C. EXISTING CAPACITY ANALYSIS

AM

SHORT REPORT

General Information		Site Information	
Analyst	EJD	Intersection	1-SR 0209 / River Rd / SR 1016
Agency or Co.	HRG, Inc.	Area Type	All other areas
Date Performed	5/14/07	Jurisdiction	Middle Smithfield Twp
Time Period	AM Peak Hour	Analysis Year	2007 Existing

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Lane Group	L	TR		L	TR		L	TR		L	TR	
Volume (vph)	113	312	20	42	415	17	10	9	45	25	24	243
% Heavy Vehicles	16	11	9	8	4	27	9	24	12	24	19	5
PHF	0.87	0.87	0.87	0.93	0.93	0.93	0.66	0.66	0.66	0.92	0.92	0.92
Pretimed/Actuated (P/A)	A	A	A	A	A	A	A	A	A	A	A	A
Startup Lost Time	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	
Arrival Type	3	3		3	3		3	3		3	3	
Unit Extension	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Ped/Bike/RTOR Volume	0	0	5	0	0	4	0	0	15	0	0	100
Lane Width	12.0	12.0		12.0	12.0		12.0	14.0		12.0	12.0	
Parking/Grade/Parking	N	-5	N	N	0	N	N	-5	N	N	5	N
Parking/Hour												
Bus Stops/Hour	0	0		0	0		0	0		0	0	
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	Excl. Left	EW Perm	03	04	NS Perm	06	07	08
Timing	G = 14.0	G = 39.0	G =	G =	G = 19.0	G =	G =	G =
	Y = 6	Y = 6	Y =	Y =	Y = 6	Y =	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 90.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	130	376		45	460		15	59		27	181	
Lane Group Capacity	504	756		592	783		218	338		227	319	

v/c Ratio	0.26	0.50		0.08	0.59		0.07	0.17		0.12	0.57	
Green Ratio	0.66	0.43		0.66	0.43		0.21	0.21		0.21	0.21	
Uniform Delay d_1	7.8	18.4		6.5	19.4		28.4	29.1		28.7	31.8	
Delay Factor k	0.11	0.11		0.11	0.18		0.11	0.11		0.11	0.16	
Incremental Delay d_2	0.3	0.5		0.1	1.2		0.1	0.2		0.2	2.4	
PF Factor	1.000	1.000		1.000	1.000		1.000	1.000		1.000	1.000	
Control Delay	8.1	18.9		6.6	20.5		28.6	29.3		29.0	34.2	
Lane Group LOS	A	B		A	C		C	C		C	C	
Approach Delay	16.2			19.3			29.2			33.5		
Approach LOS	B			B			C			C		
Intersection Delay	20.9			Intersection LOS						C		

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TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	EJD
Agency/Co.	HRG, Inc.
Date Performed	5/14/2007
Analysis Time Period	AM Peak Hour

Site Information

Intersection	2-SR 0209 / Service Driveway
Jurisdiction	Middle Smithfield Township
Analysis Year	2007 Existing

Project Description: 2773.065 - Fernwood Hotel and Casino

East/West Street: SR 0209 | North/South Street: Fernwood Service Driveway

Intersection Orientation: East-West | Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	19	361			458	2
Peak-Hour Factor, PHF	0.82	0.82	0.82	0.91	0.91	0.91
Hourly Flow Rate, HFR (veh/h)	23	440	0	0	503	2
Percent Heavy Vehicles	8	--	--	0	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration	LT					TR
Upstream Signal		1			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)				3		10
Peak-Hour Factor, PHF	1.00	1.00	1.00	0.65	0.65	0.65
Hourly Flow Rate, HFR (veh/h)	0	0	0	4	0	15
Percent Heavy Vehicles	0	0	0	20	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, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LT						LR	
v (veh/h)	23						19	
C (m) (veh/h)	1029						448	
v/c	0.02						0.04	
95% queue length	0.07						0.13	
Control Delay (s/veh)	8.6						13.4	
LOS	A						B	

Approach Delay (s/veh)	--	--		*13.4*
Approach LOS	--	--		*B*

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TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	EJD
Agency/Co.	HRG, Inc.
Date Performed	5/14/2007
Analysis Time Period	AM Peak Hour

Site Information

Intersection	3-SR 0209 / Main Driveway
Jurisdiction	Middle Smithfield Township
Analysis Year	2007 Existing

Project Description 2773.065 - Fernwood Hotel and Casino

East/West Street: SR 0209 | North/South Street: Fernwood Main Driveway

Intersection Orientation: East-West | Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	27	343			470	4
Peak-Hour Factor, PHF	0.93	0.93	0.93	0.88	0.88	0.88
Hourly Flow Rate, HFR (veh/h)	29	368	0	0	534	4
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	1	1	0	0	1	0
Configuration	L	T				TR
Upstream Signal		1			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)						
Peak-Hour Factor, PHF	0.25	0.25	0.25	0.25	0.25	0.25
Hourly Flow Rate, HFR (veh/h)	0	0	0	0	0	0
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						

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L							
v (veh/h)	29							
C (m) (veh/h)	1040							
v/c	0.03							
95% queue length	0.09							
Control Delay (s/veh)	8.6							
LOS	A							

Approach Delay (s/veh)	--	--		
Approach LOS	--	--		

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TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	EJD
Agency/Co.	HRG, Inc.
Date Performed	5/14/2007
Analysis Time Period	AM Peak Hour

Site Information

Intersection	4-SR 0209 / East Driveway
Jurisdiction	Middle Smithfield Township
Analysis Year	2007 Existing

Project Description 2773.065 - Fernwood Hotel and Casino

East/West Street: SR 0209 | North/South Street: Fernwood East Driveway

Intersection Orientation: East-West | Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	6	274	8	1	384	4
Peak-Hour Factor, PHF	0.78	0.78	0.78	0.94	0.94	0.94
Hourly Flow Rate, HFR (veh/h)	7	351	10	1	408	4
Percent Heavy Vehicles	25	--	--	0	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	1	1	0	1	1	0
Configuration	L		TR	L		TR
Upstream Signal		1			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	2	1	1	5	1	30
Peak-Hour Factor, PHF	0.25	0.25	0.25	0.50	0.50	0.50
Hourly Flow Rate, HFR (veh/h)	8	4	4	10	2	60
Percent Heavy Vehicles	50	0	0	29	100	17
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration		LTR			LTR	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L	L		LTR			LTR	
v (veh/h)	7	1		16			72	
C (m) (veh/h)	1033	1209		295			502	
v/c	0.01	0.00		0.05			0.14	
95% queue length	0.02	0.00		0.17			0.50	
Control Delay (s/veh)	8.5	8.0		17.9			13.4	
LOS	A	A		C			B	

Approach Delay (s/veh)	--	--	17.9	13.4
Approach LOS	--	--	C	B

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PM

SHORT REPORT

General Information		Site Information	
Analyst	EJD	Intersection	1-SR 0209 / River Rd/ SR 1016
Agency or Co.	HRG, Inc.	Area Type	All other areas
Date Performed	5/14/2007	Jurisdiction	Middle Smithfield Twp
Time Period	PM Peak Hour	Analysis Year	2007 Existing

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Lane Group	L	TR		L	TR		L	TR		L	TR	
Volume (vph)	308	500	38	65	435	28	36	36	75	20	11	154
% Heavy Vehicles	2	2	3	8	6	7	0	5	5	22	5	6
PHF	0.91	0.91	0.91	0.92	0.92	0.92	0.81	0.81	0.81	0.95	0.95	0.95
Pretimed/Actuated (P/A)	A	A	A	A	A	A	A	A	A	A	A	A
Startup Lost Time	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	
Arrival Type	3	3		3	3		3	3		3	3	
Unit Extension	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Ped/Bike/RTOR Volume	0	0	10	0	0	8	0	0	25	0	0	58
Lane Width	12.0	12.0		12.0	12.0		12.0	14.0		12.0	12.0	
Parking/Grade/Parking	N	-5	N	N	0	N	N	-5	N	N	5	N
Parking/Hour												
Bus Stops/Hour	0	0		0	0		0	0		0	0	
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	Excl. Left	EW Perm	03	04	NS Perm	06	07	08
Timing	G = 16.0	G = 36.0	G =	G =	G = 20.0	G =	G =	G =
	Y = 6	Y = 6	Y =	Y =	Y = 6	Y =	Y =	Y =

Duration of Analysis (hrs) = 0.25 | Cycle Length C = 90.0

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	338	580		71	495		44	106		21	113	
Lane Group Capacity	542	757		439	712		296	401		232	337	

v/c Ratio	0.62	0.77		0.16	0.70		0.15	0.26		0.09	0.34	
Green Ratio	0.64	0.40		0.64	0.40		0.22	0.22		0.22	0.22	
Uniform Delay d_1	10.7	23.4		10.0	22.4		28.2	28.9		27.8	29.4	
Delay Factor k	0.21	0.32		0.11	0.26		0.11	0.11		0.11	0.11	
Incremental Delay d_2	2.2	4.7		0.2	3.0		0.2	0.4		0.2	0.6	
PF Factor	1.000	1.000		1.000	1.000		1.000	1.000		1.000	1.000	
Control Delay	12.9	28.1		10.1	25.4		28.4	29.3		28.0	30.0	
Lane Group LOS	B	C		B	C		C	C		C	C	
Approach Delay	22.5			23.5			29.0			29.7		
Approach LOS	C			C			C			C		
Intersection Delay	23.9			Intersection LOS						C		

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TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	EJD
Agency/Co.	HRG, Inc.
Date Performed	5/14/2007
Analysis Time Period	PM Peak Hour

Site Information

Intersection	2-SR 0209 / Service Driveway
Jurisdiction	Middle Smithfield Township
Analysis Year	2007 Existing

Project Description: 2773.065 - Fernwood Hotel and Casino

East/West Street: SR 0209 | North/South Street: Fernwood Service Driveway

Intersection Orientation: East-West | Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	9	574			508	3
Peak-Hour Factor, PHF	0.89	0.89	0.89	0.91	0.91	0.91
Hourly Flow Rate, HFR (veh/h)	10	644	0	0	558	3
Percent Heavy Vehicles	5	--	--	0	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration	LT					TR
Upstream Signal		1			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)				5		19
Peak-Hour Factor, PHF	1.00	1.00	1.00	0.48	0.48	0.48
Hourly Flow Rate, HFR (veh/h)	0	0	0	10	0	39
Percent Heavy Vehicles	0	0	0	14	0	7
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, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LT						LR	
v (veh/h)	10						49	
C (m) (veh/h)	995						379	
v/c	0.01						0.13	
95% queue length	0.03						0.44	
Control Delay (s/veh)	8.7						15.9	
LOS	A						C	

Approach Delay (s/veh)	--	--		*15.9*
Approach LOS	--	--		*C*

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TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	EJD
Agency/Co.	HRG, Inc.
Date Performed	5/14/2007
Analysis Time Period	PM Peak Hour

Site Information

Intersection	3-SR 0209 / Main Driveway
Jurisdiction	Middle Smithfield Township
Analysis Year	2007 Existing

Project Description: 2773.065 - Fernwood Hotel and Casino

East/West Street: SR 0209 | North/South Street: Fernwood Main Driveway

Intersection Orientation: East-West | Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	37	512			492	7
Peak-Hour Factor, PHF	0.92	0.92	0.92	0.89	0.89	0.89
Hourly Flow Rate, HFR (veh/h)	40	556	0	0	552	7
Percent Heavy Vehicles	2	--	--	0	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	1	1	0	0	1	0
Configuration	L	T				TR
Upstream Signal		1			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)						
Peak-Hour Factor, PHF	0.25	0.25	0.25	0.25	0.25	0.25
Hourly Flow Rate, HFR (veh/h)	0	0	0	0	0	0
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						

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L							
v (veh/h)	40							
C (m) (veh/h)	1012							
v/c	0.04							
95% queue length	0.12							
Control Delay (s/veh)	8.7							
LOS	A							

Approach Delay (s/veh)	--	--		
Approach LOS	--	--		

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TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	EJD
Agency/Co.	HRG, Inc.
Date Performed	5/14/2007
Analysis Time Period	PM Peak Hour

Site Information

Intersection	4-SR 0209 / East Driveway
Jurisdiction	Middle Smithfield Township
Analysis Year	2007 Existing

Project Description 2773.065 - Fernwood Hotel and Casino

East/West Street: SR 0209 | North/South Street: Fernwood East Driveway

Intersection Orientation: East-West | Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	7	489	18	2	458	4
Peak-Hour Factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Hourly Flow Rate, HFR (veh/h)	7	514	18	2	482	4
Percent Heavy Vehicles	18	--	--	0	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	1	1	0	1	1	0
Configuration	L		TR	L		TR
Upstream Signal		1			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	7	1	3	4	5	51
Peak-Hour Factor, PHF	0.46	0.46	0.46	0.69	0.69	0.69
Hourly Flow Rate, HFR (veh/h)	15	2	6	5	7	73
Percent Heavy Vehicles	0	0	0	0	0	10
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration		LTR			LTR	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L	L		LTR			LTR	
v (veh/h)	7	2		23			85	
C (m) (veh/h)	999	1046		215			465	
v/c	0.01	0.00		0.11			0.18	
95% queue length	0.02	0.01		0.35			0.66	
Control Delay (s/veh)	8.6	8.4		23.7			14.5	
LOS	A	A		C			B	

Approach Delay (s/veh)	--	--	23.7	14.5
Approach LOS	--	--	C	B

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D. TRIP GENERATION

Memorandum

Date: November 6, 2005

To: Paul Menichello
Christopher McDermott, P.E.
Herbert, Rowland & Grubic, Inc.

From: Denis J. Finigan
Urban Stystems, Inc

Subject: Fernwood Gaming Trip Generation Estimates

Introduction

This document has been prepared to develop vehicle trip generation estimates for a 500 slot machine gaming facility to be developed at the existing Fernwood Resort in Bushkill, Pennsylvania. In addition to the gaming facility, roughly 23,500 s.f. of gaming floor area, a 9000 s.f. Hard Rock Café restaurant will be developed.

Trip Generation Estimates

The estimation of vehicle trip generation rates for this facility is complicated by the variances in the data available for casino facilities and large variances in the location and characteristics of both casinos as land uses and the market in which they operate.

The vehicle trip rates and equations published by the Institute of Transportation Engineers, ITE, in the informational report *Trip Generation* are widely accepted for most land use categories. However the information regarding casinos in this report is limited and does not apply to most facilities.

Much of the published research to date has been conducted in Las Vegas, an environment that is unlike any other area of the country. The estimation of traffic impacts for casinos is still in the developmental stage and the data available varies widely due to the numerous variations in casino facilities. A standard single independent variable has not been established.

For purposes of this analysis, pro forma data regarding gaming visits will be used to estimate customer vehicle trip demand. Urban Systems has developed a model that converts annual gaming visits to monthly, daily and hourly person trip demand using data collected at casino land uses in a number of markets. Inputs used to develop the model include proprietary data regarding customer entry /exit patterns, time of day and day of week slot occupancy data and parking facility occupancy and turn-over data.

Trip generation estimates for the Café will be made using ITE data reported for Land Use Number 920, High Turnover (Sit Down) Restaurant.

Employee trips will be estimated based upon the number of employees, 140, and typical casino staffing and shift characteristics.

Gaming Customer Demand

The Innovation Group completed a gaming market assessment for a 500 device slot facility at the Fernwood Resort. A total of 437,100 gaming visits are projected. Of that total, roughly 145,000 or one third, are expected to be internal trips and the remainder, approximately 292,100 visits, are external trips and that are assumed to generate a vehicular trip.

Annual gaming visits, or person trips to the site, will be converted to daily and hourly person trip demand and used to estimate vehicle trip demand.

Based upon an annual demand of 292,100 visits, external person trip demand on a weekday during an average month would be estimated at 570 person trips per day. On a Saturday during an average month, 1420 visits would be expected. During a peak month, 680 and 1700 visits, respectively, would be expected. Table 1 summarizes estimated customer trip demand under each scenario.

Table 1
Person Trip Demand

	Average Month	Peak Month
Weekday	570	680
Saturday	1420	1700

Person trip demand is converted to vehicle trip estimates using mode of access and vehicle loading assumptions.

For purposes of this analysis it will be assumed that 100% of the external trips to the site will be made by automobile. An auto load factor of 1.8 persons per vehicle will be

assumed for weekdays and 2.0 persons per vehicle for weekends. Table 2 summarizes auto trip demand using these assumptions.

Table 2
Daily Auto Trips to Site

	Average Month	Peak Month
Weekday	320	380
Saturday	710	850

Each auto trip to the site involves an entry and an exit trip end. On weekdays, during an average month, 640 vehicle trip ends are projected and during a peak month, 760 vehicle trip ends are projected. On Saturdays, typically the highest demand day for casino uses, 1420 and 1700 vehicle trip ends, respectively, are estimated.

Table 3 was prepared by applying casino entry and exit activity characteristics to daily vehicle trip estimates.

Table 3
Design Hour Vehicle Trip Estimates

	AM Peak	PM Peak	Saturday Mid-day
Average Month	20	40	110
Peak Month	25	50	130

A review of Table 3 indicates relatively low incremental demand resulting from the development of 500 slots at the site. As would be expected, highest demand is anticipated on a Saturday during a peak activity month.

Café Demand

Estimation of vehicle trip demand for the Hard Rock Café was made using ITE trip generation rates and adjusting for internal trips and shared café / gaming trips. For purposes of this analysis it is assumed that two thirds of the restaurant trips are external and one third are internal.

Table 4
Vehicle Trip Estimates: 9000 s.f. Café

Daily	AM Peak Hour	PM Peak Hour
770	70	65

A review and analysis of Table 4 indicates relatively high demand during the AM peak hour. Given the operating characteristics of a typical Hard Rock Café actual demand might be expected to be higher during the PM peak hour.

Employee Trips

It is estimated that 140 full time employment positions will result from the proposed project. On an average day, it can be estimated that 100 employees would be on site. This results in an estimated 40 vehicle trips to the site during the AM peak period and 60 vehicle trips to the site during the PM peak hour. This estimate assumes that all employees will park on-site.

Summary

Each vehicle trip demand component was summed to estimate weekday AM and PM peak hour vehicle trip demand. Table 5 presents a summary of vehicle trip demand. Estimates presented for casino demand reflect activity during a peak month.

Table 5
AM and PM Peak Hour Demand Estimates

Demand	AM Peak Hour		PM Peak Hour	
	In	Out	In	Out
Casino	17	8	25	25
Café	37	33	40	25
Employee	31	17	36	31
	85	58	101	81

E. 2008 WITHOUT DEVELOPMENT CAPACITY ANALYSIS

AM

SHORT REPORT

General Information		Site Information	
Analyst	EJD	Intersection	1-SR 0209 / River Rd / SR 1016
Agency or Co.	HRG, Inc.	Area Type	All other areas
Date Performed	5/22/07	Jurisdiction	Middle Smithfield Twp
Time Period	AM Peak Hour	Analysis Year	2008 Without Development

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Lane Group	L	TR		L	TR		L	TR		L	TR	
Volume (vph)	115	317	20	43	422	17	10	9	46	25	24	247
% Heavy Vehicles	16	11	9	8	4	27	9	24	12	24	19	5
PHF	0.87	0.87	0.87	0.93	0.93	0.93	0.66	0.66	0.66	0.92	0.92	0.92
Pretimed/Actuated (P/A)	A	A	A	A	A	A	A	A	A	A	A	A
Startup Lost Time	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	
Arrival Type	3	3		3	3		3	3		3	3	
Unit Extension	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Ped/Bike/RTOR Volume	0	0	5	0	0	4	0	0	15	0	0	100
Lane Width	12.0	12.0		12.0	12.0		12.0	14.0		12.0	12.0	
Parking/Grade/Parking	N	-5	N	N	0	N	N	-5	N	N	5	N
Parking/Hour												
Bus Stops/Hour	0	0		0	0		0	0		0	0	
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	Excl. Left	EW Perm	03	04	NS Perm	06	07	08
Timing	G = 4.0	G = 26.0	G =	G =	G = 12.0	G =	G =	G =
	Y = 6	Y = 6	Y =	Y =	Y = 6	Y =	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 60.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	132	381		46	468		15	61		27	186	
Lane Group Capacity	383	756		470	783		229	320		214	302	

v/c Ratio	0.34	0.50		0.10	0.60		0.07	0.19		0.13	0.62	
Green Ratio	0.60	0.43		0.60	0.43		0.20	0.20		0.20	0.20	
Uniform Delay d_1	6.6	12.3		5.7	13.0		19.5	20.0		19.7	21.9	
Delay Factor k	0.11	0.11		0.11	0.19		0.11	0.11		0.11	0.20	
Incremental Delay d_2	0.5	0.5		0.1	1.3		0.1	0.3		0.3	3.7	
PF Factor	1.000	1.000		1.000	1.000		1.000	1.000		1.000	1.000	
Control Delay	7.2	12.9		5.8	14.3		19.6	20.3		20.0	25.6	
Lane Group LOS	A	B		A	B		B	C		B	C	
Approach Delay	11.4			13.5			20.1			24.9		
Approach LOS	B			B			C			C		
Intersection Delay	14.9			Intersection LOS						B		

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TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	EJD
Agency/Co.	HRG, Inc.
Date Performed	5/22/2007
Analysis Time Period	AM Peak Hour

Site Information

Intersection	2-SR 0209 / Service Driveway
Jurisdiction	Middle Smithfield Township
Analysis Year	2008 Without Development

Project Description: 2773.065 - Fernwood Hotel and Casino

East/West Street: SR 0209 | North/South Street: Fernwood Service Driveway

Intersection Orientation: East-West | Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	19	367			465	2
Peak-Hour Factor, PHF	0.82	0.82	0.82	0.91	0.91	0.91
Hourly Flow Rate, HFR (veh/h)	23	447	0	0	510	2
Percent Heavy Vehicles	8	--	--	0	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration	LT					TR
Upstream Signal		1			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)				3		10
Peak-Hour Factor, PHF	1.00	1.00	1.00	0.65	0.65	0.65
Hourly Flow Rate, HFR (veh/h)	0	0	0	4	0	15
Percent Heavy Vehicles	0	0	0	20	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, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LT						LR	
v (veh/h)	23						19	
C (m) (veh/h)	1023						442	
v/c	0.02						0.04	
95% queue length	0.07						0.13	
Control Delay (s/veh)	8.6						13.5	

LOS	A							B	
Approach Delay (s/veh)	--	--					13.5		
Approach LOS	--	--					B		

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TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	EJD
Agency/Co.	HRG, Inc.
Date Performed	5/22/2007
Analysis Time Period	AM Peak Hour

Site Information

Intersection	3-SR 0209 / Main Driveway
Jurisdiction	Middle Smithfield Township
Analysis Year	2008 Without Development

Project Description: 2773.065 - Fernwood Hotel and Casino

East/West Street: SR 0209 | North/South Street: Fernwood Main Driveway

Intersection Orientation: East-West | Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	27	348			478	4
Peak-Hour Factor, PHF	0.93	0.93	0.93	0.88	0.88	0.88
Hourly Flow Rate, HFR (veh/h)	29	374	0	0	543	4
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	1	1	0	0	1	0
Configuration	L	T				TR
Upstream Signal		1			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)						
Peak-Hour Factor, PHF	0.25	0.25	0.25	0.25	0.25	0.25
Hourly Flow Rate, HFR (veh/h)	0	0	0	0	0	0
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						

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L							
v (veh/h)	29							
C (m) (veh/h)	1033							
v/c	0.03							
95% queue length	0.09							
Control Delay (s/veh)	8.6							

LOS	*A*										
Approach Delay (s/veh)	--	--									
Approach LOS	--	--									

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TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	EJD
Agency/Co.	HRG, Inc.
Date Performed	5/22/2007
Analysis Time Period	AM Peak Hour

Site Information

Intersection	4-SR 0209 / East Driveway
Jurisdiction	Middle Smithfield Township
Analysis Year	2008 Without Development

Project Description: 2773.065 - Fernwood Hotel and Casino

East/West Street: SR 0209 | North/South Street: Fernwood East Driveway

Intersection Orientation: East-West | Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	6	278	8	1	390	4
Peak-Hour Factor, PHF	0.78	0.78	0.78	0.94	0.94	0.94
Hourly Flow Rate, HFR (veh/h)	7	356	10	1	414	4
Percent Heavy Vehicles	25	--	--	0	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	1	1	0	1	1	0
Configuration	L		TR	L		TR
Upstream Signal		1			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	2	1	1	5	1	30
Peak-Hour Factor, PHF	0.25	0.25	0.25	0.50	0.50	0.50
Hourly Flow Rate, HFR (veh/h)	8	4	4	10	2	60
Percent Heavy Vehicles	50	0	0	29	100	17
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration		LTR			LTR	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L	L		LTR			LTR	
v (veh/h)	7	1		16			72	
C (m) (veh/h)	1028	1204		289			496	
v/c	0.01	0.00		0.06			0.15	
95% queue length	0.02	0.00		0.17			0.50	
Control Delay (s/veh)	8.5	8.0		18.2			13.5	

PM

SHORT REPORT

General Information		Site Information	
Analyst	EJD	Intersection	1-SR 0209 / River Rd/ SR 1016
Agency or Co.	HRG, Inc.	Area Type	All other areas
Date Performed	5/22/2007	Jurisdiction	Middle Smithfield Twp
Time Period	PM Peak Hour	Analysis Year	2008 Without Development

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Lane Group	L	TR		L	TR		L	TR		L	TR	
Volume (vph)	313	508	39	66	442	28	37	37	76	20	11	156
% Heavy Vehicles	2	2	3	8	6	7	0	5	5	22	5	6
PHF	0.91	0.91	0.91	0.92	0.92	0.92	0.81	0.81	0.81	0.95	0.95	0.95
Pretimed/Actuated (P/A)	A	A	A	A	A	A	A	A	A	A	A	A
Startup Lost Time	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	
Arrival Type	3	3		3	3		3	3		3	3	
Unit Extension	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Ped/Bike/RTOR Volume	0	0	10	0	0	8	0	0	25	0	0	58
Lane Width	12.0	12.0		12.0	12.0		12.0	14.0		12.0	12.0	
Parking/Grade/Parking	N	-5	N	N	0	N	N	-5	N	N	5	N
Parking/Hour												
Bus Stops/Hour	0	0		0	0		0	0		0	0	
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	Excl. Left	EW Perm	03	04	NS Perm	06	07	08
Timing	G = 5.0	G = 40.0	G =	G =	G = 13.0	G =	G =	G =
	Y = 6	Y = 6	Y =	Y =	Y = 6	Y =	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 76.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	344	590		72	502		46	109		21	115	
Lane Group Capacity	505	996		401	937		228	309		178	259	

v/c Ratio	0.68	0.59		0.18	0.54		0.20	0.35		0.12	0.44	
Green Ratio	0.67	0.53		0.67	0.53		0.17	0.17		0.17	0.17	
Uniform Delay d_1	11.9	12.4		6.5	11.9		27.0	27.8		26.6	28.3	
Delay Factor k	0.25	0.18		0.11	0.14		0.11	0.11		0.11	0.11	
Incremental Delay d_2	3.7	1.0		0.2	0.6		0.4	0.7		0.3	1.2	
PF Factor	1.000	1.000		1.000	1.000		1.000	1.000		1.000	1.000	
Control Delay	15.6	13.3		6.7	12.5		27.5	28.5		26.9	29.5	
Lane Group LOS	B	B		A	B		C	C		C	C	
Approach Delay	14.2			11.8			28.2			29.1		
Approach LOS	B			B			C			C		
Intersection Delay	15.7			Intersection LOS						B		

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TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	EJD
Agency/Co.	HRG, Inc.
Date Performed	5/22/2007
Analysis Time Period	PM Peak Hour

Site Information

Intersection	2-SR 0209 / Service Driveway
Jurisdiction	Middle Smithfield Township
Analysis Year	2008 Without Development

Project Description: 2773.065 - Fernwood Hotel and Casino

East/West Street: SR 0209 | North/South Street: Fernwood Service Driveway

Intersection Orientation: East-West | Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	9	583			516	3
Peak-Hour Factor, PHF	0.89	0.89	0.89	0.91	0.91	0.91
Hourly Flow Rate, HFR (veh/h)	10	655	0	0	567	3
Percent Heavy Vehicles	5	–	–	0	–	–
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration	LT					TR
Upstream Signal		1			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)				5		19
Peak-Hour Factor, PHF	1.00	1.00	1.00	0.48	0.48	0.48
Hourly Flow Rate, HFR (veh/h)	0	0	0	10	0	39
Percent Heavy Vehicles	0	0	0	14	0	7
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, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LT						LR	
v (veh/h)	10						49	
C (m) (veh/h)	988						372	
v/c	0.01						0.13	
95% queue length	0.03						0.45	
Control Delay (s/veh)	8.7						16.1	

LOS	A									C		
Approach Delay (s/veh)	--	--								16.1		
Approach LOS	--	--								C		

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TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	EJD
Agency/Co.	HRG, Inc.
Date Performed	5/22/2007
Analysis Time Period	PM Peak Hour

Site Information

Intersection	3-SR 0209 / Main Driveway
Jurisdiction	Middle Smithfield Township
Analysis Year	2008 Without Development

Project Description: 2773.065 - Fernwood Hotel and Casino

East/West Street: SR 0209 | North/South Street: Fernwood Main Driveway

Intersection Orientation: East-West | Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	38	520			500	7
Peak-Hour Factor, PHF	0.92	0.92	0.92	0.89	0.89	0.89
Hourly Flow Rate, HFR (veh/h)	41	565	0	0	561	7
Percent Heavy Vehicles	2	--	--	0	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	1	1	0	0	1	0
Configuration	L	T				TR
Upstream Signal		1			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)						
Peak-Hour Factor, PHF	0.25	0.25	0.25	0.25	0.25	0.25
Hourly Flow Rate, HFR (veh/h)	0	0	0	0	0	0
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						

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L							
v (veh/h)	41							
C (m) (veh/h)	1004							
v/c	0.04							
95% queue length	0.13							
Control Delay (s/veh)	8.7							

LOS	*A*			
Approach Delay (s/veh)	--	--		
Approach LOS	--	--		

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TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	EJD
Agency/Co.	HRG, Inc.
Date Performed	5/22/2007
Analysis Time Period	PM Peak Hour

Site Information

Intersection	4-SR 0209 / East Driveway
Jurisdiction	Middle Smithfield Township
Analysis Year	2008 Without Development

Project Description: 2773.065 - Fernwood Hotel and Casino

East/West Street: SR 0209 | North/South Street: Fernwood East Driveway

Intersection Orientation: East-West | Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	7	497	18	2	465	4
Peak-Hour Factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Hourly Flow Rate, HFR (veh/h)	7	523	18	2	489	4
Percent Heavy Vehicles	18	--	--	0	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	1	1	0	1	1	0
Configuration	L		TR	L		TR
Upstream Signal		1			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	7	1	3	4	5	52
Peak-Hour Factor, PHF	0.46	0.46	0.46	0.69	0.69	0.69
Hourly Flow Rate, HFR (veh/h)	15	2	6	5	7	75
Percent Heavy Vehicles	0	0	0	0	0	10
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration		LTR			LTR	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L	L		LTR			LTR	
v (veh/h)	7	2		23			87	
C (m) (veh/h)	993	1038		209			461	
v/c	0.01	0.00		0.11			0.19	
95% queue length	0.02	0.01		0.37			0.69	
Control Delay (s/veh)	8.7	8.5		24.3			14.6	

LOS	A	A	C	B
Approach Delay (s/veh)	--	--	24.3	14.6
Approach LOS	--	--	C	B

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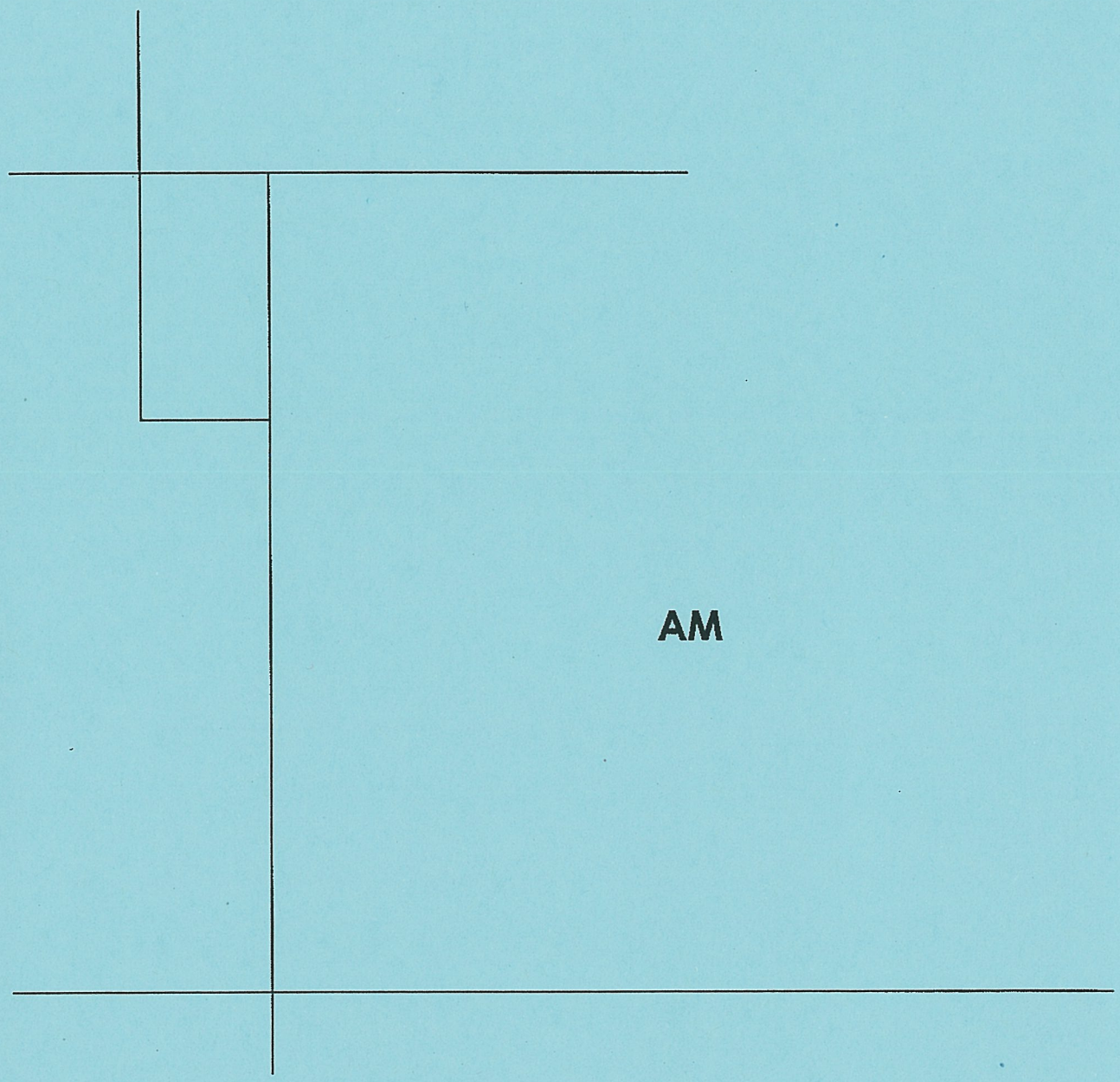
F. 2008 WITH DEVELOPMENT CAPACITY ANALYSIS


AM

SHORT REPORT

General Information		Site Information	
Analyst	EJD DJT	Intersection	1-SR 0209 / River Rd / SR 1016
Agency or Co.	HRG, Inc.	Area Type	All other areas
Date Performed	5/22/07	Jurisdiction	Middle Smithfield Twp
Time Period	AM Peak Hour	Analysis Year	2008 With Development

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Lane Group	L	TR		L	TR		L	TR		L	TR	
Volume (vph)	115	376	20	48	462	18	10	9	53	27	24	247
% Heavy Vehicles	16	11	9	8	4	27	9	24	12	24	19	5
PHF	0.87	0.87	0.87	0.93	0.93	0.93	0.66	0.66	0.66	0.92	0.92	0.92
Pretimed/Actuated (P/A)	A	A	A	A	A	A	A	A	A	A	A	A
Startup Lost Time	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	
Arrival Type	3	3		3	3		3	3		3	3	
Unit Extension	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Ped/Bike/RTOR Volume	0	0	5	0	0	4	0	0	15	0	0	100
Lane Width	12.0	12.0		12.0	12.0		12.0	14.0		12.0	12.0	
Parking/Grade/Parking	N	-5	N	N	0	N	N	-5	N	N	5	N
Parking/Hour												
Bus Stops/Hour	0	0		0	0		0	0		0	0	
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	Excl. Left	EW Perm	03	04	NS Perm	06	07	08
Timing	G = 4.0	G = 28.0	G =	G =	G = 15.0	G =	G =	G =
	Y = 6	Y = 6	Y =	Y =	Y = 6	Y =	Y =	Y =

Duration of Analysis (hrs) = 0.25 | Cycle Length C = 65.0

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	132	449		52	512		15	72		29	186	
Lane Group Capacity	334	752		399	778		264	369		245	348	

v/c Ratio	0.40	0.60		0.13	0.66		0.06	0.20		0.12	0.53	
Green Ratio	0.58	0.43		0.58	0.43		0.23	0.23		0.23	0.23	
Uniform Delay d_1	8.1	14.2		7.0	14.7		19.5	20.1		19.8	21.9	
Delay Factor k	0.11	0.19		0.11	0.23		0.11	0.11		0.11	0.14	
Incremental Delay d_2	0.8	1.3		0.1	2.1		0.1	0.3		0.2	1.6	
PF Factor	1.000	1.000		1.000	1.000		1.000	1.000		1.000	1.000	
Control Delay	8.9	15.5		7.2	16.7		19.6	20.4		20.0	23.6	
Lane Group LOS	A	B		A	B		B	C		B	C	
Approach Delay	14.0			15.9			20.3			23.1		
Approach LOS	B			B			C			C		
Intersection Delay	16.4			Intersection LOS						B		

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
DJT			
Analyst	EJD	Intersection	2-SR 0209 / Service Driveway
Agency/Co.	HRG, Inc.	Jurisdiction	Middle Smithfield Township
Date Performed	5/22/2007	Analysis Year	2008 With Development
Analysis Time Period	AM Peak Hour		

Project Description	2773.065 - Fernwood Hotel and Casino
East/West Street: SR 0209	North/South Street: Fernwood Service Driveway
Intersection Orientation: East-West	Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	19	435			511	2
Peak-Hour Factor, PHF	0.82	0.82	0.82	0.91	0.91	0.91
Hourly Flow Rate, HFR (veh/h)	23	530	0	0	561	2
Percent Heavy Vehicles	8	--	--	0	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration	LT					TR
Upstream Signal		1			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)				3		10
Peak-Hour Factor, PHF	1.00	1.00	1.00	0.65	0.65	0.65
Hourly Flow Rate, HFR (veh/h)	0	0	0	4	0	15
Percent Heavy Vehicles	0	0	0	20	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, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LT						LR	
v (veh/h)	23						19	
C (m) (veh/h)	979						393	
v/c	0.02						0.05	
95% queue length	0.07						0.15	
Control Delay (s/veh)	8.8						14.6	
LOS	A						B	

Approach Delay (s/veh)	--	--		*14.6*
Approach LOS	--	--		*B*

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
DJT		Intersection	3-SR 0209 / Main Driveway
Analyst	EJD	Jurisdiction	Middle Smithfield Township
Agency/Co.	HRG, Inc.	Analysis Year	2008 With Development
Date Performed	5/22/2007		
Analysis Time Period	AM Peak Hour		

Project Description	2773.065 - Fernwood Hotel and Casino
East/West Street: SR 0209	North/South Street: Fernwood Main Driveway
Intersection Orientation: East-West	Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	72	371			524	15
Peak-Hour Factor, PHF	0.93	0.93	0.93	0.88	0.88	0.88
Hourly Flow Rate, HFR (veh/h)	77	398	0	0	595	17
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	1	1	0	0	1	0
Configuration	L	T				TR
Upstream Signal		1			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)						
Peak-Hour Factor, PHF	0.25	0.25	0.25	0.25	0.25	0.25
Hourly Flow Rate, HFR (veh/h)	0	0	0	0	0	0
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						

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L							
v (veh/h)	77							
C (m) (veh/h)	977							
v/c	0.08							
95% queue length	0.26							
Control Delay (s/veh)	9.0							
LOS	A							

Approach Delay (s/veh)	--	--		
Approach LOS	--	--		

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
	DJT	Intersection	4-SR 0209 / East Driveway
Analyst	EJD	Jurisdiction	Middle Smithfield Township
Agency/Co.	HRG, Inc.	Analysis Year	2008 With Development
Date Performed	5/22/2007		
Analysis Time Period	AM Peak Hour		

Project Description	2773.065 - Fernwood Hotel and Casino
East/West Street: SR 0209	North/South Street: Fernwood East Driveway
Intersection Orientation: East-West	Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	29	278	8	1 ok	401	10
Peak-Hour Factor, PHF	0.78	0.78	0.78	0.94	0.94	0.94
Hourly Flow Rate, HFR (veh/h)	37	356	10	1	426	10
Percent Heavy Vehicles	25	--	--	0	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	1	1	0	1	1	0
Configuration	L		TR	L		TR
Upstream Signal		1			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	2	1	1 ok	17	1 ok	76
Peak-Hour Factor, PHF	0.25	0.25	0.25	0.50	0.50	0.50
Hourly Flow Rate, HFR (veh/h)	8	4	4	34	2	152
Percent Heavy Vehicles	50	0	0	29	100	17
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration		LTR			LTR	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L	L		LTR			LTR	
v (veh/h)	37	1		16			188	
C (m) (veh/h)	1012	1204		210			456	
v/c	0.04	0.00		0.08			0.41	
95% queue length	0.11	0.00		0.24			1.99	
Control Delay (s/veh)	8.7	8.0		23.6			18.3	
LOS	A	A		C			C	

Approach Delay (s/veh)	--	--	23.6	18.3
Approach LOS	--	--	C	C

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PM

SHORT REPORT

General Information		Site Information	
Analyst	EJD DJT	Intersection	1-SR 0209 / River Rd/ SR 1016
Agency or Co.	HRG, Inc.	Area Type	All other areas
Date Performed	5/22/2007	Jurisdiction	Middle Smithfield Twp
Time Period	PM Peak Hour	Analysis Year	2008 With Development

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Lane Group	L	TR		L	TR		L	TR		L	TR	
Volume (vph)	313	579	39	72	499	30	37	37	84	22	11	156
% Heavy Vehicles	2	2	3	8	6	7	0	5	5	22	5	6
PHF	0.91	0.91	0.91	0.92	0.92	0.92	0.81	0.81	0.81	0.95	0.95	0.95
Pretimed/Actuated (P/A)	A	A	A	A	A	A	A	A	A	A	A	A
Startup Lost Time	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	
Arrival Type	3	3		3	3		3	3		3	3	
Unit Extension	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Ped/Bike/RTOR Volume	0	0	10	0	0	8	0	0	25	0	0	58
Lane Width	12.0	12.0		12.0	12.0		12.0	14.0		12.0	12.0	
Parking/Grade/Parking	N	-5	N	N	0	N	N	-5	N	N	5	N
Parking/Hour												
Bus Stops/Hour	0	0		0	0		0	0		0	0	
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	Excl. Left	EW Perm	03	04	NS Perm	06	07	08
Timing	G = 6.0	G = 40.0	G =	G =	G = 11.0	G =	G =	G =
	Y = 6	Y = 6	Y =	Y =	Y = 6	Y =	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 75.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	344	668		78	566		46	119		23	115	
		1011										

Lane Group Capacity	490			378	949		195	263		152	222	
v/c Ratio	0.70	0.66		0.21	0.60		0.24	0.45		0.15	0.52	
Green Ratio	0.69	0.53		0.69	0.53		0.15	0.15		0.15	0.15	
Uniform Delay d_1	7.2	12.6		6.9	12.0		28.3	29.2		27.9	29.6	
Delay Factor k	0.27	0.24		0.11	0.19		0.11	0.11		0.11	0.12	
Incremental Delay d_2	4.5	1.6		0.3	1.0		0.6	1.2		0.5	2.1	
PF Factor	1.000	1.000		1.000	1.000		1.000	1.000		1.000	1.000	
Control Delay	11.7	14.2		7.2	13.0		28.9	30.5		28.4	31.7	
Lane Group LOS	B	B		A	B		C	C		C	C	
Approach Delay	13.4			12.3			30.0			31.1		
Approach LOS	B			B			C			C		
Intersection Delay	15.7			Intersection LOS						B		

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TWO-WAY STOP CONTROL SUMMARY

General Information

DJT

Analyst	EJD
Agency/Co.	HRG, Inc.
Date Performed	5/22/2007
Analysis Time Period	PM Peak Hour

Site Information

Intersection	2-SR 0209 / Service Driveway
Jurisdiction	Middle Smithfield Township
Analysis Year	2008 With Development

Project Description 2773.065 - Fernwood Hotel and Casino

East/West Street: SR 0209 | North/South Street: Fernwood Service Driveway

Intersection Orientation: East-West | Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	9	664			581	3
Peak-Hour Factor, PHF	0.89	0.89	0.89	0.91	0.91	0.91
Hourly Flow Rate, HFR (veh/h)	10	746	0	0	638	3
Percent Heavy Vehicles	5	--	--	0	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration	LT					TR
Upstream Signal		1			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)				5		19
Peak-Hour Factor, PHF	1.00	1.00	1.00	0.48	0.48	0.48
Hourly Flow Rate, HFR (veh/h)	0	0	0	10	0	39
Percent Heavy Vehicles	0	0	0	14	0	7
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, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LT						LR	
v (veh/h)	10						49	
C (m) (veh/h)	929						318	
v/c	0.01						0.15	
95% queue length	0.03						0.54	
Control Delay (s/veh)	8.9						18.4	
LOS	A						C	

Approach Delay (s/veh)	--	--		18.4
Approach LOS	--	--		C

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
DJT		Intersection	3-SR 0209 / Main Driveway
Analyst	EJD	Jurisdiction	Middle Smithfield Township
Agency/Co.	HRG, Inc.	Analysis Year	2008 With Development
Date Performed	5/22/2007		
Analysis Time Period	PM Peak Hour		

Project Description	2773.065 - Fernwood Hotel and Casino
East/West Street: SR 0209	North/South Street: Fernwood Main Driveway
Intersection Orientation: East-West	Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	92	547			565	20
Peak-Hour Factor, PHF	0.92	0.92	0.92	0.89	0.89	0.89
Hourly Flow Rate, HFR (veh/h)	99	594	0	0	634	22
Percent Heavy Vehicles	2	--	--	0	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	1	1	0	0	1	0
Configuration	L	T				TR
Upstream Signal		1			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)						
Peak-Hour Factor, PHF	0.25	0.25	0.25	0.25	0.25	0.25
Hourly Flow Rate, HFR (veh/h)	0	0	0	0	0	0
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						

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L							
v (veh/h)	99							
C (m) (veh/h)	931							
v/c	0.11							
95% queue length	0.36							
Control Delay (s/veh)	9.3							
LOS	A							

Approach Delay (s/veh)	--	--		
Approach LOS	--	--		

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TWO-WAY STOP CONTROL SUMMARY

General Information

DJT

Analyst	EJD
Agency/Co.	HRG, Inc.
Date Performed	5/22/2007
Analysis Time Period	PM Peak Hour

Site Information

Intersection	4-SR 0209 / East Driveway
Jurisdiction	Middle Smithfield Township
Analysis Year	2008 With Development

Project Description 2773.065 - Fernwood Hotel and Casino

East/West Street: SR 0209 | North/South Street: Fernwood East Driveway

Intersection Orientation: East-West | Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	34	497	18	2	478	11
Peak-Hour Factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Hourly Flow Rate, HFR (veh/h)	35	523	18	2	503	11
Percent Heavy Vehicles	18	--	--	0	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	1	1	0	1	1	0
Configuration	L		TR	L		TR
Upstream Signal		1			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	7	1	3	20	5	117
Peak-Hour Factor, PHF	0.46	0.46	0.46	0.69	0.69	0.69
Hourly Flow Rate, HFR (veh/h)	15	2	6	28	7	169
Percent Heavy Vehicles	0	0	0	0	0	10
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration		LTR			LTR	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L	L		LTR			LTR	
v (veh/h)	35	2		23			204	
C (m) (veh/h)	975	1038		143			407	
v/c	0.04	0.00		0.16			0.50	
95% queue length	0.11	0.01		0.55			2.72	
Control Delay (s/veh)	8.8	8.5		34.9			22.4	
LOS	A	A		D			C	

Approach Delay (s/veh)	--	--	34.9	22.4
Approach LOS	--	--	D	C

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