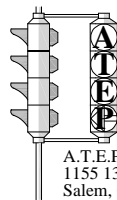


# Traffic Impact Analysis Hillyers Ford

Stayton, Oregon

May 30, 2018

Prepared by:  
Associated Transportation Engineering & Planning, Inc.  
Salem, Oregon  
May 30, 2018  
18-391



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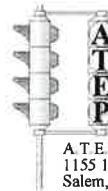
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## Traffic Impact Analysis

### Hillyers Ford

### Stayton, Oregon



### Introduction:

Hillyers Ford in Stayton Oregon is in preliminary planning stages. Located on tax lots 1400 and 1500 of tax map 9S1W03B. The 29 acre site is on the southwest side of Golf Lane about 1/4 mile west of Cascade Highway. The intent of this analysis is to estimate the impact traffic from the planned Automobile Dealership (ITE 840) will have on the transportation system in the City of Stayton and Marion County and to recommend improvements to the transportation system if appropriate.

Clients and employees of Hillyers Ford will use the transportation system and add traffic to the roadways. This analysis will consider the traffic impacts at the intersections of:

- Cascade Highway at the WB Hwy 22 intersection
- Cascade Highway at the EB Hwy 22 intersection
- Cascade Highway at Golf Lane
- Cascade Highway at Whitney St
- Cascade Highway at Shaff Road
- Golf Lane at the Site Access

The study will analyze the intersections in the AM and PM Peak hour periods and consider existing and developed traffic volumes, conditions and performance metrics.



**Figure 1 - Aerial View of Site**

### Summary of Findings:

The development of the planned 16,000 sq. ft. (16ksf) Hillyers Ford - Stayton dealership will generate an estimated 30 trips in the AM Peak hour and 39 trips in the PM Peak hour. Traffic from the planned automobile dealership will affect performance metrics at the studied intersections.

The existing AM Peak hour v/c at the Golf Lane at Cascade Hwy intersection is 0.020 (LOS C). PM Peak hour v/c at the Golf Lane at Cascade Hwy intersection is 0.029 (LOS C). When the new is complete, the v/c will change to 0.047 (4.7% of the intersections capacity is being used by the traffic volume) (LOS C) in the AM Peak hour and 0.045 (LOS C) in the PM Peak hour. All of the studied intersections are performing within accepted performance standards in the City of Stayton, Marion County and/or ODOT.

The crash data from the ODOT Crash Data Unit indicates there has been 1 reported crash at the Golf Lane at Cascade Hwy intersection in the last 5 years for which there is data. It was not a fatal crash. The intersection of the eastbound offramp at Cascade Hwy has had 26 crashes in the same period which is a higher rate than expected. There were 1472 PM Peak hour trips counted at the intersection. If one assumes 10% of the daily traffic, the crash rate is estimated to be 0.96 crashes per million entering vehicles. The estimated 90%ile crash rate for rural 3legged signalized intersections is 0.464 crashes per million entering vehicles.

## History, Existing and Background Conditions:

The site is vacant land in the City and zoned Residential Agricultural (RA). There is a concurrent application to change the zoning of the site to a commercial zone. It is anticipated that construction of the new automobile dealership will begin in 2018. Intersection sight distances meet generally accepted traffic engineering standards at all the studied intersections. Hwy 22 is used for commuters working in Salem and living in communities similar to Stayton. It is also used to access central Oregon recreational areas and the area around Stayton is an agricultural center. Traffic counts will be adjusted up using a factor of 1.127. The factor is selected because the seasonal trend table for agricultural areas is 1.10 (May 15) (0.9367/0.8439) and the ATR on Hwy 22 (24-005) indicates that May traffic is 102% of ADT while August is 115% of ADT or 12.7% higher than May. Using a factor of 1.127 results in a 12.7% increase in the counted volumes.

There were 8 or fewer left turns from the Cascade Hwy onto Golf Lane or the parking area across from Golf Lane in all the studied time periods allowing drivers turning left onto the Cascade Highway to use the left turn refuge in the highway for two stage gap acceptance.

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	WB Hwy 22 @ Cascade Hwy	All-way stop	HCM 6th Edition	SB Thru	0.882	28.1	D
2	EB Hwy 22 at Cascade Hwy	Signalized	HCM 6th Edition	EB Right	0.770	19.2	B
3	Golf Ln at Cascade Hwy	Two-way stop	HCM 6th Edition	EB Left	0.020	23.3	C
4	Whitney at Cascade Hwy	Signalized	HCM 6th Edition	WB Right	0.610	10.3	B
5	Golf Ln at Site Access	Two-way stop	HCM 6th Edition	EB Left	0.000	8.5	A
6	Shaff Rd at 1st St	Signalized	HCM 6th Edition	EB Left	0.610	23.9	C

Existing AM Peak Hour Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	WB Hwy 22 @ Cascade Hwy	All-way stop	HCM 6th Edition	SB Thru	0.686	17.7	C
2	EB Hwy 22 at Cascade Hwy	Signalized	HCM 6th Edition	SB Left	0.731	19.2	B
3	Golf Ln at Cascade Hwy	Two-way stop	HCM 6th Edition	WB Left	0.029	22.7	C
4	Whitney at Cascade Hwy	Signalized	HCM 6th Edition	WB Right	0.507	9.2	A
5	Golf Ln at Site Access	Two-way stop	HCM 6th Edition	EB Left	0.000	8.5	A
6	Shaff Rd at 1st St	Signalized	HCM 6th Edition	WB Left	0.620	25.1	C

Existing PM Peak Hour Summary

**Figure 2 - Existing Traffic Conditions**

Crash data was provided by ODOT for the studied intersections for the 5 year period including 2011 through 2015. There were 21 reported injury crashes and 31 property damage crashes at the intersections in the analyzed time period. There were no fatal crashes. The crash rate (0.968 crashes per million entering vehicles) at the east bound ramp a Cascade Hwy is above the 90%ile for ODOT intersections.

Intersection	Fatal Crashes	Injury Only	Property Damage Only	Total
Cascade Hwy at WB Hwy 22	0	4	5	9
Cascade Hwy at EB Hwy 22	0	9	17	26
Cascade Hwy at Golf Lane	0	0	1	1
Cascade Hwy at Whitney St	0	1	1	2
Cascade Hwy at Shaff Road	0	7	7	14

**Figure 3 – 2012 to 2016 ODOT Crash Data**

**Traffic Conditions when Hillyers Ford - Stayton is occupied:**

This analysis will assume that 5% of the traffic from the Hillyers Ford will travel to and from the west on Golf Lane, 20% to and from the west on Hwy 22, 10% to and from the north on the Cascade Hwy north of the interchange, 10% to and from the east on Hwy 22, 15% west of 1st St on Shaff Rd, 15% east of 1st St on Shaff Rd and 25% south of Shaff Rd on 1st St. This study will use 1.127 as the seasonal factor to increase traffic volumes for the analysis.

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	WB Hwy 22 @ Cascade Hwy	All-way stop	HCM 6th Edition	SB Thru	0.889	28.7	D
2	EB Hwy 22 at Cascade Hwy	Signalized	HCM 6th Edition	SB Left	0.777	19.8	B
3	Golf Ln at Cascade Hwy	Two-way stop	HCM 6th Edition	EB Left	0.047	24.7	C
4	Whitney at Cascade Hwy	Signalized	HCM 6th Edition	WB Right	0.619	10.5	B
5	Golf Ln at Site Access	Two-way stop	HCM 6th Edition	EB Left	0.000	8.8	A
6	Shaff Rd at 1st St	Signalized	HCM 6th Edition	EB Left	0.616	24.2	C

2018 AM Peak Hour Summary with Hillyers Ford

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	WB Hwy 22 @ Cascade Hwy	All-way stop	HCM 6th Edition	SB Thru	0.695	18.1	C
2	EB Hwy 22 at Cascade Hwy	Signalized	HCM 6th Edition	SB Left	0.739	19.6	B
3	Golf Ln at Cascade Hwy	Two-way stop	HCM 6th Edition	EB Left	0.045	24.3	C
4	Whitney at Cascade Hwy	Signalized	HCM 6th Edition	WB Right	0.515	9.3	A
5	Golf Ln at Site Access	Two-way stop	HCM 6th Edition	EB Left	0.001	8.8	A
6	Shaff Rd at 1st St	Signalized	HCM 6th Edition	WB Left	0.626	24.8	C

2018 PM Peak Hour Summary with Hillyers Ford

**Figure 4 – 2018 Traffic Conditions with Hillyers Ford****Summary:**

The development of the planned Hillyers Ford - Stayton will generate an estimated 30 trips in the AM Peak hour and 39 trips in the PM Peak hour. Residents will use the streets in the City of Stayton transportation system adding additional traffic to the system. Traffic from the Hillyers Ford, will affect performance metrics at the studied intersections and are included in the computer model for this study.

All the studied intersections are functioning with accepted performance metrics in the existing AM and PM Peak hour periods. They will continue to function with accepted performance metrics in the existing AM and PM Peak hour periods. ODOT crash data indicates a higher than generally expected crash rate at the intersection of the eastbound Hwy 22 ramp at Cascade Hwy.

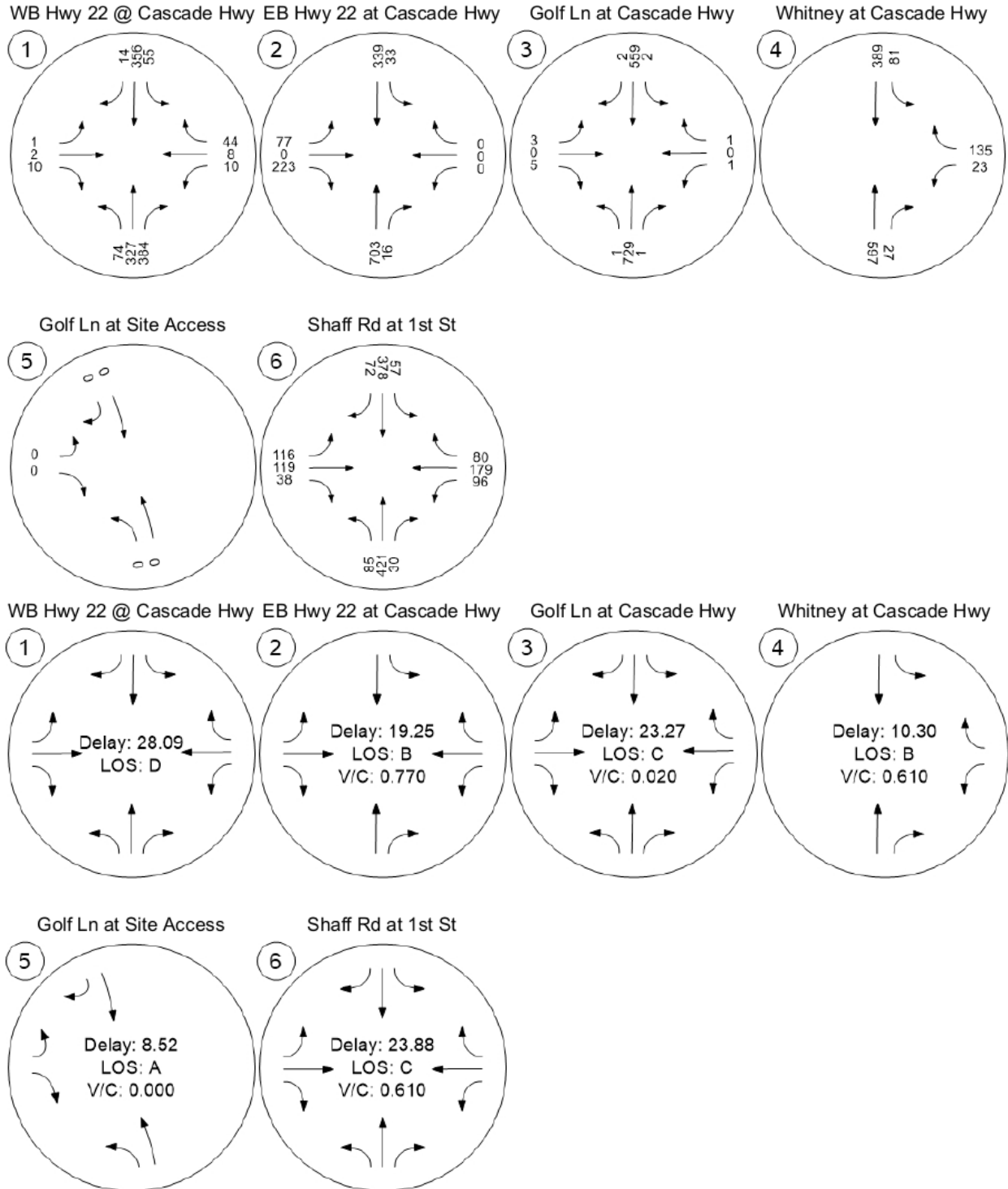


Figure 5 - Existing AM Peak hour Counts and Metrics



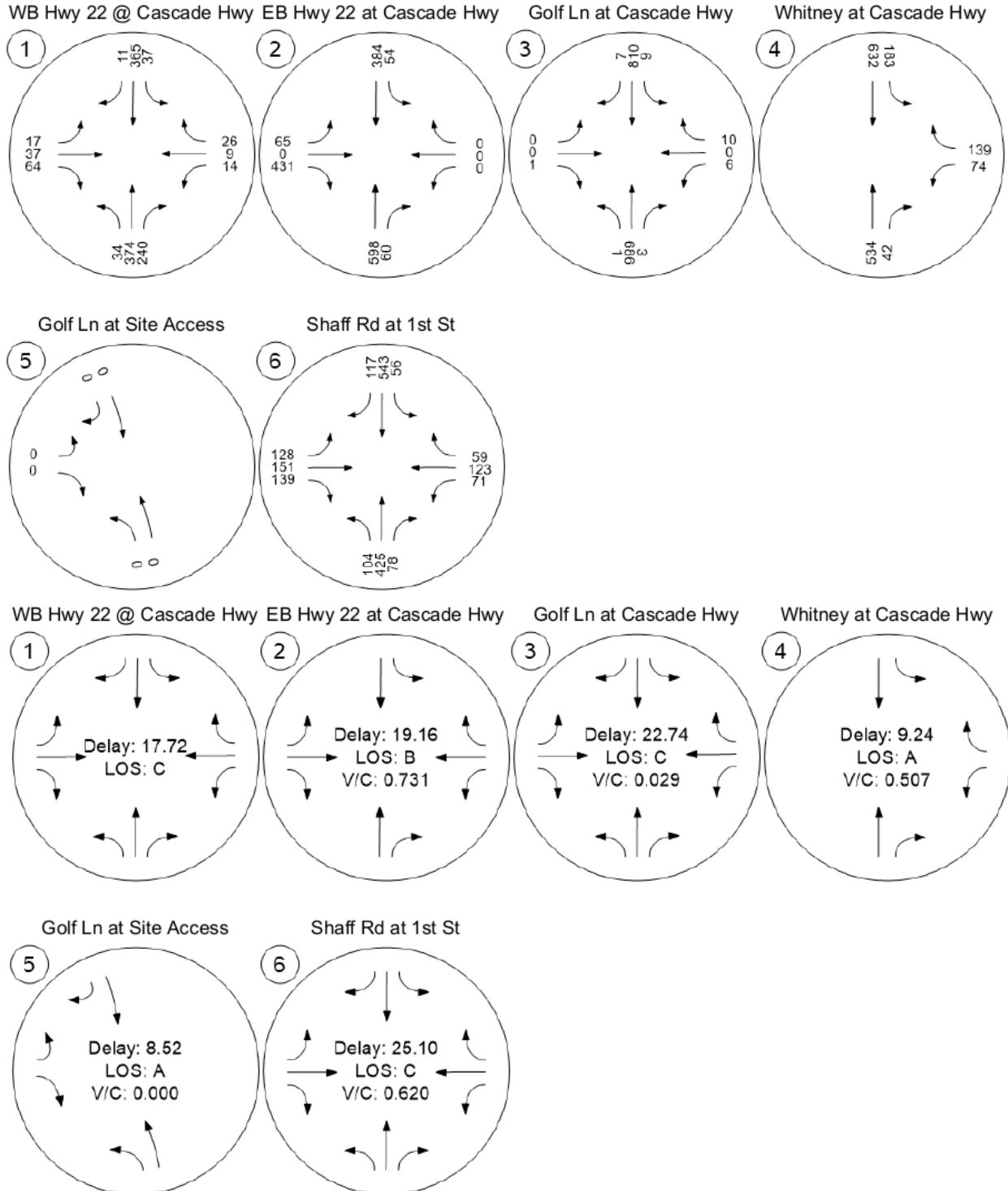


Figure 6 - Existing PM Peak hour Counts and Metrics

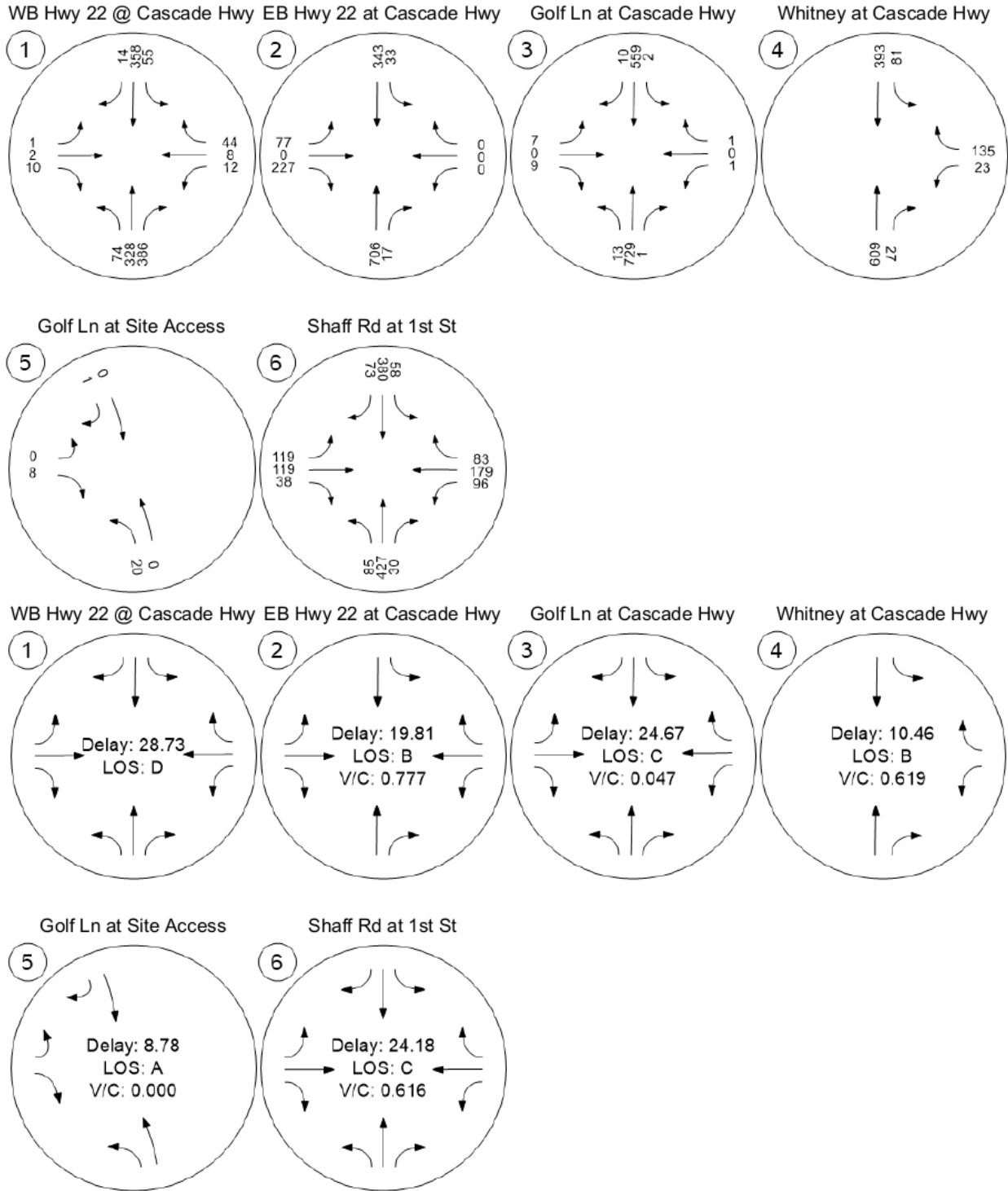


Figure 7 - 2018 AM Peak hour Counts and Metrics with Hillyers Ford

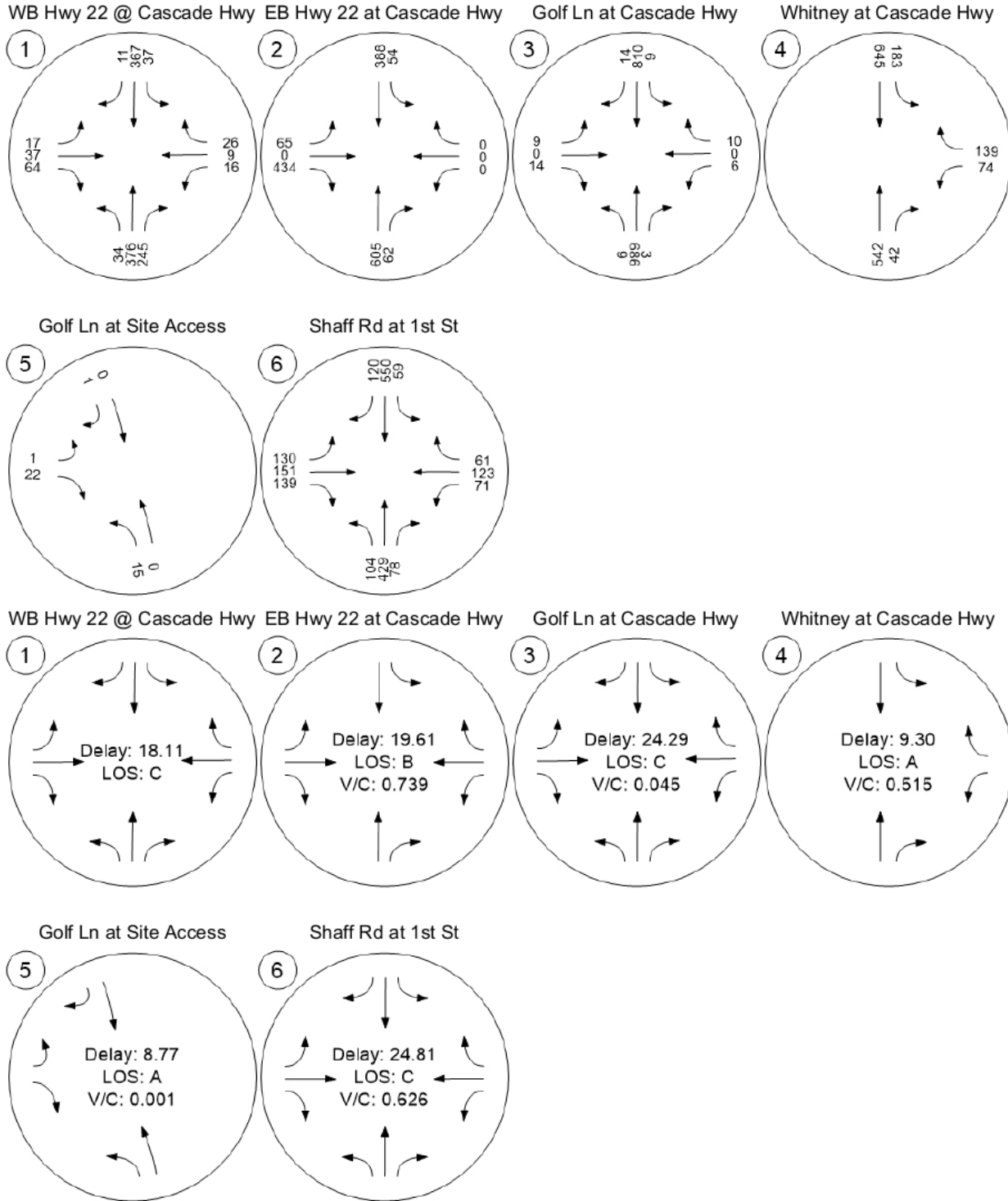


Figure 8 - 2018 PM Peak hour Counts and Metrics with Hillyers Ford