B. Future Needs Assessment

The transportation system needs in Coos Bay were determined for existing and future conditions. This chapter outlines the type of improvements that would be necessary as part of a long-range master plan, and identifies areas where further alternative solutions will be evaluated to select a preferred improvement. Phasing of implementation will be necessary since all of the improvements cannot be done at once. This will require prioritization of projects and periodic updating to reflect current needs. Most importantly, it should be understood that the improvements outlined in the following sections are a guide to managing growth in Coos Bay as it occurs over the next 20 years.

Motor Vehicles

The following summary includes the methodology and resulting improvement projects for the Coos Bay 2020 TSP Motor Vehicle Plan. Additional discussion, tables, and figures can be found in the Appendix.

Assessment Approach

Existing conditions were identified in Appendix A. The future 2020 conditions were forecast as described in the Existing and Future Traffic Volumes memorandum, dated March 19, 2003 (see Appendix). The only motor vehicle project included in the 2020 base analysis that was not included in the 2000 base network is the widening of Newmark Avenue between east of LaClair Street and Ocean Boulevard to 3 lanes. Performance was evaluated using a three-tiered assessment of capacity and operations.

- **Capacity Improvements** at both the link and intersection level as described below:
  - Demand to capacity (D/C) ratios[1] were evaluated on roadway segments and conditions where the demand to capacity ratio exceeded 1.0 were studied for potential improvements (based on a 1-hour D/C ratio).
  - Intersection level data were developed for about 74 intersections in Coos Bay (based upon staff input, for primarily arterial and collector intersections). While this is a broad sampling of intersections, it does not represent every intersection in the City. Alternative improvements were considered where Level of Service (LOS) was at E or worse or where the Oregon Highway Plan standard is exceeded.
- **Safety Improvements** were considered where high accident locations or known deficiencies exist. In some cases safety improvements were combined with other modal improvements to achieve a safer, more balanced transportation system (i.e. reducing travel lanes from four to three, providing a center left turn lane and allowing room for pedestrian and/or bicycle improvements).
- **Other Mode Improvements** were considered where known deficiencies exist in the system or where motor vehicle projects would enable enhancements in other modes (i.e. converting a four-lane roadway to a three-lane roadway with bike lanes).

[1] Demand to capacity ratio is similar to volume to capacity (V/C) ratio. The difference is that in the future demand is being estimated and therefore the term demand is utilized. For existing conditions, volume refers to the actual traffic on the roadway. While a demand to capacity ratio can exceed 1.0, a volume to capacity ratio would never exceed 1.0.

Capacity Analysis

Year 2020 traffic volume forecasts were analyzed to assess locations where peak hour performance will drop below minimum desirable levels. This focuses on the 70 study intersections that were previously examined under Existing Conditions (2002 traffic volumes), but also includes a review of road segment approaches to major intersections. The following tables summarize intersection levels of service in Coos Bay, North Bend and Coos County for 2020 operating conditions. Traffic volumes were developed as described previously and applied to existing intersection geometries. A short discussion is provided for intersections in each jurisdiction.

The Oregon Highway Plan[2] identifies maximum volume-to-capacity ratios (v/c) for peak hour operating conditions. For signalized intersections, the v/c ratio used is the intersection v/c ratio. For unsignalized intersections, the controlling movement v/c ratio is used. For each city, those intersections not meeting ODOT's standards are described.

Coos Bay

A total of 15 signalized and 23 unsignalized intersections were analyzed within Coos Bay. All of the signalized intersections operate at LOS C or better. All study intersections in Coos Bay meet ODOT's volume-to-capacity standards outlined in the Oregon Highway Plan. Several of the unsignalized intersections operate at LOS D or worse. This means that the minor street approaches to these intersections experience moderate to long delays. The major street movements generally are not impeded and typically only a handful of minor street vehicles experience delay. Peak hour signal warrants were evaluated to determine where traffic signals might be needed at locations that do not have a traffic signal today (see discussion below). None of the study intersections in Coos Bay met ODOT's preliminary signal warrants under year 2020 traffic volume conditions. Table 1 shows the future 2020 base intersection levels of service within Coos Bay.

Since no signalized intersections operate at an unacceptable level of service and since none of the unsignalized intersections met preliminary signal warrants, no intersection capacity improvements are recommended for any of the Coos Bay study intersections.

Table 1: Intersection Level of Service in Coos Bay (2020)

	2020 Base		
*Intersection***	*Level of Service*	*Average Delay*	*Volume / Capacity*
Signalized Intersections			
10th Street/Central Avenue	C	22.0	0.71
1st Sreet/Hall Avenue	A	4.9	0.41
Bayshore Dr/Commercial Ave**	A		N/A*
Broadway/Hall Avenue**	A	6.5	0.52
Broadway/Johnson Avenue**	B	17.4	0.63
Broadway/Market Avenue**	B	10.1	0.55
Central Avenue/7th Street	C	12.4	0.75
Commercial Avenue/Broadway**	B	14.1	0.60
Johnson Ave/Bayshore Drive**	C	20.2	0.71
Newmark Ave/Ocean Blvd	B	15.4	0.61
Ocean Boulevard/Butler Road	A	4.3	0.41
Ocean Boulevard/Woodland Dr	C	21.5	0.59

[2] 1999 Oregon Highway Plan, Policy Element, Table 6: Maximum Volume to Capacity Ratios Outside Metro.

*Intersection***	*2020 Base*		
	Level of Service	*Average Delay*	*Volume / Capacity*
US 101/Koosbay Boulevard**	B	12.8	0.60
US 101/Coos River**	C	32.7	0.70
Unsignalized Intersections			
11th Street/Elrod Avenue	A/A		
2nd Street/Ingersoll Avenue	A/B		
6th Street/D Street	A/C		
Bayshore Drive/Alder Avenue**	A/C		0.20*
Bayshore Drive/Birch**	A/B		0.11*
Bayshore Drive/Cedar Avenue**	A/C		0.03*
Bayshore Drive/Fir Street**	A/B		0.01*
Bayshore Drive/Market Avenue**	A/D		0.10*
Broadway/Alder Avenue**	A/D		0.32*
Broadway/Fir Street**	A/C		0.13*
Empire Boulevard/Pacific Ave**	A/C		0.15*
Lockhart Avenue/2nd Street	A/B		
Lockhart Avenue/7th Street	A/B		
Newmark Ave/LaClair Street	A/D		
Newmark Ave/Morrison Street	B/D		0.44*
Ocean Avenue/LaClair Street	A/C		0.42*
Ocean Boulevard/Radar	A/B		
Thompson Road/Koosbay Blvd	A/C		
US 101/1st Street**	C/D		0.51*
US 101/S. Front Street**	C/F		0.47*
Woodland Drive/Thompson Rd	A/C		
All-Way Stop Controlled			
7th Street/Ingersoll Avenue	A	9.3	0.41
Broadway/Lockhart Avenue**	A		0.13*
4th Street/Elrod Avenue	B	11.5	0.42

*V/C ratios calculated using movement volume/movement capacity (per HCM 2000 calculations)
** Indicates ODOT intersection

Coos County

Two signalized and seven unsignalized intersections were analyzed in the County outside of Coos Bay. Both signalized intersections operate at acceptable levels of service. Two of the unsignalized intersections currently operate at LOS E and one operates at LOS F for the side street approach. The other intersections operate at a LOS of D or better. All study intersections meet ODOT's v/c threshold outlined in the OHP. Table 2 shows the future 2020 base conditions at the study intersections in the County. None of the Coos County study intersections meet ODOT's preliminary signal warrants under year 2020 traffic volume conditions.

Since no signalized intersections operate at an unacceptable level of service and since none of the unsignalized intersections meet preliminary signal warrants, no intersection capacity improvements are recommended for any of the Coos County study intersections. The intersection at Coos River Highway/Olive Barber is listed below as an "issue" location. A traffic signal may eventually be warranted at this location due to morning traffic volumes and if a traffic signal is eventually warranted at this location, special design considerations will be required for vehicle on Coos River Highway traveling eastbound

across the Isthmus Slough bridge approaching the intersection has limited advance sight distance for viewing the traffic signal.

Table 2: Intersection Level of Service in Coos County (PM Peak Hour) 2020

Intersection	*2020 Base*		
	Level of Service	*Average Delay*	*Volume / Capacity*
Coos River Highway/Edwards	B/B	—	0.01*
Coos River Highway/Mullen	A/E	—	0.09*
Coos River Highway/Olive Barber	A/D	—	0.45*
Libby/Wilshire	A/B	—	—
US 101/East Bay Drive	A	3.5	0.68
US 101/Edwards	A/E	—	0.29*
US 101/Flanagan	B	12.0	0.70
US 101/North Bay	A/F	—	0.32*
US 101/Trans Pacific	A/C	—	0.28*

*V/C ratios calculated using movement volume/movement capacity (per HCM 2000 calculations)

Preliminary Traffic Signal Warrants

Preliminary traffic signal warrants[3] were evaluated at all unsignalized intersections in the project study under year 2020 traffic volume conditions. The results of this analysis are shown in Table 3. Meeting preliminary signal warrants does not guarantee that a signal will be installed. Before a signal can be installed on a state highway, a traffic signal investigation must be conducted or reviewed by ODOT's Region 3 Traffic Manager. Traffic signal warrants must be met and the State Highway Engineer approval obtained before a signal will be placed on a state highway. Signals on non-state facilities need to be reviewed and approved by appropriate local officials. Preliminary signal warrants were not met under year 2020 traffic volume conditions at any of the study intersections in North Bend.

Table 3: Preliminary Signal Warrants

Intersection	**Warrant Met?**	**Intersection**	**Warrant Met?**
Coos Bay			
10th Street/Central Avenue	No	Lockhart Avenue/2nd Street	No
11th Street/Elrod Avenue	No	Lockhart Avenue/7th Street	No
1st Sreet/Hall Avenue	No	Newmark Ave/LaClair Street	No
2nd Street/Ingersoll Avenue	No	Newmark Ave/Morrison Street	No
4th Street/Elrod Avenue	No	Newmark Ave/Ocean Blvd	No
6th Street/D Street	No	Ocean Avenue/LaClair Street	No
7th Street/Ingersoll Avenue	No	Ocean Boulevard/Butler Road	No
Bayshore Drive/Alder Avenue	No	Ocean Boulevard/Radar	No
Bayshore Drive/Birch	No	Ocean Boulevard/Woodland Dr	No
Bayshore Drive/Cedar Avenue	No	Thompson Road/Koosbay Blvd	No
Bayshore Dr/Commercial Ave	No	US 101/1st Street	No
Bayshore Drive/Fir Street	No	US 101/Koosbay Boulevard	No
Bayshore Drive/Market Avenue	No	US 101/S. Front Street	No
Broadway/Alder Avenue	No	Woodland Drive/Thompson Rd	No

[3] Preliminary Signal Warrants, TPAU Procedure Manual, Oregon Department of Transportation.

Intersection	Warrant Met?	Intersection	Warrant Met?
Broadway/Fir Street	No	US 101/Coos River	No
Broadway/Hall Avenue	No		
Broadway/Johnson Avenue	No	***Coos County***	
Broadway/Lockhart Avenue	No	Coos River Highway/Edwards	No
Broadway/Market Avenue	No	Coos River Highway/Mullen	No
Central Avenue/7th Street	No	Coos River Highway/Olive Barber	No
Commercial Avenue/Broadway	No	Libby/Wilshire	No
Empire Boulevard/Pacific Ave	No	US 101/Edwards	No
Johnson Ave/Bayshore Drive	No	US 101/Flanagan	No

2025 Sensitivity Test

The travel demand model was calibrated to year 2020, however, there was some concern that this plan reflect a 20-year horizon, which, when developed in 2003, would require a 2023 planning horizon. A select group of intersections was forecasted out (using straight line growth at 0.7% per year) to 2023 and analyzed under these traffic volume conditions. Table 4 summarizes the results of this analysis. Each of the selected intersections continues to operate acceptably (including by ODOT standards) until 2023.

Table 4: Intersection Level of Service in Coos Bay (PM Peak Hour) 2023

	2023 Base		
Intersection	*Level of Service*	*Average Delay*	*Volume / Capacity*
Highway 101/Flanagan	B	10.9	0.69
10th/Central	C	22.3	0.73
Johnson/Bayshore	B	19.8	0.69
7th/Central	C	13.1	0.77
US 101/Coos River Highway (Bunker Hill)	C	33.2	0.71

There are a number of locations in Coos Bay that need attention for various reasons. These locations may need improvement unrelated to any specific capacity deficiency and they may not show up as the high collision locations, but based on observation and discussions with the public, consideration of improvements at the following locations should be pursued. These locations are described in Table 5 and shown on Figure 4.

Table 5: Coos Bay Issue Locations

Location ID	*Location*	*Capacity, Operation and Safety Issue(s)*
		Coos Bay
1	Newmark/Ocean Avenue	This intersection is significantly skewed. Alternatives should be considered for improving the effect of this skew by realignment or other means. One alternative might be to realign Ocean to meet Newmark at a 90 degree angle at Ackerman Street.

Location ID	*Location*	*Capacity, Operation and Safety Issue(s)*
2	Newmark between Ocean Boulevard and Cape Arago Highway	Capacity – Peak hour directional volumes are at or near the capacity of one travel lane in each direction. There are few parallel alternative routes currently constructed. Additional roadway capacity could be provided by widening Newmark through this section or by providing an alternate parallel collector route.
3	Newmark between City Limits and Ocean Boulevard	There is a widening project (to provide two travel lanes with a center left turn lane/median) currently underway between Norman and Ocean. It appears that the current Coos Bay improvement project will likely provide sufficient capacity for the 20-year horizon. It was previously thought that it would eventually be upgraded to a five lane section, however, based on the 2020 travel demand model, further widening would not be necessary. Consider restriping to three travel lanes (one travel lane in each direction with a center left turn lane/median) between Ocean and Woodland. This would allow room to include a bike lane in each direction.
4	Coos River Highway/Olive Barber	Capacity/Safety -- There is a substantial amount of traffic turning from Olive Barber onto Coos River Highway during peak hours. Truck traffic is significant on all approaches. A traffic signal may become warranted in the future. Options for upgraded traffic control should be explored, such as providing an advance signal head for eastbound traffic on Coos River Highway before the horizontal curve if the intersection does become signalized. There is limited sight distance to the intersection from the west. ODOT is currently planning on doing an Environmental Assessment (EA) on the Isthmus Slough Bridge, which will, by default, address issues at either ends of the bridge (Bunker Hill intersection and Olive Barber/Coos River Highway). This issue should be considered together with locations 5 and 12.
5	US 101 / Bunker Hill / Coos River Highway	Capacity/Safety -- This area should be explored and alternatives developed that provide better separation between highway junctions and local street access. Analysis of the study intersections does not indicate substandard performance today or in the future, but access spacing along Coos River Highway is very substandard. Specifically, access to the port facilities north of Coos River Highway and the adjoining residential neighborhood should be examined to identify alternatives that better conform to state standards. There are a number of constraints at this intersection, including vehicular conflict, rail crossings, pedestrian and bicycle access. There are a high number of southbound vehicles on US 101 turning left onto Coos River Highway. Loop detector layout is poor and it is in very close proximity to Edwards and Flanagan. The possibility of providing interconnect between these intersections should be explored. ODOT is planning on doing an EA for this area in conjunction with locations 4 and 12.

Location ID	*Location*	*Capacity, Operation and Safety Issue(s)*
6	Woodland/Thompson	Upgraded traffic control should be explored at this intersection. While it does not meet traffic signal warrants in 2020, there is potential for significant growth in this area associated with medical center and hospital development. As growth in the area occurs, this intersection should be monitored to determine if a traffic signal or other improved control would be warranted. Safety—There area fair number of turning traffic collisions at this intersection. A traffic signal at this location would likely improve safety at this location.
7	7th/Anderson	Safety -- This intersection has a number of vehicular conflicts, irregular horizontal curves on the eastbound approaches, and two side street approaches at close proximity. Currently, two lanes are designated for eastbound traffic from 10th Avenue through this curve continuing into downtown Coos Bay. Side street connections from 7th Street, Anderson Avenue eastbound, and the loop back movement converge at this location. Alternatives should be considered to either limit access to/from the intersection approaches or to eliminate one or both of them all together.
8	Central/Anderson between 10th and Broadway	Evaluate the trade-offs of eliminating one travel lane in both directions to add bike lanes.
9	Central between 6th and /7th	Safety -- Consider restricting access between Central east of 7th to/from the west. Reorient access to businesses to/from the east (6th Street). There are a number of conflicts that would be reduced and/or eliminated with this action.
10	Bayshore Drive / North Front Street Area	Safety -- Consider access management plan for local side streets to conform with ODOT Access spacing requirements. Area potential for re-development, and frequent cross-street connection do not conform with current standards.
11	1st Street / Johnson Avenue	Safety – Explore traffic control/striping changes to create a more clear/safer intersection. There are two eastbound lanes on Johnson, one is a shared through/left and the other is a through lane. Some residents have complained that the left turn should be protected. There may be sufficient capacity in the remaining through lane to allow this, however, immediately past the intersection, the through lane is dropped as a right-only lane into the Fred Meyer shopping center. Another issue is that it is not always clear to westbound vehicles whether eastbound vehicles are turning or going straight. Alternatives for this intersection and the roadway segment immediately to the east should be explored.

Location ID	*Location*	*Capacity, Operation and Safety Issue(s)*
12	Isthmus Slough Bridge	ODOT bridge design department is studying alternative designs for the bridge on Coos River Highway. This project is being considered in conjunction with locations 4 and 5 (Olive Barber/Coos River Highway and US 101/Bunker Hill/Coos River Highway). The bridge is currently weight restricted and is a drawbridge. ODOT is no longer building drawbridges and must build the replacement higher to allow ships under. No funding has been allocated for design and construction.
13	Anderson Avenue	Traffic flow on Anderson between 7th and US 101 is affected by two diverters. The effect of these diverters is that traffic traveling through from 7th to US 101 is forced to merge left and then right to continue forward. There have been public complaints and it appears to be confusing and inconvenient. Some citizens have responded that cars are parked too close to cross-walks at intersections, making pedestrian visibility difficult. No parking restrictions should be considered along Anderson near intersections to improve pedestrian visibility.
14	US 101/Central	This intersection functions basically as a pedestrian crossing since the only allowed movement other than southbound US 101 is a southbound right turn onto Central. There have been complaints about the visibility of the traffic signal and it is noted that the stop bar on the southbound approach is a significant distance from the intersections. Solutions at this intersection should be explored.
15	US 101 Southbound	Queues develop southbound on US 101 through downtown Coos Bay, particularly in the evening peak hour. Currently, the traffic signals along US 101 are time-based coordinated, but they are not actuated (i.e. there are no loop detectors). Existing hardwire interconnect exists, however, it should be upgraded to modem or radio interconnect. The signals should be upgraded, loop detectors installed, interconnect improved and coordinated timing plans developed. It is likely that this improvement would greatly improve progression in this area.
16	2nd/Golden	Safety—This is a very low volume intersection that has had a fairly large number of crossing collisions. The reason for these collisions should be explored.
17	Ocean Avenue	Lack of bike lanes on a major arterial
18	Lakeshore Drive	Consider traffic calming measures to reduce motor vehicle speeds on long straight road segments.

Assessment of Need

Based upon the evaluation of intersection level of service, none of the signalized study intersections would operate at or worse than a D/C ratio 0.90 or a Level of Service (LOS) of D in the 2020 evening peak hour with no improvements beyond the Base 2020 conditions. Intersection operation for the existing and base 2020 scenarios are shown in the Appendix. The greatest problem areas can be grouped into the following areas:

- **Specific Issue Locations.** As described in Table 5, there are a number of specific locations in town with unsafe or confusing alignments. These locations (i.e. Bunker Hill, 7th/Central) comprise the majority of transportation related issues in the community.
- **Capacity Deficiencies**. While these are rare, there are a few locations that may need signalization or additional capacity in the 20 year time frame.

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City of Coos Bay Transportation System Plan

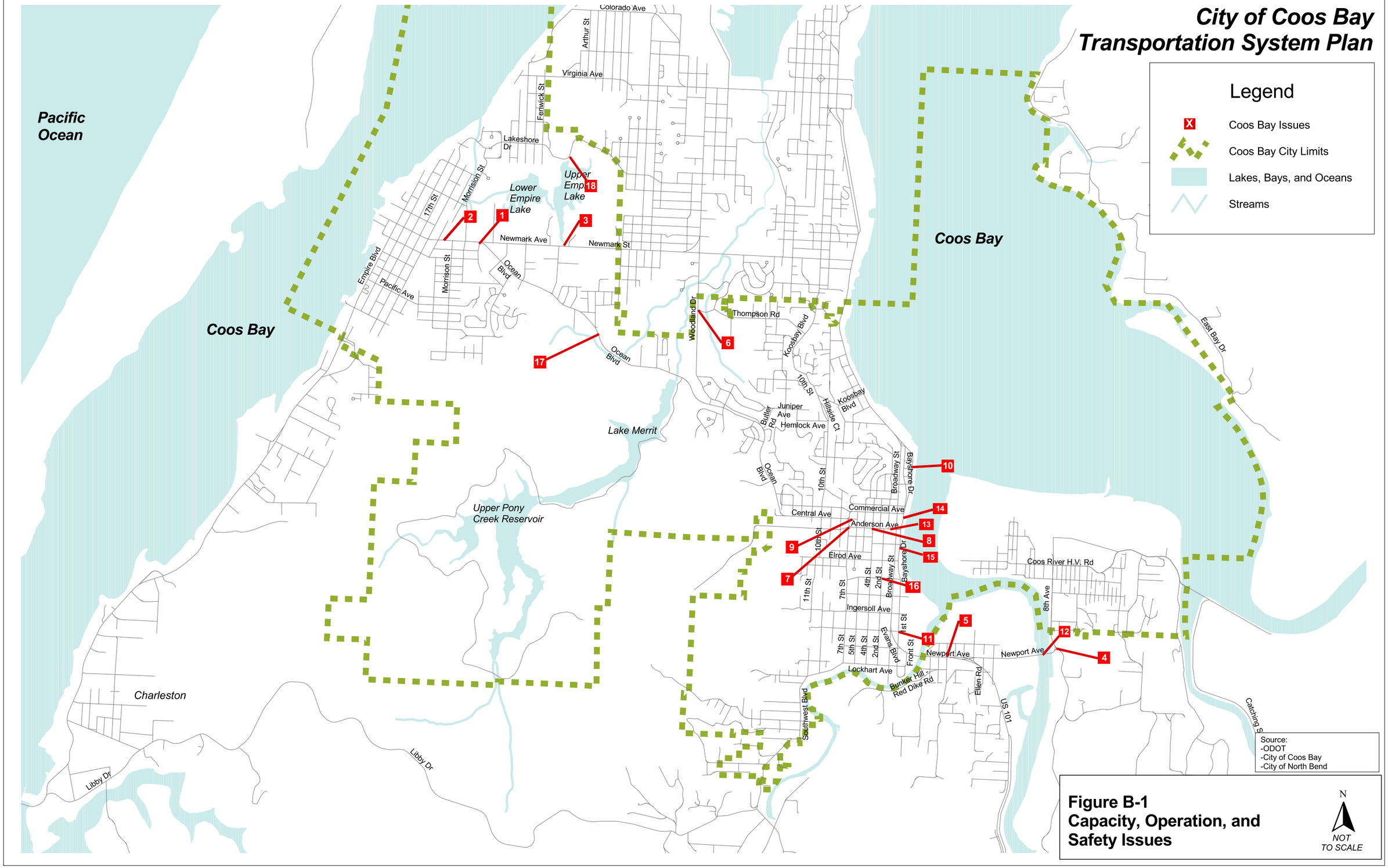

Figure B-1
Capacity, Operation, and Safety Issues

Transit

Federal funding for the fixed-route transit services that did exist in Coos Bay was terminated and service ceased operation as of the end of December 2002. The CCAT has applied for federal grants from the Federal Transit Authority to extend these basic operations. Currently, only the dial-a-ride service is operational. The discussion below is written assuming that funding and service is restored to previous levels.

Currently, there are several transit routes serving Coos Bay (see Figure B-2). A 1/B-mile buffer was created around the existing transit system using geographic information systems (GIS) to determine which areas of Coos Bay are not effectively served. A large portion of both Coos Bay is located within 1/B-mile of a transit route, which is a reasonable walking distance for most transit patrons. There are only a few areas that are not served using that criterion, as indicated on Figure B-2.

The City of Coos Bay should consider whether future transit coverage should be provided to those transit areas not covered by the existing system. Considerations will include the potential to support transit in those areas as well as the trade offs, including comparison to more frequent headways on existing routes. The City of Coos Bay should coordinate with CCAT and Coos County to provide transit shelters at transit stops with significant daily boarding. The City of Coos Bay should coordinate the provision of sidewalks along streets with significant transit usage.

Bicycles

The existing Bicycle Route map reflects bicycle accessibility in Coos Bay. Bikeway improvements are aimed at closing the gaps in the bicycle network along arterial and collector roadways.

State policy from the Transportation Planning Rule indicates that all arterial and major collector roads either have bikeways when they are constructed or improved or an adjacent parallel facility provided. Since state policy requires that all arterials and collector be improved with bike facilities, those that do not have bike facilities would be considered deficient. Additionally, a bicycle network is needed within a half-mile buffer that was created around key activity centers (parks, schools, retail, etc.) in town. These bicycle deficiencies are shown in Figure B-3. Since there are very few actual bike facilities in Coos Bay, the number of deficiencies is large. Key areas where bicycle facilities are lacking are as follows:

- Arterials such as US 101, Newmark, Ocean and Coos River Highway
- Lower classified street that fill in gaps in the bikeway network including Woodland, Ocean and Koosbay/10th

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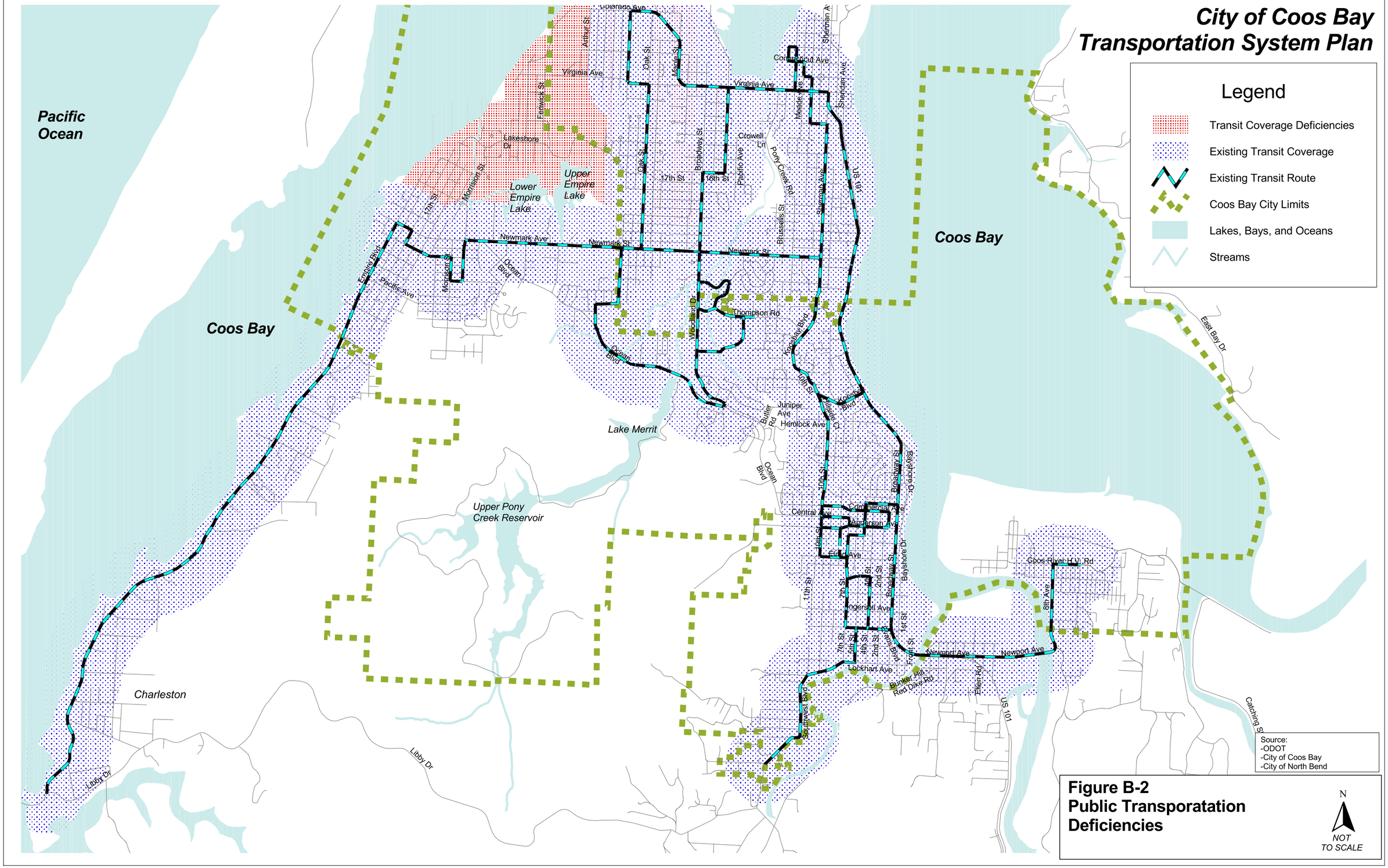

Figure B-2
Public Transporatation Deficiencies

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City of Coos Bay Transportation System Plan

Pacific Ocean

Coos Bay

Coos Bay

Lake Merrit

Upper Pony Creek Reservoir

Charleston

Lower Empire Lake

Upper Empire Lake

Colorado Ave
Arthur St
Oak St
Maple St
Sherman Ave
Connecticut Ave
Virginia Ave
Fenwick St
Meade Ave
Sheridan Ave
Lakeshore Dr
Crowell Ln
Broadway St
Pacific Ave
Pony Creek Rd
Morrison St
17th St
16th St
Brussells St
US 101
Empire Blvd
Newmark Ave
Newmark St
Ocean Blvd
Woodland Dr
Thompson Rd
Koosbay Blvd
10th St
Juniper Ave
Hemlock Ave
Butler Rd
Hillside Ct
Bayshore Dr
Central Ave
Commercial Ave
Anderson Ave
1st St
Elrod Ave
11th St
7th St
4th St
2nd St
Ingersoll Ave
Front St
Evans Blvd
Newport Ave
Lockhart Ave
Bunker Hill
Red Dike Rd
Ellen Rd
Coos River H.V. Rd
8th Ave
Southwest Blvd
Libby Dr
Catching Slough

Legend

- Bicycle Facility Deficiencies
- Existing Bike Lanes

Public Places

- Library
- Hospital
- School
- Shopping
- Coos Bay City Limits

Source:
-ODOT
-City of Coos Bay
-City of North Bend

Figure B-3
Bicycle Facility Deficiencies

N

NOT TO SCALE

Pedestrians

The existing pedestrian system network map reflects pedestrian accessibility in Coos Bay. Existing sidewalks are generally five feet wide, except adjacent to some commercial areas where they may be wider (up to 8 or 10 feet wide). In most cases sidewalk improvements are aimed at closing gaps in the existing sidewalk network to provide connectivity rather than capacity. In other words, it is much more important that a continuous sidewalk be available than it be of a certain type or size.

The most important existing pedestrian need in Coos Bay is a well-connected pedestrian system within a half-mile grid and connectivity to key centers (parks, schools, retail, etc.) in Coos Bay. Needs include safe, direct and convenient access to transit and crossings of large arterial streets which act as barriers to pedestrian movement, as well as an inventory of local street sidewalk locations in order to complete a detailed sidewalk connectivity plan. In the future, pedestrian needs will be similar in the City, but there will be additional activity centers that will need to be considered and interconnected.

Figure 1 shows where sidewalks are lacking on arterials and collectors in Coos Bay. Ideally, sidewalks would be present on all arterials and collectors, so segments where sidewalks are not available are considered deficient. This is a starting place for determining a Pedestrian Master Plan (long term), from which a Pedestrian Action Plan (shorter term, prioritized plan) will be developed. Obvious key areas where sidewalks are lacking are as follows:

- Newmark Street between Broadway Street/Woodland Drive and Ocean Boulevard. While some portions of this segment have sidewalks on one side or the other, continuous sidewalk should be provided on both sides of this street, which has a significant amount of commercial development as well as a community college along its length.
- Downtown Coos Bay. A majority of downtown streets have sidewalks on both sides; however, there are a few which lack them (some portions of 2nd Street and 4th Street). With some of the highest pedestrian activity in the City, sidewalks should be provided on all downtown streets
- Woodland Drive. While there are sidewalks on some portions of the street near Newmark Avenue, a majority of the roadway lacks sidewalks. This is the only pedestrian opportunity in about one mile spacing and provides access between the hospital and commercial activities.
    - Street Crossing Locations. Pedestrian crossings are lacking particularly on arterial routes such as Newmark, Ocean and Central at locations other than traffic signals. Pedestrian crossing improvements such as raised median islands, illumination, curb extensions and enhanced markings should be considered at locations with high pedestrian crossing demand

Other Modes

There are four other modes of transportation included in the TSP: rail, pipeline, air, and water. Future needs for these modes of transportation are identified by their providers and are summarized below as they are understood.

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City of Coos Bay Transportation System Plan

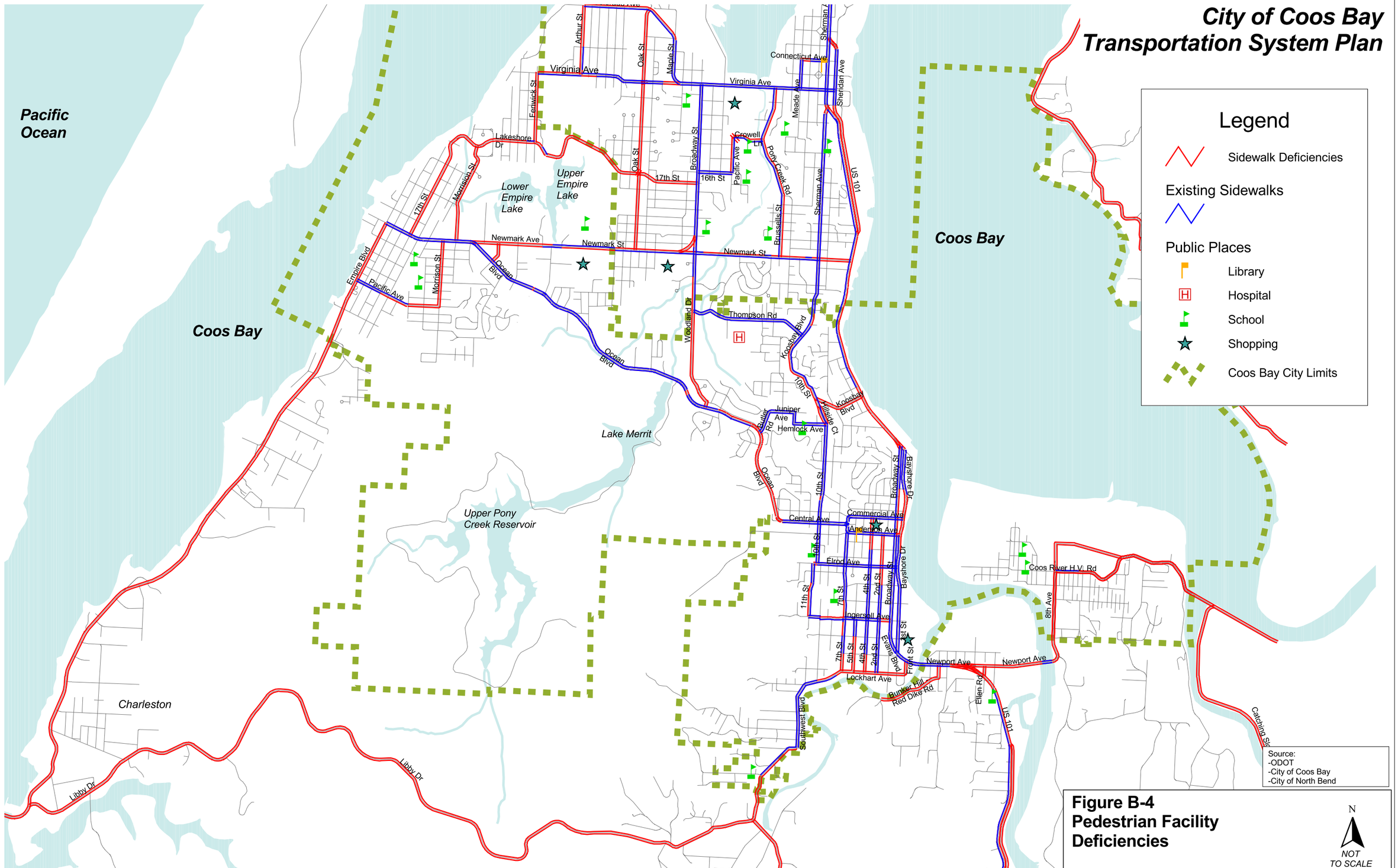

Figure B-4
Pedestrian Facility Deficiencies

Rail

The information reported here is based on the Bay Area Transportation Study (1995). 1995 inspections revealed deficiencies related to deferred maintenance on the line, all of which could be remedied with an adequate maintenance program. If deferred maintenance continues, the physical plant condition will fall below a safe or efficient operating level. Currently, the North Bend Railroad Bridge is in need of significant rehabilitation work.

Inspections and interviews also revealed deficiencies in spurs and switches, service levels, equipment and freight rates. The most glaring deficiencies include an inadequate supply of cars, inopportune switching schedules, inconsistent delivery times and freight rates that are not competitive with truck rates.

Pipeline

A proposed pipeline is being constructed in the Coos Bay area. The alignment of this pipeline and any service mains should be considered when developing any new transportation projects.

Air

The information reported here is based on the Bay Area Transportation Study (1995). The North Bend Municipal Airport has been maintained and upgraded on a regular basis since the City obtained it many decades ago. At this time, its capacity far surpasses its demand. The City of North Bend completed updated its master plan for the airport in June, 1995. At that time, approximately $25 million of improvements were identified, much of which could be funded by Federal Aviation Administration (FAA) grants. The proposed improvements included upgrading runway, taxiway and apron facilities; construction of a new terminal and general aviation facilities on the east side of the airport, a new roadway from the new terminal to Virginia and improvements to hangars and other facilities on the west side of the airport.

Water

The information reported here is based on the Bay Area Transportation Study (1995). The following challenges are key to increasing utilization and providing effective future development of the marine transportation system at the Port of Coos Bay:

- Dependable rail service and additional improvements to the highway system are key to capitalizing on opportunities in the changing worldwide maritime industry.
- There is limited availability of fully serviced commercial and industrial sites and developable industrial property.
- Some ships are limited in their hours of access to the port by the channel depth (35 feet) and by the orientation of the railroad bridge, which has a narrow opening and is oriented in a way that makes it very difficult to maneuver under the McCullough Bridge.
- Greater cooperation and coordination between business owners is necessary to achieve the long term development of the harbor. Short-term and competing interests prevent development of a long term vision, making the Port less likely to realize its full potential as a deep-draft west coast port.

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City of Coos Bay Transportation System Plan

Pacific Ocean

Coos Bay

North Bend Municipal Airport

Lake Merrit

Upper Pony Creek Reservoir

Charleston

Lower Empire Lake

Upper Empire Lake

Colorado Ave
Arthur St
Oak St
Maple St
Virginia Ave
Fenwick St
Lakeshore Dr
Morrison St
17th St
Empire Blvd
Pacific Ave
Newmark Ave
Newmark St
Ocean Blvd
Broadway St
Crowell Ln
Pacific Ave
Pony Creek Rd
Brussells St
Sherman Ave
Meade Ave
Sheridan Ave
Connecticut Ave
US 101
Woodland Dr
Thompson Rd
Koosbay Blvd
East Bay Dr
Butler Rd
Juniper Ave
Hemlock Ave
Hillside Ct
10th St
Bayshore Dr
Central Ave
Commercial Ave
Anderson Ave
Elrod Ave
11th St
7th St
5th St
4th St
2nd St
1st St
Ingersoll Ave
Evans Blvd
Front St
Lockhart Ave
Bunker Hill - Red Dike Rd
Newport Ave
Ellen Rd
Coos River H.V. Rd
8th Ave
Catching Slough
Southwest Blvd
Libby Dr

Legend

Current Pipelines
- 4 Inch Pipe
- 6 Inch Pipe
- 12 Inch Pipe

Proposed Pipeline

Coos Bay City Limits

Source:
-ODOT
-City of Coos Bay
-City of North Bend

Figure B-5
Approximate Proposed Coos County Natural Gas Pipeline

N

NOT TO SCALE