



## TECHNICAL MEMORANDUM 3

DATE: May 14, 2021

TO: Don Morehouse | ODOT

FROM: John Bosket, PE; Aaron Berger, PE (WA); Kayla Fleskes, EI; Kamilah Buker, EI | DKS

SUBJECT: US 97 Baker Road IAMP Project #20020-006  
Current Transportation System Operations

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This memorandum describes the existing motor vehicle operations and safety conditions within the US 97 Baker Road Interchange Area Management Plan (IAMP) area of potential impact (API). *Technical Memorandum #2B: Existing Transportation System Inventory* documents the existing transportation conditions for people walking and biking in the API. This information, in combination with *Technical Memorandum #4: Future Baseline (No-Build) Conditions*, will help provide a baseline understanding of the “No-Build” condition and will be used to identify deficiencies and inform the development of solutions.

### EXISTING TRAFFIC COUNTS

Due to traffic pattern changes associated with the on-going COVID-19 pandemic, traffic volumes on US 97 in the Bend-Redmond area in December 2020 were approximately 10 percent lower than in 2019<sup>1</sup>, when historically traffic has grown by over two percent per year<sup>2</sup>. Because of this continued disruption of typical traffic patterns, historic, pre-pandemic traffic data from the year 2017 was used to represent “existing” conditions.

Historical traffic counts from previous projects, including the US 97 Parkway Plan (April 2017) and the Bend Transportation System Plan Update (April 2018), were used for this analysis, as documented in *Technical Memorandum #1, Appendix A: Methodology Memorandum*. New traffic counts were collected at some of the study intersections on Thursday, January 7, 2021 to supplement the 2017 and 2018 counts. All counts were adjusted to represent 30<sup>th</sup> highest annual hour conditions (similar to summer weekday p.m. peak hour) in year 2017. Figure 1 shows the existing (year 2017) 30<sup>th</sup> highest annual hour study intersection traffic volumes used in the

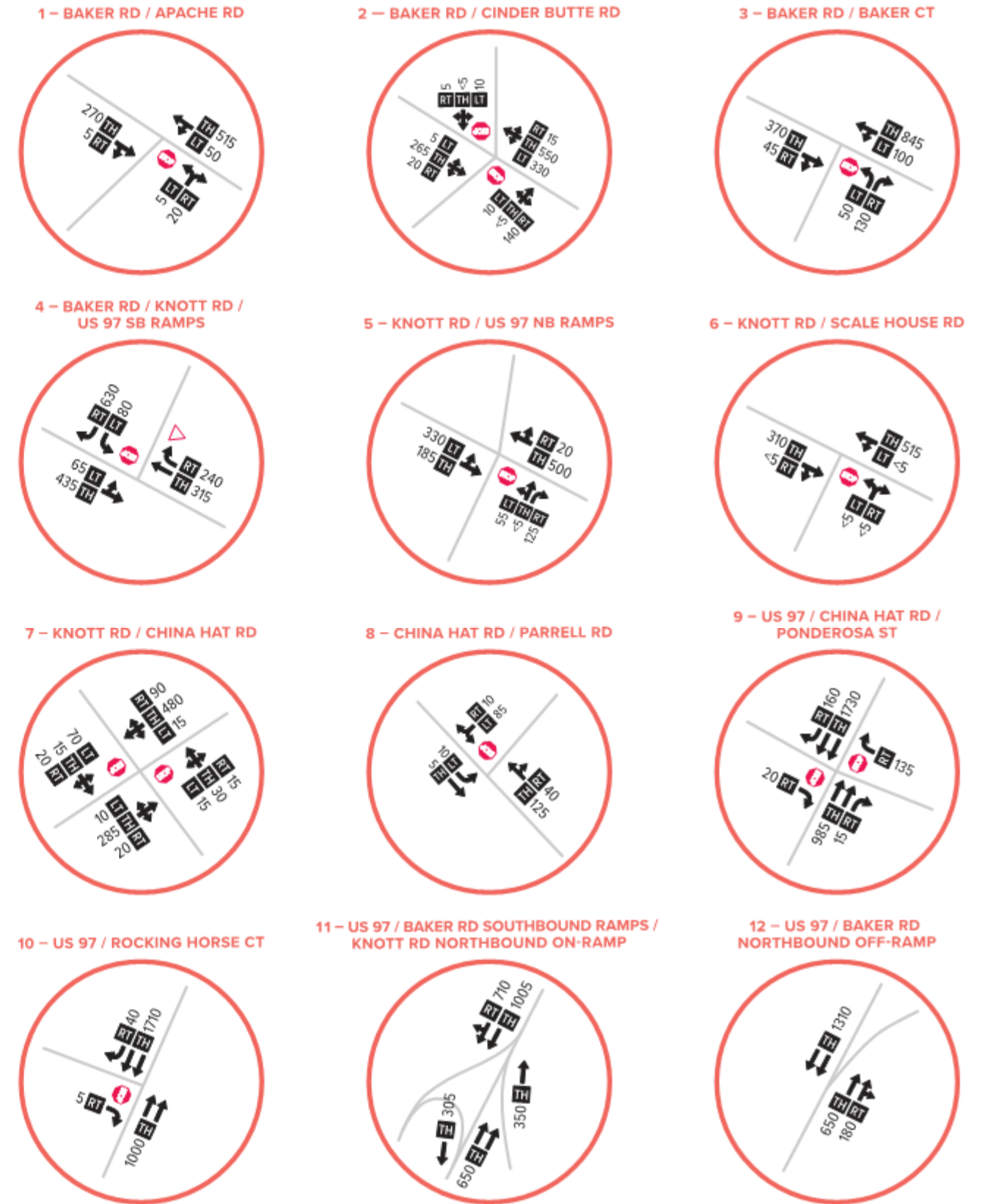
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<sup>1</sup> *Observed Statewide Traffic Volume Patterns Related to COVID-19 Monitoring*, Oregon Department of Transportation, December 31, 2020

<sup>2</sup> Based on Automatic Traffic Recorder data (ATR 09-025, 09-003) on US 97 from 2017 to 2019



FIGURE 1: STUDY INTERSECTION EXISTING (2017) 30TH HIGHEST HOUR TRAFFIC VOLUMES



STOP SIGN    
 YIELD SIGN    
 LANE CONFIGURATION    
 THROUGH MOVEMENT    
 LEFT TURN MOVEMENT    
 RIGHT TURN MOVEMENT    
 # MOTOR VEHICLE TRAFFIC VOLUME

operational and safety analysis. Note that pedestrian and bicycle activity within the API is discussed in more detail in *Technical Memorandum #2B*. Raw traffic counts are included in Appendix A.

## OPERATIONS ANALYSIS

Intersection operations were analyzed using Synchro software and the Highway Capacity Manual 6<sup>th</sup> Edition (HCM 6) methodologies to assess the level of congestion experienced. The analysis was conducted at all study intersections using the 30<sup>th</sup> highest annual hour traffic volumes representing 2017 conditions shown in Figure 1. Performance measures used for this analysis include volume-to-capacity (V/C) ratios, seconds of control delay, and levels of service (LOS).

Table 1 summarizes the results of this analysis, with each intersection's performance compared to the adopted mobility target.<sup>3</sup> HCM reports are included in Appendix B. Key operational deficiencies are described below.

- The two US 97 ramp terminals at the Baker Road interchange fail to meet the adopted mobility target, with stop-controlled ramp movements operating at V/C ratios much greater than 0.85. In fact, the southbound ramp terminal is approaching capacity and the northbound ramp terminal is operating far over capacity. This suggests that as a result of long delays during peak times, drivers turning from the northbound off-ramp are likely accepting shorter gaps in traffic than would normally be expected, indicating a potential safety concern. Further discussion of crash patterns at this intersection is included in the Safety Analysis section below.
- The intersections on Baker Road with Baker Court and Cinder Butte Road are operating within County mobility standards, which consider the average intersection delay. However, the stop-controlled minor street approaches are operating at LOS F and are experiencing long delays.

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<sup>3</sup> Mobility targets for ODOT facilities obtained from the 1999 Oregon Highway Plan. Mobility standards for City facilities based on City Development Code 4.7.500. Mobility standards for County facilities obtained from the Deschutes County Transportation System Plan.

**TABLE 1: EXISTING (2017) TRAFFIC OPERATIONS AT STUDY INTERSECTIONS DURING THE 30<sup>TH</sup> HIGHEST ANNUAL HOUR OF TRAFFIC**

ID	STUDY INTERSECTION	CONTROL	JURISDICTION	MOBILITY TARGET	V/C <sup>A</sup>	LOS <sup>A</sup>	DELAY (SEC) <sup>A</sup>
1	BAKER RD/ APACHE RD	TWSC <sup>A</sup>	County	Average Delay ≤ 35 secs	0.36 / 0.05	A / B	0.8
2	BAKER RD/ CINDER BUTTE RD	TWSC	County	Average Delay ≤ 35 secs	0.62 / 0.33	A / F	6
3	BAKER RD/ BAKER CT	TWSC	County	Average Delay ≤ 35 secs	0.59 / 0.48	A / F	4
4	BAKER RD/ KNOTT RD/ US 97 SB RAMPS	TWSC	ODOT	v/c ≤ 0.95 (Knott Rd) v/c ≤ 0.85 (ramp)	0.31 / <b>0.95</b>	A / E	8 / 46
5	KNOTT RD/ US 97 NB RAMPS	TWSC	ODOT	v/c ≤ 0.95 (Knott Rd) v/c ≤ 0.85 (ramp)	0.47 / <b>2.63</b>	A / F	11 / >300
6	KNOTT RD/ SCALE HOUSE RD	TWSC	County	LOS D	NA / 0.03	NA / B	NA / 14
7	KNOTT RD/ CHINA HAT RD	TWSC	City	Critical Movement Delay ≤ 50 secs	0.01 / 0.52	A / E	9 / 37
8	CHINA HAT RD/ PARRELL RD	TWSC	City	Critical Movement Delay ≤ 50 secs	0.37 / 0.17	A / B	8 / 11
9	US 97/ CHINA HAT RD/ PONDEROSA ST	TWSC	ODOT	v/c ≤ 0.85 (major) v/c ≤ 0.95 (minor)	NA / 0.28	NA / C	NA / 19
10	US 97/ ROCKING HORSE CT	TWSC	ODOT	v/c ≤ 0.85 (major) v/c ≤ 0.95 (minor)	NA / 0.02	NA / C	NA / 18

**Bold and red** indicates mobility target/standard is not met.

<sup>A</sup> V/C ratio and LOS reported as worst major street/minor street movement at two-way stop-controlled (TWSC) intersections. Delay reported as worst major street/minor street movement for ODOT and City intersections and average for County intersections, to best match the existing mobility targets.

## US 97 MAINLINE OPERATIONS

US 97 highway operations were analyzed for both northbound and southbound directions in the API. This included an evaluation of the levels of congestion occurring at the ramp connections where merging and diverging movements happen. Table 2 shows the US 97 mainline highway operations results for the merging and diverging areas. All ramp connections currently operate well and comply with adopted mobility targets. For this analysis, FREEVAL software with HCM 6 methodologies was used. FREEVAL outputs are included in Appendix C.

**TABLE 2: EXISTING (2017) US 97 MAINLINE TRAFFIC OPERATIONS DURING THE 30<sup>TH</sup> HIGHEST ANNUAL HOUR OF TRAFFIC**

SEGMENT	SEGMENT/ MOVEMENT TYPE	V/C MOBILITY TARGET	V/C	LOS <sup>A</sup>
<b>US 97 NORTHBOUND</b>				
<b>KNOTT RD OFF-RAMP</b>	Diverge	0.85	0.19	A
<b>KNOTT RD ON-RAMP</b>	Merge	0.85	0.24	A
<b>US 97 SOUTHBOUND</b>				
<b>BAKER RD OFF-RAMP</b>	Diverge	0.85	0.39	B
<b>BAKER RD ON-RAMP</b>	Merge	0.85	0.30	B

<sup>A</sup> LOS is based on density of traffic.

## VEHICLE QUEUING ANALYSIS

Vehicle queue lengths on intersection approaches in the API were simulated using SimTraffic. Notable 95<sup>th</sup> percentile queues that are near or beyond the storage capacity are summarized in Table 3 below. Queueing results for all study intersections in the API are included in the SimTraffic reports in Appendix B.

**TABLE 3: EXISTING (2017) INTERSECTION VEHICLE QUEUING DURING THE 30<sup>TH</sup> HIGHEST ANNUAL HOUR OF TRAFFIC**

ID	STUDY INTERSECTION	MOVEMENT	95 <sup>TH</sup> PERCENTILE QUEUE (FT)	APPROXIMATE AVAILABLE STORAGE (FT) <sup>A</sup>
2	BAKER RD/ CINDER BUTTE RD	NB	225	250
		WB	<b>175</b>	100
4	BAKER RD/ KNOTT RD/ US 97 SB RAMPS	SBL	<b>425</b> <sup>B</sup>	275
		SBR	<b>1,000</b>	725 <sup>C</sup>
		EB	75	75
5	KNOTT RD/US 97 NB RAMPS	NBL	100	150
		NBR	50	375 <sup>C</sup>
		EBL	175	700

**Bold and red** queue exceeds approximate available storage.

<sup>A</sup> Available storage reported as approximate turn bay length or approximate distance to nearest intersection/railroad crossing.

<sup>B</sup> Turn bay frequently blocked by southbound right queue.

<sup>C</sup> Distance represents distance to allow vehicles leaving the highway mainline to safely come to a stop. 820 feet is needed from the gore point for safe stopping distance, assuming a 75 mph design speed, based on *AASHTO A Policy on Geometric Design of Highways and Streets*.

The greatest queueing occurs at the US 97 southbound off-ramp. Given the high volume of southbound right turns and the proximity of vehicles stopping in the westbound lane to make a left turn at Baker Court, the 95<sup>th</sup> percentile queue extends nearly 1,000 feet down the off-ramp. This is still shorter than the total 1,500-foot ramp length, but well beyond the available queue storage area and into the segment of the off-ramp needed to allow vehicles leaving the highway mainline to safely come to a stop. Furthermore, area stakeholders have reported that these ramp queues can extend down onto the highway mainline when the railroad crossing gates<sup>4</sup> are down, which generally occurs about once a week for a duration of just under two minutes. In addition, vehicles queued waiting to make an eastbound left onto the US 97 southbound on-ramp nearly block the Baker Court intersection. This is not because the queues are long, but is a result of the very short spacing between these intersections.

At Baker Road/Cinder Butte Road, northbound vehicles queue back up to just shy of the intersection of Cinder Butte Road/Cheyenne Road. Due to vehicles stopped waiting to make a left turn from Baker Road, westbound 95<sup>th</sup> percentile queues at Baker Road/Cinder Butte Road extend

<sup>4</sup> Railroad crossing is located approximately 225 feet west of the US 97 southbound ramps

just beyond the railroad tracks, posing a potential safety hazard. There is no separate westbound left turn lane on Baker Road, but given the wide section of pavement near the intersection, it is likely that vehicles traveling westbound would drive around vehicles stopped to make a left turn. At the remaining intersections, including the US 97 northbound ramps, there was limited queuing.

While queuing analysis was conducted for the p.m. peak hour, area stakeholders have reported that during the a.m. peak hour, queues from the Morningstar Christian School at Baker Court can extend back to the interchange as well as back towards Brookwood Boulevard.

## FREIGHT OPERATIONS

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US 97 is a state freight route, reduction review route, Tier 1 lifeline route, high clearance route, and part of a Critical Route Pair with I-5 (needed as an alternative to I-5 if I-5 were to be temporarily restricted). Therefore, the ability to accommodate large and over-dimension vehicles is essential. According to data obtained from an Automatic Traffic Recorder (09-003) near Rocking Horse Court, this segment of US 97 carries approximately 2,000 to 2,800 heavy vehicles per day, which is about 11 percent of the traffic served<sup>5</sup>.

Furthermore, Knott Road and SE 27<sup>th</sup> Street are commonly used by truck traffic driving between US 97 to the south and US 20 to the east in an attempt to bypass congestion on US 97 north of the interchange and on US 20 through Bend. The interchange also serves truck traffic making deliveries to southeast Bend. Truck traffic on the interchange ramps ranges from approximately 200 to 400 heavy vehicles per day. In addition, the “thumb” area is planned to include industrial land uses and could be developed by large distributors with heavy freight usage. This would further incentivize freight vehicles to exit US 97 at the Baker Road interchange to travel to the thumb before continuing on to US 20 along Knott Road.

Approximately 1.5 miles to the southwest of the interchange on Cinder Butte Road is an area zoned as surface mining (an existing quarry and paving contractor) which is another generator of truck traffic within the API.

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<sup>5</sup> ODOT Transgis: <https://gis.odot.state.or.us/transgis/>

## SAFETY ANALYSIS

Crash data from the most recent five-year period available (2014 to 2018) was obtained from ODOT's Crash Analysis and Reporting unit for study segments and intersections. Critical crash rates were calculated and used to flag intersections and segments within the study area. If an intersection or segments was flagged as a safety focus area, details on location, crash type, severity and other crash characteristics were used to identify crash patterns and discuss potential countermeasures. It should be noted even though a crash was not reported, it does not mean that conditions that could be hazardous are not present. Therefore, existing risk factors have been identified that may contribute to the likelihood of crashes occurring. Figure 2 shows the crashes within the study area and the flagged safety focus locations, which are discussed further below.

## EXISTING RISK FACTORS

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Several risk factors that may contribute to the increased likelihood of a crash occurring were identified in *Technical Memorandum #1: Project Definition and Background*. These risk factors include:

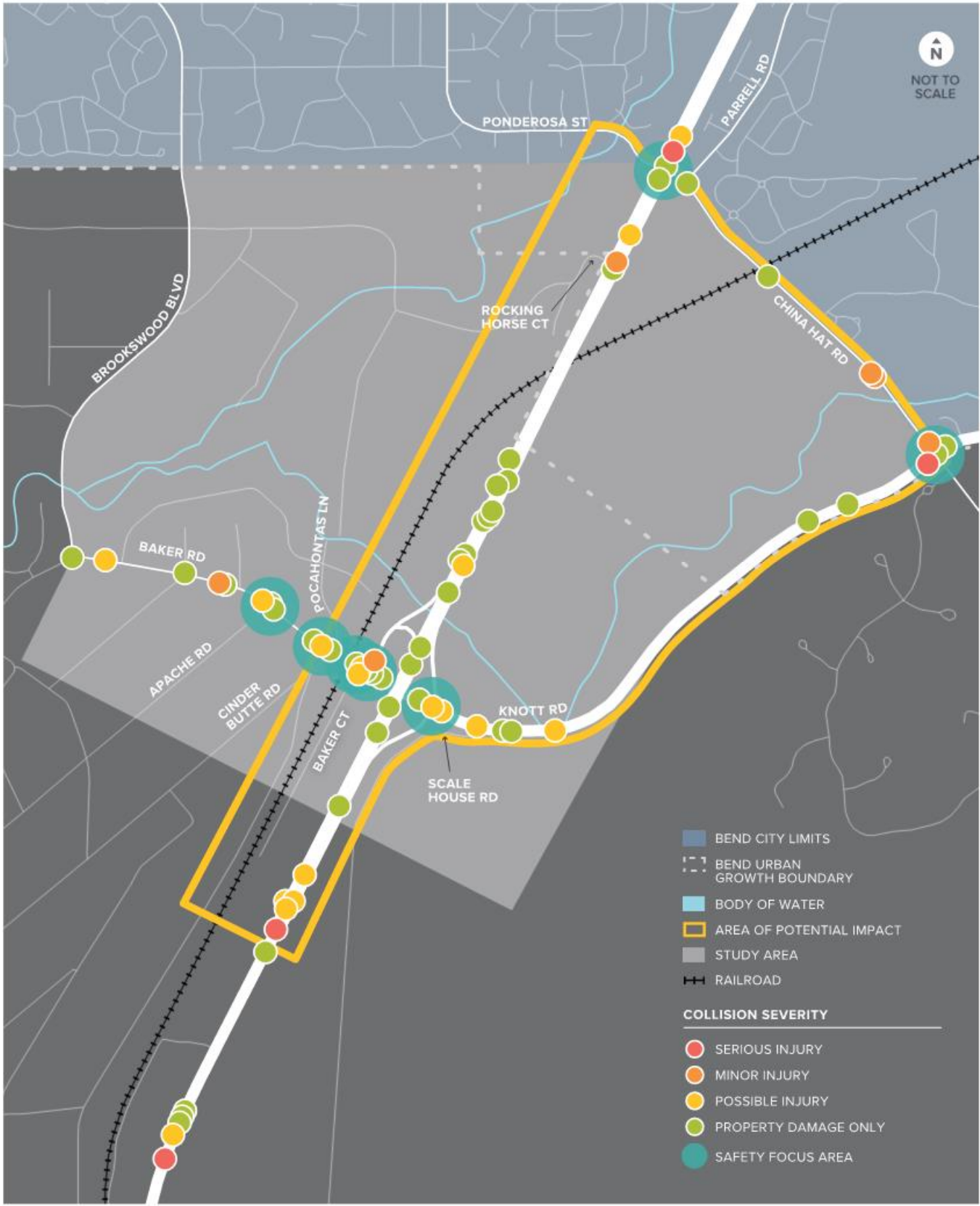
- **Closely spaced intersections:** intersections near the US 97/Baker Road southbound ramp terminal, including Baker Court and Cinder Butte Road, which surround the railroad crossing, create confusion and conflicts.
- **Railroad crossing:** vehicles have been observed to queue back along the US 97/Baker Road southbound ramp and onto the highway when the railroad crossing is closed.
- **Lack of dedicated left turn lanes:** when a driver stops to wait for an acceptable gap to make a left turn off of Baker Road/Knott Road, all traffic following the driver must stop as well, increasing the likelihood of both rear-end crashes and turning/angle crashes.
- **High speeds:** High speeds approaching the interchange from Knott Road increase the stopping sight distance after a driver perceives a danger and may increase the degree of crash severity.
- **Lack of separation from traffic for people walking and biking:** the existing walking and biking facilities are next to high-speed traffic and, while shoulders are available in some areas, there is a lack dedicated sidewalks and bike lanes as discussed in Technical Memorandum #2B: Existing Transportation System Inventory.

## CRASH TRENDS

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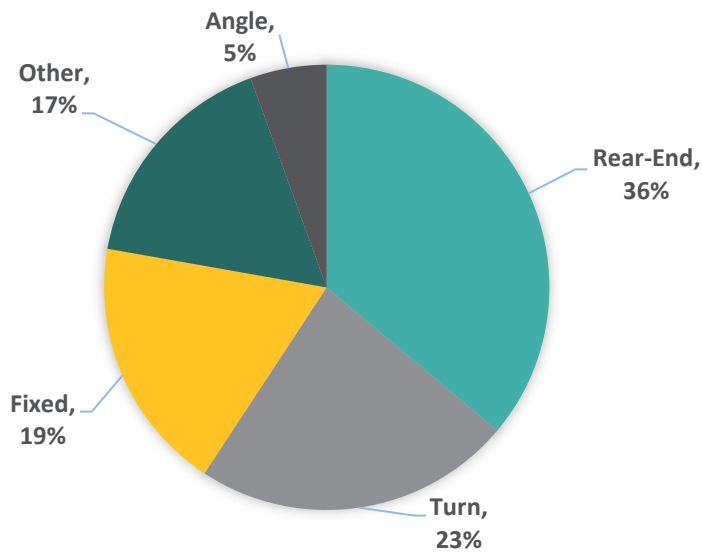
Over the five-year period analyzed, there were 108 crashes within the API. Of those crashes, 75 were flagged as intersection crashes. Along the segment portion of US 97, there were 25 crashes. The remaining eight crashes were located along the segment portions of Baker Road, Knott Road, and China Hat Road. Crashes within the API are mapped in Figure 2, while a breakdown of crash types and severities are provided in Figures 3 and 4.





**FIGURE 2: CRASH LOCATIONS AND SEVERITIES WITH THE AREA OF POTENTIAL IMPACT (2014-2018)**

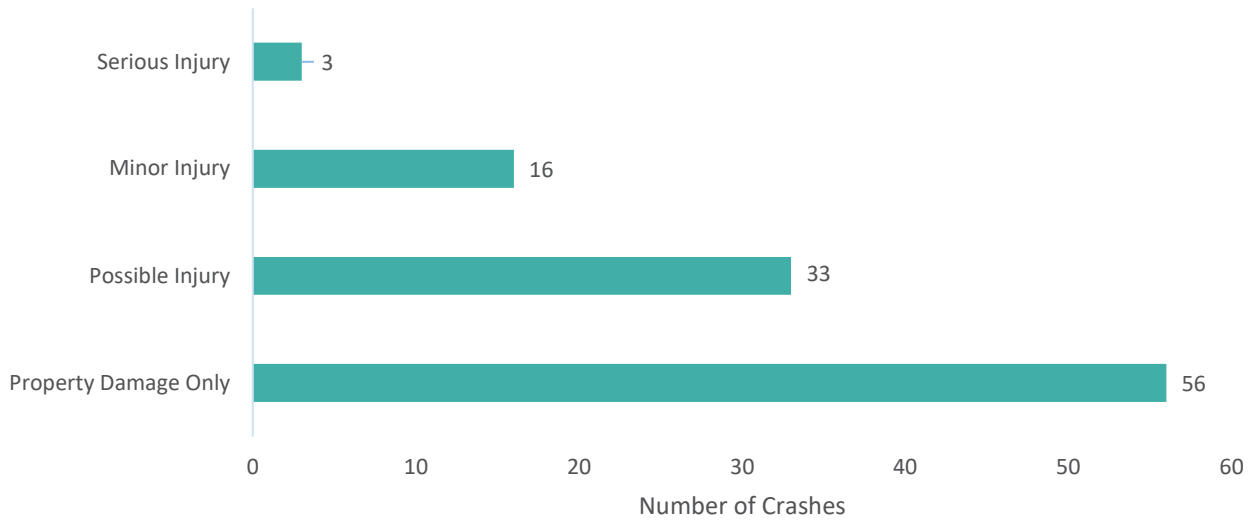
Crash types vary within the API, but the majority involved rear-end, turning movement, and fixed object crashes. Almost half of the rear-end crashes were a result of a driver failing to avoid the driver ahead, while approximately a quarter were due to the driver following too closely. Approximately 80 percent of turning movement crashes were caused by the driver failing to yield the right-of-way. The remaining turning crashes were due to the driver performing an improper turn and speeding. Most fixed object crashes were caused by speeding and drivers performing other improper movements. The other crashes consisted of head-on, non-collisions, sideswipe, pedestrian, and other crashes. It should be noted that there was one pedestrian crash located at the intersection of US 97/Ponderosa Street/China Hat Road that resulted in a minor/possible injury.



**FIGURE 3: CRASH TYPES WITHIN API (2014-2018)**

There were no crashes resulting in fatalities reported from 2014-2018. However, there were crashes resulting in serious injury. One was located along the segment portion of US 97 just south of the Baker Road/Knott Road interchange, one was located at the intersection of US 97/Ponderosa Street/China Hat Road, and one was located at the intersection of China Hat Road/Knott Road. Two of the serious injuries were caused by rear-end crashes and the third was caused by a driver hitting a fixed object.

As shown in Figure 4, most crashes resulted in only property damage, possible injuries, and minor injuries.



**FIGURE 4: CRASH SEVERITIES WITHIN THE API (2014–2018)**

## CRASH RATE ANALYSIS

Crash rate analysis was completed for each study intersection and segments within the API, with the results compared to rates observed for similar facilities to identify where the frequency of crashes occurring may be higher than should be expected. Intersections and segments were flagged as safety focus locations if observed crash rates surpassed the accepted rates described below.

### INTERSECTION CRITICAL CRASH RATE

The observed crash rate for intersections is a function of the number of crashes and the annual average daily traffic (AADT). Each intersection is grouped into a reference population based on intersection control and urban or rural area classification. The crash rates (crashes per million entering vehicles) for each intersection were compared to two different standards:

- A critical crash rate which compares performance to other similar intersections in the study area, and
- A 90th percentile crash rate which is based on similar intersections throughout the state (obtained from ODOT’s Analysis Procedures Manual Exhibit 4-1).

Full calculations are provided in Appendix D. The table below (Table 4) shows these crash rates for study intersections where crashes were reported. Intersections that had observed crash rates greater than either the critical or 90th percentile crash rate were flagged as safety focus areas for further consideration.

**TABLE 4: INTERSECTION CRASH RATES\* (2014-2018)**

STUDY INTERSECTION	FLAGGED AS SAFETY FOCUS AREA	OBSERVED CRASH RATE	CRITICAL CRASH RATE	90 <sup>TH</sup> PERCENTILE RATE
BAKER RD/ APACHE RD	Yes	0.29	0.52	0.29
BAKER RD/ CINDER BUTTE RD	Yes	0.43	NA	0.41
BAKER RD/ BAKER CT	Yes	0.62	0.43	0.29
BAKER RD/ KNOTT RD/US 97 SB RAMPS	Yes	0.34	0.39	0.29
KNOTT RD/US 97 NB RAMPS	Yes	0.59	NA	0.41
KNOTT RD/SCALE HOUSE RD	-	0.06	0.46	0.29
KNOTT RD/ CHINA HAT RD	Yes	0.60	NA	0.41
CHINA HAT RD/PARRELL RD	-	0.20	0.68	0.29
US 97/ CHINA HAT RD/ PONDEROSA ST	-	0.25	0.35	0.41
US 97/ ROCKING HORSE RD	-	0.02	0.35	0.29

\*Crash rates are crashes per million vehicles entering the intersection.

Six intersections were flagged as safety focus areas. These intersections include:

- **Baker Road/Apache Road** – While this intersection was flagged as a potential safety focus area based on the crash rate analysis, there were only three reported crashes between 2014 and 2018. This included two rear-end crashes and one turning crash on Baker Road with no apparent pattern.
- **Baker Road/Cinder Butte Road** – There were nine reported crashes at this intersection with the majority of the crashes involving rear-end (three) or turning (three) collisions. Most crashes occurred along Baker Road, but a few did occur on the side streets of Cinder Butte Road and Pocahontas Lane. There were no consistent trends or contributing factors for crashes at this intersection, but some turning movement and rear-end crashes may be caused by the lack of exclusive left turn lanes on Baker Road.
- **Baker Road/Baker Court** – There were 13 crashes reported at this intersection, with eight of those involving turns out of Baker Court (six with left turns from Baker Court and two

with right turns from Baker Court). Four of the remaining five crashes involved rear-end collisions on Baker Road. Contributing factors for many of these crashes could be closely spaced intersections causing confusion, long delays when exiting Baker Court encouraging drivers to accept smaller gaps in traffic, and lack of an exclusive left turn lane on Baker Road.

- **Baker Road/Knott Road/US 97 Southbound Ramps** – There were 11 reported crashes at this intersection, including four eastbound rear-end crashes on Baker Road, three southbound rear-end crashes on the US 97 off-ramp, two turning crashes involving left and right turns from the off-ramp, and two other crashes of various types. Contributing factors for many of these crashes could be closely spaced intersections causing confusion, long delays when turning from the off-ramp encouraging drivers to accept smaller gaps in traffic, and lack of an exclusive left turn lane on Baker Road.
- **Knott Road/US 97 Northbound Ramps** – There were 13 reported crashes at this intersection, including six rear-end crashes (three on eastbound Knott Road, two on the northbound off-ramp, and one on westbound Knott Road), five turning crashes (all left turns coming from the off-ramp), and two crashes into the guardrail. Contributing factors for many of these crashes could be lack of an exclusive eastbound left turn lane on Knott Road, long delays when turning from the off-ramp encouraging drivers to accept smaller gaps in traffic, and high speeds.
- **Knott Road/China Hat Road** – Most of the reported 11 crashes were classified as turning movement and angle crashes caused by drivers failing to yield the right-of-way. The long delays experienced on stop-controlled approaches may be increasing the likelihood of these types of crashes. Furthermore, there is a horizontal curve in Knott Road to the east that limits sight distance from the southern stopped approach to approximately 375-400 feet. By comparison the desired intersection sight distance for safe operation is 500 feet (assuming a design speed of 45 mph) and the minimum distance needed for an oncoming vehicle on Knott Road to safely stop is 360 feet<sup>6</sup>. Therefore, this horizontal curve and limited sight distance could be another contributing factor in the crashes occurring at this location.

All six intersections reported similar crash types and causes suggesting a systemic safety issue. Potential countermeasures that would apply to each flagged intersection include installing exclusive left turn lanes, installing roundabouts or traffic signals, and increasing the spacing between driveways/intersections. More details on potential safety countermeasures are discussed below.

## **EXCESS PROPORTION OF SPECIFIC CRASH TYPES ANALYSIS**

The excess proportion of specific crash types analysis looks at the proportion of crash types (i.e., rear-end, backing, angle, etc.) for each intersection and compares it with the average for the

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<sup>6</sup> A Policy on Geometric Design of Highway and Streets, 7th Edition, American Association of State Highway and Transportation Officials (AASHTO), 2018.

reference population to determine if certain types of crashes are more prevalent than should be expected. A reference population must contain at least five intersections to be valid. Furthermore, at least two crashes of the same type are necessary to calculate the excess proportion for that intersection.<sup>7</sup>

Crash types with an excess proportion greater than 0.1 were flagged as safety focus areas. Table 5 presents only the flagged intersections and shows that rear-end and turning crashes are the most commonly overrepresented crash type at study intersections. It should be noted that the intersections of Baker Road/Baker Court and Baker Road/Knott Road/US 97 Southbound ramps were flagged in Table 4 and are also flagged in Table 5, suggesting an emphasis for further consideration.

As stated in the critical crash rate discussion above, all four intersections reported having similar crash types and causes. These types of crashes are likely due to the lack of exclusive left turn lanes, high speeds on Knott Road and US 97, and the proximity of neighboring intersections. Potential safety countermeasures are discussed below.

**TABLE 5: EXCESS PROPORTION OF CRASH TYPES (2014-2018)**

STUDY INTERSECTION	FLAGGED	CRASH TYPE	EXCESS PROPORTION*
BAKER RD/ APACHE RD	Yes	Rear-End	0.19
BAKER RD/ BAKER CT	Yes	Turn	0.28
BAKER RD/ KNOTT RD/US 97 SB RAMPS	Yes	Rear-End	0.16
US 97/ CHINA HAT RD/ PONDEROSA ST	Yes	Turn	0.25
US 97/ CHINA HAT RD/ PONDEROSA ST	Yes	Rear-End	0.50

\*The excess proportion of specific crash types analysis looks at the proportion of crash types (rear-end and turning) for each intersection and compares it with the average for the reference population to determine if certain types of crashes are more prevalent than should be expected. For example, an excess proportion of 0.19 means that are 19% more observed rear-end crashes than the calculated threshold for three-leg stop-controlled intersections in this population.

### SEGMENT CRASH RATE ANALYSIS

In addition to individual intersections, crash rates for segments of the US 97 study corridor were analyzed to identify potential problem areas. Two segments along the corridor and their crash rates were obtained from the 2018 ODOT Crash Book.<sup>8</sup> The average crash rate experienced between

<sup>7</sup> Analysis Procedures Manual Version 2, Oregon Department of Transportation

<sup>8</sup> 2018 State Highway Crash Rate Tables, Transportation Data Section Crash Analysis and Reporting Unit, July 2020.

2014 and 2018 was compared against the statewide average (Crash Rate Table II in the Crash Book) for similar facilities. Segments were flagged as safety focus areas if their five-year average observed crash rate exceeded the statewide average rate. As shown in Table 6, crash rates experienced on US 97 in the area surrounding the interchange were lower than the statewide average. Therefore, none of the study segments were flagged as safety focus areas.

**TABLE 6: US 97 SEGMENT CRASH RATES\* COMPARED TO STATEWIDE AVERAGES**

START MILEPOINT	END MILEPOINT	SEGMENT NAME	FLAGGED	AREA TYPE	OBSERVED CRASH RATE	STATEWIDE AVERAGE CRASH RATE
142.24	143.68	Bend South City Limit to End Urban Area	No	Urban Fringe	0.41	0.72
143.68	150.71	End Urban Area to Lava River Caves Park	No	Rural Area	0.63	0.83

\*Crash rates are crashes per million vehicle-miles traveled.

### **SAFETY PRIORITY INDEX SYSTEM**

The Safety Priority Index System (SPIS) provides another method for identifying crash hot spots. The SPIS is a method developed by ODOT for identifying potential safety problems on state highways. This method considers the rate, frequency, and severity of crashes to produce a rating, with the highest rated sites statewide (often those with ratings within the top 10 percent) being considered for potential safety improvements.

The 2018 SPIS ratings for US 97 within the API were obtained from ODOT to screen for locations with SPIS ratings among the state’s top 10 percent. However, no locations were identified among the top 10 percent SPIS sites.

### **POTENTIAL SAFETY COUNTERMEASURES**

This section summarizes potential safety countermeasures to reduce the number of crashes and improve safety within the API and their associated Crash Reduction Factors (CRF) where available. Crash reduction factors provide estimates of the percent decrease in crashes for a given countermeasure.<sup>9</sup>

<sup>9</sup> <https://www.oregon.gov/ODOT/Engineering/Pages/ARTS.aspx>

## **SAFETY COUNTERMEASURES**

Most crashes reported were rear-end crashes caused by drivers failing to avoid the driver ahead and following too closely, turning movement crashes caused by drivers failing to yield the right-of-way, and fixed object crashes caused by drivers driving too fast. Potential countermeasures that may reduce the likelihood of these types of crashes occurring and their associated reduction factors include:<sup>10</sup>

- Installing left turn lanes on major approaches – crash reduction of 44% - 48%
- Convert two-way stop control to all-way stop control (where capacity would be sufficient) – crash reduction of 48%
- Install traffic signal – angle crash reduction of 77%, rear-end crash increase of 58%
- Install roundabout (planned improvement for Knott Road/China Hat Road) – crash reduction of 82%
- Increasing access (intersections and driveways) spacing – CRF is equation-based, however, increasing driveway spacing results in a reduction in crashes
- Install variable speed limit signs – crash reduction of 8%
- Install speed feedback sign – crash reduction of 10%
- Install separated walking facilities like sidewalks – pedestrian related crash reduction of 20%
- Install separated biking facilities like bike lanes – bicycle related crash reduction of 36% for standard bike lanes and 47% for buffered bike lanes

The application of these countermeasures will be considered in subsequent tasks when alternative solutions are developed.

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<sup>10</sup> Crash Reduction Factor List, ODOT.



## APPENDIX A: TRAFFIC COUNTS



ALL TRAFFIC DATA SERVICES

(303) 216-2439

www.alltrafficdata.net

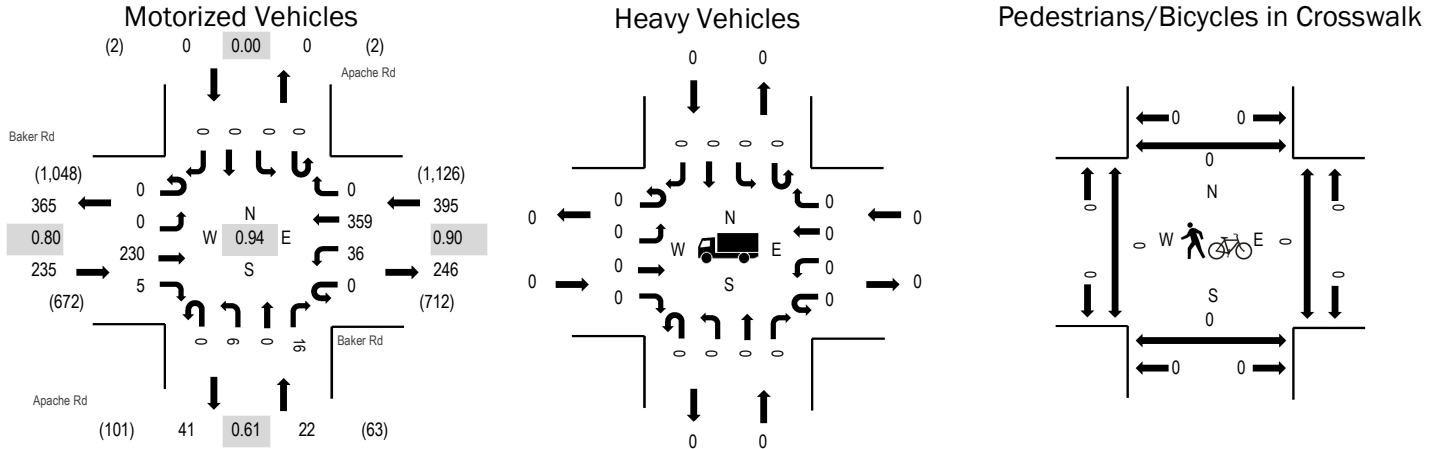
Location: 1 Apache Rd & Baker Rd PM

Date: Thursday, January 7, 2021

Study Peak Hour: 04:15 PM - 05:15 PM

Peak 15-Minutes in Study Peak Hour: 04:35 PM - 04:50 PM

Study Peak Hour (for all study intersections)



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	2.1%	0.80
WB	1.8%	0.90
NB	0.0%	0.61
SB	0.0%	0.00
All	1.8%	0.94

Traffic Counts - Motorized Vehicles

Interval Start Time	Baker Rd Eastbound				Baker Rd Westbound				Apache Rd Northbound				Apache Rd Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
3:00 PM	0	0	22	0	0	0	16	0	0	0	0	3	0	0	0	0	41	620
3:05 PM	0	0	21	0	0	1	13	0	0	0	0	3	0	0	0	0	38	635
3:10 PM	0	0	23	0	0	1	19	0	0	0	0	1	0	0	0	0	44	640
3:15 PM	0	0	22	0	0	0	29	0	0	0	0	2	0	0	0	0	53	646
3:20 PM	0	0	21	0	0	2	30	0	0	0	0	0	0	0	0	0	53	654
3:25 PM	0	0	16	0	0	3	23	0	0	0	0	2	0	0	0	0	44	653
3:30 PM	0	0	22	0	0	3	31	0	0	0	0	0	0	0	0	0	56	668
3:35 PM	0	0	14	0	0	2	34	1	0	0	0	0	0	0	0	0	51	656
3:40 PM	0	0	18	0	0	5	36	0	0	0	0	0	0	0	0	0	59	658
3:45 PM	0	0	31	0	0	2	29	0	0	1	0	1	0	0	0	0	64	657
3:50 PM	0	0	18	0	0	1	33	0	0	0	0	2	0	0	0	0	54	655
3:55 PM	0	0	18	1	0	2	39	0	0	2	0	1	0	0	0	0	63	652
4:00 PM	0	0	20	0	0	3	29	0	0	2	0	1	0	1	0	0	56	636
4:05 PM	0	0	16	2	0	1	21	0	0	1	0	2	0	0	0	0	43	633
4:10 PM	0	0	20	1	0	2	24	1	0	0	0	1	0	1	0	0	50	643
4:15 PM	0	0	22	0	0	2	35	0	0	1	0	1	0	0	0	0	61	652
4:20 PM	0	0	18	0	0	5	26	0	0	1	0	2	0	0	0	0	52	645
4:25 PM	0	0	16	1	0	4	38	0	0	0	0	0	0	0	0	0	59	666
4:30 PM	0	0	15	0	0	3	21	0	0	2	0	3	0	0	0	0	44	670
4:35 PM	0	0	20	1	0	1	30	0	0	0	0	1	0	0	0	0	53	671
4:40 PM	0	0	22	0	0	2	31	0	0	1	0	2	0	0	0	0	58	656
4:45 PM	0	0	28	2	0	3	28	0	0	0	0	1	0	0	0	0	62	638
4:50 PM	0	0	21	0	0	6	21	0	0	0	0	3	0	0	0	0	51	625
4:55 PM	0	0	11	0	0	2	33	0	0	0	0	1	0	0	0	0	47	621
5:00 PM	0	0	24	1	0	0	28	0	0	0	0	0	0	0	0	0	53	607
5:05 PM	0	0	19	0	0	3	29	0	0	0	0	2	0	0	0	0	53	
5:10 PM	0	0	14	0	0	5	39	0	0	1	0	0	0	0	0	0	59	
5:15 PM	0	0	15	0	0	4	32	0	0	0	0	3	0	0	0	0	54	

5:20 PM	0	0	18	0	0	4	48	0	0	0	0	3	0	0	0	0	73
5:25 PM	0	0	27	0	0	1	34	0	0	0	0	1	0	0	0	0	63
5:30 PM	0	0	11	1	0	3	27	0	0	1	0	2	0	0	0	0	45
5:35 PM	0	0	8	0	0	2	26	0	0	0	0	2	0	0	0	0	38
5:40 PM	0	0	11	0	0	5	22	0	0	1	0	1	0	0	0	0	40
5:45 PM	0	0	15	0	0	2	31	0	0	1	0	0	0	0	0	0	49
5:50 PM	0	0	15	0	0	3	28	0	0	0	0	1	0	0	0	0	47
5:55 PM	0	0	10	0	0	3	20	0	0	0	0	0	0	0	0	0	33
Count Total	0	0	662	10	0	91	1,033	2	0	15	0	48	0	2	0	0	1,863
Peak Hour	0	0	230	5	0	36	359	0	0	6	0	16	0	0	0	0	652

### Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles on Crosswalk

Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
3:00 PM	0	0	0	0	0	3:00 PM	0	0	0	0	0	3:00 PM	0	0	0	0	0
3:05 PM	0	0	0	0	0	3:05 PM	0	0	0	0	0	3:05 PM	0	0	0	0	0
3:10 PM	0	0	0	0	0	3:10 PM	0	0	0	0	0	3:10 PM	0	0	0	0	0
3:15 PM	0	0	0	0	0	3:15 PM	0	1	0	0	1	3:15 PM	0	0	1	0	1
3:20 PM	0	0	0	0	0	3:20 PM	0	0	0	0	0	3:20 PM	0	0	0	0	0
3:25 PM	1	0	0	0	1	3:25 PM	0	0	0	0	0	3:25 PM	0	0	0	0	0
3:30 PM	0	0	0	0	0	3:30 PM	0	0	0	0	0	3:30 PM	0	0	0	0	0
3:35 PM	0	0	0	0	0	3:35 PM	0	0	0	0	0	3:35 PM	0	0	0	0	0
3:40 PM	0	0	0	0	0	3:40 PM	0	1	0	0	1	3:40 PM	0	0	1	0	1
3:45 PM	0	0	0	0	0	3:45 PM	0	0	0	0	0	3:45 PM	0	0	0	0	0
3:50 PM	0	0	0	0	0	3:50 PM	2	0	0	0	2	3:50 PM	0	2	0	0	2
3:55 PM	0	0	0	0	0	3:55 PM	0	0	0	0	0	3:55 PM	0	0	0	1	1
4:00 PM	0	0	0	0	0	4:00 PM	0	0	1	0	1	4:00 PM	0	0	0	1	1
4:05 PM	0	0	0	0	0	4:05 PM	0	0	0	0	0	4:05 PM	0	0	0	0	0
4:10 PM	0	0	0	0	0	4:10 PM	0	0	0	0	0	4:10 PM	0	0	0	0	0
4:15 PM	0	0	0	0	0	4:15 PM	0	0	0	0	0	4:15 PM	0	0	0	0	0
4:20 PM	0	0	0	0	0	4:20 PM	0	0	0	0	0	4:20 PM	0	0	0	0	0
4:25 PM	0	0	0	0	0	4:25 PM	0	0	0	0	0	4:25 PM	0	0	0	0	0
4:30 PM	0	0	0	0	0	4:30 PM	0	0	0	0	0	4:30 PM	0	0	0	0	0
4:35 PM	0	0	0	0	0	4:35 PM	0	0	0	0	0	4:35 PM	0	0	0	0	0
4:40 PM	0	0	0	0	0	4:40 PM	0	0	0	0	0	4:40 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0	4:45 PM	0	0	0	0	0	4:45 PM	0	0	0	0	0
4:50 PM	0	0	0	0	0	4:50 PM	0	0	0	0	0	4:50 PM	0	0	0	0	0
4:55 PM	0	0	0	0	0	4:55 PM	0	0	0	0	0	4:55 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0	5:00 PM	0	0	0	0	0	5:00 PM	0	0	0	0	0
5:05 PM	0	0	0	0	0	5:05 PM	0	0	0	0	0	5:05 PM	0	0	0	0	0
5:10 PM	0	0	0	0	0	5:10 PM	0	0	0	0	0	5:10 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0	5:15 PM	0	0	0	0	0	5:15 PM	0	0	0	0	0
5:20 PM	0	0	0	0	0	5:20 PM	0	0	0	0	0	5:20 PM	0	0	0	0	0
5:25 PM	0	0	0	0	0	5:25 PM	0	0	0	0	0	5:25 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0	5:30 PM	0	0	0	0	0	5:30 PM	0	0	0	0	0
5:35 PM	0	0	0	0	0	5:35 PM	0	0	0	0	0	5:35 PM	0	0	0	0	0
5:40 PM	0	0	0	0	0	5:40 PM	0	0	0	0	0	5:40 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0	5:45 PM	0	0	0	0	0	5:45 PM	0	0	0	0	0
5:50 PM	0	0	0	0	0	5:50 PM	0	0	0	0	0	5:50 PM	0	0	0	0	0
5:55 PM	0	0	0	0	0	5:55 PM	0	0	0	0	0	5:55 PM	0	0	0	0	0
Count Total	1	0	0	0	1	Count Total	2	2	1	0	5	Count Total	0	2	2	2	6
Peak Hour	0	0	0	0	0	Peak Hour	0	0	0	0	0	Peak Hour	0	0	0	0	0



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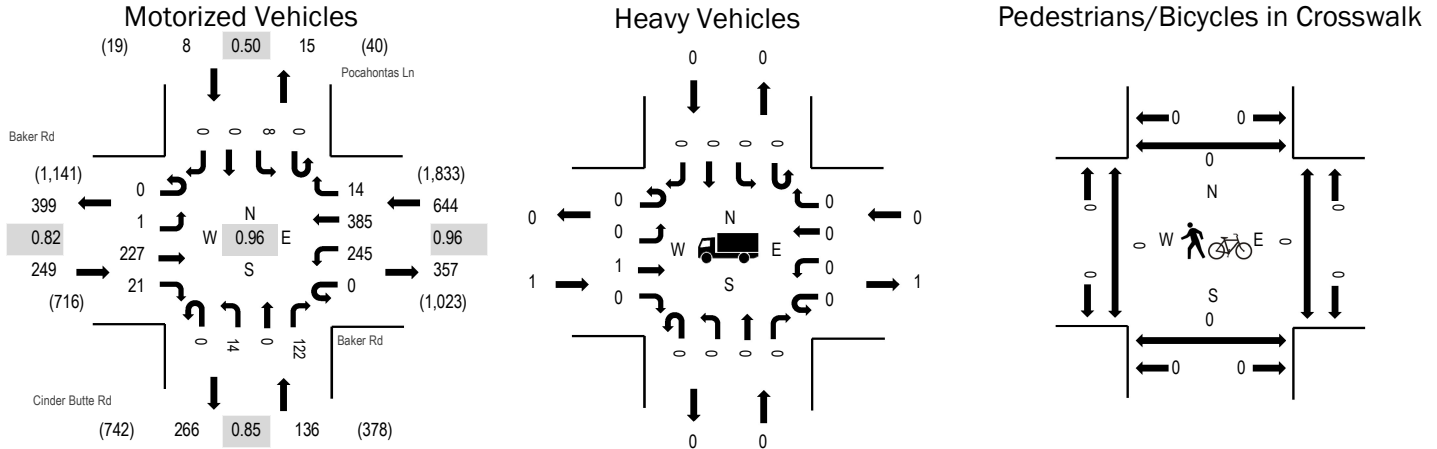
Location: 2 Cinder Butte Rd & Baker Rd PM

Date: Thursday, January 7, 2021

Study Peak Hour: 04:15 PM - 05:15 PM

Peak 15-Minutes in Study Peak Hour: 04:35 PM - 04:50 PM

Study Peak Hour (for all study intersections)



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	2.0%	0.82
WB	1.1%	0.96
NB	0.0%	0.85
SB	0.0%	0.50
All	1.2%	0.96

Traffic Counts - Motorized Vehicles

Interval Start Time	Baker Rd Eastbound				Baker Rd Westbound				Cinder Butte Rd Northbound				Pocahontas Ln Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
3:00 PM	0	0	26	0	0	7	18	0	0	1	0	9	0	0	0	0	61	972
3:05 PM	0	1	23	1	0	25	10	2	0	0	0	6	0	0	0	0	68	999
3:10 PM	0	1	18	3	0	19	24	0	0	2	0	13	0	0	0	0	80	997
3:15 PM	0	0	25	1	0	20	27	0	0	1	0	15	0	1	0	0	90	994
3:20 PM	0	0	15	3	0	19	27	0	0	0	0	10	0	0	0	0	74	1,001
3:25 PM	0	0	18	0	0	12	31	1	0	1	0	8	0	0	0	0	71	1,010
3:30 PM	0	0	20	3	0	15	28	0	0	3	0	13	0	1	0	0	83	1,023
3:35 PM	0	0	14	0	0	25	38	2	0	0	0	8	0	1	0	0	88	1,019
3:40 PM	0	0	17	2	0	14	41	1	0	0	0	8	0	0	0	0	83	1,018
3:45 PM	0	0	30	5	0	25	37	2	0	0	0	8	0	0	0	0	107	1,026
3:50 PM	0	0	18	1	0	16	32	0	0	2	0	10	0	1	0	0	80	1,012
3:55 PM	0	0	17	2	0	25	34	0	0	1	0	7	0	1	0	0	87	1,009
4:00 PM	0	0	17	3	0	22	31	1	0	1	0	12	0	1	0	0	88	1,007
4:05 PM	0	0	18	1	0	7	23	0	0	0	0	15	0	2	0	0	66	1,007
4:10 PM	0	0	19	2	0	16	29	2	0	2	0	7	0	0	0	0	77	1,017
4:15 PM	0	0	22	2	0	27	30	0	0	4	0	12	0	0	0	0	97	1,037
4:20 PM	0	0	19	1	0	19	33	1	0	2	0	8	0	0	0	0	83	1,001
4:25 PM	0	0	14	4	0	13	38	3	0	2	0	9	0	1	0	0	84	1,037
4:30 PM	0	0	16	0	0	26	28	2	0	0	0	6	0	1	0	0	79	1,059
4:35 PM	0	0	23	0	0	30	25	0	0	2	0	6	0	1	0	0	87	1,048
4:40 PM	0	1	20	2	0	14	41	1	0	2	0	10	0	0	0	0	91	1,036
4:45 PM	0	0	27	3	0	18	22	1	0	1	0	19	0	2	0	0	93	1,019
4:50 PM	0	0	19	3	0	19	27	1	0	0	0	8	0	0	0	0	77	993
4:55 PM	0	0	15	0	0	19	36	2	0	0	0	11	0	2	0	0	85	996
5:00 PM	0	0	23	0	0	20	30	2	0	1	0	11	0	1	0	0	88	967
5:05 PM	0	0	14	6	0	15	31	1	0	0	0	9	0	0	0	0	76	
5:10 PM	0	0	15	0	0	25	44	0	0	0	0	13	0	0	0	0	97	
5:15 PM	0	0	11	0	0	10	31	1	0	1	0	6	0	1	0	0	61	

5:20 PM	0	0	27	1	0	20	59	1	0	0	0	11	0	0	0	0	119
5:25 PM	0	0	25	1	0	29	37	2	0	0	0	11	0	1	0	0	106
5:30 PM	0	0	12	1	0	15	27	1	0	2	0	10	0	0	0	0	68
5:35 PM	0	0	10	1	0	24	24	3	0	0	0	13	0	0	0	0	75
5:40 PM	0	0	12	2	0	22	29	1	0	0	0	8	0	0	0	0	74
5:45 PM	0	0	14	0	0	14	33	2	0	0	0	3	0	1	0	0	67
5:50 PM	0	1	14	1	0	21	34	0	0	0	0	9	0	0	0	0	80
5:55 PM	0	0	10	0	0	20	21	0	0	0	0	5	0	0	0	0	56
Count Total	0	4	657	55	0	687	1,110	36	0	31	0	347	0	19	0	0	2,946
Peak Hour	0	1	227	21	0	245	385	14	0	14	0	122	0	8	0	0	1,037

### Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles on Crosswalk

Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
3:00 PM	0	0	0	0	0	3:00 PM	0	0	0	0	0	3:00 PM	0	0	0	0	0
3:05 PM	0	0	0	0	0	3:05 PM	0	0	0	0	0	3:05 PM	0	0	0	0	0
3:10 PM	0	0	0	0	0	3:10 PM	0	0	0	0	0	3:10 PM	0	0	0	0	0
3:15 PM	0	0	0	0	0	3:15 PM	0	0	0	0	0	3:15 PM	0	0	0	0	0
3:20 PM	0	0	0	0	0	3:20 PM	0	0	0	0	0	3:20 PM	0	0	0	0	0
3:25 PM	0	0	0	0	0	3:25 PM	0	0	0	0	0	3:25 PM	0	0	0	0	0
3:30 PM	0	0	0	0	0	3:30 PM	0	0	0	0	0	3:30 PM	0	0	0	0	0
3:35 PM	0	0	0	0	0	3:35 PM	0	0	0	0	0	3:35 PM	0	0	0	0	0
3:40 PM	0	0	0	0	0	3:40 PM	0	0	0	0	0	3:40 PM	0	0	0	0	0
3:45 PM	0	0	0	0	0	3:45 PM	0	0	0	0	0	3:45 PM	0	0	0	0	0
3:50 PM	0	0	0	0	0	3:50 PM	2	0	0	0	2	3:50 PM	0	0	0	0	0
3:55 PM	0	0	0	0	0	3:55 PM	0	0	1	0	1	3:55 PM	0	0	1	0	1
4:00 PM	0	0	0	0	0	4:00 PM	0	0	0	0	0	4:00 PM	0	0	0	0	0
4:05 PM	0	0	0	0	0	4:05 PM	0	0	0	0	0	4:05 PM	0	0	0	0	0
4:10 PM	0	0	0	0	0	4:10 PM	0	0	0	0	0	4:10 PM	0	0	0	0	0
4:15 PM	0	0	0	0	0	4:15 PM	0	0	0	0	0	4:15 PM	0	0	0	0	0
4:20 PM	0	0	0	0	0	4:20 PM	0	0	0	0	0	4:20 PM	0	0	0	0	0
4:25 PM	0	0	0	0	0	4:25 PM	0	0	0	0	0	4:25 PM	0	0	0	0	0
4:30 PM	0	0	0	0	0	4:30 PM	0	0	0	0	0	4:30 PM	0	0	0	0	0
4:35 PM	0	0	0	0	0	4:35 PM	0	0	0	0	0	4:35 PM	0	0	0	0	0
4:40 PM	0	0	0	0	0	4:40 PM	0	0	0	0	0	4:40 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0	4:45 PM	0	0	0	0	0	4:45 PM	0	0	0	0	0
4:50 PM	1	0	0	0	1	4:50 PM	0	0	0	0	0	4:50 PM	0	0	0	0	0
4:55 PM	0	0	0	0	0	4:55 PM	0	0	0	0	0	4:55 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0	5:00 PM	0	0	0	0	0	5:00 PM	0	0	0	0	0
5:05 PM	0	0	0	0	0	5:05 PM	0	0	0	0	0	5:05 PM	0	0	0	0	0
5:10 PM	0	0	0	0	0	5:10 PM	0	0	0	0	0	5:10 PM	0	0	0	0	0
5:15 PM	0	0	1	0	1	5:15 PM	0	0	0	0	0	5:15 PM	0	0	0	0	0
5:20 PM	0	0	0	0	0	5:20 PM	0	0	0	0	0	5:20 PM	0	0	0	0	0
5:25 PM	0	0	0	0	0	5:25 PM	0	0	0	0	0	5:25 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0	5:30 PM	0	0	0	0	0	5:30 PM	0	0	0	0	0
5:35 PM	0	0	0	0	0	5:35 PM	0	0	0	0	0	5:35 PM	0	0	0	0	0
5:40 PM	0	0	1	0	1	5:40 PM	0	0	0	0	0	5:40 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0	5:45 PM	0	0	0	0	0	5:45 PM	0	0	0	0	0
5:50 PM	0	0	0	0	0	5:50 PM	0	0	0	0	0	5:50 PM	0	0	0	0	0
5:55 PM	0	0	0	0	0	5:55 PM	0	0	0	0	0	5:55 PM	0	0	0	0	0
Count Total	1	0	2	0	3	Count Total	2	0	1	0	3	Count Total	0	0	1	0	1
Peak Hour	1	0	0	0	1	Peak Hour	0	0	0	0	0	Peak Hour	0	0	0	0	0



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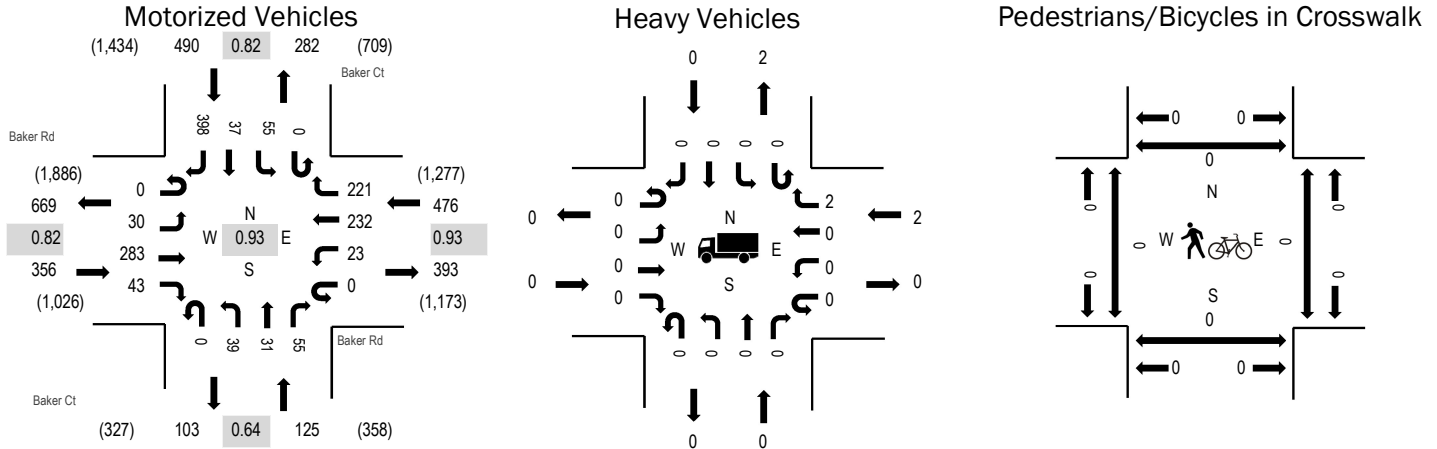
Location: 3 Baker Ct & Baker Rd PM

Date: Thursday, January 7, 2021

Study Peak Hour: 04:15 PM - 05:15 PM

Peak 15-Minutes in Study Peak Hour: 04:35 PM - 04:50 PM

### Study Peak Hour (for all study intersections)



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	1.4%	0.82
WB	1.5%	0.93
NB	0.0%	0.64
SB	0.6%	0.82
All	1.0%	0.93

### Traffic Counts - Motorized Vehicles

Interval Start Time	Baker Rd Eastbound				Baker Rd Westbound				Baker Ct Northbound				Baker Ct Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
3:00 PM	0	0	29	5	0	5	9	20	0	0	3	1	0	2	2	15	91	1,403
3:05 PM	0	1	23	5	0	7	11	6	0	2	0	1	0	2	1	26	85	1,432
3:10 PM	0	5	23	4	0	10	15	8	0	2	1	3	0	7	5	24	107	1,439
3:15 PM	0	2	33	4	0	3	20	13	0	5	1	11	0	6	8	23	129	1,445
3:20 PM	0	2	20	4	0	0	14	12	0	6	2	23	0	5	3	29	120	1,449
3:25 PM	0	2	21	2	0	3	14	13	0	2	4	14	0	3	3	26	107	1,452
3:30 PM	0	3	28	4	0	3	19	15	0	2	1	6	0	11	5	50	147	1,468
3:35 PM	0	0	20	4	0	3	24	16	0	3	3	1	0	10	1	40	125	1,456
3:40 PM	0	2	21	2	0	6	10	18	0	3	0	4	0	5	1	41	113	1,455
3:45 PM	0	1	37	2	0	7	21	11	0	2	1	3	0	4	3	42	134	1,472
3:50 PM	0	5	22	0	0	4	12	16	0	7	2	6	0	9	5	30	118	1,459
3:55 PM	0	2	20	3	0	4	17	20	0	3	3	7	0	5	3	40	127	1,446
4:00 PM	0	3	25	3	0	2	15	10	0	5	2	13	0	4	5	33	120	1,424
4:05 PM	0	2	31	2	0	4	15	14	0	1	2	3	0	2	2	14	92	1,426
4:10 PM	0	1	19	6	0	2	12	26	0	4	1	5	0	5	2	30	113	1,434
4:15 PM	0	2	27	4	0	5	25	16	0	2	5	2	0	4	9	32	133	1,447
4:20 PM	0	1	21	6	0	4	21	20	0	1	2	7	0	6	4	30	123	1,403
4:25 PM	0	3	16	5	0	2	13	19	0	7	1	12	0	5	3	37	123	1,433
4:30 PM	0	3	17	2	0	3	16	15	0	6	3	10	0	7	0	53	135	1,443
4:35 PM	0	2	27	1	0	4	18	19	0	2	3	4	0	5	5	34	124	1,403
4:40 PM	0	3	22	6	0	2	22	20	0	5	6	8	0	5	2	29	130	1,380
4:45 PM	0	2	42	3	0	0	14	16	0	4	1	5	0	5	4	25	121	1,343
4:50 PM	0	1	24	2	0	1	18	21	0	1	2	1	0	5	1	28	105	1,309
4:55 PM	0	4	16	7	0	1	18	15	0	5	0	2	0	2	1	34	105	1,302
5:00 PM	0	4	31	2	0	0	21	21	0	1	2	0	0	3	7	30	122	1,268
5:05 PM	0	4	17	2	0	1	22	20	0	2	4	3	0	2	0	23	100	
5:10 PM	0	1	23	3	0	0	24	19	0	3	2	1	0	6	1	43	126	
5:15 PM	0	0	13	2	0	3	17	13	0	1	2	3	0	5	4	26	89	



5:20 PM	0	4	35	4	0	2	33	20	0	6	1	1	0	9	3	35	153
5:25 PM	0	2	28	7	0	0	26	21	0	2	2	0	0	2	1	42	133
5:30 PM	0	1	17	4	0	0	9	16	0	1	2	6	0	1	3	35	95
5:35 PM	0	0	21	3	0	2	20	12	0	7	1	4	0	7	1	23	101
5:40 PM	0	3	12	5	0	2	13	12	0	1	1	0	0	2	1	41	93
5:45 PM	0	0	15	2	0	3	7	15	0	3	1	2	0	1	1	37	87
5:50 PM	0	0	23	1	0	2	16	9	0	5	0	3	0	1	2	36	98
5:55 PM	0	0	13	2	0	0	7	12	0	2	2	0	0	3	2	28	71
Count Total	0	71	832	123	0	100	608	569	0	114	69	175	0	166	104	1,164	4,095
Peak Hour	0	30	283	43	0	23	232	221	0	39	31	55	0	55	37	398	1,447

### Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles on Crosswalk

Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
3:00 PM	0	0	0	0	0	3:00 PM	0	0	0	0	0	3:00 PM	0	0	0	0	0
3:05 PM	0	0	0	0	0	3:05 PM	0	0	0	1	1	3:05 PM	0	1	0	0	1
3:10 PM	0	0	0	0	0	3:10 PM	0	0	0	0	0	3:10 PM	0	0	0	0	0
3:15 PM	0	0	0	1	1	3:15 PM	0	0	0	0	0	3:15 PM	0	0	0	0	0
3:20 PM	0	0	0	0	0	3:20 PM	0	0	0	0	0	3:20 PM	0	0	0	0	0
3:25 PM	0	0	0	0	0	3:25 PM	0	0	0	0	0	3:25 PM	0	0	0	0	0
3:30 PM	0	0	0	0	0	3:30 PM	0	0	0	0	0	3:30 PM	0	0	0	0	0
3:35 PM	0	0	0	0	0	3:35 PM	0	0	0	0	0	3:35 PM	0	0	0	0	0
3:40 PM	0	0	0	0	0	3:40 PM	0	0	0	0	0	3:40 PM	0	0	0	0	0
3:45 PM	0	0	0	0	0	3:45 PM	0	0	0	0	0	3:45 PM	0	0	0	0	0
3:50 PM	0	0	0	0	0	3:50 PM	2	0	0	0	2	3:50 PM	0	2	0	0	2
3:55 PM	0	0	0	0	0	3:55 PM	0	0	1	0	1	3:55 PM	0	0	0	0	0
4:00 PM	0	0	0	0	0	4:00 PM	0	0	0	0	0	4:00 PM	0	0	0	1	1
4:05 PM	0	0	0	0	0	4:05 PM	0	0	0	0	0	4:05 PM	0	0	0	0	0
4:10 PM	0	0	1	0	1	4:10 PM	0	0	0	0	0	4:10 PM	0	0	0	0	0
4:15 PM	0	0	0	0	0	4:15 PM	0	0	0	0	0	4:15 PM	0	0	0	0	0
4:20 PM	0	0	0	0	0	4:20 PM	0	0	0	0	0	4:20 PM	0	0	0	0	0
4:25 PM	0	0	1	0	1	4:25 PM	0	0	0	0	0	4:25 PM	0	0	0	0	0
4:30 PM	0	0	0	0	0	4:30 PM	0	0	0	0	0	4:30 PM	0	0	0	0	0
4:35 PM	0	0	1	0	1	4:35 PM	0	0	0	0	0	4:35 PM	0	0	0	0	0
4:40 PM	0	0	0	0	0	4:40 PM	0	0	0	0	0	4:40 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0	4:45 PM	0	0	0	0	0	4:45 PM	0	0	0	0	0
4:50 PM	0	0	0	0	0	4:50 PM	0	0	0	0	0	4:50 PM	0	0	0	0	0
4:55 PM	0	0	0	0	0	4:55 PM	0	0	0	0	0	4:55 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0	5:00 PM	0	0	0	0	0	5:00 PM	0	0	0	0	0
5:05 PM	0	0	0	0	0	5:05 PM	0	0	0	0	0	5:05 PM	0	0	0	0	0
5:10 PM	0	0	0	0	0	5:10 PM	0	0	0	0	0	5:10 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0	5:15 PM	1	0	0	0	1	5:15 PM	0	0	0	0	0
5:20 PM	0	0	0	0	0	5:20 PM	0	1	0	0	1	5:20 PM	0	0	0	0	0
5:25 PM	0	0	0	0	0	5:25 PM	0	0	0	0	0	5:25 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0	5:30 PM	0	0	0	0	0	5:30 PM	0	0	0	0	0
5:35 PM	0	0	0	0	0	5:35 PM	0	0	0	0	0	5:35 PM	0	0	0	0	0
5:40 PM	0	0	3	0	3	5:40 PM	0	0	0	0	0	5:40 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0	5:45 PM	0	0	0	0	0	5:45 PM	0	0	0	0	0
5:50 PM	0	0	1	0	1	5:50 PM	0	0	0	0	0	5:50 PM	0	0	0	0	0
5:55 PM	0	0	0	0	0	5:55 PM	0	0	0	0	0	5:55 PM	0	0	0	0	0
Count Total	0	0	7	1	8	Count Total	3	1	1	1	6	Count Total	0	3	0	1	4
Peak Hour	0	0	2	0	2	Peak Hour	0	0	0	0	0	Peak Hour	0	0	0	0	0



5:20 PM	0	0	20	0	0	0	41	0	0	0	0	0	0	0	0	0	61
5:25 PM	0	0	20	0	0	0	47	0	0	0	0	0	0	0	0	0	67
5:30 PM	0	0	16	0	0	0	24	0	0	0	0	0	0	0	0	0	40
5:35 PM	0	0	14	0	0	0	27	0	0	0	0	0	0	0	0	0	41
5:40 PM	0	0	20	0	0	0	31	0	0	0	0	1	0	0	0	0	52
5:45 PM	0	0	12	0	0	0	25	0	0	0	0	0	0	0	0	0	37
5:50 PM	0	0	12	0	0	0	19	0	0	0	0	0	0	0	0	0	31
5:55 PM	0	0	13	0	0	0	24	0	0	0	0	0	0	0	0	0	37
Count Total	5	0	738	3	0	1	1,210	0	0	3	0	3	0	0	0	0	1,963
Peak Hour	1	0	262	3	0	0	450	0	0	2	0	1	0	0	0	0	719

### Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles on Crosswalk

Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
3:00 PM	1	0	0	0	1	3:00 PM	0	0	0	0	0	3:00 PM	0	0	0	0	0
3:05 PM	0	0	0	0	0	3:05 PM	0	0	0	0	0	3:05 PM	0	0	0	0	0
3:10 PM	0	0	0	0	0	3:10 PM	0	0	0	0	0	3:10 PM	0	0	0	0	0
3:15 PM	1	0	0	0	1	3:15 PM	0	0	0	0	0	3:15 PM	0	0	0	0	0
3:20 PM	0	0	0	0	0	3:20 PM	0	0	0	0	0	3:20 PM	0	0	0	0	0
3:25 PM	1	0	1	0	2	3:25 PM	0	0	0	0	0	3:25 PM	0	0	0	0	0
3:30 PM	0	0	0	0	0	3:30 PM	0	0	0	0	0	3:30 PM	0	0	0	0	0
3:35 PM	0	0	0	0	0	3:35 PM	0	0	0	0	0	3:35 PM	0	0	0	0	0
3:40 PM	0	0	0	0	0	3:40 PM	0	0	0	0	0	3:40 PM	0	0	0	0	0
3:45 PM	0	0	0	0	0	3:45 PM	0	0	0	0	0	3:45 PM	0	0	0	0	0
3:50 PM	2	0	0	0	2	3:50 PM	2	0	0	0	2	3:50 PM	0	0	0	0	0
3:55 PM	0	0	0	0	0	3:55 PM	0	0	0	0	0	3:55 PM	0	0	0	0	0
4:00 PM	0	0	0	0	0	4:00 PM	0	0	0	0	0	4:00 PM	0	0	0	0	0
4:05 PM	0	0	0	0	0	4:05 PM	0	0	0	0	0	4:05 PM	0	0	0	0	0
4:10 PM	0	0	1	0	1	4:10 PM	0	0	0	0	0	4:10 PM	0	0	0	0	0
4:15 PM	0	0	0	0	0	4:15 PM	0	0	0	0	0	4:15 PM	0	0	0	0	0
4:20 PM	0	0	0	0	0	4:20 PM	0	0	0	0	0	4:20 PM	0	0	0	0	0
4:25 PM	0	0	1	0	1	4:25 PM	0	0	0	0	0	4:25 PM	0	0	0	0	0
4:30 PM	1	0	0	0	1	4:30 PM	0	0	0	0	0	4:30 PM	0	0	0	0	0
4:35 PM	0	0	1	0	1	4:35 PM	0	0	0	0	0	4:35 PM	0	0	0	0	0
4:40 PM	0	0	0	0	0	4:40 PM	0	0	0	0	0	4:40 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0	4:45 PM	0	0	0	0	0	4:45 PM	0	0	0	0	0
4:50 PM	0	0	0	0	0	4:50 PM	0	0	0	0	0	4:50 PM	0	0	0	0	0
4:55 PM	0	0	0	0	0	4:55 PM	0	0	0	0	0	4:55 PM	0	0	0	0	0
5:00 PM	1	0	0	0	1	5:00 PM	0	0	0	0	0	5:00 PM	0	0	0	0	0
5:05 PM	0	0	0	0	0	5:05 PM	0	0	0	0	0	5:05 PM	0	0	0	0	0
5:10 PM	0	0	0	0	0	5:10 PM	0	0	0	0	0	5:10 PM	0	0	0	0	0
5:15 PM	1	0	0	0	1	5:15 PM	0	0	0	0	0	5:15 PM	0	0	0	0	0
5:20 PM	0	0	0	0	0	5:20 PM	1	0	0	0	1	5:20 PM	0	0	0	0	0
5:25 PM	0	0	0	0	0	5:25 PM	0	0	0	0	0	5:25 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0	5:30 PM	0	0	0	0	0	5:30 PM	0	0	0	0	0
5:35 PM	0	0	0	0	0	5:35 PM	0	0	0	0	0	5:35 PM	0	0	0	0	0
5:40 PM	0	0	2	0	2	5:40 PM	0	0	0	0	0	5:40 PM	0	0	0	0	0
5:45 PM	0	0	1	0	1	5:45 PM	0	0	0	0	0	5:45 PM	0	0	0	0	0
5:50 PM	0	0	1	0	1	5:50 PM	0	0	0	0	0	5:50 PM	0	0	0	0	0
5:55 PM	0	0	0	0	0	5:55 PM	0	0	0	0	0	5:55 PM	0	0	0	0	0
Count Total	8	0	8	0	16	Count Total	3	0	0	0	3	Count Total	0	0	0	0	0
Peak Hour	2	0	2	0	4	Peak Hour	0	0	0	0	0	Peak Hour	0	0	0	0	0



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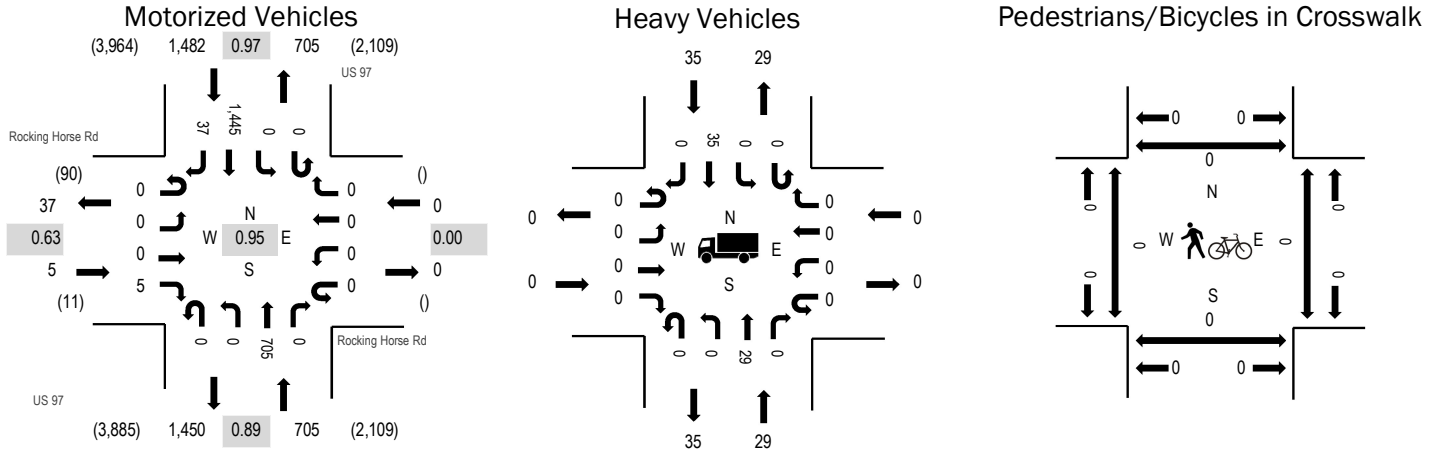
Location: 5 US 97 & Rocking Horse Rd PM

Date: Thursday, January 7, 2021

Study Peak Hour: 04:15 PM - 05:15 PM

Peak 15-Minutes in Study Peak Hour: 04:35 PM - 04:50 PM

Study Peak Hour (for all study intersections)



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	0.0%	0.63
WB	0.0%	0.00
NB	5.0%	0.89
SB	2.8%	0.97
All	3.5%	0.95

Traffic Counts - Motorized Vehicles

Interval Start Time	Rocking Horse Rd Eastbound				Rocking Horse Rd Westbound				US 97 Northbound				US 97 Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
3:00 PM	0	0	0	0	0	0	0	0	0	0	51	0	0	0	75	0	126	2,024
3:05 PM	0	0	0	0	0	0	0	0	0	0	62	0	0	0	92	2	156	2,079
3:10 PM	0	0	0	0	0	0	0	0	0	0	62	0	0	0	94	1	157	2,073
3:15 PM	0	0	0	0	0	0	0	0	0	0	72	0	0	0	84	3	159	2,110
3:20 PM	0	0	0	0	0	0	0	0	0	0	84	0	0	0	89	0	173	2,138
3:25 PM	0	0	0	0	0	0	0	0	0	0	54	0	0	0	85	3	142	2,137
3:30 PM	0	0	0	1	0	0	0	0	0	0	77	0	0	0	109	1	188	2,179
3:35 PM	0	0	0	1	0	0	0	0	0	0	65	0	0	0	110	2	178	2,180
3:40 PM	0	0	0	0	0	0	0	0	0	0	64	0	0	0	120	3	187	2,204
3:45 PM	0	0	0	0	0	0	0	0	0	0	69	0	0	0	125	4	198	2,176
3:50 PM	0	0	0	0	0	0	0	0	0	0	76	0	0	0	100	3	179	2,162
3:55 PM	0	0	0	0	0	0	0	0	0	0	47	0	0	0	133	1	181	2,181
4:00 PM	0	0	0	0	0	0	0	0	0	0	69	0	0	0	112	0	181	2,179
4:05 PM	0	0	0	0	0	0	0	0	0	0	53	0	0	0	96	1	150	2,189
4:10 PM	0	0	0	1	0	0	0	0	0	0	61	0	0	0	130	2	194	2,197
4:15 PM	0	0	0	0	0	0	0	0	0	0	61	0	0	0	125	1	187	2,192
4:20 PM	0	0	0	0	0	0	0	0	0	0	51	0	0	0	116	5	172	2,155
4:25 PM	0	0	0	1	0	0	0	0	0	0	57	0	0	0	123	3	184	2,157
4:30 PM	0	0	0	1	0	0	0	0	0	0	64	0	0	0	122	2	189	2,118
4:35 PM	0	0	0	0	0	0	0	0	0	0	69	0	0	0	131	2	202	2,095
4:40 PM	0	0	0	1	0	0	0	0	0	0	50	0	0	0	104	4	159	2,043
4:45 PM	0	0	0	0	0	0	0	0	0	0	57	0	0	0	126	1	184	2,066
4:50 PM	0	0	0	1	0	0	0	0	0	0	74	0	0	0	123	0	198	2,012
4:55 PM	0	0	0	1	0	0	0	0	0	0	65	0	0	0	107	6	179	1,943
5:00 PM	0	0	0	0	0	0	0	0	0	0	60	0	0	0	122	9	191	1,881
5:05 PM	0	0	0	0	0	0	0	0	0	0	54	0	0	0	103	1	158	
5:10 PM	0	0	0	0	0	0	0	0	0	0	43	0	0	0	143	3	189	
5:15 PM	0	0	0	0	0	0	0	0	0	0	54	0	0	0	92	4	150	

5:20 PM	0	0	0	0	0	0	0	0	0	0	50	0	0	0	119	5	174
5:25 PM	0	0	0	0	0	0	0	0	0	0	56	0	0	0	87	2	145
5:30 PM	0	0	0	1	0	0	0	0	0	0	57	0	0	0	104	4	166
5:35 PM	0	0	0	1	0	0	0	0	0	0	41	0	0	0	104	4	150
5:40 PM	0	0	0	0	0	0	0	0	0	0	66	0	0	0	113	3	182
5:45 PM	0	0	0	0	0	0	0	0	0	0	33	0	0	0	95	2	130
5:50 PM	0	0	0	1	0	0	0	0	0	0	37	0	0	0	90	1	129
5:55 PM	0	0	0	0	0	0	0	0	0	0	44	0	0	0	71	2	117
Count Total	0	0	0	11	0	0	0	0	0	0	2,109	0	0	0	3,874	90	6,084
Peak Hour	0	0	0	5	0	0	0	0	0	0	705	0	0	0	1,445	37	2,192

### Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles on Crosswalk

Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
3:00 PM	0	1	0	4	5	3:00 PM	0	0	0	0	0	3:00 PM	0	0	0	0	0
3:05 PM	0	1	0	4	5	3:05 PM	0	0	0	0	0	3:05 PM	0	0	0	0	0
3:10 PM	0	1	0	5	6	3:10 PM	0	0	0	0	0	3:10 PM	0	0	0	0	0
3:15 PM	0	4	0	4	8	3:15 PM	0	0	0	0	0	3:15 PM	0	0	0	0	0
3:20 PM	0	5	0	2	7	3:20 PM	0	0	0	0	0	3:20 PM	0	0	0	0	0
3:25 PM	0	2	0	0	2	3:25 PM	0	0	0	0	0	3:25 PM	0	0	0	0	0
3:30 PM	0	1	0	2	3	3:30 PM	0	0	0	0	0	3:30 PM	0	0	0	0	0
3:35 PM	0	1	0	3	4	3:35 PM	0	0	0	0	0	3:35 PM	0	0	0	0	0
3:40 PM	0	4	0	1	5	3:40 PM	0	0	0	0	0	3:40 PM	0	0	0	0	0
3:45 PM	0	2	0	4	6	3:45 PM	0	0	0	0	0	3:45 PM	0	0	0	0	0
3:50 PM	0	1	0	2	3	3:50 PM	0	0	0	0	0	3:50 PM	0	0	0	0	0
3:55 PM	0	1	0	2	3	3:55 PM	0	0	0	0	0	3:55 PM	0	0	0	0	0
4:00 PM	0	2	0	3	5	4:00 PM	0	0	0	0	0	4:00 PM	0	0	0	0	0
4:05 PM	0	2	0	1	3	4:05 PM	0	0	0	0	0	4:05 PM	0	0	0	0	0
4:10 PM	0	3	0	1	4	4:10 PM	0	0	0	0	0	4:10 PM	0	0	0	0	0
4:15 PM	0	5	0	3	8	4:15 PM	0	0	0	0	0	4:15 PM	0	0	0	0	0
4:20 PM	0	2	0	5	7	4:20 PM	0	0	0	0	0	4:20 PM	0	0	0	0	0
4:25 PM	0	0	0	0	0	4:25 PM	0	0	0	0	0	4:25 PM	0	0	0	0	0
4:30 PM	0	4	0	2	6	4:30 PM	0	0	0	0	0	4:30 PM	0	0	0	0	0
4:35 PM	0	1	0	2	3	4:35 PM	0	0	0	0	0	4:35 PM	0	0	0	0	0
4:40 PM	0	4	0	2	6	4:40 PM	0	0	0	0	0	4:40 PM	0	0	0	0	0
4:45 PM	0	1	0	4	5	4:45 PM	0	0	0	0	0	4:45 PM	0	0	0	0	0
4:50 PM	0	4	0	3	7	4:50 PM	0	0	0	0	0	4:50 PM	0	0	0	0	0
4:55 PM	0	2	0	1	3	4:55 PM	0	0	0	0	0	4:55 PM	0	0	0	0	0
5:00 PM	0	3	0	6	9	5:00 PM	0	0	0	0	0	5:00 PM	0	0	0	0	0
5:05 PM	0	2	0	3	5	5:05 PM	0	0	0	0	0	5:05 PM	0	0	0	0	0
5:10 PM	0	1	0	4	5	5:10 PM	0	0	0	0	0	5:10 PM	0	0	0	0	0
5:15 PM	0	2	0	0	2	5:15 PM	0	0	0	0	0	5:15 PM	0	0	0	0	0
5:20 PM	0	2	0	2	4	5:20 PM	0	0	0	0	0	5:20 PM	0	0	0	0	0
5:25 PM	0	1	0	2	3	5:25 PM	0	0	0	0	0	5:25 PM	0	0	0	0	0
5:30 PM	0	4	0	1	5	5:30 PM	0	0	0	0	0	5:30 PM	0	0	0	0	0
5:35 PM	0	2	0	3	5	5:35 PM	0	0	0	0	0	5:35 PM	0	0	0	0	0
5:40 PM	0	3	0	5	8	5:40 PM	0	0	0	0	0	5:40 PM	0	0	0	0	0
5:45 PM	0	3	0	3	6	5:45 PM	0	0	0	0	0	5:45 PM	0	0	0	0	0
5:50 PM	0	2	0	1	3	5:50 PM	0	0	0	0	0	5:50 PM	0	0	0	0	0
5:55 PM	0	2	0	2	4	5:55 PM	0	0	0	0	0	5:55 PM	0	0	0	0	0
Count Total	0	81	0	92	173	Count Total	0	0	0	0	0	Count Total	0	0	0	0	0
Peak Hour	0	29	0	35	64	Peak Hour	0	0	0	0	0	Peak Hour	0	0	0	0	0





KEY DATA NETWORK

Data Provided by K-D-N.com 503-594-4224	
N/S street:	US97
E/W street:	Ponderosa St
City, State	Bend OR
Study ID #	108528
Location	44.007819 - -121.324039
Start Date	Thursday, April 13, 2017
Start Time	04:00:00 PM
Peak Hour Start	04:40:00 PM
Peak 15 Min Start	04:40:00 PM
PHF (15-Min Int)	0.96

Peak-Hour Volumes (PHV)																							
Northbound				Southbound				Eastbound				Westbound				Entering				Leaving			
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	NB	SB	EB	WB	NB	SB	EB	WB
0	777	11	0	0	1363	127	0	0	0	17	0	0	0	107	0	788	1490	17	107	1380	884	127	11

Percent Heavy Vehicles																							
0.0%	5.9%	0.0%	0.0%	0.0%	3.7%	2.4%	0.0%	0.0%	0.0%	5.9%	0.0%	0.0%	0.0%	0.0%	0.0%	5.8%	3.6%	5.9%	0.0%	3.8%	5.2%	2.4%	0.0%

PHV- Bicycles														PHV - Pedestrians							
Northbound				Southbound				Eastbound				Westbound				in Crosswalk					
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	NB	SB	EB	WB	Sum
0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0

All Vehicle Volumes																		
Time	Northbound				Southbound				Eastbound				Westbound				15 Min	1 HR
	US97				US97				Ponderosa St				China Hat Rd					
	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	Sum
04:00:00 PM	0	67	2	0	0	95	6	0	0	0	1	0	0	0	6	0		
04:05:00 PM	0	80	1	0	0	71	3	0	0	0	2	0	0	0	7	0		
04:10:00 PM	0	88	2	0	0	87	4	0	0	0	0	0	0	0	12	0	534	
04:15:00 PM	0	69	0	0	0	93	3	0	0	0	1	0	0	0	9	0	532	
04:20:00 PM	0	85	0	0	0	98	4	0	0	0	0	0	0	0	8	0	563	
04:25:00 PM	0	57	1	0	0	101	6	0	0	0	0	0	0	0	9	0	544	
04:30:00 PM	0	55	0	0	0	93	7	0	0	0	1	0	0	0	5	0	530	
04:35:00 PM	0	49	0	0	0	97	10	0	0	0	2	0	0	0	8	0	501	
04:40:00 PM	0	81	0	0	0	125	10	0	0	0	1	0	0	0	4	0	548	
04:45:00 PM	0	64	2	0	0	109	13	0	0	0	4	0	0	0	11	0	590	
04:50:00 PM	0	68	1	0	0	111	9	0	0	0	0	0	0	0	14	0	627	
04:55:00 PM	0	60	0	0	0	108	11	0	0	0	0	0	0	0	5	0	590	2216
05:00:00 PM	0	56	2	0	0	111	11	0	0	0	1	0	0	0	8	0	576	2228
05:05:00 PM	0	65	1	0	0	99	11	0	0	0	2	0	0	0	10	0	561	2252
05:10:00 PM	0	52	1	0	0	115	15	0	0	0	1	0	0	0	10	0	571	2253
05:15:00 PM	0	81	0	0	0	121	9	0	0	0	4	0	0	0	14	0	611	2307
05:20:00 PM	0	64	1	0	0	114	12	0	0	0	1	0	0	0	10	0	625	2314
05:25:00 PM	0	65	2	0	0	108	10	0	0	0	0	0	0	0	9	0	625	2334
05:30:00 PM	0	55	1	0	0	132	9	0	0	0	2	0	0	0	7	0	602	2379
05:35:00 PM	0	66	0	0	0	110	7	0	0	0	1	0	0	0	5	0	589	2402
05:40:00 PM	0	49	3	0	0	98	12	0	0	0	1	0	0	0	10	0	568	2354
05:45:00 PM	0	46	0	0	0	85	6	0	0	0	0	0	0	0	6	0	505	2294
05:50:00 PM	0	41	0	0	0	87	10	0	0	0	1	0	0	0	5	0	460	2235
05:55:00 PM	0	47	0	0	0	72	9	0	0	0	1	0	0	0	3	0	419	2183

Bicycles on Road																		
	Northbound				Southbound				Eastbound				Westbound					



KEY DATA NETWORK

Time	US97				US97				Ponderosa St				China Hat Rd				15 Min	1 HR
	Left	Thru	Right	Utum	Left	Thru	Right	Utum	Left	Thru	Right	Utum	Left	Thru	Right	Utum	Sum	Sum
04:00:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
04:05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
04:10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:20:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:25:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:35:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:40:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:50:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:55:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:10:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1
05:15:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
05:20:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
05:25:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:30:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:35:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:40:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:45:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:50:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:55:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1

Passenger vehicles and light trucks

Time	Northbound				Southbound				Eastbound				Westbound				15 Min	1 HR
	US97				US97				Ponderosa St				China Hat Rd				Sum	Sum
	Left	Thru	Right	Utum	Left	Thru	Right	Utum	Left	Thru	Right	Utum	Left	Thru	Right	Utum		
04:00:00 PM	0	60	2	0	0	91	6	0	0	0	1	0	0	0	5	0		
04:05:00 PM	0	75	1	0	0	68	3	0	0	0	2	0	0	0	6	0		
04:10:00 PM	0	77	1	0	0	79	3	0	0	0	0	0	0	0	9	0	489	
04:15:00 PM	0	64	0	0	0	86	3	0	0	0	1	0	0	0	8	0	486	
04:20:00 PM	0	78	0	0	0	93	4	0	0	0	0	0	0	0	8	0	514	
04:25:00 PM	0	51	1	0	0	93	6	0	0	0	0	0	0	0	8	0	504	
04:30:00 PM	0	49	0	0	0	90	6	0	0	0	1	0	0	0	5	0	493	
04:35:00 PM	0	42	0	0	0	93	8	0	0	0	2	0	0	0	8	0	463	
04:40:00 PM	0	77	0	0	0	118	10	0	0	0	0	0	0	0	4	0	513	
04:45:00 PM	0	62	2	0	0	101	12	0	0	0	4	0	0	0	11	0	554	
04:50:00 PM	0	65	1	0	0	109	9	0	0	0	0	0	0	0	14	0	599	
04:55:00 PM	0	53	0	0	0	106	10	0	0	0	0	0	0	0	5	0	564	2070
05:00:00 PM	0	53	2	0	0	110	11	0	0	0	1	0	0	0	8	0	557	2090
05:05:00 PM	0	64	1	0	0	94	10	0	0	0	2	0	0	0	10	0	540	2116
05:10:00 PM	0	47	1	0	0	113	15	0	0	0	1	0	0	0	10	0	553	2134
05:15:00 PM	0	73	0	0	0	118	9	0	0	0	4	0	0	0	14	0	586	2190
05:20:00 PM	0	59	1	0	0	110	12	0	0	0	1	0	0	0	10	0	598	2200
05:25:00 PM	0	63	2	0	0	102	10	0	0	0	0	0	0	0	9	0	597	2227



KEY DATA NETWORK

05:30:00 PM	0	53	1	0	0	127	9	0	0	0	2	0	0	0	7	0	578	2275
05:35:00 PM	0	62	0	0	0	104	7	0	0	0	1	0	0	0	5	0	564	2301
05:40:00 PM	0	45	3	0	0	91	11	0	0	0	1	0	0	0	10	0	539	2253
05:45:00 PM	0	42	0	0	0	81	6	0	0	0	0	0	0	0	6	0	475	2196
05:50:00 PM	0	37	0	0	0	83	10	0	0	0	1	0	0	0	5	0	432	2134
05:55:00 PM	0	41	0	0	0	67	9	0	0	0	1	0	0	0	3	0	392	2081

FHWA 4-13 -Truck/Multi-Unit/Heavy Trucks

Time	Northbound US97				Southbound US97				Eastbound Ponderosa St				Westbound China Hat Rd				15 Min 1 HR	
	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	Sum
	04:00:00 PM	0	7	0	0	0	4	0	0	0	0	0	0	0	0	1	0	
04:05:00 PM	0	5	0	0	0	3	0	0	0	0	0	0	0	0	1	0		
04:10:00 PM	0	11	1	0	0	8	1	0	0	0	0	0	0	0	3	0	45	
04:15:00 PM	0	5	0	0	0	7	0	0	0	0	0	0	0	0	1	0	46	
04:20:00 PM	0	7	0	0	0	5	0	0	0	0	0	0	0	0	0	0	49	
04:25:00 PM	0	6	0	0	0	8	0	0	0	0	0	0	0	0	1	0	40	
04:30:00 PM	0	6	0	0	0	3	1	0	0	0	0	0	0	0	0	0	37	
04:35:00 PM	0	7	0	0	0	4	2	0	0	0	0	0	0	0	0	0	38	
04:40:00 PM	0	4	0	0	0	7	0	0	0	0	1	0	0	0	0	0	35	
04:45:00 PM	0	2	0	0	0	8	1	0	0	0	0	0	0	0	0	0	36	
04:50:00 PM	0	3	0	0	0	2	0	0	0	0	0	0	0	0	0	0	28	
04:55:00 PM	0	7	0	0	0	2	1	0	0	0	0	0	0	0	0	0	26	146
05:00:00 PM	0	3	0	0	0	1	0	0	0	0	0	0	0	0	0	0	19	138
05:05:00 PM	0	1	0	0	0	5	1	0	0	0	0	0	0	0	0	0	21	136
05:10:00 PM	0	5	0	0	0	2	0	0	0	0	0	0	0	0	0	0	18	119
05:15:00 PM	0	8	0	0	0	3	0	0	0	0	0	0	0	0	0	0	25	117
05:20:00 PM	0	5	0	0	0	4	0	0	0	0	0	0	0	0	0	0	27	114
05:25:00 PM	0	2	0	0	0	6	0	0	0	0	0	0	0	0	0	0	28	107
05:30:00 PM	0	2	0	0	0	5	0	0	0	0	0	0	0	0	0	0	24	104
05:35:00 PM	0	4	0	0	0	6	0	0	0	0	0	0	0	0	0	0	25	101
05:40:00 PM	0	4	0	0	0	7	1	0	0	0	0	0	0	0	0	0	29	101
05:45:00 PM	0	4	0	0	0	4	0	0	0	0	0	0	0	0	0	0	30	98
05:50:00 PM	0	4	0	0	0	4	0	0	0	0	0	0	0	0	0	0	28	101
05:55:00 PM	0	6	0	0	0	5	0	0	0	0	0	0	0	0	0	0	27	102

Pedestrians Crossing					15 Min 1 HR	
Time	NB	SB	EB	WB	Sum	Sum
04:00:00 PM	0	0	0	0		
04:05:00 PM	0	0	0	0		
04:10:00 PM	0	0	0	0	0	
04:15:00 PM	0	0	0	0	0	
04:20:00 PM	0	0	0	0	0	
04:25:00 PM	0	0	0	0	0	
04:30:00 PM	0	0	0	0	0	
04:35:00 PM	0	0	0	0	0	
04:40:00 PM	0	0	0	0	0	
04:45:00 PM	0	0	0	0	0	
04:50:00 PM	0	0	0	0	0	
04:55:00 PM	0	0	0	0	0	0



KEY DATA NETWORK

05:00:00 PM	0	0	0	0	0	0
05:05:00 PM	0	0	0	0	0	0
05:10:00 PM	0	0	0	0	0	0
05:15:00 PM	0	0	0	0	0	0
05:20:00 PM	0	0	0	0	0	0
05:25:00 PM	0	0	0	0	0	0
05:30:00 PM	0	0	0	0	0	0
05:35:00 PM	0	0	0	0	0	0
05:40:00 PM	0	0	0	0	0	0
05:45:00 PM	0	0	0	0	0	0
05:50:00 PM	0	0	0	0	0	0
05:55:00 PM	0	0	0	0	0	0



KEY DATA NETWORK

Data Provided by K-D-N.com 503-594-4224	
N/S street:	US97 SB ramps
E/W street:	Baker Rd
City, State	Bend OR
Study ID #	108529
Location	43.992611 - -121.336303
Start Date	Thursday, April 13, 2017
Start Time	04:00:00 PM
Peak Hour Start	04:45:00 PM
Peak 15 Min Start	05:20:00 PM
PHF (15-Min Int)	0.94

Peak-Hour Volumes (PHV)																							
Northbound				Southbound				Eastbound				Westbound				Entering				Leaving			
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	NB	SB	EB	WB	NB	SB	EB	WB
0	0	0	0	62	0	495	0	51	348	0	0	0	304	188	0	0	557	399	492	0	239	799	410

Percent Heavy Vehicles																							
0.0%	0.0%	0.0%	0.0%	1.6%	0.0%	2.4%	0.0%	7.8%	3.4%	0.0%	0.0%	0.0%	2.6%	1.1%	0.0%	#DIV/0!	2.3%	4.0%	2.0%	#DIV/0!	2.5%	2.5%	3.2%

PHV- Bicycles														PHV - Pedestrians							
Northbound				Southbound				Eastbound				Westbound				in Crosswalk					
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	NB	SB	EB	WB	Sum
0				0		0	0	0	0		0	0	0	0	0	0	0	0	0	0	0

All Vehicle Volumes																				
Time	Northbound				Southbound				Eastbound				Westbound				15 Min		1 HR	
	Left	Thru	Right	Uturn	US97 SB ramps				Baker Rd				Knott Rd				Sum	Sum		
04:00:00 PM					5		24	0	3	42		0	18	4		0				
04:05:00 PM					6		30	0	2	33		0	15	13		0				
04:10:00 PM					4		10	0	3	16		0	12	10		0	250			
04:15:00 PM					3		23	0	4	39		0	34	10		0	267			
04:20:00 PM					3		48	0	1	26		0	24	11		0	281			
04:25:00 PM					3		31	0	1	23		0	14	5		0	303			
04:30:00 PM					4		33	0	0	21		0	16	11		0	275			
04:35:00 PM					2		38	0	1	29		0	23	13		0	268			
04:40:00 PM					10		35	0	6	27		0	22	9		0	300			
04:45:00 PM					3		51	0	3	26		0	21	15		0	334			
04:50:00 PM					4		40	0	4	27		0	26	9		0	338			
04:55:00 PM					6		33	0	6	22		0	20	12		0	328	1181		
05:00:00 PM					7		37	0	7	26		0	23	13		0	322	1198		
05:05:00 PM					6		37	0	4	40		0	28	16		0	343	1230		
05:10:00 PM					3		52	0	7	28		0	25	8		0	367	1298		
05:15:00 PM					7		40	0	3	32		0	24	12		0	372	1303		
05:20:00 PM					6		48	0	3	27		0	28	23		0	376	1325		
05:25:00 PM					6		32	0	6	23		0	30	28		0	378	1373		
05:30:00 PM					6		38	0	2	33		0	27	20		0	386	1414		
05:35:00 PM					4		40	0	4	38		0	28	15		0	380	1437		
05:40:00 PM					4		47	0	2	26		0	24	17		0	375	1448		
05:45:00 PM					0		27	0	2	24		0	16	12		0	330	1410		
05:50:00 PM					2		31	0	3	17		0	20	14		0	288	1387		
05:55:00 PM					5		18	0	3	29		0	17	18		0	258	1378		

Bicycles on Road																	
Northbound				Southbound				Eastbound				Westbound					



KEY DATA NETWORK

Time					US97 SB ramps				Baker Rd				Knott Rd				15 Min 1 HR	
	Left	Thru	Right	Utum	Left	Thru	Right	Utum	Left	Thru	Right	Utum	Left	Thru	Right	Utum	Sum	Sum
04:00:00 PM					0		1	0	0	0	0	0	0	0	0			
04:05:00 PM					0		0	0	0	0	0	0	0	0	0			
04:10:00 PM					0		0	0	0	0	0	0	0	0	0	1		
04:15:00 PM					0		0	0	0	0	0	0	0	0	0	0		
04:20:00 PM					0		0	0	0	0	0	0	0	0	0	0		
04:25:00 PM					0		0	0	0	0	0	0	0	0	0	0		
04:30:00 PM					0		0	0	0	0	0	0	0	0	0	0		
04:35:00 PM					0		0	0	0	0	0	0	0	0	0	0		
04:40:00 PM					0		0	0	0	0	0	0	0	0	0	0		
04:45:00 PM					0		0	0	0	0	0	0	0	0	0	0		
04:50:00 PM					0		0	0	0	0	0	0	0	0	0	0		
04:55:00 PM					0		0	0	0	0	0	0	0	0	0	0	1	
05:00:00 PM					0		0	0	0	0	0	0	0	0	0	0	0	
05:05:00 PM					0		0	0	0	0	0	0	0	0	0	0	0	
05:10:00 PM					0		0	0	0	0	0	0	0	0	0	0	0	
05:15:00 PM					0		0	0	0	0	0	0	0	0	0	0	0	
05:20:00 PM					0		0	0	0	0	0	0	0	0	0	0	0	
05:25:00 PM					0		0	0	0	0	0	0	0	0	0	0	0	
05:30:00 PM					0		0	0	0	0	0	0	0	0	0	0	0	
05:35:00 PM					0		0	0	0	0	0	0	0	0	0	0	0	
05:40:00 PM					0		0	0	0	0	0	0	0	0	0	0	0	
05:45:00 PM					0		0	0	0	0	0	0	0	0	0	0	0	
05:50:00 PM					0		0	0	0	0	0	0	0	0	0	0	0	
05:55:00 PM					0		0	0	0	0	0	0	0	0	0	0	0	

Passenger vehicles and light trucks

Time	Northbound				Southbound				Eastbound				Westbound				15 Min 1 HR	
					US97 SB ramps				Baker Rd				Knott Rd					
	Left	Thru	Right	Utum	Left	Thru	Right	Utum	Left	Thru	Right	Utum	Left	Thru	Right	Utum	Sum	Sum
04:00:00 PM					5		24	0	3	39	0	17	4	0				
04:05:00 PM					6		29	0	2	31	0	15	10	0				
04:10:00 PM					3		10	0	3	15	0	12	10	0	238			
04:15:00 PM					3		23	0	4	36	0	33	10	0	255			
04:20:00 PM					3		48	0	1	24	0	23	11	0	272			
04:25:00 PM					3		29	0	1	23	0	14	5	0	294			
04:30:00 PM					4		33	0	0	20	0	15	11	0	268			
04:35:00 PM					1		37	0	1	27	0	23	13	0	260			
04:40:00 PM					9		35	0	6	26	0	21	9	0	291			
04:45:00 PM					3		47	0	3	25	0	20	14	0	320			
04:50:00 PM					4		39	0	3	25	0	26	9	0	324			
04:55:00 PM					6		33	0	5	19	0	20	12	0	313	1136		
05:00:00 PM					7		37	0	7	26	0	20	13	0	311	1154		
05:05:00 PM					6		36	0	4	40	0	28	15	0	334	1190		
05:10:00 PM					3		52	0	7	27	0	25	8	0	361	1259		
05:15:00 PM					7		39	0	3	31	0	22	12	0	365	1264		
05:20:00 PM					6		47	0	3	27	0	27	23	0	369	1287		
05:25:00 PM					6		32	0	5	21	0	30	28	0	369	1334		



KEY DATA NETWORK

05:30:00 PM	5	37	0	2	31	0	26	20	0	376	1372
05:35:00 PM	4	39	0	4	38	0	28	15	0	371	1398
05:40:00 PM	4	45	0	1	26	0	24	17	0	366	1409
05:45:00 PM	0	27	0	2	24	0	16	12	0	326	1378
05:50:00 PM	2	30	0	3	17	0	20	14	0	284	1358
05:55:00 PM	5	18	0	3	28	0	16	17	0	254	1350

FHWA 4-13 -Truck/Multi-Unit/Heavy Trucks

Time	Northbound				Southbound US97 SB ramps				Eastbound Baker Rd				Westbound Knott Rd				15 Min 1 HR	
	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	Sum
04:00:00 PM					0		0	0	0	3		0	1	0	0			
04:05:00 PM					0		1	0	0	2		0	3	0	0			
04:10:00 PM					1		0	0	0	1		0	0	0	0		12	
04:15:00 PM					0		0	0	0	3		0	1	0	0		12	
04:20:00 PM					0		0	0	0	2		0	1	0	0		9	
04:25:00 PM					0		2	0	0	0		0	0	0	0		9	
04:30:00 PM					0		0	0	0	1		0	1	0	0		7	
04:35:00 PM					1		1	0	0	2		0	0	0	0		8	
04:40:00 PM					1		0	0	0	1		0	1	0	0		9	
04:45:00 PM					0		4	0	0	1		0	1	1	0		14	
04:50:00 PM					0		1	0	1	2		0	0	0	0		14	
04:55:00 PM					0		0	0	1	3		0	0	0	0		15	45
05:00:00 PM					0		0	0	0	0		0	3	0	0		11	44
05:05:00 PM					0		1	0	0	0		0	1	0	0		9	40
05:10:00 PM					0		0	0	0	1		0	0	0	0		6	39
05:15:00 PM					0		1	0	0	1		0	2	0	0		7	39
05:20:00 PM					0		1	0	0	0		0	1	0	0		7	38
05:25:00 PM					0		0	0	1	2		0	0	0	0		9	39
05:30:00 PM					1		1	0	0	2		0	1	0	0		10	42
05:35:00 PM					0		1	0	0	0		0	0	0	0		9	39
05:40:00 PM					0		2	0	1	0		0	0	0	0		9	39
05:45:00 PM					0		0	0	0	0		0	0	0	0		4	32
05:50:00 PM					0		1	0	0	0		0	0	0	0		4	29
05:55:00 PM					0		0	0	0	1		0	1	1	0		4	28

Pedestrians Crossing					15 Min 1 HR	
Time	NB	SB	EB	WB	Sum	Sum
04:00:00 PM		0	0	0		
04:05:00 PM		0	0	0		
04:10:00 PM		0	0	0	0	
04:15:00 PM		0	0	0	0	
04:20:00 PM		0	0	0	0	
04:25:00 PM		0	0	0	0	
04:30:00 PM		0	0	0	0	
04:35:00 PM		0	0	0	0	
04:40:00 PM		0	0	0	0	
04:45:00 PM		0	0	0	0	
04:50:00 PM		0	0	0	0	
04:55:00 PM		0	0	0	0	0



KEY DATA NETWORK

05:00:00 PM	0	0	0	0	0
05:05:00 PM	0	0	0	0	0
05:10:00 PM	0	0	0	0	0
05:15:00 PM	0	0	0	0	0
05:20:00 PM	0	0	0	0	0
05:25:00 PM	0	0	0	0	0
05:30:00 PM	0	0	0	0	0
05:35:00 PM	0	0	0	0	0
05:40:00 PM	0	0	0	0	0
05:45:00 PM	0	0	0	0	0
05:50:00 PM	0	0	0	0	0
05:55:00 PM	0	0	0	0	0





KEY DATA NETWORK

Data Provided by K-D-N.com 503-594-4224	
N/S street:	US97 SB ramps
E/W street:	Knott Rd
City, State	Bend OR
Study ID #	
Location	43.991498 - -121.333495
Start Date	Thursday, April 13, 2017
Start Time	04:00:00 PM
Peak Hour Start	04:40:00 PM
Peak 15 Min Start	05:20:00 PM
PHF (15-Min Int)	0.91

Peak-Hour Volumes (PHV)																							
Northbound				Southbound				Eastbound				Westbound				Entering				Leaving			
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	NB	SB	EB	WB	NB	SB	EB	WB
42	1	97	0	0	0	0	0	259	161	0	0	0	454	15	0	140	0	420	469	0	275	496	258

Percent Heavy Vehicles																							
2.4%	100.0%	2.1%	0.0%	0.0%	0.0%	0.0%	0.0%	3.1%	3.1%	0.0%	0.0%	0.0%	2.4%	6.7%	0.0%	2.9%	0.0%	3.1%	2.6%	#DIV/0!	3.6%	2.4%	2.7%

PHV- Bicycles														PHV - Pedestrians							
Northbound				Southbound				Eastbound				Westbound				in Crosswalk					
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	NB	SB	EB	WB	Sum
0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	0	0	0	0	0

All Vehicle Volumes																			
Time	Northbound				Southbound				Eastbound				Westbound				15 Min		1 HR
	US97 SB ramps				US97 SB ramps				Knott Rd				Knott Rd				Sum	Sum	
	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	Sum	
04:00:00 PM	2	0	17	0	0	0	0	0	27	20	0	0	0	28	0	0			
04:05:00 PM	0	0	11	0	0	0	0	0	30	11	0	0	0	27	0	0			
04:10:00 PM	3	0	13	0	0	0	0	0	11	13	0	0	0	37	1	0	251		
04:15:00 PM	2	0	10	0	0	0	0	0	21	15	0	0	0	35	3	0	243		
04:20:00 PM	2	1	9	0	0	0	0	0	20	12	0	0	0	28	2	0	238		
04:25:00 PM	5	0	9	0	0	0	0	0	17	12	0	0	0	18	0	0	221		
04:30:00 PM	2	0	12	0	0	0	0	0	10	11	0	0	0	24	1	0	195		
04:35:00 PM	5	0	4	0	0	0	0	0	20	11	0	0	0	34	2	0	197		
04:40:00 PM	2	0	12	0	0	0	0	0	21	19	0	0	0	34	2	0	226		
04:45:00 PM	3	0	7	0	0	0	0	0	16	10	0	0	0	39	1	0	242		
04:50:00 PM	7	0	9	0	0	0	0	0	26	8	0	0	0	30	1	0	247		
04:55:00 PM	1	0	8	0	0	0	0	0	18	9	0	0	0	30	0	0	223	921	
05:00:00 PM	4	0	8	0	0	0	0	0	19	13	0	0	0	34	2	0	227	907	
05:05:00 PM	4	1	10	0	0	0	0	0	26	20	0	0	0	40	1	0	248	930	
05:10:00 PM	5	0	7	0	0	0	0	0	17	15	0	0	0	29	2	0	257	927	
05:15:00 PM	3	0	7	0	0	0	0	0	23	15	0	0	0	33	2	0	260	924	
05:20:00 PM	1	0	7	0	0	0	0	0	22	12	0	0	0	50	2	0	252	944	
05:25:00 PM	3	0	9	0	0	0	0	0	19	12	0	0	0	55	1	0	276	982	
05:30:00 PM	6	0	7	0	0	0	0	0	20	16	0	0	0	41	1	0	284	1013	
05:35:00 PM	3	0	6	0	0	0	0	0	32	12	0	0	0	39	0	0	282	1029	
05:40:00 PM	5	1	3	0	0	0	0	0	13	16	0	0	0	39	3	0	263	1019	
05:45:00 PM	3	0	8	0	0	0	0	0	14	10	0	0	0	24	1	0	232	1003	
05:50:00 PM	3	0	4	0	0	0	0	0	18	6	0	0	0	29	1	0	201	983	
05:55:00 PM	3	0	6	0	0	0	0	0	19	11	0	0	0	35	2	0	197	993	

Bicycles on Road																		
	Northbound				Southbound				Eastbound				Westbound					



KEY DATA NETWORK

Time	US97 SB ramps				US97 SB ramps				Knott Rd				Knott Rd				15 Min 1 HR	
	Left	Thru	Right	Utum	Left	Thru	Right	Utum	Left	Thru	Right	Utum	Left	Thru	Right	Utum	Sum	Sum
04:00:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
04:05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
04:10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:20:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:25:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:35:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:40:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:50:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:55:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:20:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:25:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	3
05:30:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
05:35:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
05:40:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
05:45:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
05:50:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
05:55:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3

Passenger vehicles and light trucks

Time	Northbound US97 SB ramps				Southbound US97 SB ramps				Eastbound Knott Rd				Westbound Knott Rd				15 Min 1 HR	
	Left	Thru	Right	Utum	Left	Thru	Right	Utum	Left	Thru	Right	Utum	Left	Thru	Right	Utum	Sum	Sum
04:00:00 PM	2	0	17	0	0	0	0	0	24	20	0	0	0	27	0	0		
04:05:00 PM	0	0	10	0	0	0	0	0	29	11	0	0	0	25	0	0		
04:10:00 PM	3	0	13	0	0	0	0	0	9	12	0	0	0	37	1	0	240	
04:15:00 PM	1	0	10	0	0	0	0	0	21	15	0	0	0	34	3	0	234	
04:20:00 PM	2	1	7	0	0	0	0	0	19	12	0	0	0	28	2	0	230	
04:25:00 PM	5	0	9	0	0	0	0	0	15	12	0	0	0	17	0	0	213	
04:30:00 PM	1	0	11	0	0	0	0	0	10	11	0	0	0	24	1	0	187	
04:35:00 PM	5	0	4	0	0	0	0	0	19	11	0	0	0	34	2	0	191	
04:40:00 PM	2	0	12	0	0	0	0	0	20	18	0	0	0	32	2	0	219	
04:45:00 PM	3	0	7	0	0	0	0	0	16	10	0	0	0	37	1	0	235	
04:50:00 PM	7	0	8	0	0	0	0	0	24	8	0	0	0	30	1	0	238	
04:55:00 PM	1	0	7	0	0	0	0	0	17	9	0	0	0	30	0	0	216	888
05:00:00 PM	3	0	8	0	0	0	0	0	19	13	0	0	0	33	2	0	220	876
05:05:00 PM	4	0	10	0	0	0	0	0	25	20	0	0	0	39	1	0	241	900
05:10:00 PM	5	0	7	0	0	0	0	0	17	14	0	0	0	29	2	0	251	899
05:15:00 PM	3	0	7	0	0	0	0	0	23	15	0	0	0	31	2	0	254	896
05:20:00 PM	1	0	7	0	0	0	0	0	22	12	0	0	0	48	1	0	246	916
05:25:00 PM	3	0	9	0	0	0	0	0	18	11	0	0	0	55	1	0	269	955



KEY DATA NETWORK

05:30:00 PM	6	0	7	0	0	0	0	0	0	19	14	0	0	0	40	1	0	275	984
05:35:00 PM	3	0	6	0	0	0	0	0	0	31	12	0	0	0	39	0	0	275	1000
05:40:00 PM	5	1	3	0	0	0	0	0	0	13	15	0	0	0	38	3	0	256	992
05:45:00 PM	3	0	8	0	0	0	0	0	0	14	10	0	0	0	24	1	0	229	978
05:50:00 PM	3	0	4	0	0	0	0	0	0	18	6	0	0	0	28	0	0	197	959
05:55:00 PM	2	0	6	0	0	0	0	0	0	19	11	0	0	0	34	2	0	193	969

FHWA 4-13 -Truck/Multi-Unit/Heavy Trucks

Time	Northbound US97 SB ramps				Southbound US97 SB ramps				Eastbound Knott Rd				Westbound Knott Rd				15 Min 1 HR	
	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	Sum
04:00:00 PM	0	0	0	0	0	0	0	0	3	0	0	0	0	1	0	0		
04:05:00 PM	0	0	1	0	0	0	0	0	1	0	0	0	0	2	0	0		
04:10:00 PM	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	11	
04:15:00 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	9	
04:20:00 PM	0	0	2	0	0	0	0	0	1	0	0	0	0	0	0	0	8	
04:25:00 PM	0	0	0	0	0	0	0	0	2	0	0	0	0	1	0	0	8	
04:30:00 PM	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	8	
04:35:00 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	6	
04:40:00 PM	0	0	0	0	0	0	0	0	1	1	0	0	0	2	0	0	7	
04:45:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	7	
04:50:00 PM	0	0	1	0	0	0	0	0	2	0	0	0	0	0	0	0	9	
04:55:00 PM	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	7	33
05:00:00 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	7	31
05:05:00 PM	0	1	0	0	0	0	0	0	1	0	0	0	0	1	0	0	7	30
05:10:00 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	6	28
05:15:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	6	28
05:20:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	6	28
05:25:00 PM	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	7	27
05:30:00 PM	0	0	0	0	0	0	0	0	1	2	0	0	0	1	0	0	9	29
05:35:00 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	7	29
05:40:00 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	7	27
05:45:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	25
05:50:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	4	24
05:55:00 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	4	24

Pedestrians Crossing					15 Min 1 HR	
Time	NB	SB	EB	WB	Sum	Sum
04:00:00 PM	0	0	0	0		
04:05:00 PM	0	0	0	0		
04:10:00 PM	0	0	0	0	0	
04:15:00 PM	0	0	0	0	0	
04:20:00 PM	0	0	0	0	0	
04:25:00 PM	0	0	0	0	0	
04:30:00 PM	0	0	0	0	0	
04:35:00 PM	0	0	0	0	0	
04:40:00 PM	0	0	0	0	0	
04:45:00 PM	0	0	0	0	0	
04:50:00 PM	0	0	0	0	0	
04:55:00 PM	0	0	0	0	0	0



KEY DATA NETWORK

05:00:00 PM	0	0	0	0	0	0
05:05:00 PM	0	0	0	0	0	0
05:10:00 PM	0	0	0	0	0	0
05:15:00 PM	0	0	0	0	0	0
05:20:00 PM	0	0	0	0	0	0
05:25:00 PM	0	0	0	0	0	0
05:30:00 PM	0	0	0	0	0	0
05:35:00 PM	0	0	0	0	0	0
05:40:00 PM	0	0	0	0	0	0
05:45:00 PM	0	0	0	0	0	0
05:50:00 PM	0	0	0	0	0	0
05:55:00 PM	0	0	0	0	0	0

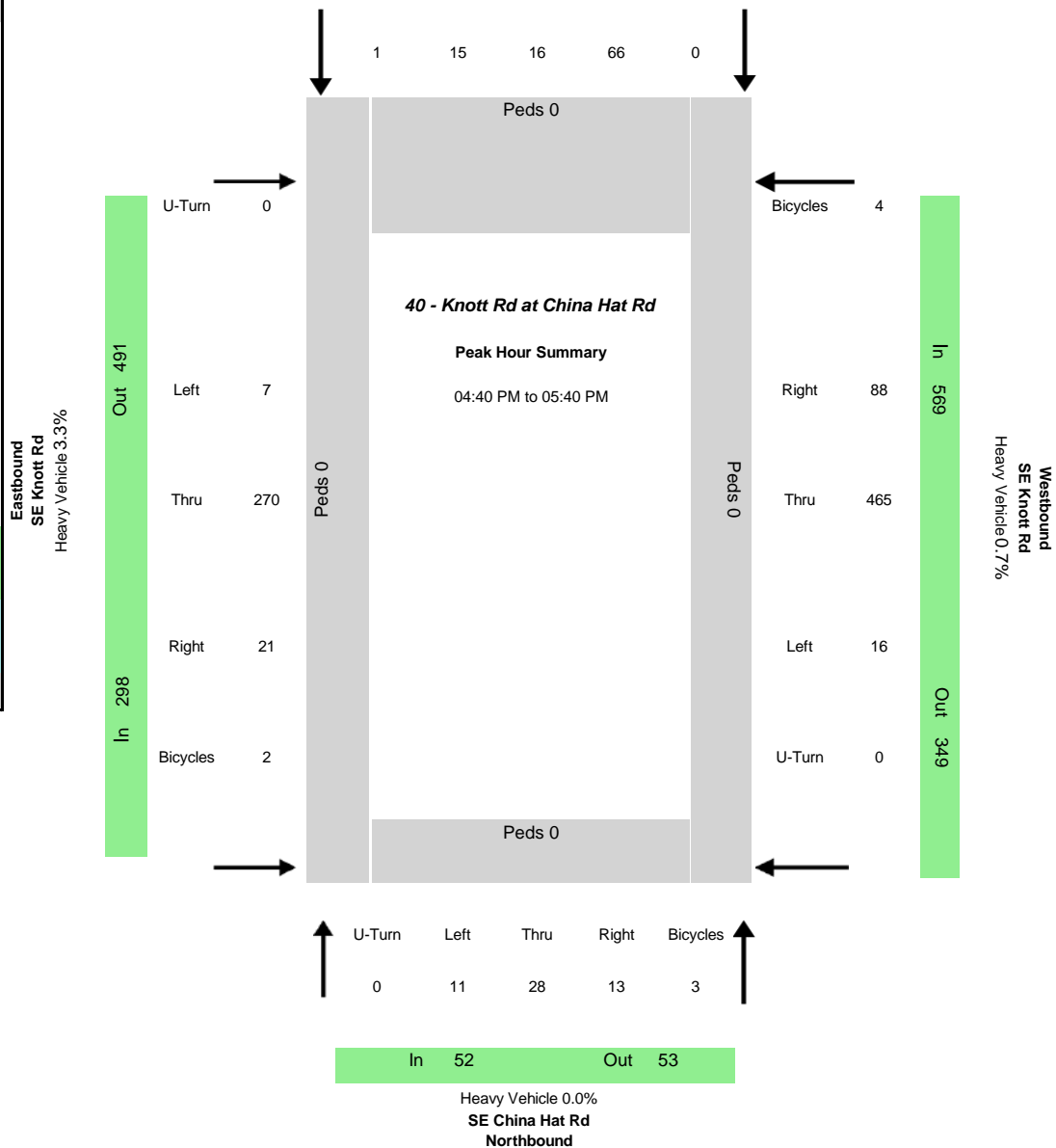


Southbound  
SE China Hat Rd  
Heavy Vehicle 2.0%

In	98	Out	125	
Bicycles	Right	Thru	Left	U-Turn

Data Provided by K-D-N.com 503-594-4224

N/S street	SE China Hat Rd
E/W street	SE Knott Rd
City, State	Bend OR
Site Notes	
Location	43.999036 - -121.312536
Start Date	Thursday, April 19, 2018
Start Time	04:00:00 PM
Weather	
Study ID #	
Peak Hour Start	04:40:00 PM
Peak 15 Min Start	05:05:00 PM
PHF (15-Min Int)	0.90



Peak-Hour Volumes (PHV)																							
Northbound				Southbound				Eastbound				Westbound				Entering				Leaving			
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	NB	SB	EB	WB	NB	SB	EB	WB
11	28	13	0	66	16	15	0	7	270	21	0	16	465	88	0	52	97	298	569	53	123	491	349
Percent Heavy Vehicles																							
0.0%	0.0%	0.0%	0.0%	0.0%	12.5%	0.0%	0.0%	0.0%	3.7%	0.0%	0.0%	0.0%	0.6%	1.1%	0.0%	0.0%	2.1%	3.4%	0.7%	3.8%	0.8%	0.6%	2.9%
PHV - Bicycles										PHV - Pedestrians													
Northbound				Southbound				Eastbound				Westbound				in Crosswalk							
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	NB	SB	EB	WB	Sum		
1	1	1	0	0	1	0	0	0	0	2	0	0	3	1	0	10	0	0	0	0	0		

Time	Northbound SE China Hat Rd				Southbound SE China Hat Rd				Eastbound SE Knott Rd				Westbound SE Knott Rd				15 Min	1 HR
	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn		
04:00:00 PM	0	1	0	0	7	1	1	0	1	21	1	0	2	30	1	0		
04:05:00 PM	2	3	2	0	3	4	0	0	0	30	1	0	2	29	4	0		
04:10:00 PM	0	2	2	0	3	2	0	0	0	21	0	0	1	22	4	0	203	
04:15:00 PM	1	1	2	0	4	2	0	0	1	21	0	0	0	45	8	0	222	
04:20:00 PM	3	1	1	0	4	1	1	0	1	16	1	0	1	33	8	0	213	
04:25:00 PM	3	0	1	0	3	1	1	0	0	22	2	0	3	37	6	0	235	
04:30:00 PM	1	2	1	0	1	5	2	0	0	21	4	0	0	31	4	0	222	
04:35:00 PM	0	2	2	0	2	1	0	0	1	22	0	0	1	28	7	0	217	
04:40:00 PM	1	2	0	0	8	1	0	0	2	24	2	0	1	28	9	0	216	
04:45:00 PM	2	1	1	0	3	2	2	0	2	17	3	0	0	37	9	0	223	
04:50:00 PM	0	4	0	0	4	1	2	0	0	22	0	0	0	53	7	0	250	
04:55:00 PM	0	3	3	0	10	3	1	0	1	21	2	0	2	38	7	0	263	917
05:00:00 PM	0	4	3	0	2	0	0	0	0	29	2	0	3	27	10	0	264	931
05:05:00 PM	2	4	1	0	10	2	2	0	1	23	2	0	1	38	7	0	264	944
05:10:00 PM	1	0	0	0	6	0	1	0	0	32	1	0	1	55	4	0	274	988
05:15:00 PM	2	2	1	0	6	2	0	0	0	28	0	0	1	37	10	0	283	992
05:20:00 PM	1	1	2	0	8	1	1	0	1	25	0	0	1	36	7	0	274	1005
05:25:00 PM	1	2	0	0	3	1	4	0	0	24	4	0	1	38	4	0	255	1008
05:30:00 PM	0	2	0	0	1	1	1	0	0	11	3	0	2	35	6	0	228	998
05:35:00 PM	1	3	2	0	5	2	1	0	0	14	2	0	3	43	8	0	228	1016
05:40:00 PM	0	1	2	0	3	3	1	0	1	15	0	0	0	40	4	0	216	1008
05:45:00 PM	0	3	0	0	2	1	0	0	0	20	0	0	6	26	7	0	219	994
05:50:00 PM	0	1	0	0	2	4	1	0	0	17	2	0	3	45	7	0	217	983
05:55:00 PM	1	4	1	0	0	3	0	0	0	16	2	0	3	26	4	0	207	952



KEY DATA NETWORK

Data Provided by K-D-N.com 503-594-4224	
N/S street:	Parrell Rd
E/W street:	China Hat Rd
City, State	Bend OR
Study ID #	
Location	44.007354 - -121.323066
Start Date	Thursday, April 13, 2017
Start Time	04:00:00 PM
Peak Hour Start	04:45:00 PM
Peak 15 Min Start	05:10:00 PM
PHF (15-Min Int)	0.75

Peak-Hour Volumes (PHV)																							
Northbound				Southbound				Eastbound				Westbound				Entering				Leaving			
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	NB	SB	EB	WB	NB	SB	EB	WB
0	0	0	0	80	0	9	0	9	5	0	0	0	106	40	1	0	89	14	147	0	49	115	86

Percent Heavy Vehicles																							
0.0%	0.0%	0.0%	0.0%	1.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.9%	0.0%	0.0%	#DIV/0!	1.1%	0.0%	0.7%	#DIV/0!	0.0%	0.9%	1.2%

PHV- Bicycles														PHV - Pedestrians							
Northbound				Southbound				Eastbound				Westbound				in Crosswalk					
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	NB	SB	EB	WB	Sum
0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0

All Vehicle Volumes																		
Time	Northbound				Southbound				Eastbound				Westbound				15 Min	1 HR
	Parrell Rd				Parrell Rd				China Hat Rd				China Hat Rd					
	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	Sum
04:00:00 PM	0	0	0	0	6	0	0	0	2	1	0	0	0	7	4	0		
04:05:00 PM	0	0	0	0	9	0	3	0	0	1	0	0	0	3	2	0		
04:10:00 PM	0	0	0	0	6	0	1	0	1	1	0	0	0	11	2	0	60	
04:15:00 PM	0	0	0	0	3	0	0	0	0	0	0	0	0	9	4	0	56	
04:20:00 PM	0	0	0	0	7	0	0	0	0	0	0	0	0	8	4	0	57	
04:25:00 PM	0	0	0	0	11	0	0	0	0	1	0	0	0	9	3	0	59	
04:30:00 PM	0	0	0	0	4	0	1	0	0	0	0	0	0	3	0	0	51	
04:35:00 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	7	4	0	44	
04:40:00 PM	0	0	0	0	5	0	0	0	0	0	0	0	0	4	3	0	32	
04:45:00 PM	0	0	0	0	5	0	1	0	1	1	0	0	0	11	3	0	46	
04:50:00 PM	0	0	0	0	2	0	0	0	0	1	0	0	0	12	2	0	51	
04:55:00 PM	0	0	0	0	6	0	0	0	0	0	0	0	0	5	2	0	52	203
05:00:00 PM	0	0	0	0	7	0	1	0	2	0	0	0	0	7	4	0	51	204
05:05:00 PM	0	0	0	0	4	0	0	0	1	0	0	0	0	10	5	0	54	206
05:10:00 PM	0	0	0	0	10	0	1	0	0	1	0	0	0	9	6	0	68	211
05:15:00 PM	0	0	0	0	13	0	2	0	0	0	0	0	0	12	3	0	77	225
05:20:00 PM	0	0	0	0	12	0	1	0	0	0	0	0	0	10	3	0	83	232
05:25:00 PM	0	0	0	0	4	0	1	0	1	2	0	0	0	8	1	1	74	226
05:30:00 PM	0	0	0	0	4	0	1	0	1	0	0	0	0	6	1	0	57	231
05:35:00 PM	0	0	0	0	10	0	0	0	0	0	0	0	0	5	2	0	48	236
05:40:00 PM	0	0	0	0	3	0	1	0	3	0	0	0	0	11	8	0	56	250
05:45:00 PM	0	0	0	0	10	0	0	0	0	0	0	0	0	5	3	0	61	246
05:50:00 PM	0	0	0	0	5	0	0	0	0	0	0	0	0	5	3	0	57	242
05:55:00 PM	0	0	0	0	6	0	0	0	0	0	0	0	0	3	3	0	43	241

Bicycles on Road																		
	Northbound				Southbound				Eastbound				Westbound					



KEY DATA NETWORK

Time	Parrell Rd				Parrell Rd				China Hat Rd				China Hat Rd				15 Min	1 HR
	Left	Thru	Right	Utum	Left	Thru	Right	Utum	Left	Thru	Right	Utum	Left	Thru	Right	Utum		
04:00:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
04:05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
04:10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:20:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:25:00 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1
04:30:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
04:35:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
04:40:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:50:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:55:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:00:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:15:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:20:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:25:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
05:35:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
05:40:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
05:45:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:50:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:55:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1

Passenger vehicles and light trucks

Time	Northbound				Southbound				Eastbound				Westbound				15 Min	1 HR
	Parrell Rd				Parrell Rd				China Hat Rd				China Hat Rd					
	Left	Thru	Right	Utum	Left	Thru	Right	Utum	Left	Thru	Right	Utum	Left	Thru	Right	Utum		
04:00:00 PM	0	0	0	0	6	0	0	0	2	0	0	0	0	5	4	0		
04:05:00 PM	0	0	0	0	9	0	2	0	0	1	0	0	0	3	1	0		
04:10:00 PM	0	0	0	0	6	0	0	0	1	0	0	0	0	9	2	0	51	
04:15:00 PM	0	0	0	0	3	0	0	0	0	0	0	0	0	8	4	0	49	
04:20:00 PM	0	0	0	0	6	0	0	0	0	0	0	0	0	7	4	0	50	
04:25:00 PM	0	0	0	0	10	0	0	0	0	1	0	0	0	8	3	0	54	
04:30:00 PM	0	0	0	0	4	0	1	0	0	0	0	0	0	3	0	0	47	
04:35:00 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	7	4	0	42	
04:40:00 PM	0	0	0	0	4	0	0	0	0	0	0	0	0	4	3	0	31	
04:45:00 PM	0	0	0	0	5	0	1	0	1	1	0	0	0	11	3	0	45	
04:50:00 PM	0	0	0	0	2	0	0	0	0	1	0	0	0	12	2	0	50	
04:55:00 PM	0	0	0	0	5	0	0	0	0	0	0	0	0	5	2	0	51	187
05:00:00 PM	0	0	0	0	7	0	1	0	2	0	0	0	0	7	4	0	50	191
05:05:00 PM	0	0	0	0	4	0	0	0	1	0	0	0	0	10	5	0	53	195
05:10:00 PM	0	0	0	0	10	0	1	0	0	1	0	0	0	8	6	0	67	203
05:15:00 PM	0	0	0	0	13	0	2	0	0	0	0	0	0	12	3	0	76	218
05:20:00 PM	0	0	0	0	12	0	1	0	0	0	0	0	0	10	3	0	82	227
05:25:00 PM	0	0	0	0	4	0	1	0	1	2	0	0	0	8	1	1	74	223



KEY DATA NETWORK

05:30:00 PM	0	0	0	0	4	0	1	0	1	0	0	0	0	6	1	0	57	228
05:35:00 PM	0	0	0	0	10	0	0	0	0	0	0	0	0	5	2	0	48	233
05:40:00 PM	0	0	0	0	3	0	1	0	3	0	0	0	0	11	8	0	56	248
05:45:00 PM	0	0	0	0	10	0	0	0	0	0	0	0	0	4	3	0	60	243
05:50:00 PM	0	0	0	0	5	0	0	0	0	0	0	0	0	5	3	0	56	239
05:55:00 PM	0	0	0	0	6	0	0	0	0	0	0	0	0	3	3	0	42	239

FHWA 4-13 -Truck/Multi-Unit/Heavy Trucks

Time	Northbound Parrell Rd				Southbound Parrell Rd				Eastbound China Hat Rd				Westbound China Hat Rd				15 Min 1 HR	
	Left	Thru	Right	Utum	Left	Thru	Right	Utum	Left	Thru	Right	Utum	Left	Thru	Right	Utum	Sum	Sum
	04:00:00 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0	0	
04:05:00 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0		
04:10:00 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	2	0	0	9	
04:15:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	7	
04:20:00 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	7	
04:25:00 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	5	
04:30:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	
04:35:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	
04:40:00 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	
04:45:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
04:50:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
04:55:00 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	16
05:00:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	13
05:05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	11
05:10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	8
05:15:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	7
05:20:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	5
05:25:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
05:30:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
05:35:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
05:40:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
05:45:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	3
05:50:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3
05:55:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2

Pedestrians Crossing					15 Min 1 HR	
Time	NB	SB	EB	WB	Sum	Sum
04:00:00 PM	0	0	0	0		
04:05:00 PM	0	0	0	0		
04:10:00 PM	0	0	0	0	0	
04:15:00 PM	0	0	0	0	0	
04:20:00 PM	0	0	0	0	0	
04:25:00 PM	0	0	0	0	0	
04:30:00 PM	0	0	0	0	0	
04:35:00 PM	0	0	1	0	1	
04:40:00 PM	0	0	0	0	1	
04:45:00 PM	0	0	0	0	1	
04:50:00 PM	0	0	0	0	0	
04:55:00 PM	0	0	0	0	0	1





KEY DATA NETWORK

05:00:00 PM	0	0	0	0	0	1
05:05:00 PM	0	0	0	0	0	1
05:10:00 PM	0	0	0	0	0	1
05:15:00 PM	0	0	0	0	0	1
05:20:00 PM	0	0	0	0	0	1
05:25:00 PM	0	0	0	0	0	1
05:30:00 PM	0	0	0	0	0	1
05:35:00 PM	0	0	0	0	0	0
05:40:00 PM	0	0	0	0	0	0
05:45:00 PM	0	0	0	0	0	0
05:50:00 PM	0	0	0	0	0	0
05:55:00 PM	0	0	0	0	0	0

## APPENDIX B: HCM AND QUEUEING REPORTS

## Shared Major Street Left Turn Approach V/C Ratio Adjustment

There is a limitation of the Highway Capacity Manual (HCM) unsignalized intersection methodology for shared left turn approaches. Major street left turns are always treated as exclusive turn lanes regardless of how they are coded. This can result in very low shared left turn v/c ratios (like 0.01) on an approach that should be over capacity. Shared major left turn vehicles are approximated in the HCM methodology by adjusting the potential for a "queue-free state" in the case of delaying through movement vehicles. The table below shows the inputs used to calculate the adjusted shared major street approach v/c ratio per ODOT Analysis and Procedures Manual Chapter 12.

ID	Intersection	Movement	Output from Synchro:		
			Left Turn V/C	Thru Vol	Adjusted V/C
1	Apache Rd & Baker Rd	WBL	0.054	515	0.36
2	Cinder Butte Rd/Pochahontas Ln & Baker Rd	WBL	0.292	550	0.62
2	Cinder Butte Rd/Pochahontas Ln & Baker Rd	EBL	0.006	265	0.16
3	Baker Ct & Baker Rd	WBL	0.093	845	0.59
4	Baker Rd/Knott Rd & US 97 SB ramp	EBL	0.058	435	0.31
5	Knott Rd & US 97 NB on ramp	EBL	0.364	185	0.47
8	Parrell Rd & China Hat Rd	WBL	0.16	355	0.37

HCM 6th TWSC  
1: Apache Rd & Baker Rd

02/01/2021

Intersection						
Int Delay, s/veh	0.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	270	5	50	515	5	20
Future Vol, veh/h	270	5	50	515	5	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	307	6	57	585	6	23

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	313	0	1009
Stage 1	-	-	-	-	310
Stage 2	-	-	-	-	699
Critical Hdwy	-	-	4.1	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	1259	-	269
Stage 1	-	-	-	-	748
Stage 2	-	-	-	-	497
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1259	-	251
Mov Cap-2 Maneuver	-	-	-	-	251
Stage 1	-	-	-	-	748
Stage 2	-	-	-	-	464

Approach	EB	WB	NB
HCM Control Delay, s	0	0.7	12.2
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	530	-	-	1259	-
HCM Lane V/C Ratio	0.054	-	-	0.045	-
HCM Control Delay (s)	12.2	-	-	8	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-

HCM 6th TWSC  
2: Cinder Butte Rd/Pocahontas Ln & Baker Rd

02/01/2021

Intersection												
Int Delay, s/veh	5.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	5	265	20	330	550	15	10	0	140	10	0	5
Future Vol, veh/h	5	265	20	330	550	15	10	0	140	10	0	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	6	294	22	367	611	17	11	0	156	11	0	6

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	628	0	0	316	0	0	1674	1679	305	1749	1682	620
Stage 1	-	-	-	-	-	-	317	317	-	1354	1354	-
Stage 2	-	-	-	-	-	-	1357	1362	-	395	328	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	964	-	-	1256	-	-	77	96	740	68	95	492
Stage 1	-	-	-	-	-	-	698	658	-	187	220	-
Stage 2	-	-	-	-	-	-	186	218	-	634	651	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	964	-	-	1256	-	-	49	52	740	35	52	492
Mov Cap-2 Maneuver	-	-	-	-	-	-	49	52	-	35	52	-
Stage 1	-	-	-	-	-	-	692	653	-	186	121	-
Stage 2	-	-	-	-	-	-	101	120	-	497	646	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.2			3.3			21.6			106.7		
HCM LOS							C			F		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	381	964	-	-	1256	-	-	51
HCM Lane V/C Ratio	0.437	0.006	-	-	0.292	-	-	0.327
HCM Control Delay (s)	21.6	8.8	0	-	9	0	-	106.7
HCM Lane LOS	C	A	A	-	A	A	-	F
HCM 95th %tile Q(veh)	2.2	0	-	-	1.2	-	-	1.1

HCM 6th TWSC  
3: Baker Ct & Baker Rd

02/01/2021

Intersection						
Int Delay, s/veh	3.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	↔
Traffic Vol, veh/h	370	45	100	845	50	130
Future Vol, veh/h	370	45	100	845	50	130
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	75
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	389	47	105	889	53	137

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	436	0	1512
Stage 1	-	-	-	-	413
Stage 2	-	-	-	-	1099
Critical Hdwy	-	-	4.1	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	1134	-	134
Stage 1	-	-	-	-	672
Stage 2	-	-	-	-	322
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1134	-	109
Mov Cap-2 Maneuver	-	-	-	-	109
Stage 1	-	-	-	-	672
Stage 2	-	-	-	-	263

Approach	EB	WB	NB
HCM Control Delay, s	0	0.9	27
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	109	643	-	-	1134	-
HCM Lane V/C Ratio	0.483	0.213	-	-	0.093	-
HCM Control Delay (s)	65.6	12.1	-	-	8.5	0
HCM Lane LOS	F	B	-	-	A	A
HCM 95th %tile Q(veh)	2.1	0.8	-	-	0.3	-

Intersection						
Int Delay, s/veh	18					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↑	↗	↖	↗
Traffic Vol, veh/h	65	435	315	240	80	630
Future Vol, veh/h	65	435	315	240	80	630
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	None
Storage Length	-	-	-	50	180	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	8	3	3	1	2	2
Mvmt Flow	69	463	335	255	85	670

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	335	0	-	0	936
Stage 1	-	-	-	-	335
Stage 2	-	-	-	-	601
Critical Hdwy	4.18	-	-	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	2.272	-	-	-	3.518
Pot Cap-1 Maneuver	1191	-	-	-	294
Stage 1	-	-	-	-	725
Stage 2	-	-	-	-	547
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1191	-	-	-	271
Mov Cap-2 Maneuver	-	-	-	-	271
Stage 1	-	-	-	-	668
Stage 2	-	-	-	-	547

Approach	EB	WB	SB
HCM Control Delay, s	1.1	0	43.9
HCM LOS			E

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1191	-	-	-	271	707
HCM Lane V/C Ratio	0.058	-	-	-	0.314	0.948
HCM Control Delay (s)	8.2	0	-	-	24.3	46.4
HCM Lane LOS	A	A	-	-	C	E
HCM 95th %tile Q(veh)	0.2	-	-	-	1.3	13.7

HCM 6th TWSC  
5: Knott Rd & US 97 NB On Ramp

02/01/2021

Intersection												
Int Delay, s/veh	53.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔	↔			
Traffic Vol, veh/h	330	185	0	0	500	20	55	0	125	0	0	0
Future Vol, veh/h	330	185	0	0	500	20	55	0	125	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	Stop	-	-	None
Storage Length	-	-	-	-	-	-	-	-	300	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	15	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	3	3	0	0	2	7	2	100	2	0	0	0
Mvmt Flow	363	203	0	0	549	22	60	0	137	0	0	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	571	0	0
Stage 1	-	-	929
Stage 2	-	-	560
Critical Hdwy	4.13	-	9.42
Critical Hdwy Stg 1	-	-	8.42
Critical Hdwy Stg 2	-	-	8.42
Follow-up Hdwy	2.227	-	3.518
Pot Cap-1 Maneuver	997	0	~ 39
Stage 1	-	0	177
Stage 2	-	0	359
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	997	-	~ 23
Mov Cap-2 Maneuver	-	-	~ 23
Stage 1	-	-	104
Stage 2	-	-	359

Approach	EB	WB	NB
HCM Control Delay, s	6.8	0	\$ 341.3
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	WBT	WBR
Capacity (veh/h)	23	770	997	-	-	-
HCM Lane V/C Ratio	2.628	0.178	0.364	-	-	-
HCM Control Delay (s)	\$ 1092.8	10.7	10.7	0	-	-
HCM Lane LOS	F	B	B	A	-	-
HCM 95th %tile Q(veh)	7.6	0.6	1.7	-	-	-

Notes  
 ~: Volume exceeds capacity    \$: Delay exceeds 300s    +: Computation Not Defined    \*: All major volume in platoon



HCM 6th TWSC  
6: Scale House Rd & Knott Rd

02/01/2021

Intersection						
Int Delay, s/veh	0.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	310	0	0	515	5	5
Future Vol, veh/h	310	0	0	515	5	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	1	0	0	1	0	0
Mvmt Flow	337	0	0	560	5	5

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	337	0	897
Stage 1	-	-	-	-	337
Stage 2	-	-	-	-	560
Critical Hdwy	-	-	4.1	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	1234	-	313
Stage 1	-	-	-	-	728
Stage 2	-	-	-	-	576
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1234	-	313
Mov Cap-2 Maneuver	-	-	-	-	313
Stage 1	-	-	-	-	728
Stage 2	-	-	-	-	576

Approach	EB	WB	NB
HCM Control Delay, s	0	0	13.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	434	-	-	1234	-
HCM Lane V/C Ratio	0.025	-	-	-	-
HCM Control Delay (s)	13.5	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection												
Int Delay, s/veh	5.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	10	285	20	15	480	90	15	30	15	70	15	20
Future Vol, veh/h	10	285	20	15	480	90	15	30	15	70	15	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	0	4	0	0	1	1	0	0	0	0	12	0
Mvmt Flow	11	317	22	17	533	100	17	33	17	78	17	22

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	633	0	0	339	0	0	987	1017	328	992	978	583
Stage 1	-	-	-	-	-	-	350	350	-	617	617	-
Stage 2	-	-	-	-	-	-	637	667	-	375	361	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.62	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.62	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.62	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4.108	3.3
Pot Cap-1 Maneuver	960	-	-	1231	-	-	228	239	718	227	241	516
Stage 1	-	-	-	-	-	-	671	636	-	481	466	-
Stage 2	-	-	-	-	-	-	469	460	-	650	609	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	960	-	-	1231	-	-	201	230	718	192	232	516
Mov Cap-2 Maneuver	-	-	-	-	-	-	201	230	-	192	232	-
Stage 1	-	-	-	-	-	-	662	627	-	474	456	-
Stage 2	-	-	-	-	-	-	423	450	-	593	600	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.3			0.2			23			37.3		
HCM LOS							C			E		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	266	960	-	-	1231	-	-	224
HCM Lane V/C Ratio	0.251	0.012	-	-	0.014	-	-	0.521
HCM Control Delay (s)	23	8.8	0	-	8	0	-	37.3
HCM Lane LOS	C	A	A	-	A	A	-	E
HCM 95th %tile Q(veh)	1	0	-	-	0	-	-	2.7

Intersection						
Int Delay, s/veh	3.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	10	5	125	40	85	10
Future Vol, veh/h	10	5	125	40	85	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	15	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	0	0	1	0	1	0
Mvmt Flow	13	7	167	53	113	13

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	220	0	-	0	227 194
Stage 1	-	-	-	-	194 -
Stage 2	-	-	-	-	33 -
Critical Hdwy	4.1	-	-	-	6.41 6.2
Critical Hdwy Stg 1	-	-	-	-	5.41 -
Critical Hdwy Stg 2	-	-	-	-	5.41 -
Follow-up Hdwy	2.2	-	-	-	3.509 3.3
Pot Cap-1 Maneuver	1361	-	-	-	763 853
Stage 1	-	-	-	-	841 -
Stage 2	-	-	-	-	992 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1361	-	-	-	755 853
Mov Cap-2 Maneuver	-	-	-	-	755 -
Stage 1	-	-	-	-	833 -
Stage 2	-	-	-	-	992 -

Approach	EB	WB	SB
HCM Control Delay, s	5.1	0	10.6
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1361	-	-	-	764
HCM Lane V/C Ratio	0.01	-	-	-	0.166
HCM Control Delay (s)	7.7	-	-	-	10.6
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.6

Intersection												
Int Delay, s/veh	0.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↗			↗		↕	↗		↕	↗
Traffic Vol, veh/h	0	0	20	0	0	135	0	985	15	0	1730	160
Future Vol, veh/h	0	0	20	0	0	135	0	985	15	0	1730	160
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	53	-	-	57
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	0	6	0	0	0	0	6	0	0	4	2
Mvmt Flow	0	0	21	0	0	141	0	1026	16	0	1802	167

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	-	-	901	-	-	513	-	0	0	-	-	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	7.02	-	-	6.9	-	-	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.36	-	-	3.3	-	-	-	-	-	-
Pot Cap-1 Maneuver	0	0	273	0	0	512	0	-	-	0	-	-
Stage 1	0	0	-	0	0	-	0	-	-	0	-	-
Stage 2	0	0	-	0	0	-	0	-	-	0	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	273	-	-	512	-	-	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	19.3		14.7		0		0	
HCM LOS	C		B					

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	WBLn1	SBT	SBR
Capacity (veh/h)	-	-	273	512	-	-
HCM Lane V/C Ratio	-	-	0.076	0.275	-	-
HCM Control Delay (s)	-	-	19.3	14.7	-	-
HCM Lane LOS	-	-	C	B	-	-
HCM 95th %tile Q(veh)	-	-	0.2	1.1	-	-

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↕↕	↕↕	↗
Traffic Vol, veh/h	0	5	0	1000	1710	40
Future Vol, veh/h	0	5	0	1000	1710	40
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	100
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	4	2	0
Mvmt Flow	0	5	0	1042	1781	42

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	-	891	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	6.9	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	3.3	-
Pot Cap-1 Maneuver	0	289	0
Stage 1	0	-	0
Stage 2	0	-	0
Platoon blocked, %			
Mov Cap-1 Maneuver	-	289	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	17.7	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	289	-	-
HCM Lane V/C Ratio	-	0.018	-	-
HCM Control Delay (s)	-	17.7	-	-
HCM Lane LOS	-	C	-	-
HCM 95th %tile Q(veh)	-	0.1	-	-

Intersection: 1: Apache Rd & Baker Rd

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	87	34
Average Queue (ft)	17	14
95th Queue (ft)	59	34
Link Distance (ft)	828	367
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 2: Cinder Butte Rd/Pocahontas Ln & Baker Rd

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	51	246	277	80
Average Queue (ft)	4	88	86	24
95th Queue (ft)	26	176	231	72
Link Distance (ft)	828	286	337	322
Upstream Blk Time (%)		0	4	
Queuing Penalty (veh)		0	0	
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Baker Ct & Baker Rd

Movement	EB	WB	NB	NB
Directions Served	TR	LT	L	R
Maximum Queue (ft)	42	137	479	334
Average Queue (ft)	4	83	339	169
95th Queue (ft)	24	164	584	504
Link Distance (ft)	286	83	498	498
Upstream Blk Time (%)		11	29	20
Queuing Penalty (veh)		106	0	0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 4: Baker Rd/Knott Rd & US 97 SB Ramp

Movement	EB	WB	WB	SB	SB
Directions Served	LT	T	R	L	R
Maximum Queue (ft)	90	73	31	425	620
Average Queue (ft)	24	5	1	149	369
95th Queue (ft)	72	42	24	431	673
Link Distance (ft)	83	758			555
Upstream Blk Time (%)	0				16
Queuing Penalty (veh)	2				112
Storage Bay Dist (ft)			150	300	
Storage Blk Time (%)		0		0	34
Queuing Penalty (veh)		0		0	27

Intersection: 5: Knott Rd & US 97 NB On Ramp

Movement	EB	WB	NB	NB
Directions Served	LT	TR	LT	R
Maximum Queue (ft)	251	8	114	78
Average Queue (ft)	92	0	43	10
95th Queue (ft)	183	5	88	48
Link Distance (ft)	758	450	573	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				300
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 6: Scale House Rd & Knott Rd

Movement	NB
Directions Served	LR
Maximum Queue (ft)	36
Average Queue (ft)	9
95th Queue (ft)	34
Link Distance (ft)	196
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 7: China Hat Rd & Knott Rd

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	95	93	78	157
Average Queue (ft)	10	10	36	64
95th Queue (ft)	51	49	67	125
Link Distance (ft)	1874	347	249	1136
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 8: China Hat Rd & Parrell Rd

Movement	EB	SB
Directions Served	L	LR
Maximum Queue (ft)	31	66
Average Queue (ft)	2	36
95th Queue (ft)	17	55
Link Distance (ft)		819
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	15	
Storage Blk Time (%)	0	
Queuing Penalty (veh)	0	

Intersection: 9: US 97 & Ponderosa St/China Hat Rd

Movement	EB	WB
Directions Served	R	R
Maximum Queue (ft)	51	100
Average Queue (ft)	15	45
95th Queue (ft)	42	80
Link Distance (ft)	934	216
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		



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Intersection: 10: US 97 & Rocking Horse Ct

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Movement	EB
Directions Served	R
Maximum Queue (ft)	31
Average Queue (ft)	5
95th Queue (ft)	22
Link Distance (ft)	428
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

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Intersection: 60: China Hat Rd & Stonegate Dr

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Movement	SW
Directions Served	LR
Maximum Queue (ft)	55
Average Queue (ft)	30
95th Queue (ft)	54
Link Distance (ft)	385
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

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Intersection: 90: US 97 SB Ramp/US 97 SB Off Ramp & US 97 On Ramp

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Movement	SW
Directions Served	T
Maximum Queue (ft)	547
Average Queue (ft)	91
95th Queue (ft)	435
Link Distance (ft)	1189
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Queuing and Blocking Report  
Existing Conditions PM

02/22/2021

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Intersection: 118: US 97

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Movement	NB	NW
Directions Served	T	R
Maximum Queue (ft)	11	31
Average Queue (ft)	1	2
95th Queue (ft)	8	16
Link Distance (ft)	1151	438
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

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Intersection: 119: US 97 & US 97 On Ramp

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Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

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Intersection: 120: US 97 & US 97 NB Off Ramp

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Movement	NB
Directions Served	R
Maximum Queue (ft)	10
Average Queue (ft)	0
95th Queue (ft)	7
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	10
Storage Blk Time (%)	0
Queuing Penalty (veh)	0

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Intersection: 153: US 97 & US 97 SB Off Ramp

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Movement	SB	SB
Directions Served	T	TR
Maximum Queue (ft)	11	60
Average Queue (ft)	0	3
95th Queue (ft)	6	26
Link Distance (ft)	3444	3444
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

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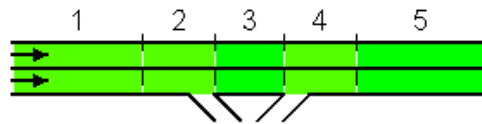
Network Summary

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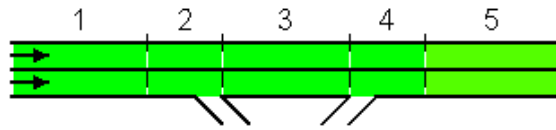
Network wide Queuing Penalty: 248

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## APPENDIX C: FREEVAL OUTPUT



Segment	Seg. 1	Seg. 2	Seg. 3	Seg. 4	Seg. 5
General Purpose Segment Data	*	*	*	*	*
General Purpose Segment Name	US 97 SB	Baker SB Off-Ramp	Baker ramp to ramp	Baker on-ramp	South of Baker
General Purpose Segment Type	Basic	Off Ramp	Basic	On Ramp	Basic
Segment Length (ft)	2,640	1,500	1,425	1,500	2,640
Free Flow Speed (mph)	65	65	65	65	65
Mainline Dem. (vph)	1,715	1715	1005	1310	1310
Mainline Single Unit Truck and Bus (%)	4.00	4.00	4.00	4.00	4.00
Mainline Tractor Trailer (%)	4.00	4.00	4.00	4.00	4.00
Acc/Dec Lane Length (ft)		200		700	
# Lanes: ONR				1	
ONR Free Flow Speed (mph)				25	
ONR/Entering Dem. (vph)				305	
ONR Single Unit Truck and Bus (%)				4.00	
ONR Tractor Trailer (%)				4.00	
# Lanes: OFR		1			
OFR Free Flow Speed (mph)		45			
OFR/Exit Dem. (vph)		710			
OFR Single Unit Truck and Bus (%)		4.00			
OFR Tractor Trailer (%)		4.00			
Processed Segment Type	Basic	Off Ramp	Basic	On Ramp	Basic
Total Density (veh/mi/ln)	13.2	17.0	7.7	11.3	10.1
Total Density (pc/mi/ln)	14.2	18.4	8.4	12.2	10.9
D/C	0.39	0.39	0.23	0.30	0.30
V/C	0.39	0.39	0.23	0.30	0.30
Density Based LOS	B	B	A	B	A
Actual Travel Time (min)	0.46	0.30	0.25	0.29	0.46
FFS Travel Time (min)	0.46	0.26	0.25	0.26	0.46
Mainline Delay (min)	0.00	0.04	0.00	0.03	0.00



Segment	Seg. 1	Seg. 2	Seg. 3	Seg. 4	Seg. 5
General Purpose Segment Data	*	*	*	*	*
General Purpose Segment Name	S of Baker	Baker off-ramp	Baker ramp to ramp	Baker On-Ramp	US 97 NB
General Purpose Segment Type	Basic	Off Ramp	Basic	On Ramp	Basic
Segment Length (ft)	2,640	1,500	2,510	1,500	2,640
Free Flow Speed (mph)	65	65	65	55	45
Mainline Dem. (vph)	830	830	650	1000	1000
Mainline Single Unit Truck and Bus (%)	4.00	4.00	4.00	4.00	4.00
Mainline Tractor Trailer (%)	4.00	4.00	4.00	4.00	4.00
Acc/Dec Lane Length (ft)		230		700	
# Lanes: ONR				1	
ONR Free Flow Speed (mph)				45	
ONR/Entering Dem. (vph)				350	
ONR Single Unit Truck and Bus (%)				4.00	
ONR Tractor Trailer (%)				4.00	
# Lanes: OFR		1			
OFR Free Flow Speed (mph)		45			
OFR/Exit Dem. (vph)		180			
OFR Single Unit Truck and Bus (%)		4.00			
OFR Tractor Trailer (%)		4.00			
Processed Segment Type	Basic	Off Ramp	Basic	On Ramp	Basic
Total Density (veh/mi/ln)	6.4	9.2	5.0	9.7	11.1
Total Density (pc/mi/ln)	6.9	9.9	5.4	10.5	12.0
D/C	0.19	0.19	0.15	0.24	0.25
V/C	0.19	0.19	0.15	0.24	0.25
Density Based LOS	A	A	A	A	B
Actual Travel Time (min)	0.46	0.30	0.44	0.33	0.67
FFS Travel Time (min)	0.46	0.26	0.44	0.31	0.67
Mainline Delay (min)	0.00	0.03	0.00	0.02	0.00

## APPENDIX D: SAFETY CALCUATIONS

00 Crash ID	01 Crash Year	02 Crash Hour	03 Crash Hour	04 Jurisdiction	05 County Name	06 Intersecting Street Name	07 Collision Type	08 Crm Cause	09 Crm Severity Detail	10 Is Hitting	11 Is Control	12 Road Flag	13 Intersection Flag	14 Date Hwy Flag	02 Crm Date	02 Crm Type	02 Crm Cause	02 Crm Severity	02 Road Surface	02 Weather	02 Road Character	03 Ped Flag	04 Alcohol Flag	04 Day Flag	05 Dmv Cause	06 Dmv Cause	
152394	2018	TA		Duchess County	BAKER RD	BAKER CT	TURN	NO-YIELD	Possible Injury	DAY	STOP SIGN	Yes	Yes	Yes	12/27/2018	ANGS-0TH	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
155225	2014	AP		Duchess County	BAKER RD	BAKER CT	TURN	NO-YIELD	Minor Injury	DAY	STOP SIGN	No	Yes	No	3/24/2014	ANGS-0TH	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
157546	2018	AP		Duchess County	BAKER RD	BAKER CT	REAR	F-AVOID	Possible Injury	DAY	STOP SIGN	Yes	Yes	Yes	6/29/2018	ANGS-0TH	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
177882	2017	5P		Duchess County			NCLN	RECKLESS	Possible Injury	DAY	UNKNOWN	Yes	No	Yes	6/19/2017	OVERLUNN	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
177912	2017	12P		Duchess County			FIX	RECEIVE	POD	DAY	UNKNOWN	Yes	No	Yes	12/28/2017	FX OBJ	FORCED	POD	NO	NO	NO	NO	NO	NO	NO	NO	NO
180028	2018	12P		Duchess County	CHINA HAT RD	KNOTT RD	FIX	STOP SIGN	Minor Injury	DAY	STOP SIGN	No	Yes	No	12/27/2018	FX OBJ	FENCE	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
180847	2018	5P		Duchess County	CHINA HAT RD	KNOTT RD	TURN	NO-YIELD	Minor Injury	DAY	STOP SIGN	No	Yes	No	6/21/2018	OS S L TURN	FORCED	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
181709	2015	3P		Duchess County	CHINA HAT RD	KNOTT RD	ANGL	PAK-STOP	POD	DAY	STOP SIGN	No	Yes	No	11/23/2015	ANGS-0TH	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
185804	2016	5P		Duchess County	BEND PKY	PONDEROSA DR	REAR	F-AVOID	Serious Injury	DAY	UNKNOWN	No	Yes	Yes	8/19/2016	S L STOP	FORCED	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
190920	2016	5A		Duchess County	BEND PKY	CHINA HAT RD	REAR	F-AVOID	POD	DAY	STOP SIGN	No	Yes	No	5/19/2016	S L STOP	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
191461	2016	5A		Duchess County	BEND PKY	CHINA HAT RD	REAR	F-AVOID	POD	DAY	STOP SIGN	No	Yes	No	5/19/2016	ANGS-0TH	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
190481	2016	5P		Duchess County	BAKER RD	BAKER CT	TURN	NO-YIELD	POD	DAY	STOP SIGN	No	Yes	No	5/19/2016	ANGS-0TH	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
197005	2017	1A		Duchess County	BAKER RD	KNOTT RD	REAR	F-AVOID	Minor Injury	DAY	STOP SIGN	No	Yes	No	10/20/2017	ANGS-0TH	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
176747	2017	5P		Duchess County	BAKER RD	BAKER CT	REAR	F-AVOID	POD	DAY	UNKNOWN	No	Yes	No	9/15/2017	S L STOP	POD	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
173888	2017	5P		Duchess County	CHINA HAT RD	KNOTT RD	SE-CT	IMP-TURN	POD	DAY	UNKNOWN	NO	Yes	Yes	10/29/2017	FX OBJ	FORCED	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
167196	2015	8P		Duchess County			HEAD	ILLNESS	Minor Injury	DLIT	ONE WAY	NO	Yes	Yes	5/14/2015	OS S L STOP	EDP WORK	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
190826	2018	4P		Duchess County	KNOTT RD		REAR	F-AVOID	Possible Injury	DAY	STOP SIGN	No	Yes	No	7/20/2018	S L STOP	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
181606	2018	12P		Duchess County			OTH	OTHER	DARK	UNKNOWN	NO	Yes	No	Yes	11/11/2018	ANIMAL	DEER ELA	POD	NO	NO	NO	NO	NO	NO	NO	NO	NO
184280	2018	10P		Duchess County			OTH	LOADSHIFT	POD	DARK	UNKNOWN	No	Yes	No	12/29/2018	S L STOP	LOAD SHIFT	POD	NO	NO	NO	NO	NO	NO	NO	NO	NO
179456	2017	13P		Duchess County	BEND PKY	CHINA HAT RD	REAR	F-AVOID	POD	DAY	STOP SIGN	Yes	Yes	Yes	10/17/2017	S L STOP	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
164377	2015	4P		Duchess County	BAKER RD	BAKER CT	REAR	IMP-TURN	POD	DAY	STOP SIGN	No	Yes	No	12/28/2015	OS S L TURN	POD	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
174470	2016	6P		Duchess County	KNOTT RD	CHINA HAT RD	SE-AM	CAR LEFT	POD	DLUK	UNKNOWN	No	Yes	No	12/19/2016	S L STOP	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
187460	2016	6P		Duchess County	KNOTT RD	CHINA HAT RD	REAR	STOP SIGN	Possible Injury	DAY	STOP SIGN	No	Yes	No	12/19/2016	OS S L TURN	FORCED	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
179922	2017	5P		Duchess County	BAKER RD	BAKER CT	REAR	NO-YIELD	Minor Injury	DARK	STOP SIGN	No	Yes	No	3/4/2017	OS S L TURN	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
172586	2017	1A		Duchess County	BAKER RD	KNOTT RD	REAR	STOP SIGN	Possible Injury	DAY	STOP SIGN	No	Yes	No	4/26/2017	S L STOP	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
172675	2017	10A		Duchess County	CHINA HAT RD	KNOTT RD	REAR	STOP SIGN	Possible Injury	DAY	STOP SIGN	No	Yes	No	5/20/2017	S L STOP	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
179927	2018	4P		Duchess County	CROSBY BUTTE RD		TURN	NO-YIELD	Minor Injury	DAY	STOP SIGN	No	Yes	No	8/20/2018	ANGS-0TH	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
174794	2017	1A		Duchess County	BAKER CT	BAKER CT	SE-AM	LEFT-CTR	Possible Injury	DAY	UNKNOWN	No	Yes	No	2/27/2017	OS S L STOP	WINDOW HD	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
172746	2017	1A		Duchess County	CHINA HAT RD	KNOTT RD	ANGL	NO-YIELD	Minor Injury	DAY	STOP SIGN	No	Yes	No	6/19/2017	ANGS-0TH	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
187180	2016	4P		Duchess County	BAKER RD	CROSBY BUTTE RD	TURN	NO-YIELD	Possible Injury	DAY	STOP SIGN	No	Yes	No	7/20/2016	OS S L TURN	FORCED	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
162413	2018	4A		Duchess County			FIX	FATIGUE	POD	DARK	NO ONE	Yes	Yes	Yes	7/15/2018	FX OBJ	BOULDER	POD	NO	NO	NO	NO	NO	NO	NO	NO	NO
183836	2018	4P		Duchess County			REAR	INATTENT	Possible Injury	DAY	STOP SIGN	No	Yes	No	6/27/2018	S L STOP	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
193566	2014	5P		Duchess County			REAR	STOP SIGN	POD	DAY	STOP SIGN	No	Yes	Yes	8/20/2014	S L STOP	POD	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
184648	2018	4P		Duchess County	BAKER RD	CROSBY BUTTE RD	REAR	CARELESS	Possible Injury	DAY	STOP SIGN	No	Yes	No	4/26/2018	S L STOP	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
190397	2016	4P		Duchess County			REAR	CARELESS	POD	DAY	STOP SIGN	No	Yes	Yes	8/10/2016	S L STOP	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
182243	2018	6P		Duchess County	BAKER RD	CROSBY BUTTE RD	TURN	NO-YIELD	POD	DARK	STOP SIGN	No	Yes	No	10/27/2018	OS S L TURN	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
182791	2018	5A		Duchess County	BAKER RD	BAKER CT	REAR	STOP SIGN	Possible Injury	DAY	STOP SIGN	No	Yes	No	10/26/2018	ANGS-0TH	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
173187	2017	5P		Duchess County			REAR	STOP FAST	Possible Injury	DAY	ACCEL LANE	Yes	Yes	Yes	7/29/2017	S L STOP	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
173780	2017	10A		Duchess County			HEAD	RECKLESS	Possible Injury	DAY	STOP SIGN	Yes	Yes	Yes	11/27/2017	ANGS-0TH	SUPPERY	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
171771	2017	1A		Duchess County	CHINA HAT RD	KNOTT RD	TURN	NO-YIELD	Possible Injury	DAY	STOP SIGN	No	Yes	No	12/1/2017	ANGS-0TH	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
178936	2017	8A		Duchess County	KNOTT RD	SCALO HOUSE RD	TURN	F-AVOID	Possible Injury	DAY	STOP SIGN	No	Yes	No	7/26/2017	S L STOP	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
184161	2016	8A		Duchess County	KNOTT RD	SCALO HOUSE RD	TURN	RECKLESS	Possible Injury	DAY	STOP SIGN	No	Yes	No	6/27/2016	S L STOP	FORCED	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
164274	2015	1A		Duchess County	KNOTT RD		TURN	STOP SIGN	Possible Injury	DAY	UNKNOWN	No	Yes	No	11/26/2015	S L STOP	POD	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
187895	2015	1A		Duchess County	BAKER RD	BAKER CT	REAR	STOP SIGN	Possible Injury	DAY	STOP SIGN	No	Yes	No	12/22/2015	S L STOP	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
187348	2016	4P		Duchess County			TURN	NO-YIELD	Minor Injury	DAY	STOP SIGN	No	Yes	Yes	7/17/2016	OS S L TURN	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
171725	2017	10A		Duchess County			FIX	SPEED	POD	DAY	STOP SIGN	Yes	Yes	Yes	7/17/2017	FX OBJ	DITCH	POD	NO	NO	NO	NO	NO	NO	NO	NO	NO
198589	2018	5P		Duchess County	BAKER RD	BAKER CT	TURN	NO-YIELD	Possible Injury	DAY	STOP SIGN	No	Yes	No	5/4/2018	ANGS-0TH	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
179078	2018	1A		Duchess County	BAKER RD	BAKER CT	REAR	INATTENT	Minor Injury	DAY	STOP SIGN	No	Yes	Yes	7/30/2018	S L STOP	FORCED	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
182662	2018	8A		Duchess County	KNOTT RD	CHINA HAT RD	TURN	STOP FAST	Possible Injury	DAY	STOP SIGN	No	Yes	No	8/26/2018	ANGS-0TH	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
182655	2016	8A		Duchess County	BAKER RD	BAKER CT	TURN	SPEED	Possible Injury	DAY	STOP SIGN	No	Yes	No	2/29/2016	S L STOP	SUPPERY	NO	NO	NO	NO	NO	NO	NO	NO	NO	
174625	2017	10A		Duchess County	BAKER RD	BAKER CT	TURN	STOP SIGN	Possible Injury	DAY	STOP SIGN	No	Yes	No	12/29/2017	ANGS-0TH	SUPPERY	NO	NO	NO	NO	NO	NO	NO	NO	NO	
197741	2018	4P		Duchess County	BEND PKY	CHINA HAT RD	TURN	IMP-TURN	Possible Injury	DAY	STOP SIGN	No	Yes	No	12/28/2018	ANGS-0TH	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
175744	2016	5P		Duchess County	BAKER RD	PONDEROSA DR	REAR	IMP-TURN	Possible Injury	DAY	STOP SIGN	No	Yes	Yes	12/28/2016	ANGS-0TH	SUPPERY</										





