

MEMORANDUM

DATE: June 3, 2022

TO: Andy Hartung, AIA, McGranahan Architects

FROM: Michael J Read, P.E., Principal, TENW

SUBJECT: Pierce College Puyallup Campus Master Plan – SR 161 Safety Analysis
TENW Project No. 2020-158

This memorandum summarizes the results of a safety analysis of SR 161 as part of the proposed 2021 Campus Master Plan for the College. At the specific request of WSDOT, TENW obtained historical collision records along SR 161 between 35th Ave SE and the SR 512 EB ramps (MP 25.42 and MP 25.75) during the most recent 5 year period.

Collision History and Safety Review

The frequency and severity of collisions are commonly weighted against speed, volume, and functional classification of a roadway segment or intersection. These variables are considered in determining if a certain location has an unusually high collision rate. Collision data was assessed to determine if there are any traffic safety conditions that could impact or be impacted by additional traffic that would be generated by the proposed Pierce College expansion project based upon WSDOT parameters.

Table 1 summarizes historical collision data as provided by WSDOT for the requested 5-year period between January 2017 to December 2021 at the intersections of SR 161 and the SR 512 Eastbound Ramps, the T-intersection of S Meridian, and 35th Avenue SE. During this period, 127 collisions were reported at intersections or were intersection related. Average annual collision rates ranged from approximately 4.0 per year at 35th Avenue SE to 12.4 collisions per year at the SR 512 EB ramps based on WSDOT-specified criterion.

Table 1: Intersection Annual Crash Frequency Summary

Study Intersection	Property Damage	Injury	Fatality	Total Collisions	Crash Frequency Per Year
SR 161 / SR 512 EB Ramps	43	19	0	62	12.4
SR 161 / S Meridian	35	10	0	45	9.0
SR 161 / 35 th Avenue SE	13	7	0	20	4.0

Source: WSDOT Historical Collision Data Summary, January 1, 2017 to December 27, 2021.

Table 2 through **4** overviews collision frequency by severity at each intersection. At these intersections, there were no fatal or serious injuries, 4 evident injuries, 32 possible injuries, and 91 property damage-only collisions. The highest collision rate that resulted in an evident or possible injury occurred at the SR 161 / SR 512 EB ramps, with an average of 3.8 collisions per year.

Of the total collisions at intersections, 49 were related to rear-end types (totaling 39%), low speed side-swipe or same direction collisions (17%), or failure to yield movements from drivers entering/exiting the arterial (44%).

Table 2: Crash Frequency at SR 161 / SR 512 EB Ramps

Most Severe Injury Type	2017	2018	2019	2020	2021	Totals
Fatal Injury	0	0	0	0	0	0
Serious Injury	0	0	0	0	0	0
Evident Injury	1	1	0	0	0	2
Possible Injury	5	4	4	1	3	17
PDO	11	8	9	11	4	43

Source: WSDOT Historical Collision Data Summary, January 1, 2017 to December 27, 2021.

Table 3: Crash Frequency at SR 161 / S Meridian

Most Severe Injury Type	2017	2018	2019	2020	2021	Totals
Fatal Injury	0	0	0	0	0	0
Serious Injury	0	0	0	0	0	0
Evident Injury	1	0	0	1	0	2
Possible Injury	0	2	2	3	1	8
PDO	7	4	9	7	8	35

Source: WSDOT Historical Collision Data Summary, January 1, 2017 to December 27, 2021.

Table 4: Crash Frequency at SR 161 / 35th Avenue NE

Most Severe Injury Type	2017	2018	2019	2020	2021	Totals
Fatal Injury	0	0	0	0	0	0
Serious Injury	0	0	0	0	0	0
Evident Injury	0	0	0	0	0	0
Possible Injury	1	1	3	0	2	7
PDO	3	3	3	3	1	13

Source: WSDOT Historical Collision Data Summary, January 1, 2017 to December 27, 2021.

Table 5 summarizes collision frequency by severity between MP 25.42 and MP 25.75 on this segment of SR 161 during the last 5-year period. As shown, 2 fatalities were reported along this segment, no serious injuries occurred, evident injuries occurred in 5 crashes, and 46 crashes resulted in possible injuries. A total of 150 crashes resulted in property damage only.

Table 5: Crash Frequency by Severity on SR 161 Segment

Most Severe Injury Type	2017	2018	2019	2020	2021	Totals
Fatal Injury	0	0	0	1	1	2
Serious Injury	0	0	0	0	0	0
Evident Injury	2	1	0	1	1	5
Possible Injury	10	9	15	6	6	46
PDO	37	25	32	36	20	150

Source: WSDOT Historical Collision Data Summary, January 1, 2017 to December 27, 2021.

Within the analysis period along the entire segment length requested, a total of 203 collisions were reported during the 5-year period (including collisions occurring at intersections). Of this total, 97 percent were related to rear-end types (totaling 45%), low speed side-swipe or same direction collisions (25%), or failure to yield movements from drivers entering/exiting the arterial (27%). The remaining collisions involved single vehicle crashes of drivers leaving the roadway and striking fixed objects.

As noted above, two pedestrian fatalities were reported during the Covid pandemic along this segment. These collisions did not occur at controlled crossings (i.e., signals) but occurred where pedestrians crossed mid-block in 2020 and 2021. The pedestrian fatality in 2020 occurred within 200 feet of the 35th Avenue SE signalized intersection at approximately 9:30 p.m. at night, whereas, the 2021 pedestrian fatality occurred within approximately 250 feet of the S Meridian Avenue intersection at approximately 2:30 a.m.

Based upon our review of collision type and severity, no geometric or design-related concerns were determined to be contributing factors to crashes during the past 5-year period at either the studied intersections or along the segment. **Attachment A** provides a detailed summary of the reported collision history.

HSM Model Evaluation of Increased Collision Frequency with the Project

TENW applied the automated the HSM predictive methods to distinguish between the typical safety performance of similar sites (predicted average crash frequency) and the site-specific safety performance (expected average crash frequency), with the results report in **Attachment B**. As requested, the signalized freeway on-ramp intersection was evaluated using The Enhanced Interchange Safety Analysis Tool (ISATe) for ramp terminals (HSM Chapter 19).

Table 6 provides a comparative expected frequency to the actual crash frequency using the WSDOT-specified criterion for location. Based upon the estimated additional entering average daily project trips at each intersection location (ranging from approximately 30 to 185 additional entering daily project trips), no significant change in the expected crash frequency with the project is expected (with increased frequency of 0.1 crash frequency increase or less), and therefore, no significant safety impacts would occur as a result of the project.

Table 6
Comparative Crash Frequency using Predictive HSM Model(s)

Study Intersection	Existing Crash Frequency Per Year	Expected Crash Frequency using HSM	Expected Crash Frequency using HSM with Project
SR 161 / S Meridian	9.0	10.9	11.0
SR 161 / 35 th Avenue SE	4.0	17.6	17.7

The intersection of SR 161 / SR 512 EB Ramps was modeled using the ISATe model. The resultant model generated an expected average crash frequency of 40.2 collisions per year at the ramp terminal (with or without the project), significantly higher than recent historical crash frequency of 12.4 collisions per year. **Attachment C** provides an output summary of the ramp terminal from the ISATe model.

Attachment A

Detailed Collision Records

OFFICER REPORTED CRASHES THAT OCCURRED ON SR 161, MILEPOST 25.42 - 25.76 IN THE CITY OF PUYALLUP

01/01/2017 - 12/27/2021

Under 23 U.S. Code § 148 and 23 U.S. Code § 407, 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.

SR	MILEPOST	DATE	INT	24 HR TIME	FULL TIME	MOST SEVERE SOBRIETY TYPE	MOST SEVERE INJURY TYPE	TOTAL CRASHES	FATAL CRASHES	SERIOUS INJURY CRASHES	EVIDENT INJURY CRASHES	POSSIBLE INJURY CRASHES	PDO - NO INJURY CRASHES	TOTAL VEHICLES	FIRST COLLISION TYPE / OBJECT STRUCK	SECOND COLLISION TYPE / OBJECT STRUCK	JUNCTION RELATIONSHIP	WEATHER	ROAD SURFACE CONDITIONS	LIGHTING CONDITIONS	
161	25.42	02/08/2020		17:27	5:27 PM		No Apparent Injury	1	0	0	0	0	0	2	From same direction - both going straight - both moving - sideswipe		1	Not at Intersection and Not Related	Overcast	Dry	Dark-Street Lights On
161	25.43	10/31/2017		05:03	5:03 AM	Had NOT Been Drinking	Possible Injury	1	0	0	0	1	0	3	From same direction - both going straight - one stopped - rear-end	1	From same direction - both going straight - one stopped - rear-end	Intersection Related but Not at Intersection	Clear or Partly Cloudy	Dry	Dark-Street Lights On
161	25.43	10/29/2018		15:24	3:24 PM	Had NOT Been Drinking	No Apparent Injury	1	0	0	0	0	1	2	From same direction - both going straight - one stopped - rear-end	1		Not at Intersection and Not Related	Clear or Partly Cloudy	Dry	Daylight
161	25.43	02/23/2019		22:16	10:16 PM	HBD - Ability Impaired	Possible Injury	1	0	0	0	1	0	2	From same direction - both going straight - both moving - rear-end	1		Not at Intersection and Not Related	Clear or Partly Cloudy	Wet	Dark-Street Lights On
161	25.43	03/01/2019		13:00	1:00 PM	Had NOT Been Drinking	Possible Injury	1	0	0	0	1	0	2	From same direction - both going straight - both moving - rear-end	1		Not at Intersection and Not Related	Clear or Partly Cloudy	Dry	Daylight
161	25.43	11/23/2019		16:30	4:30 PM	Had NOT Been Drinking	No Apparent Injury	1	0	0	0	0	1	2	From same direction - both going straight - both moving - sideswipe	1		Not at Intersection and Not Related	Clear or Partly Cloudy	Dry	Dusk
161	25.43	12/09/2019		09:07	9:07 AM	HBD - Ability Not Impaired	Possible Injury	1	0	0	0	1	0	3	From same direction - both going straight - both moving - rear-end	1	From same direction - both going straight - both moving - rear-end	Not at Intersection and Not Related	Overcast	Wet	Daylight
161	25.43	02/24/2020		09:53	9:53 AM		No Apparent Injury	1	0	0	0	0	1	2	From same direction - both going straight - both moving - sideswipe	1		Not at Intersection and Not Related	Overcast	Dry	Daylight
161	25.43	12/04/2020		12:25	12:25 PM		No Apparent Injury	1	0	0	0	0	1	2	From same direction - both going straight - both moving - sideswipe	1		Not at Intersection and Not Related	Clear or Partly Cloudy	Dry	Daylight
161	25.44	06/24/2017	35TH AVE SE	11:55	11:55 AM	Had NOT Been Drinking	No Apparent Injury	1	0	0	0	0	1	3	From same direction - both going straight - both moving - sideswipe	1	From same direction - all others	At Intersection and Not Related	Clear or Partly Cloudy	Dry	Daylight
161	25.44	08/25/2018	35TH AVE SE	15:36	3:36 PM	Had NOT Been Drinking	Possible Injury	1	0	0	0	1	0	3	From same direction - both going straight - one stopped - rear-end	1	From same direction - both going straight - one stopped - rear-end	Not at Intersection and Not Related	Clear or Partly Cloudy	Dry	Daylight
161	25.44	09/25/2020	35TH AVE SE	21:29	9:29 PM		Died in Hospital	1	1	0	0	0	0	1	Vehicle going straight hits pedestrian			Not at Intersection and Not Related	Clear	Dry	Dark-No Street Lights
161	25.44	04/17/2021	35TH AVE SE	23:30	11:30 PM		No Apparent Injury	1	0	0	0	0	1	2	From same direction - both going straight - one stopped - rear-end	1		Intersection Related but Not at Intersection	Clear or Partly Cloudy	Dry	Dark-Street Lights On
161	25.45	12/04/2020	35TH AVE SE	11:49	11:49 AM		Possible Injury	1	0	0	0	1	0	2	From same direction - both going straight - both moving - sideswipe	1		Intersection Related but Not at Intersection	Clear	Dry	Daylight
161	25.45	12/24/2021	35TH AVE SE	10:45	10:45 AM		No Apparent Injury	1	0	0	0	0	1	3	From same direction - both going straight - both moving - rear-end	1	From same direction - both going straight - one stopped - rear-end	Intersection Related but Not at Intersection	Clear	Wet	Daylight
161	25.46	02/04/2017	35TH AVE SE	10:41	10:41 AM	Had NOT Been Drinking	No Apparent Injury	1	0	0	0	0	1	2	From same direction - both going straight - one stopped - rear-end	1		At Intersection and Related	Raining	Wet	Daylight
161	25.46	02/05/2017	35TH AVE SE	14:22	2:22 PM	Had NOT Been Drinking	No Apparent Injury	1	0	0	0	0	1	3	From same direction - both going straight - both moving - sideswipe	1	From opposite direction - both going straight - one stopped - sides	At Intersection and Not Related	Clear or Partly Cloudy	Dry	Daylight
161	25.46	09/26/2017	35TH AVE SE	11:34	11:34 AM	Had NOT Been Drinking	No Apparent Injury	1	0	0	0	0	1	2	From same direction - both going straight - both moving - sideswipe	1		Not at Intersection and Not Related	Clear or Partly Cloudy	Dry	Daylight
161	25.46	07/17/2021	35TH AVE SE	21:10	9:10 PM		No Apparent Injury	1	0	0	0	0	1	2	From same direction - both going straight - both moving - sideswipe	1		Not at Intersection and Not Related	Partly Cloudy	Dry	Dark-Street Lights On
161	25.47	04/05/2018	35TH AVE SE	09:16	9:16 AM	Had NOT Been Drinking	No Apparent Injury	1	0	0	0	0	1	2	From same direction - both going straight - one stopped - rear-end	1		Intersection Related but Not at Intersection	Raining	Wet	Daylight
161	25.47	01/09/2019	35TH AVE SE	17:25	5:25 PM	Had NOT Been Drinking	No Apparent Injury	1	0	0	0	0	1	2	From same direction - both going straight - both moving - rear-end	1		Intersection Related but Not at Intersection	Raining	Wet	Dark-Street Lights On
161	25.47	07/17/2019	35TH AVE SE	17:22	5:22 PM	Had NOT Been Drinking	Possible Injury	1	0	0	0	0	1	2	From same direction - both going straight - one stopped - rear-end	1		Not at Intersection and Not Related	Raining	Wet	Daylight
161	25.47	06/04/2021	35TH AVE SE	12:30	12:30 PM		Possible Injury	1	0	0	0	1	0	3	From same direction - both going straight - one stopped - rear-end	1	From same direction - all others	At Intersection and Not Related	Clear	Dry	Daylight
161	25.48	03/04/2017	35TH AVE SE	09:04	9:04 AM	Had NOT Been Drinking	Possible Injury	1	0	0	0	1	0	2	Entering at angle	1		At Intersection and Related	Clear or Partly Cloudy	Wet	Daylight
161	25.48	03/07/2017	35TH AVE SE	18:43	6:43 PM	Had NOT Been Drinking	No Apparent Injury	1	0	0	0	0	1	2	Entering at angle	1		At Intersection and Related	Raining	Wet	Dark-Street Lights On
161	25.48	04/19/2017	35TH AVE SE	11:44	11:44 AM	Had NOT Been Drinking	Possible Injury	1	0	0	0	1	0	2	Entering at angle	1		At Intersection and Related	Raining	Wet	Daylight
161	25.48	04/29/2017	35TH AVE SE	07:24	7:24 AM	Had NOT Been Drinking	No Apparent Injury	1	0	0	0	0	1	2	Entering at angle	1		At Intersection and Related	Clear or Partly Cloudy	Dry	Daylight
161	25.48	06/06/2017	35TH AVE SE	07:22	7:22 AM	Had NOT Been Drinking	Possible Injury	1	0	0	0	1	0	2	From opposite direction - one left turn - one straight			At Intersection and Related	Clear or Partly Cloudy	Dry	Daylight
161	25.48	07/10/2017	35TH AVE SE	01:43	1:43 AM	Had NOT Been Drinking	Suspected Minor Injury	1	0	0	1	0	0	2	From same direction - both going straight - both moving - rear-end	1		At Intersection and Related	Clear or Partly Cloudy	Dry	Dark-Street Lights On
161	25.48	08/03/2017	35TH AVE SE	17:32	5:32 PM	Had NOT Been Drinking	No Apparent Injury	1	0	0	0	0	1	7	From same direction - both going straight - both moving - sideswipe	1	From same direction - all others	At Intersection and Related	Clear or Partly Cloudy	Dry	Daylight
161	25.48	08/29/2017	35TH AVE SE	14:09	2:09 PM	Had NOT Been Drinking	Possible Injury	1	0	0	0	1	0	2	From same direction - both going straight - both moving - rear-end	1		At Intersection and Not Related	Clear or Partly Cloudy	Dry	Daylight
161	25.48	10/23/2017	35TH AVE SE	10:30	10:30 AM	Had NOT Been Drinking	No Apparent Injury	1	0	0	0	0	1	2	Entering at angle	1		At Intersection and Related	Clear or Partly Cloudy	Dry	Daylight
161	25.48	10/26/2017	35TH AVE SE	11:12	11:12 AM	Had NOT Been Drinking	Possible Injury	1	0	0	0	1	0	2	From opposite direction - one left turn - one straight		Signal Pole	At Intersection and Related	Clear or Partly Cloudy	Dry	Daylight
161	25.48	11/26/2017	35TH AVE SE	18:43	6:43 PM	Had NOT Been Drinking	No Apparent Injury	1	0	0	0	0	1	2	Same direction -- both turning right -- one stopped -- rear end	1		At Intersection and Related	Raining	Wet	Dark-Street Lights On
161	25.48	11/28/2017	35TH AVE SE	04:51	4:51 AM	Had NOT Been Drinking	No Apparent Injury	1	0	0	0	0	1	3	From same direction - both going straight - both moving - rear-end	1	From same direction - both going straight - both moving - rear-end	At Intersection and Not Related	Raining	Wet	Dark-Street Lights On
161	25.48	12/05/2017	35TH AVE SE	00:45	12:45 AM	Had NOT Been Drinking	No Apparent Injury	1	0	0	0	0	1	2	From same direction - both going straight - one stopped - rear-end	1		At Intersection and Related	Fog or Smog or Smoke	Wet	Dark-Street Lights On
161	25.48	02/09/2018	35TH AVE SE	09:14	9:14 AM	Had NOT Been Drinking	No Apparent Injury	1	0	0	0	0	1	2	Entering at angle	1		At Intersection and Related	Overcast	Dry	Daylight
161	25.48	02/21/2018	35TH AVE SE	11:32	11:32 AM	Had NOT Been Drinking	No Apparent Injury	1	0	0	0	0	1	2	Entering at angle	1		At Intersection and Related	Overcast	Dry	Daylight
161	25.48	06/05/2018	35TH AVE SE	16:25	4:25 PM	Had NOT Been Drinking	Possible Injury	1	0	0	0	1	0	3	From same direction - both going straight - one stopped - rear-end	1	From same direction - both going straight - one stopped - rear-end	At Intersection and Not Related	Clear or Partly Cloudy	Dry	Daylight
161	25.48	06/20/2018	35TH AVE SE	16:56	4:56 PM	Had NOT Been Drinking	Suspected Minor Injury	1	0	0	1	0	0	2	Entering at angle	1		At Intersection and Related	Clear or Partly Cloudy	Dry	Daylight
161	25.48	07/06/2018	35TH AVE SE	13:23	1:23 PM	Had NOT Been Drinking	No Apparent Injury	1	0	0	0	0	1	2	Entering at angle	1		At Intersection and Related	Clear or Partly Cloudy	Dry	Daylight
161	25.48	07/10/2018	35TH AVE SE	09:34	9:34 AM	Had NOT Been Drinking	Possible Injury	1	0	0	0	1	0	2	Entering at angle	1	Linear Curb	At Intersection and Related	Clear or Partly Cloudy	Dry	Daylight
161	25.48	07/12/2018	35TH AVE SE	04:36	4:36 AM	Had NOT Been Drinking	Possible Injury	1	0	0	0	1	0	2	From same direction - both going straight - one stopped - rear-end	1		Intersection Related but Not at Intersection	Clear or Partly Cloudy	Dry	Dawn
161	25.48	07/13/2018	35TH AVE SE	14:04	2:04 PM	Had NOT Been Drinking	Possible Injury	1	0	0	0	1	0	2	Entering at angle	1		At Intersection and Related	Clear or Partly Cloudy	Dry	Daylight
161	25.48	08/28/2018	35TH AVE SE	15:18	3:18 PM	Had NOT Been Drinking	No Apparent Injury	1	0	0	0	0	1	2	From same direction - both going straight - one stopped - rear-end	1		At Intersection and Related	Clear or Partly Cloudy	Dry	Daylight
161	25.48	09/12/2018	35TH AVE SE	21:15	9:15 PM	Had NOT Been Drinking	No Apparent Injury	1	0	0	0	0	1	2	From same direction - both going straight - one stopped - rear-end	1		At Intersection and Related	Overcast	Wet	Dark-Street Lights On
161	25.48	09/26/2018	35TH AVE SE	09:05	9:05 AM	Had NOT Been Drinking	Possible Injury	1	0	0	0	1	0	2	Entering at angle	1		At Intersection and Related	Clear or Partly Cloudy	Dry	Daylight
161	25.48	10/31/2018	35TH AVE SE	22:51	10:51 PM	Had NOT Been Drinking	No Apparent Injury	1	0	0	0	0	1	2	From same direction - both going straight - one stopped - rear-end	1		At Intersection and Related	Raining	Wet	Dark-Street Lights On
161	25.48	01/13/2019	35TH AVE SE	13:23	1:23 PM	Had NOT Been Drinking	No Apparent Injury	1	0	0	0	0	1	2	From same direction - both going straight - both moving - rear-end	1		At Intersection and Related	Clear or Partly Cloudy	Dry	Daylight
161	25.48	02/16/2019	35TH AVE SE	15:24	3:24 PM	Had NOT Been Drinking	Possible Injury	1	0	0	0	1	0	2	From same direction - both going straight - one stopped - rear-end	1		At Intersection and Related	Raining	Wet	Daylight
161	25.48	03/12/2019	35TH AVE SE	11:04	11:04 AM	Had NOT Been Drinking	No Apparent Injury	1	0	0	0	0	1	2	From same direction - both going straight - one stopped - rear-end	1		At Intersection and Related	Overcast	Wet	Daylight
161	25.48	04/13/2019	35TH AVE SE	16:17	4:17 PM	HBD - Ability Impaired	Possible Injury	1	0	0	0	1	0	2	Entering at angle	1		At Intersection and Related	Overcast	Dry	Daylight
161	25.48	04/19/2019	35TH AVE SE	19:12	7:12 PM	Had NOT Been Drinking	No Apparent Injury	1	0	0	0	0	1	2	Entering at angle	1		At Intersection and Related	Raining	Wet	Daylight
161	25.48	05/02/2019	35TH AVE SE	12:19	12:19 PM	Had NOT Been Drinking	No Apparent Injury	1	0	0	0	0	1	2	Entering at angle	1		At Intersection and Related	Clear or Partly Cloudy	Dry	Daylight
161	25.48	05/16/2019	35TH AVE SE	14:14	2:14 PM	Had NOT Been Drinking	No Apparent Injury	1	0	0	0	0	1	2	Entering at angle	1	Linear Curb	At Intersection and Related	Raining	Wet	Daylight
161	25.48	06/25/2019	35TH AVE SE	19:57	7:57 PM	Had NOT Been Drinking	Possible Injury	1	0	0	0	1	0	2	From same direction - both going straight - one stopped - rear-end	1		At Intersection and Related	Clear or Partly Cloudy	Dry	Daylight
161	25.48	08/03/2019	35TH AVE SE	11:10																	

OFFICER REPORTED CRASHES THAT OCCURRED ON SR 161, MILEPOST 25.42 - 25.76 IN THE CITY OF PUYALLUP

01/01/2017 - 12/27/2021

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SR	MILEPOST	DATE	INT	24 HR TIME	FULL TIME	MOST SEVERE SOBRIETY TYPE	MOST SEVERE INJURY TYPE	TOTAL CRASHES	FATAL CRASHES	SERIOUS INJURY CRASHES	EVIDENT INJURY CRASHES	POSSIBLE INJURY CRASHES	PDO - NO INJURY CRASHES	TOTAL VEHICLES	FIRST COLLISION TYPE / OBJECT STRUCK	SECOND COLLISION TYPE / OBJECT STRUCK	JUNCTION RELATIONSHIP	WEATHER	ROAD SURFACE CONDITIONS	LIGHTING CONDITIONS	
161	25.48	11/12/2020	35TH AVE SE	07:24	7:24 AM		No Apparent Injury	1	0	0	0	0	1	2	Entering at angle		At Intersection and Related	Clear or Partly Cloudy	Dry	Daylight	
161	25.48	11/22/2020	35TH AVE SE	20:10	8:10 PM		No Apparent Injury	1	0	0	0	0	1	2	Same direction -- both turning left -- both moving -- sideswipe	1	At Intersection and Related	Raining	Wet	Dark-Street Lights On	
161	25.48	11/30/2020	35TH AVE SE	05:35	5:35 AM		No Apparent Injury	1	0	0	0	0	1	2	Entering at angle		At Driveway within Major Intersection	Raining	Wet	Dark-Street Lights On	
161	25.48	12/08/2020	35TH AVE SE	08:51	8:51 AM		No Apparent Injury	1	0	0	0	0	1	2	Entering at angle		At Intersection and Related	Raining	Wet	Daylight	
161	25.48	02/08/2021	35TH AVE SE	06:05	6:05 AM		No Apparent Injury	1	0	0	0	0	1	2	Entering at angle		At Intersection and Related	Overcast	Dry	Dark-Street Lights On	
161	25.48	05/10/2021	35TH AVE SE	21:13	9:13 PM		Possible Injury	1	0	0	0	1	0	2	Entering at angle		At Intersection and Related	Clear or Partly Cloudy	Dry	Dark-Street Lights On	
161	25.48	06/09/2021	35TH AVE SE	10:54	10:54 AM		Possible Injury	1	0	0	0	1	0	2	From opposite direction - one left turn - one straight		At Intersection and Related	Clear or Partly Cloudy	Dry	Daylight	
161	25.48	06/15/2021	35TH AVE SE	13:09	1:09 PM		No Apparent Injury	1	0	0	0	0	1	2	Same direction -- both turning right -- one stopped -- rear end	1	At Intersection and Related	Overcast	Dry	Daylight	
161	25.48	10/27/2021	35TH AVE SE	12:23	12:23 PM		No Apparent Injury	1	0	0	0	0	1	2	Same direction -- both turning right -- one stopped -- rear end	1	At Intersection and Related	Partly Cloudy	Dry	Daylight	
161	25.49	01/06/2018	35TH AVE SE	12:59	12:59 PM	Had NOT Been Drinking	No Apparent Injury	1	0	0	0	0	1	2	Same direction -- both turning right -- one stopped -- rear end	1	At Intersection and Related	Clear or Partly Cloudy	Dry	Daylight	
161	25.49	04/24/2018	35TH AVE SE	10:29	10:29 AM	Had NOT Been Drinking	No Apparent Injury	1	0	0	0	0	1	2	From same direction - both going straight - both moving - sideswipe	1	Not at Intersection and Not Related	Clear or Partly Cloudy	Dry	Daylight	
161	25.49	08/04/2018	35TH AVE SE	15:05	3:05 PM	Had NOT Been Drinking	No Apparent Injury	1	0	0	0	0	1	3	From same direction - both going straight - one stopped - rear-end	1	From same direction - both going straight - one stopped - rear-end	Intersection Related but Not at Intersection	Clear or Partly Cloudy	Dry	Daylight
161	25.49	12/21/2018	35TH AVE SE	14:10	2:10 PM	Had NOT Been Drinking	No Apparent Injury	1	0	0	0	0	1	2	From same direction - both going straight - one stopped - rear-end	1	Intersection Related but Not at Intersection	Clear or Partly Cloudy	Dry	Daylight	
161	25.49	01/13/2020	35TH AVE SE	07:45	7:45 AM		No Apparent Injury	1	0	0	0	0	1	2	From same direction - both going straight - one stopped - rear-end	1	Not at Intersection and Not Related	Snowing	Snow/Slush	Dawn	
161	25.50	09/13/2017	35TH AVE SE	11:40	11:40 AM	Had NOT Been Drinking	No Apparent Injury	1	0	0	0	0	1	2	From same direction - both going straight - both moving - sideswipe	1	Not at Intersection and Not Related	Clear or Partly Cloudy	Dry	Daylight	
161	25.50	09/29/2017	35TH AVE SE	08:50	8:50 AM	Had NOT Been Drinking	No Apparent Injury	1	0	0	0	0	1	2	From same direction - both going straight - one stopped - rear-end	1	Not at Intersection and Not Related	Raining	Wet	Daylight	
161	25.50	08/20/2018	35TH AVE SE	16:08	4:08 PM	Had NOT Been Drinking	No Apparent Injury	1	0	0	0	0	1	4	From same direction - both going straight - one stopped - rear-end	1	From same direction - both going straight - one stopped - rear-end	Intersection Related but Not at Intersection	Fog or Smog or Smoke	Dry	Daylight
161	25.50	01/30/2019	35TH AVE SE	14:20	2:20 PM	Had NOT Been Drinking	No Apparent Injury	1	0	0	0	0	1	2	From same direction - both going straight - both moving - sideswipe	1	Not at Intersection and Not Related	Clear or Partly Cloudy	Dry	Daylight	
161	25.50	02/14/2019	35TH AVE SE	18:09	6:09 PM	Had NOT Been Drinking	No Apparent Injury	1	0	0	0	0	1	2	From same direction - both going straight - both moving - rear-end	1	Intersection Related but Not at Intersection	Raining	Wet	Dark-Street Lights On	
161	25.50	06/16/2020	35TH AVE SE	12:21	12:21 PM		Possible Injury	1	0	0	0	1	0	2	From same direction - both going straight - both moving - sideswipe	1	Intersection Related but Not at Intersection	Clear	Dry	Daylight	
161	25.50	08/29/2020	35TH AVE SE	14:40	2:40 PM		No Apparent Injury	1	0	0	0	0	1	2	Entering at angle		At Intersection and Related	Clear or Partly Cloudy	Dry	Daylight	
161	25.50	11/17/2020	35TH AVE SE	20:04	8:04 PM		No Apparent Injury	1	0	0	0	0	1	3	Entering at angle	1	At Intersection and Related	Raining	Wet	Dark-Street Lights On	
161	25.50	10/18/2021	35TH AVE SE	16:39	4:39 PM		No Apparent Injury	1	0	0	0	0	1	2	From same direction - both going straight - one stopped - rear-end	1	Intersection Related but Not at Intersection	Clear or Partly Cloudy	Dry	Daylight	
161	25.51	02/03/2017	35TH AVE SE	20:27	8:27 PM	Had NOT Been Drinking	No Apparent Injury	1	0	0	0	0	1	4	From same direction - both going straight - both moving - rear-end	1	From same direction - both going straight - both moving - rear-end	Not at Intersection and Not Related	Raining	Wet	Dark-Street Lights On
161	25.51	06/03/2017	35TH AVE SE	15:09	3:09 PM	Had NOT Been Drinking	Possible Injury	1	0	0	0	1	0	2	From same direction - both going straight - one stopped - rear-end	1	Not at Intersection and Not Related	Clear or Partly Cloudy	Dry	Daylight	
161	25.51	12/16/2017	35TH AVE SE	15:49	3:49 PM	Had NOT Been Drinking	No Apparent Injury	1	0	0	0	0	1	2	Same direction -- both turning right -- one stopped -- rear end	1	At Intersection and Related	Overcast	Dry	Daylight	
161	25.51	05/25/2019	35TH AVE SE	16:51	4:51 PM	Had NOT Been Drinking	No Apparent Injury	1	0	0	0	0	1	2	From same direction - both going straight - one stopped - rear-end	1	Not at Intersection and Not Related	Raining	Wet	Daylight	
161	25.51	07/05/2020	35TH AVE SE	16:06	4:06 PM		No Apparent Injury	1	0	0	0	0	1	2	From same direction - both going straight - both moving - sideswipe	1	Intersection Related but Not at Intersection	Clear	Wet	Daylight	
161	25.51	10/22/2020	35TH AVE SE	18:36	6:36 PM		No Apparent Injury	1	0	0	0	0	1	2	From same direction - both going straight - both moving - sideswipe	1	Not at Intersection and Not Related	Clear	Dry	Dusk	
161	25.51	01/01/2021	35TH AVE SE	11:28	11:28 AM		No Apparent Injury	1	0	0	0	0	1	3	From same direction - both going straight - both moving - sideswipe	1	From opposite direction - all others	Intersection Related but Not at Intersection	Overcast	Wet	Daylight
161	25.51	11/26/2021	35TH AVE SE	12:03	12:03 PM		No Apparent Injury	1	0	0	0	0	1	2	Same direction -- both turning right -- one stopped -- rear end	1	At Intersection and Related	Clear	Dry	Daylight	
161	25.52	07/30/2018	35TH AVE SE	05:20	5:20 AM	Had NOT Been Drinking	No Apparent Injury	1	0	0	0	0	1	2	From same direction - both going straight - both moving - rear-end	1	Not at Intersection and Not Related	Clear or Partly Cloudy	Dry	Dawn	
161	25.52	10/25/2019	35TH AVE SE	15:52	3:52 PM	Had NOT Been Drinking	No Apparent Injury	1	0	0	0	0	1	2	From same direction - both going straight - both moving - rear-end	1	Not at Intersection and Not Related	Clear or Partly Cloudy	Dry	Daylight	
161	25.52	01/30/2020	35TH AVE SE	18:53	6:53 PM		No Apparent Injury	1	0	0	0	0	1	2	From same direction - both going straight - one stopped - sideswipe	1	Intersection Related but Not at Intersection	Raining	Wet	Dark-Street Lights On	
161	25.52	12/01/2020	35TH AVE SE	09:02	9:02 AM		No Apparent Injury	1	0	0	0	0	1	2	From same direction - both going straight - both moving - sideswipe	1	Intersection Related but Not at Intersection	Clear or Partly Cloudy	Dry	Daylight	
161	25.53	12/04/2019		17:22	5:22 PM	Had NOT Been Drinking	Possible Injury	1	0	0	0	1	0	3	From same direction - both going straight - both moving - rear-end	1	From same direction - both going straight - one stopped - rear-end	Not at Intersection and Not Related	Raining	Wet	Dusk
161	25.54	09/05/2017		16:12	4:12 PM	Had NOT Been Drinking	Possible Injury	1	0	0	0	1	0	3	From same direction - both going straight - one stopped - rear-end	1	From same direction - both going straight - one stopped - rear-end	Not at Intersection and Not Related	Fog or Smog or Smoke	Dry	Daylight
161	25.54	09/15/2017		17:09	5:09 PM	Had NOT Been Drinking	No Apparent Injury	1	0	0	0	0	1	2	From same direction - both going straight - both moving - sideswipe	1	Not at Intersection and Not Related	Clear or Partly Cloudy	Dry	Daylight	
161	25.54	12/16/2017		16:25	4:25 PM	Had NOT Been Drinking	No Apparent Injury	1	0	0	0	0	1	2	From same direction - both going straight - one stopped - rear-end	1	Not at Intersection and Not Related	Overcast	Wet	Dark-Street Lights On	
161	25.56	03/11/2017		10:42	10:42 AM	Had NOT Been Drinking	No Apparent Injury	1	0	0	0	0	1	2	From same direction - both going straight - both moving - sideswipe	1	Not at Intersection and Not Related	Raining	Wet	Daylight	
161	25.56	04/03/2017		00:18	12:18 AM	HBD - Ability Not Impaired	No Apparent Injury	1	0	0	0	0	1	2	From same direction - all others	1	Not at Intersection and Not Related	Overcast	Wet	Dark-No Street Lights	
161	25.56	07/14/2017		16:56	4:56 PM	Had NOT Been Drinking	No Apparent Injury	1	0	0	0	0	1	2	From same direction - all others	1	Not at Intersection and Not Related	Clear or Partly Cloudy	Dry	Daylight	
161	25.57	10/19/2017		11:47	11:47 AM	Had NOT Been Drinking	No Apparent Injury	1	0	0	0	0	1	2	From same direction - both going straight - both moving - rear-end	1	Not at Intersection and Not Related	Raining	Wet	Daylight	
161	25.57	05/14/2018		17:09	5:09 PM	Had NOT Been Drinking	No Apparent Injury	1	0	0	0	0	1	2	From same direction - both going straight - one stopped - rear-end	1	Not at Intersection and Not Related	Clear or Partly Cloudy	Dry	Daylight	
161	25.58	03/30/2019		14:03	2:03 PM	Had NOT Been Drinking	No Apparent Injury	1	0	0	0	0	1	2	From same direction - both going straight - both moving - sideswipe	1	Not at Intersection and Not Related	Clear or Partly Cloudy	Dry	Daylight	
161	25.59	10/02/2020		07:09	7:09 AM		No Apparent Injury	1	0	0	0	0	1	2	From same direction - both going straight - one stopped - rear-end	1	Not at Intersection and Not Related	Fog or Smog or Smoke	Dry	Daylight	
161	25.59	11/14/2021		02:31	2:31 AM		Dead at Scene	1	1	0	0	0	0	1	Other Objects	Vehicle hits Pedestrian - All Other Actions	Not at Intersection and Not Related	Raining	Wet	Dark-Street Lights On	
161	25.60	09/18/2018	S MERIDIAN	17:49	5:49 PM	Had NOT Been Drinking	No Apparent Injury	1	0	0	0	0	1	2	From same direction - both going straight - both moving - rear-end	1	Not at Intersection and Not Related	Clear or Partly Cloudy	Dry	Daylight	
161	25.61	08/27/2017	S MERIDIAN	15:56	3:56 PM	Had NOT Been Drinking	No Apparent Injury	1	0	0	0	0	1	2	From same direction - both going straight - both moving - rear-end	1	Not at Intersection and Not Related	Clear or Partly Cloudy	Dry	Daylight	
161	25.61	10/06/2019	S MERIDIAN	14:17	2:17 PM	Had NOT Been Drinking	No Apparent Injury	1	0	0	0	0	1	2	From same direction - both going straight - both moving - sideswipe	1	Intersection Related but Not at Intersection	Clear or Partly Cloudy	Dry	Daylight	
161	25.61	12/27/2019	S MERIDIAN	14:20	2:20 PM	Had NOT Been Drinking	No Apparent Injury	1	0	0	0	0	1	2	From same direction - both going straight - one stopped - rear-end	1	Intersection Related but Not at Intersection	Clear or Partly Cloudy	Dry	Daylight	
161	25.62	09/16/2017	S MERIDIAN	21:38	9:38 PM	Had NOT Been Drinking	No Apparent Injury	1	0	0	0	0	1	3	From same direction - both going straight - one stopped - rear-end	1	From same direction - both going straight - one stopped - rear-end	Intersection Related but Not at Intersection	Clear or Partly Cloudy	Dry	Dark-Street Lights On
161	25.63	08/19/2018	S MERIDIAN	20:46	8:46 PM	Had NOT Been Drinking	No Apparent Injury	1	0	0	0	0	1	2	From same direction - both going straight - both moving - sideswipe	1	Not at Intersection and Not Related	Fog or Smog or Smoke	Dry	Dark-Street Lights On	
161	25.63	06/23/2020	S MERIDIAN	11:18	11:18 AM		No Apparent Injury	1	0	0	0	0	1	2	Same direction -- both turning right -- one stopped -- rear end	1	At Intersection and Related	Clear	Dry	Daylight	
161	25.64	03/17/2017	S MERIDIAN	09:54	9:54 AM	Had NOT Been Drinking	No Apparent Injury	1	0	0	0	0	1	2	From same direction - both going straight - one stopped - rear-end	1	At Intersection and Not Related	Raining	Wet	Daylight	
161	25.64	03/21/2017	S MERIDIAN	21:07	9:07 PM	HBD - Ability Impaired	Suspected Serious Injury	1	0	1	0	0	0	4	Entering at angle	1	From opposite direction - all others	At Intersection and Related	Clear or Partly Cloudy	Dry	Dark-Street Lights On
161	25.64	10/02/2017	S MERIDIAN	16:52	4:52 PM	Had NOT Been Drinking	No Apparent Injury	1	0	0	0	0	1	2	From same direction - all others	1	At Intersection and Related	Clear or Partly Cloudy	Dry	Daylight	
161	25.64	10/05/2017	S MERIDIAN	14:55	2:55 PM	Had NOT Been Drinking	No Apparent Injury	1	0	0	0	0	1	2	Entering at angle	1	At Intersection				

OFFICER REPORTED CRASHES THAT OCCURRED ON SR 161, MILEPOST 25.42 - 25.76 IN THE CITY OF PUYALLUP

01/01/2017 - 12/27/2021

Under 23 U.S. Code § 148 and 23 U.S. Code § 407, 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.

SR	MILEPOST	DATE	INT	24 HR TIME	FULL TIME	MOST SEVERE SOBRIETY TYPE	MOST SEVERE INJURY TYPE	TOTAL CRASHES	FATAL CRASHES	SERIOUS INJURY CRASHES	EVIDENT INJURY CRASHES	POSSIBLE INJURY CRASHES	PDO - NO INJURY CRASHES	TOTAL VEHICLES	FIRST COLLISION TYPE / OBJECT STRUCK	SECOND COLLISION TYPE / OBJECT STRUCK	JUNCTION RELATIONSHIP	WEATHER	ROAD SURFACE CONDITIONS	LIGHTING CONDITIONS	
161	25.64	12/28/2019	S MERIDIAN	09:24	9:24 AM	Had NOT Been Drinking	No Apparent Injury	1	0	0	0	0	0	1	From same direction - both going straight - one stopped - rear-end		At Intersection and Related	Clear or Partly Cloudy	Wet	Daylight	
161	25.64	01/06/2020	S MERIDIAN	19:52	7:52 PM		Suspected Minor Injury	1	0	0	1	0	0	2	From opposite direction - one left turn - one straight	1	At Intersection and Related	Raining	Wet	Dark-Street Lights On	
161	25.64	02/02/2020	S MERIDIAN	19:19	7:19 PM		No Apparent Injury	1	0	0	0	0	1	2	From opposite direction - one left turn - one straight	1	At Intersection and Related	Partly Cloudy	Dry	Dark-Street Lights On	
161	25.64	02/08/2020	S MERIDIAN	22:30	10:30 PM		No Apparent Injury	1	0	0	0	0	1	2	From opposite direction - one left turn - one straight	1	At Intersection and Related	Clear	Dry	Dark-Street Lights On	
161	25.64	08/28/2020	S MERIDIAN	18:54	6:54 PM		Possible Injury	1	0	0	0	1	0	2	Entering at angle	1	At Intersection and Related	Clear	Dry	Daylight	
161	25.64	01/24/2021	S MERIDIAN	13:23	1:23 PM		No Apparent Injury	1	0	0	0	0	1	2	Same direction -- both turning left -- both moving -- sideswipe	1	At Intersection and Related	Raining	Wet	Daylight	
161	25.64	05/25/2021	S MERIDIAN	19:30	7:30 PM		No Apparent Injury	1	0	0	0	0	1	2	From same direction - both going straight - one stopped - sideswipe	1	At Intersection and Related	Clear	Dry	Daylight	
161	25.64	06/08/2021	S MERIDIAN	22:37	10:37 PM		No Apparent Injury	1	0	0	0	0	1	2	From opposite direction - one left turn - one straight	1	At Intersection and Related	Clear or Partly Cloudy	Dry	Dark-Street Lights On	
161	25.64	07/16/2021	S MERIDIAN	21:20	9:20 PM		Possible Injury	1	0	0	0	1	0	2	From same direction - both going straight - one stopped - rear-end	1	At Intersection and Related	Partly Cloudy	Dry	Dark-Street Lights On	
161	25.64	07/31/2021	S MERIDIAN	11:05	11:05 AM		No Apparent Injury	1	0	0	0	0	1	2	Entering at angle	1	At Intersection and Related	Partly Cloudy	Dry	Daylight	
161	25.64	10/04/2021	S MERIDIAN	15:01	3:01 PM		No Apparent Injury	1	0	0	0	0	1	2	From same direction - both going straight - one stopped - sideswipe	1	At Intersection and Related	Clear	Dry	Daylight	
161	25.64	10/15/2021	S MERIDIAN	19:50	7:50 PM		No Apparent Injury	1	0	0	0	0	1	2	From same direction - both going straight - one stopped - rear-end	1	At Intersection and Related	Clear	Dry	Dark-Street Lights On	
161	25.64	12/21/2021	S MERIDIAN	05:47	5:47 AM		No Apparent Injury	1	0	0	0	0	1	2	Same direction -- both turning left -- both moving -- sideswipe	1	At Intersection and Related	Raining	Wet	Dark-Street Lights On	
161	25.65	09/12/2017	S MERIDIAN	06:52	6:52 AM	Had NOT Been Drinking	No Apparent Injury	1	0	0	0	0	1	2	From same direction - both going straight - one stopped - rear-end	1	Not at Intersection and Not Related	Clear or Partly Cloudy	Dry	Daylight	
161	25.65	12/05/2019	S MERIDIAN	13:31	1:31 PM	Had NOT Been Drinking	No Apparent Injury	1	0	0	0	0	1	2	From same direction - both going straight - one stopped - sideswipe	1	At Intersection and Related	Clear or Partly Cloudy	Dry	Daylight	
161	25.65	12/13/2019	S MERIDIAN	15:08	3:08 PM	Had NOT Been Drinking	No Apparent Injury	1	0	0	0	0	1	2	From same direction - both going straight - both moving - sideswipe	1	At Intersection and Not Related	Clear or Partly Cloudy	Dry	Daylight	
161	25.65	11/18/2021	S MERIDIAN	12:40	12:40 PM		No Apparent Injury	1	0	0	0	0	1	2	From same direction - both going straight - both moving - rear-end	1	Not at Intersection and Not Related	Clear	Dry	Daylight	
161	25.66	08/15/2017	S MERIDIAN	17:32	5:32 PM	Had NOT Been Drinking	No Apparent Injury	1	0	0	0	0	1	2	Same direction -- both turning right -- one stopped -- rear end	1	At Intersection and Related	Clear or Partly Cloudy	Dry	Daylight	
161	25.66	04/06/2018	S MERIDIAN	09:37	9:37 AM	Had NOT Been Drinking	No Apparent Injury	1	0	0	0	0	1	3	From same direction - both going straight - one stopped - rear-end	1	From same direction - both going straight - one stopped - rear-end	Intersection Related but Not at Intersection	Overcast	Dry	Daylight
161	25.66	05/05/2018	S MERIDIAN	08:40	8:40 AM	Had NOT Been Drinking	Possible Injury	1	0	0	0	1	0	2	Same direction -- both turning right -- one stopped -- rear end	1	At Intersection and Related	Clear or Partly Cloudy	Dry	Daylight	
161	25.66	10/10/2018	S MERIDIAN	16:07	4:07 PM	Had NOT Been Drinking	No Apparent Injury	1	0	0	0	0	1	2	From same direction - both going straight - both moving - sideswipe	1	Intersection Related but Not at Intersection	Clear or Partly Cloudy	Dry	Daylight	
161	25.66	02/12/2019	S MERIDIAN	09:51	9:51 AM	Had NOT Been Drinking	No Apparent Injury	1	0	0	0	0	1	2	Same direction -- both turning right -- one stopped -- rear end	1	At Intersection and Related	Raining	Wet	Daylight	
161	25.66	05/29/2019	S MERIDIAN	13:08	1:08 PM	Had NOT Been Drinking	No Apparent Injury	1	0	0	0	0	1	2	Same direction -- both turning right -- one stopped -- rear end	1	At Intersection and Related	Clear or Partly Cloudy	Dry	Daylight	
161	25.66	01/08/2020	S MERIDIAN	17:57	5:57 PM		Possible Injury	1	0	0	0	1	0	2	Same direction -- both turning right -- one stopped -- rear end	1	At Intersection and Related	Overcast	Wet	Dark-Street Lights On	
161	25.66	01/30/2020	S MERIDIAN	16:45	4:45 PM		No Apparent Injury	1	0	0	0	0	1	2	Same direction -- both turning right -- one stopped -- rear end	1	At Intersection and Related	Raining	Wet	Dusk	
161	25.66	03/01/2020	S MERIDIAN	13:20	1:20 PM		No Apparent Injury	1	0	0	0	0	1	2	From same direction - both going straight - one stopped - rear-end	1	Not at Intersection and Not Related	Clear	Dry	Daylight	
161	25.66	04/26/2020	S MERIDIAN	11:06	11:06 AM		No Apparent Injury	1	0	0	0	0	1	2	Same direction -- both turning right -- one stopped -- rear end	1	At Intersection and Related	Overcast	Dry	Daylight	
161	25.66	12/18/2020	S MERIDIAN	07:49	7:49 AM		No Apparent Injury	1	0	0	0	0	1	2	Entering at angle	1	At Intersection and Related	Raining	Wet	Dawn	
161	25.66	12/22/2021	S MERIDIAN	22:11	10:11 PM		No Apparent Injury	1	0	0	0	0	1	2	Entering at angle	1	At Intersection and Related	Overcast	Wet	Dark-Street Lights On	
161	25.67	02/12/2017	S MERIDIAN	16:04	4:04 PM	Had NOT Been Drinking	No Apparent Injury	1	0	0	0	0	1	2	From same direction - both going straight - both moving - sideswipe	1	At Intersection and Related	Clear or Partly Cloudy	Dry	Daylight	
161	25.67	02/22/2017	S MERIDIAN	15:18	3:18 PM	Had NOT Been Drinking	No Apparent Injury	1	0	0	0	0	1	2	From same direction - both going straight - both moving - sideswipe	1	Not at Intersection and Not Related	Clear or Partly Cloudy	Dry	Daylight	
161	25.67	07/04/2017	S MERIDIAN	12:53	12:53 PM	Had NOT Been Drinking	No Apparent Injury	1	0	0	0	0	1	2	Entering at angle	1	At Intersection and Related	Clear or Partly Cloudy	Dry	Daylight	
161	25.67	07/20/2019	S MERIDIAN	17:40	5:40 PM	Had NOT Been Drinking	No Apparent Injury	1	0	0	0	0	1	2	Entering at angle	1	At Intersection and Related	Clear or Partly Cloudy	Dry	Daylight	
161	25.67	08/01/2020	S MERIDIAN	13:00	1:00 PM		Possible Injury	1	0	0	0	1	0	2	Same direction -- both turning right -- both moving -- rear end	1	At Intersection and Related	Overcast	Dry	Daylight	
161	25.67	11/16/2020	S MERIDIAN	15:53	3:53 PM		No Apparent Injury	1	0	0	0	0	1	2	Same direction -- both turning right -- both moving -- rear end	1	At Intersection and Related	Raining	Wet	Daylight	
161	25.68	11/11/2019	S MERIDIAN	17:47	5:47 PM	Had NOT Been Drinking	Possible Injury	1	0	0	0	1	0	2	From opposite direction - all others	1 Street Light Pole or Base	Not at Intersection and Not Related	Clear	Dry	Dark-Street Lights On	
161	25.68	01/28/2021	S MERIDIAN	05:40	5:40 AM		No Apparent Injury	1	0	0	0	0	1	2	From same direction - both going straight - both moving - sideswipe	1	Intersection Related but Not at Intersection	Raining	Wet	Dark-Street Lights On	
161	25.70	09/11/2019	SR 512 RAMP	13:58	1:58 PM	Had NOT Been Drinking	No Apparent Injury	1	0	0	0	0	1	2	From same direction - both going straight - both moving - sideswipe	1	Intersection Related but Not at Intersection	Clear or Partly Cloudy	Dry	Daylight	
161	25.71	04/11/2017	SR 512 RAMP	16:04	4:04 PM	Had NOT Been Drinking	No Apparent Injury	1	0	0	0	0	1	2	From same direction - both going straight - one stopped - rear-end	1	Not at Intersection and Not Related	Overcast	Dry	Daylight	
161	25.71	05/16/2020	SR 512 RAMP	14:22	2:22 PM		No Apparent Injury	1	0	0	0	0	1	2	From same direction - both going straight - both moving - sideswipe	1	Not at Intersection and Not Related	Raining	Wet	Daylight	
161	25.72	07/14/2017	SR 512 RAMP	15:04	3:04 PM	Had NOT Been Drinking	No Apparent Injury	1	0	0	0	0	1	2	From same direction - both going straight - one stopped - rear-end	1	Not at Intersection and Not Related	Clear or Partly Cloudy	Dry	Daylight	
161	25.72	01/04/2018	SR 512 RAMP	13:08	1:08 PM	Had NOT Been Drinking	No Apparent Injury	1	0	0	0	0	1	2	Same direction -- both turning right -- one stopped -- rear end	1	At Intersection and Related	Clear or Partly Cloudy	Dry	Daylight	
161	25.72	01/19/2019	SR 512 RAMP	10:21	10:21 AM	Had NOT Been Drinking	Possible Injury	1	0	0	0	1	0	2	Same direction -- both turning right -- both moving -- rear end	1	At Intersection and Related	Clear or Partly Cloudy	Wet	Daylight	
161	25.72	02/19/2019	SR 512 RAMP	12:33	12:33 PM	Had NOT Been Drinking	No Apparent Injury	1	0	0	0	0	1	2	From same direction - both going straight - both moving - sideswipe	1	At Intersection and Related	Raining	Wet	Daylight	
161	25.72	02/08/2021	SR 512 RAMP	07:25	7:25 AM		No Apparent Injury	1	0	0	0	0	1	2	From same direction - both going straight - one stopped - rear-end	1	Not at Intersection and Not Related	Clear	Dry	Dawn	
161	25.72	03/23/2021	SR 512 RAMP	19:18	7:18 PM		Possible Injury	1	0	0	0	1	0	2	Same direction -- both turning right -- both moving -- rear end	1	At Intersection and Related	Raining	Wet	Dark-Street Lights On	
161	25.73	11/05/2017	SR 512 RAMP	10:28	10:28 AM	Had NOT Been Drinking	Possible Injury	1	0	0	0	1	0	2	From same direction - both going straight - one stopped - rear-end	1	Not at Intersection and Not Related	Raining	Wet	Daylight	
161	25.73	09/07/2021	SR 512 RAMP	21:15	9:15 PM		Suspected Minor Injury	1	0	0	1	0	0	3	From same direction - both going straight - one stopped - rear-end	1	From same direction - both going straight - one stopped - rear-end	Not at Intersection and Not Related	Clear	Dry	Dark-Street Lights On
161	25.74	01/21/2017	SR 512 RAMP	19:14	7:14 PM	Had NOT Been Drinking	No Apparent Injury	1	0	0	0	0	1	1	Utility Box		At Intersection and Not Related	Overcast	Dry	Dark-Street Lights On	
161	25.74	03/28/2017	SR 512 RAMP	21:48	9:48 PM	Had NOT Been Drinking	No Apparent Injury	1	0	0	0	0	1	2	From opposite direction - one left turn - one straight	1	At Intersection and Related	Raining	Wet	Dark-Street Lights On	
161	25.74	12/04/2017	SR 512 RAMP	13:01	1:01 PM	Had NOT Been Drinking	Possible Injury	1	0	0	0	1	0	2	From same direction - both going straight - one stopped - rear-end	1	At Intersection and Related	Clear or Partly Cloudy	Dry	Daylight	
161	25.74	12/04/2017	SR 512 RAMP	19:24	7:24 PM	Had NOT Been Drinking	No Apparent Injury	1	0	0	0	0	1	2	Entering at angle	1	At Intersection and Related	Clear or Partly Cloudy	Dry	Dusk	
161	25.74	02/28/2018	SR 512 RAMP	17:22	5:22 PM	Had NOT Been Drinking	No Apparent Injury	1	0	0	0	0	1	2	From same direction - both going straight - both moving - rear-end	1	At Intersection and Not Related	Raining	Wet	Daylight	
161	25.74	03/04/2018	SR 512 RAMP	16:20	4:20 PM	Had NOT Been Drinking	Possible Injury	1	0	0	0	1	0	2	From same direction - both going straight - one stopped - rear-end	1	At Intersection and Related	Raining	Wet	Daylight	
161	25.74	11/03/2018	SR 512 RAMP	13:41	1:41 PM	Had NOT Been Drinking	No Apparent Injury	1	0	0	0	0	1	2	From opposite direction - one left turn - one straight	1	At Intersection and Related	Raining	Wet	Daylight	
161	25.74	02/17/2019	SR 512 RAMP	02:25	2:25 AM	Had NOT Been Drinking	No Apparent Injury	1	0	0	0	0	1	1	Metal Sign Post		Intersection Related but Not at Intersection	Clear or Partly Cloudy	Dry	Dark-Street Lights On	
161	25.74	03/06/2019	SR 512 RAMP	12:44	12:44 PM	Had NOT Been Drinking	No Apparent Injury	1	0	0	0	0	1	2	From same direction - both going straight - one stopped - rear-end	1	At Intersection and Related	Snowing	Wet	Daylight	
161	25.74	08/20/2019	SR 512 RAMP	18:35	6:35 PM	Had NOT Been Drinking	Possible Injury	1	0	0	0	1	0	2	From opposite direction - one left turn - one straight	1	At Intersection and Related	Clear or Partly Cloudy	Dry	Daylight	
161	25.74	09/27/2019	SR 512 RAMP	09:36	9:36 AM	Had NOT Been Drinking	No Apparent Injury	1	0	0	0	0	1	2</							

Attachment B

HSM Predictive Crash Frequencies with and Without the
Pierce College Master Plan Project

Existing Conditions

Worksheet 3A -- Predicted Crashes by Severity and Site Type and Observed Crashes Using the Site-Specific EB Method for Urban and Suburban Arterials

(1)	(2)	(3)	(4)	(5)	(5a)	(5b)	(6)	(7)	(8)
Collision type / Site type	Predicted average crash frequency _{VEH} (crashes/year)			Observed crashes, N _{observed(VEH)} (crashes/year)			Total Crashes _{VEHICLE}		
	N _{predicted(VEH)} (TOTAL)	N _{predicted(VEH)(FI)}	N _{predicted(VEH)(PDO)}	KABCO _{VEH}	KABC _{VEH}	PDO _{VEH}	Overdispersion Parameter, k	Weighted adjustment, w Equation A-5 from Part C Appendix	Expected average crash frequency, N _{expected(VEH)} Equation A-4 from Part C Appendix
INTERSECTIONS									
Multiple-vehicle (Intx)									
Intersection 1	5.493	1.750	3.743	8.4	1.6	6.8	0.330	0.099	8.111
Intersection 2	5.246	1.567	3.680	11.6	2.2	9.4	0.330	0.104	10.942
Intersection 3	5.434	1.931	3.504	18.8	5.0	13.8	0.390	0.086	17.648
Single-vehicle (Intx)									
Intersection 1	0.283	0.077	0.206	0.0	0.0	0.0	0.360	0.663	0.187
Intersection 2	0.299	0.089	0.210	0.0	0.0	0.0	0.360	0.650	0.194
Intersection 3	0.267	0.058	0.209	0.0	0.0	0.0	0.360	0.676	0.180
COMBINED (sum of column)	17.022	5.472	11.550	38.8	8.8	30.0	2.130	2.278	37.262

With Project Conditions

Worksheet 3A -- Predicted Crashes by Severity and Site Type and Observed Crashes Using the Site-Specific EB Method for Urban and Suburban Arterials

(1)	(2)	(3)	(4)	(5)	(5a)	(5b)	(6)	(7)	(8)
Collision type / Site type	Predicted average crash frequency _{VEH} (crashes/year)			Observed crashes, N _{observed(VEH)} (crashes/year)			Total Crashes _{VEHICLE}		
	N _{predicted(VEH)} (TOTAL)	N _{predicted(VEH)(FI)}	N _{predicted(VEH)(PDO)}	KABCO _{VEH}	KABC _{VEH}	PDO _{VEH}	Overdispersion Parameter, k	Weighted adjustment, w Equation A-5 from Part C Appendix	Expected average crash frequency, N _{expected(VEH)} Equation A-4 from Part C Appendix
INTERSECTIONS									
Multiple-vehicle (Intx)									
Intersection 1	5.551	1.767	3.784	8.4	1.6	6.8	0.330	0.098	8.120
Intersection 2	5.291	1.579	3.712	11.6	2.2	9.4	0.330	0.103	10.952
Intersection 3	5.477	1.948	3.530	18.8	5.0	13.8	0.390	0.086	17.659
Single-vehicle (Intx)									
Intersection 1	0.284	0.077	0.207	0.0	0.0	0.0	0.360	0.662	0.188
Intersection 2	0.300	0.089	0.211	0.0	0.0	0.0	0.360	0.650	0.195
Intersection 3	0.268	0.058	0.210	0.0	0.0	0.0	0.360	0.675	0.181
COMBINED (sum of column)	17.171	5.518	11.653	38.8	8.8	30.0	2.130	2.273	37.294

Attachment C

ISATe Predictive Crash Frequencies with or Without the
Pierce College Master Plan Project

Output Summary							
General Information							
Project description: Pierce College Master Plan							
Analyst:	TENW	Date:	6/2/2022	Area type:	Urban		
First year of analysis	2021						
Last year of analysis	2025						
Crash Data Description							
Freeway segments	Segment crash data available?	Yes	First year of crash data:				
	Project-level crash data available?	No	Last year of crash data:				
Ramp segments	Segment crash data available?	Yes	First year of crash data:				
	Project-level crash data available?	No	Last year of crash data:				
Ramp terminals	Segment crash data available?	Yes	First year of crash data: 2017				
	Project-level crash data available?	No	Last year of crash data: 2021				
Estimated Crash Statistics							
Crashes for Entire Facility							
Estimated number of crashes during Study Period, crashes:		120.5	0.3	1.7	10.9	40.3	67.4
Estimated average crash freq. during Study Period, crashes/yr		40.2	0.1	0.6	3.6	13.4	22.5
Crashes by Facility Component							
	Nbr. Sites	Total	K	A	B	C	PDO
Freeway segments, crashes:	4	24.5	0.1	0.4	2.2	4.3	17.5
Ramp segments, crashes:	6	4.9	0.0	0.1	0.7	1.1	3.0
Crossroad ramp terminals, crashes:	6	91.1	0.1	1.2	8.0	34.9	46.9
Crashes for Entire Facility by Year							
	Year	Total	K	A	B	C	PDO
Estimated number of crashes during the Study Period, crashes:	2021	40.1	0.1	0.6	3.6	13.4	22.4
	2022	40.2	0.1	0.6	3.6	13.4	22.5
	2023	40.2	0.1	0.6	3.6	13.4	22.5
	2024						
	2025						
	2026						
	2027						
	2028						
	2029						
	2030						
	2031						
	2032						
	2033						
	2034						
	2035						
2036							
2037							
2038							
2039							
2040							
2041							
2042							
2043							
2044							
Distribution of Crashes for Entire Facility							
Crash Type	Crash Type Category	Estimated Number of Crashes During the Study Period					
		Total	K	A	B	C	PDO
Multiple vehicle	Head-on crashes:	0.9	0.0	0.0	0.1	0.4	0.4
	Right-angle crashes:	24.5	0.0	0.3	2.3	10.1	11.6
	Rear-end crashes:	62.1	0.1	0.8	5.7	22.4	33.1
	Sideswipe crashes:	12.4	0.0	0.1	0.5	1.8	10.0
	Other multiple-vehicle crashes	1.8	0.0	0.0	0.1	0.4	1.2
	Total multiple-vehicle crashes	101.7	0.2	1.3	8.8	35.2	56.3
Single vehicle	Crashes with animal:	0.1	0.0	0.0	0.0	0.0	0.1
	Crashes with fixed object:	13.9	0.1	0.3	1.5	3.5	8.6
	Crashes with other object:	1.1	0.0	0.0	0.1	0.1	0.9
	Crashes with parked vehicle:	0.3	0.0	0.0	0.0	0.1	0.2
	Other single-vehicle crashes	3.2	0.0	0.1	0.5	1.3	1.2
	Total single-vehicle crashes	18.7	0.1	0.4	2.1	5.1	11.1
Total crashes:		120.5	0.3	1.7	10.9	40.3	67.4

Evaluation Site Summary					
General Information					
Project description: Pierce College Master Plan					
Analyst:	TENW	Date:	6/2/2022	Area type:	Urban
First year of analysis	2021	Total length of freeway segments for Study Period 0.470			
Last year of analysis	2025				
Site Description					
Freeway Segments					
Number	Lanes	Study Period Length (mi)	Crash Period Description	Study Period Description	
1	5	0.090	0	0	
2	5	0.050	0	0	
3	4	0.080	0	0	
4	4	0.250	0	0	
5	0	0.000	0	0	
6	0	0.000	0	0	
7	0	0.000	0	0	
8	0	0.000	0	0	
9	0	0.000	0	0	
10	0	0.000	0	0	
11	0	0.000	0	0	
12	0	0.000	0	0	
13	0	0.000	0	0	
14	0	0.000	0	0	
15	0	0.000	0	0	
16	0	0.000	0	0	
17	0	0.000	0	0	
18	0	0.000	0	0	
19	0	0.000	0	0	
20	0	0.000	0	0	
Ramp Segments					
Number	Crash Period Description	Study Period Description	Number	Crash Period Description	Study Period Description
1	0	0	21	0	0
2	0	0	22	0	0
3	0	0	23	0	0
4	0	0	24	0	0
5	0	0	25	0	0
6	0	0	26	0	0
7	0	0	27	0	0
8	0	0	28	0	0
9	0	0	29	0	0
10	0	0	30	0	0
11	0	0	31	0	0
12	0	0	32	0	0
13	0	0	33	0	0
14	0	0	34	0	0
15	0	0	35	0	0
16	0	0	36	0	0
17	0	0	37	0	0
18	0	0	38	0	0
19	0	0	39	0	0
20	0	0	40	0	0
Crossroad Ramp Terminals					
Number	Config.	Control	Crash Period Description	Study Period Description	
1	D4	Signal	SR 512 Ramp	0	
2	A2	One stop		0	
3	D3ex	One stop		0	
4	D4	All stop		0	
5	B4	One stop		0	
6	A4	Signal		0	