therefore, they are not accounted for in the City's revenue forecast.

TRANSPORTATION SYSTEM PLAN COST SUMMARY

Table 13 summarizes the costs associated with the planned and financially constrained transportation improvement projects. As shown, the full cost of the planned projects is approximately **$45 million** over the 21-year period, including **>$1 million** in high priority projects, **$17 million** in medium priority projects, and **$28 million** in low priority projects. Based on the anticipated revenue, there will be approximately **1 million** to fund the financially constrained projects**.** This suggests **the city will need to identify other potential revenue sources to fund transportation improvements**, including implementation of the TSP projects over the 21-year period.

Table 13: Transportation System Plan Cost Summary

Project Type	High Priority (Financially Constrained Plan)	Medium Priority	Low Priority	Total
Roadway	$35,000	$6,615,000	$13,835,000	$20,485,000
Access Management	$0	$0	$0	$0
Bicycle	$125,000	$4,335,000	$3,565,000	$8,025,000
Pedestrian	$150,000	$3,190,000	$1,810,000	$5,150,000
Multi-use Path and Trails	$255,000	$1,150,000	$565,000	$1,970,000
Transit	$0	$40,000	$0	$40,000
Safety	$150,000	$0	$420,000	$570,000
Parking	$30,000	$0	$0	$30,000
Local Street Connectivity	$0	$1,795,000	$7,520,000	$9,315,000
Total	**$745,000**	**$17,125,000**	**$27,715,000**	**$45,585,000**

Given the limited available funding, the City will likely need to identify other potential revenue sources to fund transportation. A summary of these potential revenue sources is provided below.

POTENTIAL TRANSPORTATION FUNDING SOURCES

Federal Sources

- Fixing America's Surface Transportation (FAST) Act
- Surface Transportation Block Grant (STBG)
- Congestion Mitigation and Air Quality (CMAQ)
- Highway Safety Improvement Program (HSIP)

State Sources

- All Roads Transportation Safety (ARTS)
- Connect Oregon
- Statewide Transportation Improvement Program (STIP)
- Safe Routes to School
- House Bill (HB) 2017 Transportation Investments
- Small City Allotment

Local Sources

- Economic Improvement District (EID)
- Local Improvement District (LID)
- Urban Renewal District
- Local Bond Measures
- Local Fuel Tax
- User Fee
- Street Utility Fee/Road Maintenance Fee