TRAFFIC IMPACT STUDY

for



in

Straban Township Adams County, Pennsylvania

DECEMBER 2005



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INTRODUCTION

A development is proposed for an undeveloped tract of land in Straban Township, Adams County, Pennsylvania. This development will be referred to as "Crossroads Gaming Resort and Spa" in this traffic impact study. A site layout plan is provided in the Appendix.

The site is located north of and adjacent to US Route 30, east of US Route 15. Primary access to the site will be via a proposed site roadway intersecting US Route 30, opposite the Gateway Gettysburg site roadway. Access is also proposed via the re-located Smith Road (east of the primary access) and a right-out only driveway (west of the primary access) both onto US Route 30. A location map is provided as Figure 1.

Grove Miller Engineering, Inc. has been retained by Benatec Associates to conduct a traffic impact study for the proposed development site. The scope of the study focused on the US Route 15 and US Route 30 interchange intersections and the proposed site access. It should be noted that the scope of work was not reviewed or confirmed by PENNDOT or Straban Township. The traffic study addresses the following issues:

- Determine existing traffic conditions.
- Estimate the number of trips expected to be generated by the proposed development.
- Distribute the trips to the surrounding highway network.
- Project current traffic volumes to build (2008) and design (2018) years.
- Perform traffic analyses to determine existing and future traffic operational characteristics.
- Provide recommendations to effectively accommodate projected traffic demands.

The methodology and analyses results are documented in this traffic impact study report.

The purpose of this Traffic Impact Study is to address the traffic and transportation analysis requirements of the Pennsylvania Gaming Board's Application and Disclosure Information Form, in particular Appendix 30, Local Impact Report, and Appendix 34, Plan Required by Section 1325 of the Gaming Act.

EXISTING CONDITIONS

The proposed site is located on the north side of US Route 30, east of US Route 15. Land uses in the area of the site are primarily commercial in nature.

Existing conditions of adjacent roadways are described below.

US Route 30. US Route 30 is a two-lane roadway running in an east/west direction, south of and adjacent to the proposed development. US Route 30 is classified as a Rural Principal Arterial. PENNDOT records indicate that the average daily traffic (ADT) volume on US Route 30 is approximately 14,300 vehicles per day (vpd), east of US Route 15, and approximately 18,000 vpd, west of US Route 15. The posted speed limit on US Route 30 is 45 miles per hour (mph) in the area of US Route 15. Pavement markings include a double yellow centerline and white edge lines.

US Route 15. US Route 15 is a four-lane limited access highway running in a north/south direction, west of the proposed development. US Route 15 is classified as a Rural Principal Arterial. PENNDOT records indicate that the ADT volume on US Route 15 is approximately 18,600 vpd, north of US Route 30, and approximately 20,600 vpd, south of US Route 30. The posted speed limit on US Route 15 is 65 mph in the area of US Route 30. Pavement markings include white dashed lane lines, yellow edge lines, and white edge lines.

Existing lane configurations and traffic controls at the study intersections are shown in Figure 2.

PROPOSED CONDITIONS

The Crossroads Gaming Resort and Spa is proposed to consist of a 120,000 square foot casino containing 3,000 slot machines, a 225 room hotel, and a 30,000 square foot spa. It is anticipated that the development will be operational in the year 2008.

Primary access to the site will be via a proposed site roadway intersecting US Route 30, opposite the Gateway Gettysburg site roadway. Access is also proposed via the re-located Smith Road (east of the primary access) and a right-out only driveway (west of the primary access) both onto US Route 30.

DATA COLLECTION

Manual turning movement traffic counts (TMCs) were conducted at the intersections of:

- US Route 30 and US Route 15 Northbound ramps
- US Route 30 and US Route 15 Southbound ramps

The traffic counts were conducted during the weekday PM (3:00pm to 6:00pm) and Saturday (11:00am to 1:00pm) peak periods on Wednesday, November 16, 2005 and Saturday, November 19, 2005, respectively.

Existing 2005 peak hour traffic volumes are shown in Figure 3. Copies of the turning movement data summary sheets are provided in the Appendix.

TRIP GENERATION

Trip generation calculations for the casino component of the development site were based on the methodology utilized in "Traffic Impact Study for Penn National Race Course Expansion", East Hanover Township, Dauphin County, Pennsylvania, Traffic Planning and Design, Inc., September 2004. This methodology was based on a trip generation study conducted at the Charles Town Races and Slots in Charles Town, West Virginia. Automatic traffic recorder counts were conducted on the access driveways to the facility, and trip rates were developed with respect to the number of slots. The detailed methodology and calculations are provided in the Appendix.

The Institute of Transportation Engineers (ITE), <u>Trip Generation Manual</u>, 7th Edition (2003) was used to estimate the number of trips which could be generated by the spa and hotel components of the development site. Regression equations were used to calculate the average weekday and Saturday vehicle trip ends, as well as the PM and Saturday peak hour trips.

Table 1 summarizes the trip generation projections for the Crossroads Gaming Resort and Spa. Trip generation calculation worksheets are provided in the Appendix.

Table 1. Trip Generation Summary - Crossroads Gaming Resort and Spa

Land Use (ITE Code)	Average Average Weekday Saturday Vehicle Trips Vehicle Trips		PM Peak (vph)		SAT Peak (vph)	
Size	(vpd)	(vpd)	Enter	Exit	Enter	Exit
Casino						
Casino (*) 3,000 slot machines	11,772	15,900	375	261	764	394
Hotel					<u> </u>	
Hotel (310) 225 occupied rooms	2,007	2,363	77	81	91	95
Spa						
Health/Fitness Club (492) 30,000 SF	988	626	62	59	39	37
TOTALS	14,767	18,889	514	401	894	526

^{*}Based on rates provided in the PENNDOT approved Penn National Race Course Expansion traffic impact study (September 2004)

The Gateway Gettysburg Development is currently under construction on a site located south of and adjacent to US Route 30, east of US Route 15. Primary access to the development site is proposed via a signalized intersection at US Route 30, opposite the

proposed Crossroads Gaming Resort and Spa site roadway. Intersection improvements (widening and signalization) are currently being completed.

At full build-out, the development is expected to consist of four (4) hotels, a movie theater facility, retail shops, and restaurants. Initial phases of the development, including two (2) hotels and the movie theater facility, are expected to be operational in 2006.

Trip generation and distribution information for the Gateway Gettysburg development were obtained from available sources and incorporated directly into the traffic projections.

PENNDOT is expected to complete preliminary engineering for the US Route 15/US Route 30 Interchange project by January 2006. The preferred alternative design for the existing diamond interchange is to construct a single point urban interchange (SPUI). Per discussions with PENNDOT, construction of the new interchange could begin in 2007 and could will be completed in 2009. Examples of SPUIs are illustrated in Figure 4.

TRIP DISTRIBUTION

The trips expected to be generated by the Crossroads Gaming Resort and Spa were distributed onto US Route 30 and the adjacent street network based on the directional distribution of existing traffic, roads available for travel, and local area traffic generators. The trip distributions for the PM and Saturday peak hours for full build-out of the proposed development are shown in Figure 5.

TRAFFIC PROJECTIONS

Traffic projections were made in order to account for growth in background traffic volumes which may result from other future potential development in the region. The 2005 existing peak hour traffic volumes were projected to 2008 build year and 2018 design year conditions using a 1.3 percent annual traffic growth rate. The traffic growth rate was referenced from "Pennsylvania Traffic Data 2004" published by the Pennsylvania Department of Transportation's Bureau of Planning and Research in October 2005. Traffic growth rate documentation is provided in the Appendix.

The 2008 build year peak hour traffic volumes are shown in Figures 6 and 7. The 2018 design year peak hour traffic volumes are shown in Figure 8 and 9.

Traffic projections for the Crossroads Gaming Resort and Spa are documented in a spreadsheet format and can be found in the Appendix.

TRAFFIC ANALYSES

Traffic analyses were conducted to determine the existing and future operational conditions at the following intersections:

- US Route 30 and Crossroads Roadway/Gateway Gettysburg Roadway
- US Route 30 and US Route 15 Northbound ramps
- US Route 30 and US Route 15 Southbound ramps
- US Route 30 and US Route 15 Single Point Urban Interchange (Future)
- US Route 30 and Re-Located Smith Road (Secondary Crossroads Access)

Analyses were completed for 2005 existing conditions, 2008 and 2018 no build conditions (without the proposed development), as well as 2008 and 2018 build conditions (with the proposed development).

Highway Capacity Analyses

Highway capacity analyses were conducted based on the methodology provided in the Transportation Research Board 2000 Highway Capacity Manual, Special Report 209 using the Highway Capacity Software Release 5.2. The analyses evaluate the intersection operations in terms of level of service (LOS). These levels of service (LOS) range from LOS "A" to LOS "F" with LOS "A" representing little or no delay and LOS "F" exceeding the practical limitations of available capacity and causing extreme delay. Detailed descriptions of highway capacity analyses for signalized and unsignalized intersections are provided in the Appendix.

Highway capacity analyses were completed for 2005 existing, 2008 build year, and 2018 design year conditions. Results of the analyses are discussed below and the capacity analyses worksheets are provided in the Appendix.

Queue Analyses - Signalized Intersections

Analyses were conducted to evaluate the projected queue lengths for auxiliary lanes at the signalized intersection of US Route 30 and Crossroads Roadway/Gateway Gettysburg Roadway using 2018 design year build peak hour traffic volumes.

The analyses were based on methodology as defined in "Access Management Guidelines for Activity Centers," NCHRP Report 348, pp. 98-99. This procedure is based upon the AASHTO methodology, provided in AASHTO Green Book, 2004, pp. 714-715. This methodology considers the turning volume, a random arrival factor, length of the vehicle, the percent of trucks, g/C ratio, and number of cycles per hour. The calculations for determining the appropriate turn lane lengths are included in the Appendix.

Sight Distance Evaluation

Sight distances at the proposed site access locations onto US Route 30 were evaluated to determine if available sight distances meet PENNDOT minimum safe stopping sight distance criteria. The available sight distances were evaluated using criteria provided in PENNDOT Publication 201 Engineering and Traffic Studies (December 1993). Sight distances were measured and compared with the published safe stopping sight distance criteria.

INTERSECTION DISCUSSION

The following sections detail the traffic analyses performed for the study intersections.

US Route 30 and Crossroads Roadway/Gateway Gettysburg Roadway

Capacity Analyses

<u>2008 Build Year Conditions</u>: Signalized analyses indicate that the intersection is expected to operate with all movements at LOS "D" or better during the weekday PM and Saturday peak hours, with or without the proposed development.

<u>2018 Design Year Conditions</u>: Signalized analyses indicate that the intersection is expected to operate with all movements at LOS "D" or better during the weekday PM and Saturday peak hours, with or without the proposed development.

<u>Improvement Scenario</u>: Intersection improvements are required to mitigate the impact of the proposed Crossroads Gaming Resort and Spa traffic. It is recommended that the current traffic signal design be modified and the following lane configuration be provided at the intersection:

US Route 3	0 EB Approach
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- •Two (2) left-turn lanes
- •Two (2) through lanes
- Right-turn lane

Left-turn lane

•Two (2) through lanes

US Route 30 WB Approach

•Right-turn lane

Gateway Gettysburg NB Approach

- •Two (2) left-turn lanes
- Through lane
- Right-turn lane

Crossroads Roadway SB Approach

- Left-turn lane
- Through lane
- Right-turn lane

The capacity analyses for this intersection are summarized in Tables 2 and 3.

Table 2. Capacity Analyses Summary:
US Route 30 and Crossroads Roadway/Gateway Gettysburg Roadway,
Weekday PM Peak Hour

Highway Capacity Analyses Results								
LOS (Delay or v/c)								
Approach an	d Movement	2008 No Build	2008 Build w/ Improv	2018 No Build	2018 Build w/ Improv			
	Left-Turn	В	D	С	D			
US Route 30	Thru	В	С	D	С			
EB Approach	Right-Turn	В	Α	D	A			
	Approach	В	С	D	С			
	Left-Turn	В	D	D	D			
US Route 30 WB Approach	Thru	Α	D	В	D			
	Right-Turn		Α		A			
	Approach	Α	С	С	D			
	Left-Turn	С	С	D	D			
Gateway	Thru	С	D	D	D			
Gettysburg NB Approach	Right-Turn	С	С	С	С			
, , , , , , , , , , , , , , , , , , ,	Approach	С	С	D	D			
	Left-Turn		D		D			
Crossroads	Thru	D	D	D	D			
Roadway SB Approach	Right-Turn		D		D			
22. гриодогт	Approach	D	D	D	D			
Ove	erall	В	С	D	D			

Table 3. Capacity Analyses Summary:
US Route 30 and Crossroads Roadway/Gateway Gettysburg Roadway,
Saturday Peak Hour

	High	way Capacity An	-					
	LOS (Delay or v/c)							
Approach an	d Movement	2008 No Build	2008	2018	2018			
			Build w/ Improv	No Build	Build w/ Improv			
	Left-Turn	В	D	С	D			
US Route 30	Thru	В	D	С	D			
EB Approach	Right-Turn	В	В	D	В			
	Approach	В	D	D	D			
	Left-Turn	В	С	D	С			
US Route 30 WB Approach	Thru	А	D	В	D			
	Right-Turn		В		В			
	Approach	A	С	В	D			
	Left-Turn	C	С	D	D			
Gateway	Thru	С	D	D	D			
Gettysburg NB Approach	Right-Turn	С	В	С	С			
та трргосон	Approach	С	С	D	D			
	Left-Turn		D		D			
Crossroads	Thru	D	D	D	D			
Roadway SB Approach	Right-Turn		D		D			
	Approach	D	D	D	D			
Ove	erall	В	D	С	D			

Queue Analyses

Analyses were conducted to evaluate the projected queue lengths for auxiliary lanes at the signalized intersection of US Route 30 and Crossroads Roadway/Gateway Gettysburg Roadway using 2018 design year build peak hour traffic volumes.

Table 4 summarizes the results of the queue analyses.

Table 4. Queue Analyses:
US Route 30 and Crossroads Roadway/Gateway Gettysburg Roadway,
2018 Design Year - Build Condition

Approach and Movement		AASHTO Desirable Storage Length Required (feet)	AASHTO Minimum Storage Length Required (feet)	Recommended Storage Length (feet)
	Left-Turn (2)	833	625	400 each
US Route 30 EB Approach	Thru (2)	1022	767	N/A
	Right-Turn	336	252	300
	Left-Turn		174	200
US Route 30 WB Approach	Thru (2)	1170	878	N/A
	Right-Turn	158	119	200
Cotoviav	Left-Turn (2)	988	741	400 each
Gateway Gettysburg	Thru	57	43	N/A
NB Approach Right-Turn		335	252	300
Left-Turn		156	117	150
Crossroads SB Approach	Thru	40	30	N/A
	Right-Turn	422	316	400

Sight Distance Evaluation

The posted speed limit and approach grades on US Route 30 were used to determine whether adequate sight distance is available. A summary of sight distance criteria and measurements for the intersection is provided in Table 5.

Table 5. Sight Distance Evaluation Summary:
US Route 30 and Crossroads Roadway

Location	Direction	Measured Sight Distance (ft)	Required Minimum Safe Stopping Sight Distance (ft)	Acceptable
Crossroads Roadway	Left	1000 +	383	YES
@ US Route 30	Right	1000 +	383	YES

As presented in Table 5, sight distances observed at the intersection are in excess of PENNDOT minimum safe stopping sight distance criteria.

US Route 30 and US Route 15 Northbound ramps

Capacity Analyses

<u>2005 Existing Conditions</u>: Signalized analyses indicate that the intersection currently operates at an overall LOS "A" during the weekday PM and Saturday peak hours. Ramp movements currently operate at LOS "C" during the weekday PM and Saturday peak hours.

<u>2008 Build Year Conditions</u>: Signalized analyses indicate that the intersection is expected to operate at an overall LOS "A" during the weekday PM and Saturday peak hour, with or without the proposed development. Ramp movements are expected to operate at LOS "C" during the weekday PM and Saturday peak hours, with or without the proposed development.

<u>2018 Design Year Conditions</u>: Signalized analyses indicate that the intersection is expected to operate at an overall LOS "A" (without the proposed development) and LOS "B" (with the proposed development) during the weekday PM and Saturday peak hour. Ramp movements are expected to operate at LOS "D" during the weekday PM and Saturday peak hours, with or without the proposed development.

<u>Improvement Scenario</u>: Based on the anticipated satisfactory levels or service (LOS "D" or better) through the 2018 design year, intersection improvements are not proposed or recommended.

The capacity analyses for this intersection are summarized in Tables 6 and 7.

Table 6. Capacity Analyses Summary:
US Route 30 and US Route 15 Northbound Ramps,
Weekday PM Peak Hour

Highway Capacity Analyses Results LOS (Delay or v/c)						
2005 2008 2008 2018 2018 2018 Existing No Build Build No Build B						
US Route 30	US Route 30 Thru		Α	Α	Α	Α
EB Approach	Approach	Α	Α	Α	Α	Α
US Route 30	Thru	A	Α	Α	Α .	В
WB Approach	Approach	Α	Α	Α	Α	В
US Route 15	Left-Turn	С	С	С	D	D
NB Off-Ramp NB Approach	Approach	С	С	С	D	D
Ove	erall	А	Α	A	Α	В

Table 7. Capacity Analyses Summary:US Route 30 and US Route 15 Northbound Ramps,Saturday Peak Hour

Highway Capacity Analyses Results LOS (Delay or v/c)						
Approach and Movement 2005 2008 2008 2018 2018 Existing No Build Build No Build Build						
US Route 30	Thru	Α	Α	Α	Α	Α
EB Approach	Approach	Α	Α	Α	Α	Α
US Route 30	Thru	Α	Α	Α	Α	В
WB Approach	Approach	Α	Α	A	Α	В
US Route 15	Left-Turn	С	С	С	D	D
NB Off-Ramp NB Approach	Approach	С	С	С	D	D
Ove	erall	Α	Α	A	Α	В

US Route 30 and US Route 15 Southbound ramps

Capacity Analyses

<u>2005 Existing Conditions</u>: Signalized analyses indicate that the intersection currently operates at an overall LOS "A" during the weekday PM and Saturday peak hours. Ramp movements currently operate at LOS "C" or better during the weekday PM and Saturday peak hours.

<u>2008 Build Year Conditions</u>: Signalized analyses indicate that the intersection is expected to operate at an overall LOS "B" or better during the weekday PM and Saturday peak hour, with or without the proposed development. Ramp movements are expected to operate at LOS "C" during the weekday PM and Saturday peak hours, with or without the proposed development.

<u>2018 Design Year Conditions</u>: Signalized analyses indicate that the intersection is expected to operate at an overall LOS "B" or better during the weekday PM and Saturday peak hour. Ramp movements are expected to operate at LOS "C" during

the weekday PM and Saturday peak hours, with or without the proposed development.

<u>Improvement Scenario</u>: Based on the anticipated satisfactory levels or service (LOS "D" or better) through the 2018 design year, intersection improvements are not proposed or recommended.

The capacity analyses for this intersection are summarized in Tables 8 and 9.

Table 8. Capacity Analyses Summary:
US Route 30 and US Route 15 Southbound Ramps,
Weekday PM Peak Hour

Highway Capacity Analyses Results LOS (Delay or v/c)						
Approach an	d Movement	2005 Existing	2008 No Build	2008 Build	2018 No Build	2018 Build
	Thru	Α	Α	Α	Α	Α
US Route 30 EB Approach	Right-Turn	Α	Α	Α	Α	Α
LB Approach	Approach	Α	A	Α	Α	Α
US Route 30	Thru	Α	В	В	В	В
WB Approach	Approach	Α	В	В	В	В
US Route 15	Left-Turn	В	В	С	С	С
SB Off-Ramp SB Approach	Right-Turn	С	С	С	С	С
	Approach	С	С	С	С	С
Ove	erall	Α	Α	В	Α	В

Table 9. Capacity Analyses Summary:
US Route 30 and US Route 15 Southbound Ramps,
Saturday Peak Hour

Highway Capacity Analyses Results LOS (Delay or v/c)						
Approach and Movement		2005 Existing	2008 No Build	2008 Build	2018 No Build	2018 Build
US Route 30 EB Approach	Thru	Α	Α	Α	Α	В
	Right-Turn	Α	Α	Α	Α	Α
	Approach	Α	Α	Α_	Α	Α
US Route 30 WB Approach	Thru	Α	В	В	В	В
	Approach	Α	В	В	В	В
US Route 15 SB Off-Ramp SB Approach	Left-Turn	В	В	С	С	С
	Right-Turn	С	С	С	С	С
	Approach	С	С	С	С	С
Overall		Α	Α	В	В	В

US Route 30 and US Route 15 Single Point Urban Interchange (SPUI)

Capacity Analyses

<u>2018 Design Year Conditions</u>: Signalized analyses indicate that the proposed intersection is expected to operate at an overall LOS "A" (without the proposed development) and LOS "B" (with the proposed development) during the weekday PM and Saturday peak hour. Ramp movements are expected to operate at LOS "D" during the weekday PM and Saturday peak hours, with or without the proposed development.

Improvement Scenario: Based on the anticipated satisfactory levels or service (LOS "D" or better) through the 2018 design year, additional intersection improvements are not proposed or recommended.

The capacity analyses for this intersection are summarized in Table 10.

Table 10. Capacity Analyses Summary:
US Route 30 and US Route 15 SPUI

Highway Capacity Analyses Results LOS (Delay or v/c)							
Approach and Movement		2018 PM No Build	2018 PM Build	2018 SAT No Build	2018 SAT Build		
US Route 30 EB Approach	Left-Turn	D	D	D	D		
	Thru	С	С	С	С		
	Approach	С	С	С	С		
	Left-Turn	С	С	С	С		
US Route 30 WB Approach	Thru	В	В	В	В		
ТОВ Арргоаст	Approach	В	В	В	С		
US Route 15 NB Off-Ramp NB Approach	Left-Turn	D	D	D	D		
	Approach	D	D	D	D		
US Route 15	Left-Turn	D	D	D	D		
SB Off-Ramp SB Approach	Approach	D	D	D	D		
Overall		c	С	С	С		

US Route 30 and Re-Located Smith Road (Secondary Crossroads Access)

Capacity Analyses

<u>2008 Build Year Conditions:</u> The stop-controlled intersection is expected to operate with all movements at LOS "C" or better during the weekday PM and Saturday peak hours, with the proposed development.

<u>2018 Design Year Conditions</u>: The stop-controlled intersection is expected to operate with minor street movements at LOS "D" or better during the weekday PM and Saturday peak hours, with the proposed development.

<u>Improvement Scenario</u>: It is recommended that STOP sign control and the following lane configuration be provided at the intersection:

US Route 30 EB Approach

US Route 30 WB Approach

Left-turn lane

Through lane

Through lane

•Right-turn lane

Re-Located Smith Road SB Approach

Shared left-turn/right-turn lane

The capacity analyses for this intersection are summarized in Table 11.

Table 11. Capacity Analyses Summary:
US Route 30 and Re-Located Smith Road (Secondary Crossroads Access)

	Highway Capacity Analyses Results LOS (delay or v/c)			
Approach and Movement	2008 PM Build	2018 PM Build	2008 SAT Build	2018 SAT Build
US Route 30 EB Left-Turn	В	В	В	В
Re-Located Smith Road SB Approach	С	D	С	D

Sight Distance Evaluation

The posted speed limit and approach grades on US Route 30 were used to determine whether adequate sight distance is available. A summary of sight distance criteria and measurements for the intersection is provided in Table 12.

Table 12. Sight Distance Evaluation Summary:
US Route 30 and Re-Located Smith Road (Secondary Crossroads Access)

Location	Direction	Measured Sight Distance (ft)	Required Minimum Safe Stopping Sight Distance (ft)	Acceptable
Re-Located Smith Road	Left	750 +	383	YES
@ US Route 30	Right	750 +	383	YES

As presented in Table 12, sight distances observed at the intersection are in excess of PENNDOT minimum safe stopping sight distance criteria.

CONGESTION MANAGEMENT OPPORTUNITIES

Several opportunities would be available for the Crossroads Gaming Resort and Spa to assist local and state agencies with congestion management in the area of the US Route 15 and US Route 30 interchange. These opportunities include:

- Scheduling shift changes for Crossroads employees to occur during nonpeak hour traffic time periods.
- Encouraging transit use and car pooling by Casino employees.
- Providing incentives for patrons arriving via buses and high occupancy vehicles.
- Providing incentives for patrons arriving during off-peak traffic periods.
- Providing shuttle service from the Casino hotel to local tourist attractions.

SUMMARY OF FINDINGS

Trip Generation

- ■With full occupancy, the proposed Crossroads Gaming Resort and Spa is expected to generate a total of approximately 14,767 trips during the average weekday, with approximately 915 trips during the weekday PM peak hour (as compared to approximately 1,718 trips expected to be generated by Gateway Gettysburg during the PM peak hour).
- ■With full occupancy, the proposed Crossroads Gaming Resort and Spa is expected to generate a total of approximately 18,889 trips during the average Saturday, with approximately 1,420 trips during the Saturday peak hour.

US Route 30 and Crossroads Roadway/Gateway Gettysburg Roadway

- Signalized capacity analyses indicate that the intersection is expected to operate with all movements at LOS "D" or better during the 2018 design year, with the proposed development, full build-out of GG, and recommended improvements.
- ■Sight distance from the proposed Crossroads Roadway at US Route 30 are in excess of PENNDOT minimum safe stopping sight distance criteria.

US Route 30 and US Route 15 Northbound Ramps

■ Signalized capacity analyses indicate that the intersection is expected to operate with all movements at LOS "D" or better during the 2018 design year, with or without the proposed development.

US Route 30 and US Route 15 Southbound Ramps

■ Signalized capacity analyses indicate that the intersection is expected to operate with all movements at LOS "D" or better during the 2018 design year, with or without the proposed development.

US Route 30 and US Route 15 Single Point Urban Interchange (SPUI)

■ Signalized capacity analyses indicate that the intersection is expected to operate with all movements at LOS "D" or better during the 2018 design year, with or without the proposed development.

US Route 30 and Re-Located Smith Road (Secondary Crossroads Access)

■Unsignalized capacity analyses indicate that the intersection is expected to operate with all movements at LOS "D" or better during the 2018 design year, with the proposed development.

As documented in this Traffic Impact Study, traffic generated by the Crossroads Gaming Resort and Spa project can be adequately served by the existing and planned highway network with minor improvements. The project will not have any adverse transportation or transit access impacts, nor will it have any potentially adverse traffic effect.

RECOMMENDATIONS

■The proposed lane configurations and traffic control at the study intersections are shown in Figure 10.

US Route 30 and Crossroads Roadway/Gateway Gettysburg Roadway

■It is recommended that the current traffic signal design be modified and the following lane configuration be provided to accommodate traffic expected to be generated by the proposed Crossroads Gaming Resort and Spa:

US Route 30 EB Approach

- •Two (2) left-turn lanes (400 feet of storage each)
- •Two (2) through lanes
- Right-turn lane (300 feet of storage)

Gateway Gettysburg NB Approach

- •Two (2) left-turn lanes (400 feet of storage each)
- Through lane
- •Right-turn lane (300 feet of storage)

US Route 30 WB Approach

- Left-turn lane (200 feet of storage)
- •Two (2) through lanes
- •Right-turn lane (200 feet of storage)

Gettysburg Crossroads SB Approach

- Left-turn lane (150 feet of storage)
- Through lane
- •Right-turn lane (400 feet of storage)

US Route 30 and US Route 15 Northbound Ramps

■No intersection improvements are required or recommended through the 2018 design year.

US Route 30 and US Route 15 Southbound Ramps

■No intersection improvements are required or recommended through the 2018 design year.

US Route 30 and US Route 15 Single Point Urban Interchange (SPUI)

■No additional intersection improvements are required or recommended through the 2018 design year.

US Route 30 and Re-Located Smith Road (Secondary Crossroads Access)

■It is recommended that a STOP sign (R1-1, 30" x 30") be placed on the re-located Smith Road approach at US Route 30, and the following lane configuration be provided at the intersection:

US Route 30 EB Approach

- •Left-turn lane
- Through lane

Re-Located Smith Road SB Approach

•Shared left-turn/right-turn lane

US Route 30 WB Approach

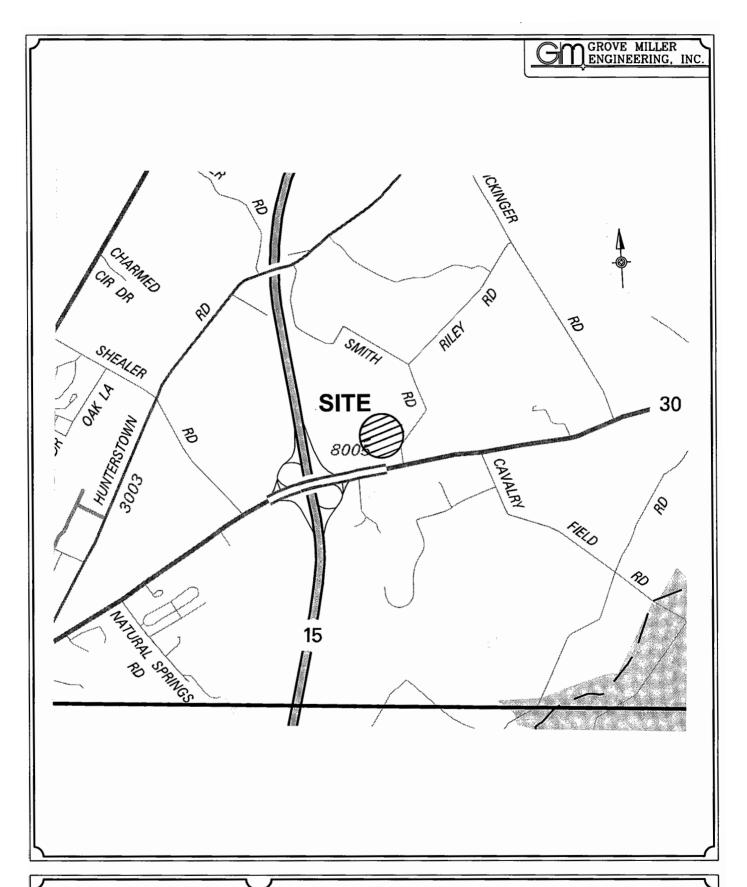
- •Through lane
- •Right-turn lane

LIST OF REFERENCES

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- 2. <u>Trip Generation Handbook</u>, Institute of Transportation Engineers, Washington D.C., March 2001.
- 3. <u>Highway Capacity Manual</u>, Transportation Research Board, Washington D.C., 2000.
- 4. <u>Highway Capacity Software</u>, Version 5.2, University of Florida, Gainesville, FL, 2005.
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- 6. <u>A Policy on Geometric Design of Highways and Streets</u>, Fifth Edition, American Association of State Highway and Transportation Officials, Washington D.C., 2004.
- 7. <u>Access Management Guidelines for Activity Centers</u>, National Cooperative Highway Research Program Report 348, Transportation Research Board, Washington D.C., 1992.
- 8. <u>Engineering and Traffic Studies</u>, Publication 201, Pennsylvania Department of Transportation, December 1993.
- 9. <u>Traffic Impact Study for Penn National Race Course Expansion</u>, Traffic Planning and Design, Inc., East Hanover Township, Dauphin County, Pennsylvania, September 2004.
- 10. <u>Traffic Impact Study for Gelcor Property</u>, Gannett Fleming, Straban Township, Adams County, Pennsylvania, May 2000.

- 11. <u>Traffic Impact Study for Hunterstown Project</u>, Herbert, Rowland & Grubic, Straban Township, Adams County, Pennsylvania, October 2000.
- 12. Various information and correspondence provided by Benatec Associates

FIGURES

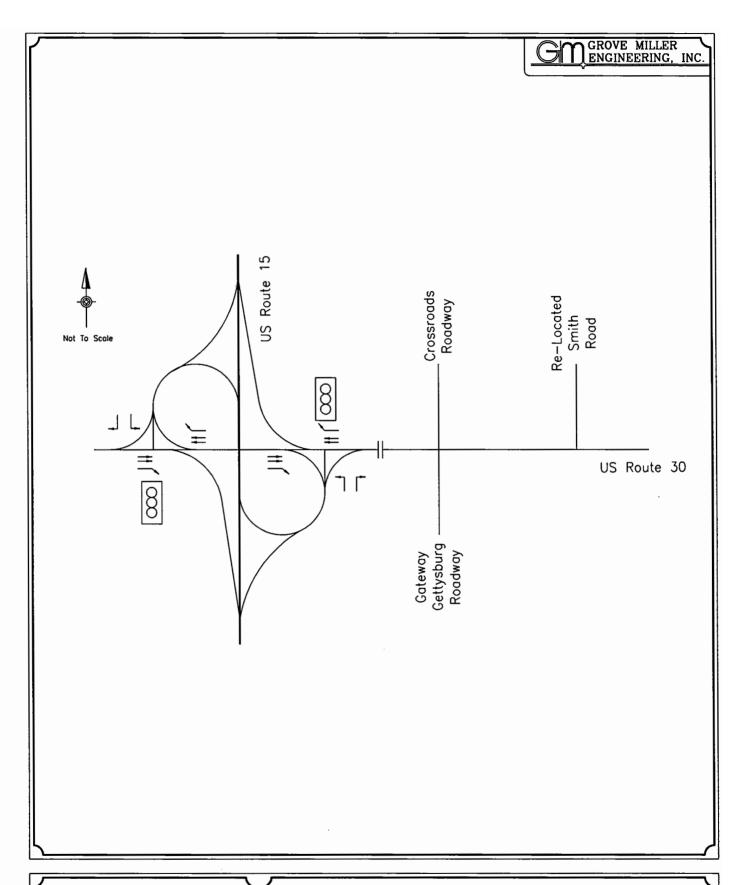


Traffic Impact Study

CROSSROADS GAMING RESORT AND SPA

Straban Township, Adams County, PA

FIGURE 1 Location Map



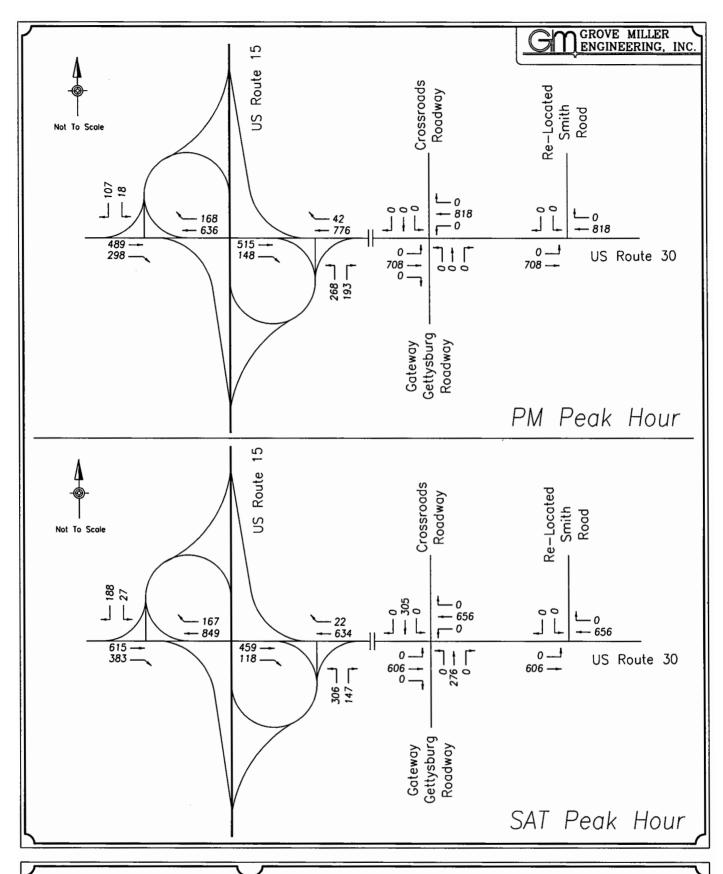
Traffic Impact Study

CROSSROADS GAMING RESORT AND SPA

Straban Township, Adams County, PA

FIGURE 2

Existing Lane Configurations and Intersection Control



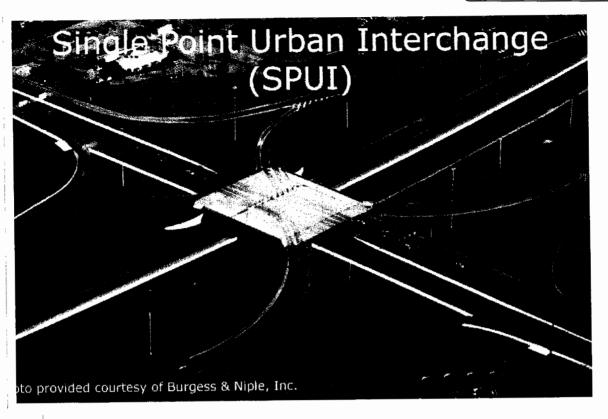
Traffic Impact Study

CROSSROADS GAMING RESORT AND SPA

Straban Township, Adams County, PA

FIGURE 3
2005 Existing Traffic Volumes







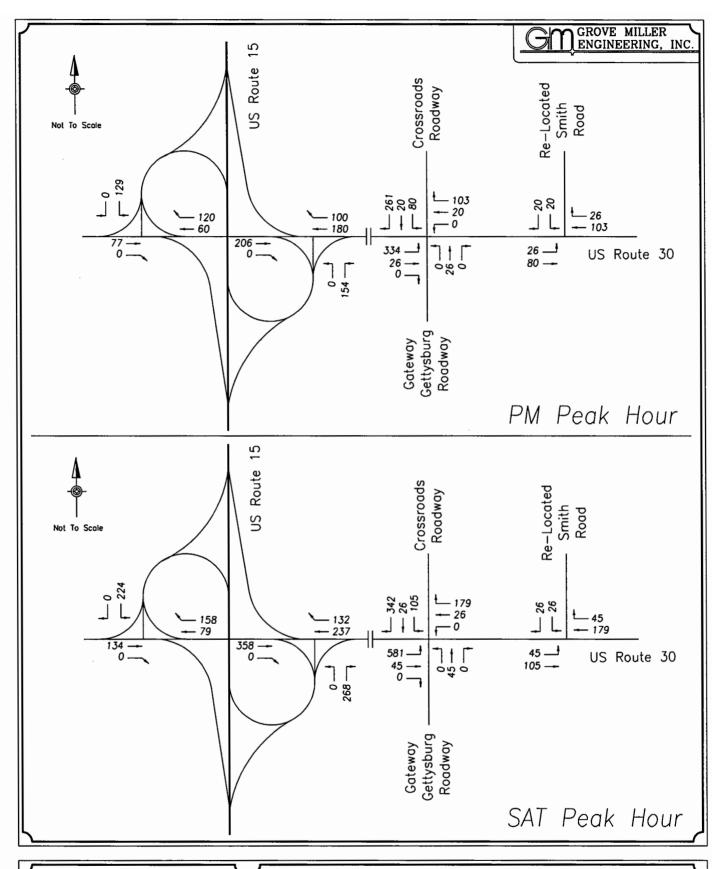
Traffic Impact Study

CROSSROADS GAMING RESORT AND SPA

Straban Township, Adams County, PA

FIGURE 4

Examples of Single Point Urban Interchanges



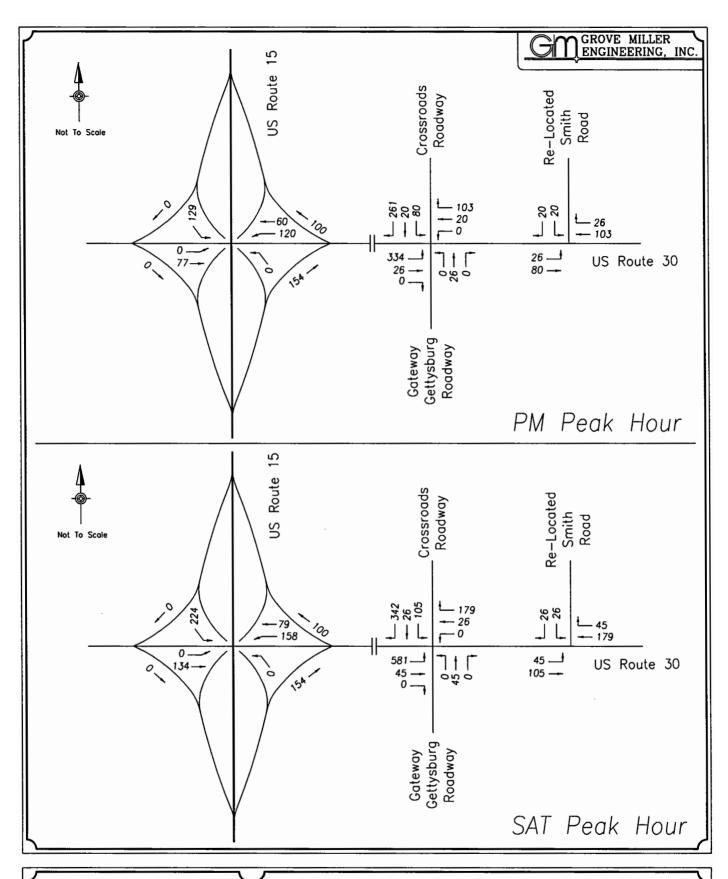
Traffic Impact Study

CROSSROADS GAMING RESORT AND SPA

Strobon Township, Adoms County, PA

Trip Distributions for Crossroads Gaming Resort and Spa

FIGURE 5a



Traffic Impact Study

CROSSROADS GAMING RESORT AND SPA

Straban Township, Adams County, PA

Trip Distributions for Crossroads Gaming Resort and Spa

FIGURE 5b

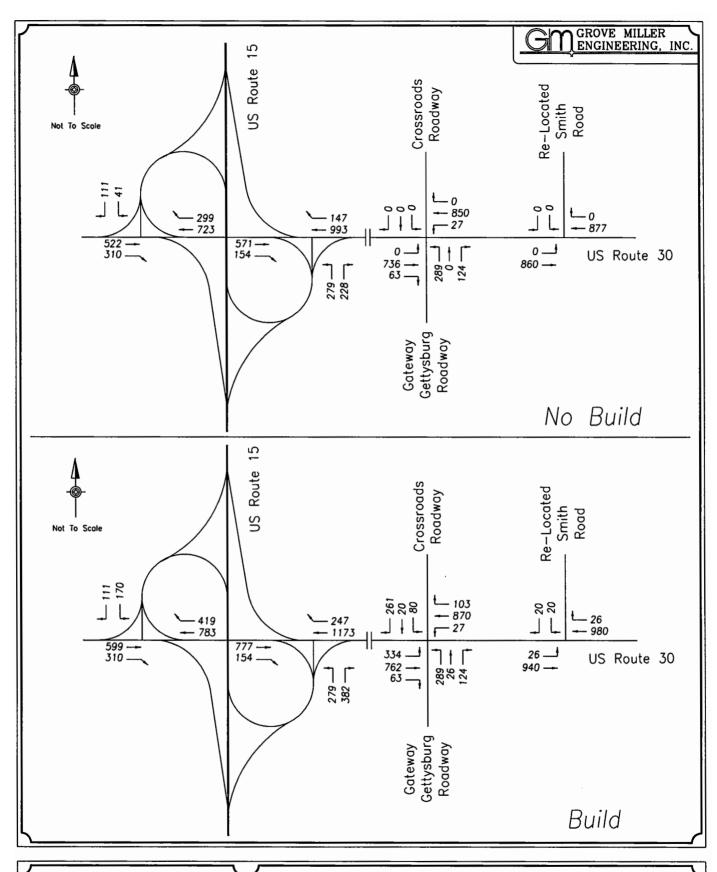


FIGURE 6a 2008 Build Year Traffic Volumes, Weekday PM Peak Hour

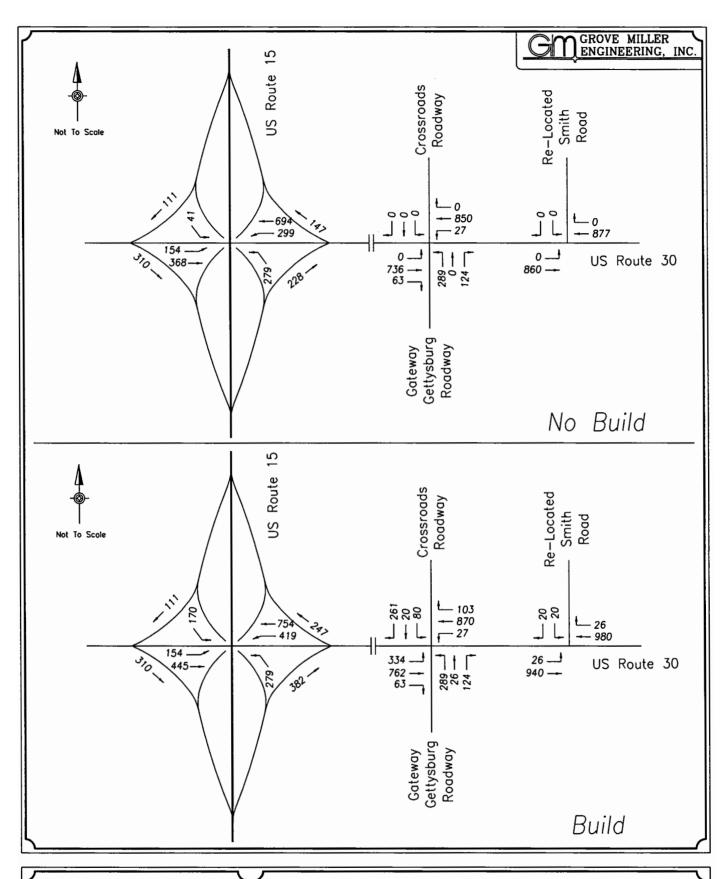


FIGURE 6b 2008 Build Year Traffic Volumes, Weekday PM Peak Hour

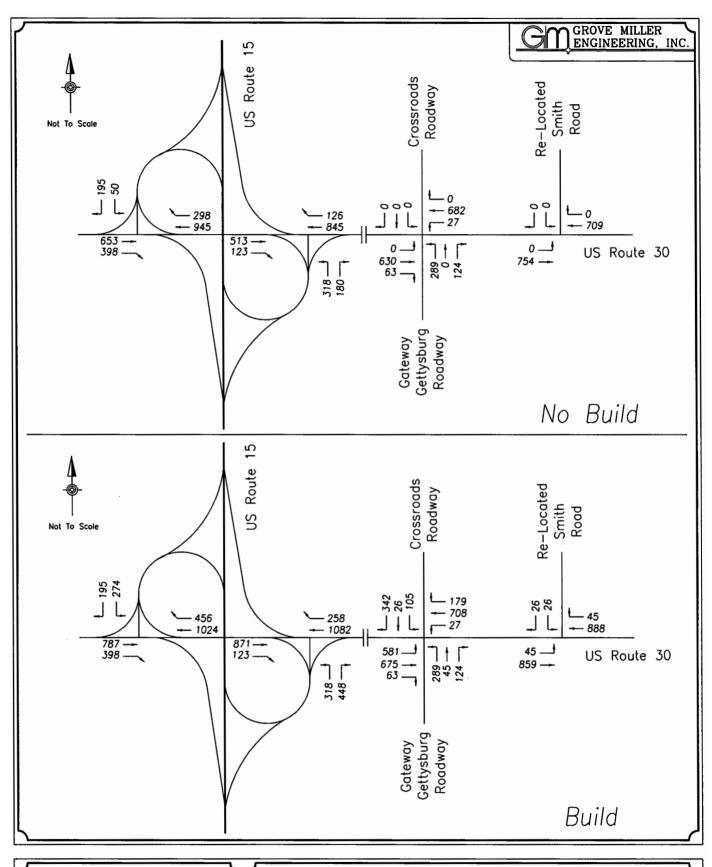
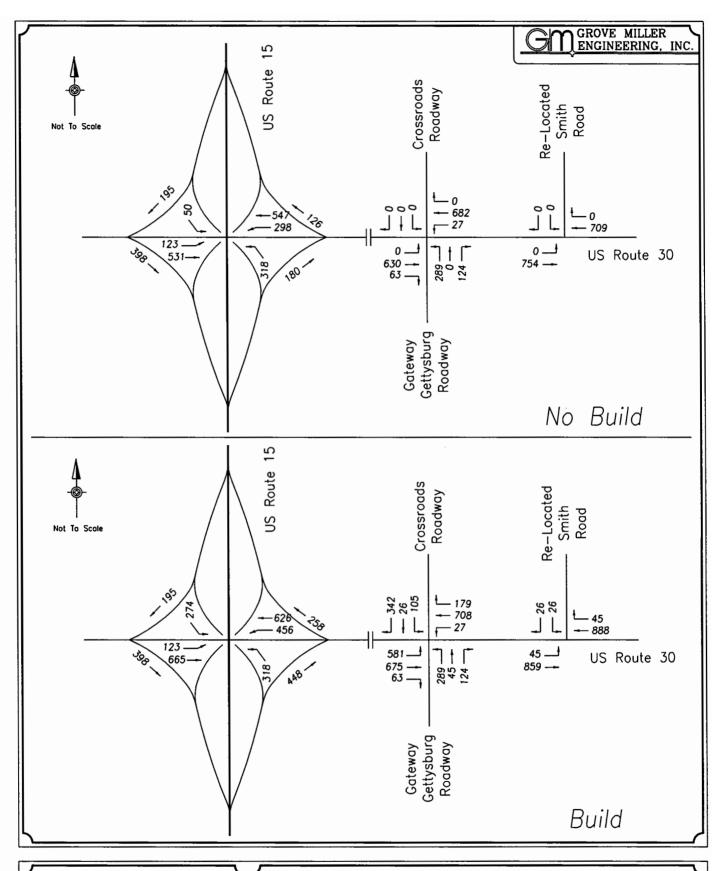


FIGURE 7a 2008 Build Year Traffic Volumes, Saturday Peak Hour



2008 Build Year Traffic Volumes, Saturday Peak Hour

FIGURE 7b

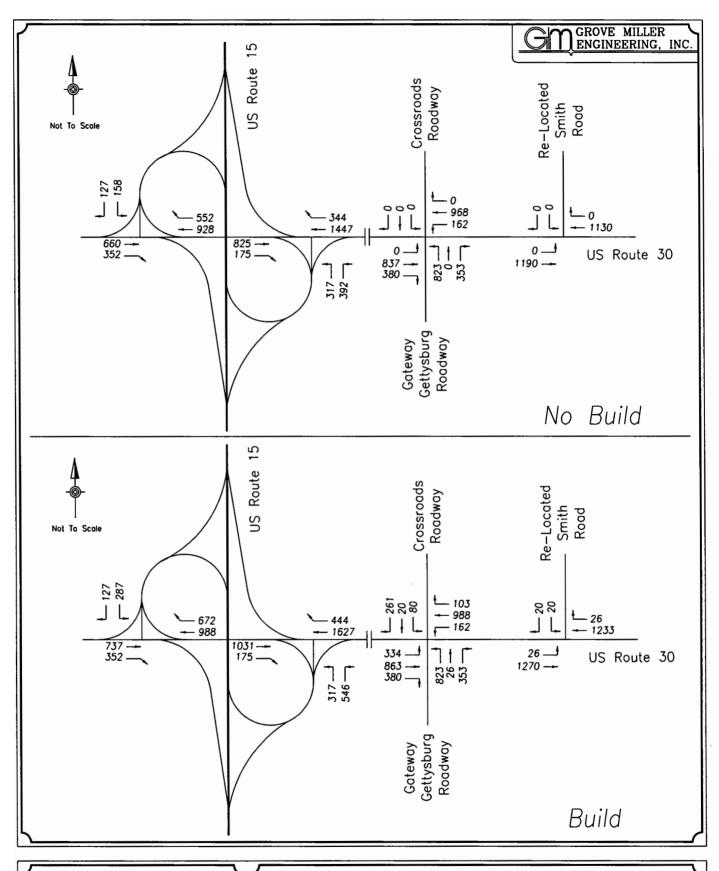
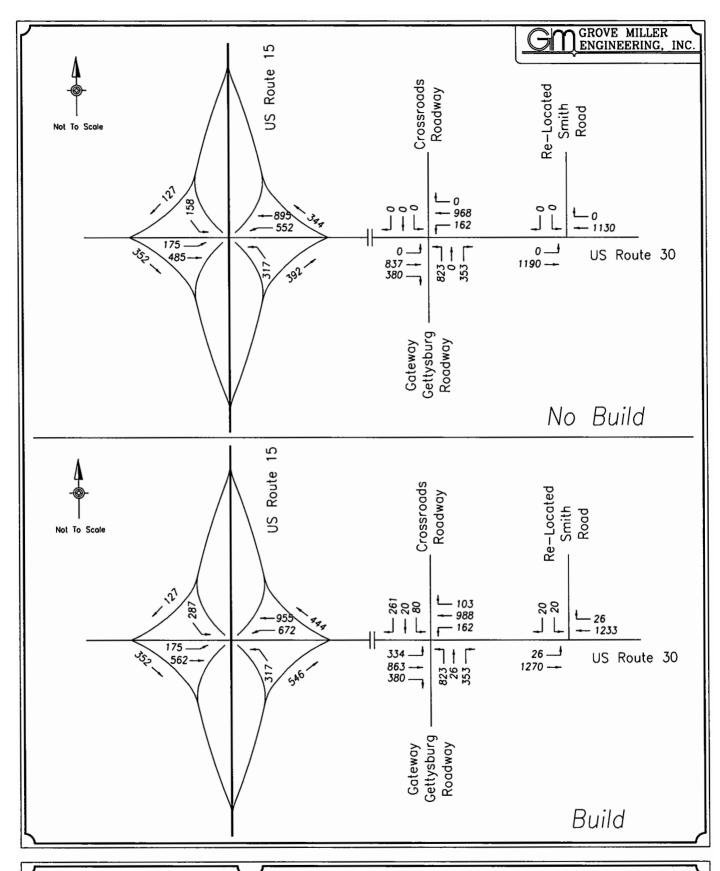


FIGURE 8a 2018 Design Year Traffic Volumes, Weekday PM Peak Hour



2018 Design Year Traffic Volumes, Weekday PM Peak Hour

FIGURE 8b

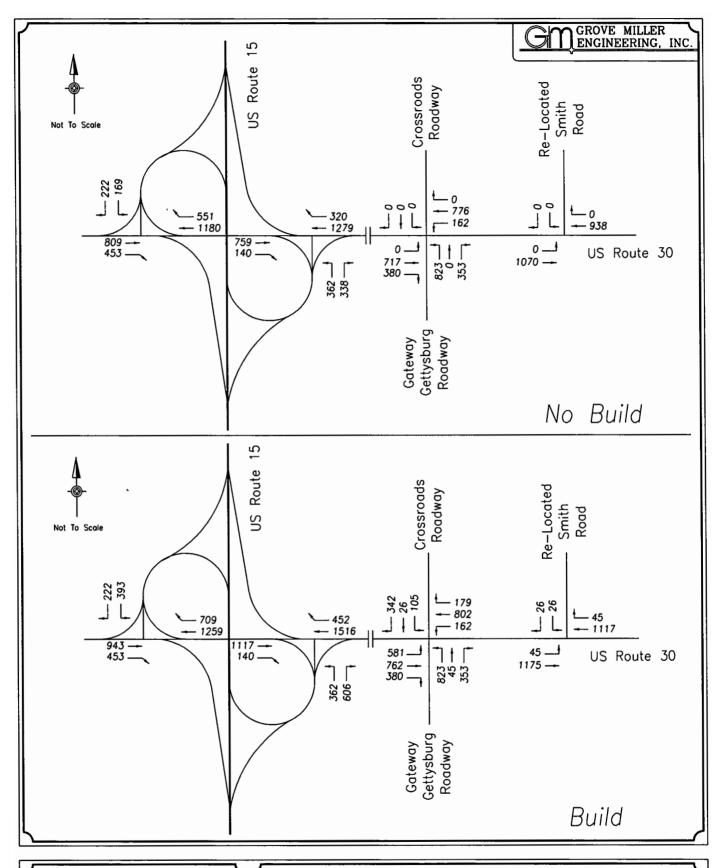


FIGURE 9a 2018 Design Year Traffic Volumes, Saturday Peak Hour

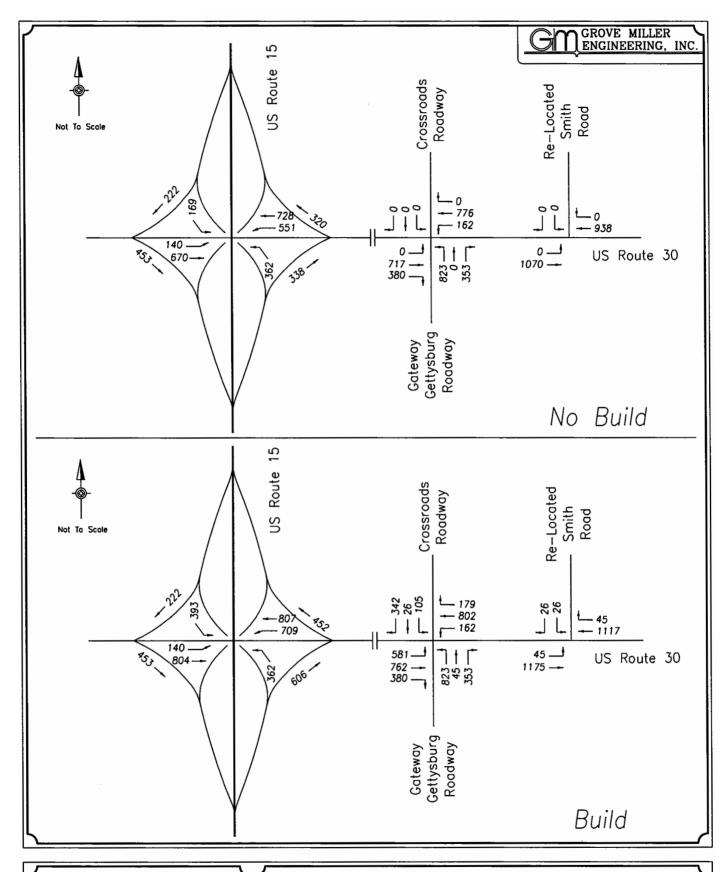


FIGURE 9b 2018 Design Year Traffic Volumes, Saturday Peak Hour

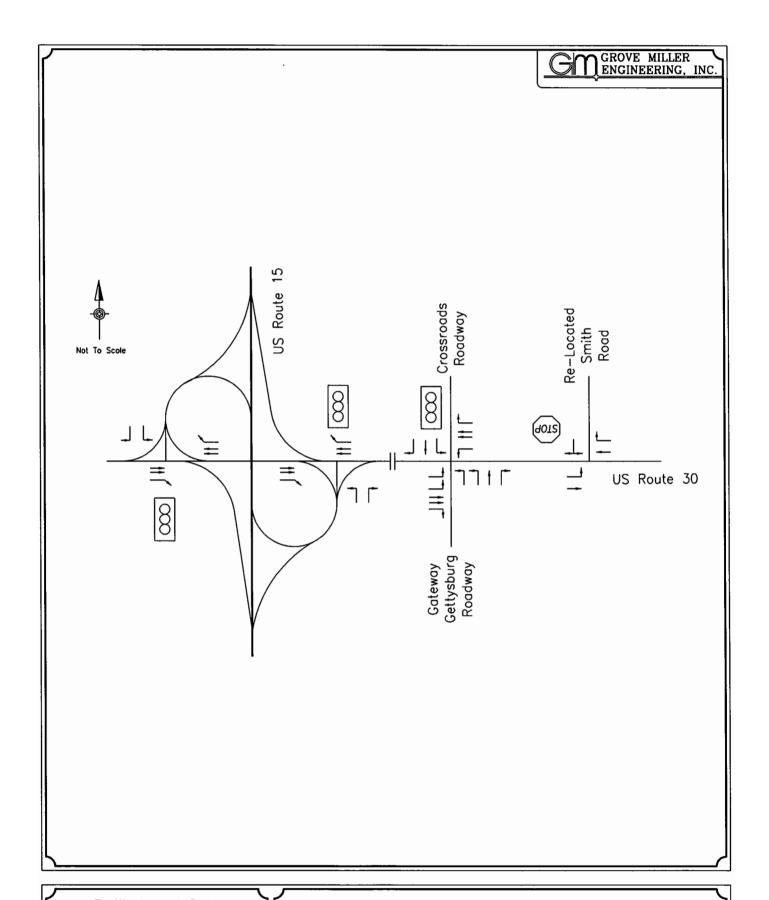
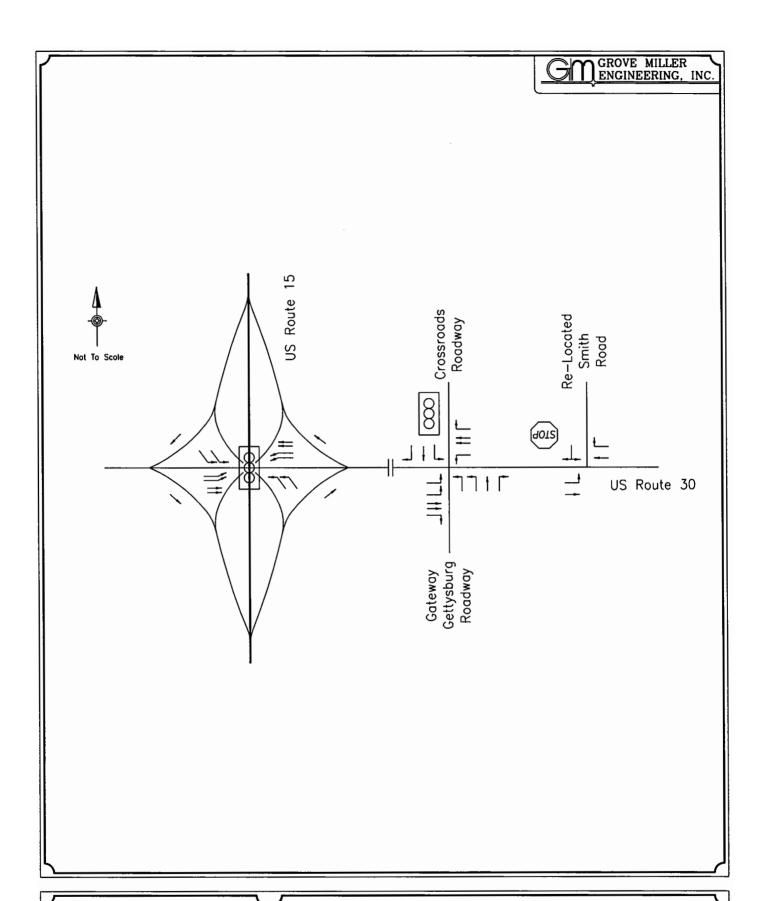


FIGURE 10a

Recommended Lane Configurations and Intersection Control



Traffic Impact Study

CROSSROADS GAMING RESORT AND SPA

Straban Township, Adams County, PA

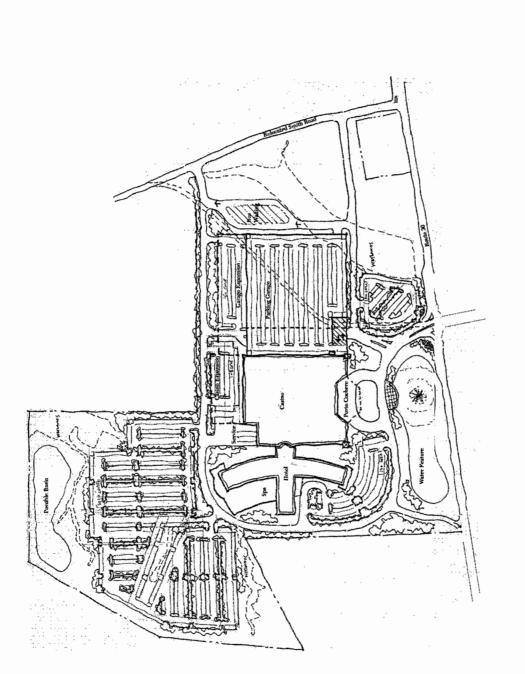
FIGURE 10b

Recommended Lane Configurations and Intersection Control

APPENDIX

Site Layout Plan
Turning Movement Peak Period Counts
Trip Generation Calculations
Traffic Projections
Level of Service Descriptions
Highway Capacity Analysis Worksheets
Queue Analysis Calculations
Study Area Photographs

Site Layout Plan



Gettysburg Gaming Resort & Spa Straban Township, Adams County, PA



Cope Linder Architects
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Finderfolds, Frenchend 19102

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Concept Site Plan

Presentation 02 November 2005

Turning Movement Peak Period Counts

Grove Miller Engineering Inc. 5600 Derry Street Harrisburg, PA 17111 Ph (717) 564-6146 Fx (717) 564-9488

Day: Wednesday Municipality: Straban Township County: Adams Weather: Rain Counter: rgf

File Name : US15SB_US30_PM Site Code : 00012985 Start Date : 11/16/2005 Page No : 1

			Int. Total	440	402	421	422	1685	469	405	366	366	1606	3291			3215	7.76	76	2.3
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Vehicle	ıte 15 C	Northbound	Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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G _{ro}	2		Thru	171	149	145	146	611	180	165	148	141	634	1245	81.4	37.8	1224	98.3	21	1.7
			Left	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			Peds App. Total	209	194	203	207	813	214	163	160	175	712	1525		46.3	1507	98.8	18	1.2
	30	pu	Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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			Start Time	04:00 PM	04:15 PM	04:30 PM	04:45 PM	Total	05:00 PM	05:15 PM	05:30 PM	05:45 PM	Total	Grand Total	Apprch %	Total %	Passenger Cars	% Passenger Cars	Heavy Vehicles	% Heavy Vehicles

Westbound 1 1 0 145 41 0 146 31 0 180 50 0 165 46 0 636 168 0 79 20.9 0 627 150 0 98.6 89.3 0 98.6 89.3 0 14 10.7			ຮ	US Route 30	30			Sn	US Route 30	30		2	US Route 15 On Ramp	e 15 On	Ramp		2	S Rout	e 15 Of	US Route 15 Off Ramp		
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0 62.1 37.9 0 79 20.9 0.1 0 <	Total Volume	0	489	298	0	787	0	636	168	-	805	0	0	0	0	0	18	0	107	0	125	1717
.000 .919 .920 .000 .919 .000 .883 .840 .250 .871 .000 <th< td=""><td>% App. Total</td><td>0</td><td>62.1</td><td>37.9</td><td>0</td><td></td><td>0</td><td>79</td><td>50.9</td><td>0.1</td><td></td><td>0</td><td>0</td><td>0</td><td>0</td><td></td><td>14.4</td><td>0</td><td>85.6</td><td>0</td><td></td><td></td></th<>	% App. Total	0	62.1	37.9	0		0	79	50.9	0.1		0	0	0	0		14.4	0	85.6	0		
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0 0.8 0 0 0.5 0 1.4 10.7 100	eavy Vehicles	0	4	0	0	4	0	တ	18	-	78	0	0	0	0	0	က	0	7	0	5	37
	Heavy Vehicles	0	0.8	0	0	0.5	0	4.	10.7	9	3.5	0	0	0	0	0	16.7	0	6.	0	0.4	2.2

Grove Miller Engineering Inc. 5600 Derry Street Harrisburg, PA 17111 Ph (717) 564-6146 Fx (717) 564-9488

Day: Wednesday Municipality: Straban Township County: Adams

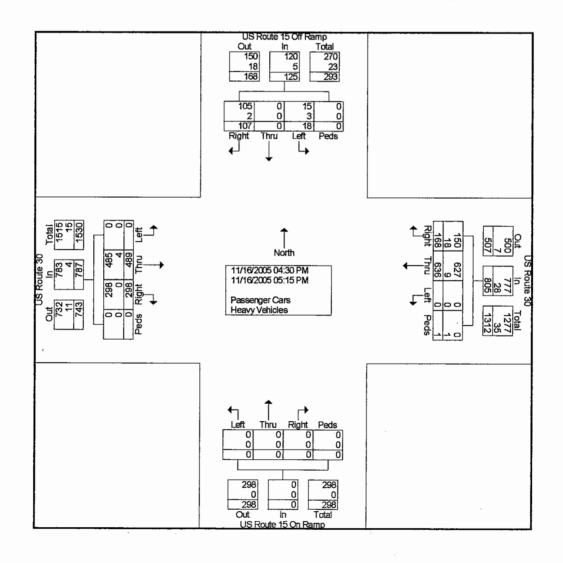
Weather: Rain Counter: rgf File Name : US15SB_US30_PM

Site Code : 00012985 Start Date : 11/16/2005

Page No : 1

Groups Printed- Passenger Cars - Heavy Vehicles

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		US Ro	ute 30	<i>'</i>		US Ro	ute 30		US R	oute 1	5 On R	amp	US R	oute 1	Off R	amp	
		Eastb	ound			Westb	ound	1		North	bound			South	oound		
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
04:30 PM	0	129	74	0	0	145	41	0	0	0	0	0	8	0	24	0	421
04:45 PM	0	129	78	0	0_	146	31	0	0	0	0	0	5	0	33	0	422
Total	0	258	152	0	0	291	72	0	0	0	. 0	0	13	0	57	0	843
05:00 PM	0	133	81	0	0	180	50	1	0	0	0	0	· 1	0	23	0	469
05:15 PM	0	98	65	. 0	0	165	46	0	0	0	0	0	4	0	27	0	405
Grand Total	0	489	298	0	0	636	168	1	0	0	0	0	18	0	107	0	1717
Apprch %	0	62.1	37.9	0	0	79	20.9	0.1	0	0	0	0	14.4	0	85.6	0	
Total %	0	28.5	17.4	0	0	37	9.8	0.1	0	0	0	0	1	0	6.2	0	
Passenger Cars	Ô	485	298	0	0	627	150	0	0	0	0	0	15	0	105	0	1680
% Passenger Cars	0	99.2	100	. 0	0	98.6	89.3	0	0	0	0	0	83.3	0	98.1	0	97.8
Heavy Vehicles	0	4	0	0	0	9	18	1	0	0	0	0	3	0	2	0	37
% Heavy Vehicles	0	8.0	0	0	0	1.4	10.7	100	0	0	0	0	16.7	0	1.9	0	2.2



Grove Miller Engineering Inc.

5600 Derry Street Harrisburg, PA 17111 Ph (717) 564-6146 Fx (717) 564-9488

Day: Saturday Municipality: Straban Township County: Adams Weather: Clear Counter: Ih

File Name: US15SB_US30_MID Site Code: 00012985 Start Date: 11/19/2005

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Southbound	Right	45	51	63	37	196	42	46	59	48	165	361	6.06	8.6	360	99.7	-	6
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US Route 15 On Ramp bound Northbound	Right	•	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	C
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US Route 30 Westbound	Right	36	34	43	37	150	53	34	43	4	170				308	96.2	12	8
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US Route 30 Eastbound	Right	79	71	92	87	332	87	114	84	86	371	703	37.7	16.7	701	99.7	2	0
2 4	Thru	132	120	147	140	539	148	180	148	149	625	1164	62.3	27.7	1154	99.1	10	C
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	Start Time	11:00 AM	11:15 AM	11:30 AM	11:45 AM	Total	12:00 PM	12:15 PM	12:30 PM	12:45 PM	Total	Grand Total	Apprch %	Total %	Passenger Cars	% Passenger Cars	Heavy Vehicles	% Heavy Vehicles

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		E	Eastbound	pu			S	Westbou	pun			Š	Northbound	Þ			So	Southbound	pu		
Start Time	Left	Thru	Right	Thru Right Peds App. Total	App. Total	Left	Thru	Right	Peds A	App. Total	Left	Thr	Right	Peds App. Total	p. Total	Left	Thr	Right	Peds App. Total	op. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of	sis From	11:00 A	M to 12:4	45 PM - F	eak 1 of 1																
Peak Hour for Entire Intersection Begins at 11:30 AM	ntire Inters	section E	Segins at	11:30 AN	_																
11:30 AM	0	147	95	0	242	0	214	43	0	257	0	0	0	0	0	4	0	63	0	29	566
11:45 AM	0	140	87	0	227	0	210	37	0	247	0	0	0	0	0	2	0	37	0	42	516
12:00 PM	0	148	87	0	235	0	211	53	0	797	0	0	0	0	0	9	0	45	0	52	551
12:15 PM	0	180	114	0	294	Q	214	34	0	248	0	0	0	0	0	80	0	46	0	54	969
Total Volume	0	615	383	0	866	0	849	167	0	1016	0	0	0	0	0	27	0	188	0	215	2229
% App. Total	0	61.6	38.4	0		0	83.6	16.4	0		0	0	0	0		12.6	0	87.4	0		
PHF	000	.854	.840	000	.849	000	.992	.788	000	.962	000	000	000	000	000	.675	000	.746	000	.802	.935
Passenger Cars	o	609	383	0	992	0	841	160	0	1001	0	0	0	0	0	24	0	188	0	212	2205
% Passenger Cars	0	99.0	100	0	99.4	<u>.</u>	99.1	92.8	0	98.5	0	0	0	0	0	88.9	0	100	0	98.6	98.9
Heavy Vehicles	0	9	0	0	ဖ	0	œ	7	0	15	0	0	0	0	0	ო	0	0	0	က	24
% Heavy Vehicles	0	1.0	0	0	9.0	0	6.0	4.2	0	.5	0	0	0	0	0	7.	0	0	0	4.	- -

Grove Miller Engineering Inc. 5600 Derry Street Harrisburg, PA 17111 Ph (717) 564-6146 Fx (717) 564-9488

Day: Saturday

Municipality: Straban Township County: Adams

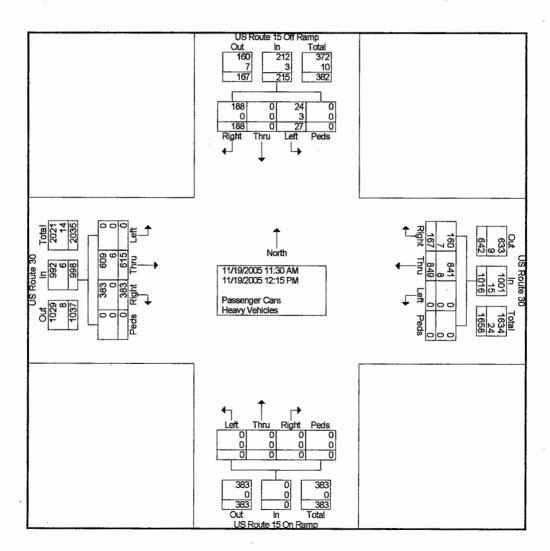
Weather: Clear Counter: Ih File Name : US15SB_US30_MID Site Code : 00012985

Start Date : 11/19/2005

Page No : 1

Groups Printed- Passenger Cars - Heavy Vehicles

								senger	Cars -								
		US Roi	ute 30			US Ro	ute .30		US R	oute 1	5 On Ra	amp	US R	oute 1	5 Off R	amp	
		Eastb	ound			Westl	oound			North	oound	-		South	bound		
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
11:30 AM	0	147	95	0	0	214	43	0	0	0	0	0	4	0	63	0	566
11:45 AM	0	140	87	0	0	210	37	0	0	. 0	0	0	5	0	37	0	516
Total	0	287	182	0	0	424	80	0	0	0	0	0	9	0	100	0	1082
12:00 PM	0	148	87	0	0	211	53	0	0	0	0	0	10	0	42	0	551
12:15 PM	0	180	114	0	0	214	34	0	0	0	0	0	8	0	46	0	596
Grand Total	0	615	383	0	0	849	167	0	0	0	0	0	27	0	188	0	2229
Apprch %	0	61.6	38.4	0	0	83.6	16.4	0	0	0	0	0	12.6	0	87.4	0	
Total %	0	27.6	17.2	0	0	38.1	7.5	0	0	0	0	0	1.2	0	8.4	0	
Passenger Cars	0	609	383	0	0	841	160	0	0	0	0	0	24	0	188	0	2205
% Passenger Cars	0	99	100	0	0	99.1	95.8	0	0	0	0	0	88.9	0	100	0	98.9
Heavy Vehicles	0	6	0	0	0	8	7	0	0	0	0	0	3	0	0	0	24
% Heavy Vehicles	0	1	0	0	0	0.9	4.2	0	0	0	. 0	0	11.1	0	0	0	1.1



Grove Miller Engineering Inc. 5600 Derry Street Hamisburg, PA 17111 Ph (717) 564-6146 Fx (717) 564-9488

Day: Wednesday Municipality: Straban Township County: Adams Weather: Rain Counter: Ih

File Name: US15NB_US30_PM Site Code: 00012985 Start Date: 11/16/2005 Page No: 1

			Int. Total	462	527	474	423	1886	519	429	368	349	1665	3551			3413	96.1	138	3.9
	_			0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
	Ramp		Peds App. Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5 On I	Southbound	Right P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	US Route 15 On Ramp	South	Thru Rig	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SN		Left	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
				86	125	96	115	434	126	110	109	104	449	883		24.9	841	95.2	42	8.4
	amp	ı	Peds App. Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
cles	US Route 15 Off Ramp	puno		65	4	43	0	80	ဖွ	_	42	0	6	တ	80	4		4	6	9
v Vehi	oute 1	Northbound	Right	က	40	4	ιΩ	18	4	ιΩ	4	5	189	36		10.4			39	10
Heav	US Ro	_	Thru	-	0	0	0	_	_	0	0	0	-	2	0.2	0.1	2	100	0	0
Cars -			Left	64	71	53	65	253	79	29	29	54	259	512	28	14.4	209	99.4	က	9.0
Printed- Passenger Cars - Heavy Vehicles			op. Tatal	201	225	205	155	786	233	201	148	127	502	1495		42.1	1423	95.2	72	4.8
ed- Pas	30	0	Peds App. Tatal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	US Route 30	Westbound	Right	16	6	7	10	42	16	œ	7	က	29	7	4.7	7	7.	100	0	0
Groups	S	Š	Thru	185	216	198	145	744	217	193	146	124	680	1424	95.3	40.1	1352	94.9	72	5.1
			Left	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			pp. Total	163	177	173	153	999	160	118	=======================================	118	202	1173		33	1149	86	54	7
	30	ď	Peds App. Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	US Route 30	Eastbound	Right	33	36	46	27	142	39	19	28	30	116	258	22	7.3	252	97.7	ဖ	2.3
	S	Ea	Thru	130	141	127	126	524	121	66	83	88	391	915	78	25.8	897	86	18	7
			reft	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			Start Time	04:00 PM	04:15 PM	04:30 PM	04:45 PM	Total	05:00 PM	05:15 PM	05:30 PM	05:45 PM	Total	Grand Total	Apprch %	Total %	Passenger Cars	% Passenger Cars	Heavy Vehicles	% Heavy Vehicles

Left Thru Right Peds App. Total Left Thru Right Thru Right Peds			ຮູ _້ ພັ	US Route 30 Eastbound	30 1d			SY	US Route 30 Westbound	30 d		٦	IS Rout No	US Route 15 Off Ramp Northbound	f Ramp		Ď	S Rout Sou	oute 15 On F Southbound	US Route 15 On Ramp Southbound		
task 1 of 1 177 0 216 9 0 225 71 0 54 0 125 0 0 173 0 198 7 0 205 53 0 43 0 96 0 <th>Start Time</th> <th></th> <th></th> <th></th> <th>Peds A</th> <th>pp. Total</th> <th>Left</th> <th></th> <th></th> <th>Peds Ap</th> <th>o. Total</th> <th>Left</th> <th></th> <th><u> </u></th> <th>Peds App</th> <th>Total</th> <th>L</th> <th></th> <th>1</th> <th>Peds App. Total</th> <th>\vdash</th> <th>Int. Total</th>	Start Time				Peds A	pp. Total	Left			Peds Ap	o. Total	Left		<u> </u>	Peds App	Total	L		1	Peds App. Total	\vdash	Int. Total
ntire Intersection Begins at 04:15 PM 141 36 0 177 0 216 9 0 225 71 0 54 0 125 0 0 0 0 0 0 0 0 127 46 0 173 0 198 7 0 205 53 0 43 0 96 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Peak Hour Analy	sis From C	14:00 PI	M to 05:4	15 PM - P	eak 1 of 1													1			
0 141 36 0 177 0 216 9 0 225 71 0 54 0 125 0	Peak Hour for En	tire Inters	ection B	egins at	04:15 PM	_																
0 127 46 0 173 0 198 7 0 205 53 0 43 0 96 0 0 0 0 0 155 65 65 0 50 0 115 0 0 0 0 0 0 0 0 0 0 0 0 0 155 65 0 50 0 156 0 0 156 0 0 156 0 156 0 156 0 156 0 156 0 156 0 156 0	04:15 PM	0	141	36	0	177	0	216	တ	0	225	71	0	54	0	125	0	0	0	0	0	527
0 126 27 0 153 0 145 10 0 155 65 0 50 0 115 0 0 0 121 39 0 160 217 16 0 233 79 1 46 0 126 0 0 0 515 148 0 663 0 776 42 0 818 268 1 193 0 462 0 0 0.000 313 00 34.9 5.1 0 818 26 1 193 0 462 0 0 0.000 313 00 34.9 5.1 0 34.8 0 17 0 48.9 0 0 0 34.5 0 38 0 38.4 0 38.8 0 34.8 0 34.8 0 0 0 0 0 0 38.0<	04:30 PM	0	127	46	0	173	0	198	7	0	205	53	0	43	0	96	0	0	0	0	0	474
0 121 39 0 160 0 217 16 0 233 79 1 46 0 126 0 0 0 0 0 0 0 0 0 1 46 0 126 0	04:45 PM	0	126	27	0	153	0	145	10	0	155	65	0	20	0	115	0	0	0	0	0	423
0 515 148 0 663 0 776 42 0 818 268 1 193 0 462 0 0 0 77.7 22.3 0 94.9 5.1 0 58 0.2 41.8 0 462 0 0 0.000 .913 .000 .894 .656 .000 .878 .848 .250 .894 .000 .917 .000 .000 0 506 145 0 651 0 738 42 0 780 266 1 171 0 438 0 0 0 98.3 98.0 98.2 0 95.1 100 95.4 99.3 100 88.6 0 44.8 0 0 0 98.3 98.0 98.2 99.3 100 88.6 94.8 0 0 0 0 99.3 98.0 99.3 10	05:00 PM	0	121	39	0	160	0	217	16	0	233	79	-	46	0	126	0	0	0	0	0	519
0 77.7 22.3 0 94.9 5.1 0 58 0.2 41.8 0	Total Volume	0	515	148	0	663	0	776	42	0	818	268	-	193	0	462	0	0	0	0	0	1943
.000 .913 .804 .000 .894 .656 .000 .878 .848 .250 .894 .000 .917 .000 <th< td=""><td>% App. Total</td><td>0</td><td>77.7</td><td>22.3</td><td>0</td><td></td><td>0</td><td>94.9</td><td>5.1</td><td>0</td><td></td><td>28</td><td>0.2</td><td>41.8</td><td>Ó</td><td></td><td>0</td><td>0</td><td>0</td><td>0</td><td></td><td></td></th<>	% App. Total	0	77.7	22.3	0		0	94.9	5.1	0		28	0.2	41.8	Ó		0	0	0	0		
0 506 145 0 651 0 738 42 0 780 266 1 171 0 0 98.3 98.0 0 98.2 0 95.1 100 0 95.4 99.3 100 88.6 0 0 9 3 0 12 0 38 0 0 38 2 0 22 0 0 1.7 2.0 0 1.8 0 4.9 0 0 4.6 0.7 0 11.4 0	PHF	00.	.913	804	000	936	000	.894	.656	000	878.	.848	.250	894	000	.917	000	000.	000	000	000	.922
0 98.3 98.0 0 98.2 0 95.1 100 0 95.4 99.3 100 88.6 0 0 0 9 3 0 12 0 38 0 0 38 2 0 22 0 0 0 1.7 2.0 0 1.8 0 4.9 0 0 4.6 0.7 0 11.4 0	Passenger Cars	0	206	145	0	651	0	738	45	0	780	266	-	171	0	438	0	0	0	0	0	1869
0 9 3 0 12 0 38 0 0 38 2 0 22 0 0 1.7 2.0 0 1.8 0 4.9 0 0 4.6 0.7 0 11.4 0	% Passenger Cars	0	98.3	98.0	0	98.2	0	95.1	100	0	95.4	99.3	9	88.6	0	94.8	0	0	0	0	0	96.2
0 1.7 2.0 0 1.8 0 4.9 0 0 4.6 0.7 0 11.4 0	Heavy Vehicles	0	6	က	0	12	0	38	0	0	38	7	0	22	0	24	0	0	0	0	0	74
	% Heavy Vehicles	0	1.7	2.0	0	1.8	0	4.9	0	0	4.6	0.7	0	11.4	0	5.2	0	0	0	0	0	3.8

Grove Miller Engineering Inc. 5600 Derry Street Harrisburg, PA 17111 Ph (717) 564-6146 Fx (717) 564-9488

Day: Wednesday

Municipality: Straban Township

County: Adams

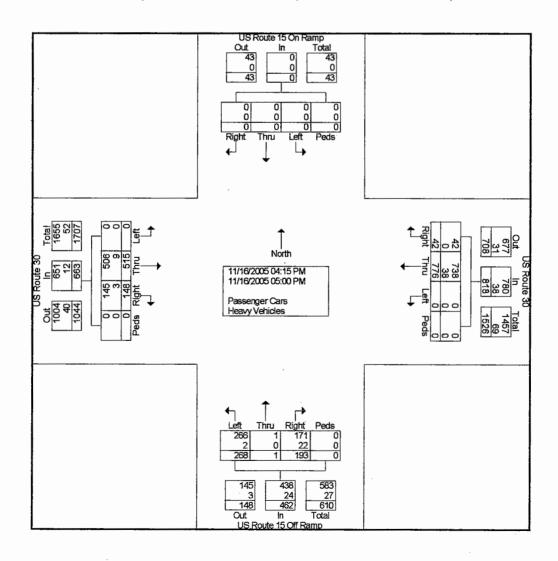
Weather: Rain Counter: Ih File Name: US15NB_US30_PM

Site Code : 00012985 Start Date : 11/16/2005

Page No : 1

Groups Printed- Passenger Cars - Heavy Vehicles

											- 011,01						_
		US Ro	ute 30	[US Ro	ute 30		US R	oute 1	5 Off R	amp	US R	oute 1	5 On R	amp	
		Eastb	ound			West	oound	1		North	bound	-		South	bound	-	
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
04:15 PM	0	141	36	0	0	216	9	0	71	0	54	0	0	0	0	0	527
04:30 PM	0	127	46	0	0	198	7	0	53	0	43	0	0	0	0	0	474
04:45 PM	0_	126	27	0	0	145	10	0	65	0	50	0	0	0	0	0	423
Total	0	394	109	0	0	559	26	0	189	0	147	0	0	0	0	0	1424
05:00 PM	0	121	39	0	0	217	16	0	79	1	46	0	0	0	0	0	519
Grand Total	0	515	148	0	0	776	42	0	268	1	193	0	0	0	0	0	1943
Apprch %	0	77.7	22.3	0	0	94.9	5.1	0	58	0.2	41.8	0	0	0	0	0	
Total %	0	26.5	7.6	0	0	39.9	2.2	0	13.8	0.1	9.9	0	0	0	0	0	
Passenger Cars	0	506	145	0	0	738	42	0	266	1	171	0	0	0	0	0	1869
% Passenger Cars	0	98.3	98	0	0	95.1	100	0	99.3	100	88.6	0	0	0	0	0	96.2
Heavy Vehicles	0	9	3	0	0	38	0	0	2	0	22	0	0	0	0	0	74
% Heavy Vehicles	0	1.7	2	0	0	4.9	0	0	0.7	0	11.4	0	0	0	0	0	3.8



Grove Miller Engineering Inc.

5600 Derry Street Harrisburg, PA 17111 Ph (717) 564-6146 Fx (717) 564-9488

Day: Saturday Municipality: Straban Township County: Adams Weather: Clear Counter: ch

File Name : US15NB_US30_MID Site Code : 00012985 Start Date : 11/19/2005 Page No : 1

			Int. Total	374	378	408	402	1562	406	444	434	394	1678	3240			3161	97.6	79	2.4
				0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
	Ramp	70	Peds App. Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	US Route 15 On Ramp	Southbound	Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	JS Rout	Sot	Thru	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7		Left	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Q.		Peds App. Total	122	121	108	125	476	101	107	120	110	438	914		28.2	904	98.9	10	7:
Se	Off Ram	pun	_	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Groups Printed- Passenger Cars - Heavy Vehicles	US Route 15 Off Ramp	Northbound	Right	55	47	31	44	177	23	37	43	4	143	320	35	6.6	312	97.5	ω	2.5
Heavy	US Ro	2	Thru	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
r Cars			Left	67	74	77	8	299	78	70	77	2	295	594	9	18.3	592	99.7	2	0.3
ssenge			Peds App. Total	126	141	159	146	572	164	173	173	149	629	1231		38	1186	96.3	45	3.7
ted- Pa	30	pu	Peds /	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ıps Prin	S Route 30	Westbound	Right	က	7	7	က	10	7	9	9	က	22	32	5.6	-	58	9.06	က	9.4
Gro	Sn	\$	Thru	123	139	157	143	562	157	167	167	146	637	1199	97.4	37	1157	96.5	42	3.5
			Left	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			Peds App. Total	126	116	141	131	514	141	164	141	135	581	1095		33.8	1071	97.8	24	2.2
	30	pu	Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	US Route 30	Eastbound	Right	27	56	31	22	106	30	78	38	31	127	233	21.3	7.2	232	96.6	-	4.0
	ຮ	E	Thru	66	6	110	109	408	11	136	103	104	454	862	78.7	26.6	839	97.3	23	2.7
			Left	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			Start Time	11:00 AM	11:15 AM	11:30 AM	11:45 AM	Total	12:00 PM	12:15 PM	12:30 PM	12:45 PM	Total	Grand Total	Apprch %	Total %	Passenger Cars	% Passenger Cars	Heavy Vehicles	% Heavy Vehicles

		รั	US Route 30	30			ISN	Route 30	30		7	IS Rout	US Route 15 Off Ramp	f Ramp		3	S Rout	US Route 15 On Ramp	Ramp		
		Ш	Eastbound	ρι			Wes	estbound	Ø			No	Northbound	٥			Sol	Southbound	ַק		
Start Time	Left	Thru	Right	Peds App. Total	. Total	Left	Thru	Right	Peds App. Total	pp. Total	Left	Thru	Right	Peds App. Total	, Total	Left	Thru	Right	Peds App. Total		Int. Total
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of	sis From	11:00 A	M to 12:4	5 PM - Pea	k 1 of 1																
Peak Hour for Entire Intersection Begins at 11:45 AM	tire Inters	section B	legins at	11:45 AM																	
11:45 AM	0	109	. 22	0	131	0	143	က	0	146	8	0	4	0	125	0	0	0	0	0	402
12:00 PM	0	11	30	0	141	0	157	^	0	164	78	0	23	0	101	0	0	0	0	0	406
12:15 PM	0	136	28	0	164	0	167	Ø	0	173	20	0	37	0	101	0	0	0	0	0	444
12:30 PM	0	103	38	0	141	0	167	ග	0	173	77	0	43	0	120	0	0	0	0	0	434
Total Volume	0	459	118	0	212	0	634	22	0	929	306	0	147	0	453	0	0	0	0	0	1686
% App. Total	0	79.5	20.5	0		0	9.96	3.4	0		67.5	0	32.5	0		0	0	0	0		
H	000	.844	922.	000.	.880	000	.949	.786	000	.948	944	000	.835	000.	906	000	000	000	000	000	.949
Passenger Cars	0	447	117	0	564	0	809	19	0	627	306	0	145	0	451	0	0	0	0	0	1642
% Passenger Cars	0	97.4	99.5	0	7.76	0	95.9	86.4	0	92.6	100	0	98.6	0	9.66	0	0	0	0	0	97.4
Heavy Vehicles	0	12	-	0	13	٥	56	က	0	53	0	0	7	0	7	0	0	0	0	0	44
% Heavy Vehicles	•	2.6	0.8	0	2.3	0	4 .1	13.6	0	4.4	0	0	4.	0	4.0	0	0	0	0	0	5.6

Grove Miller Engineering Inc.

5600 Derry Street Harrisburg, PA 17111 Ph (717) 564-6146 Fx (717) 564-9488

Day: Saturday Municipality: Straban Township County: Adams

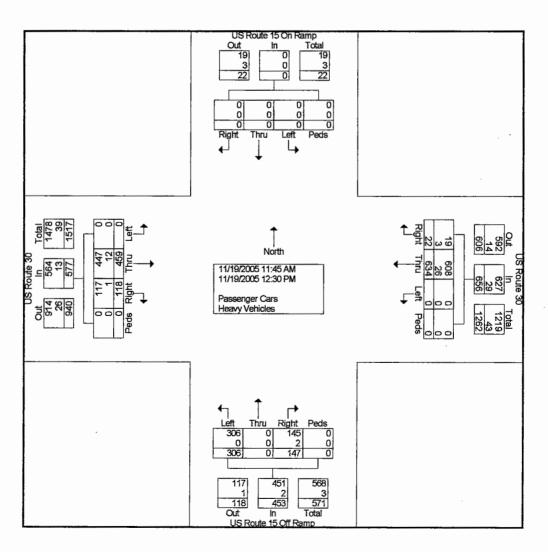
Weather: Clear Counter: ch File Name : US15NB_US30_MID Site Code : 00012985

Start Date : 11/19/2005

Page No :1

Groups Printed- Passenger Cars - Heavy Vehicles

								Seriger	Cars -								
		US Ro	ute 30	ŀ		US Ro	ute 30		US R	oute 1	5 Off R	amp	US R	oute 1	5 On R	amp	
		Eastb	ound			Westl	oound			North	oound	-		South	bound		
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
11:45 AM	0	109	22	0	0	143	3	0	81	0	44	0	0	0	0	0	402
Total	0	109	22	0	Ō	143	3	0	81	0	44	0	0	0	Ö	0	402
12:00 PM	0	111	30	0	0	157	7	0	78	0	23	0]	0	0	0	0	406
12:15 PM	0	136	28	0	0	167	6	0	70	0	37	0	0	0	0	0	444
12:30 PM	0	103	38	0	0	167	6	0	77 '	0	43	0	0	0	0	0	434
Grand Total	0	459	118	0	0	634	22	0	306	0	147	0	0	0	0	0	1686
Apprch %	0	79.5	20.5	0	0	96.6	3.4	0	67.5	0	32.5	0	0	0	0	0	
Total %	0	27.2	- 7	0	0	37.6	1.3	0	18.1	0	8.7	0	0	0	0	0	
Passenger Cars	0	447	117	0	0	608	19	0	306	0	145	0	0	0	0	0	1642
% Passenger Cars	0	97.4	99.2	0	0	95.9	86.4	0	100	0	98.6	۰0	0	0	0	0	97.4
Heavy Vehicles	0	12	1	0	0	26	3	0	Ó	0	2	0	0	0	0	0	44
% Heavy Vehicles	0	2.6	8.0	0	0	4.1	13.6	0	0.	0	1.4	0	0	0	0	0	2.6



Trip Generation Calculations

TRIP GENERATION CALCULATIONS

Background:

Trip generation calculations were based on the methodology provided in "Traffic Impact Study for Penn National Race Course Expansion", Traffic Planning & Design, September 2004. This traffic impact study and methodology were approved by PENNDOT Engineering District 8-0.

Given:

Table 1. Trip Generation Study - Charles Town Races and Slots

Table 1. The Generation Study - Chanes Town	races and c)IUG	
Time Period	Total Volume	Enter	Exit
Traffic Counts			
24-Hour Weekday (Friday)	14,248	7,129	7,129
Weekday PM Peak Hour of Adjacent Street Traffic	770	451	319
24-Hour Saturday	19,244	9,622	9,622
Saturday Peak Hour of the Generator	1,402	932	470
Time Period	Trip Rate	Enter	Exit
Trip Rates			
24-Hour Weekday (Friday)	T=5.232(X)	50%	50%
Weekday PM Peak Hour of Adjacent Street Traffic	T=0.283(X)	59%	41%
24-Hour Saturday	T=7.067(X)	50%	50%
Saturday Peak Hour of the Generator	T=0.515(X)	66%	34%

T=Total generated trips

Table 2. Gettysburg Service Area Adjustments

	Service Area Population	Difference in Populations	% Difference	Factor of Safety	Site Specific Difference	Site Specific Adjustment Factor
Charles Town	2,220,397					
Gettysburg	1,135,385*	-1,085,012	49%	0.5	-25z5	0.75

^{*}Based on information provided by market study (within a 60 minute service area)

X=# of Slots

Calculations:

Table 3. Trip Rates - Crossroads Gaming Resort and Spa

	Trip Batas	Site Specific	Trip Potos	Direc Distrit	
Time Period	Trip Rates (Charles Town)	Adjustment Factor	Trip Rates (Gettysburg)	Enter	Exit
24-Hour Weekday (Friday)	T=5.232(X)	0.75	T=3.924(X)	50%	50%
Weekday PM Peak Hour of Adjacent Street Traffic	T=0.283(X)	0.75	T=0.212(X)	59%	41%
24-Hour Saturday	T=7.067(X)	0.75	T=5.300(X)	50%	50%
Saturday Peak Hour of the Generator	T=0.515(X)	0.75	T=0.386(X)	66%	34%

T=Total generated trips

Table 4. Trip Generation - Crossroads Gaming Resort and Spa

Time Period	Х	R	Total Volume	Enter	Exit
24-Hour Weekday (Friday)	3,000	3.924	11,772	5,886	5,886
Weekday PM Peak Hour of Adjacent Street Traffic	3,000	0.212	636	375	261
24-Hour Saturday	3,000	5.300	15,900	7,950	7,950
Saturday Peak Hour of the Generator	3,000	0.386	1,158	764	394

X=# of Slots

R=Trip Rate

X=# of Slots

Tank Was	01	24 Hour Two-Way				
Land Use	 Size	Volume	Enter	EXIT	Enter	Exit
Hotel Health/Fitness	Occupied Rooms Th.Gr.Sq.Ft.	2007 988	88 15	63 21	77 62	81 59
Total		2995	103	84	139	140

Note: A zero indicates no data available.

TRIP GENERATION BY MICROTRANS

				Sa	aturday	Y	ͺS1	ınday	
				24 Hr 2-Wav	Peak	Hour	24 Hr 2-Way	Peak	Hour
Land Use		Size			Enter	Exit	-4	Enter	Exit
Hotel	225	Occupied	Roc		91	95			
Health/Fitness	Club 30	Th.Gr.Sq.	.Ft.	2363 626	+ + 39		802	0	0
Total				2989	130		2710 V	0	0

Note: A zero indicates no data available.

TRIP GENERATION BY MICROTRANS

Traffic Impact Study for Crossroads	Gaming Resort and Spa
Strahan Township Adams County	Pennsylvania

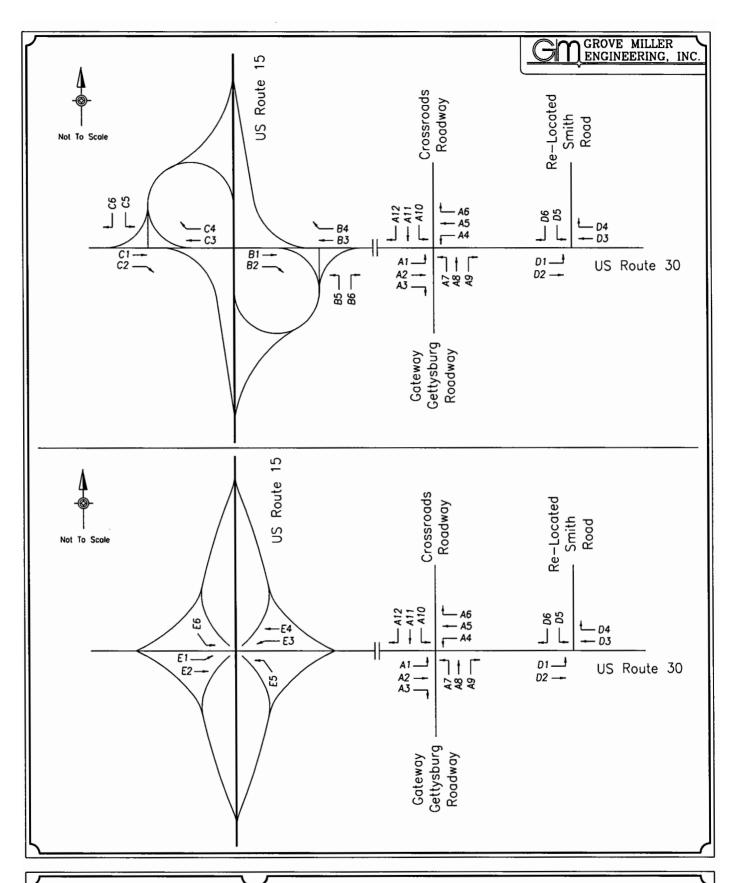
December 2005

Traffic Projections

GROVE MILLER ENGINEERING, INC. Traffic Engineering Consultants Harrisburg, PA

				ш∥																														
			PM 2018	BUILD VOLUME	334	863	380	791 888	103	823	5 6	353	8 8	261	1031	175	1627	317	546	737	305	672	287	127	56	1270	56	20	20	175	562	672	317	287
FACTOR	1.0395	1.1828	PM	BUILD	334	762	93	870	103	289	92 3	124	8 8	261	777	154	1173	279	382	599	310	419	170	1	56	940	5 6	20	20	154	445	419	5.6	170
GROWTH % / YR	1.3%	1.3%		MVMT.	Ą-	A-2	A-3	A A	A-6	A-7	A-8	6	4 4 5	A-12	7	B-2	е С	B 6	B-6	<u>.</u> .	ָ ט ט	3 3	5	ဗု	2	2 c	, <u>P</u>	D-5	9-0	щ	E-5	щ u	п 4 к	щ Ф
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7	BUILD 20	DESIGN 20	PM	NO BUILD N	0	736	63	850	} 0	289	0	124	> C	. 0	571	154	993	279	228	522	310	296	41	7	0	860	. 0	0	0	1 2	368	299	270	5.74 1.41
FVENT	ISTING TO	EXISTING TO DESIGN 2005 - 2018	PM	uu l	0	208	0 (0 8 18	20	0	0	0 0	> C		515	148	776	268	193	489	298	930 168	9 2	107	0	708	20	0	0	0	0	۰ ٥	> c	. 0
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			2018	GATEWAY GETTYSBURG TRIPS			380	162		823		353			216		529	284	164	82	į	353	137			353	701				82	353	1/6	137
		F	2008	GETTYSBURG GETTYSBURG TRIPS TRIPS			63	27		289		124			36		186	103	27	14	;	62 124	22			124	17				14	124	62	22
Ç	MENT	NO DEVELOPMENT		EXIT VOLUME				ç	27				& &	25.5	- 2		180	100			;	9 5	2			80		20	20			120	09	
. I	ERING IN EVELOP	CASII	F 75	%				u	o				20	o y	3		45	52				12	8			20		S	S)			8	15	
TRAFFIC IMPACT STUDY	GROVE MILLER ENGINEERING INC. GETTYSBURG CASINO DEVELOPMENT	PROPOSED GETTYSBURG CASII >>>CASINO, HOTEL, & SPA >>>2008 BUILD YEAR ENTED - 614 VBH	401 VPH	ENTER VOLUME	334	56			103	}	26				206)			154	12			129	ì	56		103 %	2			77			129
TRAFFIC IMI	GROVE MILI GETTYSBUF	PROPOSED GETTYSE >>>CASINO, HOTEL, 8 >>>2008 BUILD YEAR ENTED - 644	EXIT =	%	65	2			20	ì	2				40	!			30	15			25	}	S	;	S 4	5			15			25
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						A-1	A-3	A-4	A-6	A-7	Α-8 •	A-10	A-1	A-12	- d - c	B-3	8 4	B-5	9 c	<u>.</u> 8	ဗ	2	ပ် ပ	3 2	D-2	<u>-</u>	4	D-5	9-0	щ і с	7 6	3 4	С	9- <u>9</u>
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				2018	GATEWAY GATEWAY GETTYSBURG GETTYSBURG TRIPS TRIPS		380	162		823	i	353		;	216	529	294		164	78	176	353	137		353	162				8	35.2	176	•	137
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չ	FERING	DEVELO	URG CAS SPA	894 VPH 526 VPH	%			ı	n			2	3 0	65		45	52				15	30			20			2	S		6	8 45	2	
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TRAFFIC IMPACT STUDY	GROVE MIL	GETTYSBU	PROPOSED GETTYSE >>>CASINO, HOTEL, 8 >>>2008 BUILD YEAR	EXIT =	%	65	•		20	3	S			,	40				8 4	<u>0</u>			52	ĸ	•	20	2			ţ	5			25
						-4 4 -5 4	A-3	4 4 4 1	A-5	A-7	A-8	A-9	A-13	A-12	- d - c	9 P	В 4	B-5	φ, Θ	: :	ပ္ပ	9 4	ပ် ပ	ب ا ا	D-2	23	4	D-5	9-0	щ і т	F-2	л 5 4	F 5	9- <u>-</u> 9
				SAT	2018 PROJ. VOLUME	0 717	0	0	e	0	0 0	0 0	. 0	0	543	750	56	362	174	453	1004	198	33	77.7	717	9//	0	0	0	140	288	552	362	32
					2008 PROJ. VOLUME V	0	} 0	0 8	780	0	0 0	o c	0	0	477	629	23	318	153	398	883	174	55	<u> </u>	630	682	0	0	0	123	777	485	318	28
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Intersection Movement Key

Level of Service Descriptions

LEVEL-OF-SERVICE FOR SIGNALIZED INTERSECTIONS

The 2000 Highway Capacity Manual¹ defines level-of-service for signalized intersections in terms of delay. Delay is a measure of driver discomfort, frustration, fuel consumption, and lost travel time. Specifically, level-of-service criteria are stated in terms of the average stopped delay per vehicle for a 15-min analysis period. The criteria are given in the following table.

LEVEL-OF-SERVICE CRITERIA F	OR SIGNALIZED INTERSECTIONS
LEVEL-OF-SERVICE	STOPPED DELAY PER VEHICLE (seconds)
A	≤ 10.0
В	>10.0 to 20.0
СС	>20.0 to 35.0
D	>35.0 to 55.0
. Е	>55.0 to 80.0
F	> 80.0

Delay is a complex measure and is dependent on a number of variables, including the quality of progression, the cycle length, the green ratio, and the volume-to-capacity (v/c) ratio for the approach in question.

Level-of-service A describes operations with very low delay, i.e., less than 10.0 sec per vehicle. This occurs when progression is extremely favorable, and most vehicles arrive during the green phase. Most vehicles do not stop at all.

Level-of-service B describes operations with delay in the range of 10.0 to 20.0 sec per vehicle. This generally occurs with good progression and/or short cycle lengths. More vehicles stop than for LOS A, causing higher levels of average delay.

Level-of-service C describes operations with delay in the range of 20.0 to 35.0 sec per vehicle. These higher delays may result from fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear in this level. The number of vehicles stopping is significant at this level, although many still pass through the intersection without stopping.

Level-of-service D describes operations with delay in the range of 35.0 to 55.0 sec per vehicle. At Level D, the influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high v/c ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.

Level-of-Service E describes operations with delay in the range of 55.0 to 80.0 sec per vehicle. This is considered to be the limit of acceptable delay. These high delay values generally indicate poor progression, long cycle lengths, and high v/c ratios. Individual cycle failures are frequent occurrences.

Level-of-service F describes operations with delay in excess of 80.0 sec per vehicle. This is considered to be unacceptable to most drivers. This condition often occurs with oversaturation, i.e., when arrival flow rates exceed the capacity of the intersection.

-

¹ "Highway Capacity Manual", Special Report 209, Transportation Research Board, National Research Council, Washington, D.C., 2000, pp. 16-2.

LEVEL-OF-SERVICE CRITERIA FOR UNSIGNALIZED INTERSECTIONS¹

The level-of-service criteria for two-way stop controlled intersections is given in the following table:

LEVEL OF SERVICE	AVERAGE TOTAL DELAY (SEC/VEH)
Α	≤10.0
В	>10.0 AND ≤15.0
. C	>15.0 AND ≤25.0
D	>25.0 AND ≤35.0
Ë	>35.0 AND ≤50.0
F	>50.0

As used here, total delay is defined as the total elapsed time from when a vehicle stops at the end of the queue until the vehicle departs from the stop line; this time includes the time required for the vehicle to travel from the last-in-queue position to the first-in-queue position.

Average total delay less than 10 sec/veh is defined as Level of Service (LOS) A. A total delay of 50 sec/veh is assumed as the break point between LOS E and F.

LOS F exists when there are insufficient gaps of suitable size to allow a side street demand to cross safely through a major street traffic stream. This level of service is generally evident from extremely long total delays experienced by side street traffic and by queueing on the minor approaches. The method, however, is based on a constant critical gap size - that is, the critical gap remains constant, no matter how long the side street motorist waits. LOS F may also appear in the form of side street vehicles' selecting smaller-than-usual gaps. In such cases, safety may be a problem and some disruption to the major traffic stream may result. It is important to note that LOS F may not always result in long queues but may result in adjustments to normal gap acceptance behavior. The latter is more difficult to observe in the field than queueing, which is more obvious.

¹ "Highway Capacity Manual", Special Report 209, Transportation Research Board, National Research Council, Washington, D.C., 2000, pp. 17-2.

Traffic Impact Study for Crossroads Gaming Resort and Spa Straban Township, Adams County, Pennsylvania	December 2005
Highway Capacity Analysis Workshee	ets
US Route 30 and Gateway Gettysburg Roadway/Crossroads	Roadway

	SHORT REPORT													
General Info	ormation					Site Ir	formati	on						
Analyst JES Agency or Co. GME Date Performed 12/6/2005 Time Period Weekday PM Peak Hour						Intersection US 30 & Gateway Area Type All other areas Jurisdiction Straban Twp, Adams Co Analysis Year 2008 No Build								
Volume and	Timing Input													
		EB			WB			NB			SB			
Number of Lanes		LT 1	TH 2	RT 1	LT 1	TH 2	RT 0	LT 1	TH 1	RT 1	LT 0	TH 1	RT 0	
Lane Group		L	T	R	Ĺ	TR	 	L	LTR	R	l ů	LTR	Ť	
Volume (vph)		5	736	63	27	850	5	289	5	124	5	0	5	
% Heavy Vehicles		0	3	0	0	3	0	0	0	0	0	0	0	
PHF		0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Pretimed/Act	tuated (P/A)	Α	Α	Α	Α	Α	Α	Α	Α	Α	Α	Α	Α	
Startup Lost	Time	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0		2.0		
Extension of	Effective Green	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0		2.0		
Arrival Type		5	5	5	5	5		3	3	3		3		
Unit Extension		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0		3.0		
Ped/Bike/RT	Ped/Bike/RTOR Volume		0	0	0	0	0	0	0	0	0	0	0	
Lane Width		12.0	12.0	14.0	12.0	12.0		12.0	12.0	14.0		12.0		
Parking/Grade/Parking		N	0	N	N	. 0	N	N	0	N	N	0	N	
Parking/Hour										ļ		ļ.,,,		
Bus Stops/Hour		0	0	0	0	0		0	0	0		0	<u> </u>	
Minimum Pedestrian Time			3.2		<u> </u>	3.2		<u> </u>	3.2	<u> </u>		3.2		
Phasing		W Perm = 46.0	W Perm 03 0 = 46.0 G = G =		G =	4	NB Or G = 35		$\frac{SB \text{ Only}}{G = 7.0}$	SB Only G = 7.0 G =		07 08 : G =		
		= 6	7				Y = 6		Y = 6					
Duration of Analysis (hrs) = 0.25				Cycle Length C =										
Lane Grou	up Capacity,	Contro	ol Dela	ay, and	LOS	Deterr	ninatio	on						
		EB			WB		NB		SB					
Adjusted Flow Rate		5	800	68	29	929		188	212	54		10		
Lane Group Capacity		224	1346	660	316	1755		526	507	503		101		
v/c Ratio		0.02	0.59	0.10	0.09	0.53	<u>L.</u>	0.36	0.42	0.11		0.10		
Green Ratio		0.38	0.38	0.38	0.50	0.50		0.29	0.29	0.29		0.06		
Uniform Delay d ₁		23.0	29.5	23.8	16.4	20.4		33.6	34.3	31.1		53.5		
Delay Factor k		0.11	0.18	0.11	0.11	0.13		0.11	0.11	0.11		0.11	<u> </u>	
Incremental Delay d ₂		0.0	0.7	0.1	0.1	0.3		0.4	0.6	0.1		0.4		
PF Factor		0.586	0.586	0.586	0.952	0.333		1.000	1.000	1.000		1:000		
Control Delay		13.5	18.0	14.0	15.8	7.1		34.0	34.8	31.2		53.9		
Lane Group LOS		В	В	В	В	Α		С	С	С		D .		
Approach Delay			17.7			7.4		34.1			53.9			
Approach LOS		В				Α			С			D		
Intersection Delay			16.8			Intersecti			tion LOS			В		
0 : 14 @ 0005	A 11 D' - 1-4 - F								-		12/9/2005	2:12 DM		

Generated: 12/8/2005 2:12 PM

					SI	HORT	REPO	RT							
General Info	rmation							formatio	on						
Analyst Agency or Co Date Perform Time Period	o. (JES GME 6/2005 PM Peal	k Hoi	ır			Interse Area Ty Jurisdio Analysi	ype ction	Stı	30 & Ca All oth aban Tw 008 Buil	er al p, A	reas dam	s Co		
Volume and	Timing Input														
			E		DT		WB	DT		NB	T			SB	D.T.
Number of La	200	LT 2	TI- 2	╧	RT 1	LT 2	TH 2	RT 1	<u>LT</u> 2	TH 1	1	lT_	LT	TH	RT 1
Lane Group		L	²	\dashv	R	L	T	R		' T	F		L		$\frac{1}{R}$
Volume (vph)	`	334	762	, +	63	27	870	103	289	26	12		80	20	261
% Heavy Vel		0	3	-+	0	0	3	0	0	0	0	_	0	0	0
PHF	licies	0.92	0.9	2	0.92		0.92	0.92	0.92	0.92	0.9		0.92	0.92	0.92
Pretimed/Act	ruated (P/A)	0.32 A	0.5. A	-	A	0.92 A	A A	A A	A	A A	0.3 		A	0.92 A	0.92 A
Startup Lost	<u>`</u>	2.0	2.0	, +	2.0	2.0	2.0	2.0	2.0	2.0	2.		2.0	2.0	2.0
	Effective Green		2.0	-	2.0	2.0	2.0	2.0	2.0	2.0	2.		2.0	2.0	2.0
Arrival Type	Litouro Cicol	5	5	\dashv	5	5	5	5	3	3	3		3	3	3
Unit Extension	on .	3.0	3.0	, 	3.0	3.0	3.0	3.0	3.0	3.0	3.		3.0	3.0	3.0
Ped/Bike/RT		0	0	+	0	0	0	0	0	0	0		0	0	0
Lane Width	OTT VOIGING	12.0	12.	0	14.0	12.0	12.0	14.0	12.0	12.0	-	1.0	12.0	12.0	14.0
Parking/Grad	de/Parking	N	0	`	N	N	0	N	N	0	1		N	0	N
Parking/Hou	r			ヿ											
Bus Stops/H	our	0	0		0	0	0	0	0	0	(2	0	0	0
Minimum Pe	destrian Time		3.2	?			3.2			3.2				3.2	
Phasing		Thru & F	_		03	0.	4	Excl. L		NB On			ru & RT)8
Timing		G = 37. $Y = 6$	7	G = Y =		G =		G = 13 $Y = 6$.7	G = 14. $Y = 6$	<u> </u>	G = Y =	9.0	G = Y =	
Duration of A	nalysis (hrs) =			<u> </u>				1 - 0		Cycle Le	ngth		_		
Lane Grou	up Capacity,	Contr	ol D	ela	y, and	LOS	Detern	ninatio	on						
				EΒ			WB			NB				SB	
Adjusted Flo	w Rate	363	82	28	68	29	946	112	314	28	13	35	87	22	284
Lane Group	Capacity	473	10	86	816	473	1086	816	984	459	73	35	206	143	448
v/c Ratio		0.77	0.7	76	0.08	0.06	0.87	0.14	0.32	0.06	0.	18	0.42	0.15	0.63
Green Ratio		0.14	0.3	31	0.47	0.14	0.31	0.47	0.28	0.24	0.4	43	0.11	0.08	0.26
Uniform Dela	ay d ₁	50.1	37	.5	17.3	45.3	39.2	17.8	34.1	35.0	21	.4	49.5	51.9	39.3
Delay Factor	rk	0.32	0.3	31	0.11	0.11	0.40	0.11	0.11	0.11	0.	11	0.11	0.11	0.21
Incremental	Delay d ₂	7.5	3	.2	0.0	0.1	7.9	0.1	0.2	0.1	0	.1	1.4	0.5	2.9
PF Factor		0.896	0.7	702	0.401	0.896	0.702	0.401	1.00	1.000	1.0	000	1.000	1.000	1.000
Control Dela	у	52.3	29	9.5	7.0	40.6	35.4	7.2	34.3	35.1	2	1.5	50.9	52.4	42.3
Lane Group	LOS	D	7	;	Α	D	D	Α	С	D	7	;	D	D	D
Approach De	elay		34	4.9	-		32.6			30.7				44.7	
Approach LC	os		(С	- -		С			С				D	
Intersection	Delay		34	4.7				Intersec	tion L	os				С	
Copyright © 2005	University of Florida	, All Rights	Rese	rved		•	нс	S+ TM Ve	rsion 5.	2		Ge	nerated: 1	12/13/2005	4:40 PM

				Sŀ	ORT	REPO	RT						
General Info	rmation					Site in	formati	on					
Analyst Agency or Co Date Perform Time Period	o. (0 ned 12/ Weekday F	JES GME 6/2005 PM Peak	Hour			Interse Area T Jurisdi Analys	ype	Str	aban Tw	er areas	ns Co		
Volume and	Timing Input										T		
		LT	EB TH	RT	LT	WB TH	RT	LT	NB TH	RT	LT	SB TH	RT
Number of La	anes	1	2	1	1	2	0	1	1	1	0	1	0
Lane Group		L	 	R	L	TR	-	L	LTR	R		LTR	
Volume (vph)	5	837	380	162	968	5	823	5	353	5	0	5
% Heavy Vel		0	3	0	0	3	0	0	0	0	0	0	0
PHF		0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Pretimed/Act	uated (P/A)	Α	Α	A	Α	Α	A	Α	A	A	A	Α	A
Startup Lost	<u> </u>	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0		2.0	
	Effective Green		2.0	2.0	2.0	2.0		2.0	2.0	2.0		2.0	
Arrival Type		5	5	5	5	5		. з	3	3		3	
Unit Extension	n	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0		3.0	
Ped/Bike/RT	OR Volume	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width		12.0	12.0	14.0	12.0	12.0		12.0	12.0	14.0		12.0	
Parking/Grad	le/Parking	Ν	0	N	N	0	Ν	Ν	0	N	N	0	N
Parking/Hour													
Bus Stops/H		0	0	0	0	0		0	0	0		0	
	destrian Time		3.2			3.2			3.2	<u> </u>	<u> </u>	3.2	<u> </u>
Phasing		EW Pern S = 34.4		03	G =	4	NB Or G = 45		SB Only 3 = 7.0	G =	07	G =	08
Timing		' = 6	Y =		Y =		Y = 6		f = 6	Y =		Y =	
Duration of A	nalysis (hrs) = ().25							Cycle Ler	ngth C =	120.0)	
Lane Grou	ıp Capacity,	Contro	ol Dela	y, and	LOS	Deterr	ninatio	n					
			EB			WB			NB			SB	
Adjusted Flo	w Rate	5	910	413	176	1057		537	593	154		10	
Lane Group	Capacity	141	1007	494	207	1462		677	651	646		101	
v/c Ratio		0.04	0.90	0.84	0.85	0.72		0.79	0.91	0.24		0.10	
Green Ratio		0.29	0.29	0.29	0.42	0.42		0.38	0.38	0.38		0.06	
Uniform Dela	ay d ₁	30.8	41.2	40.2	27.5	29.2		33.4	35.6	25.7		53.5	
Delay Factor	k	0.11	0.42	0.37	0.38	0.28		0.34	0.43	0.11		0.11	
Incremental	Delay d ₂	0.1	11.3	11.9	27.0	1.8		6.5	17.1	0.2		0.4	
PF Factor		0.732	0.732	0.732	0.942	0.524		1.000	1.000	1.000		1.000	
Control Dela	у	22.7	41.5	41.3	52.9	17.1		39.8	52.7	25.9		53.9	
Lane Group	LOS	С	D	D	D	В.		D	D	С		D	
Approach De	elay		41.3			22.2			44.1			53.9	
Approach LC)S		D			С			D			D	
Intersection I	Delay		36.2				Intersec	tion LC	S			D	
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				Sł	IORT I	REPO	RT						
General Info	mation					Site In	formation	on					
Analyst Agency or Co Date Perform Time Period	. G	ES ME 3/2005 M Peak	(Hour			Interse Area T Jurisdio Analys	уре	Stra	80 & Cas All othe ban Twp 18 Build	er areas o, Adam	ıs Co		
Volume and	Timing Input												
		1.7	EB	DŦ	17 1	WB	DT	1.7	NB	RT	1.7	SB	DT
Number of La	ines	LT 2	TH 2	RT 1	LT 2	TH 2	RT 1	<u>LT</u> 2	TH 1	1	LT 1	TH 1	RT 1
Lane Group	illes	L		R	L	T	R	L	T	R	L	T	R
Volume (vph)		334	863	380	162	988	103	823	26	353	80	20	261
% Heavy Veh		0	3	0	0	3	0	0	0	0	0	0	0
PHF	licies	0.92	0.92	0.92		0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Pretimed/Acti	usted (P/A)	0.92 A	0.92 A	0.92 A	0.92 A	0.92 A	A A	A	0.92 A	A	0.92 A	0.92 A	A
Startup Lost		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
	Effective Green	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Arrival Type	Ellective Green	5	5	5	5	5	5	3	3	3	3	3	3
Unit Extensio	<u>n</u>	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Ped/Bike/RT0		0	0	0	0	0	0	0	0	0	0	0	0
Lane Width	or volume	12.0	12.0	14.0	12.0	12.0	14.0	12.0	12.0	14.0	12.0	12.0	14.0
Parking/Grad	e/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour			<u> </u>	- 									
Bus Stops/Ho		0	0	0	0	0	0	0	0	0	0	0	0
Minimum Ped	destrian Time	-	3.2			3.2			3.2			3.2	
Phasing		hru & R		03	0	4	Excl. L		NB Only		ru & RT)8
Timing		6 = 37.1	1 G: Y:		G =		G = 13 $Y = 6$		6 = 14.0 $6 = 6$		= 9.0 = 6	G = Y =	
Duration of A	nalysis (hrs) = 0		+-				1 - 0		Cycle Lei		_		
	ıp Capacity,		ol Dela	av. and	LOS	Deterr	ninatio	· · · · · · · · · · · · · · · · · · ·					
	,		EB	,		WB			NB			·SB	
Adjusted Flo	w Rate	363	938	413	176	1074	112	895	28	384	87	22	284
Lane Group	Capacity	473	1086	816	473	1086	816	984	459	735	206	143	448
v/c Ratio		0.77	0.86	0.51	0.37	0.99	0.14	0.91	0.06	0.52	0.42	0.15	0.63
Green Ratio		0.14	0.31	0.47	0.14	0.31	0.47	0.28	0.24	0.43	0.11	0.08	0.26
Uniform Dela	ıy d ₁	50.1	39.1	21.9	47.3	41.2	17.8	41.7	35.0	25.4	49.5	51.9	39.3
Delay Factor	k	0.32	0.39	0.11	0.11	0.49	0.11	0.43	0.11	0.13	0.11	0.11	0.21
Incremental		7.5	7.4	0.5	0.5	24.6	0.1	12.2	0.1	0.7	1.4	0.5	2.9
PF Factor	- 4	0.896	0.702	0.401	0.896	0.702	0.401	1.000	1.000	1.000	1.000	1.000	1.000
Control Dela	у	52.3	34.8	9.3	42.8	53.5	7.2	53.8	35.1	26.1	50.9	52.4	42.3
Lane Group	LOS	D	С	Α	D	D	Α	D	D	С	D	D	D
Approach De			32.4			48.3	_l		45.3		1	44.7	
Approach LC			С			D		1	D			D	
Intersection		-	41.5				Interse	ction LC				D	
	University of Florida,	All Rights				———	CS+ TM Ve			Ge	enerated:		5 4:40 PI

				Sł	HORT	REPC	RT						
General Info	ormation					Site I	nformati	on					
Analyst Agency or Co Date Perforn Time Period	o. (JES GME 6/2005 ⁄ Peak H	our			Area - Jurisd		Stra	All oth aban Tw	Gatewa er areas p, Adan No Build	is Co		
Volume and	Timing Input												
		LT	EB TH	RT	LT	WB TH	RT	1 +	NB TH	L DT	LT	SB	T DT
Number of L	anes	1	2	1	1	2	0	LT 1	1	RT 1	0	TH 1	RT 0
Lane Group		L	T	R	L	TR	 	L	LTR	R	-	LTR	
Volume (vph)	5	630	63	27	682	5	289	5	124	5	0	5
% Heavy Ve	hicles	0	3	0	0	3	0	0	0	0	0	0	0
PHF		0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Pretimed/Act	tuated (P/A)	Α	Α	Α	Α	Α	Α	Α	Α	Α	Α	Α	Α
Startup Lost	Time	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0		2.0	
Extension of	Effective Green	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0		2.0	
Arrival Type		5	5	5	5	5		3	3	3		3	
Unit Extension	on	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0		3.0	
Ped/Bike/RT	OR Volume	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width		12.0	12.0	14.0	12.0	12.0		12.0	12.0	14.0		12.0	
Parking/Grad		Ν	0	N	N	0	N	N	0	N	N	0	N
Parking/Hou							 						
Bus Stops/H		0	3.2	0	0	3.2	╂	0	3.2	0	ļ	0	-
	destrian Time WB Only	W Perm		03	T 0	<u> </u>	ND Or	l I	<u> </u>	<u> </u>	0 7	3.2	<u> </u>
Phasing		6 = 46.0			G =	4	NB Or G = 35		SB Only i = 7.0	G =		G =	08
Timing		′ = 6	Y =		Y =		Y = 6		= 6	Y =		Y =	
Duration of A	Analysis (hrs) = ().25						С	ycle Ler	ngth C =	120.0)	
Lane Grou	up Capacity,	Contro	ol Dela	y, and	LOS	Deter	ninatio	n					
			EB		<u> </u>	WB		ļ	NB			SB	
Adjusted Flo	w Rate	5	685	68	29	746	<u> </u>	188	212	54		10	
Lane Group	Capacity	269	1346	660	362	1755		526	507	503		101	
v/c Ratio		0.02	0.51	0.10	0.08	0.43		0.36	0.42	0.11		0.10	
Green Ratio		0.38	0.38	0.38	0.50	0.50		0.29	0.29	0.29		0.06	
Uniform Dela	ay d ₁	23.0	28.3	23.8	16.0	19.0	<u> </u>	33.6	34.3	31.1		53.5	
Delay Factor	·k	0.11	0.12	0.11	0.11	0.11	<u> </u>	0.11	0.11	0.11		0.11	
Incremental	Delay d ₂	0.0	0.3	0.1	0.1	0.2		0.4	0.6	0.1		0.4	
PF Factor		0.586	0.586	0.586	0.952	0.333		1.000	1.000	1.000		1.000	
Control Dela	-	13.5	16.9	14.0	15.3	6.5		34.0	34.8	31.2		53.9	
Lane Group	LOS	В	В	В	В	Α		С	С	С		D	
Approach De	elay		16.6			6.8			34.1			53.9	
Approach LC	os		В			Α			С			D	
Intersection I	Delay		17.0				Intersec	tion LO	S			В	
0							T14						

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_					SI	HORT									
General Info	ormation						Site In	formati	on						
Analyst Agency or Co Date Perform Time Period	ned 12	JES GME /6/2005 by Peak I	lour				Interse Area T Jurisdi Analys	уре	Str	30 & Cas All othe aban Twi 008 Build	er are o, Ad	as Iams	Co		
Volume and	Timing Input														
		LT	EI Th		RT	LT	WB TH	RT	LT	NB TH	RT	_	LT	SB TH	RT
Number of La	anes	2	2	╁	1	2	2	1	2	1	1	╫	1	1	1
Lane Group	41103	1 2	$\frac{2}{T}$	\dashv	R	L	T	R		T	R	+	Ĺ	T	R
Volume (vph)	581	675	-	63	27	708	179	289	45	124	. +	105	26	342
% Heavy Vel		0	3	$\overline{}$	0	0	3	0	0	0	0	\dashv	0	0	0
PHF		0.92	0.9	2 (0.92	0.92	0.92	0.92	0.92	0.92	0.92	2 (0.92	0.92	0.92
Pretimed/Act	tuated (P/A)	A	A	十	Α	Α	Α	Α	Α	Α	Α	十	Α	Α	Α
Startup Lost	<u> </u>	2.0	2.0	, 	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1	2.0	2.0	2.0
	Effective Gree		2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Arrival Type		5	5	十	5	5	5	5	3	3	3	\dashv	3	3	3
Unit Extension	on	3.0	3.0	,	3.0	3.0	3.0	3.0	3.0	3.0	3.0	1	3.0	3.0	3.0
Ped/Bike/RT	OR Volume	0	0	_	0	0	0	0	0	0	0	╅	0	0	0
Lane Width		12.0	12.	0	14.0	12.0	12.0	14.0	12.0	12.0	14.	0	12.0	12.0	14.0
Parking/Grad	de/Parking	N	0		N	N	0	N	N	0	N		N	0	N
Parking/Hou												\perp			
Bus Stops/H		0	0	\rightarrow	0	0	0	0	0	0	0	4	0	0	0
	destrian Time		3.2			<u> </u>	3.2	<u> </u>		3.2	<u> </u>			3.2	
Phasing		Thru & F $G = 31$.		G =	03	G =	4	Excl. L G = 13	_	NB Only G = 14.0		Thru G =	1 & RT	G =	08
Timing		Y = 6		Y =		Y =		Y = 6		Y = 6		Y =		Y =	
Duration of A	Analysis (hrs) =	0.25								Cycle Le	ngth	C =	120.0)	
Lane Gro	up Capacity	, Contr	ol D	ela	y, and	LOS		minatio	on						
			_	EB			WB			NB		_		SB	
Adjusted Flo	w Rate	632	73		68	29	770	195	314	49	135	-	114	28	372
Lane Group	Capacity	698	91	0	727	698	910	727	978	435	824	1	203	119	537
v/c Ratio		0.91	0.8	31	0.09	0.04	0.85	0.27	0.32	0.11	0.16	6	0.56	0.24	0.69
Green Ratio	1	0.20	0.2	26	0.42	0.20	0.26	0.42	0.28	0.23	0.48	8	0.11	0.06	0.31
Uniform Dela	ay d ₁	46.9	41	.6	20.9	38.8	42.2	22.6	34.2	36.6	17.	7	50.4	53.5	36.3
Delay Factor	rk	0.43	0.3	35	0.11	0.11	0.38	0.11	0.11	0.11	0.1	1	0.16	0.11	0.26
Incremental	Delay d ₂	15.4	5	.4	0.1	0.0	7.5	0.2	0.2	0.1	0.1	1	3.5	1.0	3.8
PF Factor		0.834	1 0.	767	0.514	0.834	0.767	0.514	1.000	1.000	1.00	00	1.000	1.000	1.000
Control Dela	ау	54.6	3	7.3	10.8	32.4	39.8	11.8	34.4	36.7	17.	8	54.0	54.5	40.1
Lane Group	LOS	D	Ĺ)	В	С	D	В	С	D	В		D	D	D
Approach Do	elay		4	3.7			34.1			30.2				44.0	
Approach LO	OS			D			С			С				D	
Intersection	Delay		3	9.0				Interse	ction L	os				D	
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SHORT REPORT

						SH	ORT	REPO	RT								
General Info	rmation							Site Ir	nforr	nati	on						
Analyst Agency or Co Date Perform Time Period			1E 2005	our				Interse Area Jurisd Ánalys	Type ictior	า	Stra	US 30 & All othe aban Tw 2018 I	er a p, A	reas Adam	is Co		
Volume and	Timing Input	_													1		
		-	LT	EB TH		RT	LT	WB TH	T =	<u>Τ</u>	LT	NB TH		RT.	LT	SB.	RT
Number of La	anes	+	1	2	┪	1	1	2	10		1	1	!	<u> </u>	0	1	0
Lane Group		\top	L	Т	┪	R	L	TR	+		L	LTR	F	₹		LTR	
Volume (vph))	十	5	717	┪	380	162	776	5		823	5	38	53	5	0	5
% Heavy Vel	nicles	十	0	3	┪	0	0	3	0	,	0	0	()	0	0	0
PHF		0	0.92	0.92	\neg	0.92	0.92	0.92	0.9	92	0.92	0.92	0.	92	0.92	0.92	0.92
Pretimed/Act	uated (P/A)		Α	Α		Α	Α	Α	Α		Α	Α	/	4	Α	Α	Α
Startup Lost	Time	2	2.0	2.0		2.0	2.0	2.0			2.0	2.0	2	.0		2.0	
Extension of	Effective Gree	n 2	2.0	2.0		2.0	2.0	2.0			2.0	2.0	2	.0		2.0	
Arrival Type			5	5		5	5	5			3	3		3		3	
Unit Extension	n	;	3.0	3.0		3.0	3.0	3.0			3.0	3.0	3	.0		3.0	
Ped/Bike/RT	OR Volume		0	0		0	0	0	0)	0	0	(0	0	0	0
Lane Width		1	12.0	12.0)	14.0	12.0	12.0			12.0	12.0	14	4.0		12.0	
Parking/Grad		_	N	0	_	N	N	0			N	0		٧	N	0	N
Parking/Hour		+			4				+		<u> </u>	<u> </u>	┡	•			ļ
Bus Stops/H		+	0	0	4	0	0	0	╄-		0	0	├	0		0	├─
	destrian Time		<u> </u>	3.2		00		3.2	1 215		<u> </u>	3.2			<u> </u>	3.2	
Phasing	WB Only G = 9.6		V Perm = 33.4		3 =	03	G =	4		3 Or 46		$SB Only \\ = 7.0$		G =	07	G =	08
Timing		<u>Y</u> =			<u> </u>		Y ==		Υ=			r = 6		Ϋ́=		Y =	
Duration of A	nalysis (hrs) =	0.2	25								C	ycle Ler	ngth	i C =	: 120.0)	
Lane Grou	up Capacity	, C	ontro	l De	la	y, and	LOS	Deter	min	atic	n						
				E	В			WB				NB	_			SB	
Adjusted Flo	w Rate		5	779		413	176	848			537	593	15	54		10	
Lane Group	Capacity		176	978	:	480	234	1433			692	666	66	80		101	
v/c Ratio		(0.03	0.80)	0.86	0.75	0.59			0.78	0.89	0.2	23		0.10	
Green Ratio		. (0.28	0.28	3	0.28	0.41	0.41		-	0.38	0.38	0.3	38		0.06	
Uniform Dela	ay d ₁	,	31.5	40.1	1	41.1	26. <i>4</i>	27.7			32.5	34.6	25	.1		53.5	
Delay Factor	·k	(0.11	0.34	1	0.39	0.31	0.18			0.33	0.41	0.1	11		0.11	
Incremental	Delay d ₂		0.1	4.7	7	14.7	12.8	0.7			5.6	14.1	0	.2		0.4	
PF Factor		(0.743	0.74	13	0.743	0.942	0.540			1.000	1.000	1.0	000		1.000	
Control Dela	у		23.5	34.	5	45.2	37.7	15.6	1		38.0	48.8	25	5.2		53.9	
Lane Group	LOS		С	С		D	D	В			D	D	()		D	
Approach De	elay			38.	1			19.4				41.5				53.9	
Approach LC	os			D				В				D				D	
Intersection I	Delay			33.	9				Inte	rsec	tion LC	S				С	
Comunicht @ 2005	I Injureity of Florid	a AII	Diahte F	locor:					100.T	M	F O	-			onoratod:	12/8/2005	2:14 PM

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General Info	rmation						Site Ir	nformat	ion_							
Analyst Agency or Co Date Perform Time Period	o	JES GME ⁄6/2003 y Peal		ur			Interse Area T Jurisd Analys	Гуре	Si	trab	0 & Cas All othe an Twp 8 Build	er ar o, A	eas dam	s Co		
Volume and	Timing Input															
				EB	T ==		WB	T 5=	ļ.,	_	NB	_	_		SB	
Normal on a file		LT	╬	TH	RT	LT	TH 2	RT 1	LT 2	+	TH 1	1		LT 1	TH 1	RT 1
Number of La	anes	2	+	2 T	1 R	2	T	R	L	+	'	R	_	L	T	R
Lane Group	·	L 504	+-	<u>'</u> 762	380	L 162	802	179	823	+	45	35	-	105	26	342
Volume (vph		581	- 			0		-	023	+		0	_	0	0	0
% Heavy Vel	nicies 	0	+	3	0		3	0			0					
PHF	1 (5/4)	0.92		.92	0.92	0.92	0.92	0.92	0.92	+	0.92	0.9		0.92	0.92	0.92
Pretimed/Act		A	-	<u>A</u>	A	A	A	A	A	+	<i>A</i>	Α	_	A	A	A
Startup Lost		2.0	-	2.0	2.0	2.0	2.0	2.0	2.0	4	2.0	2.		2.0	2.0	2.0
	Effective Green	+	- -	2.0	2.0	2.0	2.0	2.0	2.0	\dashv	2.0	2.		2.0	2.0	2.0
Arrival Type		5	-	5	5	5	5	5	3	4	3	3		3	3	3
Unit Extension		3.0	4	3.0	3.0	3.0	3.0	3.0	3.0	4	3.0	3.		3.0	3.0	3.0
Ped/Bike/RT	OR Volume	0	+	0	0	0	0	0	0	\dashv	0	0		0	0	0
Lane Width	1 /D -1:	12.0	1	12.0	14.0	12.0	12.0	14.0	12.0	'	12.0	14		12.0	12.0	14.0
Parking/Grad		N	+	0	N	N	0	N	N	\dashv	0	^		N	0	N
Parking/Hou Bus Stops/H		0	╬	0	0	0	0	0	10	┥	0	Η,)	0	0	0
	destrian Time	+ "	-+	3.2	1 0	· ·	3.2		+ "	\dashv	3.2	H		-	3.2	
Phasing		Thru 8		1	03	1 ()4	Excl.	Left		IB Only	<u> </u>	Thi	u & RT)8
Timing	G = 23.9	G = 3 Y = 6		G Y	=	G =		G = 1 Y = 6	3.5	G	= 14.0 = 6	_		7.5	G = Y =	
Duration of A	Analysis (hrs) =	0.25								C)	cle Lei	ngth	C =	: 120.0)	
Lane Gro	up Capacity	, Con	trol	Del	ay, and	LOS	Deter	minati	on							
				EB			WB				NB				SB	
Adjusted Flo	w Rate	632	2	828	413	176	872	195	895		49	38	34	114	28	372
Lane Group	Capacity	698	8	910	727	698	910	727	978	}	435	82	24	203	119	537
v/c Ratio		0.9	1	0.91	0.57	0.25	0.96	0.27	0.92	2	0.11	0.4	47	0.56	0.24	0.69
Green Ratio		0.2	0	0.26	0.42	0.20	0.26	0.42	0.28	3	0.23	0.4	18	0.11	0.06	0.31
Uniform Dela	ay d₁	46.	9	43.1	26.4	40.5	43.8	22.6	41.9	9	36.6	21	.0	50.4	53.5	36.3
Delay Factor	 	0.4		0.43	0.16	0.11	0.47	0.11	0.43	3	0.11	0.	11	0.16	0.11	0.26
Incremental	Delay d ₂	15	.4	13.0	1.1	0.2	20.4	0.2	12.9	9	0.1	0	.4	3.5	1.0	3.8
PF Factor		0.8		0.767		0.834	0.767	0.514	1.00	00	1.000	1.0	000	1.000	1.000	1.000
Control Dela	ay	54	.6	46.0	14.6	34.0	54.0	11.8	54.	8	36.7	2	1.4	54.0	54.5	40.1
Lane Group	LOS	D		D	В	С	D	В	D		D	7	;	D	D	D
Approach D				42.0	•	1	44.5		\dagger		44.5	_			44.0	
Approach L0	os			D			D				D				D	
Intersection				43.5				Interse	ection	LOS	S				D	
	University of Florida	a. All Rio	hts R	eserved		•	H	fCS+TM \	/ersion ⁴	5.2			Ge	nerated:	12/13/2005	5 4:41 PN

SHORT REPORT

Traffic Impact Study for Crossroads Gaming Reso	rt and Spa
Straban Township, Adams County, Pennsylvania	_

December 2005

Highway Capacity Analysis Worksheets

US Route 30 and US Route 15 Northbound Ramps

O					SH	ORT									
Analyst Agency or Co Date Perform Time Period).		1E 2005	Hour			Interse Area Jurisd	Гуре	U.	trab	& US 1 All other an Twp, 2005 Ex	areas Adam	·		
Volume and	Timing Input	t		-											
			1.7	EB	Lot	 	WB		┿.	_	NB	DT	 	SB	_ DT
Number of La	noc		LT	TH 2	RT	LT	TH 2	RT	1	T	TH	RT	LT	TH	RT
Lane Group	1165		<u> </u>	T	 	-	T	+	+ '		-		-	 	
Volume (vph)	\ ·			515		├	818	+	26						
% Heavy Vel			 -	3	┼	┼	3		0				_	├─	-
PHF	110162		 	0.94	+-		0.90		0.9				-	 	-
Pretimed/Act	usted (P/A)	-	<u> </u>	0.94 A	┼	-	0.90 A	+-	O.S				├─-	 	-
Startup Lost	<u>`</u> `		 	2.0	\vdash	├─	2.0		2.				_	 	_
	Effective Gree	en.	-	2.0		 	2.0	-	2.				\vdash		
Arrival Type	Fliedrive Gle	511		5			5	+	3						
Unit Extension	<u></u>		 	3.0	-	 	3.0		3.					╂──	-
Ped/Bike/RT			0	0	 	0	0		3.		0		-	┼	 -
Lane Width	OR volume			12.0	-	1	12.0	+-	12		-				
Parking/Grad	le/Parking		N	0	N	l _N	0	l _N	1/2		0	N	+-	 	
Parking/Hour			 ''	۰	 ~	 ~	Ť	+**	+				 	╁	
Bus Stops/Ho			_	0			0		1)					
	destrian Time			3.2			3.2				3.2				
Phasing	Thru Only		02		03	0.	4	NB C	nly		06		07		8
Timing	G = 68.0	G =		G =		G =		G = 4	0.0	نا نا		G =		G=	
	Y = 6 nalysis (hrs) :	Y =		Y =		Y =		Y = 6		Y =	cle Leng	Y =	120.0	Y =	
	up Capacity			l Delay	, and	LOS	Deteri	minati	on	<u> Uy</u>	olo Long	ui O	720.0		
Lanc Oroc	ap oupdoit	,, <u> </u>	01111.0	EB	, and		WB	miati	<u> </u>		NB		·	SB	
Adjusted Flo	w Rate			548			909	T	291	Т	T				
Lane Group				1990			1990		602	1					
v/c Ratio				0.28			0.46		0.48						
Green Ratio				0.57		-	0.57	+	0.33	寸					
Uniform Dela	ıy d₁			13.3		<u> </u>	15.2		31.8						
Delay Factor	k			0.11			0.11		0.11	寸					
Incremental I				0.1			0.2	1	0.6	\dashv					
PF Factor				0.128			0.128		1.00	0			, ·	-	
Control Dela	y			1.8			2.1		32.4	1					
Lane Group				Α			Α		С	十					
Approach De				1.8			2.1	<u> </u>	1		32.4				
Approach LC				Α		-	Α	-	\top		С				
Intersection I				7.1				Interse	ction I	os			-	A	
	University of Florid	da, Al	l Rights R			·	Н	CS+TM				Ge	nerated:	12/8/2005	3:05 P

					SH	IORT	REPC								
General Info	ormation						Site I	nforma	tion						
Analyst Agency or C Date Perform Time Period	ned 1		ЛЕ '2005	Hour			Area Jurisd	ection Type iction sis Year	5		0 & US 1 All other oan Twp, 2008 No	areas Adam			
Volume and	Timing Inpu	t													
			LT	EB	T 5=	 	WB	1 57	+.	_	NB		- · -	SB	T ==
Number of L	anes		 '	TH 2	RT	LT	TH 2	RT	1	<u>.T</u>	TH	RT	LT	TH	RT
Lane Group	41103		┼	T		┪┈╌	T		- '		 	 	+	 	\vdash
Volume (vph			├	571	+-	+	1140	+	27					 	
% Heavy Ve	· · · · · · · · · · · · · · · · · · ·		 	3	+	 	3	+	2,		 	<u> </u>	-	<u> </u>	
PHF			-	0.94	 	+-	0.91	+	0.9		-	 	+-	╫	<u> </u>
Pretimed/Ac	tuated (P/A)		+	A	 	 	A	+	A		 	<u> </u>	+	 	
Startup Lost			 	2.0		 	2.0		2.						
	Effective Green	en		2.0			2.0		2.					 	
Arrival Type			1	5	†	1	5		3						1
Unit Extension	on		1	3.0	 		3.0	-	3.					 	
Ped/Bike/RT	OR Volume		0	0	1	0	0	-	0		0		\vdash	 	
Lane Width			 	12.0	+	†	12.0		12	2.0					
Parking/Grad	de/Parking		N	0	N	N	0	N		ī	0	Ν			
Parking/Hou	r														ر
Bus Stops/H	-			0		<u> </u>	0		()					
	destrian Time		<u> </u>	3.2	<u> </u>	<u> </u>	3.2		<u> </u>		3.2	<u> </u>	<u></u>	<u> </u>	<u> </u>
Phasing	Thru Only G = 68.0	G =	02	G =	03	G =	4	NBO		G =	06	G =	07	G =	8
Timing	Y = 6	Y		Y =		Y =		Y = 6	<i>J</i> .0	Υ=		Y =		Y=	
	Analysis (hrs)					<u>'</u>				Су	cle Leng	th C =	120.0		
Lane Grou	up Capacity	y, C	ontro	l Delay	, and	LOS	Deterr	ninati	on						
				EB			WB		1		NB			SB	
Adjusted Flo	w Rate			607			1253		303						
Lane Group	Capacity			1990			1990		602	7					
v/c Ratio	· · · · · · · · · · · · · · · · · · ·			0.31			0.63		0.50	寸					
Green Ratio		\neg		0.57		``	0.57		0.33	ヿ					
Uniform Dela	ay d ₁			13.6			17.5		32.0	\dashv					
Delay Factor				0.11			0.21		0.11						
Incremental				0.1	-		0.6	<u> </u>	0.7	\dagger					L
PF Factor				0.128			0.128		1.00	0					-
Control Dela	у			1.8			2.9		32.7	,					
Lane Group	LOS			Α			Α		С	\top	-				
A	Nav	\neg		1.8			2.9	.•			32.7				
Approach De	ziay														
Approach LC	<u> </u>	\neg		A			A				С	l			

					SH	ORT I	REPO	RT								
General Info	rmation						Site In	form	atic	n						
Analyst Agency or Co Date Perform Time Period	o. ned 1. Weekday		<i>1E</i> 2005	Hour			Interse Area T Jurisdi Analys	ype ction			1	& US 1 All other an Twp, 2008 E	areas Adam	•	•	
Volume and	Timing Input	t														
			LT	EB TH	RT	LT	WB	T	₹T	LT	• "]	NB TH	RT	LT	SB TH	RT
Number of La	enes			2			2	+-	<u> </u>	1		111	IXI.	 '	 '''	IXI
Lane Group				T	 	 	T	+		L				 		
Volume (vph))			777	 		1420	+		279				 		
% Heavy Veh				3			3	+		0						
PHF				0.94			0.91	T		0.92	<u>.</u>					
Pretimed/Act	uated (P/A)		 	Α			Α	十一		A						
Startup Lost				2.0		†	2.0	T		2.0				1		
	Effective Gree	en		2.0	<u> </u>		2.0	†		2.0						
Arrival Type				5			5	十		3		_				
Unit Extension	on			3.0			3.0	\top		3.0						
Ped/Bike/RT	OR Volume		0	0		0	0	T		0		0				
Lane Width				12.0			12.0			12.0)					
Parking/Grad	le/Parking		Ν	0	Ν	N	0	1	V	Ν		0	N			
Parking/Hour							<u> </u>									
Bus Stops/Ho				0	ļ	ļ	0	\bot		0	_				ļ	
	destrian Time			3.2		<u> </u>	3.2	<u> </u>		<u> </u>		3.2	<u> </u>	<u> </u>	<u> </u>	
Phasing	Thru Only G = 68.0	G =	02	G =)3	G =		NB G =	Onl ₄0		G =	06	G =	07	G =	8
Timing	Y = 6	Υ =		Y =		Y =		Y =			<u>Y</u> =		Y =		Y =	
Duration of A	nalysis (hrs) =	= 0.2	25								Сус	le Leng	th C =	120.0		
Lane Grou	up Capacity	y, C	ontro	l Delay	, and	LOS I	Detern	nina	tio	n						
				EΒ			WB					NB			SB	
Adjusted Flor	w Rate			827		İ	1560			303						
Lane Group	Capacity			1990			1990			602	1					
v/c Ratio				0.42	·		0.78			0.50	Т					
Green Ratio				0.57			0.57			0.33	T					
Uniform Dela	ay d ₁			14.7			20.3	Π		32.0	T					
Delay Factor	k			0.11	-		0.33			0.11	T					
Incremental I				0.1			2.1			0.7	\dagger					
PF Factor	- 4			0.128			0.128			1.000	+					
Control Dela	y			2.0			4.7			32.7						
Lane Group	LOS			Α			Α			С						
Approach De	elay	·		2.0			4.7	4				32.7				
Approach LC)S			Α			Α					С				
Intersection I	Delay			7.1				Inter	sect	ion L	os				Α	
	University of Florid	da, Al	l Rights R			·				sion 5.2			Gen	erated: 1	2/8/2005	12:23 P

					SH	ORT I	REPO	RT							
General Info	rmation						Site In		ion						
Analyst Agency or Co Date Perform Time Period	o. ned 1. <i>Weekda</i> y		1E 2005	Hour			Interse Area T Jurisdi Analys	ype ction	St	raba	& US 1 MI other an Twp, 2018 No	areas Adam	·		
Volume and	Timing Input														
				EB			WB				NB			SB	T ===
Number of L			LT	TH 2	RT	LT	TH 2	RT	L.	\Box	TH	RT	LT	TH	RT
	anes		<u> </u>	T			T	+	1 L	_			.		
	```		 	825		_	1791	+	317	7		┝			├─
			-	3	 		3		0			 		-	├─
PHF	ilicies		 	0.94			0.92	_	0.9	2		_			├─
	tuated (P/A)			0.94 A	-	_	0.92 A	+	0.9.	_			 		
	recy or Co. Performed / Period / Weekda, me and Timing Input per of Lanes Group me (vph) avy Vehicles med/Actuated (P/A) up Lost Time asion of Effective Green al Type Extension Bike/RTOR Volume Width mg/Grade/Parking mg/Hour Stops/Hour mum Pedestrian Time ing Thru Only G = 78.0 Y = 6 tion of Analysis (hrs) te Group Capacit atio m Ratio m Ratio m Ratio m Delay d y Factor k mental Delay d actor rol Delay Group LOS pach Delay Group LOS pach Delay		-	2.0			2.0	+	2.0	$\overline{}$			\vdash	-	$\vdash \vdash$
				2.0			2.0	+	2.0	_					$\vdash \!$
	Ellective Gree	2 11		5	 	ļ	5	+	3	-		<u> </u>	 		
	lyst Incy or Co. Performed Weekda Ime and Timing Input Inber of Lanes Period Weekda Ime and Timing Input Inber of Lanes Period Weekda Ime and Timing Input Inber of Lanes Period Weekda Ime (vph) Peavy Vehicles Peavy			3.0	 	_	3.0	+	3.0			 	<u> </u>		$\vdash \!$
			0	0	1	0	0	+	0		0				├──
Lane Width	OR Volume		0	12.0		"	12.0	+	12.				┼	<u> </u>	
	de/Parking	_	N	0	N	N	0	$\frac{1}{N}$	/2.		0	N	 		\vdash
Parking/Hou			 	Ť	 	 ``	Ť	+~	 ``			 	 	<u> </u>	\vdash
Bus Stops/H				0	<u> </u>		0	1	0						
Minimum Pe	destrian Time			3.2			3.2				3.2				
Phasing			02)3	04	4	NB O			06		07)8
Timing		G = Y =		G = Y =		G = Y =		G = 3 Y = 6	0.0	G = Y =		G =		G = Y =	
Duration of A		<u> </u>		 		Υ =		1 - 0			le Leng		120.0		
				l Delay	, and	LOSI	Detern	ninati	on			,			
	<u>р оро.г.</u>	1		EB	,		WB		T		NB			SB	
Adjusted Flo	w Rate			878			1947		345			·			
Lane Group	Capacity			2283			2283		451						
v/c Ratio				0.38			0.85		0.76						
Green Ratio				0.65			0.65		0.25						
Uniform Dela	ay d ₁			9.8			16.5		41.7						
Delay Factor	r k			0.11			0.39		0.32	丁					
Incremental	Delay d ₂			0.1			3.4		7.7	す					
PF Factor	<u></u>			0.143			0.143	1	1.00	0					
Control Dela	ıy			1.5			5.7		49.4						
Lane Group	LOS			Α			Α		D	寸					
Approach De	elay			1.5			5.7				49.4				
Approach LC				Α			A		\top		D				
Intersection				9.3				Interse	ction L	os				Α	

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SHORT REPORT **General Information** Site Information JES Intersection US 30 & US 15 NB ramps **Analyst** Area Type Agency or Co. **GME** All other areas Date Performed Jurisdiction Straban Twp. Adams Co 12/6/2005 Time Period Weekday PM Peak Hour Analysis Year 2018 Build **Volume and Timing Input** WB NB EB SB LT TH RT LT TH RT LT TH RT LT TH RT **Number of Lanes** 2 2 1 T T Lane Group L Volume (vph) 1031 2071 317 % Heavy Vehicles 3 3 0 PHF 0.94 0.92 0.92 Pretimed/Actuated (P/A) Α Α Α Startup Lost Time 2.0 2.0 2.0 Extension of Effective Green 2.0 2.0 2.0 5 5 3 Arrival Type **Unit Extension** 3.0 3.0 3.0 Ped/Bike/RTOR Volume 0 0 0 0 0 0 12.0 12.0 Lane Width 12.0 Parking/Grade/Parking Ν 0 Ν Ν 0 Ν Ν 0 Ν Parking/Hour Bus Stops/Hour 0 0 Minimum Pedestrian Time 3.2 3.2 3.2 Phasing 02 04 **NB Only** 06 07 08 Thru Only 03 G = G = 78.0 G = G = G = 30.0G = G = G = Timing Y = 6Y = Y = Y = Y = 6Y = Y = Y = Cycle Length C = 120.0 Duration of Analysis (hrs) = 0.25Lane Group Capacity, Control Delay, and LOS Determination EB **WB** NB SB 1097 2251 Adjusted Flow Rate 345 2283 2283 451 Lane Group Capacity 0.99 0.76 v/c Ratio 0.48 Green Ratio 0.65 0.25 0.65Uniform Delay d₄ 10.7 20.5 41.7 Delay Factor k 0.11 0.49 0.32 Incremental Delay do 7.7 15.6 0.2 PF Factor 0.143 0.143 1.000 Control Delay 1.7 18.5 49.4 Lane Group LOS В Α 49.4 Approach Delay 1.7 18.5 Approach LOS Α В D Intersection LOS 16.4 В Intersection Delay Generated: 12/8/2005 12:18 PM

					SH	ORT	REPO	RT							
General Info	rmation						Site Ir	ıform	atio	n					
Analyst Agency or Co Date Perform Time Period	ned 1	GN 2/6/	ES ME /2005 Peak Ho	our			Interse Area T Jurisd Analys	ype iction			aban Tw	er area	s ns Co		
Volume and	Timing Input	<u> </u>				,									
	•		LT	EB TH	RT	LŤ	WB TH	1 -	₹Ť	LT	NB TH	T 6-	LT	SB	
Number of La	anes			2	+ KI	 -	2	╁	`	1	1 1 1 1	RT		TH	RT
Lane Group			1	T		<u> </u>	T	+		L		+	+		
Volume (vph)		-	459	 	<u> </u>	656	+		306			-	 	<u> </u>
% Heavy Vel			†	3	 	T	3	+		0	+-	+	┪┈┈	 	
PHF			 	0.88			0.95	\top		0.91		+	_	-	
Pretimed/Act	uated (P/A)		·	A		 	A			A			\dagger		
Startup Lost				2.0			2.0			2.0				 	
	Effective Gree	en		2.0			2.0	1		2.0			1		
Arrival Type	,			5			5			3					
Unit Extension	on			3.0			3.0	٦.		3.0		1			
Ped/Bike/RT	OR Volume		0	0		0	0	T		0	0				
Lane Width	ane Width			12.0			12.0			12.0					
	Parking/Grade/Parking		N	0	N	N	0	^	1	Ν	0	N			
	arking/Hour														Ь—
Bus Stops/H			 	0	<u> </u>	 	0	+		0		-	4		
	destrian Time	T	1	3.2		1 0	3.2	l ND	0-1		3.2		07	1	<u></u>
Phasing	Thru Only G = <i>64.0</i>	G	02 =	G =	03	G =	4	G =	Only		06	G:	07	G =	8_
Timing	Y = 6	Y	=	Υ=		Y =		Y=		Y	<u>'</u> =	Υ =	=	Y =	
	nalysis (hrs)										Cycle Lei	ngth C	= 120.0		
Lane Grou	up Capacity	/, C	Contro		y, and	LOS I		nina	tior	<u> </u>					
				EB			WB	Т	4		NB	т	ļ	SB	
Adjusted Flo	w Rate			522			691			336	<u> </u>	ļ	ļ		
Lane Group	Capacity			1873			1873		ŀ	662	l	i			
v/c Ratio				0.28			0.37		(0.51					
Green Ratio				0.53			0.53			0.37				-	
Uniform Dela	ay d ₁			15.3			16.3			29.6					
Delay Factor	·k			0.11			0.11			0.12					
Incremental	Delay d ₂			0.1			0.1	T	\neg	0.6					
PF Factor	 _			0.238			0.238			1.000					
Control Dela	у			3.7			4.0			30.2					
Lane Group	LOS			Α			Α			С					
Approach De	elay			3.7			4.0				30.2				
Approach LC)S			Α			Α				С				
Intersection I	Delay			9.6				Inters	secti	on LC	S			Α	
Copyright © 2005	University of Florid	ia, Al	Il Rights Re	eserved			Н	CS+ TM	Ver	sion 5.2		G	enerated:	12/8/2005	3:06 PN

					SH	ORT	REPC	RT	•	·		·			
General Info	ormation						Site I	nfor	matic	n					
Analyst Agency or Co Date Perform Time Period	o. ned 1: Saturd		1E 2005	our			Interse Area Jurisd Analys	Type ictic	e on		0 & US 1 All other ban Twp 2008 No	areas Adam	•		·
Volume and	Timing Input									-					
				EB	I DT	1 -	WB		Ď.T.		NB	L DT	 	SB	I DT
Number of La	ange		LT	TH 2	RT	LT	TH 2	\dashv	RT	LT 1	TH	RT	LT	TH	RT
Lane Group	aries			T	+	-	T	+		L					-
Volume (vph	<u> </u>			513		_	971	+		318					
% Heavy Vel	·			3	+		3	-		0	 				
PHF	IIICICS			0.91		 	0.95	+		0.92	 				
Pretimed/Act	tuated (P/A)			0.91 A	-	-	A	\dashv		0.92 A	1				
Startup Lost	 			2.0	+	 	2.0	+		2.0		 -	+		×
<u> </u>	Effective Gree	en.		2.0		<u>'</u>	2.0	+		2.0	 	<u> </u>	-	 	
Arrival Type	LIICOLIVO OICO	,,,		5			5	+		3		 			
Unit Extension				3.0			3.0	+		3.0					
	ed/Bike/RTOR Volume			0		0	0			0	0		<u> </u>		<u> </u>
	ane Width			12.0		+ -	12.0	+		12.0	+ -		-	ļ	
				0	N	N	0	\dashv	N	N	0	N		1	
Parking/Hou	arking/Grade/Parking							十						 	
Bus Stops/H		·		0			0		-	0					
Minimum Pe	destrian Time			3.2			3.2				3.2				
Phasing	Thru Only		02		03	04	4		B Onl		06		07	0	8
Timing	G = 64.0 Y = 6	() () ()		G = Y =		G = Y =			= 44.0 = 6	0 G Y		G = Y =		G = Y =	
Duration of A	Analysis (hrs) =			 		11-			- 0		cle Leng		120.0	1,-	
	up Capacity			l Dela	y, and	LOSI	Deteri	min	atio		<u>`</u>	<u> </u>			-
				EB			WB				NB			SB	
Adjusted Flo	w Rate	Î		564			1022	Τ		346					
Lane Group	Capacity			1873			1873	+		662					
v/c Ratio			<u>_</u>	0.30			0.55			0.52					
Green Ratio				0.53			0.53		·	0.37					
Uniform Dela	ay d ₁			15.6			18.4	T		29.8					
Delay Factor	· k		·	0.11			0.15	十	,	0.13			-		
Incremental	Delay d ₂			0.1			0.3			0.8					
PF Factor	<u> </u>	_		0.238			0.238	+		1.000					
Control Dela	у	\dashv		3.8			4.7	T		30.5					_
Lane Group				A			Α	†		С	$\neg \uparrow$				
Approach De		\dashv		3.8			4.7				30.5			·	<u> </u>
Approach LC	DS .	\neg	-	Α			Α				С				
Intersection	Delay	一	-	9.1				Inte	ersecti	ion LOS)		•	Α	
		1				·		- TI			<u> </u>			NEIDOOF	40.20 DM

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		SH	ORT	REPC	RT										
General Info	rmation						Site I	nfor	matio	n					
Analyst Agency or Co Date Perform Time Period	ned 1			our			Inters Area Jurisd Analy	Type ictio	n		0 & US 1 All other ban Twp, 2008 l	areas Adam	•		
Volume and	Timing Inpu	t													
			<u> </u>	EB	l DT	ļ.,-	WB		1		NB		1	SB	
Number of La	anes		LT	TH 2	RT	LT	TH 2	+	RT	LT 1	TH	RT	LT	TH	RT
Lane Group				T	-		T	+		L			-		
Volume (vph)			871	_	 	1340	┿		318	+-				
% Heavy Vel				3			3	╁		0	+	 	<u> </u>		
PHF				0.91	+-		0.95	+		0.92					
Pretimed/Act	tuated (P/A)			A	 	 	A	+		A	1		-		
Startup Lost				2.0	+		2.0	十		2.0	 				
	Effective Gree	en		2.0			2.0	十		2.0	†		t		
Arrival Type				5		<u> </u>	5	+		3	†				<u> </u>
Unit Extension	on			3.0		†	3.0	_		3.0	1		<u> </u>		
Ped/Bike/RT	ed/Bike/RTOR Volume ane Width			0		0	0	十		0	0		1	 	
Lane Width	ane Width			12.0	1		12.0			12.0				·	
Parking/Grad	Parking/Grade/Parking			0	N	N	0		N	N	0	N			
Parking/Hou												,			
Bus Stops/H			·	0	<u> </u>	<u> </u>	0	_		0					
	destrian Time			3.2	<u> </u>	<u> </u>	3.2			<u> </u>	3.2	<u> </u>		<u> </u>	<u> </u>
Phasing	Thru Only G = 64.0	G =	02	G =	03	04 G ≃	4		3 Onl		06	G =	07	G =	8
Timing	Y = 6	Y =		Y =		Y =		Y =		Y		Y =		Y =	
Duration of A	nalysis (hrs)	= 0.2	?5							_	cle Leng		120.0		
Lane Grou	up Capacity	y, C	ontro	Delay	, and	LOS I	Deteri	min	atio	n					
				EB			WB				NB			SB	
Adjusted Flo	w Rate		-	957			1411			346					
Lane Group	Capacity			1873			1873			662					
v/c Ratio				0.51			0.75		,	0.52					
Green Ratio				0.53			0.53			0.37					
Uniform Dela	ay d ₁	\Box		18.0			21.8		;	29.8					
Delay Factor	· k			0.12			0.31			0.13					
Incremental	Delay d ₂			0.2			1.8			0.8					
PF Factor				0.238			0.238	$oxed{\Box}$		1.000					
Control Dela	-			4.5			7.0			30.5					
Lane Group	LOS			Α			Α			С					
Approach De	elay			4.5			7.0				30.5				
Approach LC	os			Α			Α				С				
Intersection	Delay	\neg		9.1				inte	rsecti	ion LOS	3			Α	
Copyright @ 2005														2/9/2005	12:20 DM

					SH	ORT	REPOI	RT.							
General Info	rmation				<u> </u>	<u> </u>	Site In		atio	n					
Analyst Agency or Co Date Perform Time Period	o. ned 1			our			Interse Area T Jurisdio Analys	ction ype ction		US 30 Strab	& US 1 All other an Twp, 2018 No	areas Adams	·		
Volume and	Timing Input														
				EB	T		WB				NB			SB	
Number of L	0000		LT	TH 2	RT	LT	TH 2	R		LT 1	TH	RT	LT	TH	RT
	aries			T	 	-	T	+	\dashv					 	
Lane Group	\		-	759	<u> </u>	 	1599	+		362			 	 	
Volume (vph				3	-		3	╫	\dashv	0			-		
% Heavy Ve	riicies			0.92	-	-	0.95	╫		0.92			 		
Pretimed/Ac	tusted (D/A)			0.92 A	-		0.95 A	+	\dashv	0.92 A					
	<u>`</u>			2.0	 		2.0	+	\dashv	2.0	-	 			 -
Startup Lost					-		-	+-			ļ		 		
	Effective Gree	en		2.0	-	-	2.0	+	\dashv	2.0					
Arrival Type			-	5	 		5	+-	\dashv			-	├	-	
Unit Extension	ed/Bike/RTOR Volume		<u> </u>	3.0	-	-	3.0	$+\!\!-$		3.0	 	-			
			0	0	 	0	0	+-		0	0	├	 		├─
	ane Width arking/Grade/Parking		N	12.0	l N	N	12.0 0	$\frac{1}{N}$,	12.0 N	0	N	<u> </u>	 	
Parking/Hou			"	"	 '\ -	17	"	+~		14	-	'V	\vdash	 	
Bus Stops/H	·		 	0	+		0	+		0		\vdash	 		_
	destrian Time			3.2	1		3.2	+-		-	3.2				
Phasing	Thru Only	Π	02	' T	03	0.	4	NB	Only	у	06	<u> </u>	07		8
Timing	G = 74.0	G =		G =		G =		G =				G =		G =	
	Y = 6 Analysis (hrs)	Υ =		Y =		Y =		Y =	6	Y :	cle Leng	Y =	120.0	Y =	
	up Capacity			l Dolar	, and	ins	Dotorn	nina	tio		cie Len	Jui 0 -	120.0		
Laile Gio	up Capacit	y, C		EB	y, anu	<u> </u>	WB	IIIIa	T		NB			SB	
A discrete di Ele				T			1683	T	\dashv	202				Г	
Adjusted Flo	w Rate			825			<u> </u>	↓	_	393					<u> </u>
Lane Group	Capacity			2166			2166		- 1	511					
v/c Ratio				0.38			0.78			0.77					
Green Ratio				0.62			0.62	\top	\neg	0.28					
Uniform Del	ay d₁			11.5			16.9	1	7	39.4					
Delay Facto				0.11			0.33	\top		0.32					
Incremental				0.1			1.9	\top		7.0					
PF Factor	- 2			0.130		 	0.130	+		1.000					
Control Dela	ay			1.6			4.1	\top	\neg	46.4					
Lane Group	<u></u>			A			A	\top	\dashv	D					
Approach D				1.6	<u> </u>		4.1	•	\dashv		46.4		_	L	
Approach Lo				A			A		\dashv		D			_	
Intersection				9.1				Inter	sect	ion LOS				A	
IIICIGCCIOII	Dolay		ŀ	J. 1		1			3000					1	

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Site Information
Agency or Co. Date Performed 12/6/2005 Saturday Peak Hour
EB
LT TH RT LT TH RT LT TH RT LT TH RT RT RT RT RT RT R
Number of Lanes 2 2 1 1 Lane Group T T T L Volume (vph) 11117 1968 362 % Heavy Vehicles 3 3 0 PHF 0.92 0.95 0.92 Pretimed/Actuated (P/A) A A A Startup Lost Time 2.0 2.0 2.0 Extension of Effective Green 2.0 2.0 2.0 Arrival Type 5 5 3 Unit Extension 3.0 3.0 3.0 Ped/Bike/RTOR Volume 0 0 0 0 Lane Width 12.0 12.0 12.0 12.0 Parking/Grade/Parking N 0 N N 0 N Parking/Hour 0 N N 0 N N
Lane Group T T L Volume (vph) 1117 1968 362 % Heavy Vehicles 3 3 0 PHF 0.92 0.95 0.92 Pretimed/Actuated (P/A) A A A Startup Lost Time 2.0 2.0 2.0 Extension of Effective Green 2.0 2.0 2.0 Arrival Type 5 5 3 Unit Extension 3.0 3.0 3.0 Ped/Bike/RTOR Volume 0 0 0 0 Lane Width 12.0 12.0 12.0 Parking/Grade/Parking N 0 N N 0 N Parking/Hour 0 0 N N 0 N N
% Heavy Vehicles 3 3 0 N N 0 0 0
PHF 0.92 0.95 0.92 Pretimed/Actuated (P/A) A A A Startup Lost Time 2.0 2.0 2.0 Extension of Effective Green 2.0 2.0 2.0 Arrival Type 5 5 3 3.0 Unit Extension 3.0 3.0 3.0 3.0 Ped/Bike/RTOR Volume 0 0 0 0 0 Lane Width 12.0 12.0 12.0 12.0 12.0 Parking/Grade/Parking N 0 N N 0 N N Parking/Hour 0 0 N N 0 N N 0 N
Pretimed/Actuated (P/A) A A A A Startup Lost Time 2.0 2.0 2.0 2.0 Extension of Effective Green 2.0 2.0 2.0 2.0 Arrival Type 5 5 3 3.0 3.0 Unit Extension 3.0 3.0 3.0 3.0 3.0 Ped/Bike/RTOR Volume 0 0 0 0 0 0 0 Lane Width 12.0 12.0 12.0 12.0 12.0 N <td< td=""></td<>
Startup Lost Time 2.0 2.0 2.0 2.0 Extension of Effective Green 2.0 2.0 2.0 2.0 Arrival Type 5 5 3 3.0 3.0 3.0 Unit Extension 3.0 3.0 3.0 N N 0 N N 0 N N 0 N N 0 N N 0 N N 0 N N 0 N N 0 N N 0 N N 0 N N 0 N N 0 N
Extension of Effective Green 2.0 2.0 2.0 Arrival Type 5 5 3 3.0 Unit Extension 3.0 3.0 3.0 3.0 Ped/Bike/RTOR Volume 0 0 0 0 0 Lane Width 12.0 12.0 12.0 12.0 Parking/Grade/Parking N 0 N N 0 N Parking/Hour 0 N N 0 N N 0
Arrival Type 5 5 3 Unit Extension 3.0 3.0 3.0 Ped/Bike/RTOR Volume 0 0 0 0 0 0 Lane Width 12.0 12.0 12.0 </td
Unit Extension 3.0 3.0 3.0 3.0 3.0 9.0
Ped/Bike/RTOR Volume 0 0 0 0 0 0 Lane Width 12.0 <t< td=""></t<>
Lane Width 12.0 12.0 12.0 12.0 Parking/Grade/Parking N 0 N N 0 N N 0 N Parking/Hour Image: Control of the parking of the pa
Parking/Grade/Parking N 0 N N 0 N N 0 N Parking/Hour Image: Control of the parking of the pa
Parking/Hour
Bus Stops/Hour 0 1 0 0 1 1 1 1
Minimum Pedestrian Time 3.2 3.2 3.2 3.2 3.2 3.2 04 NB Only 06 07 08
G = 740 $G = G = G = G = G = G = G = G = G = G$
Timing $Y = 6$ $Y = Y = Y = Y = 6$ $Y = Y = Y = 6$
Duration of Analysis (hrs) = 0.25 Cycle Length C = 120.0
Lane Group Capacity, Control Delay, and LOS Determination
EB WB NB SB
Adjusted Flow Rate 2072 393
Lane Group Capacity 2166 2166 511
v/c Ratio 0.56 0.96 0.77
Green Ratio 0.62 0.62 0.28
Uniform Delay d ₁ 13.5 21.5 39.4
Delay Factor k 0.16 0.47 0.32
Incremental Delay d ₂ 0.3 10.9 7.0
PF Factor 0.130 0.130 1.000
Control Delay 2.1 13.7 46.4
Lane Group LOS A B D
Approach Delay 2.1 13.7 46.4
Approach LOS A B D
Intersection Delay 13.4 Intersection LOS B Converted: 12/8/2005 12:26 B

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Highway Capacity Analysis Worksheets

US Route 30 and US Route 15 Southbound Ramps

				SH	ORT I	REPO	RT								
General Info	rmation						Site In	formation	on						
Analyst Agency or Co Date Perform Time Period	o. ned 1 Weekda	JES GM 2/6/2 y PM	E 2005	Hour			Interse Area T Jurisdi Analys	ype		30 & US All oth traban Tv 2005	her a vp, A	reas Idan	s ns Co		,
Volume and	Timing Input	ŧ .													
		ŀ	LT	EB	T 57	1	WB TH	RT	LT	NB TH	I R	₽	LT	SB TH	RT
Number of La	anas	\dashv	LI	TH 2	RT 1	LT_	2	KI	'	17	╁╌	┧	1	<u> </u>	1
Lane Group	arics			T	R	 	T			+	\vdash	\dashv			R
Volume (vph	<u>, </u>	-		489	298	+	636	+			╁╌	\dashv	18		107
% Heavy Vel		\dashv		3	0		3		Н	_	\vdash	\dashv	0		0
PHF	1110100			0.92	0.92	+	0.87		-		╁	┪	0.82		0.82
Pretimed/Act	tuated (P/A)			A	A	+	A	+	\vdash	+	╁	┪	A		A
Startup Lost		\dashv		2.0	2.0	+	2.0				╆	ᅥ	2.0		2.0
	Effective Green	en		2.0	2.0		2.0		-		+	\dashv	2.0		2.0
Arrival Type	Zilodivo olo	-		5	5		5		 	-		\neg	3		3
Unit Extension	on .	_		3.0	3.0	+	3.0	 			十	一	3.0		3.0
Ped/Bike/RT		_	0	0	0	0	0	+	_		 	一	0	0	0
	Lane Width			12.0	12.0	+-	12.0	+-			+	\dashv	12.0	<u> </u>	14.0
Parking/Grade/Parking		_	N	0	N	N	0	N	 	-	✝	_	N	0	N
Parking/Grade/Parking Parking/Hour															
Bus Stops/H	our			0	0		0						0		0
Minimum Pe	destrian Time			3.2			3.2				<u> </u>			3.2	
Phasing	Thru & RT	_	02		03	04	4	SB On		06			07	- G =	08
Timing	G = 55.0 Y = 6	G= Y=		G =		G = Y =		G = 53. Y = 6	0	G = Y =		G : Y :		Y =	
Duration of A	Analysis (hrs)	1		<u> </u>						Cycle Le	ength				
Lane Gro	up Capacit	y, C	ontro	l Dela	y, and	LOS I	Deterr	ninatio	n						
				EB			WB			NB				SB	
Adjusted Flo	w Rate			532	324		731						22		130
Lane Group	Capacity			1610	1615		1610						797		761
v/c Ratio				0.33	0.20		0.45						0.03		0.17
Green Ratio				0.46	1.00		0.46	1			Т		0.44		0.44
Uniform Dela	ay d ₁			20.7	0.0		22.2						18.9		20.2
Delay Factor	r k			0.11	0.11		0.11						0.11		0.11
Incremental	Delay d ₂			0.1	0.1		0.2						0.0		0.1
PF Factor				0.436	0.950		0.436				\perp		1.000		1.000
Control Dela	ıy			9.2	0.1		9.9						18.9		20.3
Lane Group	LOS			Α	Α		Α						В		С
	elav			5.7			9.9					-		20.1	
Approach De	pproach Delay 5.7								_				_		-
			oproach LOS A tersection Delay 8.7										<u>l</u>	С	

SHORT REPORT **General Information** Site Information Analyst **JES** Intersection US 30 & US 15 SB ramps Agency or Co. **GME** Area Type All other areas Date Performed 12/6/2005 Jurisdiction Straban Twp. Adams Co Time Period Weekday PM Peak Hour Analysis Year 2008 No Build **Volume and Timing Input** EB WB NB SB ΙT RT LT RT ТН RT TH TH LT LT TH $\overline{\mathsf{RT}}$ Number of Lanes 2 1 2 1 1 Lane Group T R T L R 723 Volume (vph) 522 310 41 111 3 0 % Heavy Vehicles 0 3 0 PHF 0.92 0.92 0.90 0.85 0.85 Pretimed/Actuated (P/A) Ά Α Α Α Α 2.0 2.0 2.0 2.0 2.0 Startup Lost Time Extension of Effective Green 2.0 2.0 2.0 2.0 2.0 Arrival Type 5 5 5 3 3 Unit Extension 3.0 3.0 3.0 3.0 3.0 Ped/Bike/RTOR Volume 0 0 0 0 0 0 0 0 12.0 14.0 Lane Width 12.0 12.0 12.0 Parking/Grade/Parking Ν 0 Ν Ν 0 Ν Ν Ν Parking/Hour Bus Stops/Hour 0 0 0 0 0 Minimum Pedestrian Time 3.2 3.2 3.2 Phasing Thru & RT 02 03 04 SB Only 06 08 G = 55.0G = G = G = G = 53.0G = G = G = **Timing** Y = 6Y = Y = Y = 6Y = Y = Y = Y = Duration of Analysis (hrs) = 0.25Cycle Length C = 120.0 Lane Group Capacity, Control Delay, and LOS Determination EΒ WB NB SB 131 Adjusted Flow Rate 567 337 803 48 1610 1615 1610 797 761 Lane Group Capacity 0.21 v/c Ratio 0.35 0.50 0.06 0.17 1.00 0.44 0.44 Green Ratio 0.46 0.46 Uniform Delay d, 21.0 0.0 22.8 19.2 20.2 0.11 0.11 0.11 0.11 Delay Factor k 0.11 Incremental Delay da 0.0 0.1 0.1 0.1 0.2 PF Factor 0.436 0.950 1.000 1.000 0.436 19.2 20.4 9.3 10.2 Control Delay 0.1 C Lane Group LOS Α Α В В 10.2 20.1 Approach Delay 5.8 Α В C Approach LOS Intersection Delay 9.0 Intersection LOS Α

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					SH	ORT	REPO	RT							
General Info	rmation						Site Ir	nformati	on ·						
Analyst Agency or Co Date Perforn Time Period		GI 2/6/	ES ME /2005 M Peak	Hour					5		All oth ban Tw	er ar	dams Co		
Volume and	Timing Inpu	t													
			<u> </u>	EE		96.5	WB		 	-	NB			SB	
Number of La	anes		LT	TH 2	RT 1	LT	TH 2	RT	L		TH	RT	LT 1	TH	RT 1
Lane Group			 	T	R	╁	T		╫				L	+	R
Volume (vph	<u> </u>		+-	599	310	 	783	+	╁				170		111
% Heavy Ve	·		 	3	0	1	3	+	╫				0	 	0
PHF				0.92			0.90	+	+				0.85	+	0.85
Pretimed/Act	tuated (P/A)		 	A	A	<u> </u>	A	+	十				A	 	A
Startup Lost				2.0	2.0		2.0	-	+	_			2.0	+	2.0
	Effective Gree	en		2.0	2.0		2.0		+				2.0	-	2.0
Arrival Type				5	5		5		+				3		3
Unit Extension	on .		†	3.0	3.0		3.0		T				3.0	+	3.0
Ped/Bike/RT			0	0	0	0	0	+	十				0	0	0
Lane Width	ane Width			12.0		 	12.0		+				12.0	+	14.0
	Parking/Grade/Parking			0	N	N	0	N	1				N	0	N
Parking/Hou	Parking/Grade/Parking Parking/Hour								1						
Bus Stops/H	our			0	0		0						0		0
Minimum Pe	destrian Time			3.2			3.2							3.2	
Phasing	Thru & RT		02		03	04	4	SB Or		Ļ	06	\perp	07		08
Timing	G = 55.0 Y = 6	G Y		G Y		G = Y =		G = 53 $Y = 6$.0	G Y			G = Y =	G :	
Duration of A	nalysis (hrs)			<u>-</u>		1.		1 0					C = 120		
Lane Grou	up Capacity	y, C	Contro	l Del	ay, and	LOS	Deterr	ninatio	n						
				EB			WB				NB			SB	
Adjusted Flo	w Rate			651	337		870						200		131
Lane Group	Capacity			1610	1615		1610						797		761
v/c Ratio				0.40	0.21		0.54						0.25		0.17
Green Ratio				0.46	1.00		0.46						0.44	1	0.44
Uniform Dela	ay d ₁			21.6	0.0		23.4						21.0		20.2
Delay Factor	k			0.11	0.11		0.14						0.11	1	0.11
Incremental	Delay d ₂			0.2	0.1		0.4	<u> </u>	 				0.2		0.1
PF Factor				0.436	0.950		0.436						1.000		1.000
Control Dela	у			9.6	0.1		10.6						21.2		20.4
Lane Group	ane Group LOS A				Α		В						С		С
Approach De	elay			6.3	•		10.6							20.9	
Approach LC	os			A			В							С	
Intersection I	Delay			10.2				Intersec	tion	LOS	3			В	
Copyright © 2005	University of Florid	da, Al	II Rights R	eserved			НС	S+ TM Ve	rsion 5	5.2			Generated:	12/8/200	5 12:40 PM

			SH	ORT I	REPO	R	Γ											
General Info	rmation							Site Ir	ıfo	rmatio	n							
Analyst Agency or Co Date Perform Time Period	o. ned 1. <i>Weekda</i> y		1E 2005	Ног	ur			Interse Area Jurisd Analys	Гур icti	e on			0 & US All othe oan Tw 2018 I	er a p, A	reas dan	ns Co		
Volume and	Timing Input																	
					EB		. =	WB		<u> </u>	-		NB		_		SB	
Number of La	anos		LT	-	ΓΗ 2	RT 1	LT	TH 2	\dashv	RT	LT	┥	TH	R	┧	LT 1	TH	RT 1
Lane Group	alles		\vdash		<u>-</u> Γ	R		T	\dashv		_	┥			┥	<u>'</u>		R
Volume (vph	`		 	-	50	352		928	┪			┪			\dashv	158		127
% Heavy Vel			-	⊢	3	0		3	╅	.=		+			\dashv	0		0
PHF	ilicies		 		92	0.92		0.92	ᆉ			┪				0.92		0.92
Pretimed/Act	tuated (P/A)		 	7		A	\vdash	A	┪			┪			\dashv	A		A
Startup Lost				⊢	.0	2.0		2.0	\dashv			┪			\dashv	2.0		2.0
	Effective Gree	en		⊢	.0	2.0		2.0	十		\vdash	\dashv		\vdash	\dashv	2.0		2.0
Arrival Type	LIIOOIIVO OIO	<i>,</i> ,,		₩	5	5	 	5	┪		\vdash	┪		\vdash	ᅥ	3		3
Unit Extension	on .			—	.0	3.0		3.0	┪		\vdash	┪		┢─	\dashv	3.0		3.0
			0	⊢	0	0	0	0	┪		 	ᅥ		\vdash	\dashv	0	0	0
Lane Width					2.0	12.0	 	12.0	寸		一	┪		-	┪	12.0		14.0
Parking/Grad	Parking/Grade/Parking			7	0	N	N	0	┪	N		┪			┪	N	0	N
Parking/Hou	`								\Box									
Bus Stops/H	our				0	0		0	\Box							0		0
Minimum Pe	destrian Time			3	.2		<u></u>	3.2									3.2	
Phasing	Thru & RT		02			03	04	4	_	SB Onl		_	06			07		80
Timing	G = 56.0 Y = 6	G : Y =		\dashv	G = Y =		G = Y =			= <i>52</i> .	0	G Y			Ü Y		G =	
Duration of A	Analysis (hrs) :			一					<u>.</u>			_		ngth		= 120.0		
	up Capacity	_) D	elay	y, and	LOS I	Deter	mi	natio	n							
					EB			WB					NB				SB	
Adjusted Flo	w Rate			71	7	383		1009	I							172		138
Lane Group	Capacity			16	39	1615		1639								782		747
v/c Ratio				0.4	14	0.24		0.62	T					Г		0.22		0.18
Green Ratio				0.4	47	1.00		0.47	Т					1		0.43		0.43
Uniform Dela	ay d ₁			21	.4	0.0		23.9	Т				:	Т		21.3		20.9
Delay Factor	r k			0.1	11	0.11		0.20	T					Τ		0.11		0.11
Incremental	Delay d ₂			0	.2	0.1		0.7	十					T		0.1		0.1
PF Factor				0.4	417	0.950		0.417	+					T		1.000		1.000
Control Dela	Control Delay					0.1		10.7	T					Τ		21.4		21.1
Lane Group	Lane Group LOS					Α		В	T					T		С		С
Approach De				6	5.0	•		10.7	_					-			21.3	
Approach LO					Ā			В									С	
Intersection					.9				In	tersect	ion I	.05	3				Α	
	,																	

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SHORT REPORT **General Information** Site Information JES Intersection US 30 & US 15 SB ramps Analyst Agency or Co. **GME** Area Type All other areas Date Performed 12/6/2005 Jurisdiction Straban Twp. Adams Co Time Period Weekday PM Peak Hour Analysis Year 2018 Build Volume and Timing Input ΕB WB NΒ SB LT TH RT LT TH RT LT TH RT LT TH RT Number of Lanes 2 1 2 1 1 Lane Group T R T 1 R 737 352 988 287 Volume (vph) 127 % Heavy Vehicles 3 0 3 0 O 0.92 0.92 0.92 0.92 0.92 Pretimed/Actuated (P/A) Α Α Α Α Α Startup Lost Time 2.0 2.0 2.0 2.0 2.0 Extension of Effective Green 2.0 2.0 2.0 2.0 2.0 5 5 5 3 Arrival Type 3 **Unit Extension** 3.0 3.0 3.0 3.0 3.0 Ped/Bike/RTOR Volume 0 0 0 0 0 .0 0 0 Lane Width 12.0 12.0 12.0 12.0 14.0 Parking/Grade/Parking Ν 0 Ν Ν Ν Ν 0 Ν 0 Parking/Hour 0 Bus Stops/Hour 0 0 0 0 Minimum Pedestrian Time 3.2 3.2 3.2 Phasing Thru & RT 02 03 04 SB Only 06 07 08 G = 56.0G = G = G = G = 52.0G = G = G = Timing Y = 6Y = <u>Y</u> = Y = Y = 6Y = Y = Y = Duration of Analysis (hrs) = 0.25Cycle Length C = 120.0 Lane Group Capacity, Control Delay, and LOS Determination EΒ **WB** SB NB 1074 Adjusted Flow Rate 801 383 312 138 1615 1639 1639 782 747 Lane Group Capacity v/c Ratio 0.49 0.24 0.66 0.40 0.18 Green Ratio 0.47 0.43 0.471.00 0.43 Uniform Delay d₄ 22.1 0.0 24.6 23.3 20.9 0.11 0.23 Delay Factor k 0.11 0.11 0.11 Incremental Delay d2 0.1 0.2 1.0 0.3 0.1 PF Factor 0.417 0.950 0.417 1.000 1.000 Control Delay 9.4 0.1 11.2 23.6 21.1 С Lane Group LOS Α Α С В Approach Delay 6.4 11.2 22.8 C Approach LOS Α В 11.0 Intersection Delay Intersection LOS В Generated: 12/8/2005 11:19 AM

					SH	ORT	REPO	RT								
General Info	rmation						Site Ir	format	ion							
Analyst Agency or Co Date Perfort Time Period	ned 1			our		-	Interse Area Jurisd Analys	уре	,		0 & US All oth ban Tw 2005	er ar /p, A	eas dan	s ns Co		
Volume and	Timing Input	:									•					
			LT	EB TH	RT	LT	WB TH	RT	╀	T	NB TH	RT	_	LT	SB	RT
Númber of L	anes			2	1	L.	2	K:	╁	. 1	111	K	┪	1	III	1
Lane Group				T	R	-	T	-	+-			\vdash	\dashv	L		R
Volume (vph)			615	383		849	+	+-			\vdash	7	27		188
% Heavy Ve				3	0	 	3		+-			\vdash	┪	0		0
PHF	· · · · · · · · · · · · · · · · · · ·			0.85	0.85		0.96		+-				7	0.80		0.80
Pretimed/Ac	tuated (P/A)			Α	A	1	A						7	Α		Α
Startup Lost	Time			2.0	2.0	1	2.0		\top				┪	2.0		2.0
	Effective Gree	en		2.0	2.0		2.0						\dashv	2.0		2.0
Arrival Type				5	5	\vdash	5		1					3		3
Unit Extension	on	. '		3.0	3.0		3.0							3.0		3.0
Ped/Bike/RT	Ped/Bike/RTOR Volume ane Width				0	0.	0		T				ヿ	0	0	0
Lane Width	ane Width			12.0	12.0		12.0							12.0		14.0
	Parking/Grade/Parking			0	N	N	0	N						N	0	Ν
Parking/Hou			<u> </u>			_			╄				4			
Bus Stops/H				0	0	 	0						4	0		0
	destrian Time			3.2	<u> </u>	 	3.2	CDO	<u> </u>		06	<u> </u>		07	3.2	00
Phasing	Thru & RT G = 56.0	G :	02	G	03	G =	4	SB O G = 5		G	= 06		G =	07	G =	08
Timing	$\dot{Y} = 6$	Υ =		Y :		Y =		Y = 6		Ÿ			<u>Y</u> =		Y =	
	Analysis (hrs) :									С	ycle Le	ngth	C =	= 120.0)	
Lane Gro	up Capacity	y, C	ontro		ay, and	LOS		<u>minati</u>	on							
				EB			WB		ļ		NB			<u> </u>	SB	1
Adjusted Flo	w Rate			724	451		884	<u> </u>	_		ļ	╄-		34	ļ	235
Lane Group	Capacity			1639	1615		1639							782		747
v/c Ratio				0.44	0.28		0.54							0.04		0.31
Green Ratio				0.47	1.00		0.47							0.43		0.43
Uniform Dela	ay d ₁			21.5	0.0		22.8							19.6		22.3
Delay Factor	rk			0.11	0.11		0.14							0.11		0.11
Incremental	Delay d ₂			0.2	0.1		0.4							0.0		0.2
PF Factor					0.950		0.417							1.000		1.000
Control Dela	PF Factor 0.417 Control Delay 9.1						9.9							19.7		22.6
Lane Group	Control Delay 9.1 0. ane Group LOS A A						Α							В		C
Approach De	elay			5.7			9.9								22.2	
Approach LO	os			Ā			Α								С	
Intersection	Delay			9.2				Interse	ction	LO	S				Ā	
Convright @ 2005	University of Florid	da Δl	Il Rights F	Reserved				ICS+TM V	/oreior	5.2			G	enerated:	12/8/200	5 3:09 PM

				SH	IORT	REPO	RT								
General Info	ormation					Site I	nforma	tion							
Analyst Agency or C Date Perforr Time Period	ned 12	JES GME 2/6/2005 ay Peak H	Hour			Area Juriso	ection Type liction sis Yea			80 & US All oth ban Tw 2008	er a /p, A	rea dar	s ns Co		
Volume and	l Timing Input										-				
			EB	T 5=	ļ	WE		Ι.	_	NB		 		SB	
Number of L	2005	LT	TH 2	RT 1	LT	TH 2	RI	+	LT	TH	R	_	LT 1	TH	RT 1
Lane Group			T	R R	+-	T	+	+			\vdash	-	_ <u> </u>		R
Volume (vph			653	398	+	945		+			┝	-	50	-	195
% Heavy Ve			3	0	 	3		+			┝	_	0	-	0
PHF	1110100		0.87	0.87	+	0.96	+	╌					0.83		0.83
	tuated (P/A)		A	A	+-	A		╅			\vdash	\dashv	A	<u> </u>	A
Startup Lost	<u>`</u>		2.0	2.0	+	2.0		十			 		2.0		2.0
	f Effective Gree	n	2.0	2.0	 	2.0	_	+			\vdash		2.0	 	2.0
Arrival Type	··-	<u> </u>	5	5		5		┪~			\vdash		3		3
Unit Extensi			3.0	3.0	 	3.0	\dashv	十				\neg	3.0		3.0
Ped/Bike/RT	OR Volume	0	0	0	0	0	_	\top					0	0	0
Lane Width	ane Width			12.0	†	12.0		+				_	12.0		14.0
Parking/Gra	Parking/Grade/Parking			N	N	0	N						N	0	N
Parking/Hou								\bot							
Bus Stops/H			0	0		0					<u> </u>		0		0
	edestrian Time		3.2		<u> </u>	3.2								3.2	L
Phasing	Thru & RT G = 56.0	02 G =	G =	03	0. G =	4	SB C		G	<u>06</u>		G	07	G =	08
Timing		Y =	Y =		Y =		Y = 6		TY			Υ :		Y =	
Duration of A	Analysis (hrs) =	0.25							С	ycle Le	ngth	C:	= 120.0)	
Lane Gro	up Capacity	, Contr	ol Dela	y, and	LOS	Deter	minat	on							
			EB			WB		\perp		NB	,			SB	
Adjusted Flo	w Rate		751	457		984		丄					60		235
Lane Group	Capacity		1639	1615		1639							782		747
v/c Ratio			0.46	0.28		0.60							0.08		0.31
Green Ratio			0.47	1.00		0.47							0.43		0.43
Uniform Dela	ay d ₁		21.7	0.0		23.7							19.9		22.3
Delay Factor	rk		0.11	0.11		0.19							0.11		0.11
Incremental	Delay d ₂		0.2	0.1		0.6							0.0		0.2
PF Factor			0.417	0.950 0.1		0.417							1.000		1.000
	Control Delay 9.					10.5		\perp	_		$oldsymbol{ol}}}}}}}}}}}}}}}}}$		20.0		22.6
Lane Group	LOS		Α	Α		В							В		С
Approach De	elay		5.8			10.5							· .	22.0	
Approach LO	os		Α			В								С	
Intersection	Delay		9.6				Interse	ction	LOS	3				Α	
Convright @ 2005	University of Florida	All Rights	Reserved				CS+TM V		F 0			Go	nersted: 1	2/8/2005	12:45 PM

					S	HORT	REPC	RT					-			·
General Info	ormation						Site I	nforma	ition							
Analyst Agency or C Date Perform Time Period	ned 1			our			Area ⁻ Jurisd	ection Type liction sis Yea			30 & US All oth aban Tw 2000	ier a	rea: dar	s		
Volume and	Timing Inpu	t														
· -				EE			WB				NB				SB	
Number of L	2000		LT	TH 2	RT 1	LT	TH 2	R'	[] L	_T_	TH	R	-	LT	TH	RT
Lane Group				T	'	+	Z	+	+-				\dashv	1 L		1 R
Volume (vph	1)			787	398	-	1024	+	+			-	\dashv	274		195
% Heavy Ve			-	3	0	_	3		+				\dashv	0		0
PHF	1110100		 	0.87		+	0.96	+-	+-			┝	\dashv	0.83		0.83
Pretimed/Ac	tuated (P/A)			A	A		A	+	+				-	Α.		A
Startup Lost				2.0	2.0	\dagger	2.0	_	\dashv				┪	2.0		2.0
	Effective Gre	en		2.0	2.0	' 	2.0	+				_		2.0		2.0
Arrival Type				5	5		5		\top			_	\dashv	3		3
Unit Extension	on		İ	3.0	3.0	1	3.0	+	\neg				┪	3.0		3.0
Ped/Bike/RT	Ped/Bike/RTOR Volume ane Width			0	0	0	0	1	\top				一	` 0	0	0
Lane Width	ane Width			12.0	12.0		12.0	1	\top					12.0		14.0
Parking/Grad	Parking/Grade/Parking			0	N	N	0	N						Ν	0	N
Parking/Hou																
Bus Stops/H			<u> </u>	0	0		0		\bot			$ldsymbol{ldsymbol{ldsymbol{ldsymbol{eta}}}$	_	0		0
	destrian Time	T		3.2		<u> </u>	3.2				<u> </u>	<u></u>			3.2	
Phasing	Thru & RT G = 56.0	G :	02	G	03	0. G =	4	SB (+-	= 06		G :	07	G =	08
Timing	Y = 6	Υ =		Y		Y =		$Y = \theta$		ŦΫ			Y		Y =	
	Analysis (hrs)		-					.		С	ycle Le	ngth	C =	= 120.0)	
Lane Gro	up Capacit	y, C	ontro			LOS		minat	ion							
·				EB		ļ	WB	·			NB			ļ	SB	
Adjusted Flo	w Rate			905	457		1067							330		235
Lane Group	Capacity			1639	1615		1639							782		747
v/c Ratio				0.55	0.28		0.65							0.42		0.31
Green Ratio				0.47	1.00		0.47							0.43		0.43
Uniform Dela	ay d ₁			23.0	0.0		24.5					Г		23.6		22.3
Delay Factor	rk			0.15	0.11		0.23		\neg					0.11		0.11
Incremental	Delay d ₂			0.4	0.1		0.9	1	T					0.4		0.2
PF Factor	ncremental Delay d ₂ PF Factor			0.417	0.950		0.417							1.000		1.000
Control Dela	Control Delay 10.0						11.1							23.9		22.6
Lane Group	LOS			Α	Α		В							С		С
Approach De	elay			6.7			11.1		\top						23.4	
Approach LO	OS			Α			В			-					С	
Intersection	Delay			11.4				Inters	ection	LOS	3		-		В	
		_			··	1										

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SHORT REPORT General Information Site Information US 30 & US 15 SB ramps JES Intersection Analyst **GME** Area Type All other areas Agency or Co. Date Performed Jurisdiction Straban Twp, Adams Co 12/6/2005 Time Period Saturday Peak Hour Analysis Year 2018 No Build **Volume and Timing Input** WB NB SB ĒΒ LT TH RT LT TH RT LT TH RT LT TH RT **Number of Lanes** 2 2 1 1 1 T R T 1 R Lane Group 1180 169 222 809 453 Volume (vph) % Heavy Vehicles 3 0 3 0 0 PHF 0.92 0.92 0.96 0.92 0.92 Pretimed/Actuated (P/A) Α Α Α Α Α Startup Lost Time 2.0 2.0 2.0 2.0 2.0 Extension of Effective Green 2.0 2.0 2.0 2.0 2.0 5 3 3 Arrival Type 5 5 3.0 3.0 3.0 **Unit Extension** 3.0 3.0 0 0 Ped/Bike/RTOR Volume 0 0 0 0 0 0 12.0 12.0 14.0 Lane Width 12.0 12.0 Parking/Grade/Parking 0 Ν 0 Ν Ν 0 Ν Ν Ν Parking/Hour 0 Bus Stops/Hour 0 0 0 0 Minimum Pedestrian Time 3.2 3.2 3.2 Phasing Thru & RT 02 03 04 SB Only 06 07 80 G = G = G = G = 52.0G = G = G = 56.0G = Timing Y = 6Y = Y = Y = Y = 6Y = Y = Y = Duration of Analysis (hrs) = 0.25Cycle Length C = 120.0 Lane Group Capacity, Control Delay, and LOS Determination WB SB NB EB 1229 184 Adjusted Flow Rate 879 492 241 1615 1639 1639 782 747 Lane Group Capacity 0.24 0.75 0.32 v/c Ratio 0.54 0.30 0.47 0.43 0.43 Green Ratio 0.471.00 21.5 Uniform Delay d₁ 22.8 0.0 26.3 22.4 0.11 0.30 0.11 Delay Factor k 0.14 0.11 Incremental Delay d2 0.1 2.0 0.2 0.3 0.4 1.000 PF Factor 0.417 0.950 0.417 1.000 22.7 21.6 **Control Delay** 9.8 0.1 12.9 С Α В С Lane Group LOS Α 6.3 12.9 22.2 Approach Delay В C Α Approach LOS 11.2 Intersection LOS В Intersection Delay

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					SH	ORT I	REPO	RT								
General Info	rmation				··		Site Ir		atio	n						
Analyst Agency or Co Date Perform Time Period	ned <i>1</i>			our			Interse Area Jurisd Analys	ype iction			30 & US All oth aban Tw 2018	er a /p, A	reas dan	·		
Volume and	Timing Input	t														
				EB	т		WB				NB		\Box		SB	
Number of La	0000		LT	TH 2	RT	LT	TH 2	+-	RT	LT	TH	R	Т	LT	TH	RT
Lane Group				T 7	1 R		T	╫		·	1		_	1 L		1 R
Volume (vph	١			943	453		1259	╁	\dashv		 		\dashv	393		222
% Heavy Vel	<u></u>			3	0	 	3	╁	\dashv			<u> </u>		0		0
PHF	TIICIES			0.92	0.92	 	0.96	-	\dashv		 		\dashv	0.92		0.92
Pretimed/Act	tuated (P/A)			0.92 A	A A		0.90 A	┿	-		+-	-		0.92 A		0.92 A
Startup Lost	<u> </u>		 	2.0	2.0	-	2.0	╁	\dashv				\dashv	2.0		2.0
	Effective Gree	<u></u>		2.0	2.0	1	2.0	-			+	┢	_	2.0		2.0
Arrival Type	Lifective Gree	Ç11		5	5		5	+					\dashv	3		3
Unit Extension	nn			3.0	3.0		3.0	+					\dashv	3.0		3.0
			0	0	0	0	0	╁					\dashv	0	0	0
	Ped/Bike/RTOR Volume Lane Width			12.0	12.0	+ -	12.0	+	_		 	┝	ᅱ	12.0	U	14.0
				0	N N	l _N	0	1	,		+		\dashv	N N	0	N N
Parking/Hou	Parking/Grade/Parking Parking/Hour			<u> </u>	1	 	1	+	•		 	\vdash				
Bus Stops/H				0	0		0				1			0		0
Minimum Pe	destrian Time			3.2			3.2								3.2	
Phasing	Thru & RT		02		03	04	4		Onl		06			07	-	08
Timing	G = 56.0 Y = 6	G Y		G =		G = Y =		G = Y =	52.0		G = / =		G: Y		G = Y =	
Duration of A	Analysis (hrs) :			- T -		Y =		Y =	0		r = Cycle Le	nath			_	
	up Capacit			I Dela	v. and	LOS	Deter	mina	atio		70.0 -0	5		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		
		,,		EB	,,		WB				NB				SB	
Adjusted Flo	w Rate			1025	492		1311					T		427		241
Lane Group	Capacity			1639	1615		1639							782		747
v/c Ratio				0.63	0.30		0.80			•		Т		0.55		0.32
Green Ratio				0.47	1.00		0.47					1		0.43		0.43
Uniform Dela	ay d ₁			24.1	0.0		27.2					1		25.2		22.4
Delay Factor	r k			0.21	0.11		0.34							0.15		0.11
Incremental	Delay d ₂			0.8	0.1		2.9	<u> </u>				T		0.8		0.3
PF Factor	ncremental Delay d ₂ PF Factor			0.417	0.950		0.417					1		1.000		1.000
Control Dela	Control Delay				0.1		14.3					Τ		26.0		22.7
Lane Group	ane Group LOS				Α		В					1		С		С
Approach De	elay			7.3			14.3		一						24.8	
Approach LO	OS			Α			В								С	
Intersection				13.3	•			Inter	sect	ion L	os	,			В	
			1			L								1	_	

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Highway Capacity Analysis Worksheets

US Route 30 and US Route 15 SPUI

SHORT REPORT															
General Information Site Information															
Analyst Agency or Co Date Perform Time Period	o. <i>Gl</i>		Intersection US 30 & US 15 SPUI Area Type All other areas Jurisdiction Straban Twp, Adams Co Analysis Year 2008 No Build												
Volume and	Timing Input														
		LT	EB TH	RT	LT	WB TH		RT	LT	NB TH	RT	SB LT TH RT			
Number of La	2	2		2	2	_	<u> </u>	2	'''	INI	2	 '''			
Lane Group		L	T		L	T	十	-	L			L			
Volume (vph)	154	368		299	694			279			41			
% Heavy Vel	hicles	0	3		0	3			0			0			
PHF		0.92	0.92		0.92	0.92			0.92			0.92			
Pretimed/Act	tuated (P/A)	Α	Α		Α	Α			Α			Α			
Startup Lost	Time	2.0	2.0		2.0	2.0			2.0			2.0			
Extension of	Effective Green	2.0	2.0		2.0	2.0	\perp		2.0	ļ	<u> </u>	2.0			
Arrival Type		5	5		5	5		_	3			3	<u> </u>		
Unit Extension	···	3.0	3.0		3.0	3.0			3.0	<u> </u>		3.0			
Ped/Bike/RT	OR Volume	0	0		0	0	_		0	0		0	0	ļ	
Lane Width	12.0	12.0	<u> </u>	12.0	12.0	_		12.0			12.0		 		
Parking/Grad		N	0	N	N	0		<u> </u>	N	0	N	N	0.	N	
Parking/Hou Bus Stops/H		0	0	 	0	0	+		0	-		0	-	 	
	destrian Time	<u> </u>	3.2	+	L °	3.2	╅		 	3.2		 	3.2		
Phasing		/B Only	Thru Only		04		Exc	l. Le	ft	06		07		08	
Timing	G = 19.0 G	= 9.0	9.0 G = 33.0		G =			= 19.0		G = G					
	Y = 10 $Y = 0$. Analysis (hrs) = 0.	= 10	Y =	Y =		Y =	10	Y =		Y =	Y = 120.0				
	up Capacity, C		l Dolay	, and	1001	Deter	mins	tio		CIE LEII	jui C -	120.0			
Lane Olo	up capacity, c		EB	, and		WB	111116	T	· · · · · · · · · · · · · · · · · · ·	NB		SB			
Adjusted Flo	w Rate	167	400		325	754		303				45			
Lane Group		555	966		1110	1522			555			555			
v/c Ratio		0.30	0.41		0.29	0.50	1	0.55				0.08			
Green Ratio		0.16	0.28		0.32	0.43			0.16			0.16	_		
Uniform Dela	ay d ₁	44.6	35.6		30.9	24.5		-	46.5			43.1		,	
Delay Factor	r k	0.11	0.11		0.11	0.11			0.15			0.11			
incremental	Delay d ₂	0.3	0.3	-	0.1	0.3			1.1		- ;	0.1	- "		
PF Factor		0.875	0.747		0.691	0.490			1.000			1.000			
Control Delay		39.3	26.9		21.5	12.3			47.7			43.1			
Lane Group	LOS	D	С		С	В			D			D			
Approach De	elay		30.5	-		15.1				47.7			43.1		
Approach LC	os		С			В				D		D			
Intersection	Delay		25.0				Inter	secti	ion LOS				С		
Convright @ 2005	II Diabta D	naaniad				AT. CO.	1 1/2	- 	Generated: 12/8/2005 1						

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					SI	IORT	REPO	RT									
General Info	rmation						Site Ir	for	matic	n							
Analyst Agency or Co Date Perform Time Period	ned 1 Weekday		Intersection US 30 & US 15 SPUI Area Type All other areas Jurisdiction Straban Twp, Adams Co Analysis Year 2008 Build														
Volume and	Timing Input	<u> </u>											,				
	ŀ	EB LT TH RT			LT	WB RT			L-		NB TH	RT	LT	SB	RT		
Number of La	Number of Lanes			2	1 1	2	2	十	IXI	2		1111	101	2	 '''	 ```	
Lane Group			2 L	T	1	L	$\frac{1}{T}$	十						L	\vdash	 	
Volume (vph))		154	445		419	754	\dashv		279)			170	1		
% Heavy Vel		一	0	3		0	3	十		0				0	<u> </u>	 	
PHF	-	\neg	0.92	0.92		0.92	0.92	十		0.9	2			0.92			
Pretimed/Act	uated (P/A)		Α	Α	1	Α	Α	十		A				Α			
Startup Lost	Time		2.0	2.0		2.0	2.0	寸		2.0)			2.0			
Extension of	Effective Gree	en	2.0	. 2.0		2.0	2.0	1		2.0)			2.0			
Arrival Type			5	5		5	5	丁		3				3			
Unit Extension	on	\neg	3.0	3.0		3.0	3.0			3.0				3.0			
Ped/Bike/RT	OR Volume		0 0			0	0	T		0		0		0	0		
Lane Width		12.0	12.0		12.0	12.0	,		12.	0			12.0				
Parking/Grade/Parking			N	0	N	N	0		Ν	N		0	N	N	0	N	
Parking/Hour		_			<u> </u>			4		_				<u> </u>		 	
Bus Stops/Ho			0	0		0	0	+		0		0.0		0		 	
	destrian Time	1	D. Only	3.2	Only	0.	3.2		cl. Le	<u></u>		3.2 06	<u> </u>	07	3.2	<u> </u> 8	
Phasing	Excl. Left G = 19.0				Only 0-		4		= 19.		G =		 G		G =	0	
Timing	Y = 10	Υ=	= 10	0 Y = 10 Y =				Y = 10			Ý =		Υ=				
	nalysis (hrs) :	_									Сус	le Leng	th C =	120.0			
Lane Grou	up Capacity	<u>/, C</u>	ontro		, and	LOS		nin	atio	n				1		·	
		-4		EB			WB	_			_	NB		105	SB		
Adjusted Flor	w Rate		167	484		455 1110	820 1522	╀		303	+			185			
Lane Group	Capacity		555	966		1110	1522			555				555			
v/c Ratio			0.30	0.50		0.41	0.54		٠.	0.55				0.33			
Green Ratio			0.16	0.28		0.32	0.43			0.16				0.16			
Uniform Dela	ıy d ₁		44.6	36.6		32.2	25.1			46.5				44.9			
Delay Factor	k		0.11	0.11	-	0.11	0.14			0.15	\top			0.11			
incremental [Delay d ₂		0.3	0.4		0.2	0.4			1.1				0.4			
PF Factor			0.875	0.747		0.691	0.490			1.000)			1.000			
Control Delay	у		39.3	27.7		22.5	12.7			47.7				45.2			
Lane Group I	LOS		D ,	С		С	В			D				D			
Approach De	elay			30.7			16.2				4	47.7			45.2		
Approach LC	S			С			В					D			D		
Intersection [Delay		-	26.3				Inte	rsect	ion L	os				С		
Copyright © 2005			Н	CS+ ^T	ΓM Ve	rsion 5.	2		G	enerated:	12/8/2005	1:34 PM					

SHORT REPORT General Information Site Information Analyst **JES** Intersection US 30 & US 15 SPUI Agency or Co. **GME** Area Type All other areas Date Performed 12/8/2005 Jurisdiction Straban Twp. Adams Co Time Period Weekday PM Peak Hour Analysis Year 2018 No Build Volume and Timing Input EB WB NB SB LT TH RT LT TH RT LT TH RT LT TH RT Number of Lanes 2 2 2 2 2 2 L T L T L Lane Group L 175 Volume (vph) 485 552 895 317 158 % Heavy Vehicles 0 3 0 3 0 0 PHF 0.92 0.92 0.92 0.92 0.92 0.92 Pretimed/Actuated (P/A) Α Α Α Α Α Α Startup Lost Time 2.0 2.0 2.0 2.0 2.0 2.0 2.0 Extension of Effective Green 2.0 2.0 2.0 2.0 2.0 5 5 5 5 3 3 Arrival Type **Unit Extension** 3.0 3.0 3.0 3.0 3.0 3.0 Ped/Bike/RTOR Volume 0 0 0 0 0 0 0 0 12.0 12.0 Lane Width 12.0 12.0 12.0 12.0 Parking/Grade/Parking N 0 Ν N 0 Ν N 0 Ν Ν 0 Ν Parking/Hour Bus Stops/Hour 0 0 0 0 0 3.2 Minimum Pedestrian Time 3.2 3.2 3.2 Phasing Excl. Left WB Only Thru Only Excl. Left 06 07 08 04 G = 19.0G = 9.0G = 33.0G = 19.0G = <u>G</u> = G = G =**Timing** Y = 10Y = 10Y = 10 <u>Y =</u> Y = <u>Y =</u> Y = 10<u>Y =</u> Duration of Analysis (hrs) = 0.25Cycle Length C = 120.0 Lane Group Capacity, Control Delay, and LOS Determination EΒ **WB** NB SB 527 Adjusted Flow Rate 190 600 973 345 172 1110 1522 555 966 555 555 Lane Group Capacity v/c Ratio 0.34 0.55 0.54 0.64 0.62 0.31 Green Ratio 0.16 0.28 0.32 0.43 0.16 0.16 Uniform Delay d₄ 44.7 44.9 37.1 33.8 26.6 47.1 Delay Factor k 0.11 0.15 0.14 0.22 0.20 0.11 Incremental Delay d₂ 0.4 0.6 0.5 0.9 2.2 0.3 1.000 0.747 1.000 PF Factor 0.875 0.691 0.490 Control Delay 39.7 28.4 23.9 14.0 49.3 45.0 C Lane Group LOS D C В D D 31.4 17.8 49.3 45.0 Approach Delay C Approach LOS В D D C Intersection Delay 26.8 Intersection LOS

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SHORT REPORT General Information Site Information JES Intersection US 30 & US 15 SPUI Analyst Agency or Co. **GME** All other areas Area Type Date Performed 12/8/2005 Jurisdiction Straban Twp, Adams Co Time Period Weekday PM Peak Hour Analysis Year 2018 Build **Volume and Timing Input** WB ΝB ΕB SB RT RT LT TH LT TH RT LT TH RT LT TH **Number of Lanes** 2 2 2 2 2 2 L Lane Group L T L T L 175 562 672 955 317 287 Volume (vph) % Heavy Vehicles 0 3 0 3 0 0 PHF 0.92 0.92 0.92 0.92 0.92 0.92 Pretimed/Actuated (P/A) Α Α Α Α Α Α Startup Lost Time 2.0 2.0 2.0 2.0 2.0 2.0 Extension of Effective Green 2.0 2.0 2.0 2.0 2.0 2.0 3 5 5 5 5 3 **Arrival Type Unit Extension** 3.0 3.0 3.0 3.0 3.0 3.0 Ped/Bike/RTOR Volume 0 0 0 0 0 0 0 0 12.0 12.0 Lane Width 12.0 12.0 12.0 12.0 Parking/Grade/Parking Ν 0 Ν Ν 0 Ν Ν 0 Ν Ν 0 Ν Parking/Hour Bus Stops/Hour 0 0 0 0 0 0

Phasing Excl. Left WB Only Thru Only 04 Excl. Left 06 07 08 G = 19.0G = 33.0G = G = 19.0G= G = G = 9.0G = **Timing** Y = 10Y = 10Y = 10Y = Y = 10Y = Y =

3.2

3.2

3.2

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3.2

Duration of Analysis (hrs) :	= 0.25				Cycle Le	ength C =	120.0		
Lane Group Capacity	, Contro	l Delay, a	ind LOS	Determin	ation				
		EB		WB	NB		SB		
Adjusted Flow Rate	190	611	730	1038	345		312		
Lane Group Capacity	555	966	1110	1522	555		555		
v/c Ratio	0.34	0.63	0.66	0.68	0.62		0.56		
Green Ratio	0.16	0.28	0.32	0.43	0.16		0.16		
Uniform Delay d ₁	44.9	44.9 38.2		27.3	47.1		46.7		
Delay Factor k	0.11	0.21	0.23	0.25	0.20		0.16		
Incremental Delay d ₂	0.4	1.4	1.4	1.3	2.2		1.3		
PF Factor	0.875	0.747	0.691	0.490	1.000		1.000		
Control Delay	39.7	29.9	25.9	14.7	49.3		48.0		
Lane Group LOS	D	С	С	В	D		D		
Approach Delay		32.2		19.3	49.3		48.0		
Approach LOS		С		В	D		D		
Intersection Delay		28.5		Inte	ersection LOS		С		

Minimum Pedestrian Time

					SH	ORT I	REPO	R	Г		_							
General Info	rmation						Site Information											
Analyst Agency or Co Date Perform Time Period		Intersection US 30 & US 15 SPUI Area Type All other areas Jurisdiction Straban Twp, Adams Co Analysis Year 2008 No Build																
Volume and	Timing Input																	
			EB		WB						NB	. ,		SB				
N b a a a f l a	umbar of Lanca		LT	TH	RT	LT	TH	\dashv	RT	LT	\dashv	TH	RT	LT	TH	RT		
Number of Lanes			2	2 T		2	2 T	\dashv		2	\dashv			2		 		
Lane Group	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	\dashv	L 122	531		L 200	547	┥		318	\dashv			50	-			
Volume (vph)			123	3		298 0	3	\dashv		0	-			0	├	+-		
% Heavy Vel	nicies		0 0.92	0.92		0.92	0.92	\dashv		0.92	\dashv			0.92	 	+-		
	nuctoral (D/A)						0.92 A	┦		0.92 A				 	-	+		
Pretimed/Act			A	2.0		2.0	2.0	\dashv		2.0	-			2.0	 	+-+		
Startup Lost		_	2.0	2.0		2.0	2.0	\dashv		2.0	\dashv			2.0	┼	+-		
	Effective Gree	; []	2.0 5	5	 	5	5	\dashv		3	ᅱ			3	╁	 		
Arrival Type Unit Extension		_		3.0	-	3.0	3.0	\dashv		3.0	ᅴ			3.0	ļ	+		
		_	3.0	0	1	0	0	\dashv		0		0		0	0	+		
Ped/Bike/RTOR Volume			0 12.0	12.0		12.0	12.0	\dashv		12.0		0		12.0	0	-		
Lane Width Parking/Grade/Parking			12.0 N	0	N	12.0 N	0	\dashv	N	12.0 N	_	0	N	N N	0	$\frac{1}{N}$		
Parking/Hour				 	 '`	 ^`	╁	┥		'\ <u>'</u>	\dashv		- 14	'	 	 		
Bus Stops/Hour			0	0		0	0	┪		0	┪			0	 	+		
	destrian Time			3.2	 		3.2	╛		<u> </u>		3.2		1	3.2			
Phasing	Excl. Left	W	B Only	Thru	Thru Only		4	Ē	xcl. Le	ft		06		07		8		
Timing	G = 19.0		= 5.0	G =					5 = 20.0				G =		G =			
_	Y = 10 Analysis (hrs) =	-	= 10	Y =	10	Y = Y = 10						le I enc	Y=	Y = 120.0				
	up Capacity			Dolay	and	1.09.1	Optori	mi	natio		<i>y</i> c	ie Leng	Jul 0 -	120.0				
Lane Oroc	up Capacit	, 0	0111101	EB	, unu		WB			<u>'</u>		NB			SB			
Adjusted Flo	w Rate		134	577		324	595	Т		346	Т			54				
Lane Group			555	1054		993	1493	T		584	t			584				
v/c Ratio			0.24	0.55		0.33	0.40	十		0.59	1			0.09				
Green Ratio			0.16	0.30		0.28	0.43	十		0.17	十		•	0.17	٠.			
Uniform Dela				35.2		34.0	23.9	十		46.2	\dagger			42.3				
Delay Factor			0.11	0.15		0.11	0.11	T		0.18	†			0.11				
Incremental Delay d ₂			0.2	0.6		0.2	0.2	T		1.6	T			0.1				
PF Factor		0.875	0.714		0.736	0.507	$oxed{T}$		1.000	Ι			1.000					
Control Delay		38.9	25.7		25.2	12.3		47.8		47.8			42.4					
Lane Group	LOS		D	С		С	В			D		1		D				
Approach De	elay			28.2			16.8				-	17.8			42.4			
Approach LC	os			С			В					D		D				
Intersection I	Delay		26.8 Intersection LOS C									С						

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						SI	IORT	R	EPO	R	T_						<u>-</u>	_			
General Information										Site Information											
Analyst JES Agency or Co. GME Date Performed 12/8/2005 Time Period Saturday Peak Hour										Intersection US 30 & US 15 SPUI Area Type All other areas Jurisdiction Straban Twp, Adams Co Analysis Year 2008 Build											
Volume and	Timing Input	:						_													
					EB				WB					NB	-	- T	 	SB	Tot		
Number of Lanes			LT 2	┝	TH 2	RT	LT 2	┥	TH 2	-	RT	╁	LT 2	TH	H	RT	LT 2	TH	RT		
Lane Group			L	╁	T		L	┪	T	٦		╁	L		H		L	 	\vdash		
Volume (vph	<u> </u>		123	۱,	365		456	┨	626	_		+	318		-		274				
% Heavy Vel			0	Ť	3		0	1	3	_		Ť	0				0		 		
PHF			0.92	6	0.92	 	0.92	1	0.92	٦		1	0.92		┢		0.92	 	\vdash		
Pretimed/Act	uated (P/A)	_	Α	t	Α		Α	7	A	┪		T	Α				Α		 		
Startup Lost	`-		2.0	1	2.0		2.0	1	2.0			t	2.0		\vdash		2.0				
	Effective Gree	en	2.0		2.0		2.0	1	2.0			t	2.0		Т		2.0	 			
Arrival Type			5	T	5	†	5	7	5			T	3		Г		3				
Unit Extension	on		3.0				3.0	7	3.0			T	3.0		Г		3.0				
Ped/Bike/RT	OR Volume		0	0.			0	7	0			T	0 .	0			0	0			
Lane Width			12.0		12.0		12.0		12.0			Ī	12.0				12.0				
Parking/Grad	de/Parking		N		0	N	N		0		N		Ν	0	_/	٧	N	0	N		
Parking/Hou				L		ļ	ļ	_				L			L			<u> </u>	↓		
Bus Stops/H			0	↓	0		0	4	0	\Box		╀	0		ļ		0	<u> </u>	—		
	destrian Time		<u> </u>	3.2		<u> </u>	<u> </u>		3.2					3.2				3.2			
Phasing	Excl. Left G = 19.0		/B Only = 5.0	Thru Only G = 36.0		G =				xcl. Left = 20.0			06 G =		07 G =		G =	8			
Timing	Y = 10	_	- 5.0 = 10				Y=				= 10					Y =		Y =			
Duration of A	nalysis (hrs) :			·	1. 1.								_		= 120.0						
Lane Grou	up Capacity	y, C	ontro		elay	, and	LOS	De	etern	ηi	natio	n									
					EB			WB				NB						SB			
Adjusted Flo	w Rate		134 723		23		496	680		ĥ		34	16				298				
Lane Group	Capacity		555	10)54		993	7	1493			58	34			584					
v/c Ratio			0.24	0.0	69		0.50	0	0.46			0.8	59				0.51				
Green Ratio			0.16	0.3	30		0.28	0	0.43	Γ		0.1	17				0.17				
Uniform Dela	ay d ₁		44.2	37	7.0		35.9	2	24.6	Γ		46	5.2				45.5				
Delay Factor	·k		0.11	0.2	26		0.11	0	0.11	Γ		0.1	18				0.12				
Incremental Delay d ₂		0.2	1	.9		0.4	Γ	0.2	Γ		1.	6				0.8					
PF Factor		0.875	0.	714		0.736	0	0.507	Γ		1.0	000				1.000					
Control Delay		38.9	28	8.3		26.8	ŀ	12.7			47	7.8				46.3					
Lane Group	LOS		D	(С	Γ	В	Γ		E	<u> </u>				D				
Approach De	elay			30	0.0			•	18.7				4	47.8			46.3				
Approach LC	os				C				В					D			D				
Intersection	Delay			29	9.1					Int	ersect	ior	LOS			С					
Converight @ 2005	II Diebte D		n rod			LICE.TM .Varri									Separated: 12/8/2005 1:28 PM						

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						SH	ORT F	REPO	R								
General Info	rmation									rmatio	n						
Analyst Agency or Co Date Perform Time Period	ned 12			ur				Intersection US 30 & US 15 SPUI Area Type All other areas Jurisdiction Straban Twp, Adams Co Analysis Year 2018 No Build									
Volume and	Timing Input																
				Ē				WB	_		Ι.	_	NB		L	SB	
Ni mahan af L		4	LT	_	H	RT	LT	TH		RT	-	<u>.T</u>	TH	RT	LT	TH	RT
Number of La	anes	\dashv	2	7			2	2 T			2			 -	2	 	\vdash
Lane Group	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	\dashv	L 140	-		<u> </u>	L				L 26			 	L 160	-	├
Volume (vph		-	140	67			551	728	_		36			ļ	169	-	\vdash
% Heavy Ve	nicies	\dashv	0.92	0.9			0.92	0.92	_		0.9		 	 	0.92	┼	├──
PHF Pretimed/Act	tusted (D/A)	\dashv	0.92 A	0.8		-	0.92 A	0.92 A			U.S		 		0.92 A	┼─	┿
			2.0	2.			2.0	2.0		-	2.			├	2.0	╄	┼
Startup Lost		_	2.0	2.			_	2.0	_		2.		<u> </u>	_	2.0	-	┼
	Effective Gree	¥1	5	- Z. - 5			2.0 5	5	_		3		-	-	3	├	\vdash
Arrival Type Unit Extension			3.0	3.			3.0	3.0		<u> </u>	3.			-	3.0	-	├──
		_		-				0	_		+-		0		+	0	+-
Ped/Bike/RT Lane Width	OR volume	_	0 12.0	12	2.0		12.0	12.0	_	-	12	2.0	"		12.0	10	
Parking/Grad	de/Parking	\dashv	N 12.0	┼)	N	N N	0	_	N	12		0	N	N N	0	l _N
Parking/Hou				╫		 '`	 '\	۱ ۰	_	 '`	+	•	<u> </u>	 	+~	╫	+~
Bus Stops/H			0	1	0		0	0		 	1	0		\vdash	0	1	\vdash
	destrian Time			3.	2			3.2	_				3.2	1		3.2	\vdash
Phasing	Excl. Left		B Only			Only	04	1	_	Excl. Le			06		07)8
Timing	G = 19.0 Y = 10		= 5.0 = 10		G = ` Y =	36.0	G = Y =			= 20.			G Y:				
Duration of A	Analysis (hrs) =			+	Υ =	10	Υ =		Υ	' = 10	Y = Y			_	•		
	up Capacity			i De	alav	, and	LOSI	Deter	mi	inatio	n	1-57		<u> </u>	. 20.0		
Lano Oro	up vupuvity	,			B	,		WB					NB		Τ	SB	
Adjusted Flo	w Rate		152	728	3		599	791	T		393				184		
Lane Group	Capacity		555	105	54		993	1493	†		584				584		
v/c Ratio			0.27	0.69	9		0.60	0.53	T		0.67	7			0.32		
Green Ratio			0.16	0.30	0		0.28	0.43	Ť		0.17	7			0.17		
Uniform Dela	ay d₁		44.4	37. ⁻	1		37.2	25.6	†		46.9	,			44.0		
Delay Factor			0.11	0.2	6		0.19	0.13	†		0.24	1			0.11		
Incremental	Delay d ₂		0.3	1.9	9		1.0	0.4	Ť		3.0				0.3		
PF Factor			0.875	0.7	14		0.736	0.507	†		1.00	00			1.000		
Control Dela	ay		39.1	28.	4		28.4	13.3	T		50.	0			44.3		
Lane Group	LOS		D	С			С	В	Ť		D	\neg			D		
Approach D	elay			30.3				19.8					44.3				
Approach LOS C					B D D												
Intersection	Delay		28.8					Intersection LOS C									

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		-				SH	ORT F	REPO	R'	Т								
General Info	rmation									rmatic	n							
Analyst Agency or Co Date Perform Time Period	ned 12			ur				Intersection Area Type Jurisdiction Analysis Year US 30 & US 15 SPUI All other areas Straban Twp, Adams Co 2018 Build										
Volume and	Timing Input																	
				EB				WB			<u> </u>		NB		L	SB	T	
Number of La	anec		LT 2	Th 2	' 	RT	LT 2	TH 2		RT		.T	TH	RT	LT 2	TH	RT	
Lane Group	anes	_	L	$\frac{2}{T}$			L	T		├					L		_	
Volume (vph)	-	140	804	_		709	807	_		36				393		 	
% Heavy Vel	-	_	0	3	-		0	3			7		-		0	-	 	
PHF			0.92	0.92	, 		0.92	0.92	_		0.9			 	0.92		\vdash	
Pretimed/Act	tuated (P/A)		A	A	_		A	A			/				A		 	
Startup Lost			2.0	2.0	,		2.0	2.0			2.				2.0		\vdash	
<u> </u>	Effective Gree	n	2.0	2.0	-		2.0	2.0			2.				2.0	 	 	
Arrival Type			5	5	\dashv		5	5	_	 	3			<u> </u>	3	┢	 	
Unit Extension	on		3.0	3.0	,		3.0	3.0			3.	0			3.0		 	
Ped/Bike/RT	OR Volume		0	0	一		0	0			1)	0		0	0		
Lane Width			12.0	12.	0		12.0	12.0	_	 	12	2.0			12.0	1		
Parking/Grad	de/Parking		N	0		Ν	Ν	0		N	1	V	0	N	N	0	N	
Parking/Hou																		
Bus Stops/H			0	0	-		0	0			<u> </u>	0		ļ	0		↓	
	destrian Time			3.2	1		ļ <u>.</u>	3.2	_	<u> </u>	<u> </u>		3.2	<u> </u>	<u></u>	<u> </u>		
Phasing	Excl. Left G = 19.0		B Only = 5.0		hru (Only	0 ² G =	1		Excl. Let $c = 20$.		G=	06	G =	07		8	
Timing	Y = 10		= 10	_	= 1		Y =			= 10			<u>- </u>	Y =		Y =	3.2 08 G = Y =	
Duration of A	Analysis (hrs) =	0.2	25								Cycle Length C = 120.0							
Lane Gro	up Capacity	, C	ontro	De	lay,	and	LOS		mi	natio	n							
				EB	3			WB	_				NB		<u> </u>	SB		
Adjusted Flo	w Rate		152	874	_		771	877	4		393				427			
Lane Group	Capacity		555	1054	1		993	1493		J	584				584			
v/c Ratio			0.27	0.83			0.78	0.59	┙		0.67				0.73			
Green Ratio			0.16	0.30			0.28	0.43			0.17	7			0.17			
Uniform Dela	ay d ₁		44.4	39.1			39.5	26.4	I		46.9	7			47.4			
Delay Factor	r k		0.11	0.37			0.33	0.18	T		0.24	4			0.29			
Incremental	Delay d ₂		0.3	5.7			3.9	0.6	T		3.0				4.7			
PF Factor			0.875	0.71	4		0.736	0.507	brack	·	1.00	00			1.000			
Control Dela	ıy		39.1	33.6	3		33.0	14.0			50.	0			52.1			
Lane Group	LOS		D	С			С	В			D	\Box			D			
Approach De	elay	34.4				22.9					50.0			52.1				
Approach LOS C					C D D													
Intersection Delay 32.9				Intersection LOS C														

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Highway Capacity Analysis Worksheets

US Route 30 and Re-Located Smith Road

	TW	O-WAY STOP	CONTR	OL S	UMN	IARY				
General Information	n		Site I	nforn	natio	n				
Analyst	JES		Interse	ction			US 30 &	Smith Rd		
Agency/Co.	GME		Jurisdi	ction				Twp, Adan	ns Co	
Date Performed	12/8/200		Analys	is Yea	ar		2008 Build			
Analysis Time Period		PM Peak Hour								
	9.85		1							
East/West Street: US F						t: Smith I	Rd			
Intersection Orientation:			Study I	eriod	(hrs):	0.25				
Vehicle Volumes a	<u>nd Adjustme</u>		·							
Major Street		Eastbound	T		<u> </u>		Westbou	nd .		
Movement	1	2 	3 R		├	4	5 T		6	
Volume (veh/h)	26	940	H R			_L	980		R 26	
Peak-Hour Factor, PHF	0.92	0.92	0.92		 	0.92	0.92		0.92	
Hourly Flow Rate, HFR					\vdash		<u> </u>	_		
(veh/h)	28	1021	0			0	1065		28	
Percent Heavy Vehicles	0					0				
Median Type	Two Way Left Turn L				rn Lane					
RT Channelized			0						0	
Lanes	1	1	0			0	1		1	
Configuration	L	T					T		R	
Upstream Signal	<u>_L</u>	0			<u> </u>		0			
Minor Street		Northbound					Southbou	ınd	-	
Movement	7	8	9		<u> </u>	10	11		12	
	L	Т	R			L	Т		R	
Volume (veh/h)					<u> </u>	20			20	
Peak-Hour Factor, PHF	0.92	0.92	0.92	_		0.92	0.92		0.92	
Hourly Flow Rate, HFR (veh/h)	0	0	0			21	0	ŀ	21	
Percent Heavy Vehicles	0	0	0			0	0		0	
Percent Grade (%)		0					0			
Flared Approach		N					N			
Storage		0					0			
RT Channelized			0						0	
Lanes	0	Ō	0			0	0		0	
Configuration							LR			
Delay, Queue Length, a	nd Level of Se	rvice								
Approach	Eastbound	Westbound		Northb	ound		S	outhboun	d	
Movement	1	4	7	8	3	9	10	11	12	
Lane Configuration	L							LR		
v (veh/h)	28						-	42		
C (m) (veh/h)	646							245	 	
v/c	0.04							0.17	 	
95% queue length	0.14				-+		 	0.61	+	
Control Delay (s/veh)	10.8						 	22.7	+	
LOS	10.8 B						 	C C		
Approach Delay (s/veh)								22.7		
Approach LOS							L	C		

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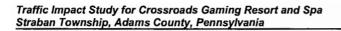
	TW	O-WAY STOP	CONTRO	DL SI	JMM	IARY				
General Information)	· · · · · ·	Site In	form	atio	n		-		
Analyst	JES		Interse	ction			US 30 & S	Smith Rd	7	
Agency/Co.	GME	·	Jurisdio			-		wp, Adams	Co	
Date Performed	12/8/2005		Analys	s Yea	r		2018 Build			
Analysis Time Period	Weekday	PM Peak Hour								
Project Description 129	9.85	-				-				
East/West Street: US Ro	oute 30					: Smith R	d			
Intersection Orientation:	East-West		Study F	eriod	(hrs):	0.25				
Vehicle Volumes an	d Adjustme									
Major Street		Eastbound					Westbour	nd		
Movement	1	2	3			4	5		6	
	L	T 1070	R			<u> </u>	T		R	
Volume (veh/h)	26	1270	0.00			0.00	1233 0.92		26	
Peak-Hour Factor, PHF	0.92	0.92	0.92			0.92	0.92		.92	
Hourly Flow Rate, HFR (veh/h)	28	1380	0			0	1340		28	
Percent Heavy Vehicles	0					0				
Median Type			Two V	Vay Le	ft Tui	rn Lane				
RT Channelized			0						0	
Lanes	1	1	0			0	1		1	
Configuration	Ĺ	T					T		R	
Upstream Signal		0					0			
Minor Street		Northbound					Southbou	nd		
Movement	7	8	9			10	11		12	
	L	Т	R			L	Т		R	
Volume (veh/h)						20			20	
Peak-Hour Factor, PHF	0.92	0.92	0.92			0.92	0.92	().92	
Hourly Flow Rate, HFR (veh/h)	0	0	0			21	0		21	
Percent Heavy Vehicles	0	0	0			0	0		0	
Percent Grade (%)		0					0	<u> </u>		
Flared Approach		N	' ''				N			
Storage		0	 				0			
RT Channelized			0		\vdash				0	
Lanes	0	0	0		 	0	0	_	0	
Configuration	 		├ ॅ		 		LR			
	nd Lovel of Co	niee								
Delay, Queue Length, a				Northb	ound			outhbound		
Approach	Eastbound	Westbound	7	8		9			12	
Movement	<u>1</u>	4	- /	8		9	10	11	12	
Lane Configuration	L							LR		
v (veh/h)	28							42		
C (m) (veh/h)	508							166		
v/c	0.06							0.25		
95% queue length	0.17							0.96		
Control Delay (s/veh)	12.5							33.9		
LOS	В			1				D		
Approach Delay (s/veh)								33.9	1	
Approach LOS								D		
P APIOGOII EOO							İ			

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		O-WAY STOP					·		
General Information	<u> </u>		Site In	<u>ıformati</u>	on				
Analyst	JES		Interse			US 30 &	Smith Rd		
Agency/Co.	GME		Jurisdio				Straban Twp, Adams Co		
Date Performed	12/8/200		Analysi	s Year		2008 Build			
Analysis Time Period	Saturday	Peak Hour							
Project Description 12									
East/West Street: US R			North/S	outh Stree	et: Smith	Rd			
ntersection Orientation:	East-West		Study P	Period (hrs	s): 0.25				
Vehicle Volumes ar	nd Adjustme	nts		·					
Major Street	1	Eastbound				Westbou	ind		
Movement	1	2	3		4	5		6	
	L	T	R		L	T		R	
Volume (veh/h)	45	859				888		45	
Peak-Hour Factor, PHF	0.92	0.92	0.92		0.92	0.92		0.92	
Hourly Flow Rate, HFR veh/h)	48	933	0		0	965		48	
Percent Heavy Vehicles	0				0				
Median Type			Two N	/ay Left T	urn Lane				
RT Channelized			0					0	
anes	1	1	0		-0	1		1	
Configuration	L	Т				T		R	
Jpstream Signal		0				0			
Minor Street		Northbound				Southbou	ınd		
Movement	7	8	9		10	11		12	
	L	Ť	R		L	Т		R	
/olume (veh/h)					26			26	
Peak-Hour Factor, PHF	0.92	0.92	0.92		0.92	0.92		0.92	
Hourly Flow Rate, HFR veh/h)	0	0	0		28	0		28	
Percent Heavy Vehicles	0	0	0	 -	0	0		0	
Percent Grade (%)		0				0			
Flared Approach	 	T N				T N			
Storage		0	 			0			
RT Channelized		-	 			 			
			0					0	
Lanes	0		0		0	0		0	
Configuration						LR	<u> </u>		
Delay, Queue Length, a			,						
Approach	Eastbound	Westbound		lorthboun			outhbound	_	
Movement	1	4	7	8	9	10	11	12	
ane Configuration	L						LR		
/ (veh/h)	48						56		
C (m) (veh/h)	692						270		
r/c	0.07			-		-	0.21		
95% queue length	0.22				+	 	0.76	 	
		· · · · · · · · · · · · · · · · · · ·						-	
Control Delay (s/veh)	10.6				ļ		21.8	-	
_OS	В						С		
Approach Delay (s/veh)							21.8		
Approach LOS			1				С		

	TW	O-WAY STOP	CONTRO	DL SL	JMN	IARY			
General Information	1		Site In	form	atio	n	·		
Analyst	JES		Interse	ction			US 30 & S	mith Rd	
Agency/Co.	GME		Jurisdio	ction	<u>-</u>		Straban T		s Co
Date Performed	12/8/2005		Analysi	s Year	r		2018 Build	1	
Analysis Time Period	Saturday	Peak Hour							
Project Description 12									
East/West Street: US R						: Smith R	d		
Intersection Orientation:	East-West	·	Study P	eriod	(hrs):	0.25			
Vehicle Volumes ar	id Adjustmei								
Major Street		Eastbound					Westbour	nd	
Movement	11	2	3			4	5		6
N/ 1 (1- //-)	L	T	R			<u>L</u>	T		R
Volume (veh/h) Peak-Hour Factor, PHF	45	1175	0.00			0.92	1117		45
Hourly Flow Rate, HFR	0.92	0.92	0.92			0.92	0.92		0.92
(veh/h)	48	1277	0			0	1214		48
Percent Heavy Vehicles	0		0						
Median Type			Two V	/ay Le	ft Tui	rn Lane			
RT Channelized			0						0
Lanes	1	1	0			0	1		1
Configuration	L	T					T		R
Upstream Signal		0					0		
Minor Street		Northbound					Southbou	nd	
Movement	7	8	9			10	11		12
	L	_ T	R			L	Т		R
Volume (veh/h)						26			26
Peak-Hour Factor, PHF	0.92	0.92	0.92			0.92	0.92		0.92
Hourly Flow Rate, HFR (veh/h)	0	0	0			28	0		28
Percent Heavy Vehicles	0	0	0			0	0		0
Percent Grade (%)		0					0		
Flared Approach		N					N		
Storage		0					0		
RT Channelized			0						0
Lanes	0	0	0			0	0		0
Configuration							LR		
Delay, Queue Length, a	and Level of Se	rvice							
Approach	Eastbound	Westbound		Northb	ound		S	outhbound	<u> </u>
Movement	1	4	7	8		9	10	11	12
Lane Configuration	L							LR	
v (veh/h)	48							56	
C (m) (veh/h)	558					-		188	
v/c	0.09							0.30	
95% queue length	0.28							1.19	
Control Delay (s/veh)	12.1							32.1	
LOS	В							D	1
Approach Delay (s/veh)								32.1	
Approach LOS								D	
T-1			L						

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December 2005

Queue Analysis Calculations

QUEUE ANALYSIS

INTERSECTION: US Route 30 and Casino/Gateway Gettysburg Roadways

CYCLE LENGTH = 120 SEC 2018 Design Year - Weekday PM Build

Queue Capacity = L = [Volume x Cycle Length x 1 Hour/3600 seconds x 25 feet/1 vehicle x R][1 - G/C][1 + %T] G/C = Green Time to Capacity Ratio

%T = Percentage of Trucks

R = Random Arrival Factor (Desirable = 2.0, Minimum = 1.5) Reference: AASHTO Green Book, 1990, pp. 828-829

US Route 30 EB

MOVEMENT	VOLUME (VPH)	% TRUCKS	G/C RATIO	DES. STORAGE LENGTH REQ'D (FEET)	MIN. STORAGE LENGTH REQ'D (FEET)
LEFT	334	0	0.14	479	359
THRU	863	3	0.31	1022	767
RIGHT	380	0	0.47	336	252

US Route 30 WB

				LENGTH	MIN. STORAGE LENGTH
MOVEMENT	VOLUME (VPH)	% TRUCKS	G/C RATIO	REQ'D (FEET)	REQ'D (FEET)
LEFT	162	0	0.14	232	174
THRU	988	3	0.31	1170	878
RIGHT	103	0	0.47	91	68

Gateway Gettysburg Roadway NB

MOVEMENT	VOLUME	% TDL/0/0	G/C	LENGTH REQ'D	MIN. STORAGE LENGTH REQ'D
MOVEMENT	(VPH)	TRUCKS	RATIO	(FEET)	(FEET)
LEFT	823	0	0.28	988	741
THRU	26	0	0.24	33	25
RIGHT	353	0	0.43	335	252

Casino Roadway SB

MOVEMENT	VOLUME (VPH)	% TRUCKS	G/C RATIO	DES. STORAGE LENGTH REQ'D (FEET)	MIN. STORAGE LENGTH REQ'D (FEET)	
LEFT	80	0	0.11	119	89	
THRU	20	0	0.08	31	23	
RIGHT	261	0	0.26	322	241	

jes 12/08/2005

QUEUE ANALYSIS

INTERSECTION: US Route 30 and Casino/Gateway Gettysburg Roadways

CYCLE LENGTH = 120 SEC 2018 Design Year - Saturday Build

Queue Capacity = L = [Volume x Cycle Length x 1 Hour/3600 seconds x 25 feet/1 vehicle x R][1 - G/C][1 + %T]

MIN

G/C = Green Time to Capacity Ratio

%T = Percentage of Trucks

R = Random Arrival Factor (Desirable = 2.0, Minimum = 1.5)
Reference: AASHTO Green Book, 1990, pp. 828-829

US Route 30 EB

MOVEMENT	VOLUME (VPH)	% TRUCKS	G/C RATIO	DES. STORAGE LENGTH REQ'D (FEET)	MIN. STORAGE LENGTH REQ'D (FEET)
LEFT	581	0	0.14	833	625
THRU	762	3	0.31	903	677
RIGHT	380	0	0.47	336	252

US Route 30 WB

MOVEMENT	VOLUME (VPH)	% TRUCKS	G/C RATIO	DES. STORAGE LENGTH REQ'D (FEET)	MIN. STORAGE LENGTH REQ'D (FEET)	
LEFT	162	0	0.14	232	174	
THRU	802	3	0.31	950	712	
RIGHT	179	0	0.47	158	119	

Gateway Gettysburg Roadway NB

				DEG.	IVIIIA.	
				STORAGE	STORAGE	
				LENGTH	LENGTH	
	VOLUME	%	G/C	REQ'D	REQ'D	
MOVEMENT	(VPH)	TRUCKS	RATIO	(FEET)	(FEET)	
		========	======		=======	
LEFT	823	0	0.28	988	741	
THRU	45	0	0.24	57	43	
RIGHT	353	0	0.43	335	252	

Casino Roadway SB

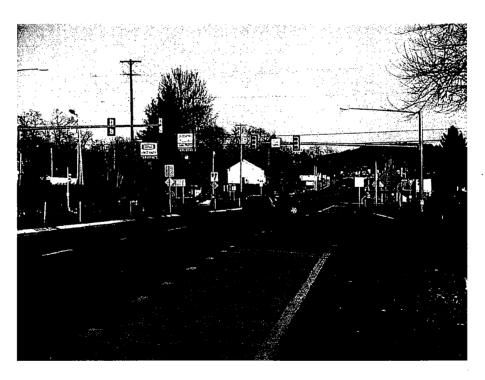
				DES.	MIN.
				STORAGE	STORAGE
				LENGTH	LENGTH
	VOLUME	%	G/C	REQ'D	REQ'D
MOVEMENT	(VPH)	TRUCKS	RATIO	(FEET)	(FEET)
=========				=======	=======
LEFT	105	0	0.11	156	117
THRU	26	0	0.08	40	30
RIGHT	342	0	0.26	422	316

jes 12/08/2005

Study Area Photographs



US Route 30 looking eastbound at US Route 15 Southbound ramps



US Route 30 looking eastbound at US Route 15 Northbound Ramps.