LOCAL ROAD SAFETY PLAN – SMALL CITY PERSPECTIVE

• Purpose and Goals
• Our Poulsbo Approach
  • Project Steps
  • Lessons Learned
• Value Provided
• Next Steps
LOCAL ROAD SAFETY PLAN – SMALL CITY

• Our city consists of
  • Little Norway surrounding the shores of Liberty Bay on the Kitsap Peninsula
  • Walkable city with extensive tourism and engaged community
  • City limits include 4.5 square miles and 60 miles of roadway
  • Approx. 11,200 population
Purpose and Goals – Why a Safety Plan?

- Growth in non-motorized use and tourism
- Address concerns and perceptions about speeding, pedestrian-vehicle conflicts, etc.
- Feedback from non-motorized advocacy groups
- Prerequisite to funding
- Address Comp Plan Complete Streets policy goals
Project Steps + Team

- Crash Data Analysis
- Location Assessments
- Advisory Committee Meetings (2)
- Project List
- Preparation of Safety Plan

- Intense “In-House” Effort

Project Team
- Engineering
- Public Works
- Police
- Planning

Advisory Committee
- Kate Collins-Nunes, Planning Commission
- Rick Eckert, NKSD
- Dianne Iverson, West Sound Cycling
- Sandy Kolbeins, HDPA
- Jeff McGinty, City Council
- Molly Merrick, Citizen
- Jim Schlachter, Rotary
POULSBO SAFETY PLAN

• Recommended by federal and state policy
• Approach follows federal and state methods
• Data Evaluation
  • All accident data 2012-2017
  • Serious injury accident data 2007-2017
  • Review speed study data past ~ 10 years
• Identify key factors (risks) that are common to accidents
• Evaluate locations for potential engineering improvements
• Prioritize projects by type and location
# Local Road Safety Plans

*Information provided by Washington State Department of Transportation (WSDOT) Local Programs Division*

**Note:** FHWA = Federal Highway Administration

**Definition:** A local road safety plan presents an agency’s data-driven analysis and prioritization of its roadways for traffic safety, based on the top crash type(s). A local road safety plan can be detailed or simple.

## How to build a plan in seven steps:

<table>
<thead>
<tr>
<th>Step</th>
<th>Plan element</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. <strong>Analyze summary crash data to identify focus/priorities.</strong> An agency can order crash data from WSDOT <a href="https://www.wsdot.wa.gov">here</a>.</td>
<td>List of crash priorities based on data.</td>
</tr>
<tr>
<td>2. <strong>Analyze individual fatal-serious crashes to identify factors present.</strong> See page 18 of FHWA’s Systemic Safety Project Selection Tool. July 2013. This tool provides a list of factors to consider when determining key factors that are common to fatal and serious injury crashes on a roadway. This tool also walks you through a process to prioritize locations.</td>
<td>Description of factors &amp; selection process.</td>
</tr>
<tr>
<td>3. <strong>Select the most common factors.</strong></td>
<td></td>
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<tr>
<td>4. <strong>Analyze the roadway network for presence of factors.</strong></td>
<td></td>
</tr>
<tr>
<td>5. <strong>Create prioritized list of roadway locations where factors are present.</strong> Education and enforcement efforts can also be noted but cannot be funded with federal Highway Safety Improvement Program funds (including WSDOT’s City Safety and County Safety Programs).</td>
<td>Prioritized list of roadway locations.</td>
</tr>
</tbody>
</table>
| 6. **Identify countermeasures to address prioritized locations.** See [Target Zero](https://www.wsdot.wa.gov/), Washington State’s Strategic Highway Safety Plan.  
   - Lane departure examples (page 97)  
   - Intersection examples (pages 104-105)  
   - Pedestrian examples (pages 149-150)  
   - Bicyclist examples (pages 173-177) | Description of countermeasures and selection process. |
| 7. **Develop a prioritized list of projects.** Examples:  
   - Install center and edge line rumble strips on the highest rated roadway segments (then the second highest rated segments, etc.)  
   - Install high friction surface treatment on horizontal curves.  
   - Evaluate and upgrade signing for size, type, and location to meet current standards.  
   - Install compact roundabouts at the highest rated intersections.  
   - Restrict access within 100 feet of intersections.  
   - Add pedestrian refuge islands on the highest rated roadway segments.  
   - Add leading pedestrian interval signal phasing at the highest rated intersections. | Prioritized list of projects. (With project cost as optional.) |
CRASH DATA ASSESSMENT

• 7 serious injury accidents 2012-2017
• 22 serious injury accidents 2007-2017
• 17 serious accidents not impairment related

• Accident Type
  ▪ User: Non-motorized (10 of 17)
  ▪ Cause: Distraction/Failure to Yield

• Accident Location
  ▪ Intersections and Driveways (18 of 22)
  ▪ Left turns

• Prioritization
  ▪ Site Specific – Iverson Street (3 accidents)
  ▪ Systemic – Multiple intersections
    • Viking-Edvard intersection (2 accidents)
    • All others (1 each)
TARGET ZERO METHODOLOGY

- **Level 1**: Factors associated with 30% of crashes
- **Level 2**: Common, but not as frequent as Level one
- **Level 3**: Factors associated with less than 10% of serious injuries

### Table 5: Summary of Serious Injury Accidents by Type, 2007-2017

<table>
<thead>
<tr>
<th>Accident Type</th>
<th>Total No. Accidents</th>
<th>No. Accidents due to Driver Impairment or Defective Equipment</th>
<th>Contributing Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pedestrian - Vehicle</td>
<td>7</td>
<td>0</td>
<td>Failure to yield to pedestrian</td>
</tr>
<tr>
<td>Bicycle - Vehicle</td>
<td>3</td>
<td>0</td>
<td>Failure to yield to bicycle</td>
</tr>
<tr>
<td>Vehicle - Vehicle</td>
<td></td>
<td>3</td>
<td>Failure to yield right of way</td>
</tr>
<tr>
<td>Left Turn</td>
<td>6</td>
<td>3</td>
<td>Inattention</td>
</tr>
<tr>
<td>Rear End</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vehicle - Fixed Object</td>
<td>5</td>
<td>2</td>
<td>Inattention, Speeding</td>
</tr>
</tbody>
</table>

2. Apparent primary Contributing Factor based on WSDOT accident data. Other contributing factors may have been applicable.
LOCATION ANALYSIS

Identified priority locations based on accident data:

10 intersections

5 street segments
## LOCATION ASSESSMENT

### Table A. Location Assessment Summary Matrix.

<table>
<thead>
<tr>
<th>Intersections</th>
<th>Signage and Striping</th>
<th>Pedestrian Features</th>
<th>Road grade or slope</th>
<th>Roadway Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>Viking Ave and Edvard St</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Viking Ave; Lindvig and Finn Hill Rd</td>
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<td></td>
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<tr>
<td>10th Ave and Lincoln Rd</td>
<td></td>
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<tr>
<td>Front Street; Tovai Canyon to Lindvig Rd</td>
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<tr>
<td>Front Street and Jensen Way</td>
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<td></td>
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<tr>
<td>8th Ave and Lincoln Rd</td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>Iverson St and Jensen St</td>
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<tr>
<td>Ohawa Way and Market Place</td>
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<tr>
<td>Forest Rock Lane and 10th Ave</td>
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<td></td>
<td></td>
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<tr>
<td>Caldart Ave and Lincoln Road</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Road Segments</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Front Street between Jensen and Hostmark</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hostmark between SR305 and Caldart</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lincoln between 10th Ave and Caldart</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Iverson between Jensen and 7th</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7th between Iverson and Liberty</td>
<td></td>
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</tr>
</tbody>
</table>

### Legend:
- Safety Enhancement Opportunity
- Existing Safety Feature
- Blank = Not Applicable
COUNTERMEASURES FOR WIDE STREETS

**Raised Medians**

**Refuge Islands**
COUNTERMEASURES – WIDE STREETS

**Leading Pedestrian Intervals**

An LPI allows a pedestrian to establish presence in the crosswalk before vehicles are given a green indication.

**Leading Pedestrian Intervals**

SAFETY BENEFIT

60%

Reduction in pedestrian-vehicle crashes at intersections

LPIs are beneficial at intersections with high left-turning volumes.
ROAD DIET

REDUCE VEHICLE LANES &/OR WIDTH AND REPLACE WITH NON-MOTORIZED FACILITIES, PARKING, LANDSCAPING

Road Diets (Roadway Reconfiguration)

A "Road Diet," or roadway reconfiguration, can improve safety, calm traffic, provide better mobility and access for all road users, and enhance overall quality of life.

SAFETY BENEFIT:

4-Lane → 3-Lane
Road Diet Conversions 19-47%
Reduction in total crashes

Source: Evaluation of Lane Reduction "Road Diet" Measures on Crashes, FHWA-HRT-10-053
WALKWAYS AND BIKE FACILITIES

Lincoln Shared Use Path

Hostmark Sidewalk and Bike Lanes

Walkways

SAFETY BENEFITS:

Sidewalks 65-89%
Reduction in crashes involving pedestrians walking along roadways

Paved Shoulders 71%
Reduction in crashes involving pedestrians walking along roadways

Example of a shared use path.

Source: pedestrianimages.org / Burden

Source: Desktop Reference for Crash Reduction Factors, FHWA-SA-08-011, Table 11.
Traffic Calming and Crosswalk Improvements

6th Avenue at Lions Park

- Raised Crosswalk
- Curb Extensions
- Striping and Stencils
- Road Diet
SYSTEMIC LOW COST IMPROVEMENTS

Systemic Application of Multiple Low-Cost Countermeasures at Stop-Controlled Intersections

Example of countermeasures on the stop approach.

Source: South Carolina DOT

SAFETY BENEFITS:
- 10% Reduction in injury and fatal crashes
- 15% Reduction in nighttime crashes
### Proposed Projects

<table>
<thead>
<tr>
<th>Location</th>
<th>Potential Risk Factors</th>
<th>Potential Countermeasures</th>
<th>Proposed Countermeasures General Description</th>
<th>Implementation Strategy</th>
<th>Est. Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>SITE SPECIFIC PROJECT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Iverson Street between Jensen Street and 4th</td>
<td>Sidewalk gap, site distance, crossing distance</td>
<td>Curb extensions, Road Diet, Access Management, Sidewalks</td>
<td>Sidewalk gaps, curb ramps, curb extensions, striping</td>
<td>Site Specific 2018 safety grant application</td>
<td>$250,000</td>
</tr>
<tr>
<td>SYSTEMIC SAFETY IMPROVEMENT PROJECT SITES</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Viking Ave - Edward Street</td>
<td>Speeds, crossing distance, site distance, driveway conflicts</td>
<td>Systemic improvements</td>
<td>Stripping, leading pedestrian interval (LPI), access control</td>
<td>Part of 2018 safety grant application</td>
<td>$20,000</td>
</tr>
<tr>
<td>Viking Ave - Finn Hill Road Intersecion</td>
<td>Speeds, crossing distance</td>
<td>Systemic improvements</td>
<td>UPI, eliminate mid-block crossing at Fish Park</td>
<td>Part of 2018 safety grant application</td>
<td>$25,000</td>
</tr>
<tr>
<td>Forest Rock Lane - 10th Avenue Intersecion</td>
<td>Speeds, turning movements</td>
<td>Road diet, stripping</td>
<td>Lane stripping, signs</td>
<td>Potential part of 2018 safety grant application</td>
<td>$15,000</td>
</tr>
<tr>
<td>Hostmark Street, SR305 to Caldart Ave</td>
<td>Road grade, speeds</td>
<td>Enhanced signage, curb extension, pedestrian light at Caldart Ave</td>
<td>Reflective signs, striping improvements, illumination</td>
<td>Part of 2018 safety grant application</td>
<td>$30,000</td>
</tr>
<tr>
<td>Front Street, Jensen to Peterson</td>
<td>Midblock crossings</td>
<td>Remove or enhance</td>
<td>Evaluate and remove or enhance existing mid-block crosswalks</td>
<td>Part of 2018 safety grant application</td>
<td>$50,000</td>
</tr>
<tr>
<td>Multiple locations</td>
<td>Pedestrian and driver distraction</td>
<td>Reflective post covers</td>
<td>Reflective sleeves on posts at stop controlled intersections</td>
<td>Potential part of 2018 safety grant application</td>
<td>$15,000</td>
</tr>
</tbody>
</table>

### Total Systemic Improvements Grant Application | $176,000
### Total Grant Applications | $425,000

### Future Projects

<table>
<thead>
<tr>
<th>Location</th>
<th>Potential Risk Factors</th>
<th>Potential Countermeasures</th>
<th>Proposed Countermeasures General Description</th>
<th>Implementation Strategy</th>
<th>Est. Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Front Street - Foral Canyon Intersecion</td>
<td>Speeds, crossing distance, site distance, pedestrian and driver distraction</td>
<td>Road diet, curb extension</td>
<td>Add parking lane edge, front, curb extension SE corner front, Torvel CR, Refuge Island at Bond Rd</td>
<td>Coordinate with adjacent Liberty Bay Trail project (2020-2022)</td>
<td>TBD</td>
</tr>
<tr>
<td>Front Street, Jensen to Hostmark segment</td>
<td>Mid-block crossings, site distance, pedestrian and driver distraction</td>
<td>Road diet, access management, wider sidewalks</td>
<td>Reconfigure Jensen - Front intersection, wider sidewalks</td>
<td>Future Complete Street project and grant application (2019-2020)</td>
<td>TBD</td>
</tr>
<tr>
<td>5th Avenue - Lincoln Rd Intersecion</td>
<td>Speeds, crossing distance, site distance</td>
<td>Striping, road diet, curb extensions</td>
<td>Curb extensions, dead-end 5th Street at DF Creek, restriping, improved signs</td>
<td>Design and implement as part of SF Dogfish Creek basin retrofit grant, 2018-2019 design</td>
<td>TBD</td>
</tr>
<tr>
<td>Ohlava Way and Market Place Intersecion</td>
<td>Speeds, crossing distance, site distance, turning movements, queues</td>
<td>Evaluate intersection control options</td>
<td>Intersection study including traffic operations, level of service and safety elements</td>
<td>Evaluate as part of future development proposals</td>
<td>$30,000</td>
</tr>
</tbody>
</table>

1 Potential locations consist of: Fjord - Hostmark, Jensen - Front, Fjord - 5th Avenue, Fugh Road - Lincoln Road, 9th - Fjord, Sunset - Jensen, 4th - Viewmont.
Proposed Projects

- 1 site specific grant application (Iverson Street)
- 4 locations for systemic countermeasures grant application
- 4 projects that could be combined with other City capital projects
- 1 project to be evaluated as part of future development
- Review and concurrence from Advisory Committee
LESSONS LEARNED

• Engagement of the community and police department was key
• The short time frame was helpful to maintain a focused effort
• Limited accident data provided a guide
• Field analysis of counter measures at all locations was essential
• Educational element to the process, however we did not directly focus on the human behavior element of safety
• This project was a first step, there is always more to do.....
VALUE PROVIDED

- Update and expand safety plan as part of Complete Streets Plan; 2021-2022
- Currently implementing non-motorized safety measures for COVID response
- Continue work with elected official on funding options
NEXT STEPS FOR THE CITY OF POULSBO

• Implement grant projects, systemic improvements and intersection modifications.
• Currently implementing non-motorized safety measures for COVID response
  • One Way Street with Designated Pedestrian Walkway
• Continue work with elected officials on funding options
• Update and expand safety plan as part of Complete Streets Plan; 2021-2022
Questions