

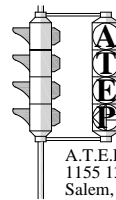
# **Traffic Impact Analysis Mildred at Liberty Rd Apartments**

Salem, Oregon

October 31, 2018

completed with  
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Salem, Oregon

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Turning Movement Counts

ODOT Crash Data

Printout of Computer Modeling

# **Traffic Impact Analysis**

## **Mildred at Liberty Rd Apartments**

### **Salem, Oregon**



### **Introduction:**

The developer intends to develop 309 apartment units on tax lot 600 of tax map 8S 3W Sec 16C in Salem, Oregon. The 15.8 acre site is north of Mildred Ln and west of Liberty Road. The intent of this analysis is to provide a traffic impact analysis for the proposed Mildred at Liberty Rd Apartments.

The site will be developed with access to Liberty Rd north of Mildred Ln and to Mildred Ln to the south. Residents of the Mildred at Liberty Rd Apartments will use the City of Salem transportation system and add traffic to the roadways. This analysis will consider the traffic impacts at the intersections of Davis Rd at Liberty Road, Davis Rd at Jaynak St, Liberty Rd at Mildred Ln and the site access at Liberty Rd. Crash data was provided by the ODOT Crash Data Unit for the most recent 5 years. Turning movement counts were completed by Quality Counts on September 27, 2018 while Crossler Middle School was in session.



**Figure 1 - Aerial View of the Site**

### **Summary of Findings:**

The Mildred at Liberty Rd Apartments will generate an estimated 111 trips in the AM Peak hour and 136 trips in the PM Peak hour. Davis Rd is a Collector and Liberty Rd is a Major Arterial in the City of Salem TSP. They carry large volumes of traffic and are impacted by the Crossler Middle School in the NW quadrant of the intersection of Davis Rd at Liberty Rd. Traffic from the planned apartments will affect the performance metrics at the studied intersection. Traffic signal warrants are currently met and will continue to be met after the proposed apartments are built at the intersections of Davis Rd at Liberty Rd and Davis Rd at Joynak St. Signalization of both intersections would mitigate the congestion that is being experienced.

Intersection sight distance at the studied intersections is adequate. There have been 4 crashes reported to the ODOT Crash Data Unit in the past 5 years at the intersection of Davis Rd at Liberty Rd. There were no fatal crashes. There do not appear to be unusual safety issues at the studied intersections.

## History and Existing Conditions:

The site is a vacant. This area of the City has been growing with residential communities. Many of the children from the neighborhood attend Crossler Middle School and adults commute to jobs in Salem. The intersection of Davis Rd at Liberty Rd is a 3-legged intersection with the eastbound approach of Davis Rd controlled with a stop sign. The intersection is at capacity for TWSC and meets warrants for signalization. The entrance to the school at Joynak St is also at capacity in the AM Peak hour and meets warrants for signalization.

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Liberty Rd at Davis Rd	Two-way stop	HCM 6th Edition	EB Left	0.990	101.2	F
2	Davis Rd at Joynak St	Two-way stop	HCM 6th Edition	SB Left	1.094	124.8	F
3	Liberty Rd at Mildred Rd	Two-way stop	HCM 6th Edition	SB Left	0.338	19.0	C

Existing AM Peak Hour Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Liberty Rd at Davis Rd	Two-way stop	HCM 6th Edition	EB Left	0.375	24.5	C
2	Davis Rd at Joynak St	Two-way stop	HCM 6th Edition	SB Left	0.119	12.0	B
3	Liberty Rd at Mildred Rd	Two-way stop	HCM 6th Edition	SB Left	0.375	17.8	C

Existing PM Peak Hour Summary

**Figure 2 - Existing Traffic Conditions**

## Traffic Conditions when Mildred at Liberty Rd Apartments are Complete:

The site will be developed with 309 apartment units. Mildred at Liberty Rd Apartments will add 111 trips to the AM Peak hour traffic and 136 trips to the PM Peak hour traffic. This study will assume that 50% of the traffic will travel to and from the north of Davis Rd on Liberty Rd, 10% of will travel south of the Liberty Rd at Mildred Ln intersection, 15% will travel to and from the west of the site on Davis Rd and 25% will travel east on Mildred Ln. The study assumes that traffic volumes will increase linearly 4% per year to find 2019 performance metrics. Factors will also be used to adjust the peak hour traffic and the impact of heavy vehicles on traffic.

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Liberty Rd at Davis Rd	Two-way stop	HCM 6th Edition	EB Left	1.289	214.0	F
2	Davis Rd at Joynak St	Two-way stop	HCM 6th Edition	SB Left	1.271	193.2	F
3	Liberty Rd at Mildred Rd	Two-way stop	HCM 6th Edition	SB Left	0.446	22.9	C
4	East Access at Liberty Rd	Two-way stop	HCM 6th Edition	EB Left	0.253	23.3	C

2020 AM Peak Hour Summary with Mildred at Liberty Rd Apartments

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Liberty Rd at Davis Rd	Two-way stop	HCM 6th Edition	EB Left	0.473	32.6	D
2	Davis Rd at Joynak St	Two-way stop	HCM 6th Edition	SB Left	0.134	12.5	B
3	Liberty Rd at Mildred Rd	Two-way stop	HCM 6th Edition	SB Left	0.469	21.6	C
4	East Access at Liberty Rd	Two-way stop	HCM 6th Edition	EB Left	0.146	21.4	C

2020 PM Peak Hour Summary with Mildred at Liberty Rd Apartments

**Figure 3 – 2020 Traffic Conditions with Apts**

The intersections of Davis Rd at Liberty Rd and Davis Rd at Joynak have v/c ratios above 1 during the AM Peak hour. Traffic to the school appears to be significant enough to create the bottlenecks. The City has planned to signalize the intersection of Davis Rd at Liberty Rd for several years. Signalization of both intersections will mitigate the congestion and handle traffic during the AM Peak hour.

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Liberty Rd at Davis Rd	Signalized	HCM 6th Edition	NB Left	0.542	31.5	C
2	Davis Rd at Joynak St	Signalized	HCM 6th Edition	EB Left	0.625	30.5	C
3	Liberty Rd at Mildred Rd	Two-way stop	HCM 6th Edition	SB Left	0.446	22.9	C
4	East Access at Liberty Rd	Two-way stop	HCM 6th Edition	EB Left	0.253	23.3	C

2020 AM Peak Hour Signalized Summary with Mildred at Liberty Rd Apartments

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Liberty Rd at Davis Rd	Signalized	HCM 6th Edition	SB Thru	0.414	33.0	C
2	Davis Rd at Joynak St	Signalized	HCM 6th Edition	EB Left	0.259	17.2	B
3	Liberty Rd at Mildred Rd	Two-way stop	HCM 6th Edition	SB Left	0.469	21.6	C
4	East Access at Liberty Rd	Two-way stop	HCM 6th Edition	EB Left	0.146	21.4	C

2020 PM Peak Hour Signalized Summary with Mildred at Liberty Rd Apartments

**Figure 4 – 2020 Traffic Conditions w Apts and Signalized Mitigation****Crash Data:**

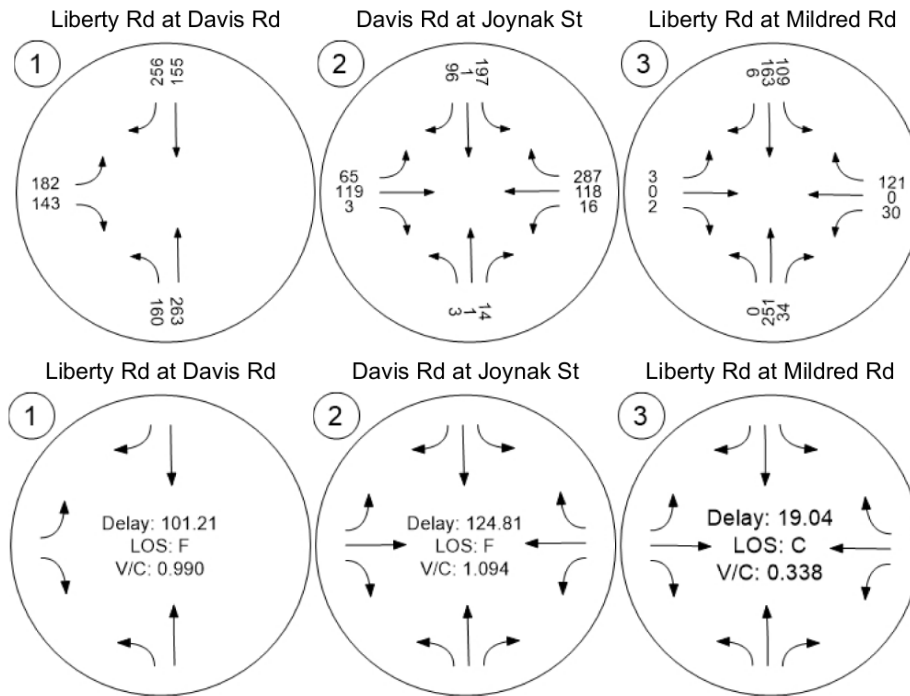
The ODOT Crash Data Unit provided information about reported crashes at the shown intersections for the past 5 years. The crash rates do not seem unexpectedly high or of significant concern.

Intersection	Fatal	Injury	Property Damage	Total Crashes
Davis Rd. at Liberty Rd	0	2	2	4
Davis Rd at Joynak St	0	1	0	1
Liberty Rd at Mildred Ln	0	3	2	5

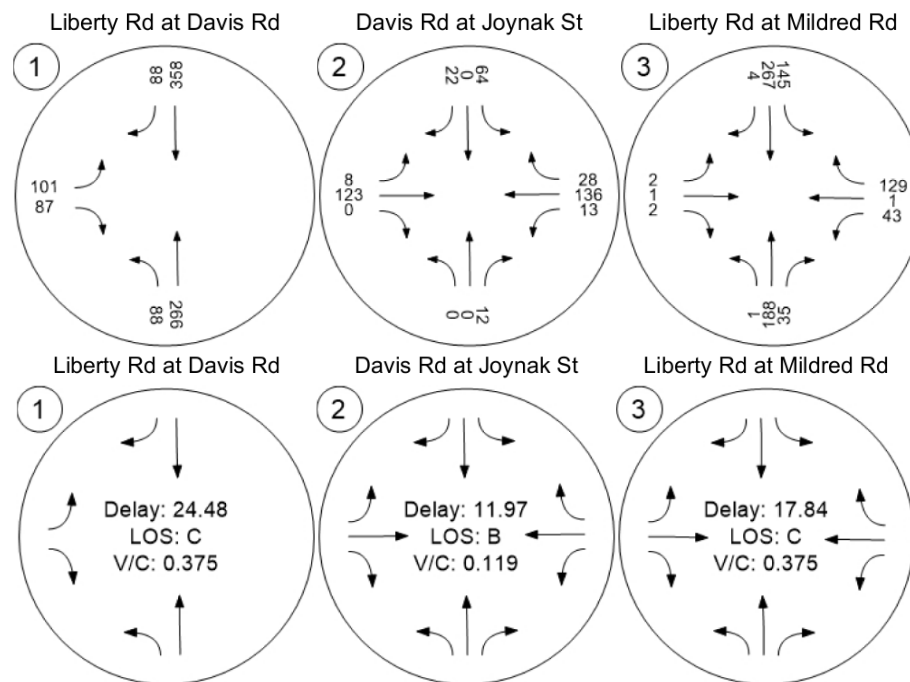
**Figure 5 – Reported Crashes at Davis Rd at Liberty Rd in 2012-2016****Summary:**

The 309 unit Mildred at Liberty Rd Apartments will generate an estimated 111 trips in the AM Peak hour and 136 trips in the PM Peak hour. Davis Rd is a Collector and Liberty Rd is a Major Arterial in the City of Salem TSP. They carry large volumes of traffic and are impacted by the Crossler Middle School in the NW quadrant of the intersection of Davis Rd at Liberty Rd. Traffic signal warrants are currently met and will continue to be met after the proposed apartments are built at the intersections of Davis Rd at Liberty Rd and Davis Rd at Joynak St. Signalization of both intersections would mitigate the congestion that is being experienced.

Intersection sight distance at the studied intersections is adequate. There have been 4 crashes reported to the ODOT Crash Data Unit in the past 5 years at the intersection of Davis Rd at Liberty Rd. There were no fatal crashes. There do not appear to be unusual safety issues at the studied intersections.



Existing AM Peak hour Counts and Metrics



Existing PM Peak hour Counts and Metrics

**Figure 6 - Existing Peak hour Counts and Metrics**

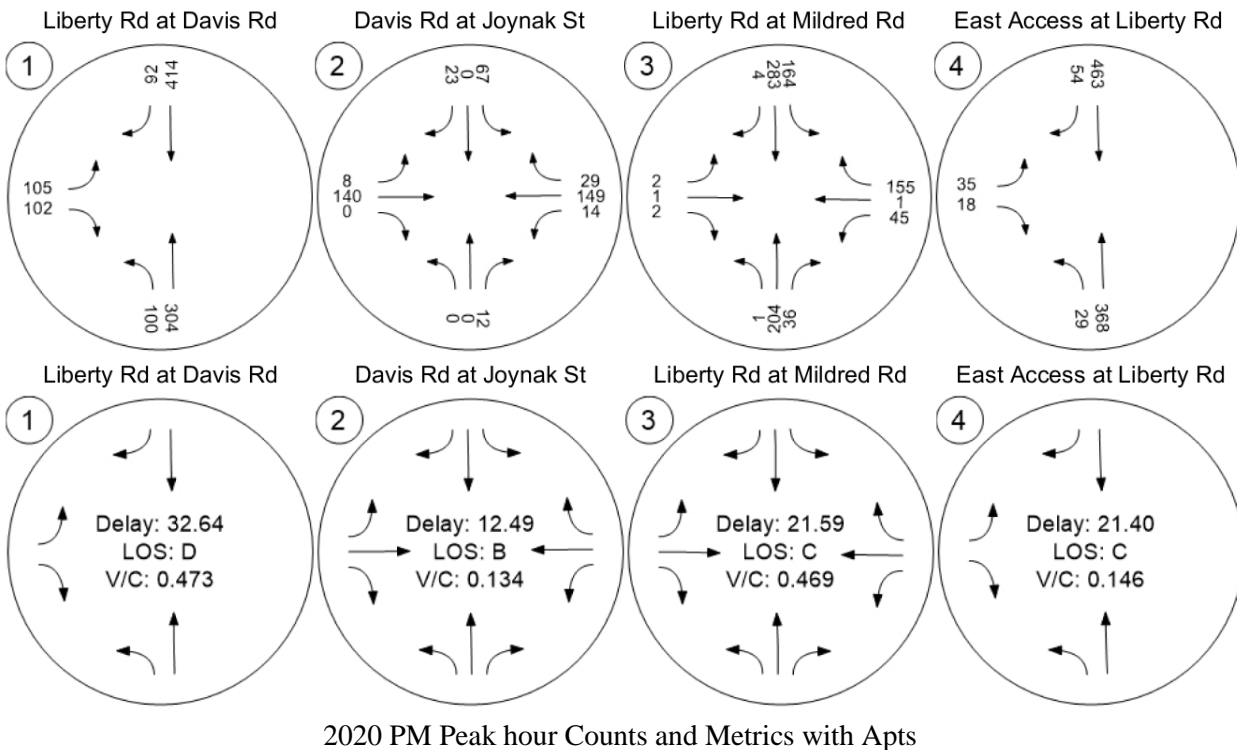
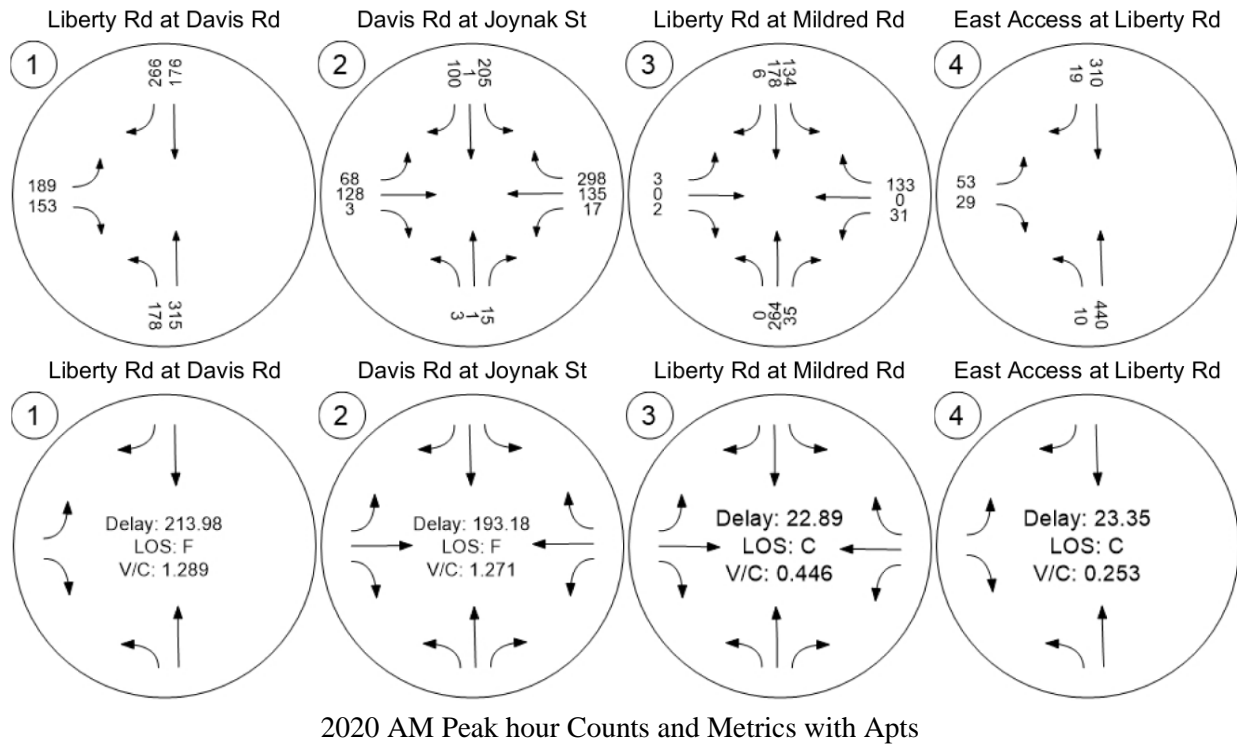
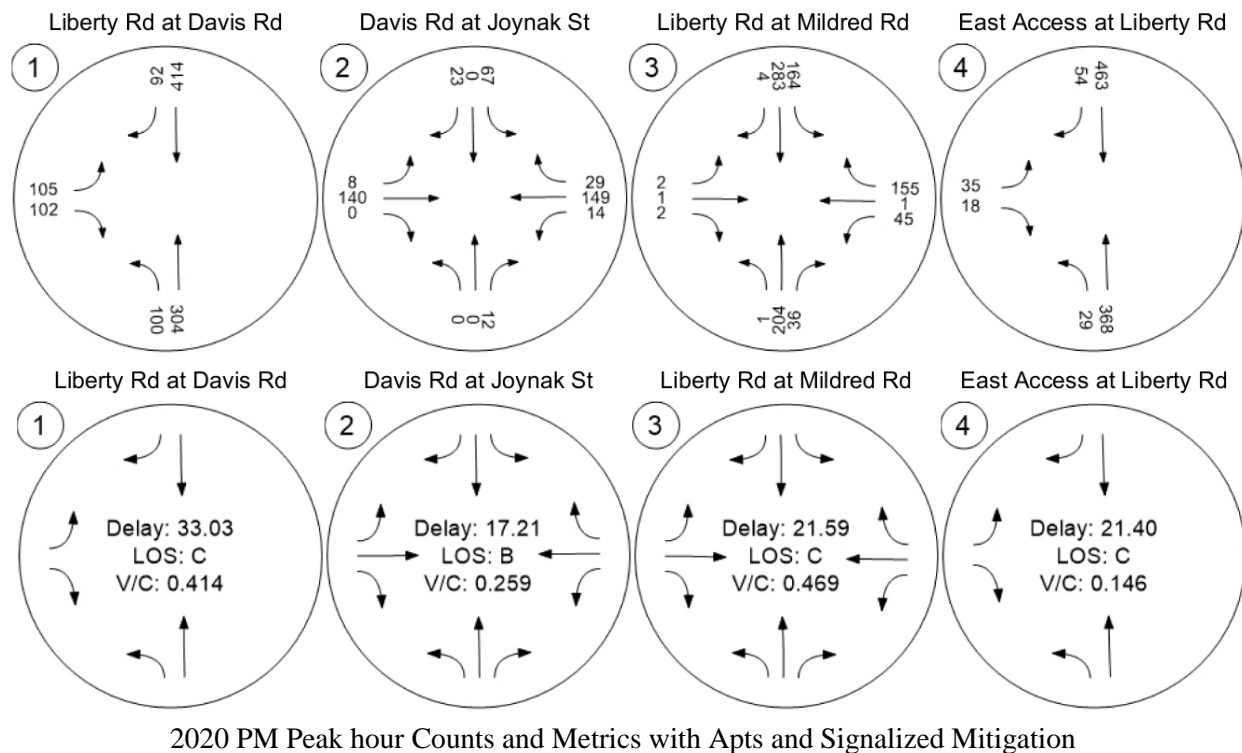
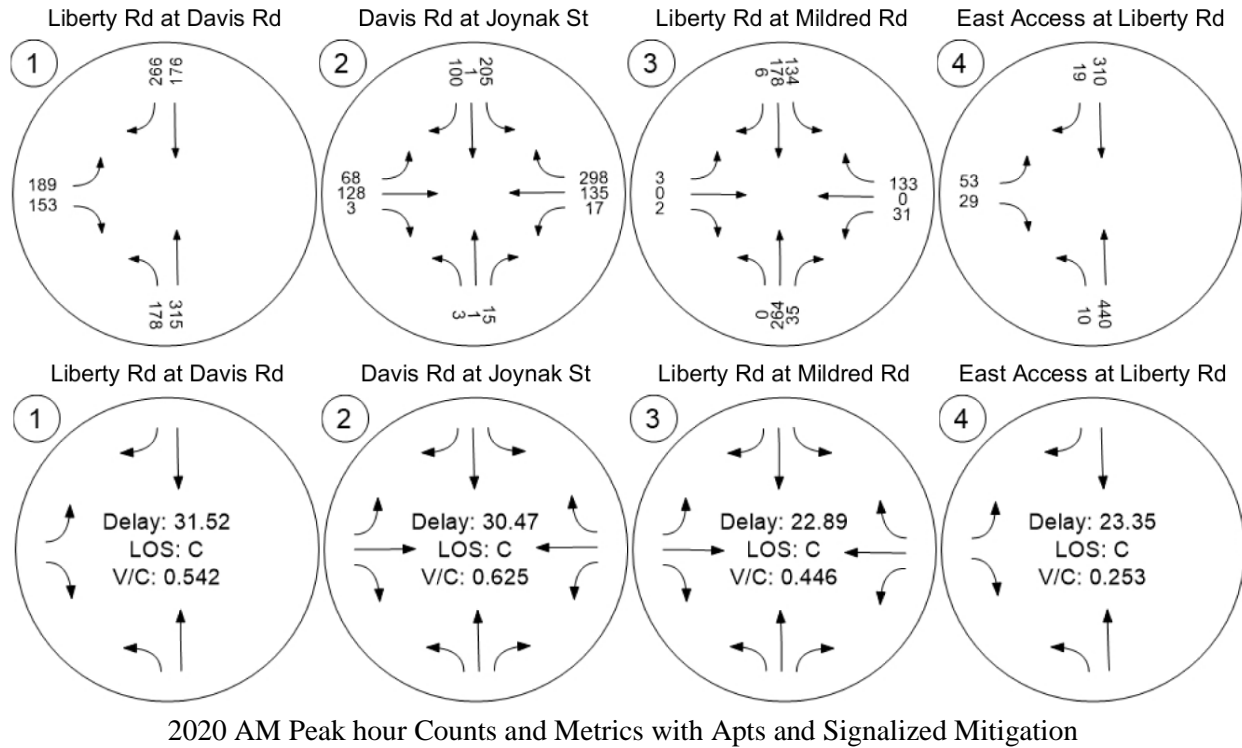


Figure 7 - 2020 Peak hour Counts and Metrics with Apts





**Figure 8 - 2020 Peak hour Counts and Metrics with Apts and Signalized Mitigation**