Received 10/31/2019

GTC Gibson Traffic Consultants, Inc.
Transportation Planners and Traffic Engineers

MEMORANDUM

BRADLY JAMES LINCOLN
STATE OF WASHINGTON
42307
REGISTERED
PROFESSIONAL ENGINEER
10/18/19

To: Rick Hanson, Hanson Homes
From: Brad Lincoln, PE
Subject: Stanton Station
Queuing Analysis
Date: October 18, 2019
Project: GTC #19-172

Gibson Traffic Consultants, Inc. (GTC) has been retained to provide a queuing analysis for the Stanton Station development. The site is located in the southwest corner of the intersection of 179th Avenue SE at 149th Street SE. A site vicinity map is included in Figure 1.

Figure 1: Site Vicinity Map

2813 Rockefeller Avenue · Suite B · Everett, WA 98201
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This statement is not correct. The striped left turn lane extends well beyond (west of) the proposed access road.

The Stanton Station development is proposed to provide an access to 149th Street SE and City of Monroe staff has requested an analysis to determine if vehicles will queue beyond the access. There is proposed to be 110 feet of separation between the stop-bar at 179th Avenue SE and the access, which would allow for approximately 4 to 5 vehicles in queue (average vehicle length of 22 to 25 feet in a queue). Additionally, the access is proposed to be located beyond the striped left-turn lane storage.

City of Monroe staff identified that traffic volumes for the intersection were to be collected on a Wednesday, Thursday and Friday between 6:00 AM and 6:00 PM. The traffic volume data was collected in October 2019 by the independent count firm Traffic Data Gathering (TDG) according to the requests of City of Monroe staff. The data shows that the highest volumes occur during the PM peak-hour between 4:00 PM and 6:00 PM. Turning movement counts for the PM peak-hour of the three count days was also provided and it was determined that the highest PM peak-hour volume occurred on Wednesday. The total traffic data and the PM peak-hour turning movement counts are included with this memorandum and have been provided to City of Monroe staff.

Additionally, video data of the west leg (eastbound vehicles) was collected at the same time to evaluate the number of vehicles that queue along 149th Street SE. The videos were reviewed and there was one time (in all 36 hours of data) where there were 3 left-turn vehicles that were queued and several instances were two vehicles were queued. However, the vast majority of the time there was less than 1 vehicle queued at the intersection. This was substantiated by the PM peak-hour level of service analysis of the intersection, which showed a 95th Percentile queue of less than 1 vehicle. This equates to 57 minutes of the PM peak-hour having less than 1 vehicle on the west leg of the intersection. The analysis is included in the attachments.

The 110 feet of separation between the access to the Stanton Station and the stop-bar should therefore provide sufficient space and is not anticipated to be blocked by eastbound vehicles queued at the adjacent intersection. The access to the Stanton Station development should therefore be approved.

Attachments

TRAFFIC DATA GATHERING

INTERSECTION TURNING MOVEMENTS ENTRY FORM

LOCATION: 179th Avenue SE @ 149th Street SE
Monroe, WA

DATE OF COUNT: Wed. 10/9/19
TIME OF COUNT: 6:00 AM - 6:00 PM

COUNTED BY: TDG

TIME INTERVAL ENDING AT	FROM NORTH ON 179th Avenue SE							FROM SOUTH ON 179th Avenue SE							FROM EAST ON 149th Street							FROM WEST ON 149th Street						
	Peds	Bicycle	HV	U-Turn	Left	Thru	Right	Peds	Bicycle	HV	U-Turn	Left	Thru	Right	Peds	Bicycle	HV	U-Turn	Left	Thru	Right	Peds	Bicycle	HV	U-Turn	Left	Thru	Right
06:15 AM	0	0	3	0	3	25	0	0	0	0	0	0	18	4	0	0	0	0	2	0	1	0	0	0	0	4	0	0
06:30 AM	0	0	3	0	3	25	2	0	0	0	0	0	31	1	0	0	0	0	2	0	3	0	0	0	0	7	0	2
06:45 AM	0	0	2	0	1	32	0	0	0	3	0	1	38	3	0	0	0	0	2	0	2	0	0	0	0	2	0	2
07:00 AM	1	0	5	0	3	52	0	0	1	4	0	0	61	1	0	0	2	0	2	2	2	0	0	0	0	8	1	1
07:15 AM	0	0	3	0	2	49	2	0	0	2	0	1	37	8	0	0	0	0	4	0	1	2	0	0	0	5	0	1
07:30 AM	0	0	0	0	1	75	1	0	0	3	0	0	44	7	0	1	1	0	2	0	2	1	0	1	0	6	2	1
07:45 AM	0	0	3	0	8	61	1	0	0	3	0	1	64	2	0	0	2	0	5	1	2	0	0	3	0	4	0	4
08:00 AM	0	0	4	0	8	59	0	0	0	3	0	0	73	13	0	0	0	0	1	0	8	1	0	0	0	9	0	4
08:15 AM	0	0	1	0	3	51	1	0	0	4	0	0	45	9	0	0	1	0	2	0	3	1	0	0	0	2	0	4
08:30 AM	0	0	5	0	6	64	1	0	0	4	0	1	44	3	0	0	0	0	2	0	2	0	0	0	0	1	1	2
08:45 AM	1	0	3	0	4	57	1	0	0	2	0	1	66	7	0	0	1	0	3	0	8	0	0	2	0	6	0	0
09:00 AM	0	0	5	0	9	39	0	0	0	3	0	1	68	9	0	0	0	0	4	0	3	1	0	0	0	2	0	1
09:15 AM	0	0	7	2	27	38	0	0	0	3	0	0	49	13	0	0	2	0	5	0	5	0	0	0	0	4	1	1
09:30 AM	0	0	2	0	9	40	4	0	0	6	0	1	45	14	0	0	0	0	14	0	44	0	0	1	0	7	0	2
09:45 AM	0	0	2	0	7	24	2	0	0	3	0	0	45	6	0	0	2	0	2	0	12	2	0	0	0	4	1	1
10:00 AM	0	0	3	0	2	32	3	0	0	4	0	0	33	11	1	0	1	0	3	1	9	0	0	0	0	3	0	2
10:15 AM	0	0	1	0	1	32	3	0	0	5	0	1	43	2	1	0	3	0	4	0	6	1	0	1	0	8	0	0
10:30 AM	0	0	5	0	4	37	1	0	0	4	0	0	36	7	1	0	1	0	2	0	8	0	0	0	0	1	0	0
10:45 AM	0	0	5	0	4	35	4	0	0	2	0	1	28	4	0	0	1	0	3	0	8	1	0	1	0	0	1	0
11:00 AM	0	0	4	0	3	25	2	0	0	0	0	0	38	6	0	0	1	0	5	0	5	0	0	0	0	4	1	0
11:15 AM	1	0	3	0	4	42	2	0	0	4	0	1	47	4	1	0	1	0	5	0	4	0	0	0	0	3	0	0
11:30 AM	0	0	5	0	10	46	3	0	0	2	1	0	46	6	0	0	0	0	5	0	3	0	0	0	0	2	0	0
11:45 AM	1	0	4	0	14	26	1	0	0	9	0	1	49	21	0	0	2	0	10	0	12	2	0	1	0	5	3	3
12:00 PM	0	0	1	0	8	37	2	0	0	5	0	2	36	8	0	0	1	0	14	0	30	1	0	0	0	6	0	0

TRAFFIC DATA GATHERING

INTERSECTION TURNING MOVEMENTS ENTRY FORM

LOCATION: 179th Avenue SE @ 149th Street SE
Monroe, WA

DATE OF COUNT: Wed. 10/9/19
TIME OF COUNT: 6:00 AM - 6:00 PM

COUNTED BY: TDG

TIME INTERVAL ENDING AT	FROM NORTH ON 179th Avenue SE							FROM SOUTH ON 179th Avenue SE							FROM EAST ON 149th Street							FROM WEST ON 149th Street						
	Peds	Bicycle	HV	U-Turn	Left	Thru	Right	Peds	Bicycle	HV	U-Turn	Left	Thru	Right	Peds	Bicycle	HV	U-Turn	Left	Thru	Right	Peds	Bicycle	HV	U-Turn	Left	Thru	Right
12:15 PM	1	0	4	0	3	38	2	0	0	3	0	3	39	6	0	0	0	0	4	0	13	2	0	2	0	1	0	1
12:30 PM	0	0	2	0	3	34	2	0	0	1	0	2	46	5	0	0	0	0	5	2	4	1	0	1	0	2	0	3
12:45 PM	0	0	7	0	2	30	1	0	0	2	0	0	62	4	0	0	1	0	3	0	5	0	0	1	0	4	0	3
01:00 PM	0	0	0	1	14	34	5	0	0	3	0	1	45	15	1	0	0	0	5	0	1	0	0	0	0	5	0	1
01:15 PM	1	0	4	0	6	40	1	0	0	2	0	3	47	6	1	0	0	0	9	0	27	3	0	0	0	2	0	0
01:30 PM	1	0	4	0	4	46	3	0	0	4	0	1	63	4	0	0	1	0	4	0	4	0	0	0	0	2	1	0
01:45 PM	0	0	2	0	2	42	2	0	0	10	0	2	54	3	0	0	1	0	5	0	8	1	0	0	0	4	0	0
02:00 PM	0	0	2	0	5	41	2	0	0	3	0	2	40	6	0	0	0	0	4	0	5	0	0	0	0	2	1	0
02:15 PM	0	1	4	0	2	41	3	0	0	5	0	1	63	5	1	0	2	0	4	1	6	1	0	0	0	4	0	3
02:30 PM	0	0	2	0	0	60	5	0	0	5	0	1	55	5	1	0	1	0	1	0	10	0	0	0	0	2	0	0
02:45 PM	0	0	3	0	2	65	4	0	0	5	0	1	74	4	0	0	0	0	5	1	4	0	0	0	0	2	0	2
03:00 PM	0	0	4	0	1	47	5	0	0	5	0	0	79	7	2	0	0	0	2	0	8	0	1	0	0	3	0	0
03:15 PM	1	0	5	0	3	58	2	0	0	6	0	4	70	8	0	0	1	0	6	0	7	3	0	0	0	3	0	2
03:30 PM	1	1	1	0	5	60	5	0	1	6	0	2	84	7	1	0	2	0	4	3	7	2	0	1	0	5	0	3
03:45 PM	0	1	3	0	1	79	4	0	0	2	0	6	98	5	2	0	1	0	6	0	13	2	0	0	0	8	0	4
04:00 PM	0	0	5	0	6	75	5	0	0	6	0	4	89	5	0	0	0	0	2	0	6	0	0	0	0	2	0	1
04:15 PM	0	1	1	0	1	59	3	0	0	6	0	3	94	6	0	0	0	0	4	0	9	0	0	0	0	8	0	1
04:30 PM	0	0	3	1	5	64	1	0	0	3	0	3	96	5	0	0	1	0	5	0	6	0	0	0	0	4	0	4
04:45 PM	0	0	8	0	1	72	3	0	0	4	0	6	98	10	0	0	0	0	3	0	12	0	0	0	0	5	1	2
05:00 PM	0	0	5	0	5	53	1	0	0	8	0	5	97	8	0	0	0	0	10	0	9	0	0	0	0	2	1	2
05:15 PM	0	0	1	0	4	49	2	0	0	5	0	3	106	7	0	0	0	0	9	0	6	0	0	0	0	6	0	2
05:30 PM	0	0	0	0	0	68	4	1	2	3	0	2	126	6	0	0	0	0	2	0	5	1	0	0	0	7	0	1
05:45 PM	1	0	2	0	4	49	3	1	0	2	0	2	92	10	0	0	0	0	4	0	5	0	0	0	0	6	0	0
06:00 PM	0	0	2	0	11	41	4	0	0	3	0	2	76	7	0	0	0	0	7	0	7	1	0	0	0	2	0	1

TRAFFIC DATA GATHERING

INTERSECTION TURNING MOVEMENTS ENTRY FORM

LOCATION: 179th Avenue SE @ 149th Street SE
Monroe, WA

DATE OF COUNT: Thu. 10/10/19
TIME OF COUNT: 6:00 AM - 6:00 PM

COUNTED BY: TDG

TIME INTERVAL ENDING AT	FROM NORTH ON 179th Avenue SE							FROM SOUTH ON 179th Avenue SE							FROM EAST ON 149th Street							FROM WEST ON 149th Street						
	Peds	Bicycle	HV	U-Turn	Left	Thru	Right	Peds	Bicycle	HV	U-Turn	Left	Thru	Right	Peds	Bicycle	HV	U-Turn	Left	Thru	Right	Peds	Bicycle	HV	U-Turn	Left	Thru	Right
06:15 AM	0	0	1	0	1	25	0	0	0	2	0	0	28	3	0	0	0	0	1	0	3	1	0	0	0	1	0	1
06:30 AM	0	0	2	0	4	21	3	0	0	0	0	0	42	0	0	0	1	0	3	0	4	0	0	0	0	3	0	3
06:45 AM	0	0	2	0	2	35	0	0	0	1	0	0	38	6	0	0	0	0	0	0	2	0	0	0	0	4	0	3
07:00 AM	0	0	7	0	3	55	0	0	0	3	0	0	54	4	0	0	0	0	5	0	3	0	0	0	0	8	0	1
07:15 AM	0	0	4	0	3	54	1	0	2	3	0	0	41	3	1	0	0	0	3	0	1	4	0	0	0	6	0	2
07:30 AM	0	0	4	0	2	68	1	0	0	4	0	1	40	1	0	1	1	0	2	0	0	0	0	1	0	4	1	1
07:45 AM	0	0	7	0	6	65	0	0	0	1	0	1	56	2	0	0	1	0	3	0	1	0	0	0	0	7	0	1
08:00 AM	0	0	5	0	7	53	1	0	0	4	0	0	74	7	0	0	4	0	1	0	10	1	0	0	0	7	0	1
08:15 AM	0	0	3	0	4	56	0	0	0	3	0	0	48	6	0	0	1	0	4	0	3	0	0	0	0	3	0	2
08:30 AM	1	0	5	0	2	59	1	0	0	3	0	2	51	8	0	0	0	0	3	0	3	0	0	0	0	0	0	1
08:45 AM	0	0	2	0	3	43	1	0	0	5	0	1	53	7	0	0	1	0	1	0	4	0	0	2	0	9	0	0
09:00 AM	0	0	2	0	10	37	2	0	0	5	0	0	63	5	0	0	0	0	4	0	2	0	0	0	0	5	0	2
09:15 AM	0	0	2	0	31	39	2	0	0	1	0	1	41	12	0	0	0	0	5	0	11	0	0	0	0	3	2	0
09:30 AM	0	0	10	0	13	40	2	0	0	1	0	1	41	10	0	0	0	0	13	1	37	0	0	0	0	4	0	1
09:45 AM	1	0	5	0	1	27	2	0	0	5	0	0	40	5	0	0	0	0	5	0	6	1	0	0	0	1	0	0
10:00 AM	0	0	1	0	1	23	1	0	0	1	0	1	34	7	0	0	1	0	3	0	14	1	0	0	0	5	0	1
10:15 AM	0	0	3	0	5	31	1	0	0	4	0	0	40	5	0	0	3	0	4	0	9	0	0	0	0	6	0	0
10:30 AM	1	0	4	0	3	35	1	0	0	5	0	0	34	6	0	0	0	0	4	1	9	0	0	0	0	4	0	1
10:45 AM	1	0	1	0	2	36	3	0	0	7	0	0	35	8	0	0	2	0	7	0	1	0	0	1	0	3	0	2
11:00 AM	0	0	6	0	2	38	7	0	0	5	0	3	40	6	0	0	2	0	1	1	7	0	0	0	0	3	1	0
11:15 AM	1	0	2	0	5	42	5	0	1	3	0	1	40	8	0	0	1	0	3	0	8	2	0	0	0	5	1	0
11:30 AM	0	0	6	0	4	40	4	0	0	2	0	3	55	8	0	0	2	0	7	0	10	0	0	0	0	5	0	0
11:45 AM	0	0	8	0	16	37	4	0	0	6	0	0	47	13	0	0	1	0	4	0	8	1	0	0	0	2	0	1
12:00 PM	0	0	6	0	7	36	5	0	0	6	0	1	62	12	1	0	2	0	14	0	30	0	0	0	0	4	0	0

TRAFFIC DATA GATHERING

INTERSECTION TURNING MOVEMENTS ENTRY FORM

LOCATION: 179th Avenue SE @ 149th Street SE
Monroe, WA

DATE OF COUNT: Thu. 10/10/19
TIME OF COUNT: 6:00 AM - 6:00 PM

COUNTED BY: TDG

TIME INTERVAL ENDING AT	FROM NORTH ON 179th Avenue SE							FROM SOUTH ON 179th Avenue SE							FROM EAST ON 149th Street							FROM WEST ON 149th Street						
	Peds	Bicycle	HV	U-Turn	Left	Thru	Right	Peds	Bicycle	HV	U-Turn	Left	Thru	Right	Peds	Bicycle	HV	U-Turn	Left	Thru	Right	Peds	Bicycle	HV	U-Turn	Left	Thru	Right
12:15 PM	1	0	0	0	5	43	1	0	0	3	0	4	56	5	0	0	0	0	5	1	16	0	0	0	0	4	0	1
12:30 PM	0	1	7	1	4	44	7	0	0	2	0	2	32	9	0	0	1	0	6	0	9	2	0	0	0	9	1	1
12:45 PM	0	0	4	0	5	37	2	0	0	5	0	2	54	8	0	0	0	0	5	0	11	1	0	0	0	2	0	3
01:00 PM	0	0	0	0	11	30	0	0	0	5	0	1	37	7	0	0	1	0	2	0	5	0	0	0	0	3	0	1
01:15 PM	0	0	0	0	6	40	2	0	0	4	0	0	32	4	0	0	0	0	9	0	14	0	1	0	0	4	0	1
01:30 PM	0	0	5	0	3	27	5	1	0	2	0	0	34	5	0	0	0	0	8	0	7	2	0	0	0	0	0	0
01:45 PM	0	0	4	0	4	50	4	0	0	2	0	1	52	3	0	0	0	0	4	0	8	0	0	0	0	3	0	0
02:00 PM	2	1	5	1	7	56	2	0	0	9	0	0	37	7	0	0	1	0	1	0	3	1	0	0	0	5	1	4
02:15 PM	0	0	1	0	4	39	4	0	0	4	0	1	50	3	0	0	1	0	2	0	9	0	0	0	0	3	3	1
02:30 PM	0	0	2	1	1	50	3	0	0	4	0	3	61	9	1	0	0	0	8	0	5	3	0	0	0	5	0	0
02:45 PM	0	0	2	0	4	47	3	8	0	3	2	0	6	70	0	0	1	0	9	0	6	0	0	0	0	2	0	2
03:00 PM	0	0	2	0	5	38	2	0	0	6	2	4	60	9	0	0	1	0	5	2	7	1	0	0	0	4	1	4
03:15 PM	0	0	5	0	0	53	3	0	0	6	0	4	68	7	0	0	0	0	16	0	7	1	0	0	0	2	0	4
03:30 PM	0	0	2	1	2	47	5	0	0	6	0	1	64	8	2	0	0	0	5	1	3	1	0	1	0	5	0	3
03:45 PM	0	0	5	0	2	52	2	0	0	4	1	5	92	9	1	0	0	0	8	1	10	1	0	0	0	3	1	1
04:00 PM	0	0	3	0	1	58	7	0	2	6	0	3	72	6	0	0	1	0	8	0	6	2	0	0	0	4	0	1
04:15 PM	0	0	4	0	3	55	7	0	0	3	0	0	95	8	1	0	0	0	6	0	4	0	0	0	0	1	0	2
04:30 PM	0	0	6	0	1	55	9	0	0	1	0	1	87	5	0	0	0	0	5	0	3	2	0	0	0	1	1	0
04:45 PM	0	0	4	0	2	35	2	0	0	5	0	1	78	5	0	0	0	0	4	0	7	2	0	0	0	3	0	3
05:00 PM	0	0	0	0	1	40	3	0	0	6	0	2	111	15	0	0	1	0	5	0	10	2	0	0	0	6	0	2
05:15 PM	0	0	1	0	1	53	3	0	0	2	0	4	78	7	0	0	0	0	12	0	9	0	0	0	0	3	0	0
05:30 PM	2	0	2	0	0	44	4	0	0	3	0	1	85	2	0	0	1	0	5	0	5	2	0	0	0	6	0	0
05:45 PM	2	0	3	1	4	48	8	0	0	4	0	8	78	5	0	0	0	0	3	0	6	0	0	2	0	7	0	1
06:00 PM	0	0	0	0	3	48	6	0	0	1	0	4	94	8	1	0	0	0	7	0	8	0	0	0	0	5	1	0

TRAFFIC DATA GATHERING

INTERSECTION TURNING MOVEMENTS ENTRY FORM

LOCATION: 179th Avenue SE @ 149th Street SE
Monroe, WA

DATE OF COUNT: Fri. 10/11/19
TIME OF COUNT: 6:00 AM - 6:00 PM

COUNTED BY: TDG

TIME INTERVAL ENDING AT	FROM NORTH ON 179th Avenue SE							FROM SOUTH ON 179th Avenue SE							FROM EAST ON 149th Street							FROM WEST ON 149th Street						
	Peds	Bicycle	HV	U-Turn	Left	Thru	Right	Peds	Bicycle	HV	U-Turn	Left	Thru	Right	Peds	Bicycle	HV	U-Turn	Left	Thru	Right	Peds	Bicycle	HV	U-Turn	Left	Thru	Right
06:15 AM	0	0	3	0	0	24	0	0	0	0	0	0	22	3	0	0	0	0	2	0	2	0	0	0	0	5	0	2
06:30 AM	0	0	3	0	3	26	1	0	0	0	0	0	24	2	0	0	0	0	1	0	3	0	0	0	0	4	0	0
06:45 AM	0	0	2	0	2	28	2	0	0	5	0	2	42	1	0	0	0	0	1	0	4	0	0	0	0	4	0	3
07:00 AM	0	0	4	0	0	42	0	0	0	3	0	0	48	6	0	0	0	0	1	0	1	0	0	0	0	8	0	1
07:15 AM	0	0	3	0	1	36	0	0	0	1	0	0	41	3	2	0	1	0	3	0	1	3	0	1	0	4	1	0
07:30 AM	0	0	6	0	4	58	0	0	0	4	0	3	39	1	1	0	3	0	3	2	2	0	0	0	0	2	0	1
07:45 AM	0	0	2	0	4	69	3	0	0	2	0	0	68	0	0	0	0	0	2	0	1	0	0	3	0	3	3	1
08:00 AM	0	0	5	0	1	49	0	0	1	3	0	1	71	6	0	0	0	0	2	0	4	1	0	1	0	7	0	1
08:15 AM	0	0	1	0	1	33	3	0	0	5	0	1	48	1	0	0	2	0	0	1	1	0	0	2	0	7	0	2
08:30 AM	0	0	9	0	2	39	1	0	0	7	0	1	56	3	0	0	1	0	0	0	2	0	0	0	0	0	0	1
08:45 AM	0	0	4	0	4	55	0	0	0	3	0	1	51	6	0	0	0	0	4	0	6	0	0	2	0	10	0	2
09:00 AM	0	0	4	0	1	42	0	0	1	2	0	0	63	6	0	0	4	0	5	0	11	0	0	0	0	2	0	1
09:15 AM	0	0	2	0	6	34	2	0	0	1	0	0	32	6	0	0	0	0	5	0	4	1	0	1	0	3	1	1
09:30 AM	1	0	3	0	2	25	2	0	0	1	0	0	39	5	0	0	1	0	3	0	2	0	0	0	0	5	0	2
09:45 AM	1	0	3	0	4	29	4	0	0	4	0	0	41	1	0	0	1	0	0	0	3	1	0	1	0	4	0	0
10:00 AM	0	0	4	0	10	32	2	0	0	3	0	1	37	3	0	0	0	0	5	0	4	0	0	0	0	7	0	1
10:15 AM	0	0	0	0	1	28	1	0	0	3	0	0	47	2	0	0	2	0	4	1	8	1	0	0	0	0	0	0
10:30 AM	0	0	3	0	4	40	2	0	0	4	0	1	34	3	1	0	0	0	1	1	3	0	0	1	0	7	2	0
10:45 AM	0	0	3	0	3	22	2	0	0	3	0	3	40	4	0	0	2	0	4	0	3	0	0	0	0	6	2	0
11:00 AM	2	0	4	0	13	30	1	0	0	3	0	2	43	5	0	0	0	0	5	0	5	1	0	0	0	4	0	1
11:15 AM	1	0	3	0	4	46	4	0	0	3	0	2	32	5	0	0	3	0	7	0	9	0	0	2	0	6	0	0
11:30 AM	0	0	4	0	3	37	5	0	0	5	0	2	44	5	1	0	1	0	1	0	3	1	0	0	0	2	0	1
11:45 AM	0	0	3	0	5	43	7	0	0	4	0	1	33	2	0	0	2	0	3	2	8	0	0	1	0	10	0	1
12:00 PM	0	0	1	0	3	38	3	0	0	1	0	1	58	4	2	0	0	0	4	0	6	0	0	0	0	5	0	1

TRAFFIC DATA GATHERING

INTERSECTION TURNING MOVEMENTS ENTRY FORM

LOCATION: 179th Avenue SE @ 149th Street SE
Monroe, WA

DATE OF COUNT: Fri. 10/11/19
TIME OF COUNT: 6:00 AM - 6:00 PM

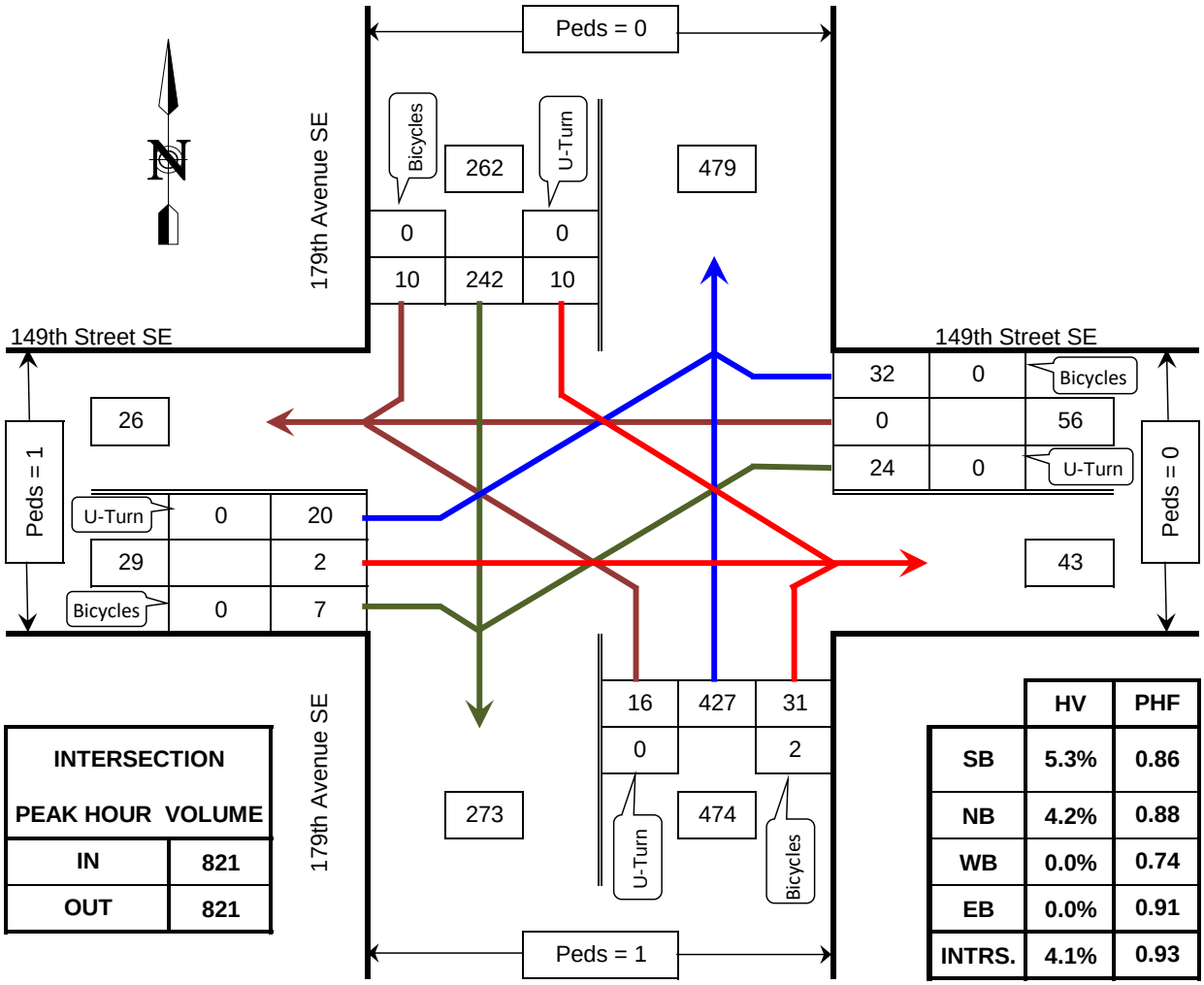
COUNTED BY: TDG

TIME INTERVAL ENDING AT	FROM NORTH ON 179th Avenue SE							FROM SOUTH ON 179th Avenue SE							FROM EAST ON 149th Street							FROM WEST ON 149th Street						
	Peds	Bicycle	HV	U-Turn	Left	Thru	Right	Peds	Bicycle	HV	U-Turn	Left	Thru	Right	Peds	Bicycle	HV	U-Turn	Left	Thru	Right	Peds	Bicycle	HV	U-Turn	Left	Thru	Right
12:15 PM	0	0	2	0	2	40	0	0	0	3	0	2	55	8	0	0	0	0	6	0	7	0	0	0	0	3	1	2
12:30 PM	0	0	2	0	4	51	1	0	0	3	0	2	42	5	2	0	0	0	1	1	5	1	0	0	0	2	1	2
12:45 PM	0	0	3	0	3	41	2	0	0	4	0	3	71	6	0	0	0	0	4	0	1	0	0	2	0	9	0	1
01:00 PM	0	1	2	0	3	38	4	0	0	1	0	0	57	8	0	0	0	0	2	0	4	0	0	0	0	5	0	2
01:15 PM	0	0	2	0	2	36	2	0	0	5	0	2	55	8	0	0	0	0	6	1	4	0	0	0	0	5	1	0
01:30 PM	0	0	3	0	0	29	2	0	0	4	0	1	61	6	0	0	0	0	3	0	5	0	0	0	0	2	0	0
01:45 PM	0	1	4	0	2	45	2	0	0	3	0	3	76	4	0	0	0	0	3	0	2	0	0	0	0	5	0	1
02:00 PM	0	1	2	0	5	39	3	0	3	2	0	3	65	12	0	0	0	0	4	0	3	2	0	0	0	7	0	0
02:15 PM	0	0	4	0	4	51	2	1	0	8	0	3	71	6	0	0	0	0	3	1	5	3	0	0	0	3	0	0
02:30 PM	0	0	2	1	2	41	0	0	0	8	0	0	77	11	0	0	1	0	1	0	6	0	0	1	0	7	1	1
02:45 PM	0	0	5	0	1	65	4	0	0	5	0	1	70	7	0	0	0	0	4	0	5	0	0	0	0	1	0	3
03:00 PM	0	0	2	0	7	41	7	0	0	9	0	3	89	6	1	0	5	0	7	0	10	1	0	0	0	7	0	1
03:15 PM	0	0	0	0	2	51	4	2	0	3	0	2	79	9	1	0	1	0	4	0	10	0	0	0	0	3	0	2
03:30 PM	2	0	3	0	2	44	2	0	0	8	0	2	96	11	0	0	0	0	3	0	8	1	0	0	0	3	0	1
03:45 PM	0	1	1	0	2	54	1	0	0	5	0	4	122	10	0	0	0	0	2	0	7	0	0	2	0	4	0	0
04:00 PM	0	0	3	0	5	63	6	0	1	6	1	4	94	7	0	0	1	0	4	1	6	1	0	2	0	7	0	4
04:15 PM	0	0	4	0	4	50	3	0	0	2	0	4	106	6	2	0	1	0	7	1	8	0	0	0	0	7	0	4
04:30 PM	0	1	4	0	5	60	3	1	1	1	0	4	101	4	1	0	0	0	2	0	5	0	0	0	0	4	0	2
04:45 PM	1	1	1	0	1	45	3	0	0	3	0	2	98	10	0	0	0	0	6	0	7	0	0	0	0	3	0	6
05:00 PM	0	0	2	0	2	62	3	0	0	3	0	3	88	6	0	0	1	0	1	0	13	1	0	1	0	7	0	2
05:15 PM	0	0	1	0	3	37	1	0	2	3	0	2	91	3	0	0	1	0	8	0	7	0	0	0	0	7	0	1
05:30 PM	0	1	1	0	0	48	3	0	0	10	0	2	88	5	0	0	0	0	5	1	6	0	0	0	0	7	0	0
05:45 PM	0	0	3	0	1	57	3	0	0	3	0	4	82	6	0	0	0	0	4	1	3	0	0	0	0	6	0	1
06:00 PM	0	0	1	0	4	38	2	0	0	4	0	4	70	1	0	0	0	0	6	0	1	0	0	1	0	5	0	3

TRAFFIC DATA GATHERING

TURNING MOVEMENTS DIAGRAM

4:00 PM - 6:00 PM PEAK HOUR: 4:30 PM TO 5:30 PM



INTERSECTION PEAK HOUR	VOLUME
IN	821
OUT	821

	HV	PHF
SB	5.3%	0.86
NB	4.2%	0.88
WB	0.0%	0.74
EB	0.0%	0.91
INTRS.	4.1%	0.93

PHF = Peak Hour Factor
HV = Heavy Vehicle

179th Avenue SE @ 149th Street SE

Monroe, WA

COUNTED BY: TDG

DATE OF COUNT: Wed. 10/9/19

REDUCTION DATE: Thu. 10/10/19

TIME OF COUNT: 4:00 PM - 6:00 PM

Intersection												
Int Delay, s/veh	1.9											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	2	7	24	0	32	16	427	31	10	242	10
Future Vol, veh/h	20	2	7	24	0	32	16	427	31	10	242	10
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	175	-	-	200	-	-	100	-	-	165	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	4	4	4	4	4	4	4	4	4	4	4	4
Mvmt Flow	22	2	8	26	0	34	17	459	33	11	260	11

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	815	814	266	803	803	476	271	0	0	492	0	0
Stage 1	288	288	-	510	510	-	-	-	-	-	-	-
Stage 2	527	526	-	293	293	-	-	-	-	-	-	-
Critical Hdwy	7.14	6.54	6.24	7.14	6.54	6.24	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.14	5.54	-	6.14	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.14	5.54	-	6.14	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.536	4.036	3.336	3.536	4.036	3.336	2.236	-	-	2.236	-	-
Pot Cap-1 Maneuver	294	310	768	299	315	585	1281	-	-	1061	-	-
Stage 1	715	670	-	542	534	-	-	-	-	-	-	-
Stage 2	531	526	-	711	667	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	272	303	768	289	308	585	1281	-	-	1061	-	-
Mov Cap-2 Maneuver	272	303	-	289	308	-	-	-	-	-	-	-
Stage 1	706	663	-	535	527	-	-	-	-	-	-	-
Stage 2	493	519	-	694	660	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	16.9	14.6	0.3	0.3
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1281	-	-	272	573	289	585	1061	-	-
HCM Lane V/C Ratio	0.013	-	-	0.079	0.017	0.089	0.059	0.01	-	-
HCM Control Delay (s)	7.8	-	-	19.4	11.4	18.7	11.5	8.4	-	-
HCM Lane LOS	A	-	-	C	B	C	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.3	0.1	0.3	0.2	0	-	-