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# WILLIAM PATERSON UNIVERSITY

## COMPREHENSIVE TRAFFIC AND TRANSPORTATION PLANNING STUDY

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*April 30, 2012*

A handwritten signature in black ink, appearing to read "Gordon Meth".

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**Our Project No. J4504.00**

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# WILLIAM PATERSON UNIVERSITY TRAFFIC AND TRANSPORTATION PLANNING STUDY

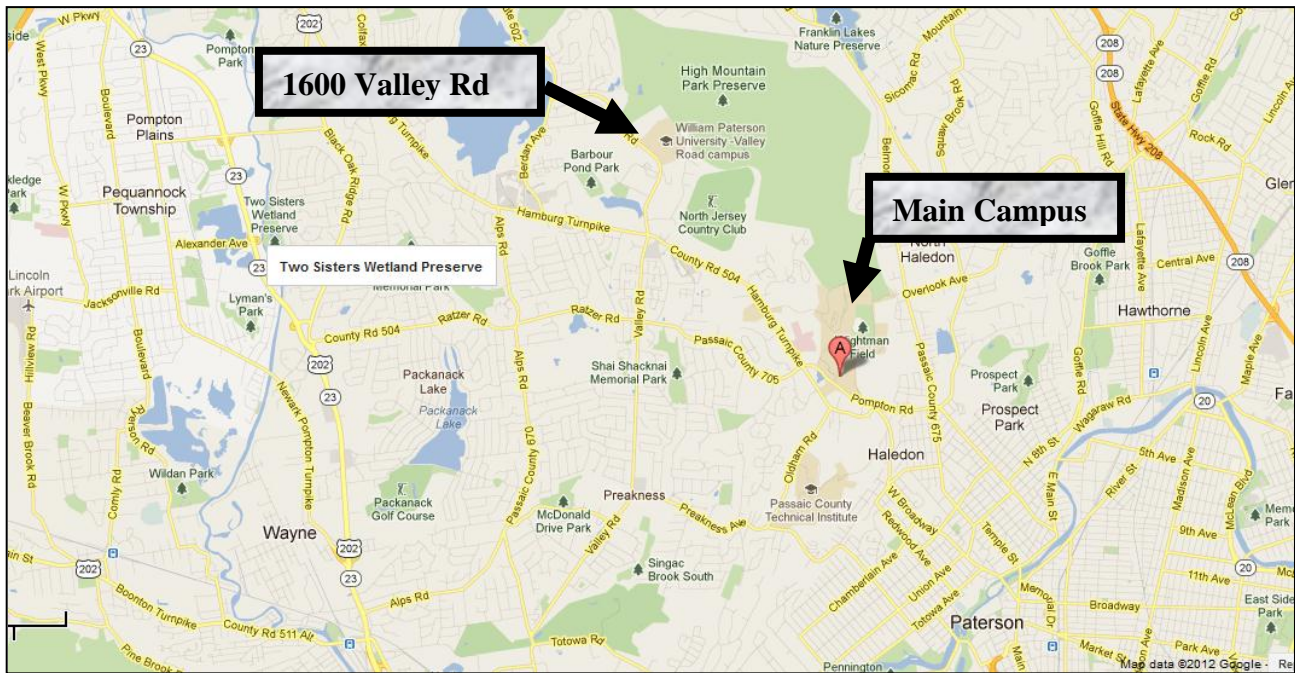
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## Introduction

William Paterson University (WPU), located in Wayne, NJ, presently serves a population of over 11,600 students. The majority of these students attend classes at the main campus, with the remainder being housed at satellite locations at 1,600 Valley Road, Power Arts Center, and Alumni House. Figure 1 contains a location map for WPU. Over the next five (5) years, enrollment is expected to grow to 13,000 students. At the time of writing, WPU was in the process of designing an approximately 1,100 car parking garage, which has the potential to re-orient traffic within the campus. This potential change, in addition to existing concerns regarding traffic, pedestrian, bicycle, and transit access, prompted WPU to initiate a comprehensive traffic and transportation planning study to evaluate transportation access and develop conceptual improvements.



**Figure 1 – William Paterson University Location**

## **Existing Conditions**

### Regional Road System

Access to the main campus of WPU is provided via several driveways on Pompton Road (C.R. 504), Paterson-Hamburg Turnpike (C.R. 504), and Belmont Avenue (C.R. 675). Access to 1,600 Valley Road is provided via a driveway to Valley Road (C.R. 681). These roads in turn provide access to the regional road system.

**Pompton Road (C.R. 504)** is an east-west arterial roadway under the jurisdiction of Passaic County that provides connectivity between Wayne and Paterson. Adjacent to WPU, Pompton Road has two lanes (one per direction), has a roadway width of 30 feet, and is posted for 35 mile per hour operation. Adjacent land uses are primarily institutional adjacent to WPU. Based on traffic counts conducted, the average daily traffic on Pompton Road is 16,500-18,000 vehicles per day on the average, with nearly 20,000 vehicles per day on weekdays.

**Paterson-Hamburg Turnpike (C.R. 504)** is a north-south arterial roadway under the jurisdiction of Passaic County that provides mobility within Wayne. Adjacent to WPU, Paterson-Hamburg Turnpike has four lanes (two per direction), has a roadway width of 42 feet, and is posted for 45 mile per hour operation. Adjacent land uses are primarily commercial adjacent to WPU.

**Belmont Avenue (C.R. 675)** is a north-south arterial roadway under the jurisdiction of Passaic County that provides connectivity between North Haledon and Paterson. Adjacent to WPU, Belmont Avenue has two lanes (one per direction), has a roadway width of 29 feet, and is posted for 35 mile per hour operation. Adjacent land uses are a combination of commercial and industrial adjacent to WPU.

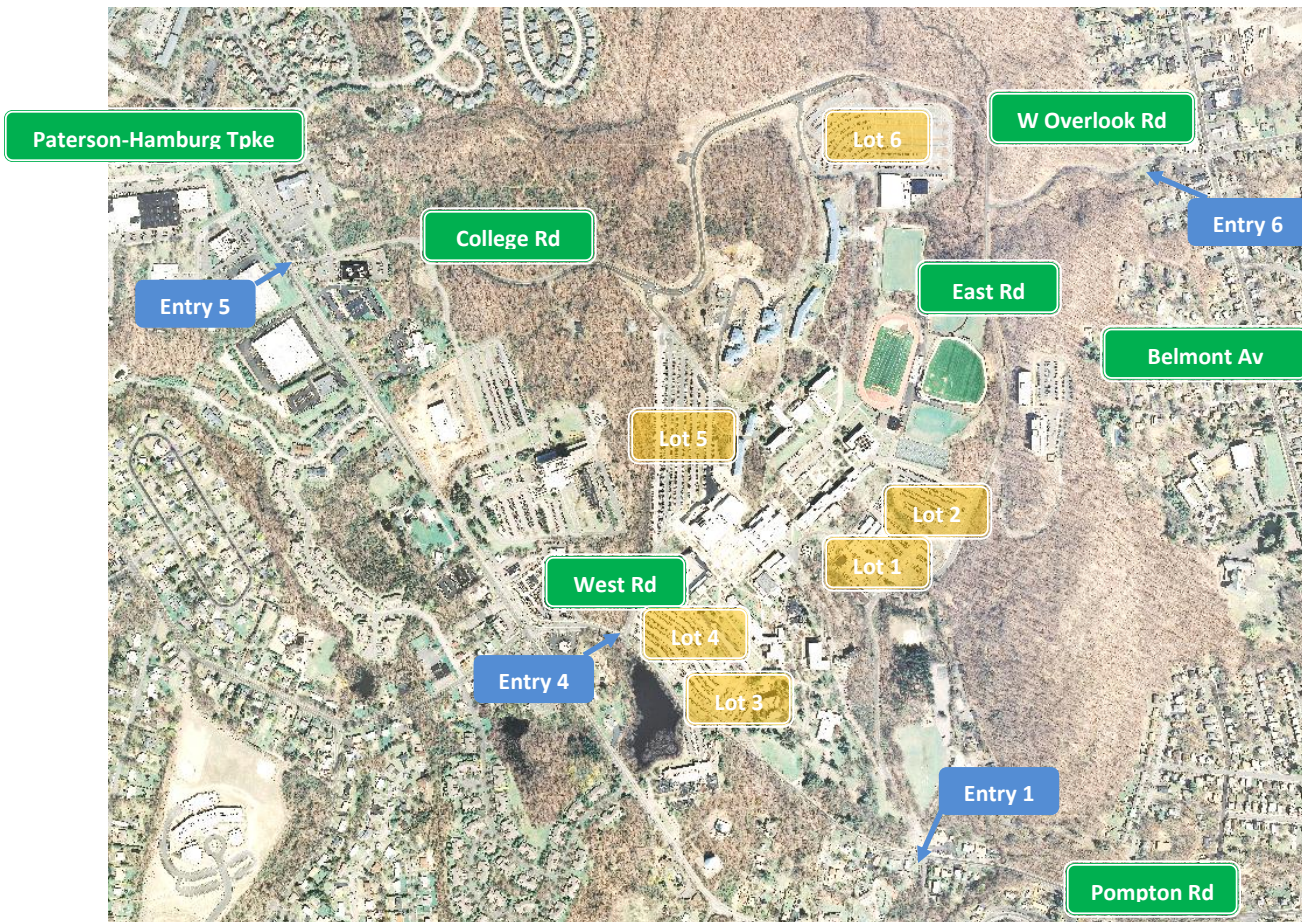
**Valley Road (C.R. 681)** is a north-south arterial roadway under the jurisdiction of Passaic County that provides mobility within Wayne. Adjacent to WPU, Valley Road has four lanes (two per direction), has a roadway width of 44 feet, and is posted for 40 mile per hour operation. Adjacent land uses are primarily commercial adjacent to WPU.

### Internal Road System

Figure 2 shows the various parking lots and roads for the main campus of WPU. As shown, there are 6

main parking lots on the main campus. Some are reserved for faculty and staff. There are several smaller parking areas throughout the campus. There is a ring road around most of the campus between East Road, West Road, and College Road. However, there is no roadway around Lot 5. Instead, traffic must circulate through Lot 5.

Primary access is provided via a traffic signal at Paterson-Hamburg Turnpike and College Road (Entry 5), a traffic signal at Belmont Avenue and West Overlook Road (approximately Entry 6), an unsignalized driveway at Pompton Road and West Road (Entry 4), and an unsignalized driveway at Pompton Road and East Road (Entry 1). There are two additional driveways that provide access to gated areas, and there is an exit only driveway onto Pompton Road between Lots 3 and 4 in addition to these access points.



**Figure 2 – Internal Road Network**

## Traffic Volumes

In order to establish the baseline level of traffic throughout WPU, a combination of 16 Automatic Traffic Recorder (ATR) and 12 Turning Movement (TM) counts were conducted at numerous locations both on and off campus. The ATR counts were conducted continuously between September 11, 2011 and October 1, 2011. The TM counts were conducted on September 14, 2011 for 10 locations, and September 27, 2011 for two (2) locations. The peak hours for campus and regional road traffic were found to occur from 8:30-9:30 am and 4:30-5:30 pm. Manual turning movement counts were performed using MioVision.

MioVision is a video imaging technology used to conduct traffic counts. It provides a video recording of the count for quality assurance and audit trail purposes, and can be quite effective. The count is conducted from a fish-eye lens, mounted on an extendable pole appropriately 25' tall. The units mount to virtually any pole in a non-destructive manner. Imaging technology is used to count cars, medium and heavy trucks/buses, bicycles, and pedestrians. Individual counts are stored, so that data can be summarized into various time intervals at a later date for more detailed analysis. Having the video available after the fact not only can be used for quality assurance purposes, but it allows the video to be used to verify traffic operations and patterns at a later date. MioVision units can obtain accurate count with very limited light. The 12 MioVision count locations and the dates of the counts are as follows:

- Pompton Road and Entry 4 (7 am – 9 pm) – September 14, 2011
- Pompton Road and Entry 1 (8:15–9:45 am & 4:15-5:45 pm) – September 14, 2011
- Paterson-Hamburg Turnpike and Pompton Road (7:30-9:30 am & 4-6 pm) - September 14, 2011
- Paterson-Hamburg Turnpike and College Road (7:30-9:30 am & 4-6 pm) - September 27, 2011
- Belmont Avenue and Overlook Road (7:30-9:30 am & 4-6 pm) - September 14, 2011
- Valley Road and 1600 Valley Road Driveway (8:15–9:45 am & 4:15-5:45 pm) - September 27, 2011
- East Road and Maintenance Facility Driveway (8:15–9:45 am & 4:15-5:45 pm) – September 14, 2011
- East Road and Lot 1 Driveway (8:15–9:45 am & 4:15-5:45 pm) – September 14, 2011

- East Road and Lot 2 Driveway/Tennis Court Road (8:15–9:45 am & 4:15-5:45 pm) – September 14, 2011
- East Road and West Overlook Road (8:15–9:45 am & 4:15-5:45 pm) – September 14, 2011
- East Road and Lot 6 Exit (8:15–9:45 am & 4:15-5:45 pm) – September 14, 2011
- College Road and West Road (8:15–9:45 am & 4:15-5:45 pm) – September 14, 2011

Figures 3 and 4 contain the hourly turning movement counts by hour at the various traffic count locations for WPU.

A review of the daily volumes indicates that traffic in and out of the campus are approximately equal on Monday-Wednesday, slightly less on Thursday, and significantly lower on Friday. Tables 1 and 2 contain the hourly in and out volumes for each entry on an hourly basis (including cut-through traffic). As shown, Entries 4, 5 and 6 are the most heavily used.

Table 3, below contains a summary of traffic entering or leaving WPU during the morning and evening peak hours. It is noted that there is existing cut-through traffic (i.e. traffic not destined to or from WPU) traversing between Belmont Avenue and Paterson-Hamburg Turnpike using West Overlook Road and College Road. This volume was estimated to be 85 eastbound vehicles and 285 westbound vehicles in the morning peak hour, and 245 eastbound vehicles and 285 westbound vehicles during the evening peak hour. These were deducted from the counts shown in Table 1. As noted, peak hour traffic generation is approximately 0.20 trips per student for WPU, and this rate includes all faculty, staff, and other traffic. Table 1 also contains a comparison to the trip generation rate per student for higher Education facilities from the Institute of Transportation Engineer’s (ITE) Trip Generation Manual, 8<sup>th</sup> Edition (which contains an average rate from a national database of samples). As shown, the observed rate of 0.20 trips per student is very close to the rate from the previously cited ITE source, which is 0.21 trips per student. The slight difference could be attributable to the transit access available at WPU.



**TABLE 1 – WPU Inbound Driveway Traffic Volumes by Hour**

Time	Inbound Traffic (Average Day - Monday-Wednesday)						Total
	Entry 1	Entry 2	Entry 4	Entry 5	Entry 6	1600 Valley	
12 am - 1 am	34	3	26	26	8	1	98
1 am - 2 am	20	1	16	12	2	0	51
2 am - 3 am	14	0	7	6	4	0	31
3 am - 4 am	8	0	4	4	2	0	18
4 am - 5 am	10	0	5	5	4	0	24
5 am - 6 am	23	1	12	10	18	3	67
6 am - 7 am	102	6	34	62	97	6	307
7 am - 8 am	158	31	521	236	424	69	1439
8 am - 9 am	170	57	539	255	514	116	1651
9 am - 10 am	209	79	537	278	315	350	1768
10 am - 11 am	187	83	428	249	264	215	1426
11 am - 12 pm	122	46	231	210	184	119	912
12 pm - 1 pm	166	66	347	311	217	119	1226
1 pm - 2 pm	180	63	421	291	250	162	1367
2 pm - 3 pm	151	45	238	254	211	109	1008
3 pm - 4 pm	234	56	377	299	286	197	1449
4 pm - 5 pm	212	56	353	356	310	203	1490
5 pm - 6 pm	201	58	398	370	350	216	1593
6 pm - 7 pm	162	45	344	279	270	267	1367
7 pm - 8 pm	106	21	157	199	135	83	701
8 pm - 9 pm	100	19	142	180	94	18	553
9 pm - 10 pm	92	14	116	137	60	15	434
10 pm - 11 pm	78	5	63	70	31	8	255
11 pm - 12 am	53	4	53	48	14	6	178
<b>Total</b>	<b>2792</b>	<b>759</b>	<b>5369</b>	<b>4147</b>	<b>4064</b>	<b>2282</b>	<b>19413</b>

Figures 5-8 contain the arrival and departure patterns for main campus WPU traffic, after adjustment for cut-through traffic is taken into consideration. As shown, approximately 35-40% of traffic is oriented to/from the west on Pompton Road, approximately 40% of traffic is oriented to/from the east on either Belmont Avenue or Pompton Road (inbound and outbound traffic appears to adjust between these driveways), approximately 20-25% of traffic is oriented to Paterson-Hamburg Turnpike, and less than 5% of traffic is oriented to Ailsa Avenue.

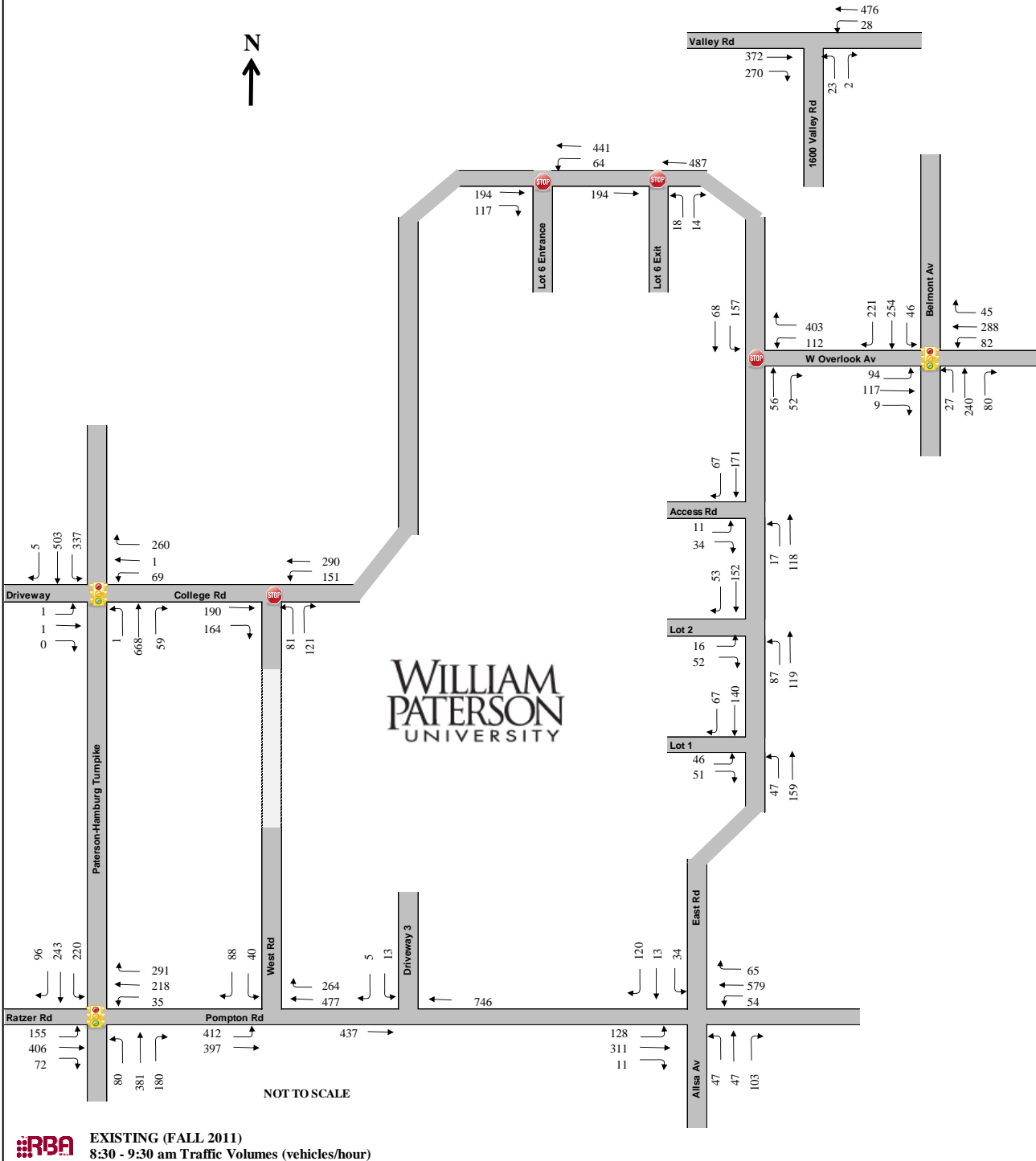
**TABLE 2 – WPU Outbound Driveway Traffic Volumes by Hour**

<b>Outbound (Average Day - Monday-Wednesday)</b>									
<b>Time</b>	<b>Entry 1</b>	<b>Entry 2</b>	<b>Lot 3 Exit</b>	<b>Lot 4 Exit</b>	<b>Entry 4</b>	<b>Entry 5</b>	<b>Entry 6</b>	<b>1600 Valley</b>	<b>Total</b>
12 am - 1 am	28	0	1	2	38	21	16	0	106
1 am - 2 am	10	1	0	0	22	9	9	0	51
2 am - 3 am	7	0	2	0	15	6	6	2	38
3 am - 4 am	5	0	0	0	4	2	4	0	15
4 am - 5 am	7	0	0	0	2	8	5	0	22
5 am - 6 am	11	0	0	0	3	23	30	1	68
6 am - 7 am	52	2	1	1	7	70	108	5	246
7 am - 8 am	158	10	6	15	46	198	290	16	739
8 am - 9 am	134	16	5	30	64	319	319	26	913
9 am - 10 am	179	37	17	88	168	265	241	49	1044
10 am - 11 am	211	40	23	108	223	275	239	163	1282
11 am - 12 pm	138	23	11	60	149	200	212	138	931
12 pm - 1 pm	187	37	28	111	283	312	275	289	1522
1 pm - 2 pm	166	28	29	111	244	298	269	141	1286
2 pm - 3 pm	133	20	15	54	192	229	265	97	1005
3 pm - 4 pm	236	31	34	123	293	357	374	187	1635
4 pm - 5 pm	241	25	58	146	296	355	399	217	1737
5 pm - 6 pm	199	26	23	83	251	312	383	96	1373
6 pm - 7 pm	183	22	30	97	279	312	319	182	1424
7 pm - 8 pm	120	12	21	70	270	200	245	193	1131
8 pm - 9 pm	132	11	29	94	400	214	227	262	1369
9 pm - 10 pm	81	8	16	45	246	128	148	203	875
10 pm - 11 pm	66	3	5	11	122	67	78	10	362
11 pm - 12 am	39	2	7	7	108	41	38	3	245
<b>Total</b>	<b>2723</b>	<b>354</b>	<b>361</b>	<b>1256</b>	<b>3725</b>	<b>4221</b>	<b>4499</b>	<b>2280</b>	<b>19419</b>

**TABLE 3 – WPU Entering/Exiting Traffic Volumes**

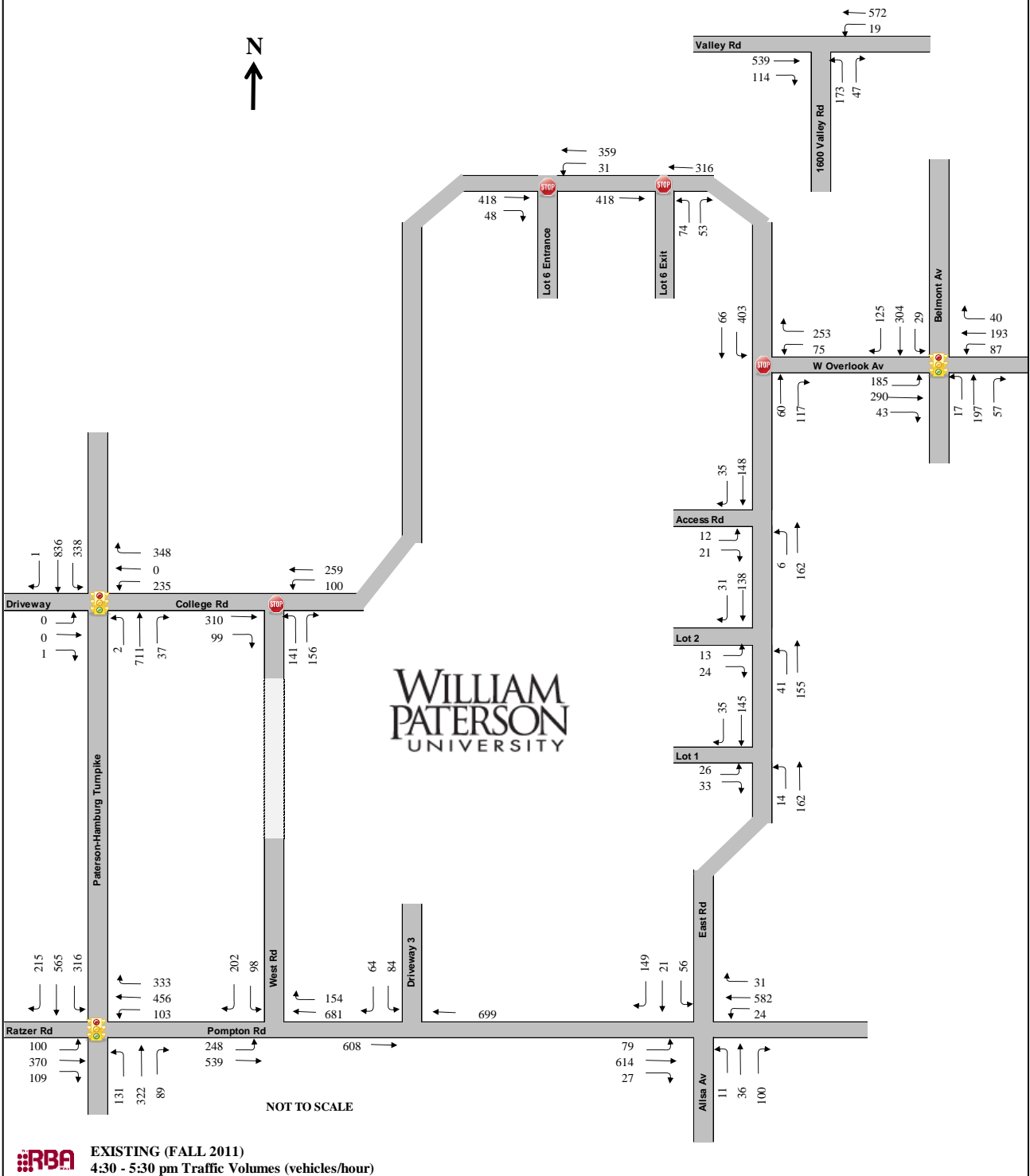
		<b>8:30-9:30 am</b>	<b>4:30-5:30 pm</b>
Main Campus	Inbound	<b>1436</b>	<b>882</b>
	<u>Outbound</u>	<b><u>516</u></b>	<b><u>1034</u></b>
	Total	<b>1952</b>	<b>1916</b>
1600 Valley Rd	Inbound	<b>298</b>	<b>133</b>
	<u>Outbound</u>	<b><u>25</u></b>	<b><u>220</u></b>
	Total	<b>323</b>	<b>353</b>
Total	Inbound	<b>1734</b>	<b>1015</b>
	<u>Outbound</u>	<b><u>541</u></b>	<b><u>1254</u></b>
	Total	<b>2275</b>	<b>2269</b>
Trips/Student		<b>0.20</b>	<b>0.20</b>
ITE Rate		<b>0.21</b>	<b>0.21</b>

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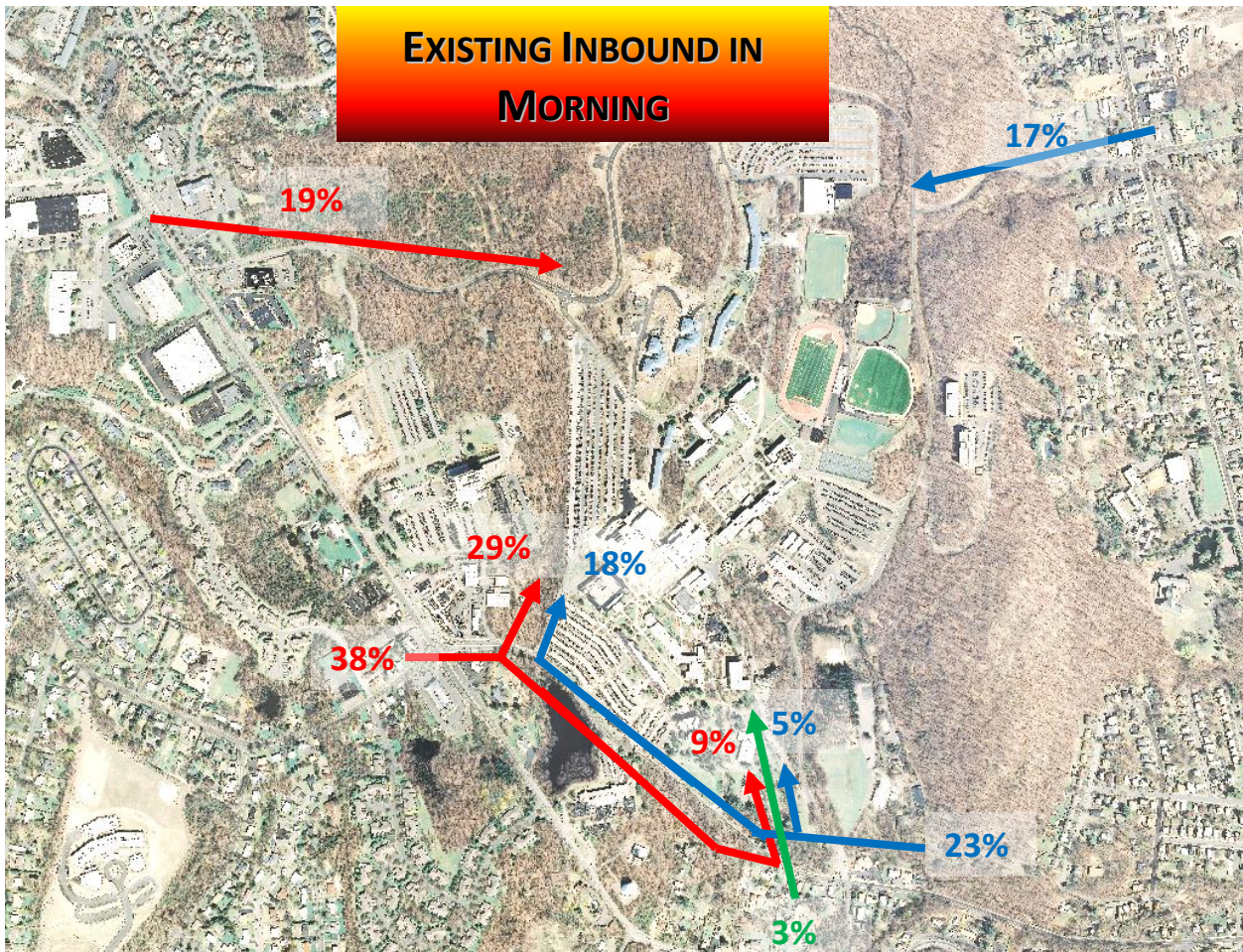


**Figure 3 – Morning Peak Hour Turning Movement Counts**

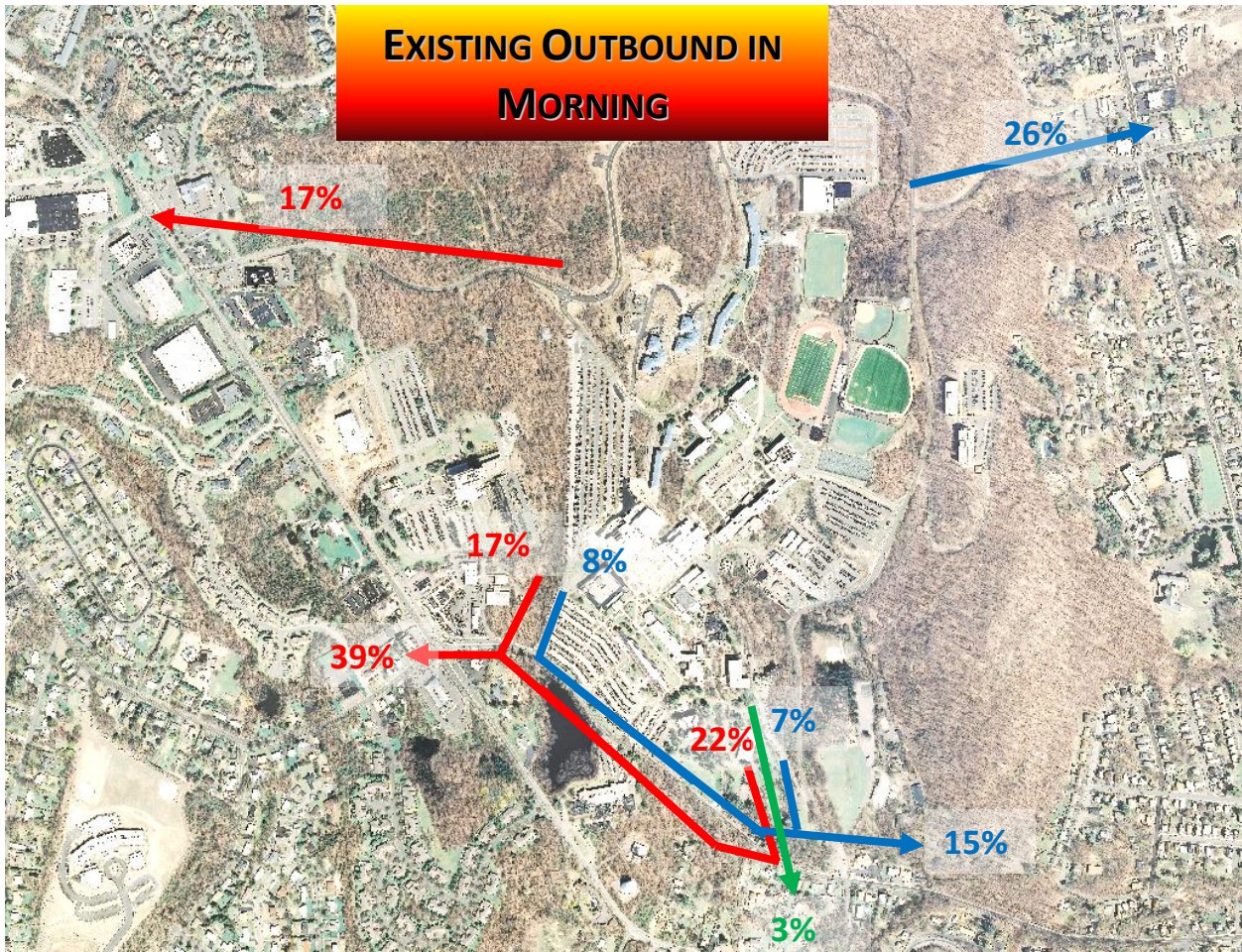
# WILLIAM PATERSON UNIVERSITY TRAFFIC AND TRANSPORTATION PLANNING STUDY



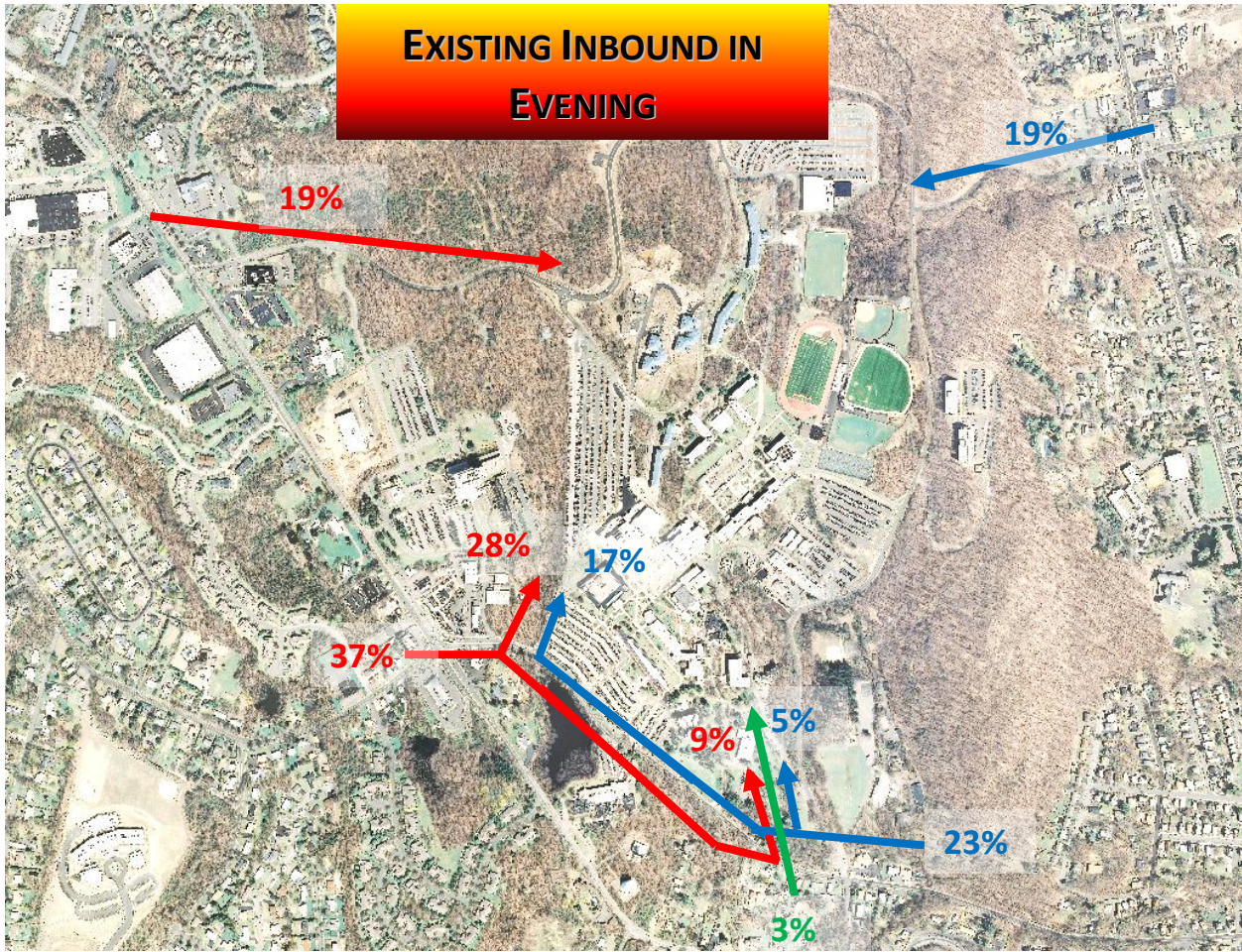
**Figure 4 - Evening Peak Hour Turning Movement Counts**



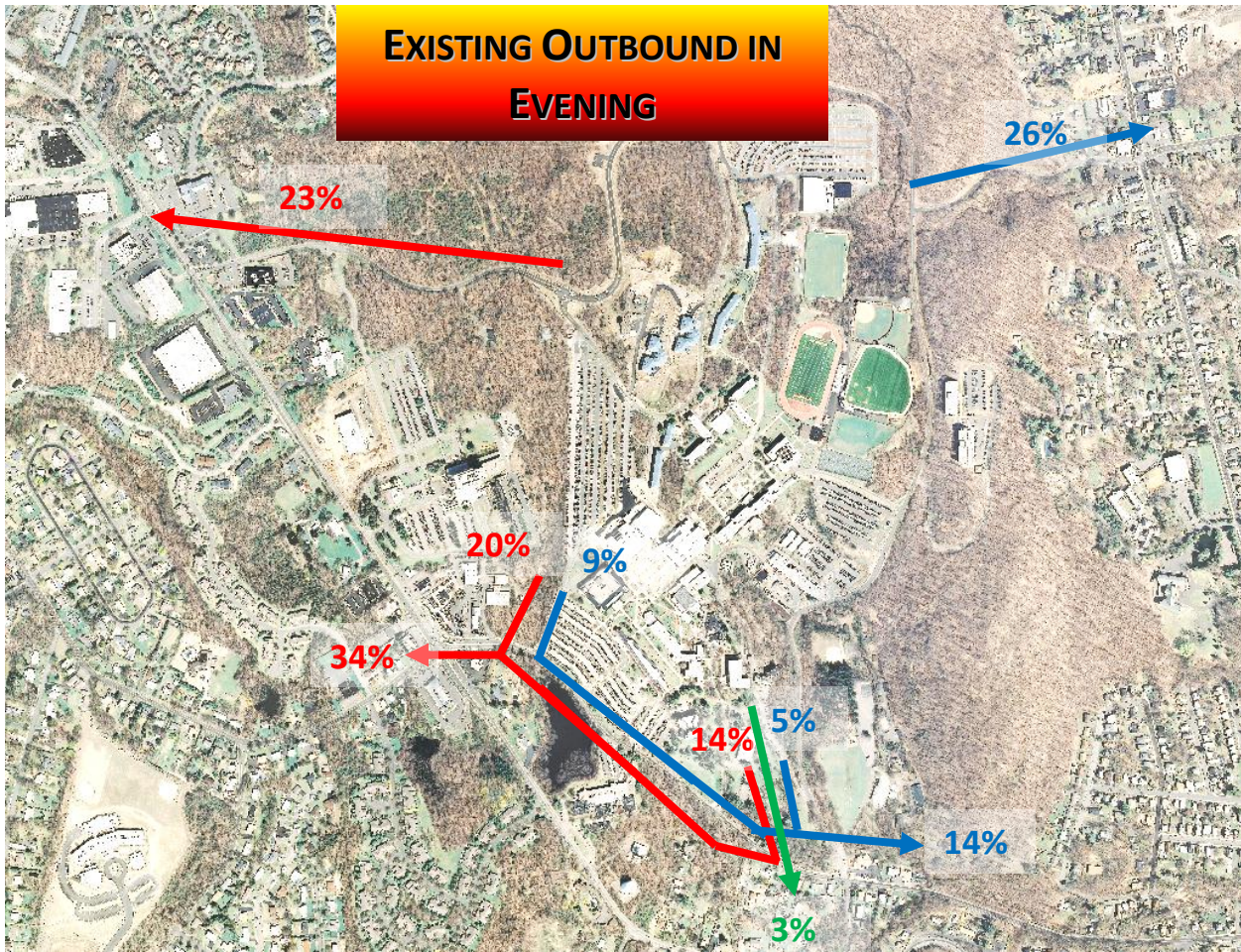
**Figure 5 – Morning Peak Hour Arrival Patterns**



**Figure 6 – Morning Peak Hour Departure Patterns**



**Figure 7 – Evening Peak Hour Arrival Patterns**



**Figure 8 – Evening Peak Hour Departure Patterns**

Traffic Level of Service

Level of Service analysis for the various intersections under study was conducted for the weekday morning and evening peak hours, utilizing the methods outlined in the Highway Capacity Manual, 2000 Edition, published by the Transportation Research Board, using the program Synchro, version 7. With this analysis, Level of Service (LOS) is expressed on a scale ranging from “A” to “F”, with “A” being best and “F” being worst. Level of Service is determined by the average delay per vehicle for a specific approach or lane group during the peak hour. LOS F refers to an average delay in excess of 80 seconds for signalized intersections and 50 seconds for unsignalized intersections. LOS F is achieved at a lower delay for unsignalized intersections because driver impatience occurs due to the lack of expectation of ever getting a gap (as opposed to a green indication at a signalized intersection). LOS D is often



considered the appropriate limit of acceptable traffic operations, and this corresponds to average peak hour delay of 35-55 seconds per vehicle at signalized intersections and a delay of 25-35 seconds at unsignalized intersections. During peak hours, LOS C is considered good and is usually the target operations for new construction. LOS C indicates an average peak hour delay of 20-35 seconds per vehicle for signalized intersections and 15-25 seconds for unsignalized intersections. Table 4 summarizes traffic operations for the existing case. As shown, there is significant delay at the unsignalized driveways on Pompton Road during both peak hours. Left turns out of 1600 Valley Road experience some delay that can be considered failing. There is some delay leaving WPU during the evening peak hour at the Paterson-Hamburg Turnpike and College Road signal, although this would be considered marginal. Further, northbound left turn delays are high at the Paterson-Hamburg Turnpike and Pompton Road/Ratzer Road signal during the evening peak hour, although this is unrelated to WPU traffic. Figure 9 summarizes existing traffic trouble spots at the main campus of WPU based on this level of service.

**TABLE 4 – Existing Level of Service**

Intersection	Approach	8:30-9:30 am		4:30-5:30 pm	
		Delay	LOS	Delay	LOS
Paterson Hamburg Tpke & Ratzler Rd/Pompton Rd (signalized)	<b>NB Left</b>	47.8	D	<b>56.0</b>	<b>E</b>
	NB Through-Right	19.2	B	21.3	C
	SB Left	43.6	D	50.3	D
	SB Through-Right	15.5	B	25.6	C
	EB Approach	38.7	D	45.2	D
	WB Left-Through	25.0	C	46.1	D
	WB Right	5.0	A	4.9	A
	Overall	26.0	C	33.9	C
Paterson Hamburg Tpke & College Rd (signalized)	NB Approach	18.9	B	7.2	A
	SB Approach	5.3	A	29.6	C
	EB Approach	33.5	C	23.5	C
	<b>WB Left-Through</b>	49.5	D	<b>66.8</b>	<b>E</b>
	WB Right	12.8	B	7.4	A
	Overall	13.2	B	24.0	C
Belmont Av & Overlook Av (signalized)	NB Approach	12.2	B	10.8	B
	SB Approach	15.2	B	13.9	B
	EB Left	32.7	C	38.0	D
	EB Through-Right	22.1	C	29.3	C
	WB Left	23.4	C	31.5	C
	WB Through-Right	29.3	C	24.7	C
	Overall	19.7	B	22.1	C
Pompton Rd & West Rd (Entry 4)	EB Approach	11.6	B	9.1	A
	<b>SB Left</b>	<b>1145.2</b>	<b>F</b>	<b>9999</b>	<b>F</b>
	SB Right	15.1	C	29.5	D
Pompton Rd & East Rd (Entry 1) / Ailsa Av	EB Approach	4.2	A	2.4	A
	WB Approach	1.3	A	0.8	A
	<b>NB Approach</b>	<b>443.3</b>	<b>F</b>	<b>158.4</b>	<b>F</b>
	<b>SB Left-Through</b>	<b>316.6</b>	<b>F</b>	<b>782.1</b>	<b>F</b>
	SB Right	16.3	C	17.1	C
Pompton Rd & Lot 3 Exit	<b>SB Left</b>	27.3	D	<b>107.8</b>	<b>F</b>
	SB Right	14.7	B	18.3	C

**TABLE 4 – Existing Level of Service (continued)**

Intersection	Approach	8:30-9:30 am		4:30-5:30 pm	
		Delay	LOS	Delay	LOS
Valley Rd & 1600 Valley Rd Dwy	EB Approach	0.8	A	0.4	A
	<b>SB Left</b>	<b>37.0</b>	<b>E</b>	<b>72.0</b>	<b>F</b>
	SB Right	16.0	C	11.2	B
College Rd & West Rd (all way stop)	EB Through	10.7	B	16.5	C
	EB Right	8.8	A	8.4	A
	WB Left	10.6	B	10.3	B
	WB Through	13.4	B	14.0	B
	NB Left	10.4	B	12.3	B
	NB Right	9.4	A	10.2	B
W Overlook Av & East Rd (all way stop)	WB Approach	18.7	C	14.9	B
	NB Approach	9.8	A	10.7	B
	SB Approach	12.4	B	26.4	D
College Rd & Lot 6 Entrance (all way stop)	EB Approach	10.4	B	14.8	B
	WB Left	7.7	A	7.5	A
	WB Through	14.8	B	12.2	B
College Rd & Lot 6 Exit (all way stop)	EB Approach	9.3	A	15.6	C
	WB Approach	14.7	B	12.6	B
	NB Left	8.8	A	10.1	B
	NB Right	7.4	A	8.2	A
East Rd & Lot 1	EB Approach	2.0	A	0.7	A
	SB Approach	11.5	B	10.4	B
East Rd & Lot 2	NB Approach	3.7	A	1.8	A
	EB Approach	10.6	B	10.4	B
East Rd & Tennis Court Rd	NB Approach	1.1	A	0.3	A
	EB Approach	9.9	A	10.1	B

Traffic Safety/Operational Issues

In order to assess traffic safety, crash records were summarized by location for the latest available 3 year period at the time of writing, which was January 1, 2008 to December 31, 2010. The results are summarized in Table 5. As indicated, nearly half of the crashes on campus at WPU (i.e. not driveways with County Roads) occurred in Lot 5. Given the mixture of through traffic, parking, and transit access at this location, this is not surprising. At the access driveways, there are a high number of crashes at Paterson-Hamburg Turnpike and College Road. This is likely due to the lack of a left turn lane on

Paterson-Hamburg Turnpike and the high left turn volume.

**TABLE 5 – Vehicle Crash History**

Location	Vehicle Crashes			
	2008	2009	2010	Total
Lot 1	0	4	3	7
Lot 2	3	2	2	7
Lot 3	0	2	6	8
Lot 4	16	14	6	36
Lot 5	17	23	33	73
Lot 6	4	0	5	9
Lot 8	1	0	0	1
College Hall	0	1	4	5
Power Arts	2	0	0	2
1600 Valley Rd	4	5	8	17
Veritans	0	0	0	0
Visitor	0	0	0	0
Admissions	0	0	0	0
Pompton Rd & East Dr (Entry 1)	2	9	5	16
Pompton Rd & West Dr (Entry 4)	0	0	1	1
Paterson-Hamburg Tpke & College Rd	14	12	12	38
Belmont Av & Overlook Av	7	1	1	9
Valley Rd & 1600 Valley Rd	1	1	0	2
<b>Total</b>	<b>71</b>	<b>74</b>	<b>86</b>	<b>231</b>

In addition to the above, the alignment of the exit for Lot 1 was found to be problematic given the curvature of the road in this area and the proximity to the driveway for the Maintenance Facility. This did not show up as a high crash location however due to the low traffic volumes in the area.

### Parking

Parking occupancy numbers were provided by WPU for October, 2010. Additional counts were conducted September 20-22, 2011. Table 6 summarizes existing parking utilization at WPU. As shown, most of the numbered lots fill up, with only Lot 6 having excess capacity. As this lot is remote from most campus buildings, this is not surprising. The Veritans lot is an overflow lot leased by WPU

that is relatively remote, so the fact that it is not full is not surprising. The parking at 1,600 Valley Road appears to reach 77% occupancy at most.

**TABLE 6 – Parking Occupancy**

<b>Parking Lot</b>	<b>Capacity</b>	<b>Peak Occupancy</b>	<b>%</b>
Lot 1	131	134	102%
Lot 2	347	347	100%
Lot 3	292	290	99%
Lot 4	378	382	101%
Lot 5	897	902	101%
Lot 6	874	802	92%
Other	300	250	83%
Veritans	200	40	20%
<b>Sub-Total Main Campus</b>	<b>3,419</b>	<b>3,147</b>	<b>92%</b>
1,600 Valley Rd	703	538	77%
<b>Total</b>	<b>4,122</b>	<b>3,685</b>	<b>89%</b>

Part of Lot 2, Lot 3, and many of the other parking on campus are reserved for faculty and staff. Otherwise, anyone is free to park in any space without permits or fees. Part of Lots 5 and Lot 4 are closest to campus, and these lots tend to fill up first. Vehicles frequently “cruise” these lots waiting for spaces to vacate.

Transit Service

Existing transit service for WPU is provided via four (4) NJ Transit bus routes. The specifics of these routes are as follows:

**NJ Transit Route 744** – This route provides service from Passaic Bus Terminal to Wayne Preakness Center. It stops at both WPU main campus and 1600 Valley Road. The route runs every 30-60 minutes per direction on weekdays, and carries 300-350 passengers per day to and from WPU.

**NJ Transit Route 748** – This route provides service between Pompton Lakes and Willowbrook Mall. It stops at both WPU main campus every 60 minutes per direction on weekdays, and

carries 100-150 passengers per day to and from WPU.

**NJ Transit Route 198** – This route provides service between Willowbrook Mall and New York City. It stops at both WPU main campus every 2 hours per direction on weekdays, and carries 50-75 passengers per day to and from WPU.

**NJ Transit Route 75** – This route provides service between Butler and Newark. It stops at both WPU main campus every 2 hours per direction on weekdays, and carries 24 passengers per day to and from WPU.

In addition to NJ Transit, WPU runs internal shuttle buses around campus. These are provided by a private contractor, and routes tend to be modified from time to time to suit the needs of the campus. Based on ridership information provided, the shuttle buses presently carry 10,000-20,000 passengers per month while school in session.

Most transit service presently stops in Lot 5 by the Speert Hall (formerly Wayne Hall). Many of the above routes run through College Road, Lot 5 and West Road. Based on discussions with NJ Transit, they currently experience operational delays traversing Lot 5 (due to the need to circulate through active parking aisles, and students dwelling waiting for spaces) and making left turns at Pompton Road and West Road (Entry 4).

### Pedestrian Activity

Through MioVision, we were able to measure pedestrian activity at the various locations studied. By Lot 2, there were approximately 20 pedestrians per hour in the evening peak hour. Otherwise, pedestrian activity at the on campus intersections counted was found to be minimal.

A review of pedestrian facilities revealed that within the main campus of WPU, there are excellent pedestrian facilities within the core of the campus buildings. There is also a pedestrian overpass of Pompton Road connecting some campus buildings, including a crosswalk through Lot 3. Otherwise, there is a lack of pedestrian facilities connecting to County roadways. Pedestrian stairs within Lot 6 were also found to require some maintenance and repair. Based on discussions with campus stakeholders, there is a desire for a sidewalk connection to Pompton Road. Otherwise, the existing

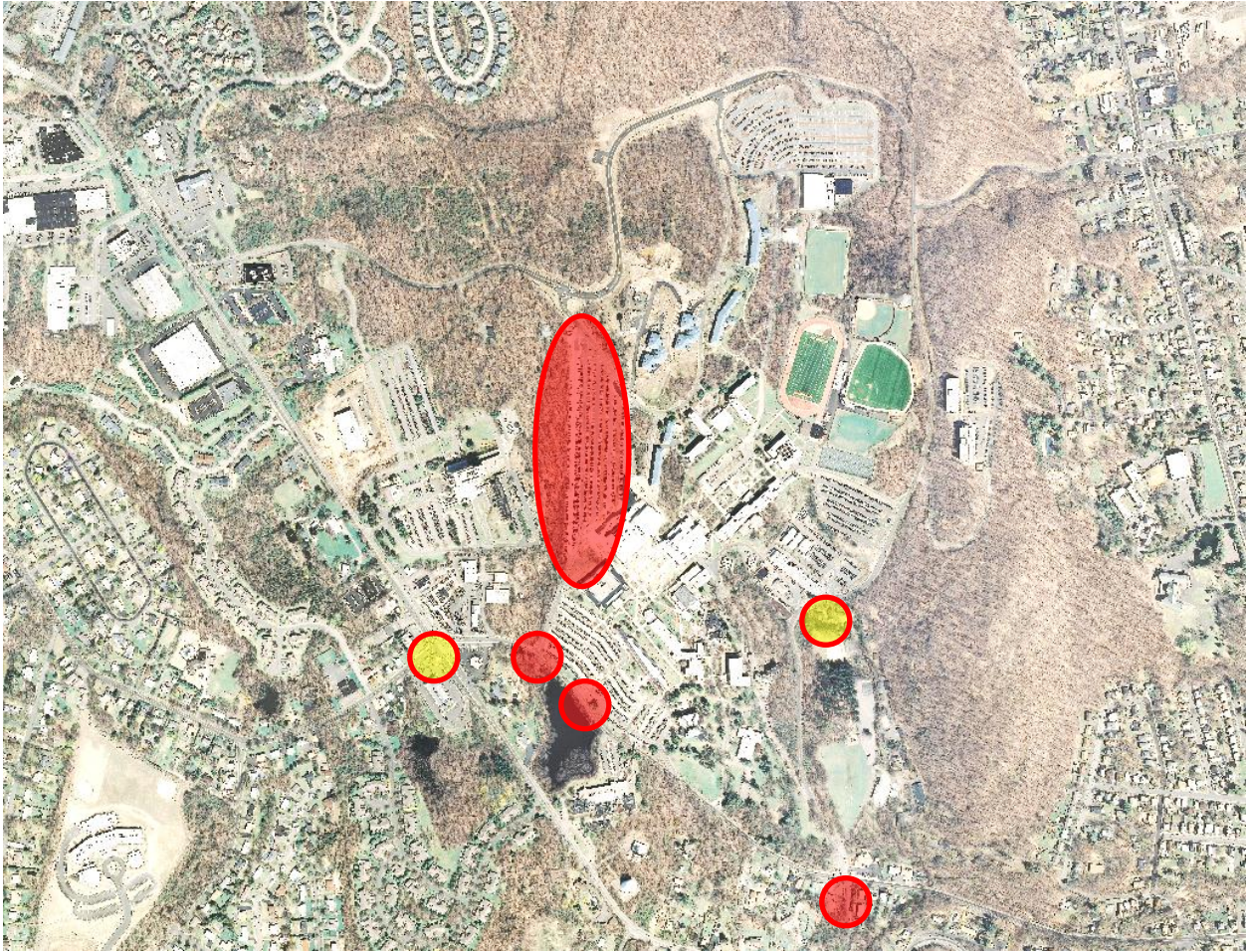
facilities appear to be adequate for WPU's needs given the terrain and proximity of potential destinations.

### Bicycle Activity

Given the topography of WPU, bicycle demand is relatively low. Through a discussion with stakeholders, there is a desire for bicycle storage facilities in residence halls.

### Summary of Existing Transportation Issues

Figure 9 contains a summary of current transportation issues on the main campus of WPU. Significant issues are highlighted in red, and minor issues in yellow. As shown, Lot 5 has issues due to crashes, transit operational issues, and cruising for parking. The three Pompton Road driveways have issues due to traffic operations. The exit for Lot 1 has a minor issue due to the orientation of the driveway. The intersection of Paterson-Hamburg Turnpike and Pompton Road/Ratzer Road has minor operational issues during the evening peak hour for movements that are unrelated to WPU.



**Figure 9 – Summary of Existing Transportation Issues**



## **Future (2016) Conditions – No Build**

### Regional Road Network Changes

Based on discussions with Passaic County, the County is in the process of improving Paterson-Hamburg Turnpike through its intersection with College Road. This will include providing a center left turn lane along the roadway. Said plans are in the early design stages, but can be expected to be completed by 2016.

In addition to the above, Passaic County is planning to implement a “road diet” along Valley Road adjacent to 1600 Valley Road. This road diet will consist of restriping the roadway after resurfacing to provide only one through lane per direction, as well as left turn lanes in the center of the roadway and shoulders on the side of the road. This will have some consequences for capacity at 1600 Valley Road.

### Transit Improvements

NJ Transit has several potential improvements to transit service intended for WPU at various stages in the planning and development process. These include:

- Reroute the NJ Transit 748 bus service between Paterson and Willowbrook Mall to WPU
- Create a new service between WPU and Montclair State University with 30-60 minute headways
- Create a new service between WPU and Ramapo College with 60 minute headways
- Create a new service between WPU and New York (George Washington Bridge Bus Terminal) with 15-30 minute service

In support of these services, NJ Transit sees the value in creating a University Transit Center with space for 4-6 buses to stage, closer to Pompton Road than the current location, along with ticketing and other potential amenities.

### Traffic Growth Projections

As indicated earlier, WPU anticipates enrollment to grow to 13,000 over the next 5 years from the

existing 11,600 students. The existing observed trip generation rate per student was used to forecast future traffic volumes. This assumes no shift to transit from the proposed transit improvements in order to be appropriately conservative. It is hoped that the transit improvements will facilitate a reduction in people driving to WPU, thereby reducing traffic and easing parking demand. Table 7 contains the resulting traffic growth. Table 8 contains the composite total future traffic.

**TABLE 7 – Traffic Growth to 2016**

		<b>8:30-9:30 am</b>	<b>4:30-5:30 pm</b>
Main Campus Parking Lots	Inbound	<b>145</b>	<b>65</b>
	<u>Outbound</u>	<b><u>15</u></b>	<b><u>76</u></b>
	Total	<b>160</b>	<b>141</b>
Main Campus Pickup/Drop off	Inbound	<b>38</b>	<b>45</b>
	<u>Outbound</u>	<b><u>38</u></b>	<b><u>45</u></b>
	Total	<b>76</b>	<b>90</b>
1600 Valley Rd	Inbound	<b>36</b>	<b>16</b>
	<u>Outbound</u>	<b><u>3</u></b>	<b><u>27</u></b>
	Total	<b>39</b>	<b>43</b>
Total	Inbound	<b>219</b>	<b>126</b>
	<u>Outbound</u>	<b><u>56</u></b>	<b><u>148</u></b>
	Total	<b>275</b>	<b>274</b>

**TABLE 8 – Future (2016) WPU Traffic Volumes**

		<b>8:30-9:30 am</b>	<b>4:30-5:30 pm</b>
Main Campus -	Inbound	<b>1619</b>	<b>992</b>
	<u>Outbound</u>	<b><u>569</u></b>	<b><u>1155</u></b>
	Total	<b>2188</b>	<b>2147</b>
1600 Valley Rd	Inbound	<b>334</b>	<b>149</b>
	<u>Outbound</u>	<b><u>28</u></b>	<b><u>247</u></b>
	Total	<b>362</b>	<b>396</b>
Total	Inbound	<b>1953</b>	<b>1141</b>
	<u>Outbound</u>	<b><u>597</u></b>	<b><u>1402</u></b>
	Total	<b>2550</b>	<b>2543</b>

Table 9 contains a summary of parking demand, assuming that no parking garage is constructed. As

shown, an additional 100 parking spaces would need to be found for the main campus, and parking supply will be fully utilized. It should be noted that in order to ensure that people can find spaces when they need them, parking should be no more than 85-90% full, especially in a situation where all of the available parking is not obvious to all vehicles (due to spaces being spread out through multiple lots). Accordingly, there will be a deficit of approximately 733 spaces on the main campus.

**TABLE 9 – Future (2016) Parking Occupancy Without Parking Deck**

<b>Parking Lot</b>	<b>Capacity</b>	<b>Existing</b>	<b>Future No Build</b>	<b>%</b>
Lot 1	131	134	134	102%
Lot 2	347	347	347	100%
Lot 3	292	290	290	99%
Lot 4	378	382	382	101%
Lot 5	897	902	902	101%
Lot 6	874	802	874	100%
Other	300	250	400	133%
Veritans	200	40	200	100%
<b>Sub-Total Main Campus</b>	<b>3,419</b>	<b>3,147</b>	<b>3,529</b>	<b>103%</b>
1,600 Valley Rd	703	538	583	83%
<b>Total</b>	<b>4,122</b>	<b>3,685</b>	<b>4,112</b>	<b>100%</b>

Figures 10 and 11 contain a summary of future (2016) traffic volumes without a new parking deck.

Traffic Level of Service

Level of Service analysis for the various intersections under study was repeated for the future no build condition. Table 10 contains a summary of the results. As shown, existing problems will be exacerbated. As well, critical movement intersection operations at the intersection of West Overlook Road and East Road will degrade to Level of Service (LOS) E during the evening peak hour.

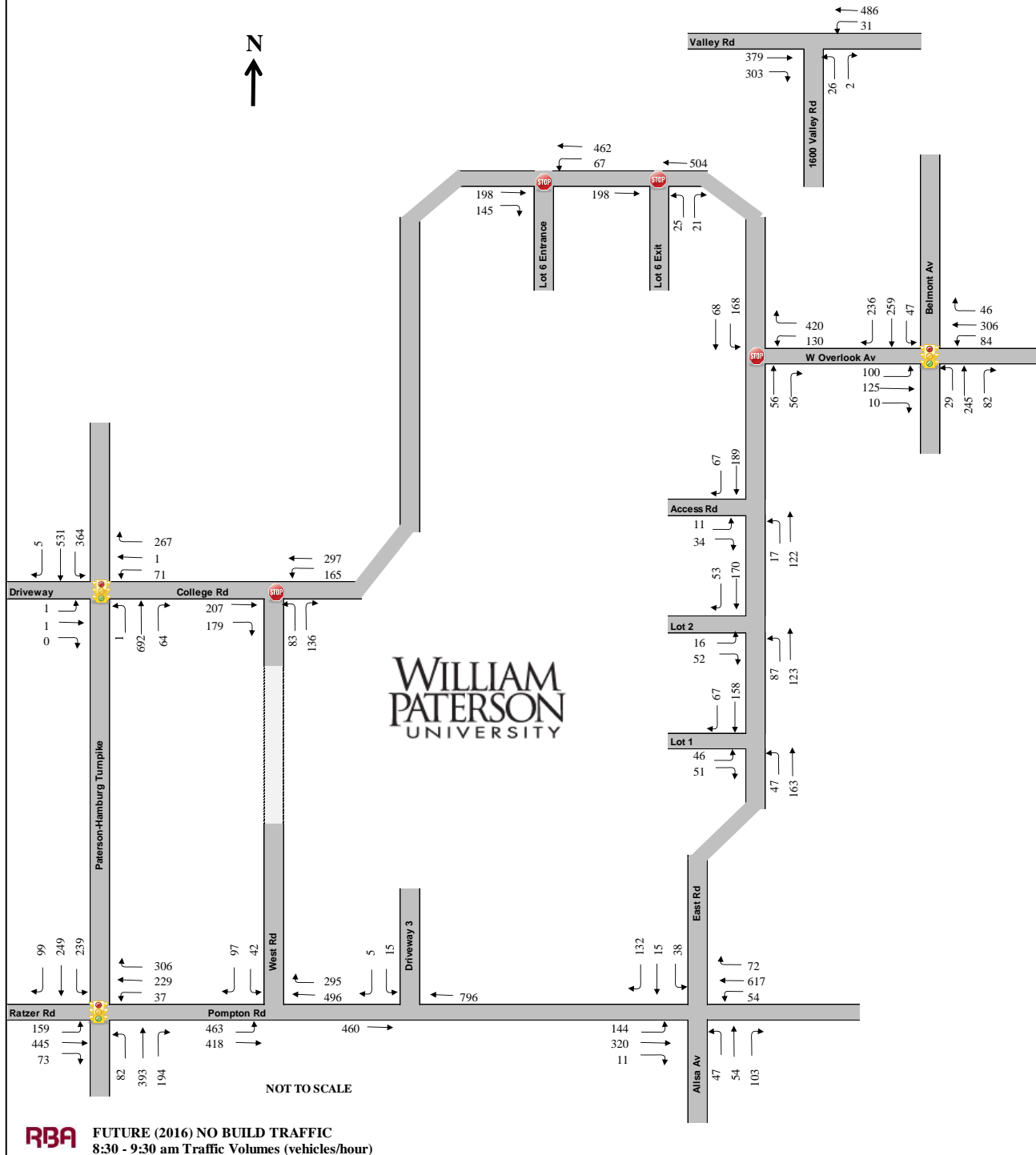
**TABLE 10 – Future (2016) Level of Service with No Parking Deck**

Intersection	Approach	8:30-9:30 am		4:30-5:30 pm	
		Delay	LOS	Delay	LOS
Paterson Hamburg Tpke & Ratzler Rd/Pompton Rd (signalized)	<b>NB Left</b>	48.9	D	<b>57.6</b>	<b>E</b>
	NB Through-Right	20.4	C	22.0	C
	SB Left	45.0	D	52.6	D
	SB Through-Right	16.3	B	27.0	C
	EB Approach	40.2	D	48.1	D
	WB Left-Through	25.0	C	49.1	D
	WB Right	4.9	A	4.9	A
	Overall	27.0	C	35.8	D
Paterson Hamburg Tpke & College Rd (signalized)	NB Left	12.0	B	13.5	B
	NB Through-Right	11.6	B	17.4	B
	SB Left	12.7	B	19.7	B
	SB Through-Right	4.0	A	10.7	B
	EB Approach	32.5	C	23.5	C
	<b>WB Left-Through</b>	48.9	D	<b>71.3</b>	<b>E</b>
	WB Right	12.3	B	10.8	B
	Overall	11.3	B	19.7	B
Belmont Av & Overlook Av (signalized)	NB Approach	12.4	B	10.9	B
	SB Approach	15.9	B	14.3	B
	<b>EB Left</b>	38.3	D	45.9	D
	EB Through-Right	22.4	C	30.9	C
	WB Left	23.6	C	35.3	D
	WB Through-Right	30.8	C	25.4	C
	Overall	20.9	C	24.0	C
Pompton Rd & West Rd (Entry 4)	EB Approach	16.6	C	10.5	B
	<b>SB Left</b>	<b>9999</b>	<b>F</b>	<b>9999</b>	<b>F</b>
	<b>SB Right</b>	15.9	C	<b>36.1</b>	<b>E</b>

**TABLE 10 – Future (2016) Level of Service with No Parking Deck (continued)**

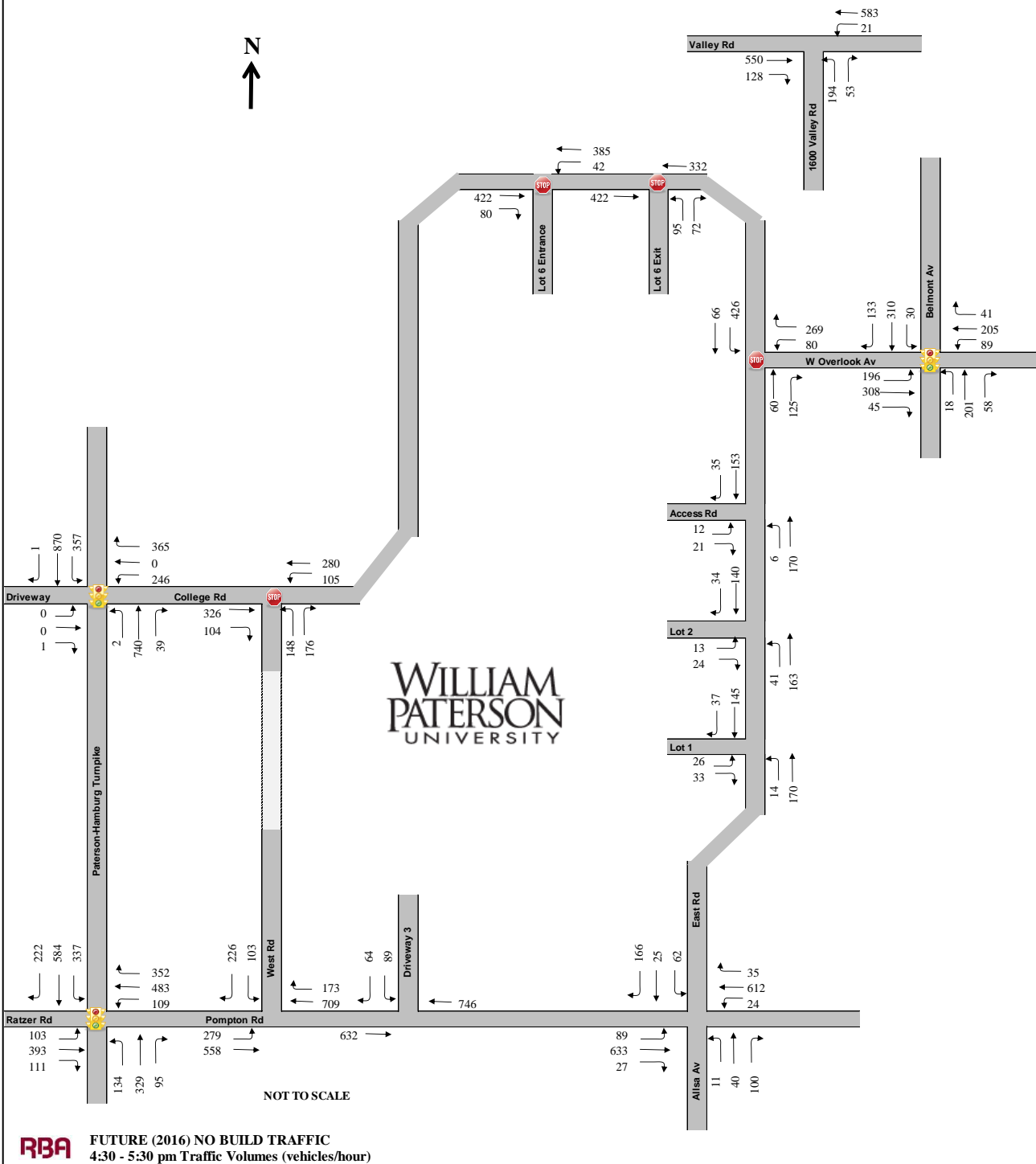
Intersection	Approach	8:30-9:30 am		4:30-5:30 pm	
		Delay	LOS	Delay	LOS
Pompton Rd & East Rd (Entry 1) / Ailsa Av	EB Approach	4.6	A	2.7	A
	WB Approach	1.3	A	0.8	A
	<b>NB Approach</b>	<b>661.2</b>	<b>F</b>	<b>240.8</b>	<b>F</b>
	<b>SB Left-Through</b>	<b>632.9</b>	<b>F</b>	<b>1170.6</b>	<b>F</b>
	SB Right	17.6	C	18.5	C
Pompton Rd & Lot 3 Exit	<b>SB Left</b>	30.3	D	<b>108.2</b>	<b>F</b>
	SB Right	15.5	C	16.8	C
Valley Rd & 1600 Valley Rd Dwy	EB Approach	1.8	A	0.7	A
	<b>SB Left</b>	<b>52.3</b>	<b>F</b>	<b>241.7</b>	<b>F</b>
	SB Right	18.1	C	14.1	B
College Rd & West Rd (all way stop)	EB Through	11.6	B	19.5	C
	EB Right	9.3	A	8.7	A
	WB Left	11.2	B	10.8	B
	WB Through	15.0	B	16.0	C
	NB Left	10.8	B	13.0	B
	NB Right	9.9	A	10.9	B
W Overlook Av & East Rd (all way stop)	WB Approach	24.3	C	17.4	C
	NB Approach	10.1	B	11.4	B
	<b>SB Approach</b>	13.3	B	<b>35.8</b>	<b>E</b>
College Rd & Lot 6 Entrance (all way stop)	EB Approach	11.0	B	16.7	C
	WB Left	7.8	A	7.6	A
	WB Through	17.1	C	13.6	B
College Rd & Lot 6 Exit (all way stop)	EB Approach	9.7	A	17.6	C
	WB Approach	16.8	C	14.3	B
	NB Left	9.2	A	10.9	B
	NB Right	7.6	A	8.7	A
East Rd & Lot 1	EB Approach	2.0	A	0.7	A
	SB Approach	11.8	B	10.5	B
East Rd & Tennis Court Rd	NB Approach	1.1	A	0.3	A
	EB Approach	10.4	B	12.5	B

# WILLIAM PATERSON UNIVERSITY TRAFFIC AND TRANSPORTATION PLANNING STUDY



**Figure 10 – Future (2016) Morning Peak Hour Turning Movement Counts**

**WILLIAM PATERSON UNIVERSITY TRAFFIC AND TRANSPORTATION PLANNING STUDY**



**Figure 11 – Future (2016) Evening Peak Hour Turning Movement Counts**

Future Traffic Conditions with a new Parking Deck

Table 11 contains a summary of parking demand with a new 1,100 parking space parking garage located near Lot 2. Under this scenario, it is assumed that the leasing of the Veritan’s parking lot would be ended. As shown, it is expected that parking will be reduced in Lot 6, and that an equilibrium will be achieved everywhere else.

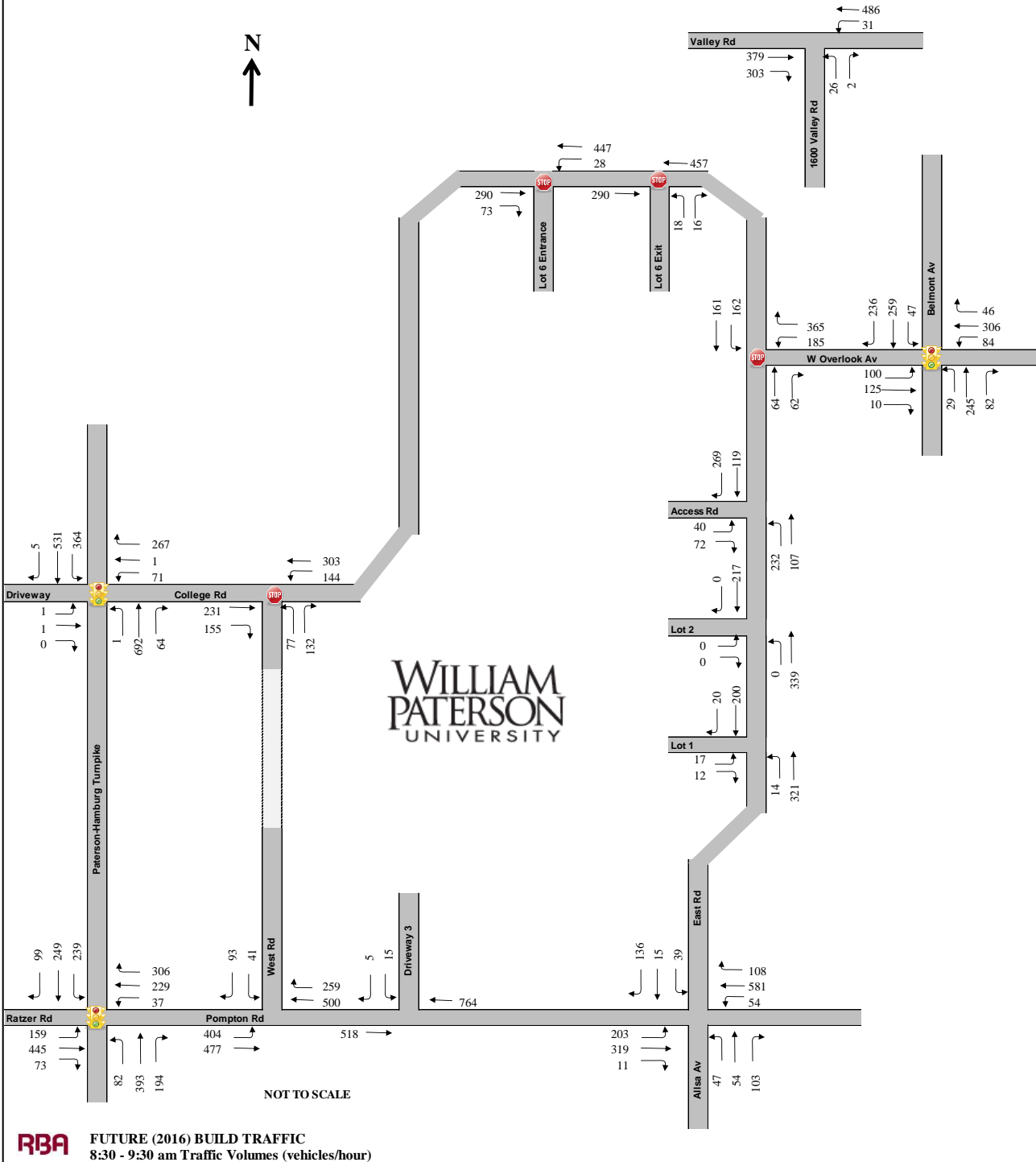
**TABLE 11 – Future (2016) Parking Occupancy With Parking Deck**

<b>Parking Lot</b>	<b>Capacity</b>	<b>Existing</b>	<b>Future No Build</b>	<b>Future Build</b>	<b>%</b>
Lot 1	131	134	134	112	85%
Lot 2	347	347	347	291	84%
Lot 3	292	290	290	243	83%
Lot 4	378	382	382	320	85%
Lot 5	897	902	902	755	84%
Lot 6	874	802	874	581	66%
Other	300	250	400	271	90%
Veritans	200	40	200	0	0%
Parking Deck	1100	0	0	956	87%
<b>Sub-Total Main Campus</b>	<b>4,519</b>	<b>3,147</b>	<b>3,529</b>	<b>3,529</b>	<b>78%</b>
1,600 Valley Rd	703	538	583	583	83%
<b>Total</b>	<b>5,222</b>	<b>3,685</b>	<b>4,112</b>	<b>4,112</b>	<b>79%</b>

The re-orientation of traffic will result in the re-orientation of some traffic. Figures 12 and 13 contain a summary of future (2016) traffic volumes with a new parking deck.

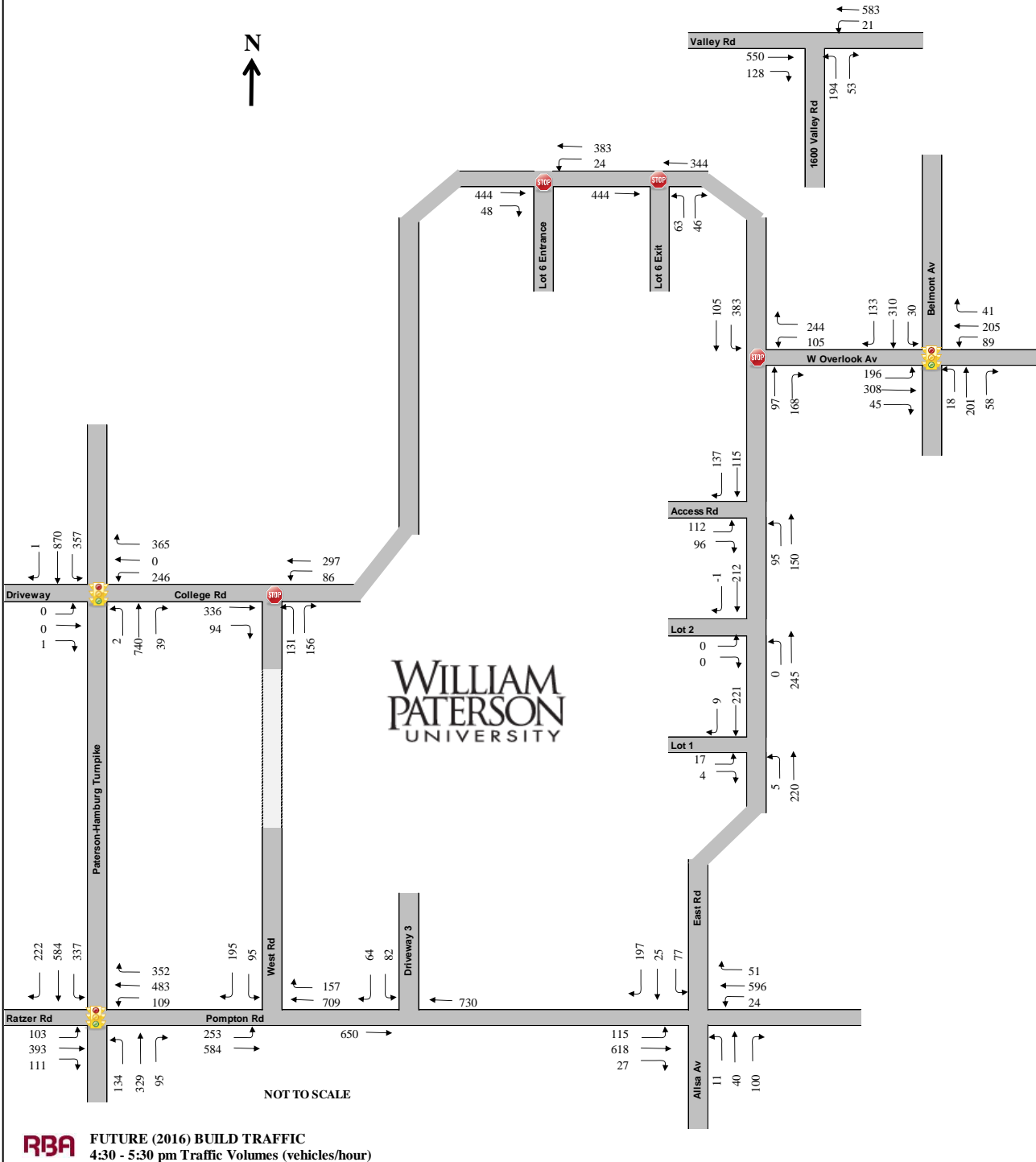


# WILLIAM PATERSON UNIVERSITY TRAFFIC AND TRANSPORTATION PLANNING STUDY



**Figure 12 – Future (2016) Morning Peak Hour Turning Movement Counts with Parking Deck**

# WILLIAM PATERSON UNIVERSITY TRAFFIC AND TRANSPORTATION PLANNING STUDY



**Figure 13 – Future (2016) Evening Peak Hour Turning Movement Counts with Parking Deck**

## Traffic Level of Service with Parking Deck

Level of Service analysis for the various intersections under study was repeated for the future condition with a parking deck (i.e. build condition). Table 12 contains a summary of the results. As shown, existing problems will be exacerbated. As well, critical movement intersection operations at the intersection of West Overlook Road and East Road will degrade to Level of Service (LOS) E during the evening peak hour.

**TABLE 12 – Future (2016) Level of Service with Parking Deck**

Intersection	Approach	8:30-9:30 am		4:30-5:30 pm	
		Delay	LOS	Delay	LOS
Paterson Hamburg Tpke & Ratzler Rd/Pompton Rd (signalized)	<b>NB Left</b>	48.9	D	<b>57.8</b>	<b>E</b>
	NB Through-Right	20.4	C	22.1	C
	SB Left	45.0	D	53.4	D
	SB Through-Right	16.3	B	27.1	C
	EB Approach	40.2	D	48.9	D
	WB Left-Through	25.0	C	50.0	D
	WB Right	4.9	A	4.8	A
	Overall	27.0	C	36.3	D
Paterson Hamburg Tpke & College Rd (signalized)	NB Left	13.0	B	13.5	B
	NB Through-Right	18.9	B	17.2	B
	SB Left	19.8	B	18.3	B
	SB Through-Right	4.2	A	10.7	B
	EB Approach	32.0	C	23.5	C
	<b>WB Left-Through</b>	49.0	D	<b>70.1</b>	<b>E</b>
	WB Right	12.2	B	10.6	B
	Overall	15.4	B	19.2	B
Belmont Av & Overlook Av (signalized)	NB Approach	12.7	B	10.9	B
	SB Approach	17.2	B	14.2	B
	<b>EB Left</b>	<b>80.5</b>	<b>F</b>	43.7	D
	EB Through-Right	22.8	C	30.4	C
	WB Left	23.9	C	34.1	C
	WB Through-Right	35.9	D	25.2	C
	Overall	25.7	C	23.5	C
Pompton Rd & West Rd (Entry 4)	EB Approach	13.8	B	9.9	A
	<b>SB Left</b>	<b>9999</b>	<b>F</b>	<b>9999</b>	<b>F</b>
	<b>SB Right</b>	15.7	C	30.9	D

**TABLE 12 – Future (2016) Level of Service with Parking Deck (continued)**

Intersection	Approach	8:30-9:30 am		4:30-5:30 pm	
		Delay	LOS	Delay	LOS
Pompton Rd & East Rd (Entry 1) / Ailsa Av	EB Approach	6.4	A	3.6	A
	WB Approach	1.3	A	0.8	A
	<b>NB Approach</b>	<b>9999</b>	<b>F</b>	<b>399.0</b>	<b>F</b>
	<b>SB Left-Through</b>	<b>9999</b>	<b>F</b>	<b>9999</b>	<b>F</b>
	SB Right	17.6	C	20.7	C
Pompton Rd & Lot 3 Exit	<b>SB Left</b>	34.2	D	<b>108.4</b>	<b>F</b>
	SB Right	15.1	C	16.7	C
Valley Rd & 1600 Valley Rd Dwy	EB Approach	1.9	A	0.7	A
	<b>SB Left</b>	<b>53.9</b>	<b>F</b>	<b>263.5</b>	<b>F</b>
	SB Right	18.2	C	14.2	B
College Rd & West Rd (all way stop)	EB Through	12.0	B	18.4	C
	EB Right	8.7	A	8.3	A
	WB Left	10.6	B	10.0	B
	WB Through	14.3	B	16.0	C
	NB Left	10.5	B	12.2	B
	NB Right	9.7	A	10.5	B
W Overlook Av & East Rd (all way stop)	WB Approach	31.7	D	18.4	C
	NB Approach	10.9	B	13.7	B
	<b>SB Approach</b>	17.5	C	<b>36.7</b>	<b>E</b>
College Rd & Lot 6 Entrance (all way stop)	EB Approach	11.9	B	16.2	C
	WB Left	7.4	A	7.4	A
	WB Through	16.3	C	13.2	B
College Rd & Lot 6 Exit (all way stop)	EB Approach	10.7	B	16.7	C
	WB Approach	14.4	B	13.3	B
	NB Left	8.9	A	10.0	B
	NB Right	7.6	A	8.2	A
East Rd & Lot 1	EB Approach	0.4	A	0.2	A
	SB Approach	12.0	B	11.7	B
East Rd & Tennis Court Rd	NB Approach	7.0	A	4.2	A
	EB Approach	17.1	C	26.9	D

## **Improvement Recommendations / Concepts**

### Pompton Road and East Road (Entry 1)

#### Issues:

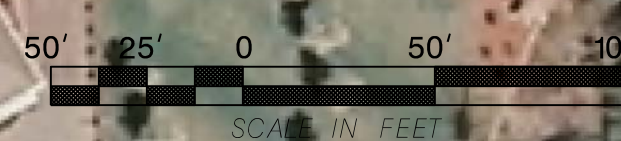
- Capacity problems
- Sight distance issues
- Conflicts with Ailsa Avenue
- Parking lot next to driveway
- Existing case – approx. 80 left/through out/hr
- Future case – approx. 100 left/through out/hr
- Based on discussions with Passaic County, they were generally not in favor of a traffic signal at Entry 1, due to the grade of Pompton Road in the area, and would require left turn lanes if one were installed. This would require right of way taking, and a redesign of Ailsa Avenue and East Road.

#### Solution:

- Signalization would be problematic and expensive, due to need to create turn lanes
- Fairly low left turn volumes, meaning that cost/benefit of signalization would be low
- Re-route left turns and through traffic to other driveways (Belmont Av or Exit from Lot 3)
- Use islands to separate parking / separate from Ailsa Avenue
- Order of Magnitude Cost = \$30,000, including design, construction, and construction inspection

Figure 14 shows this concept.

SEE SHEET 2



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Gordon E. Meth  
New Jersey  
Professional Engineer  
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Revisions		
NO.	DATE	BY

Designed By	Drawn By
abm	jak
Checked By	Approved By
GEM	

William Paterson University

CONCEPTUAL IMPROVEMENTS  
WILLIAM PATERSON UNIVERSITY  
LOCAL ROADS AND PARKING LOTS  
TOWNSHIP OF WAYNE  
PASSAIC COUNTY, NEW JERSEY

CONCEPT PLAN

SCALE: 1" = 50'  
SHEET: 1 of 4  
DATE: JANUARY 2012

C-1  
C-4

## Pompton Road and West Road (Entry 4)/Lots 3 and 4

### Issues:

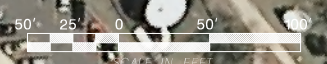
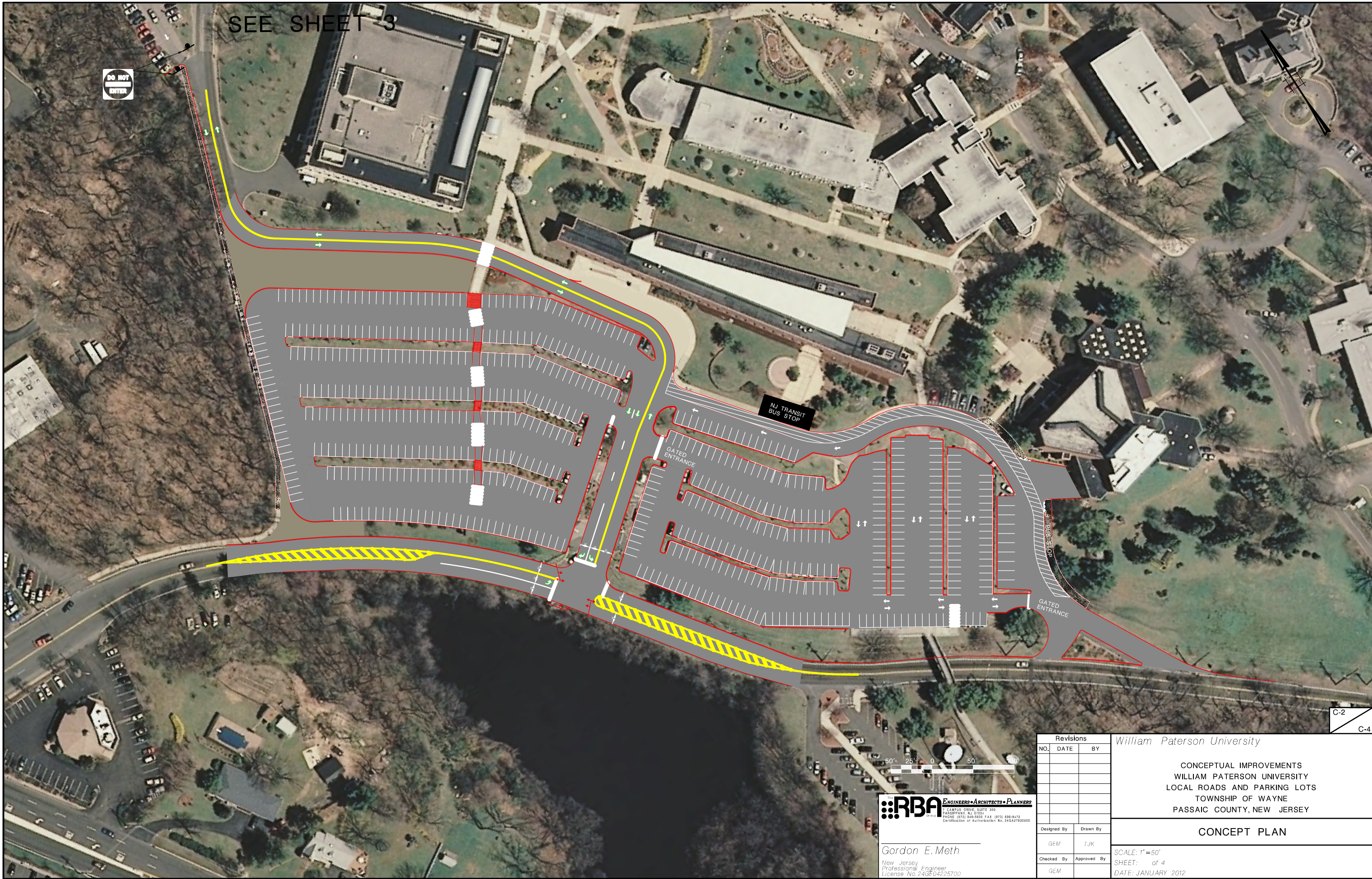
- Capacity problems
- Need sidewalk connection to Pompton Road at West Road (Entry 4)
- Need bus terminal
- Need way to get buses back onto Pompton Road
- Need to not lose parking
- Bus stacking for Shea Center for school groups

### Solution:

- Close Entry 4
- Realign West Road to current exit for Lots 3 and 4, and signalize. This will include adding left turn lanes to Pompton Road.
- Add sidewalk connection along existing West Road (Entry 4) between campus and Pompton Road
- Convert Entry 3 for inbound driveway movements, and create road along perimeter of Lots 3 and 4
- Realign Lot 3 parking spaces for 90 degree parking instead of angled parking (by using retaining walls)
- Create bus terminal to the south of the Atrium Building
- Buses would enter at Entry 3, and leave via realigned West Road, thereby no longer having to circulate through Lot 5
- Order of Magnitude Cost of Pompton Road improvements = \$470,000, including design, construction, and construction inspection
- Order of Magnitude Cost of on campus improvements = \$480,000, including design, construction, and construction inspection
- No net loss of parking

Figure 15 shows this concept.

SEE SHEET 3



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Revisions		
NO.	DATE	BY

William Paterson University

CONCEPTUAL IMPROVEMENTS  
 WILLIAM PATERSON UNIVERSITY  
 LOCAL ROADS AND PARKING LOTS  
 TOWNSHIP OF WAYNE  
 PASSAIC COUNTY, NEW JERSEY

CONCEPT PLAN

SCALE: 1"=50'  
 SHEET: of 4  
 DATE: JANUARY 2012

C-2  
 C-4



## East Road and West Overlook Avenue

### Issues:

- Capacity problems in peaks

### Solution:

- Add channelized right turn lane to West Overlook Avenue
- Order of Magnitude Cost = \$60,000, including design, construction, and construction inspection

Figure 16 shows this concept.



SEE SHEET 3

C-4  
C-4

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CONCEPT PLAN

SCALE: 1" = 50'  
SHEET: 4 of 4  
DATE: JANUARY 2012

## 1600 Valley Road Driveway

### Issues:

- Capacity problems, particularly in evening peak hour
- Narrowing of Valley Road by Passaic County will exacerbate problems

### Solution:

- Signalizing driveway is most cost effective solution that addresses issue
- Order of Magnitude Cost = \$300,000, including design, construction, and construction inspection

## Lot 5

### Issues:

- Conflicts between through traffic, parking maneuvers, pedestrians, and transit
- High degree of cruising for parking (due to proximity to campus), which interferes with through traffic
- High number of crashes (46% of crashes on campus)

### Solution:

- Creating a through road was investigated, but the loss of parking and costs would be too high.
- Eliminate NJ Transit bus operations from Lot 5 by moving transit center to Lot 3, and allowing buses to loop through Lot 3.
- This parking area is close to campus, and therefore particularly susceptible to people dwelling waiting for vacant spaces, or cruising looking for vacant spaces. While this occurs in many lots, it is particularly problematic in Lot 5, since all campus traffic must circulate through parking aisles (meaning that that said vehicles impede the flow of traffic, thereby causing the high crash rate and the impedance to emergency vehicles. One strategy to address this would be to meter the parking in this area. By metering the parking, people with long stays will be encouraged to use other lots that involve a slightly longer walk, while those with short stays can pay to park close. In any event, metering the parking in Lot 5 would reduce the amount of cruising for parking and/or dwelling in parking aisles waiting for spaces to vacate substantially, thereby improving safety and circulation. Parking meters could be set with variable pricing, and would utilize a few central pay stations and metered parking. Remote units could print out unsold space numbers, thereby minimizing enforcement costs. Pricing should be adjusted to ensure 10-15% vacancies in parking at all times.
- Signing and striping should be provided to create one-way flows on the two most remote parking aisles. Previously, these aisles functioned in this manner, but the signing has been removed and the striping has faded.
- Costs would be minimal, as parking meters could be contracted out to a vendor in exchange for a portion of the parking revenue. Signing and striping costs are minimal.
- The revenue could be used to fund enforcement, and help fund the parking deck or other campus improvements

SEE SHEET 4



SEE SHEET 2

C-3  
C-4



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**CONCEPT PLAN**  
  
SCALE: 1"=50'  
SHEET: 3 of 4  
DATE: JANUARY 2012

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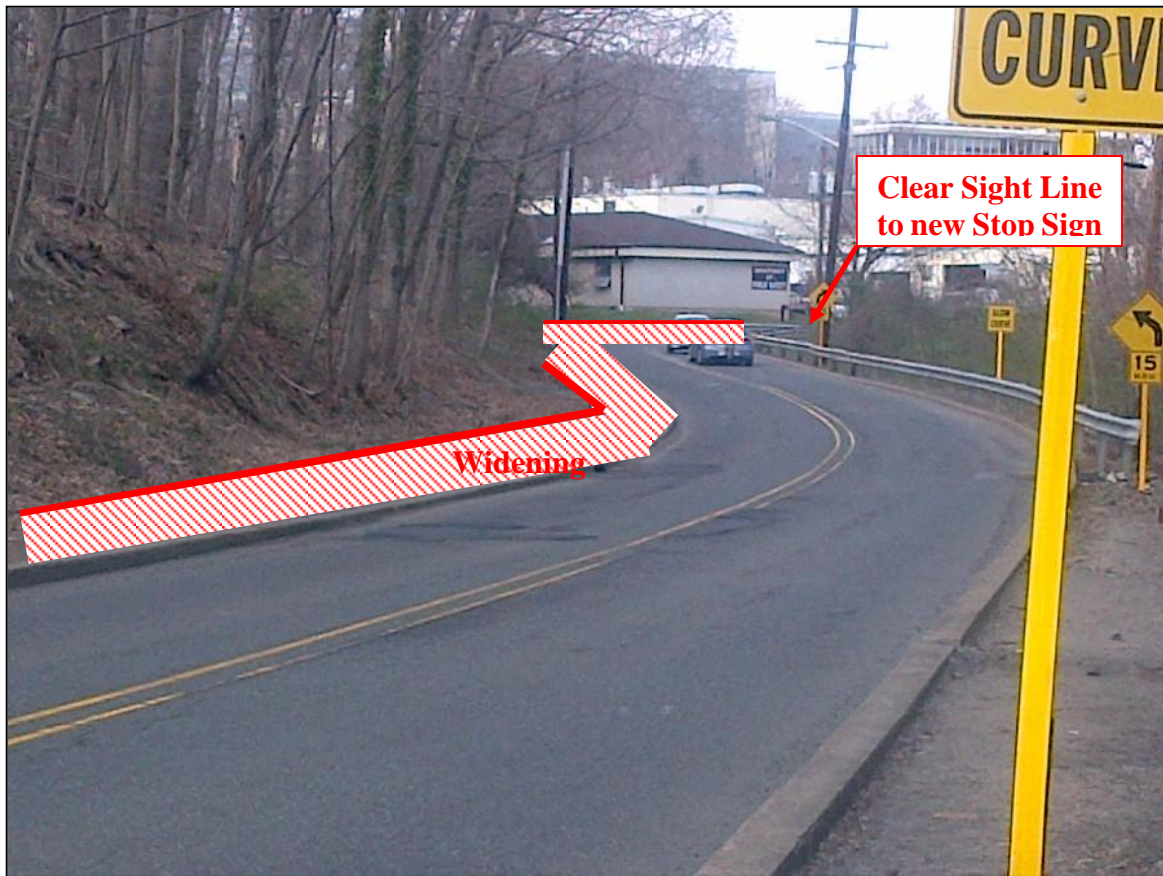
## Other

### Issues:

- Minor access and circulation issues on campus

### Solutions:

- Modify entrance to Lot 1 with Parking Deck construction to combine with adjacent driveway and realign
- Modify main entrance to Lot 2 with Parking Deck construction to provide access to Tennis Court Road.
- Create an All Way stop at East Road and Tennis Court Road
- Create an All Way stop by Police Headquarters, since leaving one movement uncontrolled can create compliance issues. This will require opening sight triangles, and adding advanced signage regarding the stop sign, as shown in Figure 18.
- Widen the curve south of the Police Headquarters in order to reduce conflicts with traffic, as shown in Figure 18.
- Eliminating stop sign control by Lot 6 Entrance was discussed, and was viewed as being advisable (to prevent creating a general disregard for stop signs). However, the committee was concerned about controlling speeds in this area.
- Rehabilitate the stairs in Lot 6
- Order of Magnitude Cost = \$5,000 over and above civil engineering incorporated into Park Deck construction already



**Figure 18 – Widening of East Dr by Police HQ**

Summary of Improvements/Priority

<u>Location</u>	<u>Cost</u>	<u>Priority</u>
Entry 1	\$ 30,000	Medium
Pompton Rd Signal	\$ 470,000	High
Entry 4/Lots 3 and 4	\$ 480,000	High
1600 Valley Rd Signal	\$ 300,000	Medium
Lot 5	\$ 0	High
W Overlook & East Rd	\$ 60,000	Low
Belmont & Overlook	\$ 30,000	Medium
Widen Curve by Police HQ	\$ 90,000	Medium
Other	\$ 5,000	Low
<b>TOTAL</b>	<b>\$1,465,000</b>	

## **Conclusions**

Based on a review of traffic, transit, and pedestrian operations on WPU campus, we find that creating a new signal on Pompton Road, along with the modifications to Entry 4 and Lots 3 and 4 that include a new transit center are a high priority, and would address most of the transportation issues on campus. Adding a new sidewalk connection to Pompton Road should be part of this improvement. We have also found that traffic safety and operations in Lot 5 can be improved at minimal cost by adding metered parking and relocating NJ Transit operations to Lot 3. We have also found that signalizing the driveway for 1600 Valley Road is a high priority. We have also found that some minor changes are required at other locations in order to improve traffic operations.