

# DATA COLLECTION REPORT

## PHASE 2

PREPARED FOR



PREPARED BY





Dear Open Streets Corvallis Team,

The Oregon State University (OSU) Institute of Transportation Engineers (ITE) Student Chapter is pleased to present Phase 2 of the Spot Speed Study and Turning Movement Counts (TMC) study conducted for the 2023 Open Streets Corvallis Demonstration Project at SW 11th St & SW Washington Ave.

Upon request of the City of Corvallis, a follow up TMC Study and Spot Speed Study was performed twice during Fall 2023. The City of Corvallis is interested in knowing the volume/speed of vehicles as well as volume of bicycles/pedestrians on this corridor during the school year to be able to compare data collected during the Fall with data collected during the Summer given that this corridor is designated as a Neighborhood Bikeway.

Attached is a summary of our data and results from the study. All spreadsheets used during data collection are included in the appendix.

If you have any questions or concerns, please feel free to contact us at [osuitestudents@gmail.com](mailto:osuitestudents@gmail.com).

Sincerely,

OSU ITE Student Chapter

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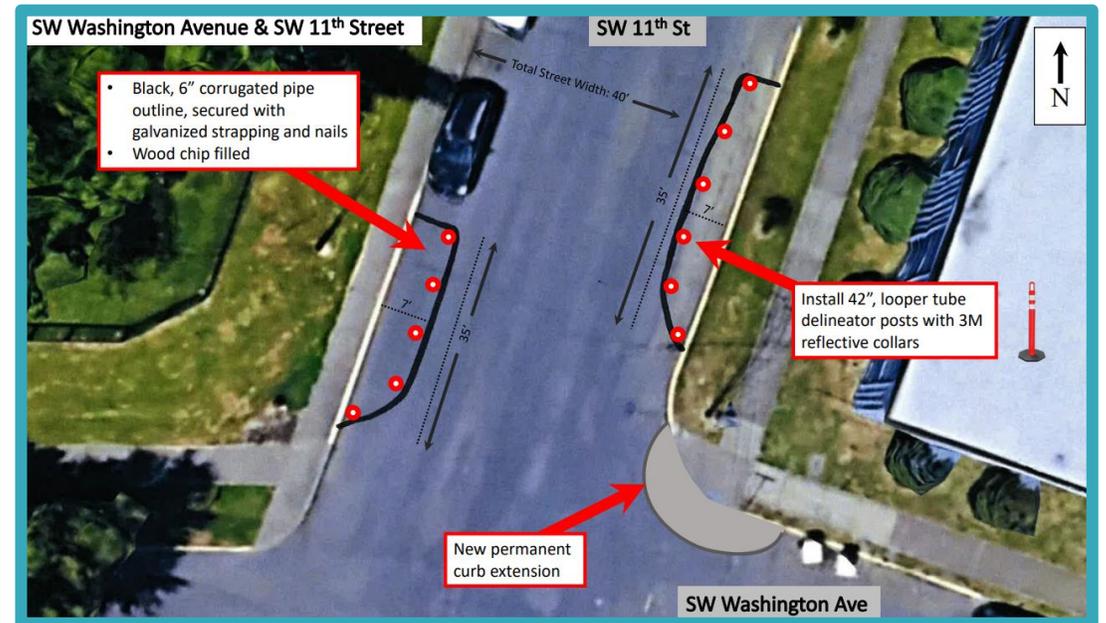
## **8. Appendices**

Appendix A

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# 1 PROJECT BACKGROUND

Temporary curb extensions were installed on the northwest and northeast faces of 11th street from August 18th through September 1st for the 2023 Open Streets Corvallis Demonstration Project.



This was a great opportunity for the OSU ITE Student Chapter to perform a before and after study of the traffic speeds, volumes, and turning movements at this intersection, with and without the curb extensions.

# NEIGHBORHOOD BIKEWAY DEMONSTRATION

AUGUST 18 - SEPTEMBER 1

From August 18 to September 1, Open Streets Corvallis will demonstrate features of a Neighborhood Bikeway along 11th Street.

## WHAT IS A NEIGHBORHOOD BIKEWAY?

Neighborhood Bikeways are low volume, local streets that are comfortable for bicyclists of all ages and abilities. The Neighborhood Bikeway design standards outline improvements that would slow vehicles down and encourage new cyclists. 11th Street is a future Neighborhood Bikeway and the treatments you experience along the route are a snapshot of what could exist on a Neighborhood Bikeway corridor.

## WHAT YOU'LL SEE:



- 1. A curb extension increases pedestrian visibility to drivers and promotes slower, safer vehicle turning movements. It also shortens the travel distance and provides a waiting space for pedestrians.
- 2. Sharrow indicates to people on bikes that they are welcome and alerts motorists that a higher volume of cyclists may be present.
- 3. Future site of a speed hump. The demonstration will show chevron markings to represent a speed hump.

## COMMENTS ABOUT THE DEMONSTRATION?

Contact Josh Capar, City of Corvallis Active Transportation Program Specialist, at [josh.capar@corvallisoregon.gov](mailto:josh.capar@corvallisoregon.gov). More information on Neighborhood Bikeways is available by using the search function at [corvallisoregon.gov](http://corvallisoregon.gov).



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# PROJECT TEAM

## STUDENT VOLUNTEERS



Elsa Moreno Rangel



Shoroq Alabdali



Sarah Carr



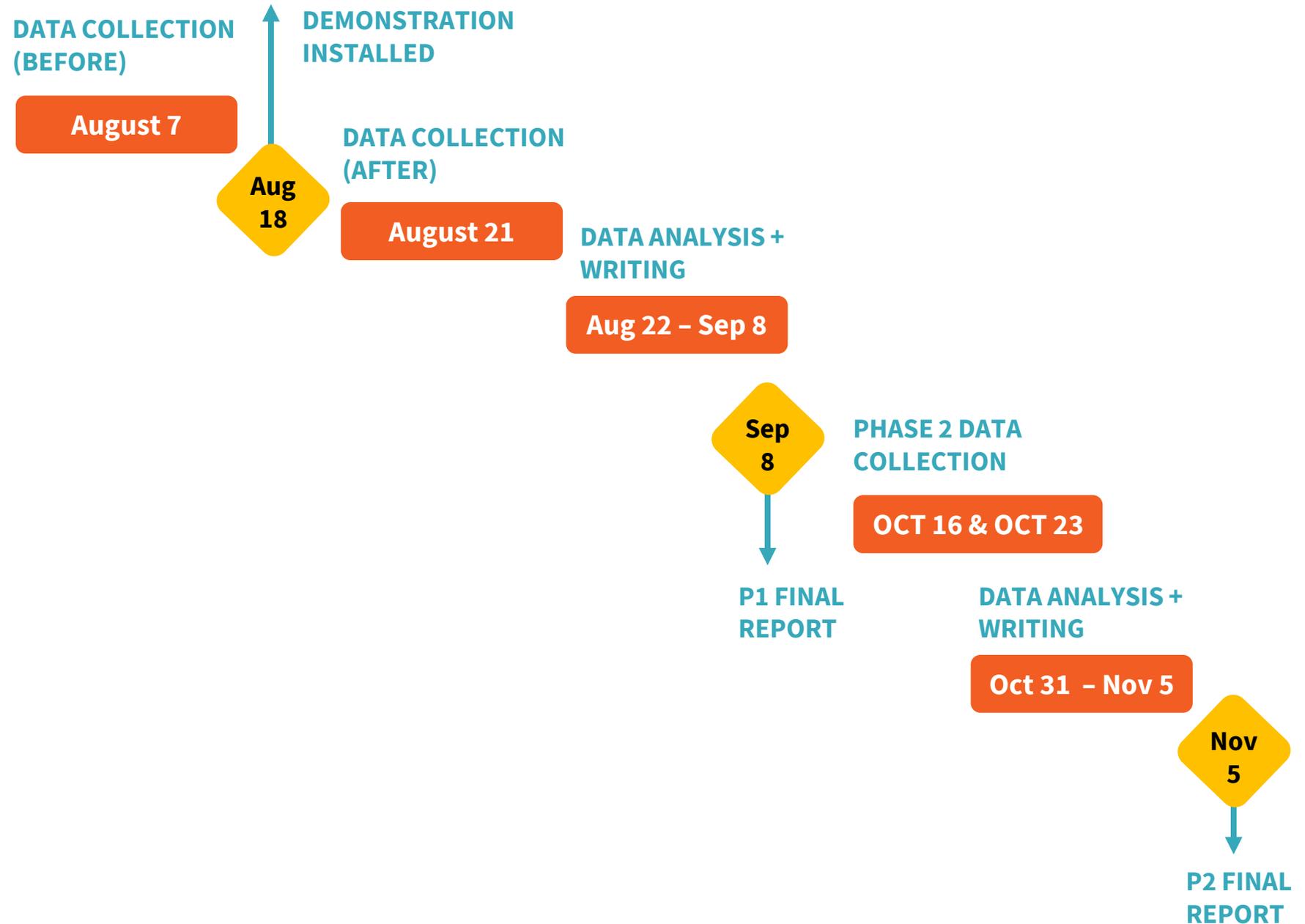
Amy Wyman



Emilio Calderon

3

# PROJECT TIMELINE



# 4

## METHODOLOGY

### #1 - Spot Speed Study

For the spot speed study, we collected speeds from passenger cars, bicycles, heavy vehicles, and buses along 11th Street for both the AM Period and the PM Period using the spreadsheet attached in Appendix A.

### #2 – Turning Movement Counts (TMC) Study

For the TMC study, we collected turning movements from passenger cars, heavy vehicles, buses, bicycles, and pedestrians in all four approaches of the intersection (11th St & Washington Ave) using the spreadsheet attached in Appendix B.



**Figure 1 – Study Site**



**RESULTS**

**5.1**

**SPOT SPEED STUDY**

# SPOT SPEED STUDY – DATA COLLECTION SETUP

FIGURE 2 - ALONG (11<sup>TH</sup> STREET)



To record the speed of each vehicle, we measured the distance between the reference points shown in Figure 2 and typed this value on the “distance” column of the spreadsheet shown in Appendix A.

We decided not to use a speed gun during data collection to avoid influencing user behavior. Instead, we timed each user from the moment the front of their vehicle arrived at the first reference point until the back of the vehicle departed from the second reference point using a stopwatch.

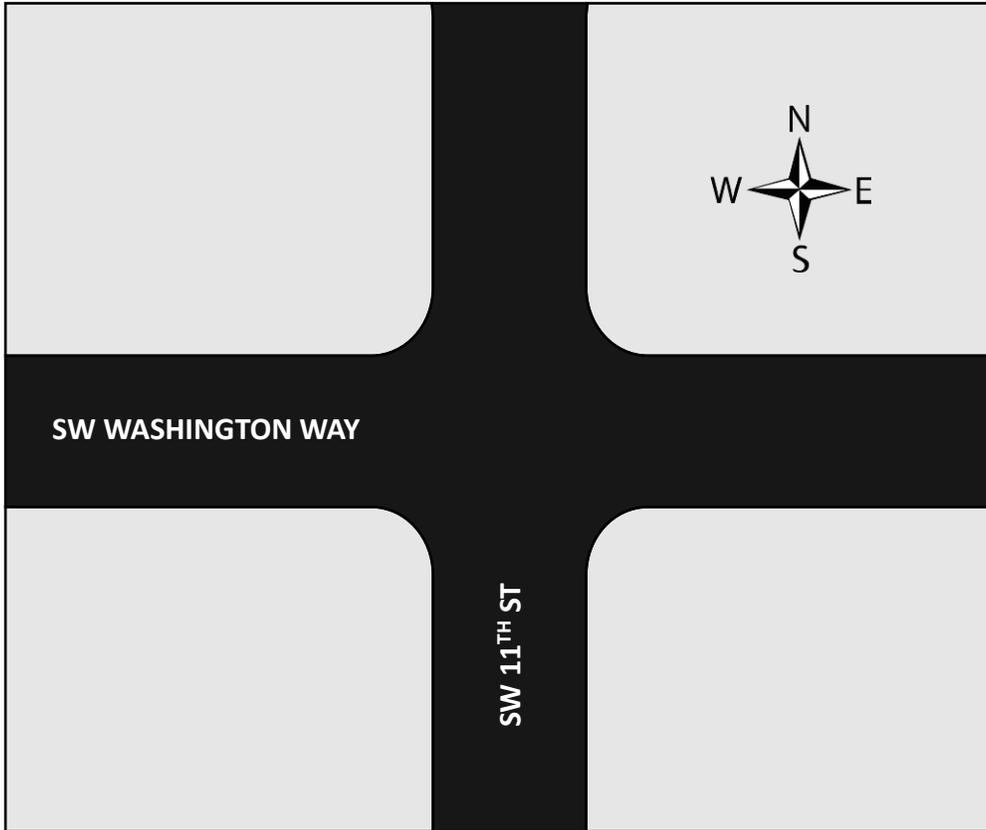
We obtained our field results in seconds, which we then converted into speed in “MPH” by using the following formula:

$$\text{Speed} = \text{distance travelled} / \text{time elapsed}$$

**Limitations:** For (PM period): Before & After data was collected by 2 different volunteers. It is likely that the method used by one volunteer was a bit different than the other. For example, one volunteer could have recorded the arrival or departure time too soon or too late, which resulted in our average speed being slower or faster than what was really happening in the field. Therefore, speed results for the **Before & After PM Period** may not reflect actual field conditions, and thus accurate comparison of Before & After speed data for the (PM period) cannot be made.

However, both the Before & After speed data for the AM period was collected by the same volunteer, and therefore, a more reliable comparison can be made for the **Before & After speed data from the AM period**.

# SPOT SPEED STUDY – PASSENGER CARS



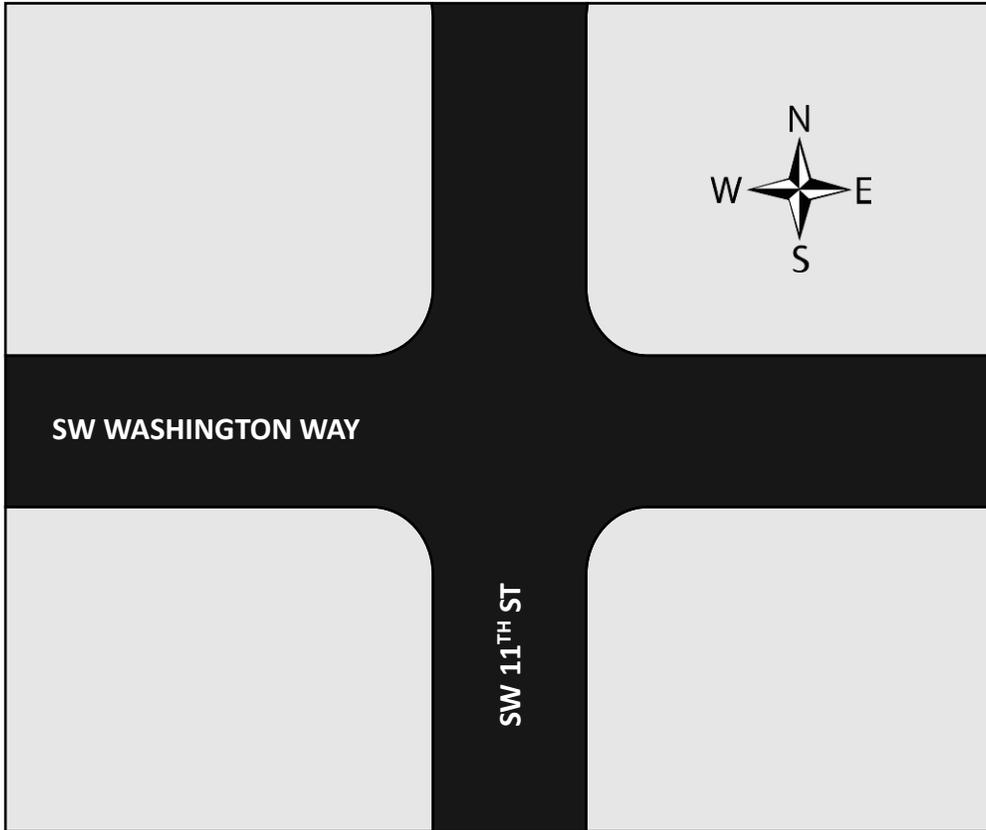
OCTOBER 16	
<b>AM PERIOD</b>	
130 OBSERVATIONS	AVERAGE SPEED
<b>FROM NORTH</b>	<b>23.5 MPH</b>
70 OBSERVATIONS	AVERAGE SPEED
<b>FROM SOUTH</b>	<b>20.8 MPH</b>
<b>PM PERIOD</b>	
108 OBSERVATIONS	AVERAGE SPEED
<b>FROM NORTH</b>	<b>23.3 MPH</b>
88 OBSERVATIONS	AVERAGE SPEED
<b>FROM SOUTH</b>	<b>20.4 MPH</b>

OCTOBER 23	
<b>AM PERIOD</b>	
98 OBSERVATIONS	AVERAGE SPEED
<b>FROM NORTH</b>	<b>27.0 MPH</b>
91 OBSERVATIONS	AVERAGE SPEED
<b>FROM SOUTH</b>	<b>24.0 MPH</b>
<b>PM PERIOD</b>	
154 OBSERVATIONS	AVERAGE SPEED
<b>FROM NORTH</b>	<b>22.9 MPH</b>
206 OBSERVATIONS	AVERAGE SPEED
<b>FROM SOUTH</b>	<b>21.3 MPH</b>

<b>OBSERVATIONS</b>	N/A
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<b>LIMITATIONS</b>	N/A
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# SPOT SPEED STUDY – BICYCLES



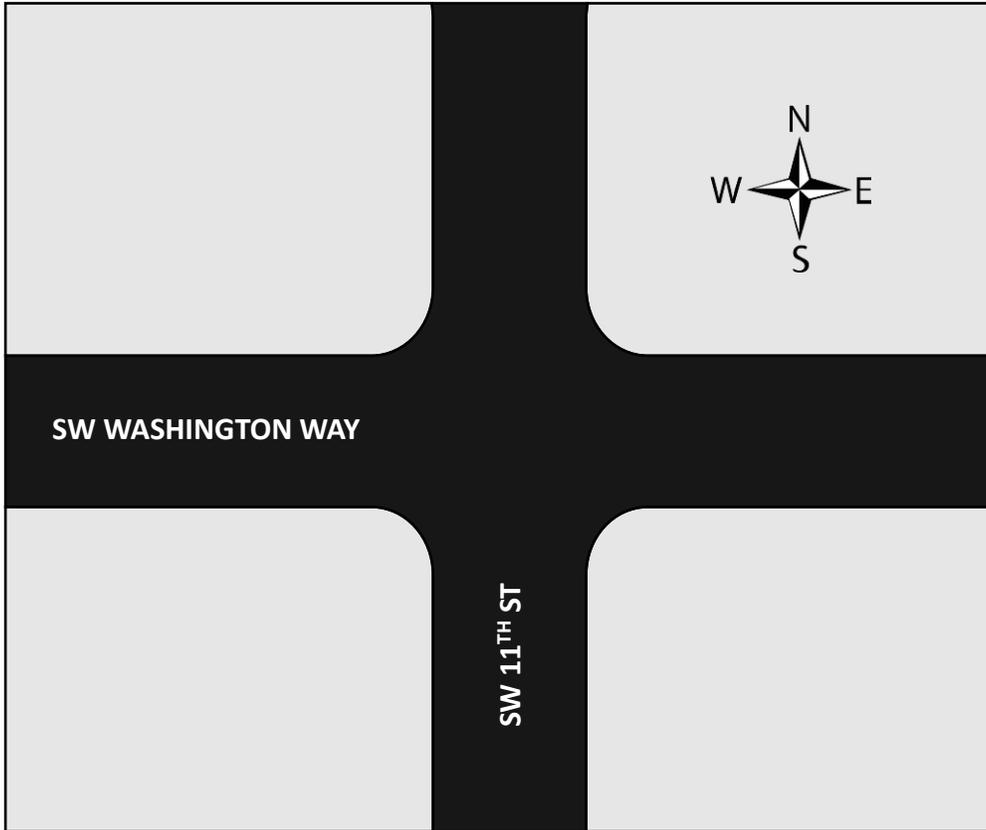
OCTOBER 16	
<b>AM PERIOD</b>	
4 OBSERVATIONS	AVERAGE SPEED
<b>FROM NORTH</b>	<b>18.0 MPH</b>
12 OBSERVATIONS	AVERAGE SPEED
<b>FROM SOUTH</b>	<b>13.5 MPH</b>
<b>PM PERIOD</b>	
14 OBSERVATIONS	AVERAGE SPEED
<b>FROM NORTH</b>	<b>16.2 MPH</b>
20 OBSERVATIONS	AVERAGE SPEED
<b>FROM SOUTH</b>	<b>15.7 MPH</b>

OCTOBER 23	
<b>AM PERIOD</b>	
4 OBSERVATIONS	AVERAGE SPEED
<b>FROM NORTH</b>	<b>17.3 MPH</b>
18 OBSERVATIONS	AVERAGE SPEED
<b>FROM SOUTH</b>	<b>16.2 MPH</b>
<b>PM PERIOD</b>	
12 OBSERVATIONS	AVERAGE SPEED
<b>FROM NORTH</b>	<b>16.7 MPH</b>
19 OBSERVATIONS	AVERAGE SPEED
<b>FROM SOUTH</b>	<b>15.3 MPH</b>

<b>OBSERVATIONS</b>	N/A
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<b>LIMITATIONS</b>	N/A
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# SPOT SPEED STUDY – HEAVY VEHICLES



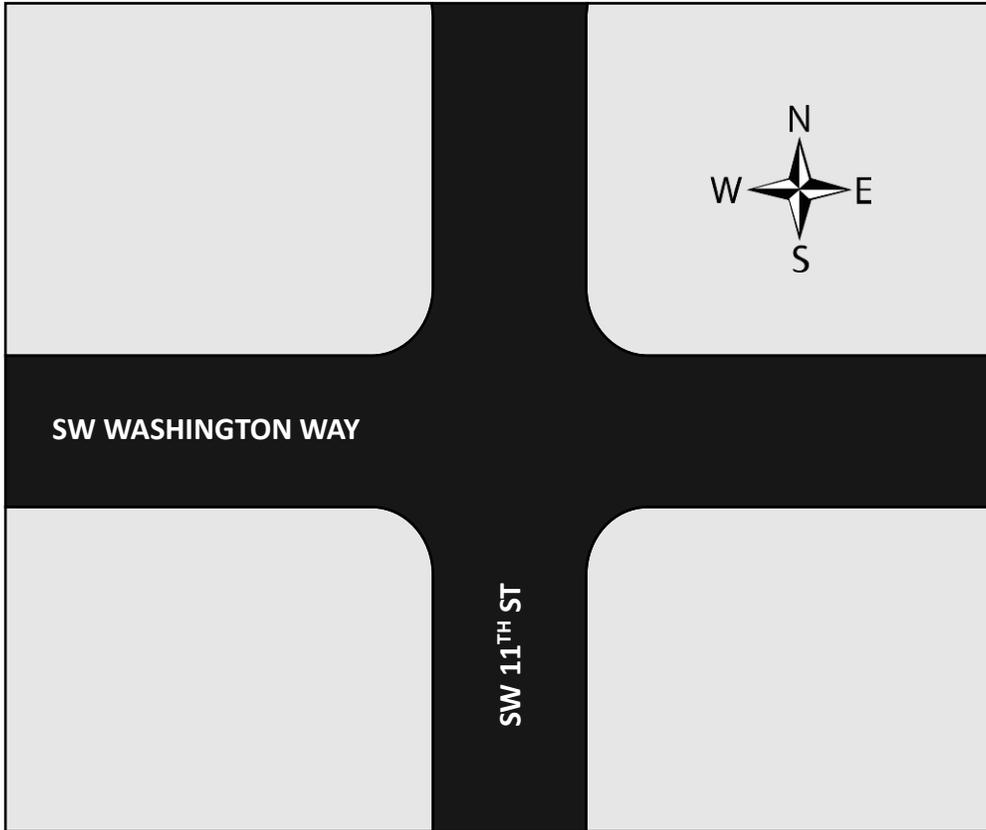
OCTOBER 16	
<b>AM PERIOD</b>	
3 OBSERVATIONS	AVERAGE SPEED
<b>FROM NORTH</b>	<b>11.5 MPH</b>
1 OBSERVATIONS	AVERAGE SPEED
<b>FROM SOUTH</b>	<b>10.7 MPH</b>
<b>PM PERIOD</b>	
1 OBSERVATIONS	AVERAGE SPEED
<b>FROM NORTH</b>	<b>17.4</b>
0 OBSERVATIONS	AVERAGE SPEED
<b>FROM SOUTH</b>	<b>N/A</b>

OCTOBER 23	
<b>AM PERIOD</b>	
1 OBSERVATIONS	AVERAGE SPEED
<b>FROM NORTH</b>	<b>19.8 MPH</b>
0 OBSERVATIONS	AVERAGE SPEED
<b>FROM SOUTH</b>	<b>N/A</b>
<b>PM PERIOD</b>	
1 OBSERVATIONS	AVERAGE SPEED
<b>FROM NORTH</b>	<b>10.3 MPH</b>
0 OBSERVATIONS	AVERAGE SPEED
<b>FROM SOUTH</b>	<b>N/A</b>

<b>OBSERVATIONS</b>	N/A
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<b>LIMITATIONS</b>	N/A
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# SPOT SPEED STUDY – BUS



## OCTOBER 16

### AM PERIOD

1 OBSERVATIONS      AVERAGE SPEED

**FROM NORTH**      **17.0**

0 OBSERVATIONS      AVERAGE SPEED

**FROM SOUTH**      **N/A**

### PM PERIOD

0 OBSERVATIONS      AVERAGE SPEED

**FROM NORTH**      **N/A**

0 OBSERVATIONS      AVERAGE SPEED

**FROM SOUTH**      **N/A**

## OCTOBER 23

### AM PERIOD

1 OBSERVATIONS      AVERAGE SPEED

**FROM NORTH**      **17.4**

0 OBSERVATIONS      AVERAGE SPEED

**FROM SOUTH**      **N/A**

### PM PERIOD

0 OBSERVATIONS      AVERAGE SPEED

**FROM NORTH**      **N/A**

0 OBSERVATIONS      AVERAGE SPEED

**FROM SOUTH**      **N/A**

**OBSERVATIONS**      N/A

**LIMITATIONS**      N.A

**5.2**

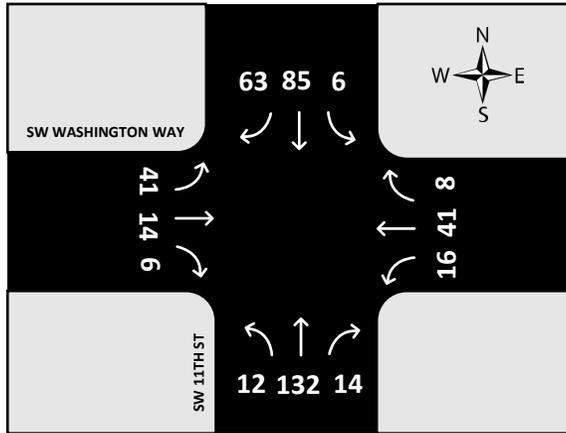
**TURNING MOVEMENT COUNTS  
(TMC) STUDY**

# TMC STUDY – PASSENGER CARS

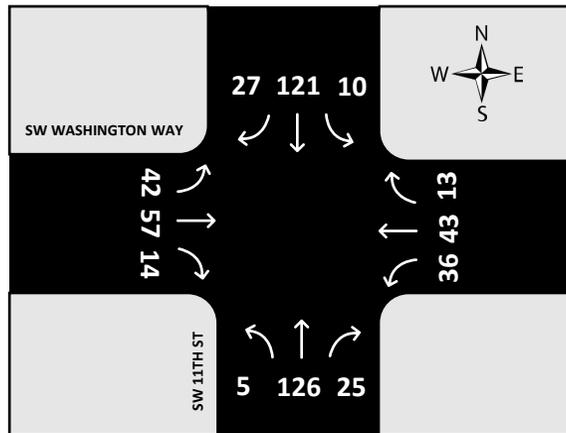
NUMBERS REPRESENT THE SUM OF TURNING MOVEMENTS IN THE FULL 2 HOURS OF EACH AM & PM PERIOD.

OCTOBER 16

## AM PERIOD | 7 AM-9 AM

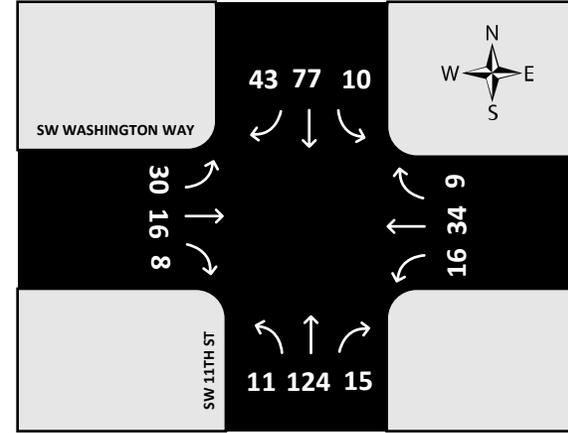


## PM PERIOD | 12 PM-2 PM

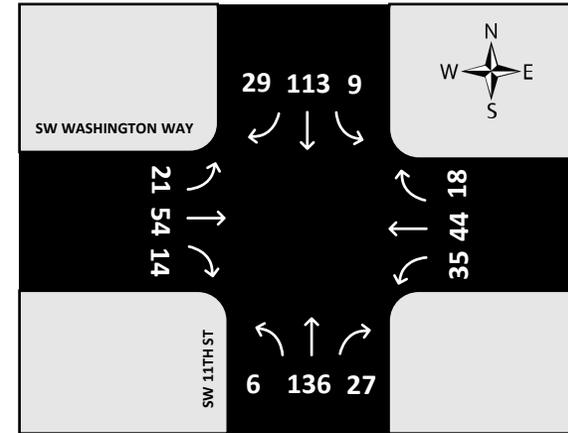


OCTOBER 23

## AM PERIOD | 7 AM-9 AM



## PM PERIOD | 12 PM-2 PM

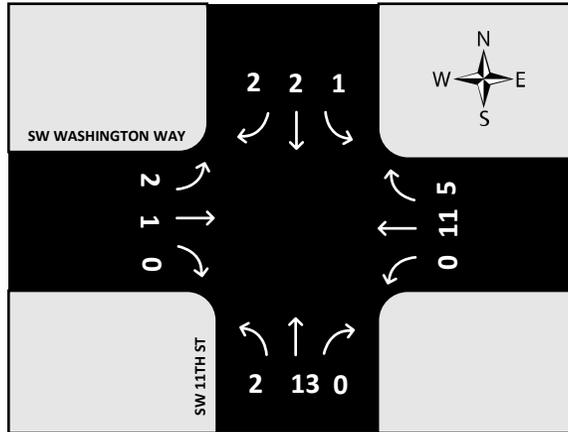


# TMC STUDY – BICYCLES

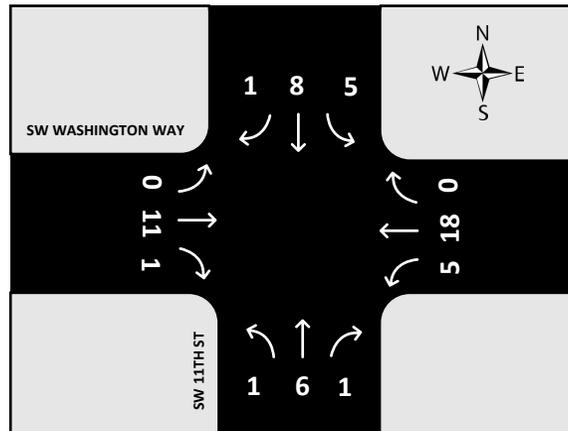
NUMBERS REPRESENT THE SUM OF TURNING MOVEMENTS IN THE FULL 2 HOURS OF EACH AM & PM PERIOD.

OCTOBER 16

## AM PERIOD | 7 AM-9 AM

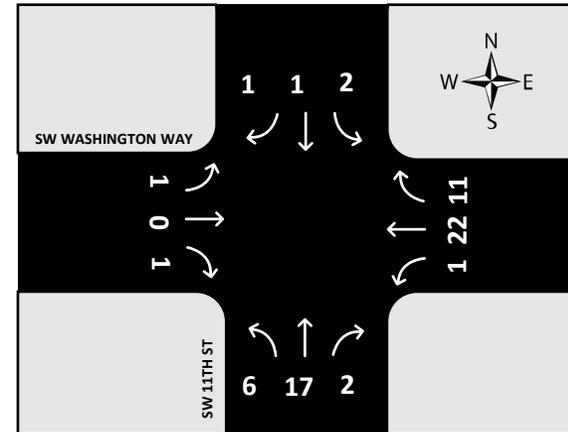


## PM PERIOD | 12 PM-2 PM

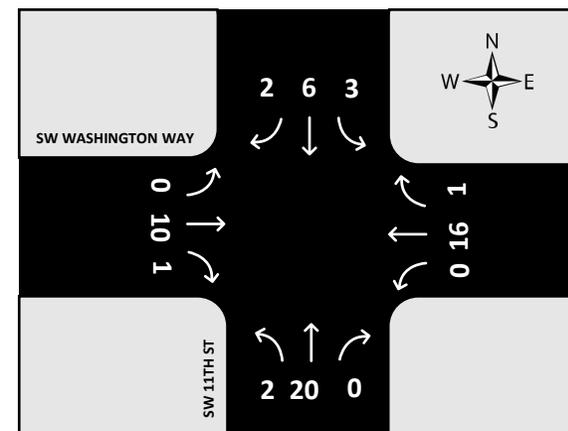


OCTOBER 23

## AM PERIOD | 7 AM-9 AM



## PM PERIOD | 12 PM-2 PM

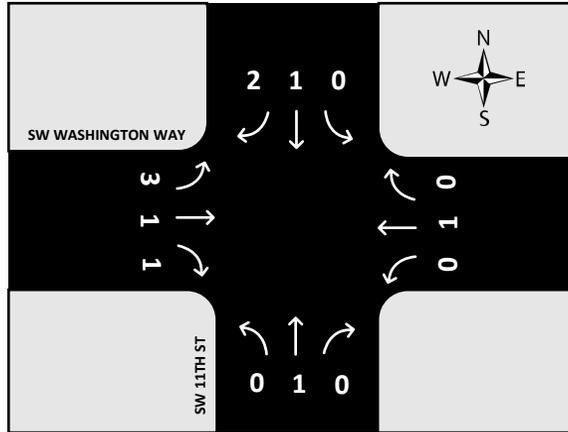


# TMC STUDY – HEAVY VEHICLES

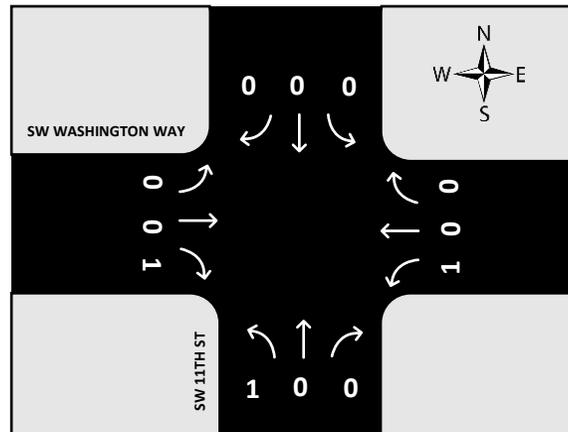
NUMBERS REPRESENT THE SUM OF TURNING MOVEMENTS IN THE FULL 2 HOURS OF EACH AM & PM PERIOD.

OCTOBER 16

## AM PERIOD | 7 AM-9 AM

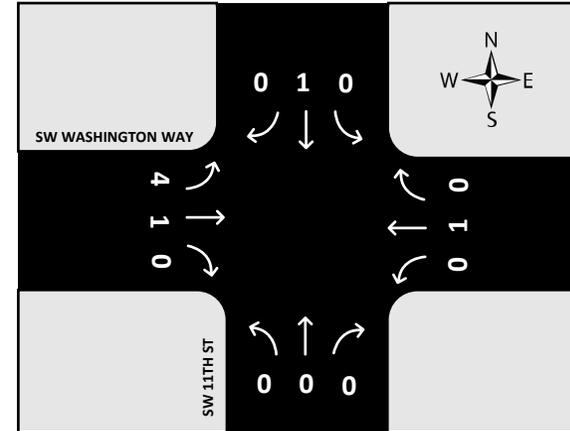


## PM PERIOD | 12 PM-2 PM

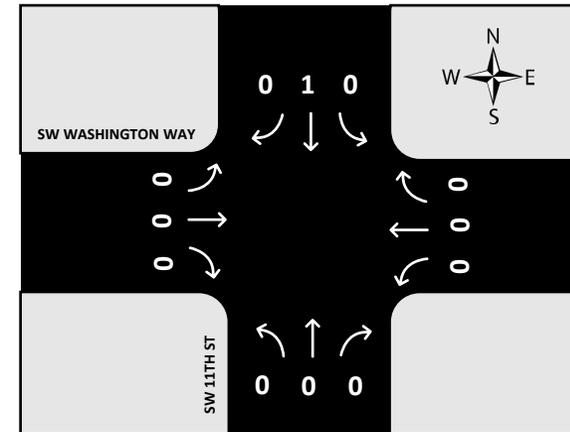


OCTOBER 23

## AM PERIOD | 7 AM-9 AM



## PM PERIOD | 12 PM-2 PM

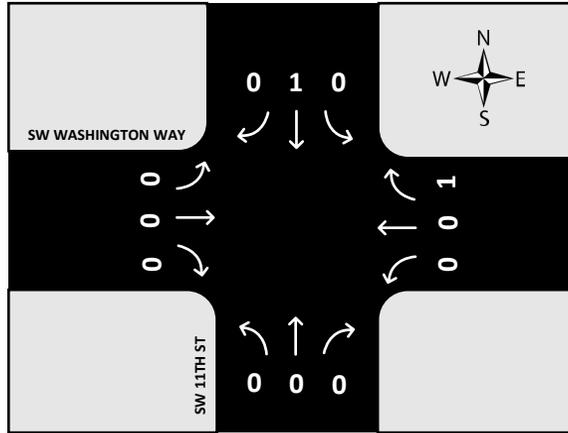


# TMC STUDY – BUS

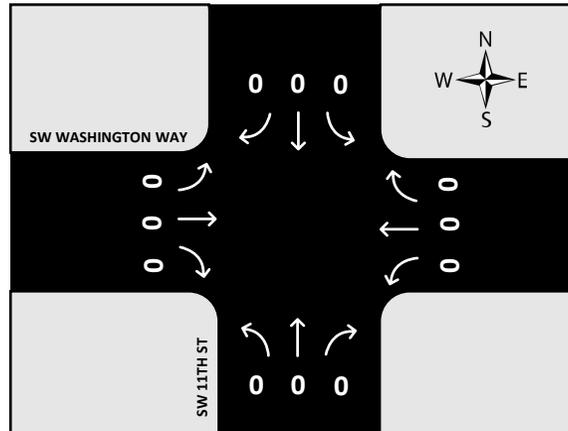
NUMBERS REPRESENT THE SUM OF TURNING MOVEMENTS IN THE FULL 2 HOURS OF EACH AM & PM PERIOD.

OCTOBER 16

## AM PERIOD | 7 AM-9 AM

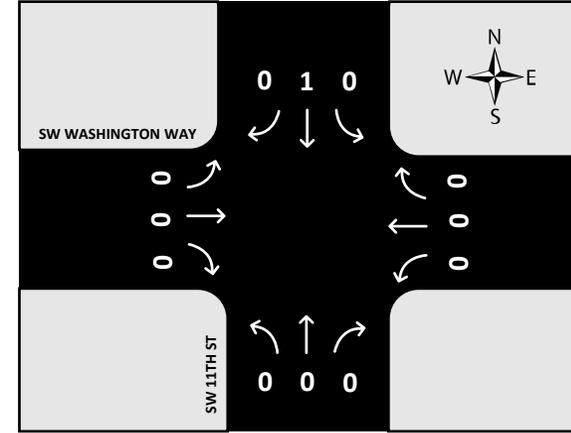


## PM PERIOD | 12 PM-2 PM

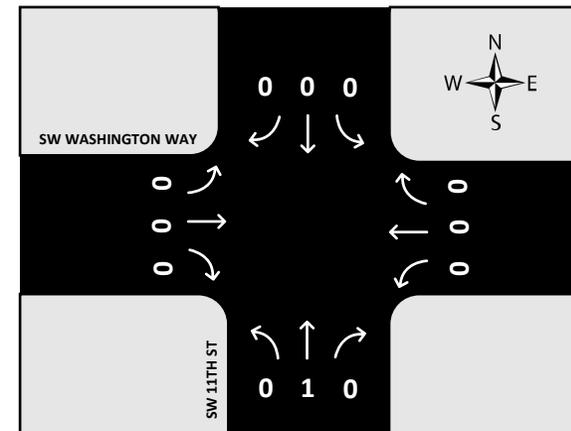


OCTOBER 23

## AM PERIOD | 7 AM-9 AM



## PM PERIOD | 12 PM-2 PM

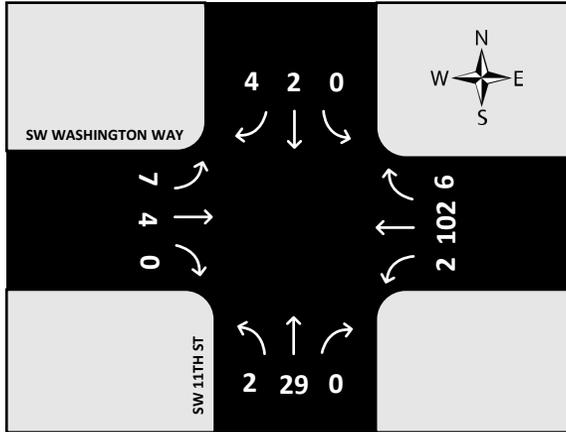


# TMC STUDY – PEDESTRIANS

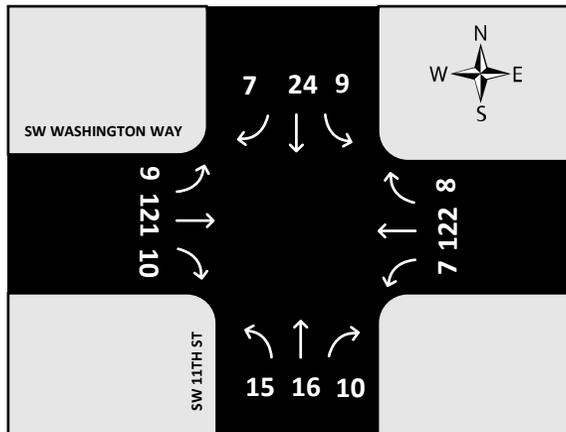
NUMBERS REPRESENT THE SUM OF TURNING MOVEMENTS IN THE FULL 2 HOURS OF EACH AM & PM PERIOD.

OCTOBER 16

## AM PERIOD | 7 AM-9 AM

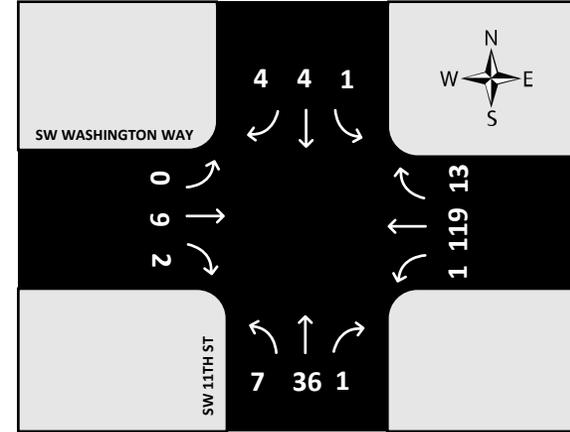


## PM PERIOD | 12 PM-2 PM

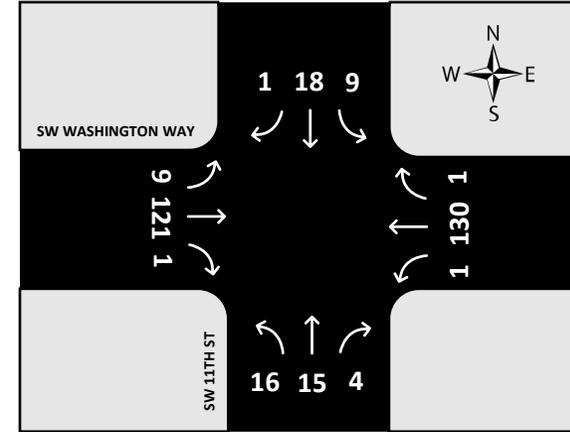


OCTOBER 23

## AM PERIOD | 7 AM-9 AM



## PM PERIOD | 12 PM-2 PM



# 6

## CONCLUSION

This report shows the results obtained from the Spot Speed Study and Turning Movement Counts (TMC) study conducted for the 2023 Open Streets Corvallis Demonstration Project at SW 11th St & SW Washington Ave.

This data contains information regarding the speeds and volumes experienced at the intersection during the Fall 2023 academic year.

Attached in the appendix are the spreadsheets containing the data collected. Appendix A shows the data from the Spot Speed Study and Appendix B shows the data from the Turning Movement Counts (TMC) study.

**Limitations of the data:** Passenger cars were the most common vehicle type in the study, and therefore, it is easier to compare data more accurately than other vehicle types with fewer observations.

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## ACKNOWLEDGEMENTS

The OSU ITE Student Chapter would like to thank our faculty advisor and mentor, Dr. David Hurwitz, for providing us with technical guidance for data collection procedures and overall project success.

We would also like to thank OSU Transportation Services and the City of Corvallis for inviting our student chapter to volunteer with data collection at this year's Open Streets Corvallis Demonstration Project and for providing our students with this wonderful technical experience opportunity.



**APENDICES**



# APENDIX A

# **SPOT SPEED STUDY**

**"OCTOBER 16"  
(AM & PM PERIODS)**

# OCTOBER 16 (AM & PM PERIODS) FROM NORTH

SPOT SPEED STUDY   AFTER - AM PERIOD (7-9 AM)   FROM NORTH					
Observation number	Distance between reference points (obtain from field)	Date	Time that it took the vehicle to pass along the reference points.	Speed obtained from $v = d/t$	Passenger car, heavy vehicle, bus, ped, bike
#	DISTANCE (ft)	DATE	TRAVEL TIME (seconds)	SPEED (mph)	VEHICLE TYPE
1	45	10/16/2023	1.10	27.9	Passenger Car
2	45	10/16/2023	1.03	29.8	Passenger Car
3	45	10/16/2023	1.18	26.0	Passenger Car
4	45	10/16/2023	1.28	24.0	Passenger Car
5	45	10/16/2023	1.33	23.1	Passenger Car
6	45	10/16/2023	1.15	26.7	Passenger Car
7	45	10/16/2023	1.26	24.3	Passenger Car
8	45	10/16/2023	1.15	26.7	Passenger Car
9	45	10/16/2023	1.17	26.2	Passenger Car
10	45	10/16/2023	1.80	17.0	Bus
11	45	10/16/2023	1.21	25.4	Passenger Car
12	45	10/16/2023	2.81	10.9	Passenger Car
13	45	10/16/2023	1.43	21.5	Passenger Car
14	45	10/16/2023	0.95	32.3	Passenger Car
15	45	10/16/2023	1.23	24.9	Passenger Car
16	45	10/16/2023	0.71	43.2	Passenger Car
17	45	10/16/2023	0.68	45.1	Passenger Car
18	45	10/16/2023	1.28	24.0	Passenger Car
19	45	10/16/2023	1.53	20.0	Passenger Car
20	45	10/16/2023	1.21	25.4	Passenger Car
21	45	10/16/2023	1.13	27.1	Passenger Car
22	45	10/16/2023	1.25	24.5	Passenger Car
23	45	10/16/2023	1.36	22.6	Passenger Car
24	45	10/16/2023	1.38	22.2	Passenger Car
25	45	10/16/2023	1.20	25.6	Passenger Car
26	45	10/16/2023	1.53	20.0	Passenger Car
27	45	10/16/2023	1.51	20.3	Passenger Car
28	45	10/16/2023	1.68	18.3	Passenger Car
29	45	10/16/2023	1.45	21.2	Passenger Car
30	45	10/16/2023	2.35	13.1	Passenger Car
31	45	10/16/2023	2.78	11.0	Passenger Car
32	45	10/16/2023	1.23	24.9	Passenger Car
33	45	10/16/2023	1.20	25.6	Passenger Car
34	45	10/16/2023	1.26	24.3	Passenger Car
35	45	10/16/2023	1.18	26.0	Passenger Car
36	45	10/16/2023	1.91	16.1	Passenger Car
37	45	10/16/2023	1.23	24.9	Bike
38	45	10/16/2023	1.45	21.2	Passenger Car
39	45	10/16/2023	2.10	14.6	Bike
40	45	10/16/2023	1.61	19.1	Passenger Car
41	45	10/16/2023	1.76	17.4	Bike
42	45	10/16/2023	1.86	16.5	Passenger Car
43	45	10/16/2023	1.25	24.5	Passenger Car
44	45	10/16/2023	1.16	26.4	Passenger Car
45	45	10/16/2023	1.19	25.8	Passenger Car
46	45	10/16/2023	1.11	27.6	Passenger Car
47	45	10/16/2023	1.15	26.7	Passenger Car
48	45	10/16/2023	1.20	25.6	Passenger Car
49	45	10/16/2023	1.33	23.1	Passenger Car
50	45	10/16/2023	1.30	23.6	Passenger Car
51	45	10/16/2023	1.40	21.9	Passenger Car
52	45	10/16/2023	2.05	15.0	Bike
53	45	10/16/2023	1.50	20.4	Passenger Car
54	45	10/16/2023	1.20	25.6	Passenger Car
55	45	10/16/2023	1.40	21.9	Passenger Car
56	45	10/16/2023	1.28	24.0	Passenger Car
57	45	10/16/2023	1.50	20.4	Passenger Car
58	45	10/16/2023	1.25	24.5	Passenger Car
59	45	10/16/2023	1.63	18.8	Passenger Car
60	45	10/16/2023	1.05	29.2	Passenger Car
61	45	10/16/2023	1.38	22.2	Passenger Car
62	45	10/16/2023	1.35	22.7	Passenger Car
63	45	10/16/2023	1.21	25.4	Passenger Car
64	45	10/16/2023	1.26	24.3	Passenger Car
65	45	10/16/2023	1.51	20.3	Passenger Car
66	45	10/16/2023	1.30	23.6	Passenger Car
67	45	10/16/2023	1.08	28.4	Passenger Car
68	45	10/16/2023	1.28	24.0	Passenger Car
69	45	10/16/2023	1.56	19.7	Passenger Car
70	45	10/16/2023	1.41	21.8	Passenger Car
71	45	10/16/2023	1.80	17.0	Passenger Car
72	45	10/16/2023	1.26	24.3	Passenger Car
73	45	10/16/2023	1.30	23.6	Passenger Car
74	45	10/16/2023	1.33	23.1	Passenger Car
75	45	10/16/2023	1.15	26.7	Passenger Car
76	45	10/16/2023	1.40	21.9	Passenger Car
77	45	10/16/2023	1.43	21.5	Passenger Car
78	45	10/16/2023	1.45	21.2	Passenger Car
79	45	10/16/2023	1.90	16.1	Passenger Car
80	45	10/16/2023	1.25	24.5	Passenger Car
81	45	10/16/2023	1.30	23.6	Passenger Car
82	45	10/16/2023	1.35	22.7	Passenger Car
83	45	10/16/2023	1.20	25.6	Passenger Car
84	45	10/16/2023	1.17	26.2	Passenger Car
85	45	10/16/2023	1.10	27.9	Passenger Car
86	45	10/16/2023	1.50	20.4	Passenger Car
87	45	10/16/2023	1.45	21.2	Passenger Car
88	45	10/16/2023	1.35	22.7	Passenger Car
89	45	10/16/2023	1.33	23.1	Passenger Car
90	45	10/16/2023	1.40	21.9	Passenger Car
91	45	10/16/2023	1.37	22.4	Passenger Car
92	45	10/16/2023	1.40	21.9	Passenger Car
93	45	10/16/2023	1.28	24.0	Passenger Car
94	45	10/16/2023	1.24	24.7	Passenger Car
95	45	10/16/2023	1.16	26.4	Passenger Car
96	45	10/16/2023	1.17	26.2	Passenger Car
97	45	10/16/2023	1.23	24.9	Passenger Car
98	45	10/16/2023	1.50	20.4	Passenger Car
99	45	10/16/2023	1.53	20.0	Passenger Car
100	45	10/16/2023	1.38	22.2	Passenger Car
101	45	10/16/2023	2.56	12.0	Heavy Vehicle
102	45	10/16/2023	1.25	24.5	Passenger Car
103	45	10/16/2023	1.33	23.1	Passenger Car
104	45	10/16/2023	1.20	25.6	Passenger Car
105	45	10/16/2023	1.16	26.4	Passenger Car
106	45	10/16/2023	1.26	24.3	Passenger Car
107	45	10/16/2023	1.21	25.4	Passenger Car
108	45	10/16/2023	1.32	23.2	Passenger Car
109	45	10/16/2023	0.96	32.0	Passenger Car
110	45	10/16/2023	1.25	24.5	Passenger Car
111	45	10/16/2023	1.40	21.9	Passenger Car
112	45	10/16/2023	1.43	21.5	Passenger Car
113	45	10/16/2023	1.08	28.4	Passenger Car
114	45	10/16/2023	1.53	20.0	Passenger Car
115	45	10/16/2023	2.05	15.0	Passenger Car
116	45	10/16/2023	1.01	30.4	Passenger Car
117	45	10/16/2023	1.60	19.2	Passenger Car
118	45	10/16/2023	1.00	30.7	Passenger Car
119	45	10/16/2023	1.45	21.2	Passenger Car
120	45	10/16/2023	1.58	19.4	Passenger Car
121	45	10/16/2023	1.21	25.4	Passenger Car
122	45	10/16/2023	1.64	18.7	Passenger Car
123	45	10/16/2023	1.45	21.2	Passenger Car
124	45	10/16/2023	2.71	11.3	Heavy Vehicle
125	45	10/16/2023	1.63	18.8	Passenger Car
126	45	10/16/2023	1.05	29.2	Passenger Car
127	45	10/16/2023	1.32	23.2	Passenger Car
128	45	10/16/2023	1.98	15.5	Passenger Car
129	45	10/16/2023	2.71	11.3	Heavy Vehicle
130	45	10/16/2023	1.70	18.0	Passenger Car
131	45	10/16/2023	1.76	17.4	Passenger Car
132	45	10/16/2023	1.11	27.6	Passenger Car
133	45	10/16/2023	1.25	24.5	Passenger Car
134	45	10/16/2023	1.48	20.7	Passenger Car
135	45	10/16/2023	1.18	26.0	Passenger Car
136	45	10/16/2023	1.38	22.2	Passenger Car
137	45	10/16/2023	1.48	20.7	Passenger Car
138	45	10/16/2023	1.08	28.4	Passenger Car

AVERAGE SPEEDS	
PASSENGER CAR	23.5
HEAVY VEHICLE	11.5
BUS	17.0
BIKE	18.0

SPOT SPEED STUDY   AFTER - PM PERIOD (12-2 PM)   FROM NORTH					
Observation number	Distance between reference points (obtain from field)	Date	Time that it took the vehicle to pass along the reference points.	Speed obtained from $v = d/t$	Passenger car, heavy vehicle, bus, ped, bike
#	DISTANCE (ft)	DATE	TRAVEL TIME (seconds)	SPEED (mph)	VEHICLE TYPE
1	45	10/16/2023	1.43	21.5	Passenger Car
2	45	10/16/2023	1.61	19.1	Passenger Car
3	45	10/16/2023	1.25	24.5	Passenger Car
4	45	10/16/2023	2.31	13.3	Bike
5	45	10/16/2023	1.59	19.3	Passenger Car
6	45	10/16/2023	1.13	27.1	Passenger Car
7	45	10/16/2023	1.36	22.6	Passenger Car
8	45	10/16/2023	1.68	18.3	Passenger Car
9	45	10/16/2023	2.25	13.6	Passenger Car
10	45	10/16/2023	0.98	31.3	Passenger Car
11	45	10/16/2023	1.03	29.8	Passenger Car
12	45	10/16/2023	1.96	15.7	Passenger Car
13	45	10/16/2023	1.18	26.0	Passenger Car
14	45	10/16/2023	1.34	22.9	Passenger Car
15	45	10/16/2023	1.43	21.5	Passenger Car
16	45	10/16/2023	1.23	24.9	Passenger Car
17	45	10/16/2023	1.56	19.7	Passenger Car
18	45	10/16/2023	1.13	27.1	Passenger Car
19	45	10/16/2023	1.40	21.9	Bike
20	45	10/16/2023	1.55	19.8	Passenger Car
21	45	10/16/2023	1.30	23.6	Passenger Car
22	45	10/16/2023	2.33	13.2	Bike
23	45	10/16/2023	1.45	21.2	Passenger Car
24	45	10/16/2023	1.37	22.4	Passenger Car
25	45	10/16/2023	1.21	25.4	Passenger Car
26	45	10/16/2023	1.86	16.5	Passenger Car
27	45	10/16/2023	1.68	18.3	Passenger Car
28	45	10/16/2023	1.20	25.6	Passenger Car
29	45	10/16/2023	1.13	27.1	Passenger Car
30	45	10/16/2023	1.23	24.9	Passenger Car
31	45	10/16/2023	1.36	22.6	Passenger Car
32	45	10/16/2023	1.25	24.5	Passenger Car
33	45	10/16/2023	1.18	26.0	Passenger Car
34	45	10/16/2023	1.76	17.4	Heavy Vehicle
35	45	10/16/2023	1.15	26.7	Passenger Car
36	45	10/16/2023	1.36	22.6	Passenger Car
37	45	10/16/2023	1.05	29.2	Passenger Car
38	45	10/16/2023	1.18	26.0	Passenger Car
39	45	10/16/2023	1.25	24.5	Passenger Car
40	45	10/16/2023	1.11	27.6	Passenger Car
41	45	10/16/2023	2.51	12.2	Passenger Car
42	45	10/16/2023	1.38	22.2	Passenger Car
43	45	10/16/2023	1.98	15.5	Passenger Car
44	45	10/16/2023	1.50	20.4	Passenger Car
45	45	10/16/2023	1.63	18.8	Passenger Car
46	45	10/16/2023	1.06	28.9	Passenger Car
47	45	10/16/2023	1.70	18.0	Passenger Car
48	45	10/16/2023	1.03	29.8	Passenger Car
49	45	10/16/2023	1.04	29.5	Passenger Car
50	45	10/16/2023	1.16	26.4	Passenger Car
51	45	10/16/2023	1.18	26.0	Passenger Car
52	45	10/16/2023	0.96	32.0	Passenger Car
53	45	10/16/2023	0.75	40.9	Passenger Car
54	45	10/16/2023	1.70	18.0	Passenger Car
55	45	10/16/2023	1.36	22.6	Passenger Car
56	45	10/16/2023	1.43	21.5	Passenger Car
57	45	10/16/2023	1		

# OCTOBER 16 (AM & PM PERIODS) FROM SOUTH

SPOT SPEED STUDY   AFTER - AM PERIOD (7-9 AM)   FROM SOUTH					
Observation number	Distance between reference points (obtain from field)	Date	Time that it took the vehicle to pass along the reference points.	Speed obtained from $v = d/t$	Passenger car, heavy vehicle, bus, ped, bike
#	DISTANCE (ft)	DATE	TRAVEL TIME (seconds)	SPEED (mph)	VEHICLE TYPE
1	45	10/16/2023	1.50	20.4	Passenger Car
2	45	10/16/2023	1.38	22.2	Passenger Car
3	45	10/16/2023	1.90	16.1	Passenger Car
4	45	10/16/2023	1.76	17.4	Passenger Car
5	45	10/16/2023	2.03	15.1	Passenger Car
6	45	10/16/2023	1.51	20.3	Passenger Car
7	45	10/16/2023	1.28	24.0	Passenger Car
8	45	10/16/2023	1.38	22.2	Passenger Car
9	45	10/16/2023	1.62	18.9	Passenger Car
10	45	10/16/2023	1.80	17.0	Passenger Car
11	45	10/16/2023	1.68	18.3	Passenger Car
12	45	10/16/2023	2.92	10.5	Passenger Car
13	45	10/16/2023	2.10	14.6	Passenger Car
14	45	10/16/2023	0.96	32.0	Passenger Car
15	45	10/16/2023	1.25	24.5	Passenger Car
16	45	10/16/2023	1.75	17.5	Passenger Car
17	45	10/16/2023	1.83	16.8	Passenger Car
18	45	10/16/2023	1.11	27.6	Passenger Car
19	45	10/16/2023	1.68	18.3	Passenger Car
20	45	10/16/2023	1.46	21.0	Passenger Car
21	45	10/16/2023	1.73	17.7	Passenger Car
22	45	10/16/2023	1.33	23.1	Passenger Car
23	45	10/16/2023	1.36	22.6	Passenger Car
24	45	10/16/2023	1.76	17.4	Passenger Car
25	45	10/16/2023	2.00	15.3	Bike
26	45	10/16/2023	1.40	21.9	Passenger Car
27	45	10/16/2023	2.00	15.3	Bike
28	45	10/16/2023	1.50	20.4	Passenger Car
29	45	10/16/2023	1.70	18.0	Passenger Car
30	45	10/16/2023	1.80	17.0	Passenger Car
31	45	10/16/2023	3.00	10.2	Bike
32	45	10/16/2023	1.55	19.8	Passenger Car
33	45	10/16/2023	2.00	15.3	Bike
34	45	10/16/2023	1.80	17.0	Passenger Car
35	45	10/16/2023	3.15	9.7	Bike
36	45	10/16/2023	1.55	19.8	Passenger Car
37	45	10/16/2023	1.38	22.2	Passenger Car
38	45	10/16/2023	1.45	21.2	Passenger Car
39	45	10/16/2023	1.23	24.9	Passenger Car
40	45	10/16/2023	1.30	23.6	Passenger Car
41	45	10/16/2023	1.25	24.5	Passenger Car
42	45	10/16/2023	1.83	16.8	Passenger Car
43	45	10/16/2023	1.45	21.2	Passenger Car
44	45	10/16/2023	1.90	16.1	Passenger Car
45	45	10/16/2023	1.15	26.7	Passenger Car
46	45	10/16/2023	1.36	22.6	Passenger Car
47	45	10/16/2023	1.10	27.9	Passenger Car
48	45	10/16/2023	1.70	18.0	Passenger Car
49	45	10/16/2023	1.50	20.4	Passenger Car
50	45	10/16/2023	1.40	21.9	Passenger Car
51	45	10/16/2023	1.35	22.7	Passenger Car
52	45	10/16/2023	1.33	23.1	Passenger Car
53	45	10/16/2023	1.75	17.5	Passenger Car
54	45	10/16/2023	1.70	18.0	Passenger Car
55	45	10/16/2023	2.03	15.1	Bike
56	45	10/16/2023	1.50	20.4	Passenger Car
57	45	10/16/2023	1.40	21.9	Passenger Car
58	45	10/16/2023	1.06	28.9	Passenger Car
59	45	10/16/2023	1.10	27.9	Passenger Car
60	45	10/16/2023	1.25	24.5	Passenger Car
61	45	10/16/2023	0.95	32.3	Passenger Car
62	45	10/16/2023	0.90	34.1	Passenger Car
63	45	10/16/2023	1.55	19.8	Passenger Car
64	45	10/16/2023	1.40	21.9	Passenger Car
65	45	10/16/2023	1.71	17.9	Passenger Car
66	45	10/16/2023	1.25	24.5	Passenger Car
67	45	10/16/2023	2.03	15.1	Passenger Car
68	45	10/16/2023	1.80	17.0	Passenger Car
69	45	10/16/2023	1.70	18.0	Passenger Car
70	45	10/16/2023	1.30	23.6	Passenger Car
71	45	10/16/2023	1.10	27.9	Passenger Car
72	45	10/16/2023	1.26	24.3	Passenger Car
73	45	10/16/2023	1.22	25.1	Passenger Car
74	45	10/16/2023	1.30	23.6	Passenger Car
75	45	10/16/2023	1.35	22.7	Passenger Car
76	45	10/16/2023	1.41	21.8	Passenger Car
77	45	10/16/2023	1.38	22.2	Passenger Car
78	45	10/16/2023	1.40	21.9	Passenger Car
79	45	10/16/2023	1.20	25.6	Passenger Car
80	45	10/16/2023	1.08	28.4	Passenger Car
81	45	10/16/2023	2.00	15.3	Passenger Car
82	45	10/16/2023	1.70	18.0	Passenger Car
83	45	10/16/2023	1.85	16.6	Passenger Car
84	45	10/16/2023	1.57	19.5	Passenger Car
85	45	10/16/2023	1.46	21.0	Passenger Car
86	45	10/16/2023	1.78	17.2	Passenger Car
87	45	10/16/2023	1.30	23.6	Passenger Car
88	45	10/16/2023	1.43	21.5	Passenger Car
89	45	10/16/2023	1.80	17.0	Passenger Car
90	45	10/16/2023	1.40	21.9	Passenger Car
91	45	10/16/2023	1.53	20.0	Passenger Car
92	45	10/16/2023	1.22	25.1	Passenger Car
93	45	10/16/2023	1.36	22.6	Passenger Car
94	45	10/16/2023	1.60	19.2	Passenger Car
95	45	10/16/2023	1.31	23.4	Passenger Car
96	45	10/16/2023	1.27	24.2	Passenger Car
97	45	10/16/2023	1.53	20.0	Passenger Car
98	45	10/16/2023	0.95	32.3	Passenger Car
99	45	10/16/2023	1.35	22.7	Passenger Car
100	45	10/16/2023	1.51	20.3	Passenger Car
101	45	10/16/2023	1.46	21.0	Passenger Car
102	45	10/16/2023	1.20	25.6	Passenger Car
103	45	10/16/2023	1.26	24.3	Passenger Car
104	45	10/16/2023	1.48	20.7	Passenger Car
105	45	10/16/2023	2.15	14.3	Passenger Car
106	45	10/16/2023	2.00	15.3	Passenger Car
107	45	10/16/2023	1.85	16.6	Passenger Car
108	45	10/16/2023	1.90	16.1	Passenger Car
109	45	10/16/2023	1.86	16.5	Passenger Car
110	45	10/16/2023	1.61	19.1	Passenger Car
111	45	10/16/2023	1.73	17.7	Passenger Car
112	45	10/16/2023	1.65	18.6	Passenger Car
113	45	10/16/2023	1.81	16.9	Passenger Car
114	45	10/16/2023	1.71	17.9	Passenger Car
115	45	10/16/2023	2.01	15.3	Passenger Car
116	45	10/16/2023	2.10	14.6	Passenger Car
117	45	10/16/2023	1.63	18.8	Bike
118	45	10/16/2023	2.05	15.0	Passenger Car
119	45	10/16/2023	3.06	10.0	Bike
120	45	10/16/2023	2.15	14.3	Bike
121	45	10/16/2023	1.79	17.1	Passenger Car
122	45	10/16/2023	1.80	17.0	Passenger Car
123	45	10/16/2023	2.41	12.7	Bike
124	45	10/16/2023	2.43	12.6	Bike
125	45	10/16/2023	2.45	12.5	Bike
126	45	10/16/2023	1.71	17.9	Passenger Car
127	45	10/16/2023	1.60	19.2	Passenger Car
128	45	10/16/2023	1.68	18.3	Passenger Car
129	45	10/16/2023	2.86	10.7	Heavy Vehicle
130	45	10/16/2023	1.50	20.4	Passenger Car
131	45	10/16/2023	1.41	21.8	Passenger Car

AVERAGE SPEEDS	
PASSENGER CAR	20.8
HEAVY VEHICLE	10.7
BUS	N/A
BIKE	13.5

SPOT SPEED STUDY   AFTER - PM PERIOD (12-2 PM)   FROM SOUTH					
Observation number	Distance between reference points (obtain from field)	Date	Time that it took the vehicle to pass along the reference points.	Speed obtained from $v = d/t$	Passenger car, heavy vehicle, bus, ped, bike
#	DISTANCE (ft)	DATE	TRAVEL TIME (seconds)	SPEED (mph)	VEHICLE TYPE
1	45	10/16/2023	1.70	18.0	Bike
2	45	10/16/2023	1.18	26.0	Passenger Car
3	45	10/16/2023	1.63	18.8	Passenger Car
4	45	10/16/2023	1.75	17.5	Passenger Car
5	45	10/16/2023	1.88	16.3	Passenger Car
6	45	10/16/2023	1.55	19.8	Passenger Car
7	45	10/16/2023	1.86	16.5	Passenger Car
8	45	10/16/2023	1.21	25.4	Passenger Car
9	45	10/16/2023	1.50	20.4	Passenger Car
10	45	10/16/2023	2.11	14.5	Passenger Car
11	45	10/16/2023	1.25	24.5	Passenger Car
12	45	10/16/2023	1.45	21.2	Passenger Car
13	45	10/16/2023	2.18	14.1	Bike
14	45	10/16/2023	1.41	21.8	Passenger Car
15	45	10/16/2023	1.36	22.6	Passenger Car
16	45	10/16/2023	1.96	15.7	Passenger Car
17	45	10/16/2023	1.50	20.4	Passenger Car
18	45	10/16/2023	1.46	21.0	Passenger Car
19	45	10/16/2023	2.03	15.1	Passenger Car
20	45	10/16/2023	3.28	9.4	Passenger Car
21	45	10/16/2023	2.30	13.3	Passenger Car
22	45	10/16/2023	1.55	19.8	Passenger Car
23	45	10/16/2023	1.10	27.9	Passenger Car
24	45	10/16/2023	1.36	22.6	Passenger Car
25	45	10/16/2023	2.91	10.5	Bike
26	45	10/16/2023	1.51	20.3	Passenger Car
27	45	10/16/2023	1.18	26.0	Passenger Car
28	45	10/16/2023	2.13	14.4	Passenger Car
29	45	10/16/2023	1.20	25.6	Passenger Car
30	45	10/16/2023	1.43	21.5	Bike
31	45	10/16/2023	1.50	20.4	Passenger Car
32	45	10/16/2023	1.40	21.9	Passenger Car
33	45	10/16/2023	1.68	18.3	Passenger Car
34	45	10/16/2023	1.38	22.2	Passenger Car
35	45	10/16/2023	1.70	18.0	Passenger Car
36	45	10/16/2023	1.24	24.7	Passenger Car
37	45	10/16/2023	1.58	19.4	Passenger Car
38	45	10/16/2023	1.41	21.8	Passenger Car
39	45	10/16/2023	1.61	19.1	Passenger Car
40	45	10/16/2023	1.26	24.3	Passenger Car
41	45	10/16/2023	1.68	18.3	Passenger Car
42	45	10/16/2023	1.35	22.7	Passenger Car
43	45	10/16/2023	1.45	21.2	Passenger Car
44	45	10/16/2023	1.30	23.6	Passenger Car
45	45	10/16/2023	1.43	21.5	Passenger Car
46	45	10/16/2023	1.70	18.0	Passenger Car
47	45	10/16/2023	1.26	24.3	Passenger Car
48	45	10/16/2023	2.90	10.6	Bike
49	45	10/16/2023	1.73	17.7	Passenger Car
50	45	10/16/2023	2.48	12.4	Passenger Car
51	45	10/16/2023	1.45	21.2	Passenger Car
52	45	10/16/2023	1.36	22.6	Passenger Car
53	45	10/16/2023	1.15	26.7	Passenger Car
54	45	10/16/2023	1.46	21.0	Passenger Car
55	45	10/16/2023	1.26	24.3	Passenger Car
56	45	10/16/2023	2.01	15.3	Passenger Car
57	45	10/16/2023	2.51	12.2	Bike
58	45	10/16/2023	1.68	18.3	Passenger Car
59	45	10/16/2023	1.36	22.6	Passenger Car
60	45	10/16/2023	1.48	20.7	Passenger Car
61	45	10/16/2023	1.11	27.6	Passenger Car
62	45	10/16/2023	1.56	19.7	Bike
63	45	10/16/2023	1.43	21.5	Passenger Car
64	45	10/16/2023	1.28	24.0	Passenger Car
6					

# **SPOT SPEED STUDY**

**"OCTOBER 23"  
(AM & PM PERIODS)**

# OCTOBER 23 (AM & PM PERIODS) FROM NORTH

SPOT SPEED STUDY   AFTER - AM PERIOD (7-9 AM)   FROM NORTH					
Observation number	Distance between reference points (obtain from field)	Date	Time that it took the vehicle to pass along the reference points.	Speed obtained from v = d/t	Passenger car, heavy vehicle, bus, ped, bike
#	DISTANCE (ft)	DATE	TRAVEL TIME (seconds)	SPEED (mph)	VEHICLE TYPE
1	45	10/23/2023	1.48	20.7	Passenger Car
2	45	10/23/2023	1.02	30.1	Passenger Car
3	45	10/23/2023	1.38	22.2	Passenger Car
4	45	10/23/2023	1.93	15.9	Passenger Car
5	45	10/23/2023	2.35	13.1	Passenger Car
6	45	10/23/2023	1.45	21.2	Passenger Car
7	45	10/23/2023	1.18	26.0	Passenger Car
8	45	10/23/2023	1.28	24.0	Passenger Car
9	45	10/23/2023	1.28	24.0	Passenger Car
10	45	10/23/2023	1.23	24.9	Passenger Car
11	45	10/23/2023	1.76	17.4	Bus
12	45	10/23/2023	1.13	27.1	Passenger Car
13	45	10/23/2023	1.11	27.6	Passenger Car
14	45	10/23/2023	1.21	25.4	Passenger Car
15	45	10/23/2023	3.13	9.8	Bike
16	45	10/23/2023	1.33	23.1	Passenger Car
17	45	10/23/2023	1.01	30.4	Passenger Car
18	45	10/23/2023	1.25	24.5	Passenger Car
19	45	10/23/2023	1.06	28.9	Passenger Car
20	45	10/23/2023	1.31	23.4	Passenger Car
21	45	10/23/2023	1.32	23.2	Passenger Car
22	45	10/23/2023	1.28	24.0	Passenger Car
23	45	10/23/2023	1.23	24.9	Passenger Car
24	45	10/23/2023	1.65	18.6	Passenger Car
25	45	10/23/2023	1.31	23.4	Passenger Car
26	45	10/23/2023	0.93	33.0	Passenger Car
27	45	10/23/2023	0.88	34.9	Passenger Car
28	45	10/23/2023	2.10	14.6	Bike
29	45	10/23/2023	1.50	20.4	Bike
30	45	10/23/2023	1.31	23.4	Passenger Car
31	45	10/23/2023	1.58	19.4	Passenger Car
32	45	10/23/2023	1.23	24.9	Passenger Car
33	45	10/23/2023	1.38	22.2	Passenger Car
34	45	10/23/2023	1.36	22.6	Passenger Car
35	45	10/23/2023	1.21	25.4	Passenger Car
36	45	10/23/2023	1.30	23.6	Passenger Car
37	45	10/23/2023	1.00	30.7	Passenger Car
38	45	10/23/2023	1.10	27.9	Passenger Car
39	45	10/23/2023	0.96	32.0	Passenger Car
40	45	10/23/2023	0.95	32.3	Passenger Car
41	45	10/23/2023	0.98	31.3	Passenger Car
42	45	10/23/2023	1.23	24.9	Passenger Car
43	45	10/23/2023	1.28	24.0	Passenger Car
44	45	10/23/2023	1.26	24.3	Passenger Car
45	45	10/23/2023	1.23	24.9	Passenger Car
46	45	10/23/2023	1.03	29.8	Passenger Car
47	45	10/23/2023	0.94	32.6	Passenger Car
48	45	10/23/2023	1.21	25.4	Passenger Car
49	45	10/23/2023	0.83	37.0	Passenger Car
50	45	10/23/2023	0.90	34.1	Passenger Car
51	45	10/23/2023	0.86	35.7	Passenger Car
52	45	10/23/2023	0.96	32.0	Passenger Car
53	45	10/23/2023	1.08	28.4	Passenger Car
54	45	10/23/2023	1.10	27.9	Passenger Car
55	45	10/23/2023	0.80	38.3	Passenger Car
56	45	10/23/2023	1.11	27.6	Passenger Car
57	45	10/23/2023	1.12	27.4	Passenger Car
58	45	10/23/2023	1.05	29.2	Passenger Car
59	45	10/23/2023	0.95	32.3	Passenger Car
60	45	10/23/2023	0.97	31.6	Passenger Car
61	45	10/23/2023	1.10	27.9	Passenger Car
62	45	10/23/2023	1.16	26.4	Passenger Car
63	45	10/23/2023	1.01	30.4	Passenger Car
64	45	10/23/2023	1.55	19.8	Heavy Vehicle
65	45	10/23/2023	0.96	32.0	Passenger Car
66	45	10/23/2023	1.43	21.5	Passenger Car
67	45	10/23/2023	1.36	22.6	Passenger Car
68	45	10/23/2023	1.06	28.9	Passenger Car
69	45	10/23/2023	0.80	38.3	Passenger Car
70	45	10/23/2023	1.03	29.8	Passenger Car
71	45	10/23/2023	1.38	22.2	Passenger Car
72	45	10/23/2023	0.98	31.3	Passenger Car
73	45	10/23/2023	1.05	29.2	Passenger Car
74	45	10/23/2023	1.53	20.0	Passenger Car
75	45	10/23/2023	1.00	30.7	Passenger Car
76	45	10/23/2023	1.06	28.9	Passenger Car
77	45	10/23/2023	1.05	29.2	Passenger Car
78	45	10/23/2023	0.93	33.0	Passenger Car
79	45	10/23/2023	1.00	30.7	Passenger Car
80	45	10/23/2023	0.80	38.3	Passenger Car
81	45	10/23/2023	1.85	16.6	Passenger Car
82	45	10/23/2023	0.80	38.3	Passenger Car
83	45	10/23/2023	1.16	26.4	Passenger Car
84	45	10/23/2023	1.76	17.4	Passenger Car
85	45	10/23/2023	0.93	33.0	Passenger Car
86	45	10/23/2023	1.11	27.6	Passenger Car
87	45	10/23/2023	1.70	18.0	Passenger Car
88	45	10/23/2023	0.86	35.7	Passenger Car
89	45	10/23/2023	1.03	29.8	Passenger Car
90	45	10/23/2023	1.56	19.7	Passenger Car
91	45	10/23/2023	1.65	18.6	Passenger Car
92	45	10/23/2023	1.46	21.0	Passenger Car
93	45	10/23/2023	1.06	28.9	Passenger Car
94	45	10/23/2023	0.90	34.1	Passenger Car
95	45	10/23/2023	1.27	24.2	Bike
96	45	10/23/2023	1.71	17.9	Passenger Car
97	45	10/23/2023	1.08	28.4	Passenger Car
98	45	10/23/2023	1.16	26.4	Passenger Car
99	45	10/23/2023	1.10	27.9	Passenger Car
100	45	10/23/2023	1.05	29.2	Passenger Car
101	45	10/23/2023	1.20	25.6	Passenger Car
102	45	10/23/2023	1.15	26.7	Passenger Car
103	45	10/23/2023	1.46	21.0	Passenger Car
104	45	10/23/2023	1.01	30.4	Passenger Car

AVERAGE SPEEDS	
PASSENGER CAR	27.0
HEAVY VEHICLE	19.8
BUS	17.4
BIKE	17.3

SPOT SPEED STUDY   AFTER - PM PERIOD (12-2 PM)   FROM NORTH					
Observation number	Distance between reference points (obtain from field)	Date	Time that it took the vehicle to pass along the reference points.	Speed obtained from v = d/t	Passenger car, heavy vehicle, bus, ped, bike
#	DISTANCE (ft)	DATE	TRAVEL TIME (seconds)	SPEED (mph)	VEHICLE TYPE
1	45	10/23/2023	1.56	19.7	Passenger Car
2	45	10/23/2023	1.76	17.4	Passenger Car
3	45	10/23/2023	2.98	10.3	Heavy Vehicle
4	45	10/23/2023	1.43	21.5	Passenger Car
5	45	10/23/2023	1.89	16.2	Passenger Car
6	45	10/23/2023	1.93	15.9	Passenger Car
7	45	10/23/2023	1.65	18.6	Passenger Car
8	45	10/23/2023	2.16	14.2	Passenger Car
9	45	10/23/2023	1.53	20.0	Passenger Car
10	45	10/23/2023	1.80	17.0	Passenger Car
11	45	10/23/2023	1.66	18.5	Passenger Car
12	45	10/23/2023	1.93	15.9	Passenger Car
13	45	10/23/2023	1.90	16.1	Passenger Car
14	45	10/23/2023	1.75	17.5	Passenger Car
15	45	10/23/2023	1.58	19.4	Passenger Car
16	45	10/23/2023	1.98	15.5	Passenger Car
17	45	10/23/2023	1.75	17.5	Passenger Car
18	45	10/23/2023	1.58	19.4	Passenger Car
19	45	10/23/2023	1.98	15.5	Passenger Car
20	45	10/23/2023	1.33	23.1	Passenger Car
21	45	10/23/2023	1.40	21.9	Passenger Car
22	45	10/23/2023	1.35	22.7	Passenger Car
23	45	10/23/2023	1.36	22.6	Passenger Car
24	45	10/23/2023	1.51	20.3	Passenger Car
25	45	10/23/2023	1.96	15.7	Passenger Car
26	45	10/23/2023	1.63	18.6	Passenger Car
27	45	10/23/2023	1.40	21.9	Passenger Car
28	45	10/23/2023	1.95	15.7	Passenger Car
29	45	10/23/2023	1.21	25.4	Passenger Car
30	45	10/23/2023	1.65	18.6	Passenger Car
31	45	10/23/2023	1.13	27.1	Passenger Car
32	45	10/23/2023	1.48	20.7	Passenger Car
33	45	10/23/2023	1.26	24.3	Passenger Car
34	45	10/23/2023	1.46	21.0	Passenger Car
35	45	10/23/2023	1.16	26.4	Passenger Car
36	45	10/23/2023	1.36	22.6	Passenger Car
37	45	10/23/2023	2.31	13.3	Passenger Car
38	45	10/23/2023	0.93	33.0	Passenger Car
39	45	10/23/2023	1.50	20.4	Passenger Car
40	45	10/23/2023	1.04	29.5	Passenger Car
41	45	10/23/2023	1.40	21.9	Passenger Car
42	45	10/23/2023	1.21	25.4	Passenger Car
43	45	10/23/2023	1.43	21.5	Passenger Car
44	45	10/23/2023	1.13	27.1	Passenger Car
45	45	10/23/2023	1.76	17.4	Passenger Car
46	45	10/23/2023	1.35	22.7	Passenger Car
47	45	10/23/2023	1.61	19.1	Passenger Car
48	45	10/23/2023	1.36	22.6	Passenger Car
49	45	10/23/2023	1.11	27.6	Passenger Car
50	45	10/23/2023	1.11	27.6	Passenger Car
51	45	10/23/2023	1.21	25.4	Passenger Car
52	45	10/23/2023	2.81	10.9	Bike
53	45	10/23/2023	1.81	16.9	Passenger Car
54	45	10/23/2023	1.46	21.0	Passenger Car
55	45	10/23/2023	1.48	20.7	Passenger Car
56	45	10/23/2023	1.68	18.3	Passenger Car
57	45	10/23/2023	2.27	13.5	Passenger Car
58	45	10/23/2023	1.73	17.7	Passenger Car
59	45	10/23/2023	1.72	17.8	Passenger Car
60	45	10/23/2023	1.43	21.5	Passenger Car
61	45	10/23/2023	1.73	17.7	Passenger Car
62	45	10/23/2023	1.66	18.5	Passenger Car
63	45	10/23/2023	1.68	18.3	Passenger Car
64	45	10/23/2023	1.63	18.6	Passenger Car
65	45	10/23/2023	2.28	13.5	Passenger Car
66	45	10/23/2023	2.28	13.5	Passenger Car
67	45	10/23/2023	2.08	14.7	Passenger Car
68	45	10/23/2023	1.96	15.7	Bike
69	45	10/23/2023	1.11	27.6	Passenger Car
70	45	10/23/2023	0.95	32.3	Passenger Car
71	45	10/23/2023	1.35	22.7	Passenger Car
72	45	10/23/2023	1.16	26.4	Passenger Car
73	45	10/23/2023	1.36	22.6	Passenger Car
74	45	10/23/2023	1.46	21.0	Passenger Car
75	45	10/23/2023	2.50	12.3	Bike
76	45	10/23/2023	1.48	20.7	Bike
77	45	10/23/2023	1.56	19.7	Bike
78	45	10/23/2023	0.85	36.1	Passenger Car
79	45	10/23/2023	1.16	26.4	Passenger Car
80	45	10/23/2023	1.43	21.5	Passenger Car
81	45	10/23/2023	1.05	29.2	Passenger Car
82	45	10/23/2023	1.16	26.4	Passenger Car
83	45	10/23/2023	1.03	29.8	Passenger Car
84	45	10/23/2023	1.65	18.6	Passenger Car
85	45	10/23/2023	1.60	19.2	Passenger Car
86	45	10/23/2023	1.06	28.9	Passenger Car
87	45	10/23/2023	1.25	24.5	Passenger Car
88	45	10/23/2023	2.20	13.9	Passenger Car
89	45	10/23/2023	1.75	17.5	Passenger Car
90	45	10/23/2023	1.35	22.7	Passenger Car
91	45	10/23/2023	0.95	32.3	Passenger Car
92	45				

# OCTOBER 23 (AM & PM PERIODS) FROM SOUTH

SPOT SPEED STUDY   AFTER - AM PERIOD (7-9 AM)   FROM SOUTH					
Observation number	Distance between reference points (obtain from field)	Date	Time that it took the vehicle to pass along the reference points.	Speed obtained from $v = d/t$	Passenger car, heavy vehicle, bus, ped, bike
#	DISTANCE (ft)	DATE	TRAVEL TIME (seconds)	SPEED (mph)	VEHICLE TYPE
1	45	10/23/2023	1.58	19.4	Passenger Car
2	45	10/23/2023	1.41	21.8	Passenger Car
3	45	10/23/2023	1.48	20.7	Passenger Car
4	45	10/23/2023	1.38	22.2	Passenger Car
5	45	10/23/2023	1.61	19.1	Passenger Car
6	45	10/23/2023	1.26	24.3	Passenger Car
7	45	10/23/2023	1.18	26.0	Passenger Car
8	45	10/23/2023	0.98	31.3	Passenger Car
9	45	10/23/2023	1.26	24.3	Passenger Car
10	45	10/23/2023	1.28	24.0	Passenger Car
11	45	10/23/2023	1.95	15.7	Passenger Car
12	45	10/23/2023	1.11	27.6	Passenger Car
13	45	10/23/2023	1.03	29.8	Passenger Car
14	45	10/23/2023	1.25	24.5	Passenger Car
15	45	10/23/2023	1.27	24.2	Passenger Car
16	45	10/23/2023	2.11	14.5	Passenger Car
17	45	10/23/2023	1.26	24.3	Passenger Car
18	45	10/23/2023	1.23	24.9	Passenger Car
19	45	10/23/2023	1.43	21.5	Passenger Car
20	45	10/23/2023	1.50	20.4	Passenger Car
21	45	10/23/2023	1.41	21.8	Passenger Car
22	45	10/23/2023	1.35	22.7	Bike
23	45	10/23/2023	2.06	14.9	Bike
24	45	10/23/2023	1.10	27.9	Passenger Car
25	45	10/23/2023	2.03	15.1	Bike
26	45	10/23/2023	1.50	20.4	Bike
27	45	10/23/2023	1.58	19.4	Passenger Car
28	45	10/23/2023	1.18	26.0	Passenger Car
29	45	10/23/2023	1.03	29.8	Passenger Car
30	45	10/23/2023	1.68	18.3	Passenger Car
31	45	10/23/2023	1.46	21.0	Passenger Car
32	45	10/23/2023	1.21	25.4	Passenger Car
33	45	10/23/2023	0.88	34.9	Passenger Car
34	45	10/23/2023	1.08	28.4	Passenger Car
35	45	10/23/2023	1.81	16.9	Bike
36	45	10/23/2023	1.06	28.9	Passenger Car
37	45	10/23/2023	0.78	39.3	Passenger Car
38	45	10/23/2023	0.98	31.3	Passenger Car
39	45	10/23/2023	1.33	23.1	Passenger Car
40	45	10/23/2023	1.18	26.0	Passenger Car
41	45	10/23/2023	1.23	24.9	Passenger Car
42	45	10/23/2023	1.01	30.4	Passenger Car
43	45	10/23/2023	1.16	26.4	Passenger Car
44	45	10/23/2023	1.21	25.4	Passenger Car
45	45	10/23/2023	1.36	22.6	Passenger Car
46	45	10/23/2023	1.05	29.2	Passenger Car
47	45	10/23/2023	1.58	19.4	Passenger Car
48	45	10/23/2023	0.91	33.7	Passenger Car
49	45	10/23/2023	1.61	19.1	Bike
50	45	10/23/2023	0.96	32.0	Passenger Car
51	45	10/23/2023	1.70	18.0	Bike
52	45	10/23/2023	0.95	32.3	Passenger Car
53	45	10/23/2023	1.21	25.4	Passenger Car
54	45	10/23/2023	2.03	15.1	Bike
55	45	10/23/2023	1.71	17.9	Passenger Car
56	45	10/23/2023	1.28	24.0	Passenger Car
57	45	10/23/2023	2.08	14.7	Bike
58	45	10/23/2023	1.63	18.8	Passenger Car
59	45	10/23/2023	1.31	23.4	Passenger Car
60	45	10/23/2023	1.25	24.5	Passenger Car
61	45	10/23/2023	1.30	23.6	Passenger Car
62	45	10/23/2023	1.21	25.4	Passenger Car
63	45	10/23/2023	1.75	17.5	Bike
64	45	10/23/2023	1.33	23.1	Passenger Car
65	45	10/23/2023	1.23	24.9	Passenger Car
66	45	10/23/2023	1.30	23.6	Passenger Car
67	45	10/23/2023	1.56	19.7	Passenger Car
68	45	10/23/2023	1.26	24.3	Passenger Car
69	45	10/23/2023	0.96	32.0	Passenger Car
70	45	10/23/2023	1.40	21.9	Passenger Car
71	45	10/23/2023	1.11	27.6	Passenger Car
72	45	10/23/2023	1.30	23.6	Passenger Car
73	45	10/23/2023	1.66	18.5	Passenger Car
74	45	10/23/2023	1.58	19.4	Passenger Car
75	45	10/23/2023	1.06	28.9	Passenger Car
76	45	10/23/2023	1.09	28.1	Passenger Car
77	45	10/23/2023	1.23	24.9	Passenger Car
78	45	10/23/2023	1.75	17.5	Passenger Car
79	45	10/23/2023	1.28	24.0	Passenger Car
80	45	10/23/2023	1.33	23.1	Passenger Car
81	45	10/23/2023	1.65	18.6	Passenger Car
82	45	10/23/2023	1.70	18.0	Passenger Car
83	45	10/23/2023	1.28	24.0	Passenger Car
84	45	10/23/2023	1.13	27.1	Passenger Car
85	45	10/23/2023	1.90	16.1	Passenger Car
86	45	10/23/2023	1.81	16.9	Passenger Car
87	45	10/23/2023	1.41	21.8	Passenger Car
88	45	10/23/2023	1.41	21.8	Passenger Car
89	45	10/23/2023	2.83	10.8	Bike
90	45	10/23/2023	2.84	10.8	Bike
91	45	10/23/2023	1.25	24.5	Passenger Car
92	45	10/23/2023	1.68	18.3	Passenger Car
93	45	10/23/2023	1.28	24.0	Passenger Car
94	45	10/23/2023	1.30	23.6	Passenger Car
95	45	10/23/2023	1.15	26.7	Passenger Car
96	45	10/23/2023	1.63	18.8	Bike
97	45	10/23/2023	1.33	23.1	Passenger Car
98	45	10/23/2023	1.58	19.4	Bike
99	45	10/23/2023	1.85	16.6	Bike
100	45	10/23/2023	2.73	11.2	Bike
101	45	10/23/2023	1.85	16.6	Bike
102	45	10/23/2023	1.26	24.3	Passenger Car
103	45	10/23/2023	1.30	23.6	Passenger Car
104	45	10/23/2023	1.48	20.7	Passenger Car
105	45	10/23/2023	2.28	13.5	Bike
106	45	10/23/2023	1.20	25.6	Passenger Car
107	45	10/23/2023	1.25	24.5	Passenger Car
108	45	10/23/2023	1.30	23.6	Passenger Car
109	45	10/23/2023	1.76	17.4	Passenger Car

AVERAGE SPEEDS	
PASSENGER CAR	24.0
HEAVY VEHICLE	N/A
BUS	N/A
BIKE	16.2

SPOT SPEED STUDY   AFTER - PM PERIOD (12-2 PM)   FROM SOUTH					
Observation number	Distance between reference points (obtain from field)	Date	Time that it took the vehicle to pass along the reference points.	Speed obtained from $v = d/t$	Passenger car, heavy vehicle, bus, ped, bike
#	DISTANCE (ft)	DATE	TRAVEL TIME (seconds)	SPEED (mph)	VEHICLE TYPE
1	45	10/23/2023	1.86	16.5	Bike
2	45	10/23/2023	1.60	19.2	Passenger Car
3	45	10/23/2023	1.98	15.5	Bike
4	45	10/23/2023	1.93	15.9	Passenger Car
5	45	10/23/2023	1.11	27.6	Passenger Car
6	45	10/23/2023	1.88	16.3	Passenger Car
7	45	10/23/2023	1.35	22.7	Passenger Car
8	45	10/23/2023	2.31	13.3	Bike
9	45	10/23/2023	2.58	11.9	Bike
10	45	10/23/2023	1.95	15.7	Bike
11	45	10/23/2023	1.43	21.5	Passenger Car
12	45	10/23/2023	1.41	21.8	Passenger Car
13	45	10/23/2023	1.63	18.8	Passenger Car
14	45	10/23/2023	1.33	23.1	Passenger Car
15	45	10/23/2023	1.90	16.1	Passenger Car
16	45	10/23/2023	1.43	21.5	Passenger Car
17	45	10/23/2023	1.33	23.1	Passenger Car
18	45	10/23/2023	2.26	13.6	Passenger Car
19	45	10/23/2023	2.11	14.5	Passenger Car
20	45	10/23/2023	1.93	15.9	Passenger Car
21	45	10/23/2023	1.65	18.6	Passenger Car
22	45	10/23/2023	1.31	23.4	Passenger Car
23	45	10/23/2023	1.15	26.7	Passenger Car
24	45	10/23/2023	1.43	21.5	Passenger Car
25	45	10/23/2023	1.36	22.6	Passenger Car
26	45	10/23/2023	1.35	22.7	Passenger Car
27	45	10/23/2023	2.00	15.3	Passenger Car
28	45	10/23/2023	1.76	17.4	Passenger Car
29	45	10/23/2023	1.23	24.9	Passenger Car
30	45	10/23/2023	1.30	23.6	Passenger Car
31	45	10/23/2023	1.30	23.6	Passenger Car
32	45	10/23/2023	1.15	26.7	Passenger Car
33	45	10/23/2023	1.49	20.6	Passenger Car
34	45	10/23/2023	1.31	23.4	Passenger Car
35	45	10/23/2023	0.91	33.7	Passenger Car
36	45	10/23/2023	1.31	23.4	Passenger Car
37	45	10/23/2023	1.89	16.2	Passenger Car
38	45	10/23/2023	1.03	29.8	Passenger Car
39	45	10/23/2023	2.21	13.9	Passenger Car
40	45	10/23/2023	2.15	14.3	Passenger Car
41	45	10/23/2023	1.45	21.2	Passenger Car
42	45	10/23/2023	1.21	25.4	Passenger Car
43	45	10/23/2023	1.68	18.3	Passenger Car
44	45	10/23/2023	2.46	12.5	Bike
45	45	10/23/2023	1.80	17.0	Passenger Car
46	45	10/23/2023	1.36	22.6	Passenger Car
47	45	10/23/2023	2.26	13.6	Bike
48	45	10/23/2023	1.71	17.9	Passenger Car
49	45	10/23/2023	1.75	17.5	Passenger Car
50	45	10/23/2023	1.21	25.4	Passenger Car
51	45	10/23/2023	1.58	19.4	Passenger Car
52	45	10/23/2023	1.58	19.4	Bike
53	45	10/23/2023	2.20	13.9	Passenger Car
54	45	10/23/2023	2.08	14.7	Passenger Car
55	45	10/23/2023	1.56	19.7	Passenger Car
56	45	10/23/2023	3.26	9.4	Bike
57	45	10/23/2023	1.38	22.2	Passenger Car
58	45	10/23/2023	2.78	11.0	Bike
59	45	10/23/2023	1.38	22.2	Passenger Car
60	45	10/23/2023	3.26	9.4	Bike
61	45	10/23/2023	1.38	22.2	Passenger Car
62	45	10/23/2023	1.80	17.0	Passenger Car
63	45	10/23/2023	1.73	17.7	Passenger Car
64	45	10/23/2023	1.18	26.0	Bike
65	45	10/23/2023	1.21	25.4	Passenger Car
66	45	10/23/2023	1.28	24.0	Passenger Car
67	45	10/23/2023	1.36	22.6	Passenger Car
68	45	10/23/2023	1.65	18.6	Passenger Car
69	45	10/23/2023	0.96	32.0	Passenger Car
70	45	10/23/2023	0.95	32.3	Passenger Car
71	45	10/23/2023	0.85	36.1	Passenger Car
72	45	10/23/2023	1.43	21.5	Passenger Car
73	45	10/23/2023	2.75	11.2	Bike
74	45	10/23/2023	1.36	22.6	Passenger Car
75	45	10/23/2023	1.58	19.4	Passenger Car
76	45	10/23/2023	1.26	24.3	Passenger Car
77	45	10/23/2023	1.51	20.3	Bike
78	45	10/23/2023	1.53	20.0	Passenger Car
79	45	10/23/2023	1.56	19.7	Passenger Car
80	45	10/23/2023	1.81	16.9	Passenger Car
81	45	10/23/2023	1.18	26.0	Passenger Car
82	45	10/23/2023	1.31	23.4	Passenger Car
83	45	10/23/2023	0.81	37.9	Passenger Car
84	45	10/23/2023	1.38	22.2	Passenger Car
85	45	10/23/2023	2.44	12.6	Passenger Car
86	45	10/23/2023	1.78	17.2	Passenger Car
87	45	10/23/2023	1.63	18.8	Passenger Car</



# APENDIX B

# **TMC STUDY**

**"OCTOBER 16"  
(AM & PM PERIODS)**

# OCTOBER 16 | PASSENGER CAR

TIME	FROM NORTH				FROM SOUTH				FROM EAST				FROM WEST			
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total
<b>AM PERIOD</b>																
7:00 AM - 7:15 AM	0	3	3	6	1	6	1	8	1	1	0	2	3	0	1	4
7:15 AM - 7:30 AM	1	8	1	10	1	5	1	7	3	1	0	4	2	0	1	3
7:30 AM - 7:45 AM	0	10	9	19	1	9	2	12	1	7	0	8	2	2	0	4
7:45 AM - 8:00 AM	1	9	11	21	2	25	1	28	1	9	0	10	3	0	0	3
8:00 AM - 8:15 AM	1	20	8	29	1	33	1	35	4	6	2	12	6	4	0	10
8:15 AM - 8:30 AM	0	18	10	28	3	22	3	28	1	4	0	5	7	3	3	13
8:30 AM - 8:45 AM	1	9	11	21	3	10	1	14	3	5	1	9	10	3	1	14
8:45 AM - 9:00 AM	2	8	10	20	0	22	4	26	2	8	5	15	8	2	0	10
<b>GRAND TOTAL</b>	<b>6</b>	<b>85</b>	<b>63</b>	<b>154</b>	<b>12</b>	<b>132</b>	<b>14</b>	<b>158</b>	<b>16</b>	<b>41</b>	<b>8</b>	<b>65</b>	<b>41</b>	<b>14</b>	<b>6</b>	<b>61</b>
<b>PM PERIOD</b>																
12:00 PM - 12:15 PM	1	20	7	28	1	25	4	30	6	2	2	10	6	9	5	20
12:15 PM - 12:30 PM	1	9	5	15	0	14	2	16	3	7	2	12	10	6	0	16
12:30 PM - 12:45 PM	1	21	2	24	0	20	4	24	7	8	1	16	2	8	0	10
12:45 PM - 1:00 PM	1	19	4	24	1	11	4	16	3	12	0	15	5	4	2	11
1:00 PM - 1:15 PM	2	16	4	22	0	15	4	19	7	3	2	12	2	6	0	8
1:15 PM - 1:30 PM	2	8	1	11	3	16	3	22	3	2	1	6	4	7	3	14
1:30 PM - 1:45 PM	0	13	1	14	0	11	2	13	3	6	2	11	8	10	2	20
1:45 PM - 2:00 PM	2	15	3	20	0	14	2	16	4	3	3	10	5	7	2	14
<b>GRAND TOTAL</b>	<b>10</b>	<b>121</b>	<b>27</b>	<b>158</b>	<b>5</b>	<b>126</b>	<b>25</b>	<b>156</b>	<b>36</b>	<b>43</b>	<b>13</b>	<b>92</b>	<b>42</b>	<b>57</b>	<b>14</b>	<b>113</b>

# OCTOBER 16 | BIKE

TIME	FROM NORTH				FROM SOUTH				FROM EAST				FROM WEST			
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total
<b>AM PERIOD</b>																
7:00 AM - 7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM - 7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM - 7:45 AM	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM - 8:00 AM	0	0	2	2	0	5	0	5	0	1	2	3	1	0	0	1
8:00 AM - 8:15 AM	0	1	0	1	0	1	0	1	0	0	1	1	1	0	0	1
8:15 AM - 8:30 AM	0	0	0	0	0	0	0	0	0	0	2	2	0	1	0	1
8:30 AM - 8:45 AM	0	0	0	0	0	1	0	1	0	1	0	1	0	0	0	0
8:45 AM - 9:00 AM	0	0	0	0	2	6	0	8	0	9	0	9	0	0	0	0
<b>GRAND TOTAL</b>	<b>1</b>	<b>2</b>	<b>2</b>	<b>5</b>	<b>2</b>	<b>13</b>	<b>0</b>	<b>15</b>	<b>0</b>	<b>11</b>	<b>5</b>	<b>16</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>3</b>
<b>PM PERIOD</b>																
12:00 PM - 12:15 PM	0	2	0	2	0	1	0	1	0	4	0	4	0	5	0	5
12:15 PM - 12:30 PM	0	2	0	2	0	3	0	3	1	0	0	1	0	0	0	0
12:30 PM - 12:45 PM	0	0	0	0	0	2	1	3	1	6	0	7	0	3	0	3
12:45 PM - 1:00 PM	2	1	0	3	0	0	0	0	0	0	0	0	0	0	0	0
1:00 PM - 1:15 PM	0	0	1	1	0	0	0	0	0	2	0	2	0	2	0	2
1:15 PM - 1:30 PM	1	0	0	1	0	0	0	0	3	2	0	5	0	1	0	1
1:30 PM - 1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45 PM - 2:00 PM	2	3	0	5	1	0	0	1	0	4	0	4	0	0	1	1
<b>GRAND TOTAL</b>	<b>5</b>	<b>8</b>	<b>1</b>	<b>14</b>	<b>1</b>	<b>6</b>	<b>1</b>	<b>8</b>	<b>5</b>	<b>18</b>	<b>0</b>	<b>23</b>	<b>0</b>	<b>11</b>	<b>1</b>	<b>12</b>

# OCTOBER 16 | HEAVY VEHICLE

TIME	FROM NORTH				FROM SOUTH				FROM EAST				FROM WEST			
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total
<b>AM PERIOD</b>																
7:00 AM - 7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM - 7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
7:30 AM - 7:45 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	1
7:45 AM - 8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
8:00 AM - 8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
8:15 AM - 8:30 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM - 8:45 AM	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM - 9:00 AM	0	0	1	1	0	1	0	1	0	0	0	0	0	0	0	0
<b>GRAND TOTAL</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>3</b>	<b>1</b>	<b>1</b>	<b>5</b>
<b>PM PERIOD</b>																
12:00 PM - 12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
12:15 PM - 12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM - 12:45 PM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0
12:45 PM - 1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 PM - 1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15 PM - 1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30 PM - 1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45 PM - 2:00 PM	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0
<b>GRAND TOTAL</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>

# OCTOBER 16 | BUS

TIME	FROM NORTH				FROM SOUTH				FROM EAST				FROM WEST			
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total
<b>AM PERIOD</b>																
7:00 AM - 7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM - 7:30 AM	0	1	0	1	0	0	0	0	0	0	1	1	0	0	0	0
7:30 AM - 7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM - 8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM - 8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM - 8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM - 8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM - 9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>GRAND TOTAL</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>PM PERIOD</b>																
12:00 PM - 12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM - 12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM - 12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM - 1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 PM - 1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15 PM - 1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30 PM - 1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45 PM - 2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>GRAND TOTAL</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

# OCTOBER 16 | PEDESTRIAN

TIME	FROM NORTH				FROM SOUTH				FROM EAST				FROM WEST			
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total
<b>AM PERIOD</b>																
7:00 AM - 7:15 AM	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM - 7:30 AM	0	0	0	0	0	3	0	3	0	3	3	6	0	0	0	0
7:30 AM - 7:45 AM	0	0	0	0	0	4	0	4	0	16	0	16	0	1	0	1
7:45 AM - 8:00 AM	0	1	2	3	1	3	0	4	2	13	0	15	3	1	0	4
8:00 AM - 8:15 AM	0	0	0	0	0	3	0	3	0	4	0	4	2	1	0	3
8:15 AM - 8:30 AM	0	0	0	0	0	1	0	1	0	8	3	11	0	0	0	0
8:30 AM - 8:45 AM	0	1	1	2	0	7	0	7	0	29	0	29	1	0	0	1
8:45 AM - 9:00 AM	0	0	0	0	1	8	0	9	0	29	0	29	1	1	0	2
<b>GRAND TOTAL</b>	<b>0</b>	<b>2</b>	<b>4</b>	<b>6</b>	<b>2</b>	<b>29</b>	<b>0</b>	<b>31</b>	<b>2</b>	<b>102</b>	<b>6</b>	<b>110</b>	<b>7</b>	<b>4</b>	<b>0</b>	<b>11</b>
<b>PM PERIOD</b>																
12:00 PM - 12:15 PM	1	2	1	4	1	2	0	3	0	8	0	8	1	32	1	34
12:15 PM - 12:30 PM	1	1	0	2	1	1	0	2	0	8	2	10	1	16	2	19
12:30 PM - 12:45 PM	0	4	0	4	3	1	0	4	0	37	0	37	0	2	0	2
12:45 PM - 1:00 PM	2	3	1	6	0	6	1	7	0	23	2	25	3	10	3	16
1:00 PM - 1:15 PM	0	1	1	2	2	0	1	3	2	1	2	5	1	25	2	28
1:15 PM - 1:30 PM	0	2	1	3	4	3	4	11	5	7	0	12	1	13	0	14
1:30 PM - 1:45 PM	2	7	1	10	3	3	4	10	0	26	0	26	2	4	2	8
1:45 PM - 2:00 PM	3	4	2	9	1	0	0	1	0	12	2	14	0	19	0	19
<b>GRAND TOTAL</b>	<b>9</b>	<b>24</b>	<b>7</b>	<b>40</b>	<b>15</b>	<b>16</b>	<b>10</b>	<b>41</b>	<b>7</b>	<b>122</b>	<b>8</b>	<b>137</b>	<b>9</b>	<b>121</b>	<b>10</b>	<b>140</b>

# **TMC STUDY**

**"OCTOBER 23"  
(AM & PM PERIODS)**

# OCTOBER 23 | PASSENGER CAR

TIME	FROM NORTH				FROM SOUTH				FROM EAST				FROM WEST			
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total
<b>AM PERIOD</b>																
7:00 AM - 7:15 AM	2	6	1	9	0	7	0	7	0	1	0	1	1	0	1	2
7:15 AM - 7:30 AM	0	5	1	6	0	5	1	6	1	1	0	2	4	0	1	5
7:30 AM - 7:45 AM	3	5	8	16	0	11	1	12	1	4	0	5	3	2	1	6
7:45 AM - 8:00 AM	3	16	6	25	3	16	1	20	4	6	0	10	3	0	2	5
8:00 AM - 8:15 AM	1	10	10	21	4	34	5	43	3	5	0	8	3	6	1	10
8:15 AM - 8:30 AM	1	15	6	22	1	18	1	20	1	3	3	7	6	4	0	10
8:30 AM - 8:45 AM	0	13	6	19	3	15	4	22	3	3	3	9	5	3	1	9
8:45 AM - 9:00 AM	0	7	5	12	0	18	2	20	3	11	3	17	5	1	1	7
<b>GRAND TOTAL</b>	<b>10</b>	<b>77</b>	<b>43</b>	<b>130</b>	<b>11</b>	<b>124</b>	<b>15</b>	<b>150</b>	<b>16</b>	<b>34</b>	<b>9</b>	<b>59</b>	<b>30</b>	<b>16</b>	<b>8</b>	<b>54</b>
<b>PM PERIOD</b>																
12:00 PM - 12:15 PM	1	15	0	16	1	24	5	30	0	3	1	4	1	11	1	13
12:15 PM - 12:30 PM	0	10	6	16	2	16	1	19	5	10	2	17	2	3	1	6
12:30 PM - 12:45 PM	2	8	3	13	0	21	3	24	3	5	2	10	2	6	2	10
12:45 PM - 1:00 PM	0	12	9	21	0	20	5	25	7	9	2	18	2	5	3	10
1:00 PM - 1:15 PM	1	19	4	24	0	5	2	7	3	2	5	10	5	7	2	14
1:15 PM - 1:30 PM	2	25	4	31	0	14	4	18	3	4	2	9	6	6	3	15
1:30 PM - 1:45 PM	1	10	2	13	0	21	4	25	8	7	3	18	1	6	1	8
1:45 PM - 2:00 PM	2	14	1	17	3	15	3	21	6	4	1	11	2	10	1	13
<b>GRAND TOTAL</b>	<b>9</b>	<b>113</b>	<b>29</b>	<b>151</b>	<b>6</b>	<b>136</b>	<b>27</b>	<b>169</b>	<b>35</b>	<b>44</b>	<b>18</b>	<b>97</b>	<b>21</b>	<b>54</b>	<b>14</b>	<b>89</b>

# OCTOBER 23 | BIKE

TIME	FROM NORTH				FROM SOUTH				FROM EAST				FROM WEST			
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total
<b>AM PERIOD</b>																
7:00 AM - 7:15 AM	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0
7:15 AM - 7:30 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0
7:30 AM - 7:45 AM	1	0	0	1	0	0	0	0	0	2	1	3	0	0	0	0
7:45 AM - 8:00 AM	1	0	1	2	1	5	0	6	0	2	5	7	1	0	0	1
8:00 AM - 8:15 AM	0	0	0	0	1	4	0	5	1	1	1	3	0	0	0	0
8:15 AM - 8:30 AM	0	0	0	0	1	1	0	2	0	1	2	3	0	0	1	1
8:30 AM - 8:45 AM	0	1	0	1	0	0	1	1	0	1	0	1	0	0	0	0
8:45 AM - 9:00 AM	0	0	0	0	3	7	0	10	0	14	2	16	0	0	0	0
<b>GRAND TOTAL</b>	<b>2</b>	<b>1</b>	<b>1</b>	<b>4</b>	<b>6</b>	<b>17</b>	<b>2</b>	<b>25</b>	<b>1</b>	<b>22</b>	<b>11</b>	<b>34</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>2</b>
<b>PM PERIOD</b>																
12:00 PM - 12:15 PM	1	0	0	1	0	4	0	4	0	2	0	2	0	2	0	2
12:15 PM - 12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM - 12:45 PM	0	0	1	1	0	1	0	1	0	4	0	4	0	0	0	0
12:45 PM - 1:00 PM	0	1	1	2	1	7	0	8	0	4	0	4	0	0	0	0
1:00 PM - 1:15 PM	1	1	0	2	0	1	0	1	0	0	0	0	0	3	0	3
1:15 PM - 1:30 PM	0	1	0	1	0	1	0	1	0	4	0	4	0	2	1	3
1:30 PM - 1:45 PM	0	1	0	1	0	3	0	3	0	1	0	1	0	1	0	1
1:45 PM - 2:00 PM	1	2	0	3	1	3	0	4	0	1	1	2	0	2	0	2
<b>GRAND TOTAL</b>	<b>3</b>	<b>6</b>	<b>2</b>	<b>11</b>	<b>2</b>	<b>20</b>	<b>0</b>	<b>22</b>	<b>0</b>	<b>16</b>	<b>1</b>	<b>17</b>	<b>0</b>	<b>10</b>	<b>1</b>	<b>11</b>

# OCTOBER 23 | HEAVY VEHICLE

TIME	FROM NORTH				FROM SOUTH				FROM EAST				FROM WEST			
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total
<b>AM PERIOD</b>																
7:00 AM - 7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM - 7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
7:30 AM - 7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
7:45 AM - 8:00 AM	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	1
8:00 AM - 8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM - 8:30 AM	0	1	0	1	0	0	0	0	0	0	0	0	1	0	0	1
8:30 AM - 8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM - 9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
<b>GRAND TOTAL</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>4</b>	<b>1</b>	<b>0</b>	<b>5</b>
<b>PM PERIOD</b>																
12:00 PM - 12:15 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM - 12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM - 12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM - 1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 PM - 1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15 PM - 1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30 PM - 1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45 PM - 2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>GRAND TOTAL</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

# OCTOBER 23 | BUS

TIME	FROM NORTH				FROM SOUTH				FROM EAST				FROM WEST			
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total
<b>AM PERIOD</b>																
7:00 AM - 7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM - 7:30 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM - 7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM - 8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM - 8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM - 8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM - 8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM - 9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>GRAND TOTAL</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>PM PERIOD</b>																
12:00 PM - 12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM - 12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM - 12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM - 1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 PM - 1:15 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0
1:15 PM - 1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30 PM - 1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45 PM - 2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>GRAND TOTAL</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

# OCTOBER 23 | PEDESTRIAN

TIME	FROM NORTH				FROM SOUTH				FROM EAST				FROM WEST			
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total
<b>AM PERIOD</b>																
7:00 AM - 7:15 AM	0	0	0	0	0	1	0	1	0	2	2	4	0	0	0	0
7:15 AM - 7:30 AM	0	0	0	0	0	2	0	2	0	5	1	6	0	0	0	0
7:30 AM - 7:45 AM	0	0	0	0	2	3	0	5	0	22	3	25	0	0	0	0
7:45 AM - 8:00 AM	0	2	1	3	0	4	0	4	0	19	3	22	0	5	0	5
8:00 AM - 8:15 AM	0	0	0	0	0	3	0	3	0	7	0	7	0	2	0	2
8:15 AM - 8:30 AM	0	2	0	2	1	3	0	4	1	9	0	10	0	0	2	2
8:30 AM - 8:45 AM	4	0	0	4	4	13	1	18	0	31	1	32	0	1	0	1
8:45 AM - 9:00 AM	0	0	0	0	0	7	0	7	0	24	3	27	0	1	0	1
<b>GRAND TOTAL</b>	<b>4</b>	<b>4</b>	<b>1</b>	<b>9</b>	<b>7</b>	<b>36</b>	<b>1</b>	<b>44</b>	<b>1</b>	<b>119</b>	<b>13</b>	<b>133</b>	<b>0</b>	<b>9</b>	<b>2</b>	<b>11</b>
<b>PM PERIOD</b>																
12:00 PM - 12:15 PM	3	3	0	6	0	2	0	2	0	10	0	10	4	29	1	34
12:15 PM - 12:30 PM	0	0	0	0	4	1	2	7	0	8	0	8	1	7	0	8
12:30 PM - 12:45 PM	1	1	0	2	3	1	1	5	0	37	0	37	0	9	0	9
12:45 PM - 1:00 PM	0	2	0	2	2	3	0	5	0	21	0	21	1	12	0	13
1:00 PM - 1:15 PM	4	4	0	8	0	1	0	1	0	6	0	6	1	19	0	20
1:15 PM - 1:30 PM	0	1	1	2	1	4	1	6	1	11	0	12	0	9	0	9
1:30 PM - 1:45 PM	0	0	0	0	3	2	0	5	0	24	0	24	2	8	0	10
1:45 PM - 2:00 PM	1	7	0	8	3	1	0	4	0	13	1	14	0	28	0	28
<b>GRAND TOTAL</b>	<b>9</b>	<b>18</b>	<b>1</b>	<b>28</b>	<b>16</b>	<b>15</b>	<b>4</b>	<b>35</b>	<b>1</b>	<b>130</b>	<b>1</b>	<b>132</b>	<b>9</b>	<b>121</b>	<b>1</b>	<b>131</b>