Bremerton2044

Attachment A. Active Transportation Existing Conditions

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Technical Memorandum

Date: Last revised on December 31, 2024
To: City of Bremerton
From: Parametrix
Project Name: Bremerton Active Transportation Plan
Subject: Existing Conditions Memo

Introduction

This memorandum provides a comprehensive overview of existing active transportation facilities, safety concerns, and programs in the City of Bremerton (City). Active transportation users are those who walk, bike, and roll to their destinations. This memo will be used as a baseline to develop the *Active Transportation Plan*, which will supplement the *Transportation Element* to identify opportunities for active transportation users and include a list of proposed projects for implementation. Additional documentation of the existing condition of Bremerton's roadways, including traffic and freight, is detailed in the *Transportation Element: Existing Conditions Memo.*

Plans and Programs

The *Active Transportation Plan* will be developed to align with the City's existing plans, complementing other initiatives with active transportation improvements. Ongoing transportation projects as of spring 2024 are summarized in Table 1. A summary of recent plans is outlined Table 2, including details of their recommendations for bicycle and pedestrian infrastructure.

Table 1. Ongoing Projects with Active Transportation Elements

Project	Bicycle and/or Pedestrian Infrastructure	Status
6th Street Active Transportation Improvements	Bicycle lanes and spot pedestrian improvements	Pre-Design
Bremerton School Zone Safety Improvements	Upgraded school zone signage and speed feedback signs and/or flashing beacons	Design
Naval Avenue Bicycle and Pedestrian Enhancements Project	Bicycle and pedestrian improvements	Design
Warren Avenue Bridge Multimodal Project	Bicycle and pedestrian improvements	Design
Systemic Pedestrian Treatments	Rectangular rapid flashing beacons, crosswalks, and ADA curb ramps	Right-of-Way
View Ridge Elementary – Almira Safe Routes to School	Bicycle and pedestrian improvements	Design
Washington Avenue & 11th Street Improvements	Bicycle and pedestrian improvements	Construction

ADA = Americans with Disabilities Act

Table 2. Existing Plans and Programs

Plan	Description and Connection to Active Transportation
Joint Compatibility Transportation Plan (2023)	The *Joint Compatibility Transportation Plan* examined commuter traffic, parking, and access to NBK-BR. The plan's preferred alternative included active transportation project recommendations.
West Kitsap Way Planning Study (2023)	The *West Kitsap Way Planning Study* provided a comprehensive overview of lane configuration, pavement condition and active transportation infrastructure along Kitsap Way from SR 3 to Chico Way. The study established updated cross sections and preliminary designs for the roadway's future reconstruction
Sidewalk Work Plan (Annual)	Updated annually by the City, the *Sidewalk Work Plan* identifies pedestrian improvements throughout the city that will be constructed by City forces. Construction goals are established annually; for 2024 they include 20 curb ramps compliant with the ADA, 2,000 lineal feet of sidewalk infill and reconstruction, trip hazard removal at 6 locations that involves tree removal and panel replacement, and contracted sidewalk planning to eliminate approximately 800 trip hazards city-wide.
6th Street and 11th Street Corridor Feasibility Study (2020)	The *6th Street and 11th Street Corridor Feasibility Study* evaluated the feasibility of major roadway improvements along these corridors with a focus on enhancing nonmotorized travel and safety. The study recommended road diets for both corridors, prioritizing 6th Street, which had lower traffic volumes and topography more suited to nonmotorized demand.
Strategic Road Safety Plan (2020)	The *Strategic Road Safety Plan* conducted a comprehensive analysis of the transportation network, identifying crash trends, contributing factors, and roadway deficiencies to develop targeted safety needs and potential treatments. These treatments were then assessed for feasibility, leading to prioritized recommendations for improving road safety.
SR 303 Corridor Study (2021)	The *SR 303 Corridor Study* identified transportation improvements along SR 303 to improve livability, attract investment, and increase economic vitality for people and businesses. The plan included active transportation project recommendations from Burwell Street to NE Fairgrounds Road.
Comprehensive Plan: Transportation Element (2016)	The *Transportation Element* of the City's *Comprehensive Plan* outlines the City's existing and planned transportation network. The plan's project list included active transportation improvements and identified the Priority Bicycle and Pedestrian Networks.
ADA Transition Plan (2016)	The *ADA Transition Plan* guides efforts in creating an accessible transportation system and outlines progress toward compliance with federal ADA requirements. It identifies deficiencies in policies, procedures, and physical assets, offering a path for correction and removal of barriers.
Non-Motorized Transportation Plan (2007)	The *Non-Motorized Transportation Plan* outlines the City's planned 20-year bicycle and pedestrian networks. The plan outlined existing conditions and included a project list of bicycle and pedestrian improvements for active transportation users.

ADA = Americans with Disabilities Act; NBK-BR = Naval Base Kitsap Bremerton; SR = State Route

Active Transportation Network

Pedestrian Facilities and Gaps

Existing active transportation infrastructure in the city includes sidewalks, bicycle lanes, neighborhood greenways, and shared-use paths. Dedicated pedestrian spaces provide a safe and comfortable space for people to walk, fostering healthier communities. Sidewalks play an essential role for pedestrian movement, enhancing connectivity and access to local destinations. Sidewalks are available on both sides of 44% of arterial and collector roadways within Bremerton (Figure 1). Sidewalk availability is limited to concentrated urban areas within the city, including downtown, Manette, and East Bremerton. Sidewalks are not available west of Jarstad Park or along State Route (SR) 3, which is maintained by the Washington State Department of Transportation (WSDOT), extending southwest from the city and providing a connection to Bremerton National Airport. Shared-use paths, also known as multiuse pathways, are designated routes designed to accommodate both pedestrians and bicyclists. These paths are typically separated from motorized vehicle traffic, providing a safe and accessible option for active transportation.

Most streets in the downtown core have sidewalks on at least one side, although sidewalk condition[1] varies among streets (Figure 2). Approximately 38% of existing sidewalks are in marginal or worse condition. Sidewalks on arterial and collector streets in Bremerton were mostly in fair or better condition with some exceptions such as 5th Street, which has sidewalks that are mostly in marginal condition. Most major streets downtown—such as Warren Avenue, Washington Avenue, and 6th Street—have sidewalks in generally better condition than adjacent local roadways. Most sidewalks within the city have a width of 5 feet or less.

Pedestrian Priority Network

The *Non-Motorized Transportation Plan* originally identified the pedestrian network that was built upon Bremerton's existing system of sidewalks, shared-use paths, and other existing pedestrian infrastructure. The *2016 Comprehensive Plan* updated and classified this network as the Pedestrian Priority Network, which outlined key connections for active transportation users where the City could prioritize the development of future facilities. The Pedestrian Priority Network was updated in the development of the *Active Transportation Plan*.

[1] Sidewalk availability and conditions as of spring 2024.

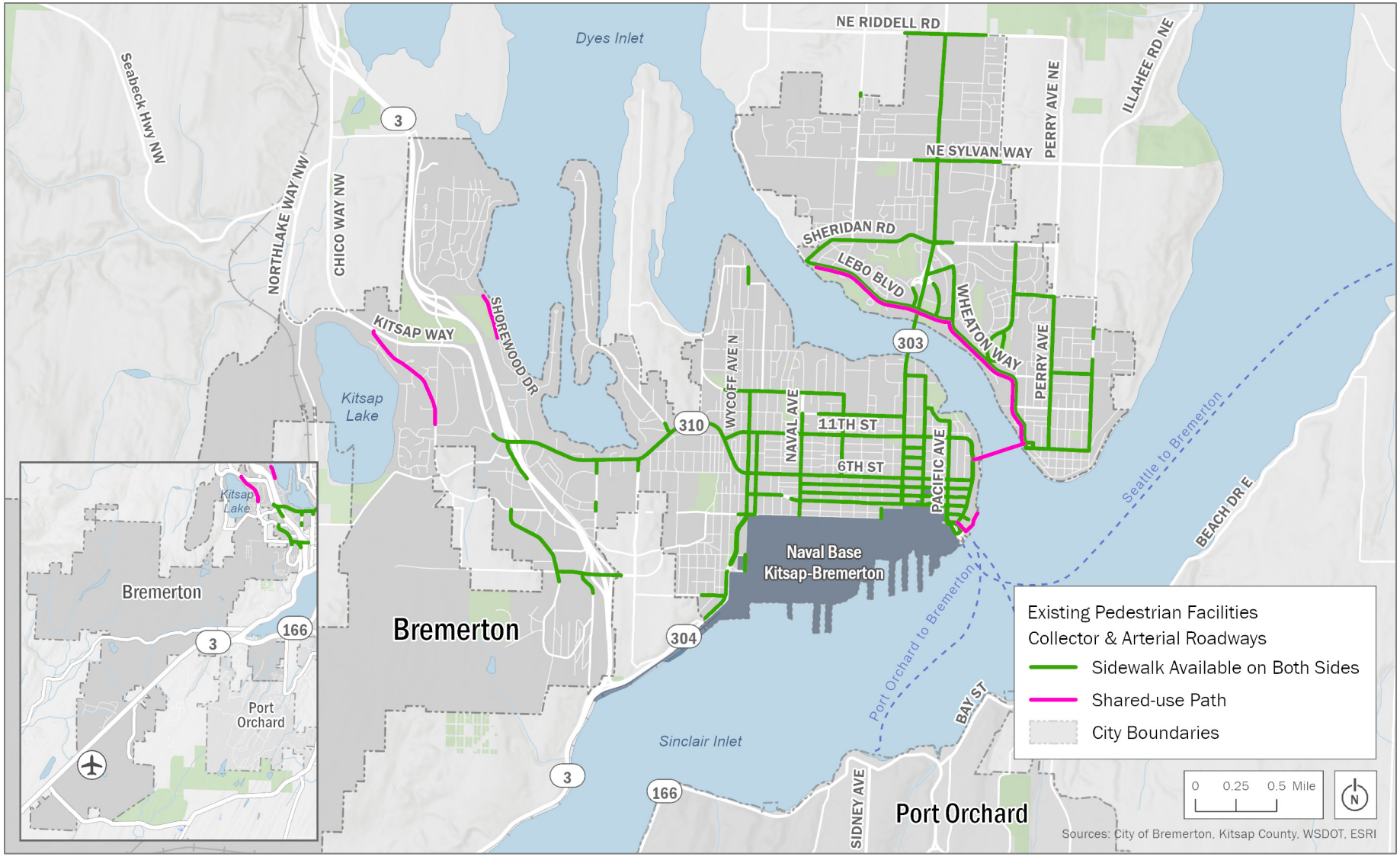

Figure 1. Existing Pedestrian Facilities

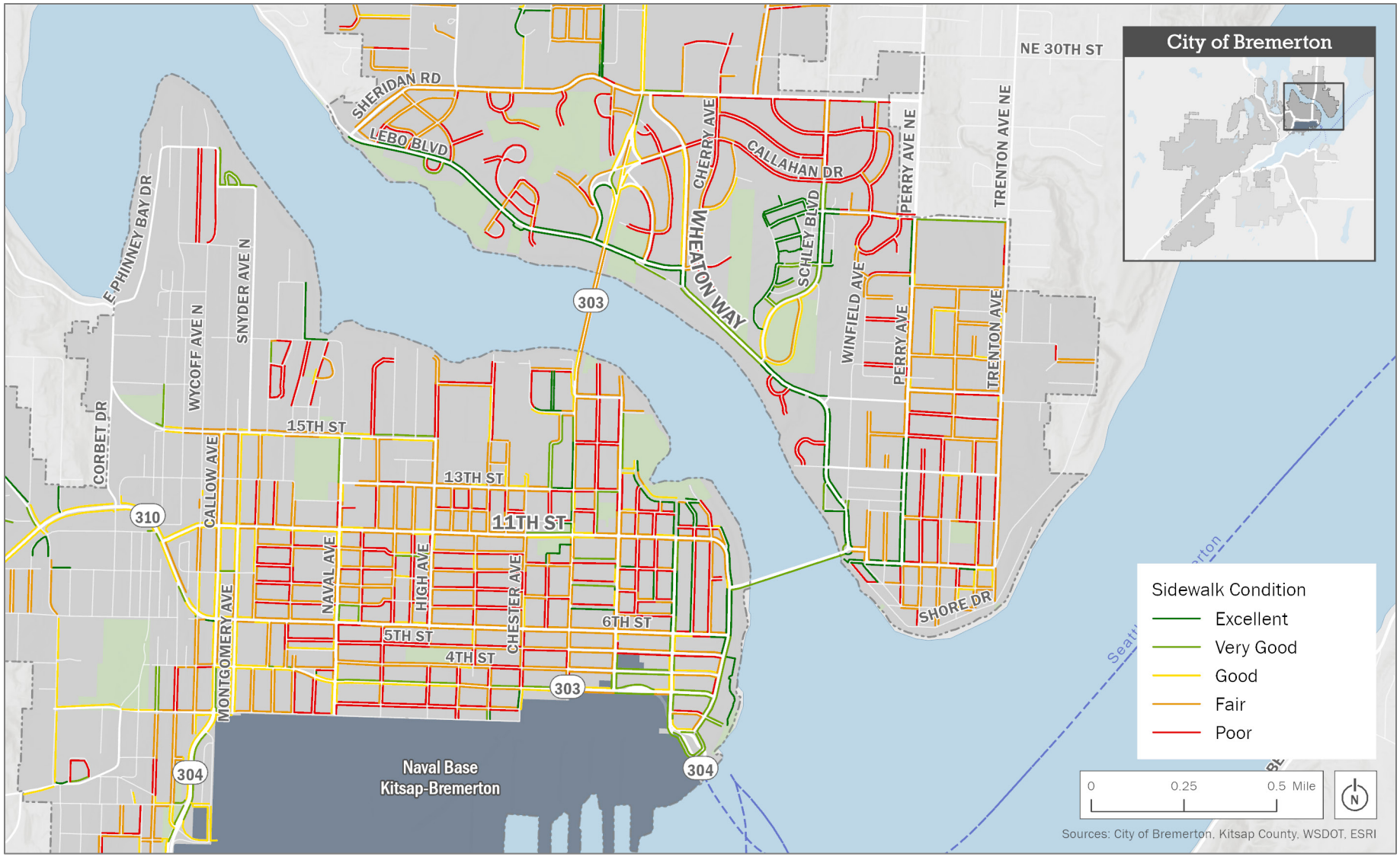

Figure 2. Downtown Sidewalk Conditions (2018)

Level of Traffic Stress

Level of traffic stress (LTS) is a measure used to evaluate the relative comfort of active transportation facilities. LTS metrics include pedestrian LTS (PLTS) and bicycle LTS (BLTS) to capture conditions for both user types. In addition to the presence of a dedicated active transportation facility, LTS considers other roadway characteristics, such as vehicle speed, traffic volume, and the number of lanes, to classify roadways based on how comfortable they feel for most users. The LTS scale ranges from 1 to 4, with LTS 1 representing the lowest stress, suitable for users of all ages and abilities, and LTS 4 representing the highest stress, suitable only for very experienced and confident bicyclists (Figure 3).

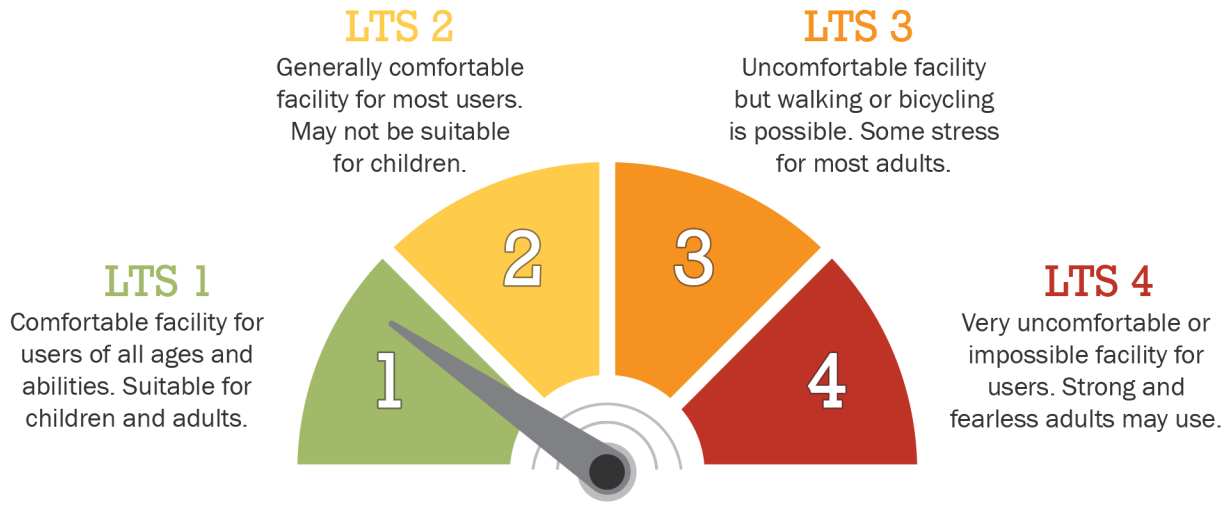

Figure 3. Level of Traffic Stress

The criteria and thresholds for LTS classifications in the *Active Transportation Plan* were selected based on the current *WSDOT Design Manual*. The *Active Transportation Plan's* preliminary PLTS methodology is consistent with the current thresholds in Chapter 1510 of the *WSDOT Design Manual*. For the *Active Transportation Plan's* preliminary BLTS analysis, which is discussed in the following chapter, methodology is consistent with the current thresholds in Chapter 1520 of the *WSDOT Design Manual*. While the manual specifies target speed as an LTS criterion, posted speed limits were used instead due to limited data availability. The WSDOT LTS methodology provided rankings for roadway segments only, as guidance for intersection LTS is not currently included in the *Design Manual*. Consideration of user comfortability at intersections will be considered at a future date. The City of Bremerton will develop and adopt City PLTS and BLTS standards that consider a range of methodologies as part of a separate planning process.

Pedestrian Level of Traffic Stress

A PLTS analysis was conducted for select arterial and collector roadways that provide major connections for people walking and rolling citywide and downtown. Factors used to evaluate PLTS included the presence and width of an existing pedestrian facilities, number of travel lanes per direction, posted speed limit, and vehicular traffic volumes. Figure 4 shows the results from the PLTS analysis.

Due to the presence of sidewalks in the downtown, most of Bremerton's downtown core was classified as PLTS 1 or 2. Roadways without existing sidewalks, including sections of Kitsap Way west of SR 3, W Arsenal Way, and Auto Center Boulevard, were also higher stress with PLTS ratings of 3 or 4. Streets sidewalks at a minimum width of 5 feet received higher stress PLTS ratings in

areas with higher traffic volumes or posted speeds greater than 35 mph, including Loxie Eagans Boulevard and 11th Street. The Warren Avenue (SR 303) Bridge, which is currently in the design phase for active transportation improvements, was ranked PLTS 4 due to sidewalk widths less than 4 feet.

While PLTS results provide an overview of relative user comfort on bike and pedestrian routes, other factors contribute to comfort of people walking or rolling, such including the direction of traffic relative to pedestrians, sidewalk condition, and slope. These factors help supplement this analysis and provide a more complete understanding of the overall quality of the facility for pedestrians.

Figure 4. Preliminary Pedestrian Level of Traffic Stress (PLTS) Results

Bicycle Facilities and Gaps

Bicycle facilities in Bremerton include bicycle lanes, neighborhood greenways, buffered bicycle lanes, shared-lane markings, paved shoulders, and shared-use paths (Figure 5, Table 3). There are approximately 13 miles of roadway that support 15 miles of existing facilities, as some roads feature multiple facility types such as a bike lane and a shared-use path.

Bicycle lanes, buffered bicycle lanes, and shared-use paths offer dedicated spaces for bicyclists separate from vehicles. The most common facility type in the city is a bike lane, with 6.5 miles of bike lanes within the city limits. Buffered bicycle lanes in Bremerton are separated by painted buffers.

Shared-lane markings, neighborhood greenways, and paved shoulders are all shared street facilities between bicyclists and vehicles. Neighborhood greenways, also known as neighborhood bikeways, are streets specifically optimized for bicycle traffic. These low-speed streets prioritize shared bicycle travel in lanes by using signs, pavement markings, and speed management measures to discourage through motor vehicle traffic while allowing local vehicles to access the area.

Table 3. Existing Bicycle Facilities

Bicycle Facility	Description	Total Miles
Bike Lane	Dedicated facility for bicyclists adjacent to traffic with striping and lane markings	6.5
Buffered Bike Lane	Dedicated facility for bicyclists adjacent to traffic with a buffer of 2 feet or greater and lane markings	1.4
Shared-Use Path	Paved facility typically separated from motor vehicle traffic, designed to accommodate various nonmotorized users	3.4
Neighborhood Greenway	Low-stress streets with speeds 25 mph or lower that are optimized for bicycle traffic, featuring traffic calming measures and signage to prioritize bicycles and enhance safety	2.1
Paved Shoulder	Shoulders at least 4 feet wide designated for bicycle use; paved shoulder may not meet best practice for facility design since it is not a dedicated facility	0.8
Shared-Lane Markings	Pavement markings or sharrows that indicate shared use by bicyclists and vehicles in a lane	0.8
	Total	15

Bicycle Priority Network

Network connectivity for existing bicycle facilities is limited throughout Bremerton, with gaps between the city's existing facilities downtown and those located on the west side of the city. The *Non-Motorized Transportation Plan* envisioned a future bicycle network in 2007, which identified all existing and planned bicycle infrastructure in the city. This network was refined in the *2016 Comprehensive Plan* and was the basis for the Bicycle Priority Network, which was updated during the development of this *Active Transportation Plan*.

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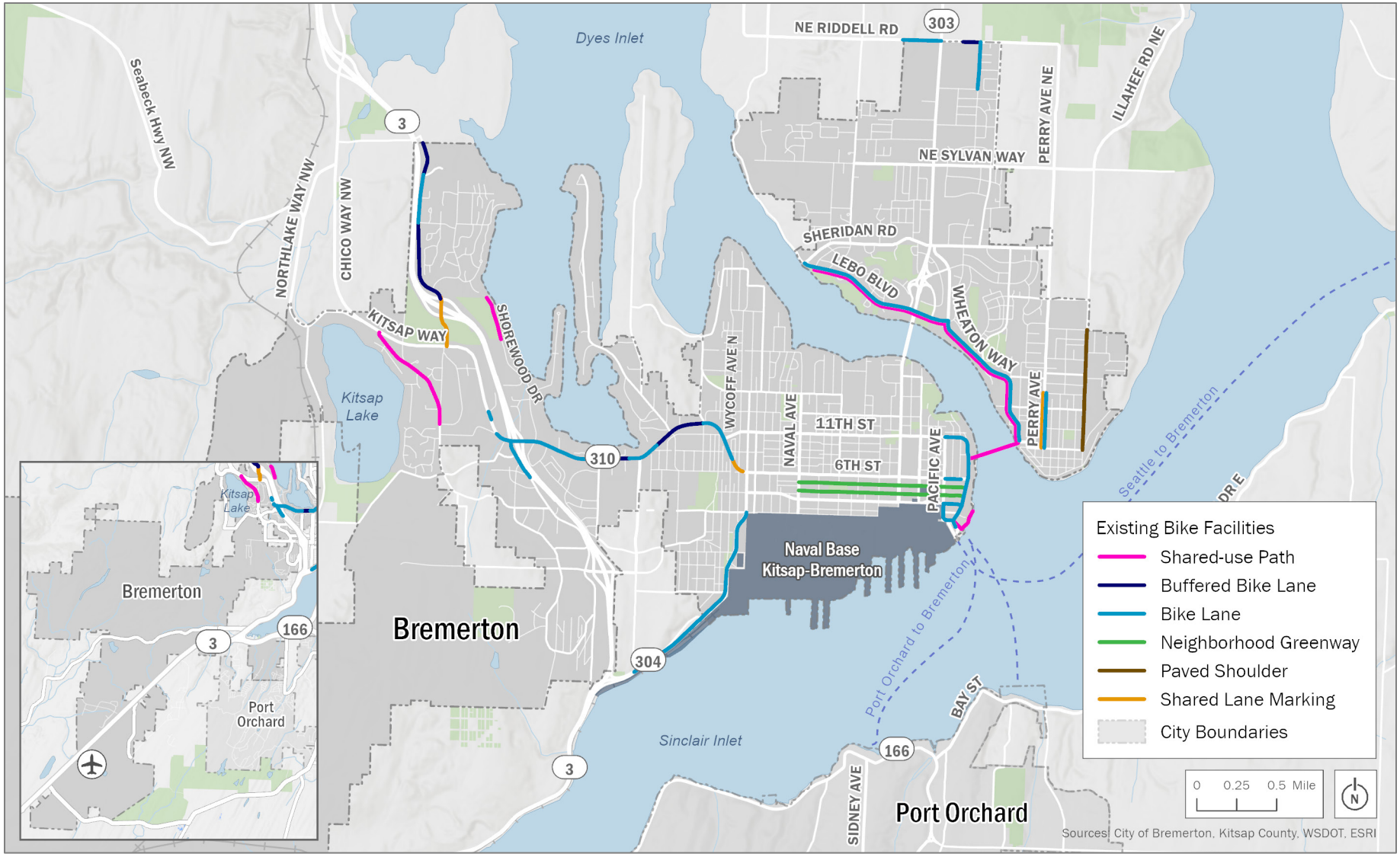

Figure 5. Existing Bicycle Facilities

Level of Traffic Stress

Bicycle level of traffic stress (BLTS) was calculated for select collector and arterial roadways that provide major connections for bicyclists within the urban core of Bremerton. Factors used for the BLTS ranking include presence and width of existing bicycle facilities, number of lanes per direction, posted speed limit, and vehicular traffic volumes. BLTS analysis results are shown in Figure 6.

Approximately half of the roadways selected for the analysis were classified as BLTS 2. Kitsap Lake Road, Price Road, and Trenton Road are all shared facilities classified as BLTS 2 due to low posted speed limits and traffic volumes. The WSDOT BLTS thresholds classify shared facilities with posted speed limits of 30 mph or greater as BLTS 3 and BLTS 4, regardless of the number of lanes or traffic volumes. Some roadway segments rated BLTS 4 are part of ongoing projects to implement active transportation improvements, including the Warren Avenue (SR 303) Bridge and Kitsap Way east of SR 3. Analysis of BLTS for Warren Avenue and 11th Street show that both streets are high stress biking environments with ratings of BLTS 4.

Additional consideration was given for certain BLTS rankings near existing shared-use paths. For both LTS analysis, scoring methodology used the weakest link principle, which means the overall stress level for a segment is determined by the most stressful segment, which may be due to facilities on one side of the road or gaps in facilities. Lebo Boulevard, which has an eastbound bicycle lane, and an existing 10-foot-wide shared-use path along the south side of the road, was ranked as BLTS 2 on the presence of the shared-use path with a bike lane. The Manette Bridge, with an 8-foot shared-use path on the south side, was evaluated with the assumption that bicyclists would use the path rather than the roadway, leading to a BLTS 2 score.

Figure 6. Preliminary Bicycle Level of Traffic Stress (BLTS) Results

Active Transportation Safety

Within the past 5 years, there have been 110 crashes that involved a bicyclist or pedestrian within the city limits of Bremerton (Figure 7). The safety analysis included all roadways within the city, including roads owned and maintained by WSDOT. Most active transportation crashes occurred along arterial or collector roadways, with major crash hotspots downtown and at a major intersection of SR 303 in the northeast section of the city. Table 4 summarizes all active transportation crashes from 2018 to 2022, including 32 crashes involving bicyclists and 78 involving pedestrians.

Table 4. Active Transportation Crashes within the City of Bremerton (2018–2022)

Year	No Injury/ Unknown	Minor Injury	Serious Injury	Fatal	Total
2018	11	13	4	2	30
2019	15	9	4	0	28
2020	4	8	5	0	17
2021	6	6	3	0	15
2022	3	13	3	1	20

Source: Washington State Department of Transportation

The total of crashes involving bicyclists and pedestrians has generally been decreasing since 2018. A sharp decline in annual crashes occurred in 2020, which may be a result of changing traffic pattern and reduced vehicular traffic due to the COVID-19 pandemic. Approximately 66% of these crashes occurred at an intersection. There were three fatal pedestrian crashes during this timeframe. Two of the pedestrian fatalities on National Avenue and Oyster Bay Avenue W were caused by drivers under the influence of alcohol. The other pedestrian fatality occurred along SR 3, which is maintained by WSDOT, near Jarstad Park.

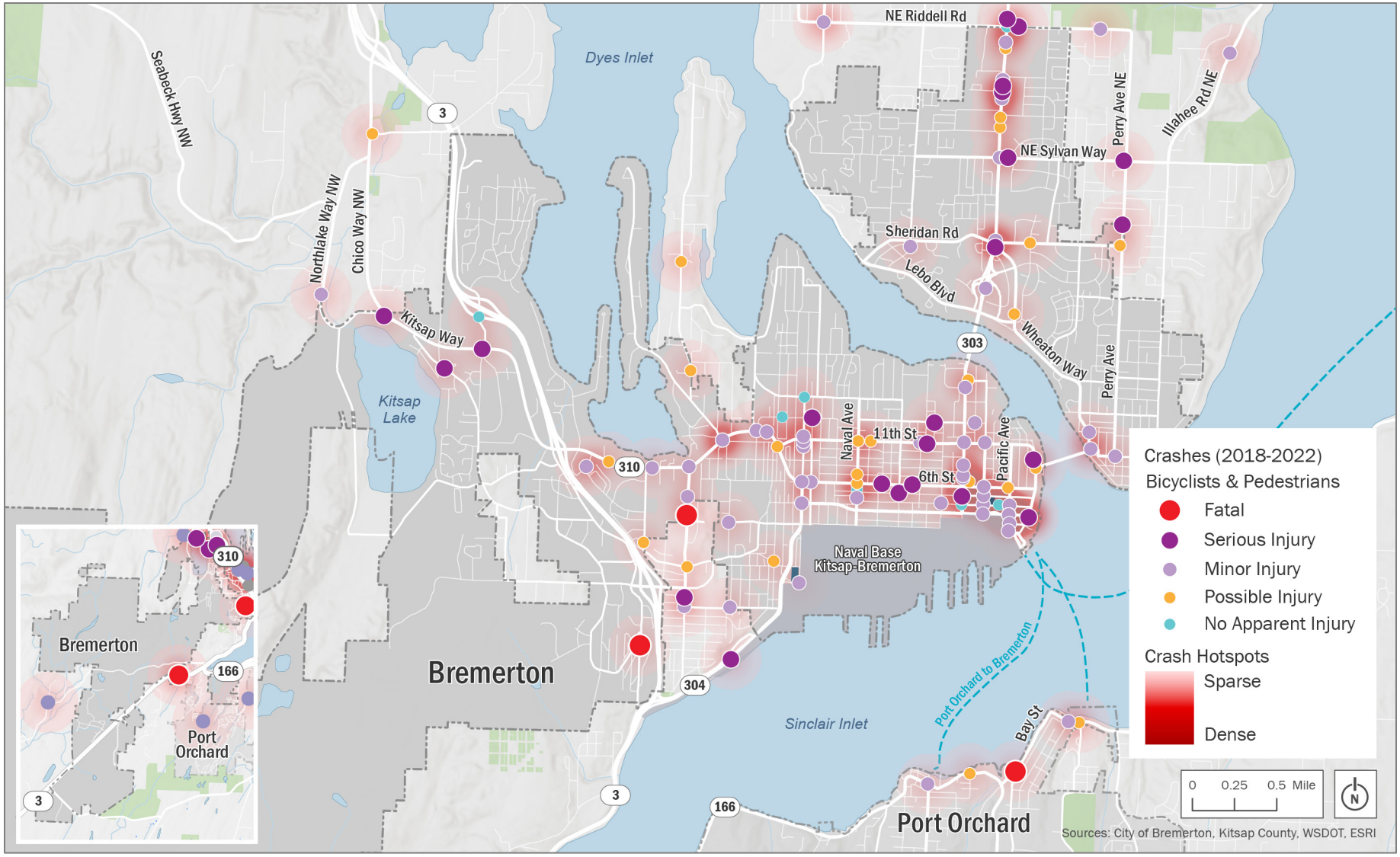

Figure 7. Active Transportation Crashes (2018–2022)

Analysis and Findings

Active Transportation Demand

Active transportation demand refers to the desire and need for nonmotorized modes of travel, encompassing both the level of interest and use of these modes within a community. Understanding active transportation demand helps inform infrastructure planning, policy decisions, and initiatives aimed at the implementation of active transportation facilities where they are needed the most.

The active transportation demand analysis focused on identifying and evaluating key destinations for people walking, bicycling, taking transit, or utilizing other forms of nonmotorized travel. Locating active transportation destinations within Bremerton's city limits can inform the existing demand and existing connections, and opportunities for improvement. This analysis serves as a foundation for developing strategies that promote walking, cycling, and other sustainable modes of transportation.

A total of 315 active transportation destinations were identified within the city limits of Bremerton. Destinations included a variety of community resources designed to meet the needs of the population. These included civic buildings that serve as hubs for local government and public services, health facilities that provide essential medical care and wellness programs, schools, and parks that offer recreational and green spaces for relaxation and outdoor activities. Destinations also incorporated transportation connections, including transit centers, bus stops, and ferry terminals. Beyond these, other critical community resources, such as senior centers or public libraries, were also included to enhance the overall quality of life and support the well-being of residents. Table 5 outlines all facilities identified as destinations for active transportation users.

Table 5. Active Transportation Demand

Category	Destinations
Civic buildings	Government buildings, law enforcement, Naval Base Kitsap Bremerton
Community resources	Museums, public library, Red Cross, senior center, Puget Sound Industrial Center, Bremerton Foodline
Health resources	Hospitals, urgent care clinic
Park	Parks
School	Schools, universities
Transportation	Transit stops, pedestrian overpass, NBK-BR gate access, airport, ferry, park and ride

Areas with high active transportation demand were located based on higher concentrations of active transportation destinations. Notably, downtown and East Bremerton exhibited high demand due to their denser populations and greater availability of civic services. The prevalence of transit stops along collector and arterial roadways in Bremerton's core also influenced concentrations of high demand observed in these areas. Figure 8 shows areas of high active transportation demand, with Figure 9 providing additional context of transit routes through Bremerton.

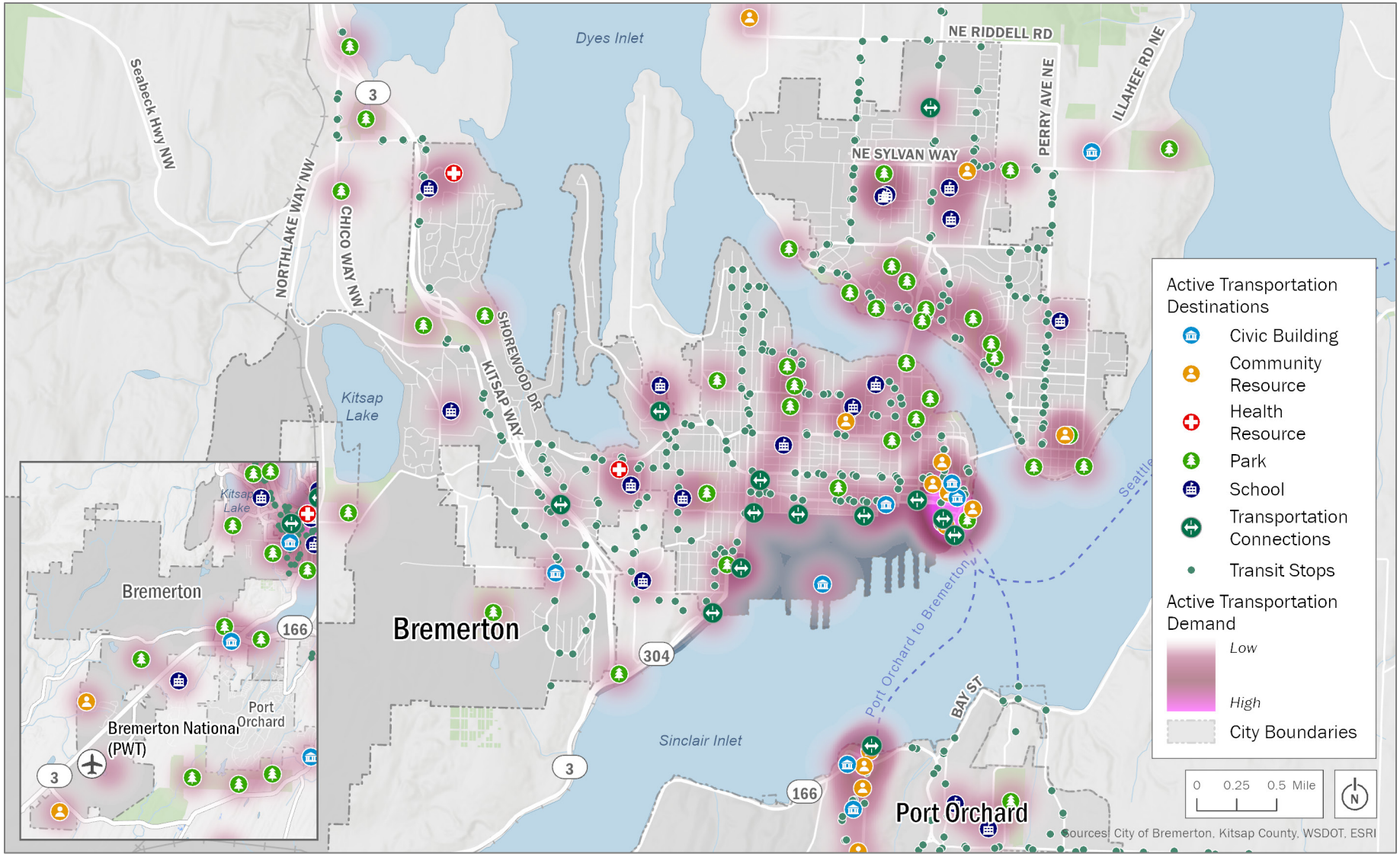

Figure 8. Active Transportation Demand

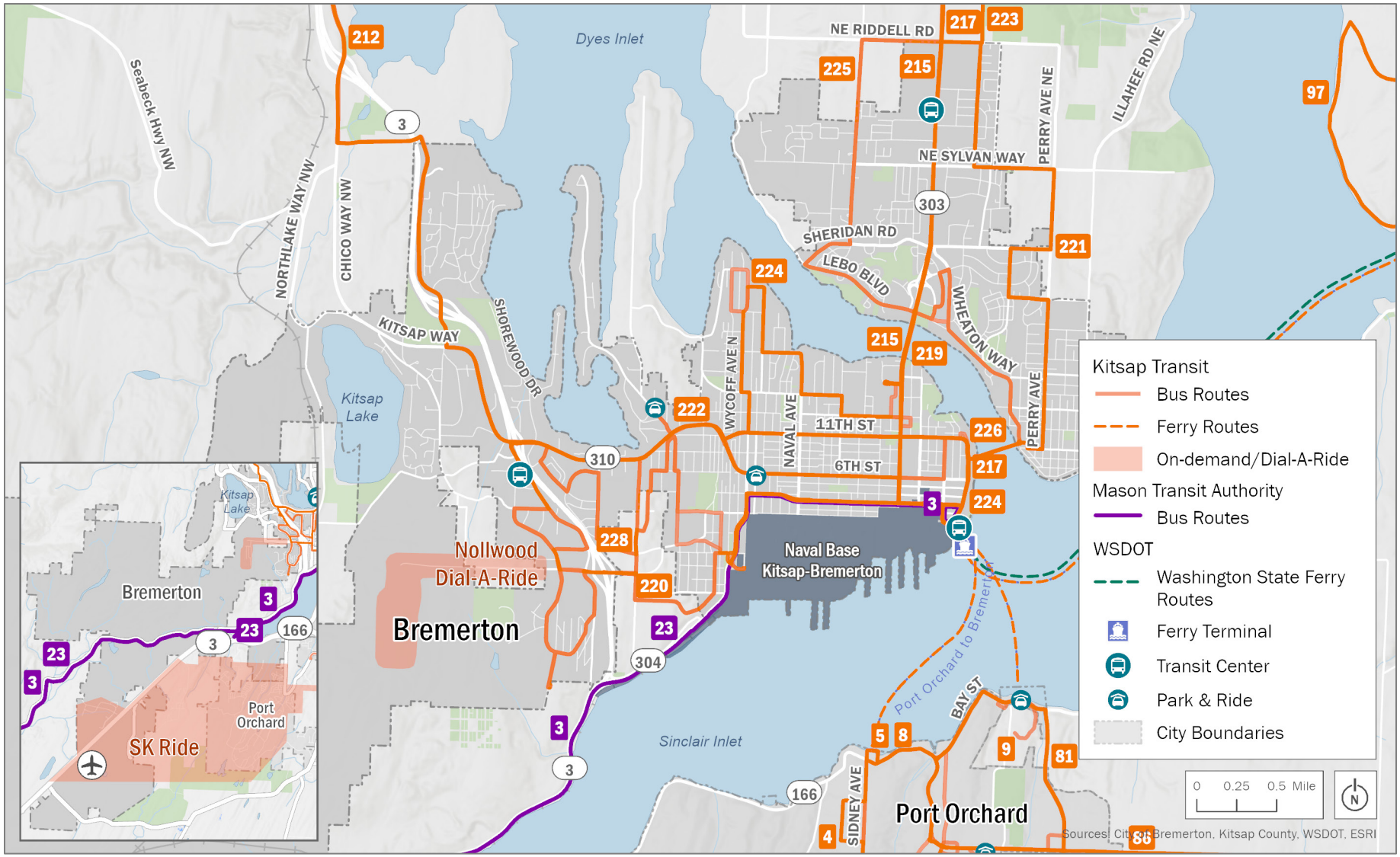

Figure 9. Existing Transit Network

Transportation Equity

Equity is a pivotal consideration in the strategic planning of active transportation systems to ensure inclusivity across communities and reduce disproportionate impacts from the transportation network onto historically disadvantaged communities. Certain community characteristics, such as vehicle ownership or household income, may indicate the need for more active transportation facilities. These indicators suggest a greater reliance on walking, biking, and public transit, making it essential to provide accessible, safe, and efficient alternatives to support mobility and improve the quality of life for all communities.

The datasets employed in the equity analysis for the Bremerton *Active Transportation Plan* include Environmental Health Disparities, Areas of Persistent Poverty, and Historically Disadvantaged Communities. These datasets were chosen for their alignment with key criteria used by WSDOT in applying the Complete Streets guidance. Table 6 outlines the definitions and thresholds of the three separate equity metrics used in the analysis.

Table 6. Equity Metrics

Dataset	Source	Definitions and Thresholds
Environmental Health Disparities	Washington Department of Health	Census tracts within top quintile of pollutant exposures and socioeconomic vulnerability
Areas of Persistent Poverty	Bipartisan Infrastructure Law	County with a poverty rate of at least 20% over the last 30 years; census tract with a poverty rate of at least 20%, according to the ACS 5-year data; or any territory or possession of the United States
Historically Disadvantaged Communities	Justice40 Initiative; CEJST	Census tracts meeting thresholds for any of the tool's burden categories or census tracts located within the boundaries of Federally Recognized Tribes

ACS = American Community Survey 5-year Estimates; CEJST = Climate and Economic Justice Screening Tool

WSDOT thresholds for environmental health disparities identifies disadvantaged communities as those in the top quintile for the metric. No census tracts within the city met the defined threshold of pollutant exposure or socioeconomic vulnerability as outlined in the WSDOT tool.

Seven census tracts in Bremerton were identified as areas of persistent poverty, with four census tracts identified as historically disadvantaged communities (Figure 10). Data for the census tract east of SR 3 and south of Kitsap Way indicated additional transportation burdens on the community due to traffic proximity and volumes. The census tract was above the 90th percentile for community proximity to heavy traffic. While not exhaustive, these datasets encompass characteristics that indicate a greater need for active transportation facilities in certain communities.

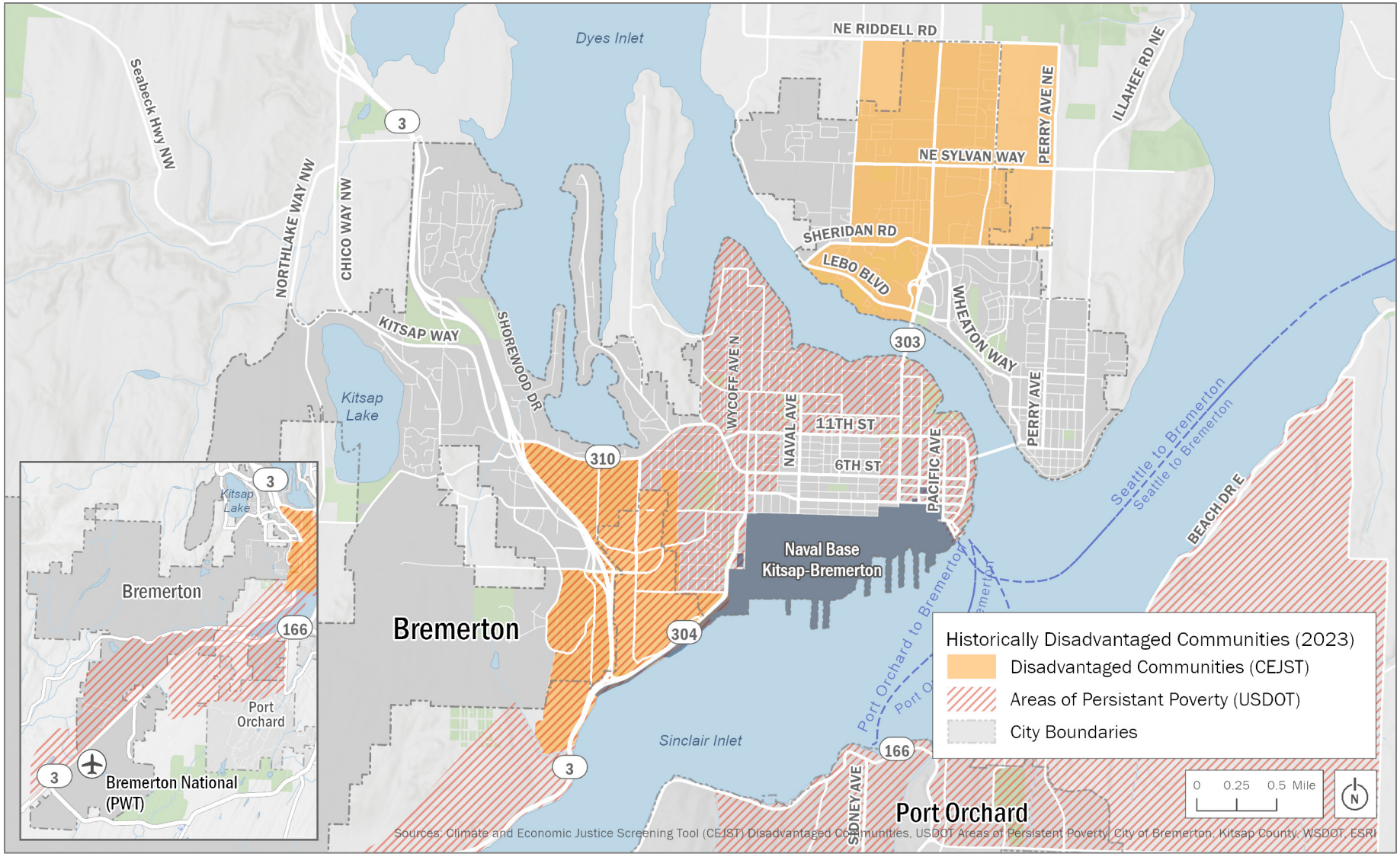

Figure 10. Equity Analysis

Connectivity Gap Analysis

Active transportation gaps were identified using existing conditions data collection and analysis. were identified. The purpose of the gap analysis was to locate roadway segments along the critical active transportation connections that lack sufficient bicycle or pedestrian infrastructure. Selection of the gaps was based on the quality of existing facilities, network connectivity, and alignment with the Priority Bicycle and Priority Pedestrian Networks.

The LTS analyses identified areas of high stress, ranked as LTS 3 and 4, along select arterials and collectors where additional facilities were needed to improve comfortability. Consistent with the definition of network gaps from the *WSDOT Active Transportation Plan*, segments that were classified as LTS of 3 or 4 were considered for the gap analysis. Many segments that received poor LTS scores are the location of ongoing projects that include the addition of active transportation infrastructure, including 6th Street, Naval Avenue, Warren Avenue Bridge, and Washington Avenue/11th Street. Since needs along these segments are currently being addressed, they are not included as an identified gap for the *Active Transportation Plan*. Major gaps identified through the LTS analysis for both bicyclists and pedestrians are detailed in Table 7.

The gap analysis also highlighted future active transportation connections—SR 3 and SR 304—that could link Bremerton's bicycle and pedestrian users to broader networks across Kitsap County. Both roads are maintained by WSDOT and are access-controlled for segments within this area. Future collaboration would be required among the state, city, and neighboring jurisdictions to plan and implement future infrastructure. Figure 11 highlights all active transportation gaps found in the analysis.

Table 7. Active Transportation Gaps

Gap Type	Location
Bike and Pedestrian Gaps	Kitsap Way/Northlake Road – West of SR 3 to Kitsap Lake Auto Center Way/W Werner Road/W Loxie Eagans Boulevard – Burwell Street to S National Avenue Warren Avenue – 16th Street to Lebo Boulevard Pine Road - North of Sheridan Road SR 303 – Sheridan Road to NE Riddell Road Wheaton Way – Sheridan Road to Callahan Drive Pine Road – North of Sheridan Road Perry Avenue – Magnuson Way to Sheridan Road NE Riddell Road – SR 303 to Petersville Road Sylvan Way – Pine Road to Robin Avenue
Pedestrian Gaps	11th Street - Kitsap Way to Warren Avenue
Bike Gaps	Sheridan Road – SR 303 to Pine Road NE 6th Street – 11th Street to Pacific Avenue Perry Avenue – Magnuson Way to Sylvan Road – Robin Avenue to Petersville Road Warren Avenue – Lebo Boulevard to Sheridan Road Wheaton Way – Callahan Drive to Lebo Boulevard
Future Network Connectivity	SR 304/SR 3 – 1st Street to US 16 SR 3/SR 166 – Bremerton to PSIC and Port Orchard

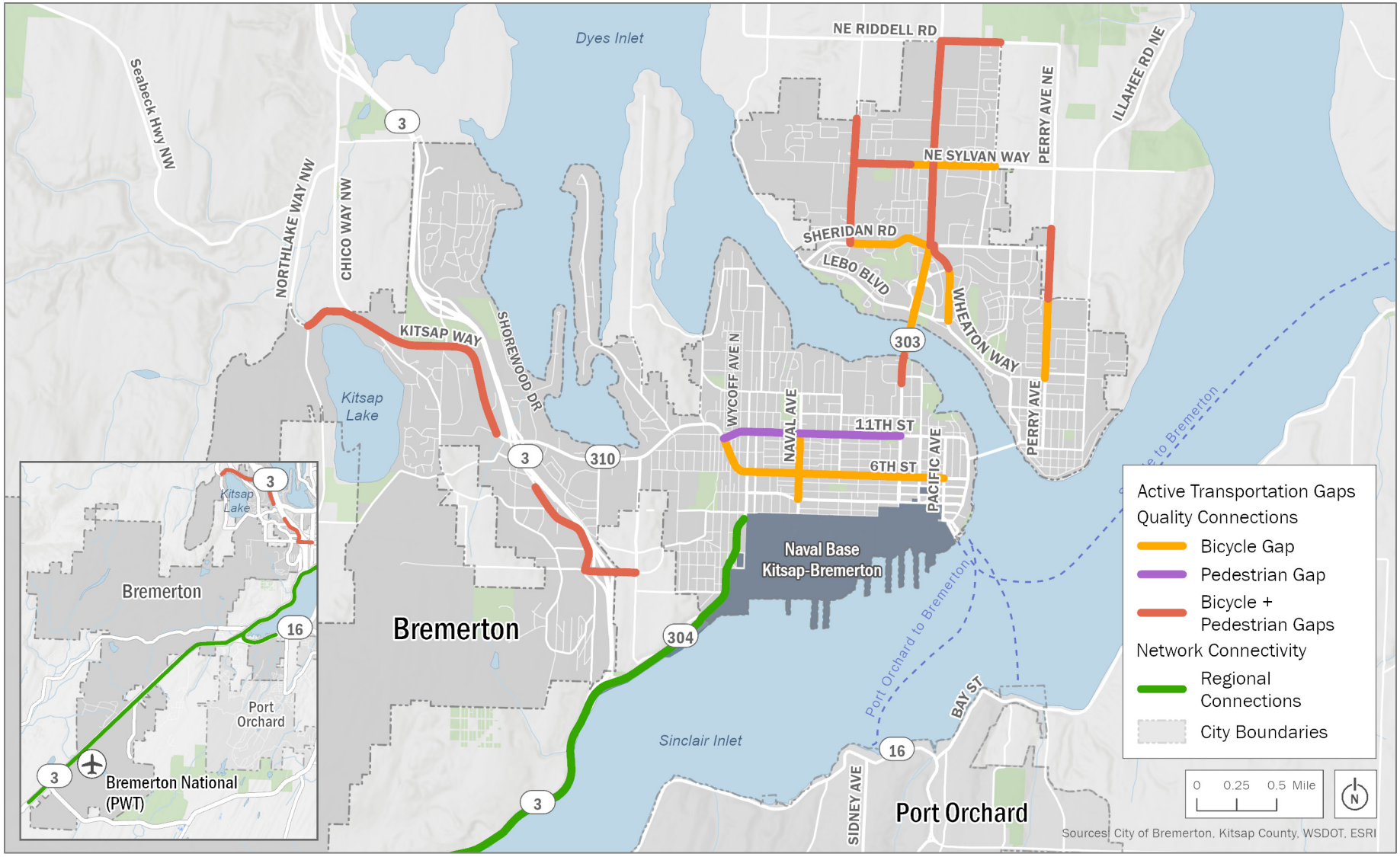

Figure 11. Active Transportation Gaps

Next Steps

Results from the three key analyses—Active Transportation Demand, Transportation Equity, and Active Transportation Gaps—will be incorporated into the next steps of the project. The Bicycle and Pedestrian Priority Networks will be updated to reflect city priorities and connections for users of all ages and abilities. The updated networks may, in turn, necessitate a revision of identified gaps. A prioritization matrix and methodology for projects will be developed to identify the project recommendations. The active transportation project list will be informed by data collected on existing conditions, including projects from other plans, and encompassing both funded and unfunded bicycle and pedestrian infrastructure initiatives. The final project list for the *Active Transportation Plan* will be integrated with the project list in the *Transportation Element*. All these elements will be consolidated into the *Active Transportation Plan*, which will supplement the *Transportation Element*, ensuring a cohesive and comprehensive strategy for future active transportation improvements.