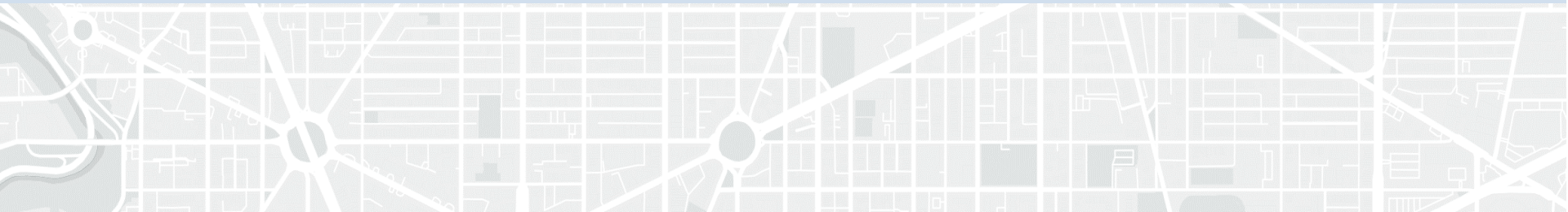


# **3<sup>rd</sup> Avenue & Fern Ridge Road Pedestrian Crossing Assessment**

**Caleb Cox, PE**

**Stayton, OR  
March 18, 2024**



# Background and History

- 2018 - TSP recommended a crossing study
- 2020 - Fatal Pedestrian Crash
- 2023 - City installed high visibility crosswalk markings
- 2024 - Fern Ridge Apartments Construction



# Existing Conditions



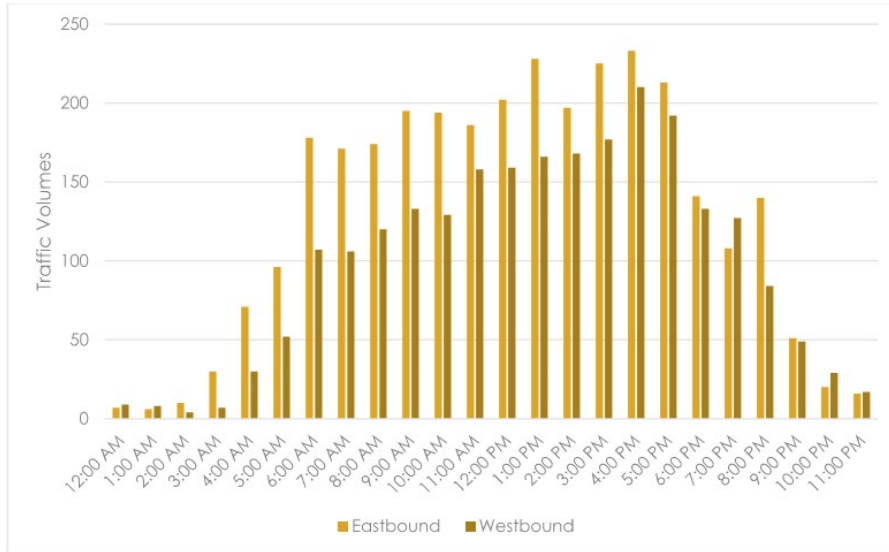
Source: Kittelson & Associates



Source: Kittelson & Associates, Caleb Cox



# Pedestrian Crossing Study



## Data Collection

- 4 crashes in the last 5 years
- Measured 85<sup>th</sup> percentile speed of 41 mph
- 5,500 Average daily traffic
- 14 daily pedestrian crossings between 12:00 & 6:00



# Pedestrian Crossing Study

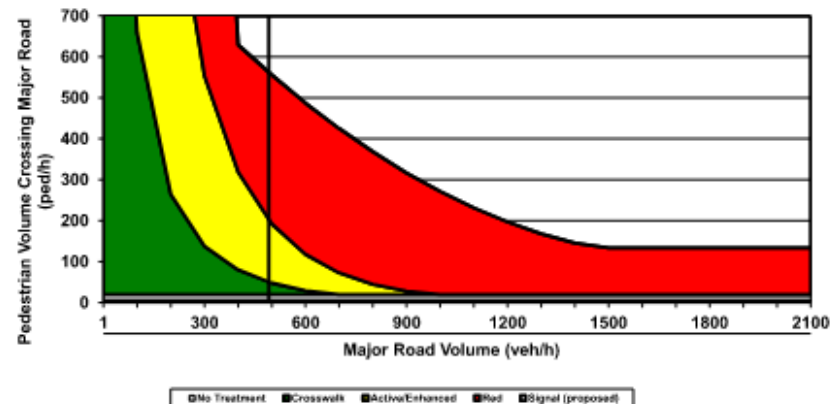
- FHWA Guide for Improving Safety at Uncontrolled Crossing Locations
- NCHRP Report 562 Improving Pedestrian Safety at Unsignalized Crossings

## GUIDELINES FOR PEDESTRIAN CROSSING TREATMENTS

This spreadsheet combines Worksheet 1 and Worksheet 2 (Appendix A, pages 69-70) of TCIP Report 113/NCHRP Report 562 (Improving Pedestrian Safety at Unsignalized Intersections) into an electronic format. This spreadsheet should be used in conjunction with, and not independent of, Appendix A documentation.

Key	This spreadsheet is still under development, please inform TTI if errors are identified.
Blue fields	contain descriptive information.
Green fields	are required and must be completed.
Orange fields	are adjustments that are filled out only under certain conditions (follow instructions to the left of the cell).
Gray fields	are automatically calculated and should not be edited.

Analyst and Site Information			
Analyst:	Kim Olson	Major Street:	Fern Ridge Road
Analysis Date:	December 4, 2021	Minor Street or Location:	1st Avenue
Data Collection Date:	November 22, 2023	Peak Hour:	2:55 to 3:55 PM
Step 1: Select worksheet:			
Posted or statutory speed limit (or 85th percentile speed) on the major street (mph)	2a	35	
Is the population of the surrounding area <10,000? (enter YES or NO)	1b	YES	
Step 2: Does the crossing meet minimum pedestrian volumes to be considered for a traffic control device?			
Peak-hour pedestrian volume (ped/h), $V_p$	2a	5	
Result: Consider raised median islands, curb extensions, traffic calming, etc. as feasible.			
Step 3: Does the crossing meet the pedestrian warrant for a traffic signal?			
Major road volume, total of both approaches during peak hour (veh/h), $V_{maj}$	3a	491	
[Calculated automatically] Preliminary (before min. threshold) peak hour pedestrian volume to meet warrant	3b	194	
[Calculated automatically] Minimum required peak hour pedestrian volume to meet traffic signal warrant	3c	294	
% 15th percentile crossing speed of pedestrians less than 3.5 ft/s (1.1 m/s)? (enter YES or NO)	3d	NO	
If 15th percentile crossing speed of pedestrians is less than 3.5 ft/s (1.1 m/s), then reduce 3c by up to 50%.	3e		
% rate of reduction for 3c (up to 50%)	3f		
Reduced value of 3c	3f	194	
Result:			
Step 4: Estimate pedestrian delay.			
Pedestrian crossing distance, curb to curb (ft), L	4a	62	
Pedestrian walking speed (ft/s), S <sub>p</sub> (suggested speed = 3.5 ft/s)	4b	3.5	
Pedestrian start-up time and end clearance time (s), t <sub>1</sub> (suggested start-up time = 3 sec)	4c	3	
[Calculated automatically] Critical gap required for crossing pedestrian (s), t <sub>c</sub>	4d	21	
Major road volume, total both approaches OR approach being crossed if raised median island is present, during peak hour (veh/h), $V_{maj}$	4e	491	
Major road flow rate (veh/s), v	4f	0.19	
Average pedestrian delay (s/person), d <sub>p</sub>	4g	343	
Total pedestrian delay (h), D <sub>t</sub> . The value in 4h is the calculated estimated delay for all pedestrians crossing the major roadway without a crossing treatment (assumes 0% compliance). If the actual total pedestrian delay has been measured at the site, that value can be entered in 4i to replace the calculated value in 4h.	4h	0.3	
4i			
Step 5: Select treatment based up on total pedestrian delay and expected motorist compliance.			
Expected motorist compliance at pedestrian crossings in region: enter HIGH for High Compliance or LOW for Low Compliance	5a	LOW	
Treatment Category:	Consider raised median islands, curb extensions, traffic calming, etc. as feasible.		



# Findings

- Enhanced crossing treatments are recommended for a few reasons:
  - 3 lane road section results in longer crossing distance
  - Vehicle speeds exceeding 40 mph
  - Crossing is located at the top of a crest vertical curve
  - Pedestrian generating uses nearby including schools, homes, and assisted living facility
  - Likely seasonal adjustments to pedestrian traffic



# Recommendations

RRFB

VS.

PHB



Source: Kittelson & Associates, Chris Romano



Source: Google Earth



