City of Yakima

Local Road Safety Plan

City of Yakima
Engineering Division
February 2022

Introduction

This Local Road Safety Plan is the initial plan for the City of Yakima and has been developed in response to WSDOT's 2022 City Safety Program. WSDOT's City Safety Program was developed as a result of the Washington State Strategic Highway Safety Plan Target Zero goal, which is to reduce the number of traffic deaths and serious injuries on Washington's roadways to zero by the year 2030. The WSDOT 2022 City Safety Program provides grants to cities to develop engineering solutions to reduce and eliminate fatal and serious injury crashes. The development of this initial local road safety plan will enable Yakima to join in helping meet the state's goal and provide a safer transportation system for the citizens of the City of Yakima and those of the surrounding areas that use Yakima's transportation system.

Although the primary purpose of this document is to help develop a list of projects to use for WSDOT's 2022 City Safety Program call for projects, this plan will also serve as the basis for the City to seek future funding for spot safety improvements, funding for further data collection and feasibility studies, and provide locations to be referenced when other projects are developed.

Safety Plan Process

For this initial safety plan, the City has tried to follow guidance from WSDOT Local Programs with their seven-step development plan. Those steps are the following:

1. Analyze summary data to identify focus/priorities
2. Analyze individual fatal/serious crashes to identify risk factors
3. Select most common risk factors
4. Analyze roadway network for presence of risk factors
5. Create prioritized list of roadway locations
6. Identify countermeasures to address prioritized locations
7. Develop a prioritized list of projects

As a starting point of the safety plan process, WSDOT provided crash data for all city streets from 2016 to 2020. The crash data was used to help identify risk factors associated with the serious injury and fatality crash locations.

Existing Efforts

Even though this is the City of Yakima's first local road safety plan, this is not the city's first and only effort to address transportation system safety needs. There were several other efforts previously put forth that will be useful in current and future safety plan development. The following are the results of several of those efforts.

The City adopted a Pedestrian Master Plan in November 2021 that was a major step in identifying deficiencies in the city's pedestrian network so improvements could start to be made.

In June 2021 the city Public Works Department prepared a Traffic Safety Report for the city council which identified the top 10 intersections in the city with the most crashes. This report analyzed risk factors and provided recommendations for safety improvements going forward. The City is preparing a first quarter 2022 update to the Top 10 intersection locations that will review the effectiveness of recent improvements.

The City of Yakima has also developed a 2040 Transportation System Plan. The plan identifies a comprehensive list of multimodal transportation system projects and programs. The projects have been assigned a likely timing horizon of short range, mid-range, and long-range. The projects listed can possibly be modified to address safety plan deficiencies or can have funding supplemented by safety plan funding requests to meet safety needs.

The City plans to complete its ADA Transition Plan in the first quarter of 2022. This plan will address the built environment in the public right of way for ADA compliance and needs.

Analysis of WSDOT Summary Data

From 2016 to 2020, Yakima had a total of 8758 crashes, 103 were serious injury crashes and 17 were fatal crashes. The 120 serious injury and fatality crashes are 1.4% of all crashes.

Table 1

Year	2016	2017	2018	2019	2020	Total
Total Crashes in Yakima	1999	1957	1788	1738	1276	8758
Total Serious Injury	18	21	23	17	24	103
Total Fatality Crashes	4	3	2	1	7	17

Since the goal of the safety plan is to reduce and eliminate serious and fatal crashes, review of the details of the crash data is filtered down to cover only those 120 crashes.

When looking at locations of just fatal crashes, they appear to be random in nature and common risk factors did not readily present themselves. After reviewing safety plans from other cities, this randomness is present in those plans as well. Seeing this, fatal crashes alone will not be the primary focus of this safety plan, but rather focusing on risk factors that affect both fatalities and serious crashes.

When looking at the details the crash data provided and filtering the serious and fatal, three types of crashes stand out:

- Hit Pedestrian 32 crashes 26.7%
- Entering at Angle 24 crashes 20.0%
- Intersection Related 69 crashes 57.5%

Given the data results above, the City of Yakima has chosen to make its first priority those crashes at intersections involving pedestrians. The city has chosen to do so because even though there were only 177 crashes out of the 8758 total that involved pedestrians, 32 of those crashes resulted in serious injuries or fatalities to pedestrians. Those 32 pedestrian hits are 26.7% of all serious injury and fatal crashes, which is a large portion as one might expect since pedestrians are not protected by being in a vehicle.

See Table 2 below for further breakdown of the crash data.

Table 2 **Crash Data for 2016 to 2020**	**Fatal/Serious Injury Crashes Only**		**Total Crashes**	
Overall Crash Numbers		% of Total		% of Total
# of Crashes	120		8758	
# of Fatal Crashes	17	14.2%	17	0.2%
# of Serious Injury Crashes	103	85.8%	103	1.2%
# of Drug/Alcohol Related Crashes	18	17.5%	497	5.7%
Total # of Fatalities	17			
Total # of Injuries	173			
By Collison Type				
Hit Pedestrian	32	26.7%	177	2.0%
Entering At Angle	24	20.0%	2748	31.4%
Hit Fixed Object	22	18.3%	964	11.0%
Hit Cyclist	8	6.7%	62	0.7%
Rear End	7	5.8%	2044	23.3%
By Junction Relationship				
Intersection Related	69	57.5%	5209	59.5%
Non-Intersection Not Related	39	32.5%	2321	26.5%
Driveway Related	12	10.0%	1098	12.5%
By Driver Contributing Circumstance				
Did Not Grant RW	28	23.3%	2212	25.3%
Under Influence of Alcohol/Drugs	18	15.0%	497	5.7%
Inattention/Distraction	10	8.3%	2521	28.8%
Exceeding Safe/Stated Speed	8	6.7%	356	4.1%
Disregard Stop Sign/Stop Light	5	4.2%	641	7.3%
Improper Turn/Merge	3	2.5%	332	3.8%

By Traffic Control				
No Traffic Control	76	63.3%	4875	55.7%
Stop Sign	22	18.3%	1644	18.8%
Signal	21	17.5%	2111	24.1%

Further evaluation of crash data involving pedestrians yielded some additional information. Of the 32 crashes involving pedestrians, looking at the data for By Junction Relationship shows that 16 were Not at Intersection and Not Related, 14 were At Intersection and Related, 1 was At Intersection and Not Related, and 1 was At a Driveway.

When breaking down the data for crashes not intersection related, half involved pedestrians crossing the roadway outside of crosswalks, and 5 of those 8 were caused by pedestrians failing to grant the right of way to the vehicles.

Of the 14 crashes that are at intersections, 8 occurred at intersections with no traffic control and 6 occurred at signalized intersections. The leading contributing circumstance in 8 of the crashes was the vehicle drivers not granting right of way to the pedestrians. Three crashes involved pedestrians under the influence of alcohol or drugs, 1 was due to inattention by the pedestrian, and 1 involved a pedestrian not using the crosswalk.

Armed with this information, the locations of all 32 serious injury and fatality crashes were looked at to determine if there were common risk factors present. The following were risk features, and conditions, that were chosen to aid in the development of prioritizing crash locations:

- ADT of 10,000 or more
- 4 or more lanes
- 48’ roadway width
- Functional Class – Principle Arterial
- Posted at 35mph or more
- Intersection

A simple totaling of the number of these risk features present at each location was used to create the prioritized list below in Table 3.

Also, below is a map of locations of all serious injury and fatal crashes in the city of Yakima. The 32 crash locations that involved pedestrians are numbered on this map and they correspond to location numbers on the prioritized risk list in Table 3.

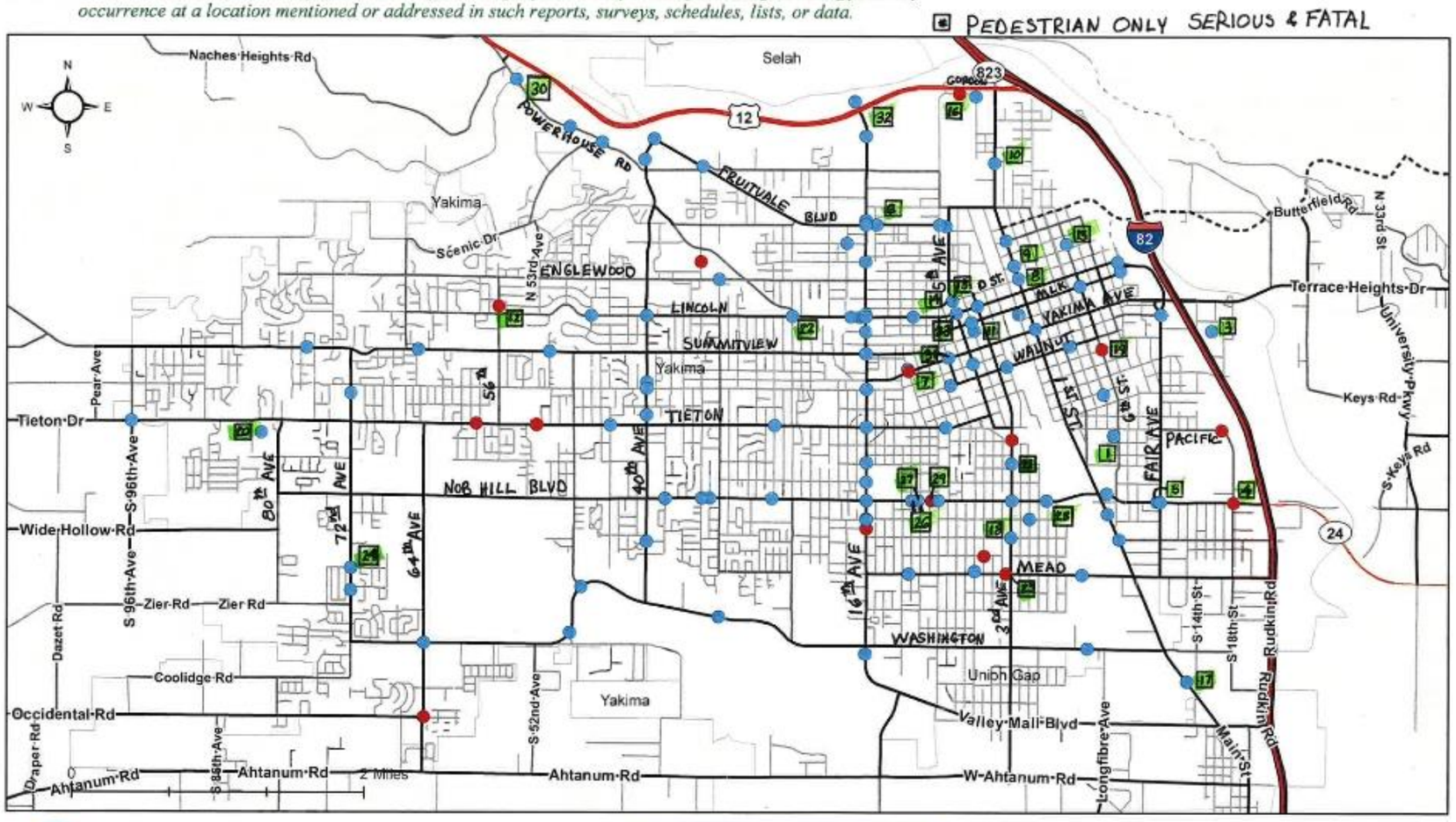
Table 3 Pedestrian Serious and Fatal Crashes Prioritized by Risk Features

Map #	Report Number	Location	BLOCK NUMBER	INTERSECTING TRAFFICWAY	Over 10,000? ADT	4 or More? Lanes	48' or More? Width	Principal Arterial? Functional Classification	35 or More? Posted Speed	Intersection?	Number of Risk Features
4	E582553	E NOB HILL BLVD	1800	S 18TH ST	Yes	Yes	Yes	Yes	Yes	Yes	6
8	E525762	N 1ST ST	300	East D ST	Yes	Yes	Yes	Yes	Yes	Yes	6
9	EA65046	N 1ST ST	500	East E ST	Yes	Yes	Yes	Yes	Yes	Yes	6
6	E640468	FRUITVALE BLVD	1400		Yes	Yes	Yes	Yes	Yes	No	5
10	E598550	N 1ST ST	1200		Yes	Yes	Yes	Yes	Yes	No	5
13	E587370	N 5TH AVE	300	West D ST	Yes	Yes	Yes	Yes	No	Yes	5
14	E613564	N 5TH AVE	0	West D ST	Yes	Yes	Yes	Yes	No	Yes	5
17	E903450	S 1ST ST	2400		Yes	Yes	Yes	Yes	Yes	No	5
23	E863114	W LINCOLN AVE	0	N 5TH AVE	Yes	Yes	Yes	Yes	No	Yes	5
24	EA10706	W MEAD AVE	0	S 72ND AVE	Yes	Yes	Yes	No	Yes	Yes	5
26	E708043	W NOB HILL BLVD	0	QUEEN AVE	Yes	Yes	Yes	Yes	No	Yes	5
5	E558712	E NOB HILL BLVD	900		Yes	Yes	No	Yes	Yes	No	4
18	E840190	S 3RD AVE	0	W VIOLA AVE	Yes	Yes	Yes	No	No	Yes	4
27	E918209	W NOB HILL BLVD	1100		Yes	Yes	Yes	Yes	No	No	4
28	E890737	W NOB HILL BLVD	0		Yes	Yes	Yes	Yes	No	No	4
29	E744598	W NOB HILL BLVD	1000		Yes	Yes	Yes	Yes	No	No	4
19	E729623	S 6TH ST	0	E SPRUCE ST	No	Yes	Yes	No	No	No	3
21	E921107	W ARLINGTON ST	0	S 3RD AVE	Yes	Yes	No	No	No	Yes	3
22	E767001	W LINCOLN AVE	0	N 24TH AVE	Yes	Yes	No	No	No	Yes	3
25	E744683	W MEAD AVE	300		Yes	No	Yes	No	Yes	No	3
31	E737843	W YAKIMA AVE	0	S 7TH AVE	Yes	No	No	Yes	No	Yes	3
11	E749481	N 4TH AVE	100		No	Yes	Yes	No	No	No	2
32	E727734	012Q120096			N/A	No	No	No	Yes	Yes	2
2	EA13521	ALLEYWAY		E WALNUT ST	No	No	No	No	No	Yes	1
3	E665443	E CHESTNUT AVE-WALMART	1600		No	Yes	No	No	No	No	1
7	E727394	N 11TH AVE	0		No	Yes	No	No	No	No	1
12	E762693	N 56TH AVE	300		No	Yes	No	No	No	No	1
15	E547550	N 6TH ST	500		No	Yes	No	No	No	No	1
30	E98650222	W POWERHOUSE RD	4800		No	No	No	No	Yes	No	1
1	E569103	ALLEY W OF S 6TH ST	600		No	No	No	No	No	No	0
16	EA86059	N GORDON RD	2000		No	No	No	No	No	No	0
20	E77790230	S 82ND AVE	711		No	No	No	No	No	No	0

2016 - 2020 Fatal and Suspected Serious Injury Crashes

City of Yakima

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 – KM

Legend

- Fatal Injury (17)
- Suspected Serious Injury (103)

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

With the above prioritized list, all locations with five and six risk features present were analyzed further to see if there were some countermeasures that could be implemented to reduce or eliminate the pedestrian safety problems.

When looking at locations of pedestrian crashes, there were two locations with multiple severe and fatal crashes. They were the 5th Avenue and D Street intersection, and on Nob Hill Boulevard from S 11th Avenue to S 12th Avenue. Both of these locations had five or six of the chosen risk features present, so they will be analyzed further for improvements.

Links to possible countermeasures for reducing vehicle/pedestrian crashes were obtained from the Federal Highway Administration Local Road Safety Plan website. Some of those countermeasures include Crosswalk Visibility Enhancements, Installing RRFBs, providing Leading Pedestrian Interval at signalized crossings, installing medians and pedestrian refuge islands, installing Pedestrian Hybrid Beacons, and installation of lighting. Education and enforcement are other countermeasures that may also be appropriate in some locations.

The following is a list of potential spot safety countermeasures or additional efforts needed for all crash locations with five or six risk features:

CRASH LOCATION	POTENTIAL COUNTERMEASURES/ADDITIONAL EFFORTS
E Nob Hill BLVD and S 18th Street	Upgrade signal system to APS, Install More Visible Crosswalk Striping
N 1st Street and East D Street	Install High Visibility Crosswalk, Impaired driver - Education, Enforcement
N 1st Street and East E Street	Collect additional vehicle and pedestrian data to determine a solution.
1400 Block of Fruitvale BLVD	Impaired driver - Education/Enforcement
1200 Block of N 1st Street	Jaywalking - Education/Enforcement
N 5th Ave and West D Street	Extend No Parking in NW corner to be 20-30' from crosswalk for sight distance-sign No Parking Here to corner and remove solid white line back to sign, Install painted crosswalks, add Crosswalk sign for SB and NB traffic. Upgrade sidewalks to meet ADA, redo curbing and maybe build bulb outs on 5th at NE, NW, and SW corners.
N 5th AVE and West D Street	Same as above.
2400 Block of S 1st ST	Inattention - Education
W Lincoln Ave and N 5th Ave	More visible crosswalk striping, Good candidate for LPI for peds crossing 5th Ave so upgrade signal controller to allow for it.
W Mead Ave and S 72nd Ave	Possible signal modification.
W Nob Hill BLVD and Queen Ave	Collect additional vehicle and pedestrian data to determine a solution.

Another thing to note when looking at the plotted locations of serious and fatal crashes, 16th Avenue as a route looks to have the most serious injury and fatal crashes in the city of Yakima. There were no pedestrians involved in those crashes, but 16th Avenue has almost all the risk features present that were used to prioritize pedestrian crash locations in Table 3 above. This route is something that would benefit from the collection of additional vehicle traffic data as

well as pedestrian and bicycle data so a systemic approach can be used for prioritizing safety improvements in the next update to this local road safety plan.

Conclusion

This initial plan identified that the majority of fatal or serious injury crashes were intersection related and/or involved pedestrians. A set of risk factors was chosen as shown in Table 3 on page 5 and used for evaluation of crash locations. This evaluation created a prioritized list of locations and countermeasures were proposed or additional efforts needed at those locations to identify safety improvements. This list will be the basis for the city to seek future funding for spot safety improvements, funding for further data collection and feasibility studies, and provide locations to be referenced when other city projects are developed so these needs can be addressed as part of those projects.

This plan is to be a living document that will be revised every two years. Development of this plan has identified that the city does not have adequate data to effectively implement a systemic approach to preventing serious and fatal crashes at this time. Within the next two years, such data will be collected with the goal of moving toward a systemic approach with the next plan revision.

The next plan revision will also include input and feedback of other improvements made from local stakeholders. Stakeholders may include city police, fire, school district, planning office, and the bike and pedestrian safety group.