

City of Port Orchard

Local Roadway Safety Plan

(Strategic Risk-Based Assessment)

March 2020

Developed using the
Systemic Safety Project Selection Tool

City of Port Orchard — Public Works Department

Introduction

The City of Port Orchard is committed to reducing all collisions on City maintained roads with an emphasis on eliminating fatalities and serious injuries. As outlined in the Target Zero Washington State Strategic Highway Safety Plan, identification of collision trends and contributing factors is key to implementing successful Collision reduction strategies.

The Study area includes all City operated and maintained streets. Note that portions of SR16, SR160, and SR166 are within City limits have not been included for evaluation. These roadways are operated by the State of Washington Department of Transportation (WSDOT) and maintained jointly by the City and by WSDOT pursuant to 47.24 RCW.

The three E's are being used to address safety topics: Education, Enforcement, Engineering. This report focuses on Engineering strategies, but also acknowledges that partnerships with law enforcement and other public safety agencies can result in a real and beneficial safety gain for the targeted risk group, as well as other motorists.

Approach

This Plan was developed using a seven-step process shown in Attachment A. The process information was provided by WSDOT Highways & Local Programs division for use in developing Local Roadway Safety Plans to support Washington State's Target Zero Plan. The process utilizes the Systematic Safety Selection Tool developed by Federal Highway Administration (FHWA) Office of Safety.

Washington State's Target Zero plan highlights the importance of data driven collision reduction strategies. Low-cost, near-term projects can be identified which will improve roadway safety through systemic and meaningful action. The Target Zero Priority matrix to identify locations and specific strategies, for three priority levels.

- Priority Level 1: Contributing factors that are involved in 30% or more of fatality or serious injury collisions.
- Priority Level 2: Contributing factors that are involved in 10% or more of fatality or serious injury collisions.
- Priority Level 3: Contributing factors that are associated with less than 10% of fatality or serious injury collisions but are common factors that will improve traffic safety for all users.

The goal of this Plan is to identify systemic and spot safety enhancement that can be implemented to reduce the risk of fatality and serious injury collisions and to reduce the total number of collisions. Systematic safety enhancements involve countermeasures that are employed along a roadway, corridor, or areas for mitigation throughout the roadway system. Spot safety enhancements are targeted at a specific location to mitigate a specific factor or set of factors.

Collision Evaluation

Data

Collision data reported by law enforcement is maintained by WSDOT Transportation Data, GIS & Modelling Office for all roadways in the State of Washington. Data for the five-year period from 2014 through 2018 is used in this study. Collision data was retrieved from the County Road Administration Board (CRAB) online system. Data comes from accident reports provided by the City Police, Kitsap County Sherriff, or Washington State Patrol.

Additionally, WSDOT Highways & Local Programs City Safety and Traffic Programs provides an analysis of collision data by City for fatal and serious injury collisions for use in developing Local Roadway Safety Plans.

Analysis:

Data analysis began the Citywide safety analysis document provided by WSDOT which provides an analysis of various factors that may contribute to each collision and a statistical comparison with other City's both State wide and in Western Washington. Highlighted are factors that exceed the state average for collisions involving fatalities or serious injury collisions. Refer to Appendix C.

Factors of concern are as follows:

- By Collision Type: Hit Pedestrian, Angle (T), and Hit Fixed Object
- By Light Condition: Dark No Street Lights
- By Junction Relationship: Non -intersection
- By Traffic Control: No Traffic Control, Stop Signs
- By Roadway Type: Two Way – Divided w/ no Barrier

Further analysis was conducted on a corridor level using both serious injury accidents and all traffic data. Collision data was provided by WSDOT or was retrieved from the County Road Administration Board (CRAB) online system for 2014 through 2018. The data was entered from accident reports provided by the City of Port Orchard Police Department, Kitsap County Sherriff, or Washington State Patrol. Refer to Appendix B showing locations of serious injury accidents.

Table 1 – Collisions by Secondary Arterial Street			
Street:	ADT	Serious Injury	Total Collisions
Bethel Ave.	14823	4	18
Bethel Rd. SE	19151	1	246
Lund Ave.		2	61
Old Clifton Rd.	6507		26
Pottery Ave.	9607		34
Sidney Ave. (from Pottery to short of SR 16)	7611	1	36
Sidney Rd. SW (from Pottery Ave./SR 16 Overpass to Sedgwick)	10020		30
Tremont St.	27681		107

From review of all data it was apparent that most collisions within the City have occurred on high volume arterial streets. More specifically the greatest number of accidents have occurred at the following corridors:

- Bethel Road SE and Bethel Avenue from Lincoln to Sedgwick/SR 160 (246)
- Lund Ave. from Sidney Ave. to Jackson Ave (61)
- Pottery Ave. and Sidney Rd SW combined from Tremont to Sedgwick (64)

Tremont Street has not been included as this roadway was recently reconstructed with complete street improvements/ safety enhancements.

10 of 14 serious injury accidents shown on the map provided by the State occurred on State Routes. Of the remaining 3 serious accidents shown on the map; two (2) occurred along the Bethel Road SE Corridor, one (1) occurred on Lund Avenue, and one (1) occurred along the Pottery Ave. & Sidney Ave. Corridor. Note that the number of suspected injury collisions found in the detailed collision data differs from and is greater than what is shown on the WSDOT provided map.

Bethel Road SE Corridor

From examination of the detailed collision data provided by the State five (5) suspected serious injury accidents occurred in the Bethel Rd.SE Corridor. A summary of these collisions is as follows:

- Two (2) involved left hand turns at intersections.
- One (1) was a rear end that was intersection related
- One (1) was a collision with a fixed object a non-intersection location.
- One (1) was a collision with a pedestrian at a non-intersection location. This collision occurred at night and at a location without street lighting.

Lund Ave. Corridor

Two (2) suspected serious injury collision occurred within the Lund corridor. As summary of these collisions is as follows:

- One (1) was a head on collision at a non-intersection location that involving a motorcycle crossing the centerline.
- One (1) was a collision with a pedestrian at a non-intersection location. This occurred at night at a location with operational street lighting.

Pottery Ave.- Sidney Rd. SW Corridor

One (1) suspected serious injury collision occurred within the Pottery Ave - Sidney Rd. SW corridor. This was an angle collision that occurred at a stop-controlled intersection.

Four (4) other suspected serious injury collision had been reported at other roadways than the three major corridors with the largest number of total collisions. There roadways were Port Orchard Blvd, So. Kitsap Blvd, SE Carl Pickle DR, and Sidney Ave. Eight (8) of the twelve (12) serious injury accidents occurred within the three corridors with the largest number of collisions.

Other Roadways

Three (3) of the 14 reported serious injury collisions over the most recent 5-year reporting period that occurred within City limits were drug and alcohol related. This is 23.1% of those reported which is greater than 17.7% for City's in Western Washington. This data may inform education and enforcement efforts.

Summary:

Most serious injury accidents between 2014 through 2018 within the City's roadway network occurred on three arterial corridors: Bethel Rd SW, Lund Ave, and the Pottery Ave. -Sidney Rd SW. The number of collisions that occurred in these three corridors at non intersection locations is higher than other locations within the City. This was especially true for Bethel. The highest number of collisions involved access from driveways or were driveway related. The number of accidents occurring at intersections was not significantly high (less than 5 per year). However, 4 of 9 serious injuries occurred at either signal controlled or stop sign controlled intersections. Two of the serious injury collisions involved pedestrians at night time hours (dark) of which one occurred at a location without street lighting.

Most accidents occurring within the corridors involve driveway and driveway related collision types. Street lighting was a factor in some intersection and driveway/ driveway related accidents. Street lighting was also a factor in one serious injury collision involving a pedestrian. Refer to the maps attached in Appendix D showing accidents occurring by type within the Bethel Rd SW, Lund Ave, and Pottery Ave-Sidney Rd SW Corridors.

Priority levels

Based on the collision data, the City has determined the following priority levels, designated risk factors and identified counter measures for consideration:

- Priority Level 1 – 50% or 4 of 8 reported serious injury collisions occurred at signalized and stop controlled intersections. Projects that reduce the number and severity of collisions, such as round-a-bout's, should be considered for future capacity improvements. No single intersection location had a statistically high number of serious injury collisions that would warrant a spot project.

Risk factors are: speed, inattention distraction, and under the influence.

Countermeasures may include red light cameras, round a bout's, improved channelization/ curbs, and access control near intersections, improved signage (advisory), and improved pavement markings/ rumble strips.

- Priority Level 2 – 13% or 1 of 8 reported serious injury collisions involved pedestrians at a night time hours (dark) at locations without street lighting.

Risk factors are: speed, inattention distractions, in crosswalk, driver failing to yield, and under the influence.

Countermeasures may include street lighting at location with higher numbers of night time (dark) use, improved signage (RRFB's), improved separation of modes/ channelization with sidewalks, bike lanes, and planter strips.

- Priority level 2 – 13% or 1 and 8 reported serious injury collision occurred involved head on accidents. 6 head on collisions occurred throughout the system in the reporting period.

Risk factors are: speed, inattention distraction, and under the influence.

Countermeasures include pavement markings/ treatments, curbs/ dividers.

- Priority level 2 – 13% or 1 and 8 reported serious injury collisions involved run off with fixed objects. 151 fixed object collisions occurred during the reporting period throughout the system.

Risk factors are: speed, inattention distraction, and under the influence.

Countermeasures include removal of objects with in clear zones, protection for objects that cannot be relocated and/or placing reflectors on objects that can not be relocated as a temporary measure, improved signage (advisory signs), and improved pavement markings (edge lines, rumble strips).

- Priority Level 3 – While no serious injury accidents involved driveway locations most collisions occurred at driveways. 182 at driveway or driveway related collisions occurred during the reporting period.

Risk Factors are; speed, failure to yield, inattention distraction, and under the influence.

Countermeasures may include restricted access, channelization, and street lighting.

Evaluation of the City's transportation system

Once the contributing factors have been determined, the next step is to evaluate the existing City road system to determine where the high-risk factors currently occur and to determine the appropriate countermeasures.

All serious injury collisions and the greatest concentration occurred within the most heavily congested secondary arterial corridors. Existing physical conditions that may contribute to collisions are lack of access control at driveways, un-restricted center turn lanes, obstructions in clear zones, and absent or substandard street lighting. Improvements to enhance safety may include raised curbs, raised medians, left turn pockets, roundabouts, street lighting, and complete street elements (sidewalks, bike lanes).

Intersection Control

Many (4 of 9) of the serious injury collisions have occurred at intersections. With increasing congestion improved access controls and delineation is needed to reduce the number of conflicts. The replacement of signals with roundabouts may reduce the severity of collisions at and near intersections.

Lighting Conditions

Two of the serious injury accidents involved pedestrians. One occurred a location without street lighting. Complete street improvements (cross walks, sidewalks, bike lanes) are needed along many arterial corridors. Complete streets projects also address the removal of fixed objects in clear zones. Street lighting improvements may improve recognition of pedestrians along the roadside and at intersections. Lighting improvements are best targeted within designated centers and near other traffic generators such as schools, parks, and transit/ school bus stops.

The City of Port Orchard Capital Improvement Plan has identified projects for the three corridors experiencing the largest number of collisions. Additionally, intersection improvement at other locations have been identified to address both capacity and safety enhancements.

Corridor Improvements

Within the Bethel Road SE Corridor Plan a series of round-a-bout and raised medians limiting left turn movement while still providing for access are envisioned. These round-a-bout will also serve as pedestrian crossing points, enhancing safety for pedestrians. Signals at major intersections will be replaced reducing the severity of accidents at those higher risk locations.

An extension of improvements provided along Tremont, including round-a-bouts and raised medians, is envisioned to be extended on Lund to provide complete streets and safety enhancements along this busy corridor.

Within the Pottery Ave. & Sidney Rd. SW corridor, one possible approach that is also cost effective is to implement a road diet project to reduce the number and width of traffic lanes to reduce speeds. An Elementary School and Middle School are located along the corridor. The road diet project would allow for bike lanes to be added, sidewalk gaps to be addresses, and safety encasements at crosswalks and intersections. The City begins further study of the corridor this year.

Project Priority Selection

The list below contains the project priorities for safety enhancements to reduce the risk of fatalities and serious injury collisions. The projects are listed in order of priority starting with the highest.

- Bethel Rd. SE Phase 1 (SE Salmonberry Rd. to SE Blueberry Road). This project provides roundabouts, raised medians, bike lanes, sidewalks, street lighting, and transit stop improvements.
- Bethel Rd. SE Phase 4 (Lund Ave. to SE Salmonberry Rd.). For scope elements refer to Phase 1.
- Vallier Ct. Connector – included in Phase 4 above.
- Bethel Rd. SE Phase 5A (Lund Ave. to SE Lincoln Ave). For scope elements refer to Phase 1. Note that the project is broken into parts A and B to prioritize safety enhancements.
- Bethel Rd. SE Phase 5A (SE Lincoln Ave. to Mile Hill Dr). For scope elements refer to Phase 1.
- Pottery Ave. Widening (Tremont Street to Sidney Rd. SW). This project provides a center turn lane/ turn lanes, raised medians, bike lanes, and sidewalks.
- Sidney Rd. SW Widening (Pottery Ave./SR 16 Overpass to SW Sedgwick Rd.). This project provides a center turn lane/ turn lanes, raised medians, bike lanes, and sidewalks.
- Network wide corridor lighting evaluation and improvements. Inventory and evaluation gaps in street lighting along Secondary Arterial and high-volume Collectors corridors at roadway intersections and commercial driveways. Provide and/ or upgrade street lighting. Emphasis on areas with significant pedestrian traffic such as schools, parks, regional and local centers, and transit/ school bus stops.
- Network wide safety and signage improvements for crosswalk at intersection and heavy use driveway locations to be integrated with the ADA transition planning.

Commentary:

A review of the City's 6-year and 20-year transportation plan, comprehensive plan, ADA Transition Plan, and various corridor studies was included in the development of this plan. Some but not all the projects identified in these plans have been included in the list of prioritized projects. Projects listed are located within the City's network within corridors with the largest number of collisions and serious injury collisions. Note that other projects to provide complete streets (sidewalks, bike lanes) in other locations also provide needed safety enhancements.

Education and Outreach

Education and outreach priorities based on a comparison of data with other City's include: driving under the influence, Inattention/ distraction, and apparently asleep. An interesting data point is 55.6% serious injury collisions (36% is the statewide average) involved Light Truck/ SUV vehicle types while none involved Heavy Trucks or Bus/ School Bus.

References

1. WSDOT website
2. WSDOT Local Road Safety Plan Workshop
3. FHWA Systematic Safety Tool website
4. FHWA Safety Project Selection Tool
5. FHWA CMF Clearing house
6. COPO ADA Transition Plan
7. COPO Pavement Management Plan
8. COPO Bethel Corridor Study
9. KC McCormick Urban Village Transportation Plan

Attachments

- Appendix A – Local Road Safety Plans “How to build a plan in seven steps”
- Appendix B - Map, 2014 – 2018 Fatal & Serious Injury Crashes
- Appendix C - Crash Data Summary 2014 – 2018
- Appendix D – Corridor Maps showing collision types.
- Appendix E – Traffic volumes
- Appendix F – Excerpts from the Bethel Road and Sedgwick Road Corridor Plan.