



Local Road Safety Plan

December 2021

Prepared by



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Overview

The Washington Department of Transportation (WSDOT) recommends municipalities develop a Local Road Safety Plan to identify safety issues and engineering countermeasures to reduce fatal and serious injury crashes. A Local Road Safety Plan (LRSP) represents an agency's data-driven analysis and prioritization of its roadways for traffic safety, based on the most frequent fatal or serious injury crash type(s). The federal Highway Safety Improvement Program (HSIP) is currently allocating an estimated \$35 million in grant funding for the 2022 grant cycle to assist municipalities in realizing safety improvement projects identified in their LRSPs. In addition, LRSPs also support the state's "Target Zero" goal of zero traffic fatalities and serious injuries on Washington's roadways by the year 2030.

This Local Safety Program aims to:

1. List crash reduction priorities based on analysis of summary crash data;
2. Describe the factors contributing to individual fatal/serious crashes and the selection process used to identify said factors;
3. Provide an analysis of the roadway network for presence of fatal/serious crash risk factors;
4. Provide a prioritized list of roadway locations where fatal/serious crash risk factors are present;
5. Identify and describe the countermeasures to address prioritized roadway locations and the selection process used to identify said countermeasures; and
6. List safety improvement projects by priority.

The above components are covered in the following report sections:

- Crash Data Analysis (1) and **Appendixes A and B**
- Roadway Network Risk Factor Analysis and Selection (2, 3)
- Risk Factor Location Prioritization Methodology (4)
- Risk Factor Locations (4)
- Recommended Countermeasures (5)
- Prioritized Safety Improvement Projects (6)

The City of Port Townsend's roadway network is comprised of a hierarchy of roads with various functional classifications that establish the intended uses of each road. Functional classifications range from principal arterials intended to move high volumes of motor vehicles between major destinations with limited access to adjacent roads and properties to local roads intended to provide access to adjacent properties with no through traffic. Minor arterials and major collectors provide a balance of local access and capacity for through traffic. The adopted WSDOT Functional Classifications (see map in **Appendix C**) for the City of Port Townsend's roadway network have been used in this plan for consistency with WSDOT crash reporting. The WSDOT functional classifications are less refined than the City of Port Townsend's functional classifications (see map **Appendix C**) but are similar enough to use as a basis for establishing facility types recommended for safety improvements.

The City of Port Townsend's roadway network relies upon State Route (SR) 20 as the primary connection between downtown Port Townsend (including the ferry terminal) with the rest of the Olympic Peninsula.

WSDOT classified major collectors that provide circulation within the City of Port Townsend include Discovery Rd, 19th St, San Juan Ave, Hastings Ave, Sheridan St, Walker St, and others. See **Appendix C**.

This Local Road Safety Plan utilized recommendations provided by the U.S Department of Transportation Federal Highway Administration's (FHWA) 2013 *Systemic Safety Project Selection Tool* guidelines, 2021 *Proven Safety Countermeasures*, and other Washington State Department of Transportation (WSDOT) recommended sources.

By determining contributing factors, establishing a prioritized risk rating, and prioritizing project sites with features connected with higher risk rates, countermeasures can be targeted and recommended projects prioritized to provide the maximum benefit to the traveling public, reducing the risk of fatality or serious injury crashes on City of Port Townsend roads.

1 - Crash Data Analysis

This section provides an analysis of the crash data provided by WSDOT for the period 2016-2020 and an explanation of how the City selected its focus crash and facility types. As the City of Port Townsend has a population below 27,500 and does not maintain state highways within its jurisdiction, fatality or serious injury crashes that occurred on SR 20 within City limits were not included in the Fatal/Serious Injury Crash Data Summary provided by WSDOT (see **Section 1.1** and **Appendix A**). However, crash data for crashes on all roads within City limits was requested due to the occurrence of severe injury crashes on SR 20 within City limits (see **Section 1.2** and **Appendix B**).

1.1 WSDOT Fatal/Serious Injury Crash Data Summary

The Fatal/Serious Injury Crash Data Summary provided by WSDOT highlighted areas of concern for fatal or serious injury crashes based on the percentage of crashes observed in the City of Port Townsend in 2016-2020 and how the rates compared to all roads in the state, all cities, and westside cities. See **Appendix A**.

In the period 2016-2020, the City of Port Townsend had eight (8) serious injury crashes and one (1) fatal crash for a total of nine (9) crashes **on city-maintained roads**. Of these crashes:

- 22.2% or two (2) crashes involved a hit bicyclist (one of these was the fatality)
- 11.1% or one (1) crash involved a hit pedestrian
- 22.2% or two (2) crashes involved a fixed object
- 11.1% or one (1) crash occurred at an angle
- 11.1% or one (1) crash involved an overturned motor vehicle
- 22.2% or two (2) crashes were identified as other:
 - One (1) crash involved a person who fell, jumped, or was pushed from a motor vehicle
 - One (1) crash involved improper passing

1.2 Crash Data Report

The Crash Data Report includes **all reported crashes on all roadways within City limits including SR 20** involving fatal, suspected serious injury, suspected minor injury, possible injury, or no injury scenarios for the 2016-2020 time period. SR 20 is a primary connection for residents traveling to and from downtown Port Townsend, including the Port Townsend - Coupeville ferry terminal. See **Appendix B**.

The Crash Data Report includes information on the type of crash (fixed-object, rear-end, etc.), time of day, geographic location, and other potential contributing factors relevant to an evaluation of the safety risks present in the City's roadway network. WSDOT provided a map of the fatal and suspected injury crash locations (see **Figure 1**). Note: This data set includes crashes on SR 20, therefore the total number of severe (combined fatal and serious injury) crashes increased to twelve (12), as three (3) serious injury crashes occurred on SR 20 from 2016-2020.

See **Tables 1-2** and **Figures 1-2** below.

Table 1. City of Port Townsend Severe Crashes 2016-2020

Crash Type	Count	% of Severe Injury Crashes
Ped/Bicyclist*	5	42%
Fixed object	2	17%
Overtaken motor vehicle	1	8%
Entering at angle	1	8%
Other**	3	25%
Total	12	100%

*One bicyclist crash was the fatality; all others were serious injuries.

**See details provided in Table 2 for other individual crashes.

Table 2. Comparison of Severe Crashes by Crash Type, Injury Type, and Facility, 2016-2020

Crash Type	Fatality		Serious Injury		Total	
	City-Maintained Road	SR 20	City-Maintained Road	SR 20	Number (#)	Percentage (%)
Bicyclist	1	-	1	1	3	25.00%
Pedestrian	-	-	1	1	2	16.67%
Fixed Object	-	-	2	-	2	16.67%
Angle	-	-	1	-	1	8.33%
Overtaken Motor Vehicle	-	-	1	-	1	8.33%
Other	-	-	2*	1**	3	25.00%
Total	1	0	8	3	12	100%

*One crash involved a motor vehicle improperly passing at a speed that exceeded a reasonably safe speed. The secondary crash type for this crash was fixed object. The other crash involved a person who fell, jumped, or was pushed from the motor vehicle.

**This SR-20 crash involved an improper mid-block U-turn by a motorcycle.

Figure 1. Map of Fatal/Serious Injury Crashes within Port Townsend City Limits by Injury Type

2016 - 2020 Fatal and Suspected Serious Injury Crashes City of Port Townsend

Under 23 U.S. Code § 148 and 23 U.S. Code § 409, safety data, reports, surveys, schedules, lists compiled or collected for the purpose of identifying, evaluating, or planning the safety enhancement of potential crash sites, hazardous roadway conditions, or railway-highway crossings; are not subject to discovery or admitted into evidence in a Federal or State court proceeding or considered for other purposes in any action for damages arising from any occurrence at a location mentioned or addressed in such reports, surveys, schedules, lists, or data.

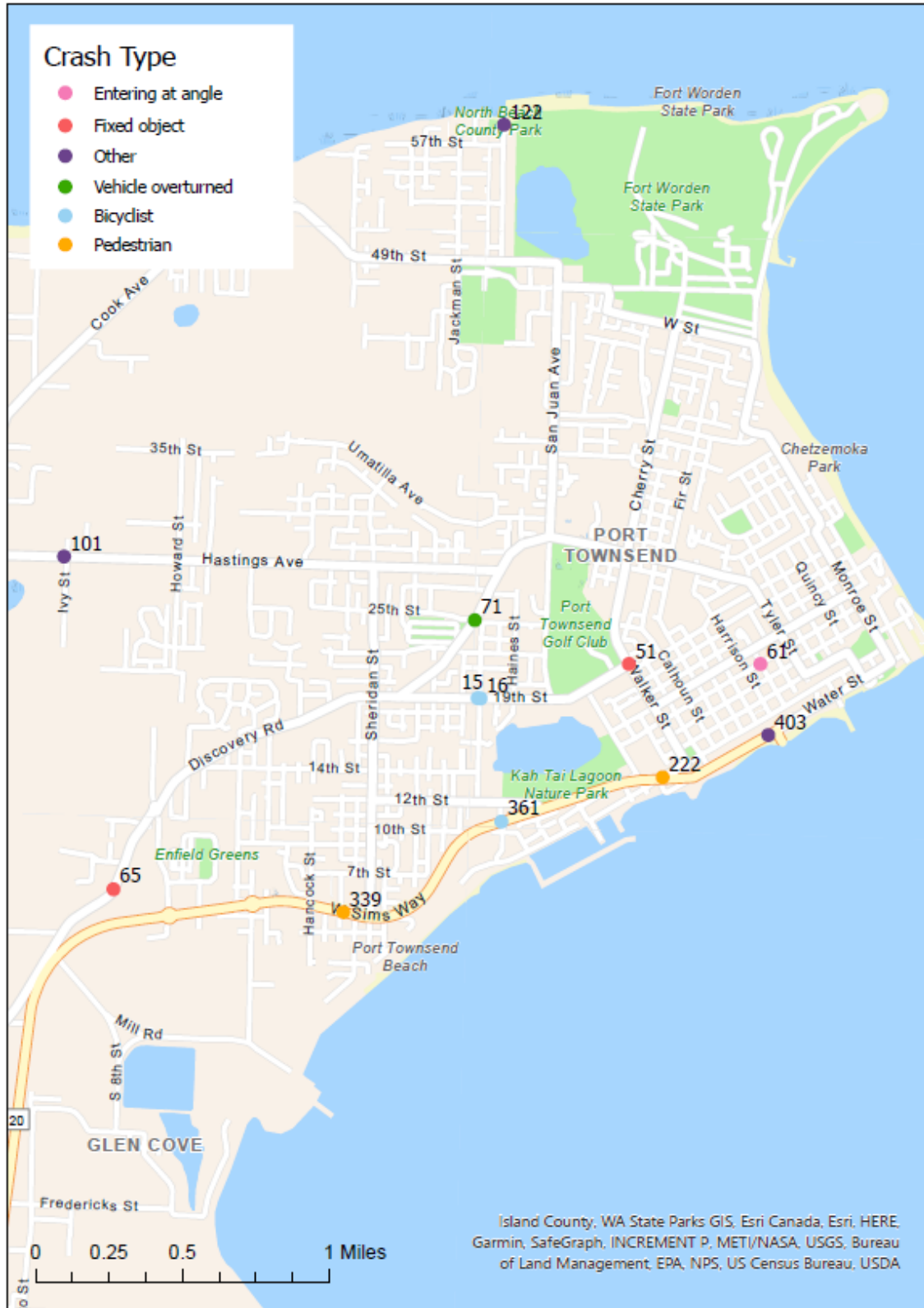


Washington State Department of Transportation
 WSDOT - Transportation Data, GIS and Modeling Office
 Crash Data and Reporting Branch - JB

Legend
 ● Fatal (1)
 ● Suspected Serious Injury (11)

--- County Line
 County
 City
 Tribal Land
 — U.S. Interstate
 — U.S. Highway
 — State Route
 — Local Roads

Figure 2. Map of Fatal/Serious Injury Crashes within Port Townsend City Limits by Crash Type



*Label numbers refer to GIS Identification Number (TSI_ID field) for individual crashes.

1.2.1 Fatal Crashes

Between 2016-2020, one (1) fatal crash occurred within the City-maintained roadway network at the intersection of 19th St and Landes St and was intersection related (#16 in **Figure 2** above). This crash involved a moving motor vehicle striking a **bicyclist**. Weather conditions were overcast and dry in daylight hours at 2:12 pm in March 2018. The roadway was straight with a downhill grade from west to east (the direction of travel). The posted speed limit was 25 mph and the roadway was two-way, undivided with blacktop. The crash occurred in the lane of primary trafficway. The bicyclist was riding with traffic and a designated bicycle route was present. The passenger car was making a right turn from west to south. The motor vehicle driver did not grant the right of way to the bicyclist. The bicyclist died at the hospital.

1.2.2 Serious Injury Crashes

There were eleven (11) serious injury crashes within the City limits between 2016-2020. Of these, eight (8) occurred **on city-maintained roads** as described below:

- One (1) crash involved a **bicyclist** riding with traffic using the roadway on a straight and graded 19th St with no motor vehicle involved near the fatality crash location (#15).
- One (1) crash involved a motor vehicle hitting a **pedestrian** who was crossing Washington St at a non-intersection and non-cross walk location (#222)
- One (1) crash involved a fatigued driver crashing into **fixed objects** including a metal sign post and earth bank at night at the T-intersection of Blaine St and Walker St (#51).
- One (1) crash involved a **fixed object** (tree or stump) at a horizontal curve on a grade on Discovery Rd at dawn with a driver who had been drinking (#65).
- One (1) crash involved an **entering at angle** motor vehicle crash at the intersection of Clay St and Fillmore St at dusk with distractions outside and an obstructed view (#61).
- One (1) crash involved an **overturned motor vehicle** at the intersection of Discovery Rd and 24th St where an unknown distraction resulted in a motorcyclist overturned in the ditch (#71).
- One (1) **other** crash involved a person who fell, jumped, or was pushed from a motor vehicle during daylight hours immediately south of the North Beach County Park parking area (#122).
- One (1) **other** crash involved a driver under the influence of alcohol attempting an improper passing maneuver on a straight section of Hastings Ave with a truck and trailer coming from the opposite direction. The impaired driver's motor vehicle was forced off the road and crashed into a fixed object tree or stump (#101).

Three (3) serious injury crashes occurred **on SR 20 within City limits** as described below:

- One (1) crash involved a **bicyclist** riding in the roadway on W Sims Way that struck a moving motor vehicle turning right from Haines Pl onto W Sims Way at the signalized intersection (#361).
- One (1) crash involved a motor vehicle going straight and hitting a **pedestrian** crossing in a marked and signalized pedestrian crosswalk on W Sims Way at Hendricks St (#339).
- One (1) **other** crash involved a motorcycle attempting an improper, mid-block U-Turn that did not grant the right of way to a motor vehicle. This occurred near the ferry docks (#403).

1.2.3 All Crashes

The breakdown of all 405 crashes for the period 2016-2020 includes:

- 60% (247) crashes on City Roads
- 39% (157) crashes on State Highways (SR 20)
- 1% (1) on State Park Roads

Of these 405 crashes:

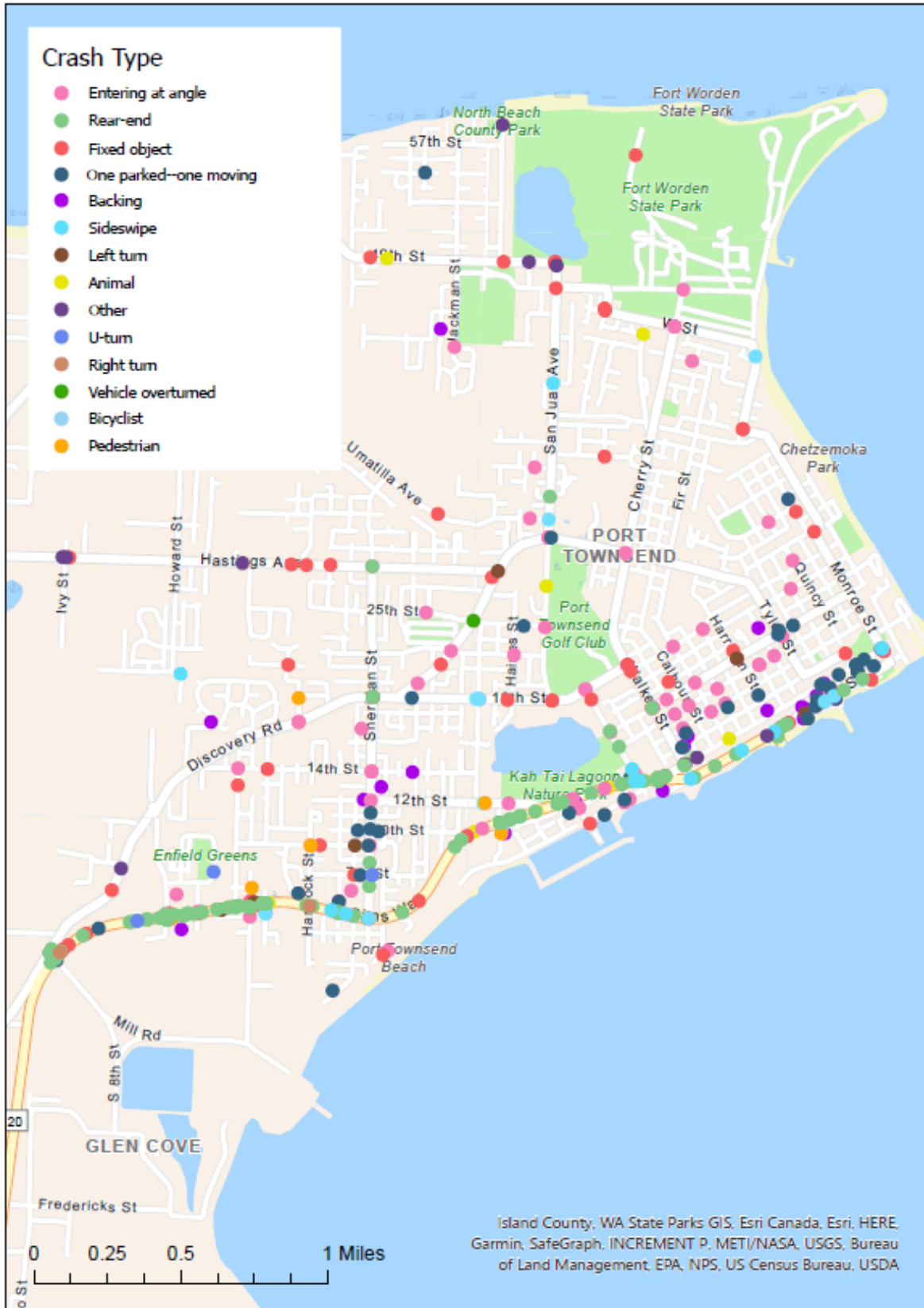
- Approximately 26% are **entering at angle** crashes located predominantly within the City’s downtown grid road network.
- Approximately 25% are **rear-end** crashes located predominantly along SR-20.
- Approximately 16% of crashes are **fixed-object** crashes distributed throughout the City, mostly occurring on SR 20 and major collectors.
- Approximately 10% of crashes involved **one parked and one moving motor vehicle**, mostly located in the more populated downtown area where there is on-street parking.
- **Pedestrian/bicyclist** related crashes make up approximately 6.4% of all crashes:
 - Of these 26, 16 involved bicyclists and 10 involved pedestrians.
 - Of these 26, 11 of these crashes occurred on SR 20.
- **Backing-related** crashes represent approximately 6% of crashes and are concentrated along the waterfront east and west of the ferry dock.

See **Table 3** and **Figure 3** below.

Table 3. City of Port Townsend Crashes by Type, 2016-2020

Crash Type	Count	% of Total Crashes
Entering at angle	104	25.7%
Rear-end	101	24.9%
Fixed object	61	15.1%
One parked - one moving	41	10.1%
Pedestrian	16	4.0%
Bicyclist	10	2.4%
Backing	23	5.7%
Sideswipe	12	3.0%
Left Turn	11	2.7%
Animal	11	2.7%
Other	9	2.2%
U-Turn	3	0.7%
Right Turn	2	0.5%
Motor Vehicle Overturned	1	0.2%
Total	405	100%

Figure 3. Map of All 2016-2020 Crashes by Crash Type within Port Townsend City Limits



1.3 Identification of Focus Crash Types and Facilities

Due to the small data set for fatal/serious injury crashes, additional evidence from the analysis of all crashes informed the selection of focus crash types and focus facilities for this local road safety plan.

Focus Crash Type 1: Bicyclist Involved Crashes

Due to the occurrence of a fatal bicyclist crash on 19th St, a serious injury bicyclist crash on 19th St, and a serious injury bicyclist crash on SR 20, this plan takes a systemic approach to addressing potential bicyclist risk factors within the City limits, including SR 20. See **Figure 4**.

- Bicyclist related crashes (3) represent 25% of all fatal/serious injury crashes.
- Bicyclist related crashes (16) represent 4% of all crashes.

Focus Crash Type 2: Pedestrian Involved Crashes

Due to the occurrence of a serious injury pedestrian crash on Washington St and a serious injury pedestrian crash on SR 20, this plan takes a systemic approach to addressing potential pedestrian crash risk factors within the City limits, including SR 20. See **Figure 4**.

- Pedestrian related crashes (2) represent 16.7% of all fatal/serious injury crashes.
- Pedestrian related crashes (10) represent 2.4% of all crashes.

Focus Crash Type 3: Fixed Object Crashes

Due to the occurrence of two serious injury crashes with fixed objects cited as the primary circumstance (and another three serious injury crashes with fixed objects cited as the secondary circumstance) this plan takes a systemic approach to addressing potential fixed-object crash risk factors within City limits, including SR 20. See **Figure 5**.

- Fixed object crashes (2) represent 16.7% of all fatal/serious injury crashes.
- Fixed object related crashes (61) represent 15.1% of all crashes.

Other Crash Types Not Selected

Although entering at angle and rear-end crashes together represent approximately 50% of all crashes between 2016-2020, they were not selected as focus crash types because:

- The single serious injury entering at angle crash appears to be an isolated situation.
- There were no fatal or serious injury rear-end crashes.

Focus Facility Type 1: Principal Arterials and Major Collectors

The majority of the fatal and serious injury crashes occurred on Principal Arterials and Major Collectors. These roadways generally serve higher motor vehicle volumes and operate at higher speeds than lower classified roadways.

Focus Facility Type 2: Bicycle Lanes

The fatal crash that involved a bicyclist was related to interaction of a bicycle lane and motor vehicle lane at an intersection.

Focus Facility Type 3: Pedestrian Crossings

The pedestrian serious injury crashes occurred at marked, unmarked, controlled, uncontrolled, intersection, and mid-block locations.

Figure 4. Map of 2016-2020 Pedestrian and Bicyclist Crashes within Port Townsend City Limits

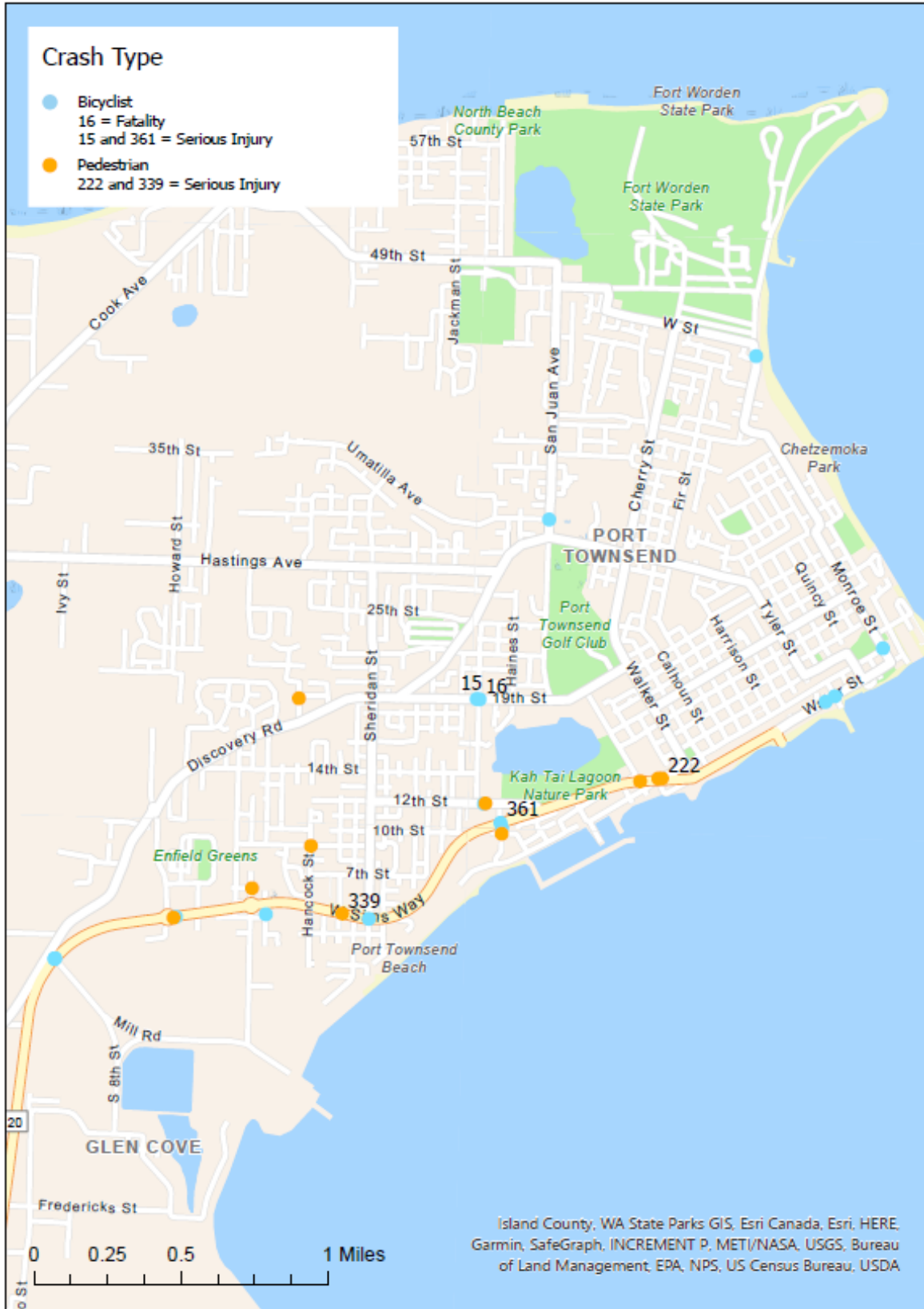
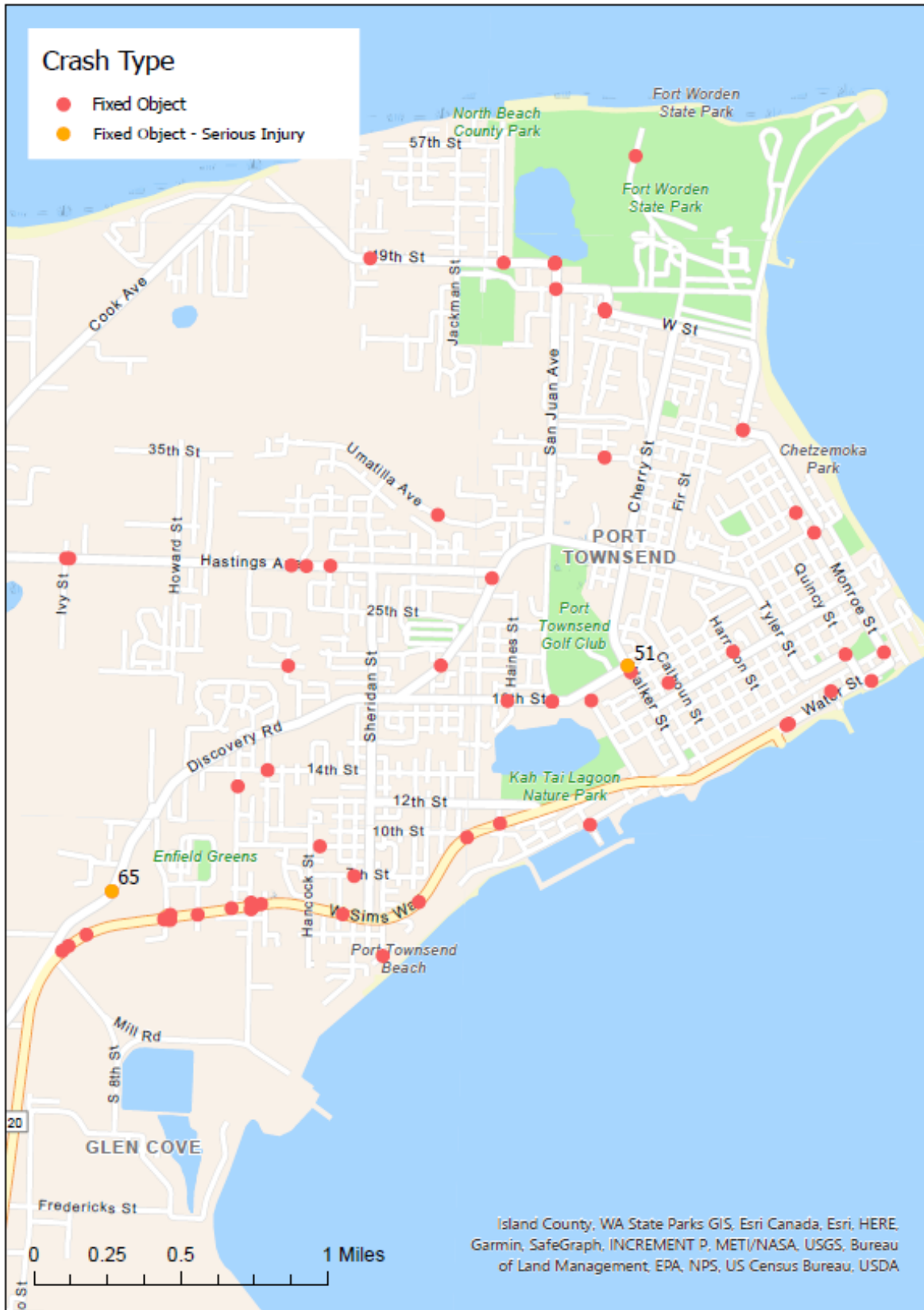


Figure 5. Map of 2016-2020 Fixed Object Crashes within Port Townsend City Limits



2 - Risk Factor Analysis and Identification

This section describes the analysis and identification of risk factors that contributed to focus crash types of pedestrian, bicyclist, and fixed object crashes. An analysis of the roadway network for risk factor locations follows.

2.1 Analyze Individual Fatal and Serious Injury Crashes to Identify Risk Factors

A combination of field reviews and mapping applications were used to identify roadway conditions at the focus crash type locations. The following risk factors were identified for the focus crash types listed below:

Bicyclist

- Located on principal arterial or major collector (higher speeds and ADT)
- Bicycle Lane at intersection
- Bicycle Lane on Downgrade (ability for bicyclists to operate at higher speeds)
- Motor Vehicles Required to Yield to Bicycles (Motor vehicle Failed to Yield ROW at Intersections)
- Impaired Driver

Pedestrian

- Located on principal arterial or major collector (higher speeds and ADT)
- Marked Midblock Crosswalk with Overhead Beacon (Vehicle Failed to Yield ROW)
- Unmarked Midblock Crossing (Vicinity of Informal Pedestrian Pathway)

Fixed Object

- Located on principal arterial or major collector (higher speeds and ADT)
- Horizontal Curve
- T-Intersection
- Excessive speed for conditions
- Driver Not Aware of Hazard
- Impaired Driver

2.2 Select Most Common Risk Factors

The following risk factors were identified as relevant for bicyclist, pedestrian, and fixed object crashes:

Contributing Risk Factor #1: Bicycle Lanes Through Intersections (Driver Not Aware of Bicyclist)

The fatality bicyclist crash occurred at a two-way stop-controlled intersection with the motor vehicle travelling on the major roadway without stop-control turning right onto the minor roadway in front a bicyclist heading the same direction as the motor vehicle in a bicycle lane. A serious injury bicyclist crash occurred on SR 20 at a signalized intersection involving a motor vehicle making a right turn in front of an oncoming bicyclist in a bicycle lane.

Contributing Risk Factor #2: Crosswalks (Marked/Unmarked and Driver Not Aware of Pedestrian)

One serious injury pedestrian occurred at a marked crosswalk with an overhead pedestrian beacon suggesting that the beacon was not effective in making the driver aware of the pedestrian. Another serious injury pedestrian crash involved a pedestrian crossing the road where no illumination or crosswalk exists resulting in the driver not being aware of the pedestrian.

Contributing Risk Factor #3: Horizontal Curves and T-Intersections (Driver Not Aware of Road Hazard)

The fixed object crashes involved a single motor vehicle roadway departure at a horizontal curve and a single motor vehicle departure across a T intersection into an embankment. In both circumstances, the driver did not have enough awareness of the potential hazard to take corrective action.

Contributing Risk Factor #4: Roadway Downgrade

Port Townsend includes numerous multimodal corridors with steep or extended downgrades, including 19th St where the fatal bicyclist crash and one other serious injury bicyclist crash occurred. Downgrades can result in higher motor vehicle and bicycle speeds resulting in more severe crashes compared to flat roadways.

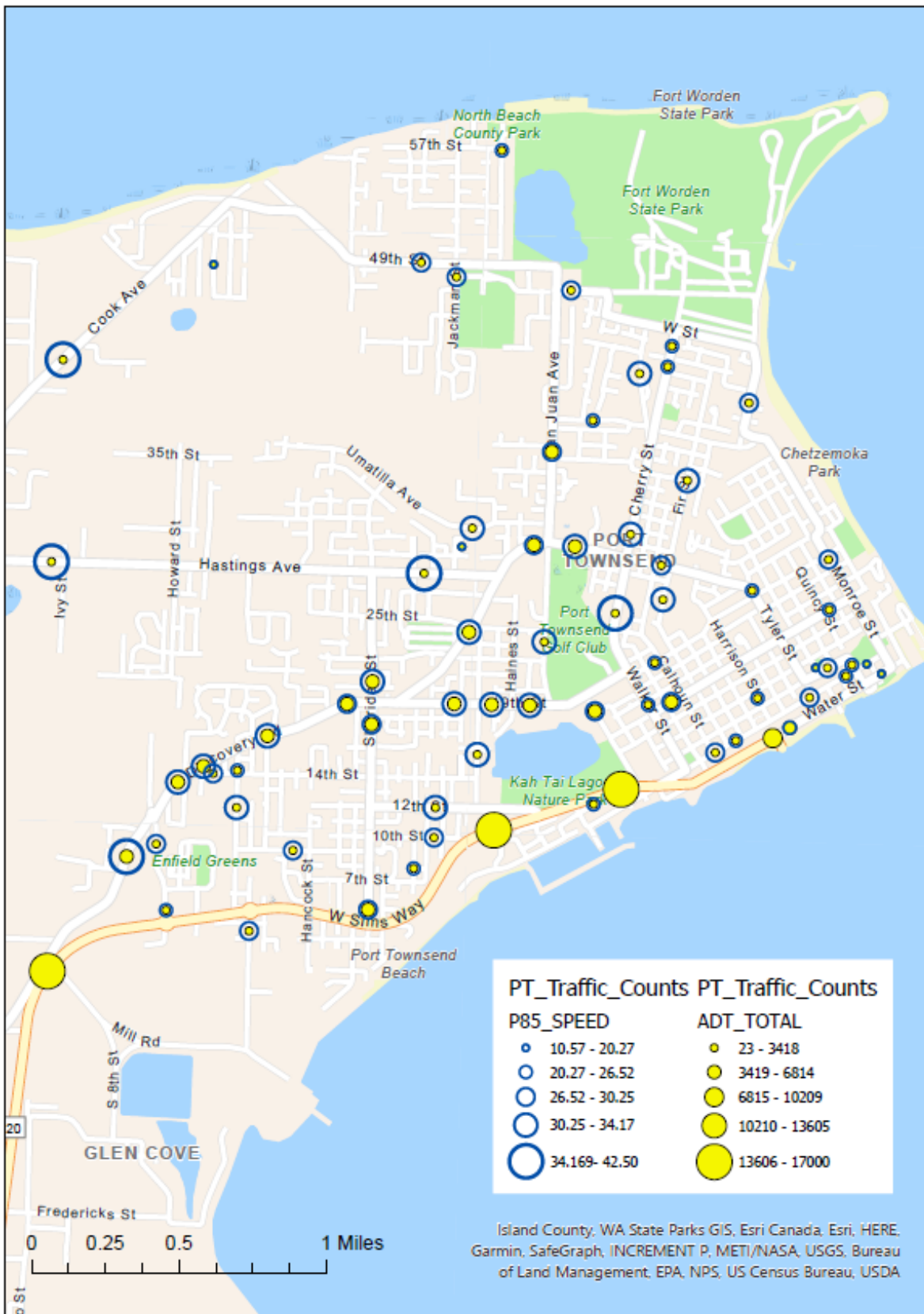
Contributing Risk Factor #5: Operating Speeds Higher Than 25 MPH

The speed differential between bicycles and automobiles was a causal factor or contributing factor in the fatal and serious injury bicyclist crashes. The operating speed of a motor vehicle hitting a pedestrian is directly proportional to the severity of injury to the pedestrian. The operating speed of a motor vehicle hitting a fixed object is directly proportional to the severity of injury to the motor vehicle occupant(s). Crashes that occur at less than 25 MPH generally result in less severe injury than those that occur over 25 MPH. See **Figure 6** for map of recent 85th percentile speeds for City of Port Townsend roadways.

Contributing Risk Factor #6: Average Daily Traffic (ADT) Volumes Higher Than 10,000

Higher ADT volumes are associated with roadways with a functional classification of principal arterial or major collector while lower ADT volumes are associated with roadways with a functional classification of local road. One (1) serious injury bicyclist crash and one (1) serious injury pedestrian crash occurred on SR 20, the City's principal arterial with ADT volumes averaging between 13,000 - 17,000. The fatal bicyclist crash, one (1) serious injury bicyclist crash, one (1) serious injury pedestrian crash, and both (2) serious injury fixed object crashes occurred on major collectors with ADT volumes averaging between 3,400- 6,800. See **Figure 6** for map of Average Daily Traffic (ADT) volumes for City of Port Townsend roadways.

Figure 6. Map of Port Townsend 85th Percentile Speeds and Average Daily Traffic (ADT) Volumes



2.3 Analyze Roadway Network for Presence of Risk Factors

This step evaluates the existing City of Port Townsend’s roadway network to determine locations where the contributing risk factors identified above currently exist.

Contributing Risk Factor #1: Bicycle Lanes Through Intersections

Dedicated bicycle lanes are provided on principal arterials (SR 20) and major collectors (Sheridan St, 19th St, a portion of Blaine St, San Juan Ave, F St, and a portion of Discovery Rd). These facilities all include bicycle lanes through intersections with cross-roads ranging from other major collectors to local roads.

Contributing Risk Factor #2: Crosswalks

Marked crosswalks exist at intersection and mid-block locations primarily on principal arterials and major collectors. There is an existing mid-block pedestrian beacon on Sims Way.

Contributing Risk Factor #3: Horizontal Curves and T-Intersections

Horizontal curves generally occur on the principal arterials and major collectors in less densely developed areas of the City. T-intersections (including 90 degree curves/major turns through intersections) occur where the local grid roads intersect with major collectors and principal arterials.

Contributing Risk Factor #4: Roadway Downgrade

Roadway downgrades of various lengths and steepness are present on all principal arterials and major collectors, most notably SR 20, 19th St, Discovery Rd, Washington St, Lawrence St, Monroe St, Jefferson St and F St. In addition, local roads in Uptown Port Townsend from northwest to southeast have downgrades.

Contributing Risk Factor #5: Operating Speeds Greater than 25 MPH

Speed data collected from 2017 to the present indicates that speeds greater than 25 MPH are more prevalent on major collectors in the less densely developed sections of the City, including Discovery Rd, Hastings Ave, Cook Ave, and Cherry St. Speed data for SR 20 was not available for review.

Contributing Risk Factor #6: Average Daily Traffic (ADT) Volumes Greater than 10,000

SR 20 is the only roadway within City limits with ADT greater than 10,000.

The City’s principal arterial (SR 20) exhibits all six identified risk factors to various extents. The City’s major collectors generally include one or more of the above risk factors.

3 - Risk Factor Location Prioritization Methodology

High risk factor locations were prioritized based on the number of risk factors present:

- **Risk Factor Location Priority Group 1:** 6 risk factors present
- **Risk Factor Location Priority Group 2:** 3-5 risk factors present
- **Risk Factor Location Priority Group 3:** 1-2 risk factors present

4 - High Risk Factor Locations

The following **Table 4** identifies high risk factor locations by the priority groups described above.

Table 4. Prioritized List of High Risk Factor Locations within Port Townsend

High Risk Factor Location Priority	Location
High Risk Factor Priority Group 1	SR 20 Corridor Bicycle Lanes Through Intersections
	SR 20 Corridor Pedestrian Crossings at Intersections and Mid-Block
	SR 20 Horizontal Curves
	SR 20 Bicycle Lanes on Downgrades
	SR 20 Corridor Segments with Operating Speeds above 25 MPH
High Risk Factor Priority Group 2	Discovery Rd where bicycle lanes are present (east of Sheridan St)
	Cook Ave/49th St/San Juan Ave Corridor
	Admiralty Ave/Spruce St/W St/Walnut St Corridor
	Jackson St/Roosevelt St/Monroe St Corridor
	19 th St/Blaine St Corridor
	Kearney St
	Walker St/Cherry St/Redwood St Corridor
	F St/Tyler St/Jefferson St/Quincy St Corridor
	Water St
	Rainier St
	Howard St
Sheridan St	
High Risk Factor Priority Group 3	Discovery Rd where no bicycle lanes are present (west of Sheridan St)
	Hastings Ave
	Washington St
	Lawrence St
	McPherson St
	Landes St
	12 th St
	Benedict St

5 - Recommended Countermeasures

This section identifies recommended countermeasures by both focus crash type and focus facility type and how these countermeasures were selected.

5.1 Identify Countermeasures

Countermeasures are recognized methods for reducing transportation safety risks. After determining higher-risk locations for fatal/serious injury crashes, the most effective countermeasures for addressing the risks are considered. See **Tables 5-7** for City of Port Townsend Recommended Countermeasures by Focus Crash Type and Focus Facility Type.

Table 5. Recommended Countermeasures to Reduce Bicyclist Involved Crashes

Focus Crash Type	Focus Facility Type	Countermeasure
Reduce Bicyclist Involved Crashes	Principal Arterials and Major Collectors	Use Traffic Calming to Achieve Appropriate Speeds for All Users
		Replace Traffic Signals With Roundabouts
		Mark/Sign Bicycle Lanes
		Use Road Diets to Separate Modes and Achieve Appropriate Speeds for All Users
		Low Level Lighting at Conflict Points
	Bicycle Lanes	Use Traffic Calming to Appropriate Speed Limits for All Users
		Replace Traffic Signals With Roundabouts
		Mark/Sign Bicycle Lanes
		Low Level Lighting at Conflict Points

Table 6. Recommended Countermeasures to Reduce Pedestrian Involved Crashes

Focus Crash Type	Focus Facility Type	Countermeasure
Reduce Pedestrian Involved Crashes	Principal Arterials and Major Collectors	Use Traffic Calming to Achieve Appropriate Speeds for All Users
		Replace Traffic Signals With Roundabouts
		Use Road Diets to Separate Modes and Achieve Appropriate Speeds for All Users
		Leading Pedestrian Interval
		Exclusive Pedestrian Phase if warranted
		Low Level Lighting at Conflict Points
	Pedestrian Crossings	Use Traffic Calming to Achieve Appropriate Speeds for All Users
		Replace Traffic Signals With Roundabouts
		Leading Pedestrian Interval
		Exclusive Pedestrian Phase if warranted
		Medians and Pedestrian Refuges
		RRFBs and/or PHBs
		Low Level Lighting at Conflict Points

Table 7. Recommended Countermeasures to Reduce Fixed Object Crashes

Focus Crash Type	Focus Facility Type	Countermeasure
Reduce Fixed Object Crashes	Principal Arterials and Major Collectors	Use Traffic Calming to Achieve Appropriate Speeds for All Users
		Wider Edge Lines
		Enhanced Delineation for Horizontal Curves
		Systemic Application of Multiple Low-Cost Countermeasures at Stop-Controlled Intersections
		Longitudinal Rumble Strips and Stripes on Two-Lane Roads
		Roadside Design Improvements at Curves

5.2 Preferred Countermeasure Selection Process

The preferred countermeasures were chosen from the FHWA Office of Safety's [Proven Safety Countermeasures](#) resource (updated 2021) to achieve the objectives of reducing bicyclist, pedestrian, and fixed object crashes. Choice of countermeasures was also informed by the WSDOT *Local Road Safety Plan* (2021) presentation slides made available in the 2022 City Safety Program call for projects resources.

Countermeasures have also been selected with the following City policies and planning efforts in mind:

- The City of Port Townsend adopted a Street Light Policy on August 16, 2021, that is characterized by a Dark Sky Initiative, Energy Conservation, Safety, and Quality of Life strategy. For instance, installation of chevron or other signs with retro-reflective materials is a proven countermeasure for crashes at curves and also provides a visible reminder of upcoming roadway changes without requiring illumination from above.
- The City of Port Townsend is considering a Traffic Calming Program. The primary intent is to slow traffic and thereby improve safety since lower motor vehicle speeds are proven to improve safety by lessening the severity of crashes between motor vehicles and bicyclists/pedestrians.
- The City of Port Townsend has a policy to prioritize improvements to increase safety and mobility for non-motorized users before motorized users.

6 - Prioritized Safety Improvement Projects

The prioritization of high risk factor locations within the City of Port Townsend has identified the need to improve pedestrian and bicycle safety on SR 20 throughout the City. This corridor includes six of six contributing risk factors identified for fatal/serious injury crashes within City limits. The following safety improvement projects reflect selection of proven countermeasures identified and adopted City transportation policies.

Table 8 provides a prioritized list of safety improvement projects addressing **High Risk Factor Priority Group 1** locations. The projects are listed in order of priority, starting with the highest. Some projects address multiple risk factors and are repeated in the table.

Table 9 provides a prioritized list of safety improvement projects addressing **High Risk Factor Priority Group 2** locations. The projects are listed in order of priority, starting with the highest.

Table 8. City of Port Townsend Prioritized Safety Improvement Projects - Priority Group 1

High Risk Factor Priority 1 Group	Safety Improvement Project	Relative Cost (High/Med/Low)
SR 20 Corridor Bicycle Lanes Through Intersections	SR 20/Mill Road Install roundabout with ADA accessible pedestrian and bicycle facilities, ADA ramps and RRFBs. See WSDOT STIP Project No 0020(171).	H
	SR 20/Kearney St Install roundabout with ADA accessible pedestrian and bicycle facilities, ADA ramps and RRFBs. See WSDOT STIP Project No 0020(171).	H
	SR 20/Haines St Install roundabout with ADA accessible pedestrian and bicycle facilities, ADA ramps and RRFBs.	H
	Install R10-15 Modified Right-Turn Yield to Bicycle Sign at locations with stop sign or traffic-signal control.	L
	Reduce speed limit to 25 MPH with traffic calming	L
SR 20 Corridor Pedestrian Crossings at Intersections and Mid-Block	Replace flashing pedestrian beacon at Hendricks St and SR20 with RRFB.	M
	SR 20/Mill Road Install roundabout with ADA accessible pedestrian and bicycle facilities, ADA ramps and RRFBs. See WSDOT STIP Project No 0020(171).	H
	SR 20/Kearney St Install roundabout with ADA accessible pedestrian and bicycle facilities, ADA ramps and RRFBs. See WSDOT STIP Project No 0020(171).	H
	Reduce speed limit to 25 MPH with traffic calming	L
SR 20 Horizontal Curves	Reduce speed limit to 25 MPH with traffic calming	L
SR 20 Bicycle Lanes on Downgrades	Install R10-15 Modified Right-Turn Yield to Bicycle Sign at locations with stop sign or traffic-signal control.	L
	Reduce speed limit to 25 MPH with traffic calming	L
SR 20 Corridor Segments with Operating Speeds above 25 MPH	Reduce speed limit to 25 MPH with traffic calming	L

Table 9. City of Port Townsend Prioritized Safety Improvement Projects - Priority Group 2

High Risk Factor Priority 2 Group	Safety Improvement Project	Relative Cost (High/Med/Low)
Major Collectors with Bicycle Lanes Discovery Rd east of 19 th St, 19 th St/Blaine St Corridor, Water St, Howard St, Kearney St, and Sheridan St	Complete a network wide inventory of bicycle lane signing and pavement markings for consistency with MUTCD, or NACTO, and City of Port Townsend Standards on all WSDOT classified major collectors with bicycle lanes with an emphasis on intersection treatments and bicycle lanes on grades.	L
	Complete network wide bicycle lane signing and pavement marking improvements and/or traffic calming consistent with MUTCD, or NACTO, and City of Port Townsend Standards on all WSDOT classified major collectors with bicycle lanes with an emphasis on intersection treatments and bicycle lanes on grades.	M
	Reduce speed limit to 25 MPH with signing and traffic calming.	M
	Enhance pedestrian and bicycle crossings.	M
Major Collector T-Intersections	Complete a network wide inventory of stop controlled T-intersection signing and pavement markings for consistency with MUTCD, or NACTO, and City of Port Townsend Standards on all WSDOT classified major collectors with an emphasis on intersections of major collectors with major collectors and principal arterials.	L
	Complete network wide improvements to stop controlled T-intersection signing and pavement markings and/or traffic calming for consistency with MUTCD, or NACTO, and City of Port Townsend Standards on all WSDOT classified major collectors with an emphasis on intersections of major collectors with major collectors and principal arterials.	M
	Reduce speed limit to 25 MPH with signing and traffic calming.	M
	Enhance pedestrian and bicycle crossings.	M
Major Collector Curves Cook Ave/49th St/San Juan Ave Corridor, Admiralty Ave/Spruce St/W St/Walnut St Corridor, Jackson St/Roosevelt St/Monroe St Corridor	Complete a network wide inventory of curve warning signs for consistency with MUTCD, or NACTO, and City of Port Townsend Standards on WSDOT classified major collectors in the less densely developed areas of the City.	L
	Complete network wide curve warning sign improvements for consistency with MUTCD, or NACTO, and City of Port Townsend Standards on WSDOT classified major collectors in the less densely developed areas of the City.	M
	Reduce speed limit to 25 MPH with signing and traffic calming.	M
	Enhance pedestrian and bicycle crossings.	M

7 - Conclusion

The City of Port Townsend employed a data-based approach to identify and prioritize transportation safety improvements. A majority of the 2016-2020 severe crashes within City limits are associated with bicycle/pedestrian crashes and fixed-object crashes. This data compels the City to seek safety improvements that can address the existing high risk factors associated with these crash types on SR 20.

The selected countermeasures are intended to increase the ability for bicyclists and pedestrians to safely travel along and cross principal arterial and major collector roadways critical to the City of Port Townsend's transportation network. The safety improvement projects along SR 20 also align with WSDOT STIP Project Number 0020(171) currently in the preliminary engineering phase. It is critical that the WSDOT roundabouts specifically address bicycle and pedestrian safety with their designs.

The selected countermeasures align with the City's Street Light Policy to preserve dark sky and limit light pollution while also enhancing safety.

City roads showing specific risk criteria have been identified, and safety improvements were prioritized for roads with greater opportunity to mitigate risk.

This plan should be updated in order to evaluate the success of the program and to identify additional risk factors and employ new countermeasures as needed. In addition, criteria used to evaluate locations should be updated concurrently.