

UPDATED Future Transportation Conditions

Prepared for

City of Bandon

Prepared by

Parametrix

700 NE Multnomah, Suite 1000

Portland, OR 97232-4110

T. 503.233.2400 T. 360.694.5020 F. 1.855.542.6353

www.parametrix.com

CITATION

Parametrix. 2023. UPDATED Future Transportation Conditions. Prepared for City of Bandon by Parametrix, Portland, Oregon. December 2023.

ACKNOWLEDGEMENTS

Respectfully acknowledging that Bandon is located on the land of the Coquille Indian Tribe and the Confederated Tribes of Siletz Indians. In offering this land acknowledgement, we affirm Indigenous sovereignty, history, and experiences. We commit to engaging in a respectful and successful partnership as a steward of these lands.

CONTENTS

1. INTRODUCTION	1-1
2. FUTURE POPULATION AND LAND USE ASSUMPTIONS.....	2-2
2.1 Future Population.....	2-2
2.1.1 Title VI and Environmental Justice Communities.....	2-3
2.2 Future Land Use	2-3
2.2.1 Commercial Development.....	2-6
2.2.2 Residential Development	2-6
3. FUTURE TRANSPORTATION AND DEFICIENCIES	3-7
3.1 Future Roadway	3-7
3.1.1 Roadway Network.....	3-7
3.1.2 Pavement Condition.....	3-7
3.1.3 Future Traffic Volumes	3-9
3.1.4 Traffic Operations.....	3-12
3.1.5 Parking Utilization	3-15
3.1.6 Bridges.....	3-16
3.1.7 Safety.....	3-16
3.1.8 Freight	3-18
3.2 Bicycle and Pedestrian Network	3-18
3.2.1 Future Bicycle and Pedestrian Network.....	3-18
3.2.2 Level of Traffic Stress	3-19
3.3 Transit System	3-23
3.4 Emergency Response and Evacuation.....	3-23
3.5 Access Management	3-23
3.6 Airport Deficiencies.....	3-24
3.7 Port/Marine.....	3-24
3.8 Rail	3-24
4. REFERENCES	4-25

CONTENTS (CONTINUED)

FIGURES

Figure 2-1. Vacant Buildable Land – City Limits.....	2-4
Figure 2-2. Vacant Buildable Land – UGB Boundary	2-5
Figure 3-1. Pavement Condition.....	3-8
Figure 3-5. Future No Build 2045 Peak Hour Intersection Volumes	3-11
Figure 3-6. Areas of Safety Concern	3-17
Figure 3-7. Future Pedestrian Level of Traffic Stress.....	3-20
Figure 3-8. Future Bicycle Level of Traffic Stress.....	3-21
Figure 3-9. Future Pedestrian and Bicycle Level of Traffic Stress – Jetty Park Trail	3-22

TABLES

Table 2-1. Population Trends and Forecast: 2010-2050	2-2
Table 3-1. Planned Development Assumptions	3-9
Table 3-2. Future No Build 2045 Traffic Operations – V/C Ratio, Delay, and LOS.....	3-13
Table 3-3. Future No Build 2045 Traffic Operations – Queuing	3-14
Table 3-4. Bridges	3-16

APPENDICES

Appendix A: Synchro and SimTraffic Reports

ACRONYMS AND ABBREVIATIONS

TSP – transportation system plan

UGB – urban growth boundary

ODOT – Oregon Department of Transportation

v/c – volume-to-capacity

LOS – level of service

AWSC – all way stop control

TWSC – two way stop control

1. INTRODUCTION

This memorandum documents the future conditions of the Bandon transportation system, using a planning horizon year of 2045. The analysis considers the likely future conditions of the transportation system under a Future No Build condition. “No Build” conditions refer to the transportation system in the year 2045 if there are no transportation system investments beyond those projects already programmed for construction or basic maintenance and preservation. The No Build scenario analysis provides a basis for comparing “Build” scenarios that will be considered in the next phase of the Transportation System Plan (TSP). The project team will look at projects and programs that can address deficiencies noted in both the existing system and based on likely issues that may arise under the No Build scenario.

Future conditions are considered in the context of likely future growth in transportation demand, population growth, and changes in land use. Future conditions will identify likely future deficiencies in the City’s transportation system for all modes, including automobile, bicycle, pedestrian, freight, and emergency response and evacuation.

The future conditions analysis will inform the next stage of Bandon’s TSP, providing a baseline for comparing the development of draft solutions.

2. FUTURE POPULATION AND LAND USE ASSUMPTIONS

2.1 Future Population

Portland State University’s Population Research Center publishes current and forecast population data for all communities in Oregon. Table 2-1 below summarizes the most recent population forecast for Bandon, which shows that Bandon’s population is forecast to grow to 4,787 people by 2050. This represents a substantial 36% percent increase over the 2020 population of 3,529. The City is expected to grow more quickly than Coos County and Oregon as a whole. Coos County is only expected to grow 1% during the same period.

This population growth will increase needs on the transportation system as compared to today. Table 2-1 compares these population growth trends in Bandon to Coos County and to Oregon as a whole.

The 2022-2072 *Coos County Coordinated Population Forecast* notes that Coos County is projected to have a larger middle-age and old-age population than younger population. The forecast also notes that Bandon has seen an increased interest in development, with an increase in new housing applications, apartment buildings, and commercial businesses, demonstrating projected growth in Bandon.

Table 2-1. Population Trends and Forecast: 2010-2050

	City of Bandon	Coos County	Oregon
2010	3,175	63,045	3,837,300
2020	3,529 +11.1%	64,929 +3.0%	4,243,959 +10.6%
2030	3,867 +9.6%	65,267 +0.5%	4,503,900 +6.1%
2040	4,195 +8.5%	65,046 -0.3%	N/A N/A
2050	4,787 +14.1%	65,528 +0.7%	N/A N/A

County and City Population Forecasts prepared by: Population Research Center, Portland State University, June 30, 2022.

Short-term population forecasts for Oregon were generated in conjunction with the Economic and Revenue Forecast by the Oregon Office of Economic Analysis.

Note: The percentage increases listed in green indicate the increase from the previous row/time period. For example, in 2020 there were 11.1% more residents in Bandon than in 2010. Forecasts were unavailable for Oregon for 2050.

2.1.1 Title VI and Environmental Justice Communities

State and federal law through Title VI require the TSP to consider disadvantaged communities in the planning process, ensuring that benefits are not disproportionately distributed on the basis of race, color, or national origin.¹ The TSP must also address Environmental Justice populations, defined by Executive Order 12828 to include low-income and minority populations.² While there is not a substantial population of Title VI or Environmental Justice populations in Bandon, other vulnerable populations including people who have disabilities, older adults, and youth populations may be disproportionately affected by transportation deficiencies in Bandon. These groups may lack the ability or desire to travel by car. People with disabilities can be negatively affected by incomplete or nonexistent sidewalks, as well as a lack of curb cuts and infrequent transit service. The specific needs of these communities must be considered in the development of future projects and programs. There are no planned, funded improvements in the city that would directly affect the vulnerable populations listed above. Therefore, conditions affecting these populations in the future are expected to be the same as current conditions.

2.2 Future Land Use

Bandon's city limits and Urban Growth Boundary (UGB) provide future development capacity for the next 20 years of growth in Bandon. Figure 2-1 and Figure 2-2 show vacant buildable lands in the city and UGB according to Bandon's 2012 Comprehensive Plan. These maps, along with Bandon's zoning map, display a number of vacant residential parcels available outside the current city limits but within the UGB – known as Bandon's "Donut Hole." Residential growth in Bandon will likely include buildout of these residential areas, along with infill in other parts of the city.

The following sections describe areas in Bandon with future planned developments. These areas may see substantial growth in residential and commercial uses that could influence the City's transportation system needs.

¹ Title VI of the Civil Rights Act of 1964 states, "No person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance."

² Refers to Presidential Executive Order 12828: Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (1994) and related applicable laws and regulations. <https://www.archives.gov/files/federal-register/executive-orders/pdf/12898.pdf>

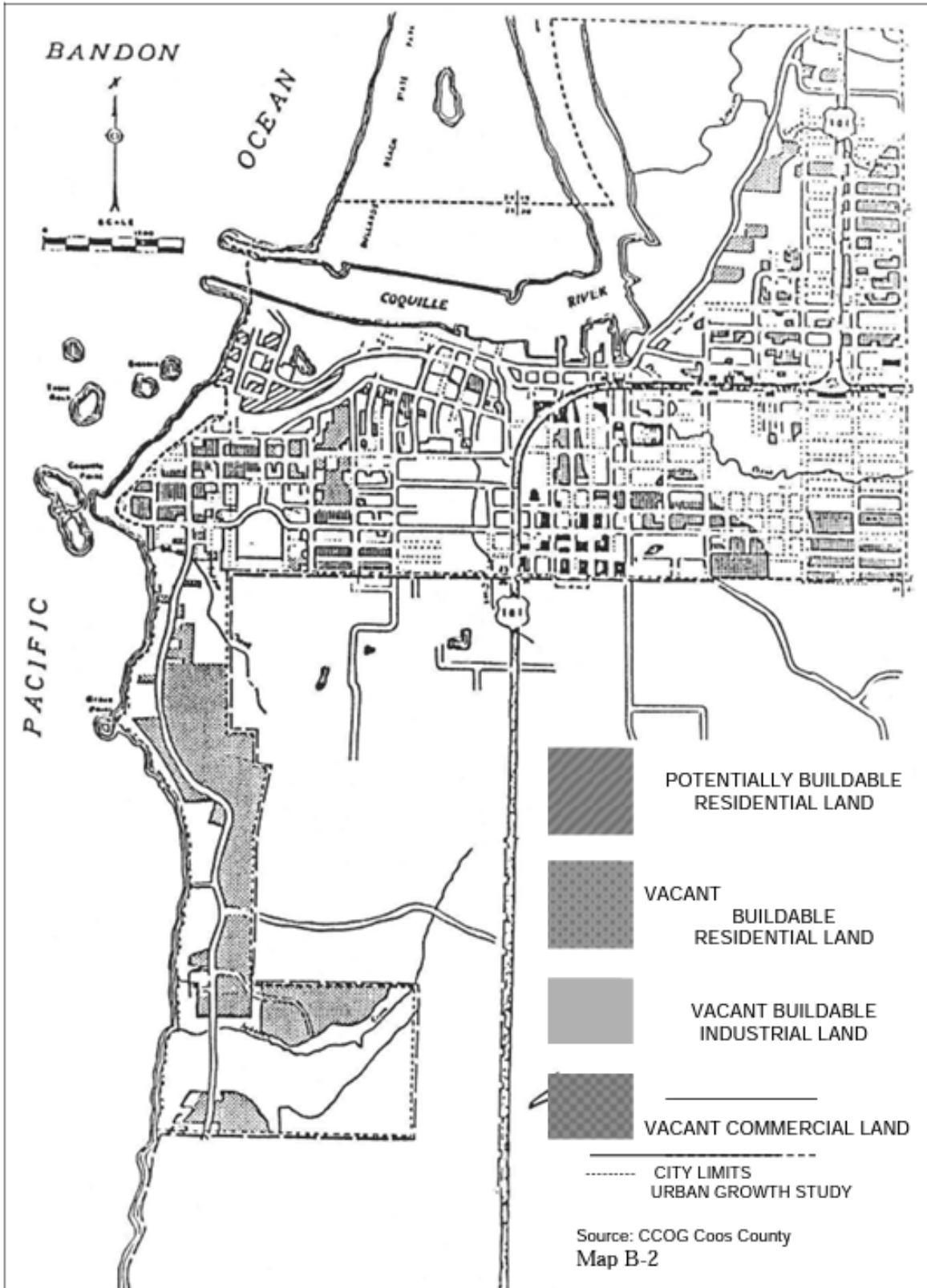


Figure 2-1. Vacant Buildable Land – City Limits

Source: Bandon Comprehensive Plan

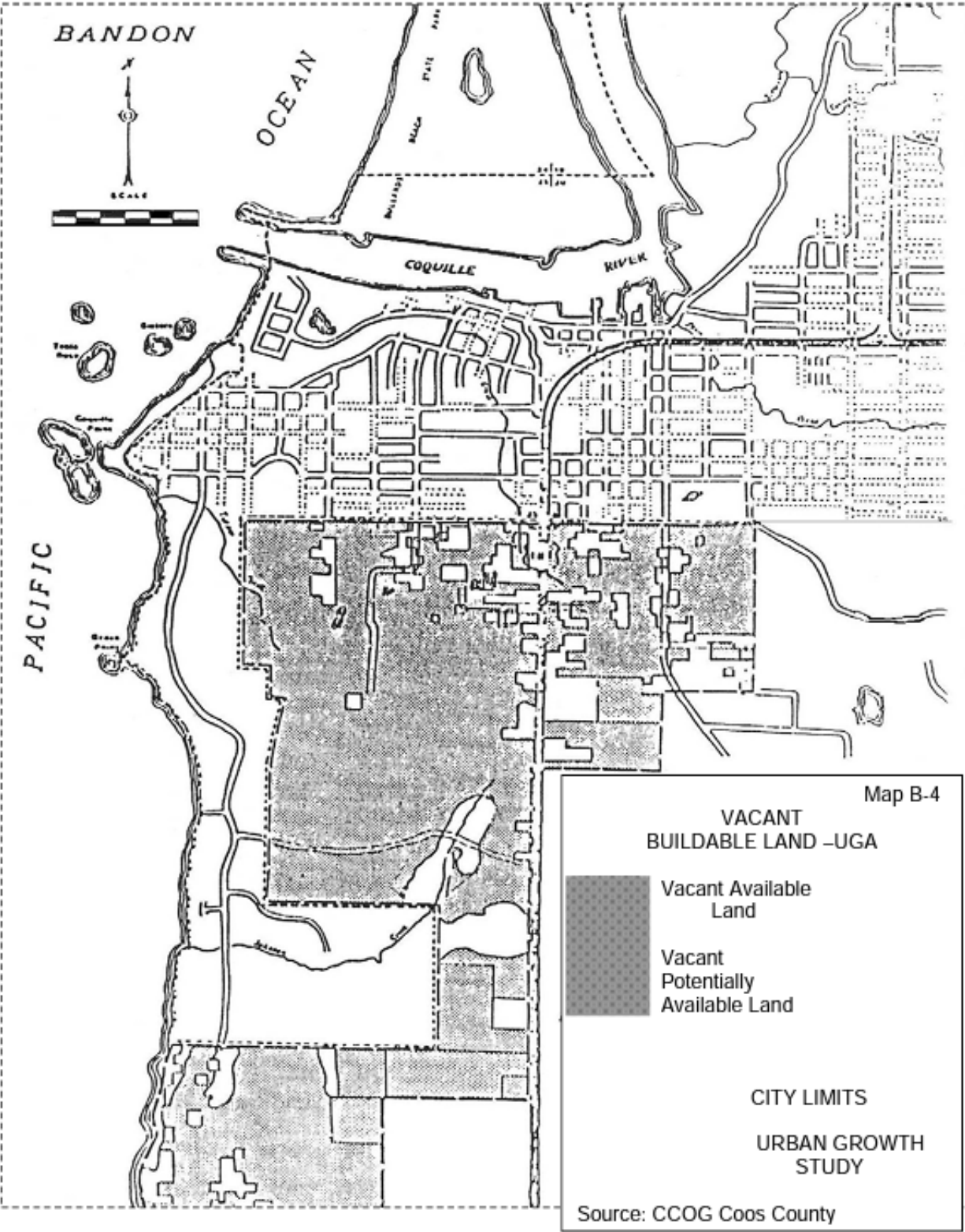


Figure 2-2. Vacant Buildable Land – UGB Boundary
Source: Bandon Comprehensive Plan

2.2.1 Commercial Development

- **1st Street (northwest of Old Town).** A new hotel development of the Bandon Marriott at the corner of Oregon Ave SE and 1st Street SE will consist of an 84-unit hotel room in the Old Town Commercial (C-1) Zone. This new development may affect parking needs near Old Town. This may also increase pedestrian needs in Old Town.
- **Gravel Point.** This project is to construct a 110-room hotel and 32 associated suites on a 24.8-acre site along Beach Loop Drive. This development may affect road connectivity needs in southwest Bandon. Development of the Gravel Point property may require additional multimodal connections between Beach Loop Road and commercial centers within the city.
- **Port of Bandon Office on High Dock.** The City of Bandon has received a planning application requesting approval to construct a new Port office called the "High Dock Building, " on property zoned Marine Commercial (C-3). This new development may affect parking and pedestrian needs near Old Town.

2.2.2 Residential Development

- **Bandon Opportunity Project.** This planned development is a coordinated effort between the City of Bandon and Bandon Dunes. The 17-acre property is located along 20th Street SE and is intended to help with Bandon's housing shortage. The site will likely be developed with several types of housing, which may include subsidized affordable housing, tiny homes, and home ownership options. The site will also likely be developed in phases. Roads and streets will be built by the developer, or using grant funds. Completion of the project will complete the 20th Street right-of-way, which will divert truck traffic from the Uptown area, particularly 11th Street.
- **Harvard Street.** This planned platted subdivision south of the Harvard Street Apartments will include a mix of smaller homes and duplexes, and may include up to 100 new housing units. This new development may increase bicycle and pedestrian needs in eastern Bandon.
- **Bandon School District Rezoning.** The City of Bandon has been working with the Bandon School District to rezone a portion of land adjacent to their baseball fields from Public Facilities & Parks to Residential 1. The City and School District are seeking a developer to acquire the property and develop affordable workforce housing. The project will likely be broken into phases, with Phase 1 to include about 30-35 housing units. This residential development may affect the need for additional roadway network connections, particularly on 13th Street SW. The new development may also increase the need for pedestrian connections on 11th Street.
- **Seabird Apartments.** In 2021, a developer applied for a 48-unit apartment complex on Seabird Drive near the intersection of U.S. 101. As part of the proposed multifamily development, sidewalks and bicycle lanes would be provided to connect to future facilities east and west of the site.
- **Bandon Coastal Subdivision.** The City of Bandon has approved a Planning Application for a Tentative Subdivision Plat for a land division creating 22 lots. This Subdivision Plat is located on a plot of land north of Seabird Drive, adjacent to the Seabird Village II Subdivision. Development would include construction of an extension of Salty Dog Drive and the addition of sidewalks on Shearwater Circle.

3. FUTURE TRANSPORTATION AND DEFICIENCIES

3.1 Future Roadway

3.1.1 Roadway Network

Though there is a desire for additional north-south and east-west roadway connections in Bandon and prior plans call for additional collectors within the city; these are plans are not funded. Therefore, the roadway network is expected to be the same as existing in 2045 for purposes of defining the future No Build transportation network.

3.1.2 Pavement Condition

The City has stated that pavement condition, gravel roadways, and a lack of street standards has impeded the ability for development to occur on certain lots and limits connectivity to local destinations. Many of these streets are within Bandon's donut hole, including 18th Street SW, 19th Street SW, 20th Street SW, Jackson Road, and 24th Street SW/Edna Lane. Other gravel roadways within the UGB are found on the south end of town. As reported by the State of Oregon's TransGIS database, pavement conditions along U.S. 101, the primary north-south thoroughfare in Bandon, vary from fair to very good. Pavement condition along U.S. 101 is shown in Figure 3-1. There are no planned repaving efforts in Bandon, so conditions are expected to be the same as existing in 2045.

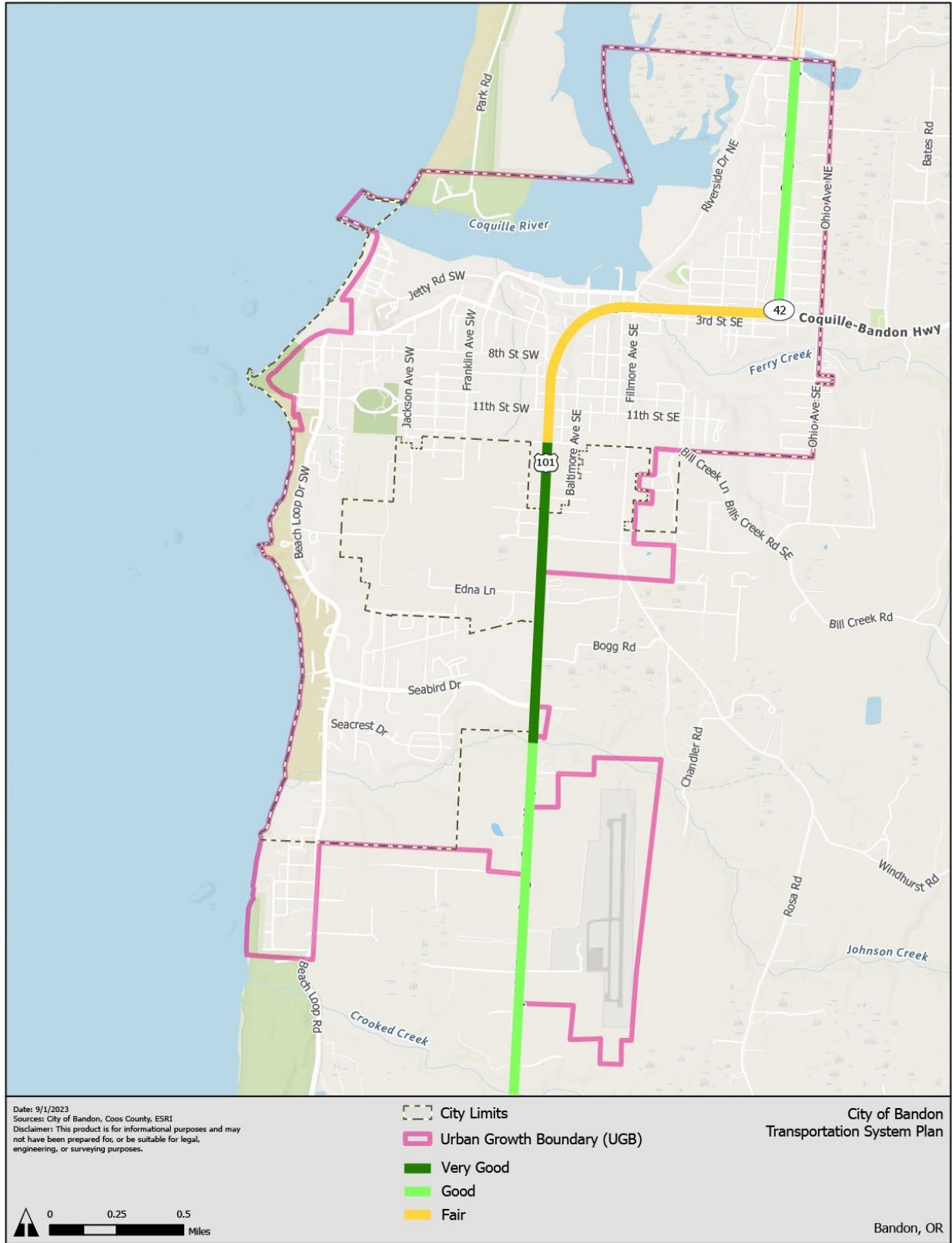


Figure 3-1. Pavement Condition

3.1.3 Future Traffic Volumes

Future traffic forecasts for the horizon year 2045 were developed by applying a linear growth factor for all movements for background growth and adding trips for planned developments in the City.

The growth factor was calculated using 2021 and 2041 volumes provided in the Oregon Department of Transportation (ODOT) Future Highway Volume Table. Based on these volumes along U.S. 101 between MP 261.51 and 275.87, the average annual growth rate for the study area is +0.06%. An overall growth rate of +1.38%, or +0.06% over 23 years, was applied to all 2022 30 HV intersection volumes to develop the 2045 intersection volumes. Additional information regarding analysis procedures is documented in Technical Memo #3: Analysis Methodology.

Assumptions about the type, size, and location of the planned developments discussed in Section 2.2 were made based on available applications and conversations with the City. Trip generation for each development was estimated using ITE (Institute of Transportation Engineers) Trip Generation, 11th Edition. The land use codes and independent variable values that were used for each development as well as the calculated number of PM peak hour trips (including both entering and exiting trips) are shown in Table 3-1.

Table 3-1. Planned Development Assumptions

Development	Land Use (LU) Code	Independent Variable Value	PM Peak Hours Total Trips
1st Street (northwest of Old Town	LU 310 – Hotel	84 rooms	34
Gravel Point	LU 310 – Hotel	142 rooms	77
Port of Bandon Office on High Dock	LU 75 – Single Tenant Office Building	1,834 sf	11
Bandon Opportunity Project	LU 223 – Affordable Housing	100 units	46
Harvard Street	LU 210 – Single-Family Detached Housing LU 215 – Single-Family Attached Housing	50 units 50 units	78
Bandon School District Rezoning	LU 210 – Single-Family Detached Housing LU 223 – Affordable Housing	10 units 31 units	25
Seabird Apartments	LU 221 – Multifamily Housing Mid-Rise	48 units	19
Bandon Coastal Subdivision	LU 210 – Single-Family Detached Housing	21 units	23
Gravel Point Development	LU 223 – Affordable Housing	160 units	74

sf = square feet

These estimated PM peak hour trips were assigned to the roadway network based on existing travel patterns. The following distributions percentages were used to assign the PM peak hour development trips:

- 35% to/from north of U.S. 101 & 1st Street SE/OR 42S (intersection #7)
- 10% to/from west of U.S. 101 & 1st Street SE/OR 42S (intersection #7)
- 15% to/from east of U.S. 101 & 1st Street SE/OR 42S (intersection #7)
- 10% to/from east of Fillmore Avenue SE & 11th Street SE (intersection #14)
- 10% to/from Downtown Bandon, west of U.S. 101 between Oregon Avenue SE and 2nd Street SE (intersection #3 to #5)

- 10% to/from west of Franklin Avenue SW & 11th Street SW (intersection #13)
- 10% to/from south of U.S. 101 & Seabird Drive/Doberman Lane (intersection #1)

The peak hour intersection volumes for the horizon year 2045, including both background growth of +1.38% and 387 PM peak hour trips from 9 planned developments, are shown in Figure 3-5.

3.1.4 Traffic Operations

The Future No Build traffic analysis accounts for completed or planned transportation improvements that have an identified and committed funding source. Since the one planned and funded project within the Bandon UGB (Ferry Creek Bridge) does not change roadway capacity or traffic patterns, no changes were made to the roadway network for traffic modeling.

State highway mobility targets were developed for the 1999 Oregon Highway Plan (OHP)³ as a method to gauge reasonable and consistent targets for traffic flow along state highways. The mobility targets are based on volume-to-capacity (v/c) ratios and are shown in Table 3-2. Additional information regarding intersection mobility targets is documented in Tech Memo #3: Analysis Methodology.

Level of service (LOS) is another metric that describes how well an intersection operates. Intersections receive a LOS grade from “A” to “F”, where LOS “A” represents the best conditions with minimal delay at the intersection and LOS “F” represents the worst conditions. The City of Bandon has not adopted LOS standards.

Traffic operations for the 14 study intersections were analyzed using Synchro and SimTraffic. Volume to capacity ratios, delay, and LOS were reported using FHWA *Highway Capacity Manual* (HCM) 6th Edition (TRB 2016) reports for all intersection types: all-way stop control, two-way stop control, and signalized. For the signalized intersections that are not supported by HCM 6th Edition, HCM 2000 reports were used. For the unsignalized intersections, v/c ratios and delay were reported for the worst movement along the mainline and side street. Volume-to-capacity ratios for the mainlines at two-way stop-controlled intersections were calculated based on ODOT APM guidelines. For signalized intersections, the reported v/c ratios and delays represent the overall intersection operations and are not distinguished for the mainline and side street. The critical intersection v/c ratios were calculated based on ODOT APM guidelines for signalized intersections.

Intersection #5 has a non-HCM compatible stop configuration and could not be analyzed using HCM methodologies. Intersection #5 has a non-standard stop sign placement since U.S. 101 turns at the intersection, meaning the northbound and westbound approaches are free while the southbound and eastbound approaches are stop-controlled. Per Exhibit 12-12 in Chapter 12 of the ODOT APM, the intersection was analyzed in an Adjusted for Analysis configuration where the approaches with the major flows are modeled as if they are opposite each other.

V/c ratios, delay, and LOS are summarized in Table 3-2. None of the intersections are expected to operate with a v/c ratio that exceeds the mobility target.

The 95th percentile queue lengths were analyzed using SimTraffic and are summarized in Table 3-3. None of the queue lengths exceed the storage length or the space between intersections. Traffic reports are available in *Appendix A: Synchro and SimTraffic Reports*.

Table 3-2. Future No Build 2045 Traffic Operations – V/C Ratio, Delay, and LOS

#	Intersection	Control	Future No Build Mobility Target	Mainline Operations			Side Street Operations			Exceeds Mobility Target?
				v/c ratio	Delay (s)	LOS	v/c ratio	Delay (s)	LOS	
1	U.S. 101 & Seabird Drive/Doberman Lane	TWSC	v/c < 0.80	0.03	9	A	0.47	30	D	No
2	U.S. 101 & 11th Street SW/SE	Signal	v/c < 0.90	0.27	24	C	0.27	24	C	No
3	U.S. 101 & Oregon Avenue SE	TWSC	v/c < 0.90	0.04	9	A	0.10	17	C	No
4	U.S. 101 & Chicago Avenue SE	TWSC	v/c < 0.90	0.37	9	A	0.15	24	C	No
5	U.S. 101 & 2nd Street SE/Delaware Avenue SE	TWSC	v/c < 0.90	0.44	9	A	0.38	56	F	No
6	U.S. 101 & Fillmore Avenue SE	Signal	v/c < 0.90	0.47	14	B	0.47	14	B	No
7	U.S. 101 & 1st Street SE/OR 42S	Signal	v/c < 0.90	0.55	48	D	0.55	48	D	No
8	U.S. 101 & 9th Street SW	TWSC	v/c < 0.90	0.02	10	A	0.19	27	D	No
9	Beach Loop Drive & 11th Street SW	AWSC	v/c < 0.95	0.13	8	A	0.10	8	A	No
10	Beach Loop Drive & Seabird Drive SW	TWSC	v/c < 0.95	0.05	7	A	0.09	9	A	No
11	Riverside Drive/Fillmore Avenue SE & 1st Street SE	TWSC	v/c < 0.95	0.05	8	A	0.23	10	B	No
12	Edison Avenue SW & 4th Street SW	AWSC	v/c < 0.95	0.11	8	A	0.10	7	A	No
13	Franklin Avenue SW & 11th Street SW	AWSC	v/c < 0.95	0.22	8	A	0.04	8	A	No
14	Fillmore Avenue SE & 11th Street SE	TWSC	v/c < 0.95	0.07	8	A	0.28	14	B	No

Table 3-3. Future No Build 2045 Traffic Operations – Queuing

#	Intersection/Approach	Control	Storage Length (ft)	95th Percentile Queue Length (ft)	Exceeds Storage Length?
1	U.S. 101 & Seabird Drive/Doberman Lane	TWSC			
	Eastbound approach		> 1,000	100	No
	Westbound approach		590	20	No
	Northbound approach		> 1,000	30	No
	Southbound approach		> 1,000	10	No
2	U.S. 101 & 11th Street SW/SE	Signal			
	Eastbound approach		> 1,000	180	No
	Westbound approach		200	140	No
	Northbound approach		> 1,000	160	No
	Southbound approach		260	260	No
3	U.S. 101 & Oregon Avenue SE	TWSC			
	Eastbound approach		200	50	No
	Northbound approach		240	40	No
	Southbound approach		490	10	No
4	U.S. 101 & Chicago Avenue SE	TWSC			
	Eastbound approach		900	50	No
	Westbound approach		480	10	No
	Northbound approach		200	20	No
	Southbound approach		230	60	No
5	U.S. 101 & 2nd Street SE/Delaware Avenue SE	TWSC			
	Northeastern approach		490	40	No
	Southwestern approach		440	20	No
	Eastbound approach		270	50	No
	Southbound approach		210	60	No
6	U.S. 101 & Fillmore Avenue SE	Signal			
	Eastbound approach		440	150	No
	Westbound approach		> 1,000	260	No
	Northbound approach		420	120	No
	Southbound approach		200	130	No
7	U.S. 101 & 1st Street SE/OR 42S	Signal			
	Southeastern approach		280	90	No
	Northwestern approach		240	210	No
	Northeastern approach		> 1,000	240	No
	Southwestern approach		870	240	No
8	U.S. 101 & 9th Street SW	TWSC			
	Eastbound approach		200	50	No
	Westbound approach		210	30	No
	Northbound approach		250	40	No
	Southbound approach		240	30	No

#	Intersection/Approach	Control	Storage Length (ft)	95th Percentile Queue Length (ft)	Exceeds Storage Length?
9	Beach Loop Road & 11th Street SW	AWSC			
	Eastbound approach		390	50	No
	Westbound approach		600	60	No
	Northbound approach		> 1,000	60	No
	Southbound approach		950	50	No
10	Beach Loop Road & Seabird Drive SW	TWSC			
	Westbound approach		650	50	No
	Northbound approach		910	0	No
	Southbound approach		> 1,000	20	No
11	Riverside Drive/Fillmore Avenue SE & 1st Street SE	TWSC			
	Eastbound approach		240	70	No
	Northbound approach		260	30	No
	Southbound approach		290	0	No
12	Edison Avenue SW & 4th Street SW	AWSC			
	Eastbound approach		590	50	No
	Westbound approach		900	50	No
	Northbound approach		900	20	No
	Southbound approach		530	50	No
13	Franklin Avenue SW & 11th Street SW	AWSC			
	Eastbound approach		560	60	No
	Westbound approach		> 1,000	70	No
	Northbound approach		280	40	No
	Southbound approach		> 1,000	50	No
14	Fillmore Avenue SE & 11th Street SE	TWSC			
	Eastbound approach		> 1,000	40	No
	Westbound approach		> 1,000	20	No
	Northbound approach		> 1,000	60	No
	Southbound approach		> 1,000	80	No

AWSC = all-way stop-controlled; TWSC = two-way stop-controlled

3.1.5 Parking Utilization

Parking needs are most prominent in Old Town Bandon due to the high number of visitors and residents seeking shopping, recreation, and leisure opportunities. According to an informal Old Town parking study conducted by the City, there are 783 existing on-street and off-street parking space in Old Town. The study showed that currently, parking inventory in Old Town Bandon ensures that residents and visitors can usually find a space proximal to their destination and there is not a need for additional parking spaces. Public parking lots adjacent to Old Town are currently underutilized, and there is no signage directing people to available off-street public parking lots.

There are currently no adopted plans to expand on- or off-street parking within Bandon. Therefore, future parking conditions are generally expected to be the same as existing. Near and mid-term future

parking demand is not anticipated to exceed the City’s overall existing supply of combined (on- and off-street) parking capacity on a regular basis, as future parking constraints are expected to be concentrated during peak visitor periods.

Any significant changes to future parking capacity will be driven primarily by private development and/or redevelopment, as described in *Section 2.3 Future Land Use*. These future demands may increase the overall demand for both on- and off-street parking in the city and may worsen peak-hour parking constraints near Old Town, Beach Loop Drive, and other commercial areas in Bandon, especially without parking management strategies and periodic enforcement. Without new development, parking supply will stay the same and use of existing parking stalls will increase gradually over time as a result of population growth and tourist travel.

3.1.6 Bridges

Two bridges, built in 1960 and 1962, on Fillmore Avenue and over Ferry Creek, are rated “poor” and “fair,” respectively, as shown in Table 3-4. Replacement of the Ferry Creek Bridge is funded within the 2018-2021 Statewide Transportation Improvement Program (STIP). This project will include the design, development, and construction of a new bridge to replace the existing Ferry Creek Bridge, which is no longer capable of sustaining its design capacity. This project has been approved for approximately 90% funding through the Oregon Department of Transportation. The City will be responsible for a 10% match and any work that may be accomplished outside the funded scope of the project.

There are no funded plans to replace the Fillmore Avenue bridge, though this bridge may require refurbishment or replacement by 2040.

Table 3-4. Bridges

Bridge ID	Structure Name	Facility Carried	Feature Intersected	Year Built	Structure Owner	Bridge Condition	Sufficiency Rating
01308	Johnson Creek, Hwy 9 at MP 275.72	U.S. 101 (Hwy 9)	Johnson Creek	1929	ODOT	Good	39
18920	Creek, Fillmore Ave	Fillmore Ave	Ferry Creek	1960	City/Municipal Highway Agency	Poor	31.1
01236A	Ferry Creek, Hwy 9	U.S. 101 (Hwy 9)	Ferry Creek	1962	ODOT	Fair	93.4
17967	Ferry Creek, Hwy 9 right of way Rt at MP 273.80	Private Access Road	Ferry Creek	1999	ODOT	Good	84.3

Ave = avenue; Hwy = highway; ID = identification; MP = milepost; ODOT = Oregon Department of Transportation

3.1.7 Safety

There are no planned, funded safety improvements in the city. Therefore, safety conditions and issues in the future are expected to be the same as current conditions. Areas with safety concerns are shown in Figure 3-6, namely along U.S. 101 from 11th Street to 42S.

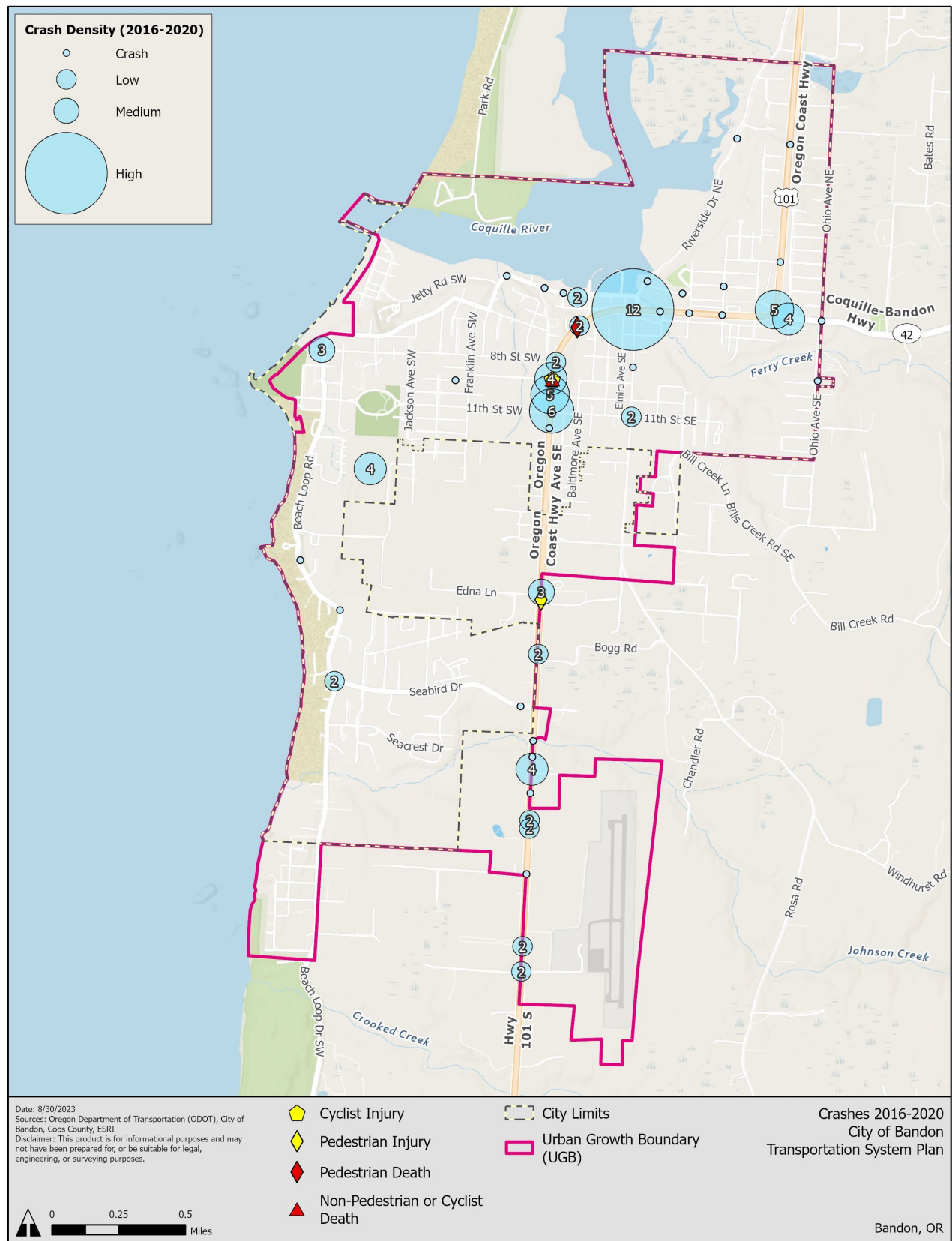


Figure 3-5. Areas of Safety Concern

3.1.8 Freight

Trucks will need continued access to commercial areas and areas with hotels and hospitality. Additionally, delivery trucks will need places to park while delivering. The lack of designated loading zones in commercial areas have been noted to be insufficient to provide efficient deliveries without blocking other travelers on the road. As there are no plans to implement designated loading zones in Bandon, this is expected to continue.

3.2 Bicycle and Pedestrian Network

The future Bicycle and Pedestrian Network is based on planned, funded projects within the city. The only currently funded bicycle and pedestrian project is the Jetty Park Trail. Gradual increases in population, tourist demand, and traffic could impact bicycle and pedestrian safety in the future.

- **Jetty Park Trail.** Planned project to improve the connection between Old Town and the Jetty Park. This project will create a pathway that connects 1st Street SW in Old Town to the Jetty. This project was also included in the City's Bicycle and Pedestrian Facilities Plan. \$325,000 has been set aside in the 2020-2021 City of Bandon Annual Budget. In 2020, the City applied for, and received, \$100,000 in Small City Allotment funds, from the Oregon Department of Transportation, to support this project. Construction is expected to begin in 2023.
- **Unfunded Projects.** The 2000 Bandon TSP, Safe Routes to School Plan, and Parks Master Plan recommend several projects related to the bicycle and pedestrian networks. However, these projects are not funded. Without funding, projects are unlikely to be built and the future bicycle and pedestrian networks will remain the same. No other improvements are funded and bicycle and pedestrian conditions and issues are anticipated to remain largely the same as today. The exception would be new sidewalks constructed as part of frontage improvements with future development.

3.2.1 Future Bicycle and Pedestrian Network

- **Sidewalks.** The future sidewalk system in Bandon is anticipated to be the same as existing, with sidewalks limited to Old Town, U.S. 101, and the commercial area near 11th Street and U.S. 101. 11th Street would continue to lack sidewalks on the south side of the street. Beach Loop Road would have no designated walking path or bike facilities.
- **Crossings.** There are no planned crossing improvements in Bandon, so future crossing conditions are expected to be the same as existing. Most pedestrian crossings would remain unsignalized, without pedestrian push buttons, and with minimal levels of physical protection from traffic. Many crossings would remain deficient or missing along U.S. 101.
- **Curb Ramps.** As part of a statewide effort to improve pedestrian facilities, an ODOT project will replace 15 ramps at 4 intersections in Bandon. The new curb ramps will comply with the Americans with Disabilities Act. Beyond this project, it is anticipated that future accessibility conditions will be the same as existing with most curb ramps remaining uncompliant with ADA standards. Crossing deficiencies would remain throughout the City and along main thoroughfares like U.S. 101.
- **Lighting.** Future streetlighting is anticipated to be the same as existing, with most lighting concentrated in commercial areas and dispersed lighting in certain residential areas.

- **Bicycling.** There are no planned, funded improvements to Bandon’s bicycle system. Therefore, under Future No Build conditions, Bandon would still lack a designated bicycle network. Most of U.S. 101 and Old Town, where most commercial destinations are located, would still lack consistent bike facilities or a nearby parallel facility. Neighborhoods would lack designation of any shared greenway bike routes.

3.2.2 Level of Traffic Stress

An assessment of level of traffic stress (LTS) was conducted for bicyclists (BLTS) and pedestrians (PLTS) within the city of Bandon based on the ODOT APM, Chapter 14. The methodology considers the quality and comfort of routes between origins and destinations to determine a generalized four-tier LTS rating including excellent, good, fair, or poor. These ratings provide a general measure of actual and perceived safety and comfort for pedestrians and bicyclists travelling along a particular street segment within the city, based on factors such as the presence and quality of bicycle/pedestrian facilities, speed limits, traffic volumes, barriers, and other measures.

Levels of traffic stress are only evaluated for arterials and collector streets within Bandon. These analysis factors were adapted to meet the local context of Bandon’s existing street system and are based on available data for the city. ODOT data was the primary source of input for this analysis, though the project team also used Google aerial imagery and Google Street View to confirm speed limits and the presence of sidewalk and bike facilities at several locations. Sidewalks and bike lanes were not individually inventoried. Due to the less-than-comprehensive data available, the project team used the information available to make assumptions about the conditions of the modal factors.

There are no planned, funded improvements to Bandon’s bicycle system. The only currently funded bicycle and pedestrian project is the Jetty Park Trail. As such, the future bicyclist and pedestrian LTS will remain the same, except for the area where the Jetty Park Trail is being constructed, as shown in Figure 3-7, Figure 3-8, and Figure 3-9.

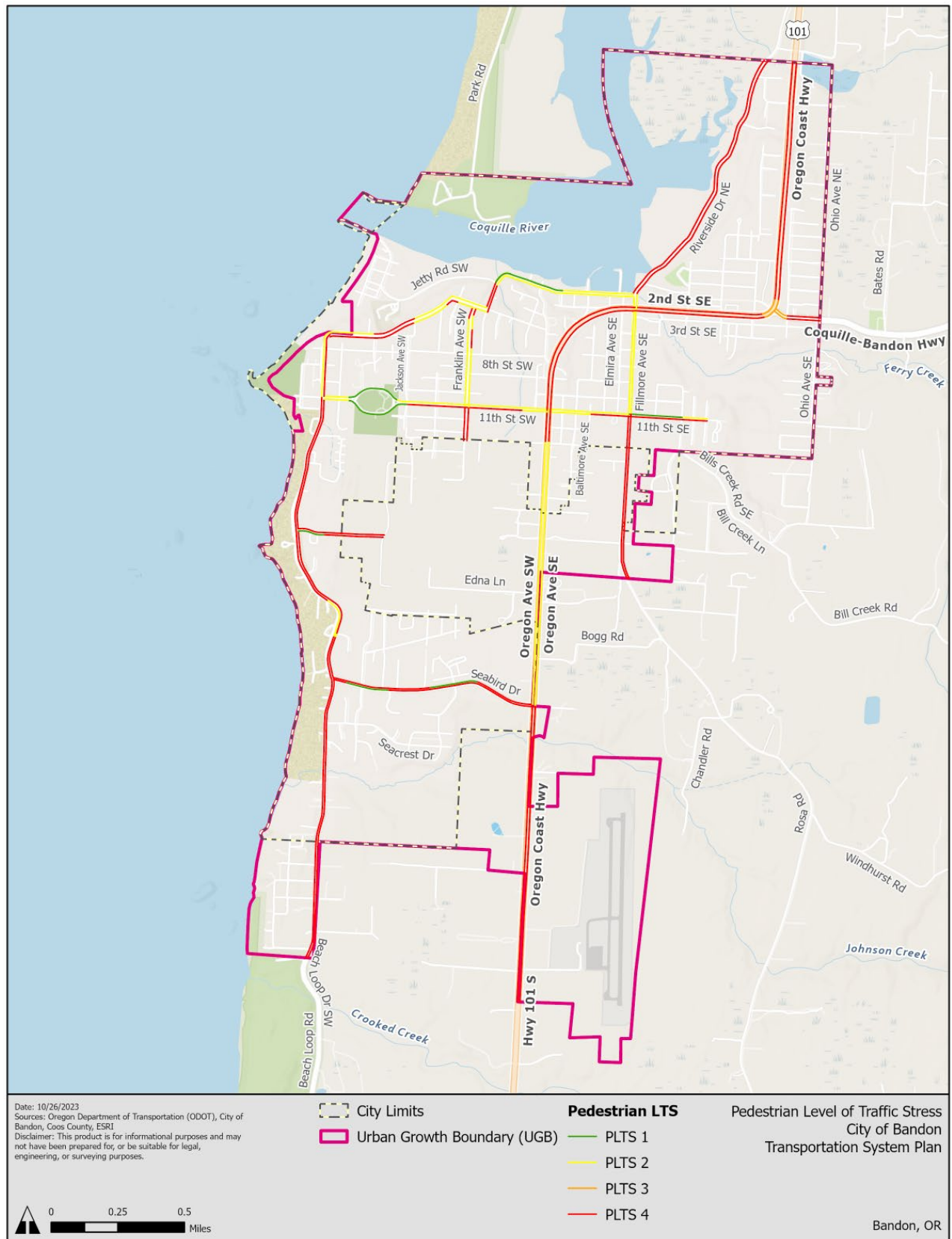


Figure 3-6. Future Pedestrian Level of Traffic Stress

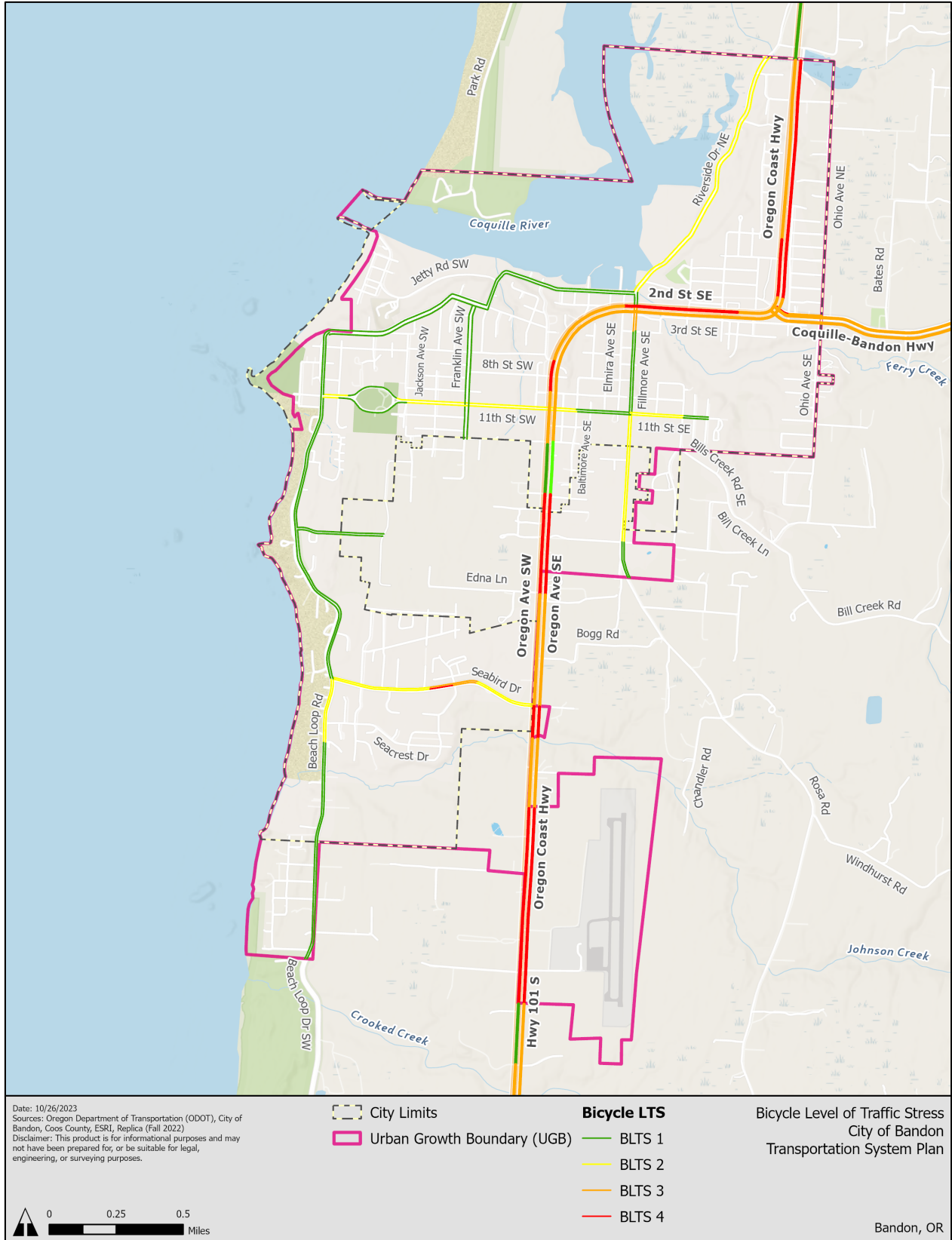


Figure 3-7. Future Bicycle Level of Traffic Stress

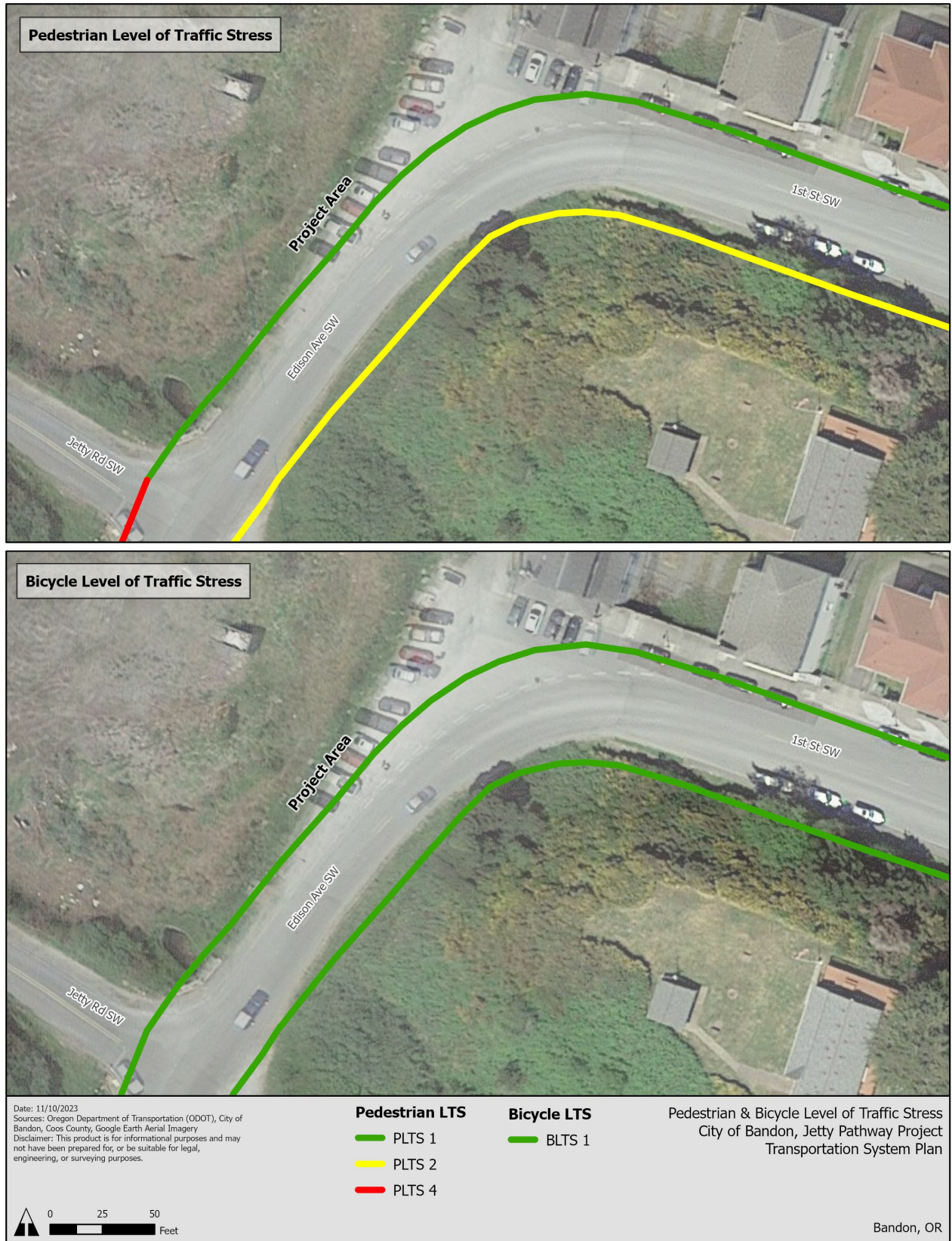


Figure 3-8. Future Pedestrian and Bicycle Level of Traffic Stress – Jetty Park Trail

3.3 Transit System

Currently, there are no funded improvements to enhance or expand the transit system in Bandon. Because there are no funded changes to the public transportation systems that service Bandon, the future transit system in Bandon is likely to operate the same as existing. Dial-a-Bus services through Coos County Transit will operate as the only citywide transit, while the Coastal Express Route operated by Curry Public Transit will provide intercity service. The infrequent service and limited-service hours of the existing transit options may make transit an impractical option for those who would prefer to use it. Without planned service improvements, local transit service deficiencies are expected to grow as the population ages and as traffic volumes grow incrementally over time.

- **Coos County Transit Master Plan.** During development of the 2021 *Coos County Transit Master Plan*, outreach in Bandon indicated that community members support weekend service from Coos Bay/North Bend to Bandon, a daily shuttle from Bandon to the Southwest Oregon Regional Airport, and connections between Bandon and Roseburg. Existing conditions evaluations show that the time between the first and last trips of the day between Bandon and Coos Bay/North Bend is sufficient for shorter-duration trips, but not trips requiring being at the destination for most or all of the day. However, no projects that would increase service within Bandon were included in this plan.
- **Curry County Transit Development Plan.** Curry Public Transit recently completed a draft *Curry Transit Development Plan* in January 2023. This plan does not include expansion to transit services that serve Bandon.
- **Capital Improvement Program.** The City of Bandon 2022-2023 Annual Budget within the city's five-year Capital Improvement Program proposes \$30,000 of the Block Grant Funding budget to be put towards the operation of the Trolley program.

3.4 Emergency Response and Evacuation

Emergency response needs are expected to remain consistent through the horizon year. Emergency response will continue to require access throughout the City and to the hospital.

Similarly, evacuation needs are expected to stay the same through the horizon year. Much of Bandon is within the inundation zone, based on analyses by Oregon Department of Geology and Mineral Industries (DOGAMI). Evacuation routes need consistent wayfinding and signage that are effective in communicating to residents and visitors.

3.5 Access Management

Future year access management on U.S. 101 should be consistent with *OAR734-051 Division 51*.⁴ There are no current plans to close or revise accesses. This may occur occasionally as development occurs along U.S. 101. Since there are no planned and funded projects to account for in the Future No Build Condition, the access spacing deficiencies are the same as those outlined in the Existing Conditions memo.

⁴ <https://secure.sos.state.or.us/oard/displayDivisionRules.action?selectedDivision=3317>

3.6 Airport Deficiencies

With the continued success and growth of Bandon Dunes Golf Resort generating air travel demand, Bandon State Airport is positioned to accommodate increased general aviation activity in the future. However, there are no proposed changes to the type of service provided at the Bandon Airport, or substantial changes to land use adjacent to the airport. According to the *Bandon State Airport Master Plan (2017)*, proposed physical improvements for Bandon State Airport will be limited to areas within existing airport property.

3.7 Port/Marine

Planned future development projects at the Port of Bandon include the following:

- **Marina Redevelopment Project.** Built in 1984, the 84-slip marina has served as a commercial and recreational destination for many. The Port of Bandon has designed a new layout to replace the marina with new docks, piles, and services. The Port of Bandon has recently awarded a contract to West Coast Contractors. This project is planned to begin in September 2023 and will be completed by Spring 2024.
- **Pullen Pier.** The Port of Bandon plans to construct a public, ADA-accessible fishing pier along the western side of the Bandon marina riverwalk adjacent to the boardwalk. Currently there is limited availability of shore accessible fishing along the lower Coquille River.

3.8 Rail

Bandon has no railroads and has no plans to develop them.

4. REFERENCES

- City of Bandon (City of Bandon, Oregon). 2022. Annual Budget. Available at <https://www.cityofbandon.org/sites/default/files/fileattachments/finance/page/11046/budget_document_fy2022-23_proposed.pdf>. Accessed September 18, 2023.
- City of Bandon (City of Bandon, Oregon). 2000. Bandon Transportation System Plan. Available at <https://www.cityofbandon.org/sites/default/files/fileattachments/general/page/10146/bandon_trasplan_.pdf>. Accessed September 11, 2023.
- City of Bandon. 2010. Bandon Transportation Refinement Plan. Available at <https://www.cityofbandon.org/sites/default/files/fileattachments/general/page/10146/bandon_transportation_refinement_plan_2010.pdf>. Accessed September 8, 2023.
- City of Bandon. 2012. Comprehensive Plan. Available at <https://www.cityofbandon.org/sites/default/files/fileattachments/planning_department/page/10146/1991_comp_plan_codified_9-12-2011.pdf>. Accessed September 8, 2023.
- City of Bandon. 2017. Parks Master Plan. Available at <www.cityofbandon.org/sites/default/files/fileattachments/general/page/10146/parks_masterplan.pdf>. Accessed September 15, 2023.
- City of Bandon. 2020. Safe Routes to School Plan. Available at <https://www.oregonsaferoutes.org/wp-content/uploads/2023/02/ODOT-SRTS-Plan_Bandon-6.19.20.pdf>. Accessed September 8, 2023.
- Coos County Area Transit. 2021. Transit Master Plan. Available at <https://stkai01.blob.core.windows.net/kaiwebdata/z8maf8s7romqfs6w5ydigh4wbszz?sp=r&sv=2018-11-09&se=2023-09-18T17%3A38%3A45Z&rscd=inline%3B+filename%3D%223514_Final_Transit_Master_Plan_final.pdf%3B+filename%3DUTF-8%27%27273514_Final_Transit_Master_Plan_final.pdf&rsct=application%2Fpdf&sr=b&sig=fOyjWGMvkt8wONZrImSmUxHCJgArxTehlwkouJpUuo%3D> Accessed September 18, 2023.
- Curry Public Transit Inc. 2023. Transit Development Plan (Draft). Available at <<https://stkai01.blob.core.windows.net/kaiwebdata/yz6v9wee44gykb9bk5wdk1rxg3xu?sp=r&sv=2018-11-09&se=2023-09-18T17%3A51%3A33Z&rscd=inline%3B+filename%3D%22Curry+County+TDP+Report.pdf%3B+filename%3DUTF-8%27%27Curry%2520County%2520TDP%2520Report.pdf&rsct=application%2Fpdf&sr=b&sig=TAGtDK%2F19Iz0BaYp5F9iwa78IPC%2FOk1eTLtFTpgGFo4%3D>> Accessed September 18, 2023
- ODAV (Oregon Department of Aviation). 2017. Bandon State Airport, Airport Master Plan. Available at <<https://www.oregon.gov/aviation/plans-and-programs/Documents/Airport%20Planning/Bandon/Bandon%20AMP%20FINAL.pdf>>. Accessed September 11, 2023.
- ODAV. 2018. Oregon Aviation Plan v6.0. Available at <<https://www.oregon.gov/aviation/plans-and-programs/pages/oap.aspx>>. Accessed September 11, 2023.
- ODOT (Oregon Department of Transportation). 2023a. Analysis Procedures Manual, Version 2. Available at <<https://www.oregon.gov/odot/Planning/Documents/APMv2.pdf>>. Accessed September 8, 2023.

- ODOT. 2023b. Highway Design Manual. Available at <https://www.oregon.gov/odot/Engineering/Documents_RoadwayEng/HDM-0000-Full.pdf>. Accessed September 8, 2023.
- ODOT. 2023c. Oregon Highway Plan. Available at <<https://www.oregon.gov/odot/Planning/Documents/OHP.pdf>>. Accessed September 11, 2023.
- Oregon Office of Economic Analysis. Oregon's Annual Population Forecast Through 2030. Available at: <<https://www.oregon.gov/das/oea/Pages/forecastdemographic.aspx>> Accessed September 18, 2023.
- Population Research Center, Portland State University. 2022. Coos County Coordinated Population Forecast 2022-2072. Available at <<https://www.pdx.edu/population-research/sites/populationresearch.web.wdt.pdx.edu/files/2022-06/Coos.pdf>> Accessed September 15, 2023.
- TRB (Transportation Research Board). 2016. Highway Capacity Manual, Sixth Edition: A Guide for Multimodal Mobility Analysis. Transportation Research Board, Atlanta, GA.

Appendix A

Synchro and SimTraffic Reports

