TECHNICAL MEMORANDUM

REF: MAX-2014149.01

DATE: April 2, 2019

TO: Mr. Stephen Bartlett
City of Portsmouth School Department
1 Junkins Avenue, Suite 402
Portsmouth, NH 03801

FROM: Ms. Rebecca L. Brown, P.E., PTOE Senior Project Manager
Mr. Douglas S. Halpert, P.E., Project Engineer

RE: Portsmouth High School Circulation Study
Portsmouth, New Hampshire

INTRODUCTION

Greenman-Pedersen, Inc. (GPI) has prepared this circulation study for the Portsmouth High School campus on behalf of the Portsmouth School Department in Portsmouth, New Hampshire. The City of Portsmouth installed a fully actuated traffic signal at the intersection of Lafayette Road (Route 1) and Andrew Jarvis Drive which became operational in October 2018. Although the school's address is Andrew Jarvis Drive, there is also access to the school via Summit Avenue which helps to distribute vehicle trips. Summit Avenue is a residential neighborhood street that is less desirable than Andrew Jarvis Drive to handle the high school traffic as it has a sloping profile, poor sight distances, limited queue storage and tight turning radii. The installation of a traffic signal at the Lafayette Road (Route 1) / Andrew Jarvis Drive intersection was intended to facilitate the use of Andrew Jarvis Drive as the primary access route for the school.

In addition to the school access issues, there are circulation concerns within the campus itself that warrant evaluation. Specifically, conflicts between school buses, parent drop-off and pick-up traffic, student and staff parking traffic, and pedestrian and bicyclist access. At this time the School Department is considering changes on the school campus that would redirect entering and exiting traffic to the Andrew Jarvis Drive/Lafayette Road intersection and reduce conflicts on internal campus roads and parking areas through changes to design of the campus roadway and parking areas. This study identifies existing parking and circulation deficiencies on the school campus and evaluates alternatives to improve safety, operations, and circulation both on-site and in the immediate surrounding neighborhood.

Study Area

The project limits were identified in coordination with representatives from the City of Portsmouth, the Portsmouth School Department, and the Portsmouth High School. The limits include the access drives and parking lots on the school campus, as well as the following intersections:

- Lafayette Road (Route 1) / Andrew Jarvis Drive
- Andrew Jarvis Drive / Lot A Driveway
- Andrew Jarvis Drive / Summit Avenue / Alumni Circle
- Summit Avenue Gate

Figure 1 depicts the Portsmouth High School and study area intersections in relation to the surrounding area roadway network.

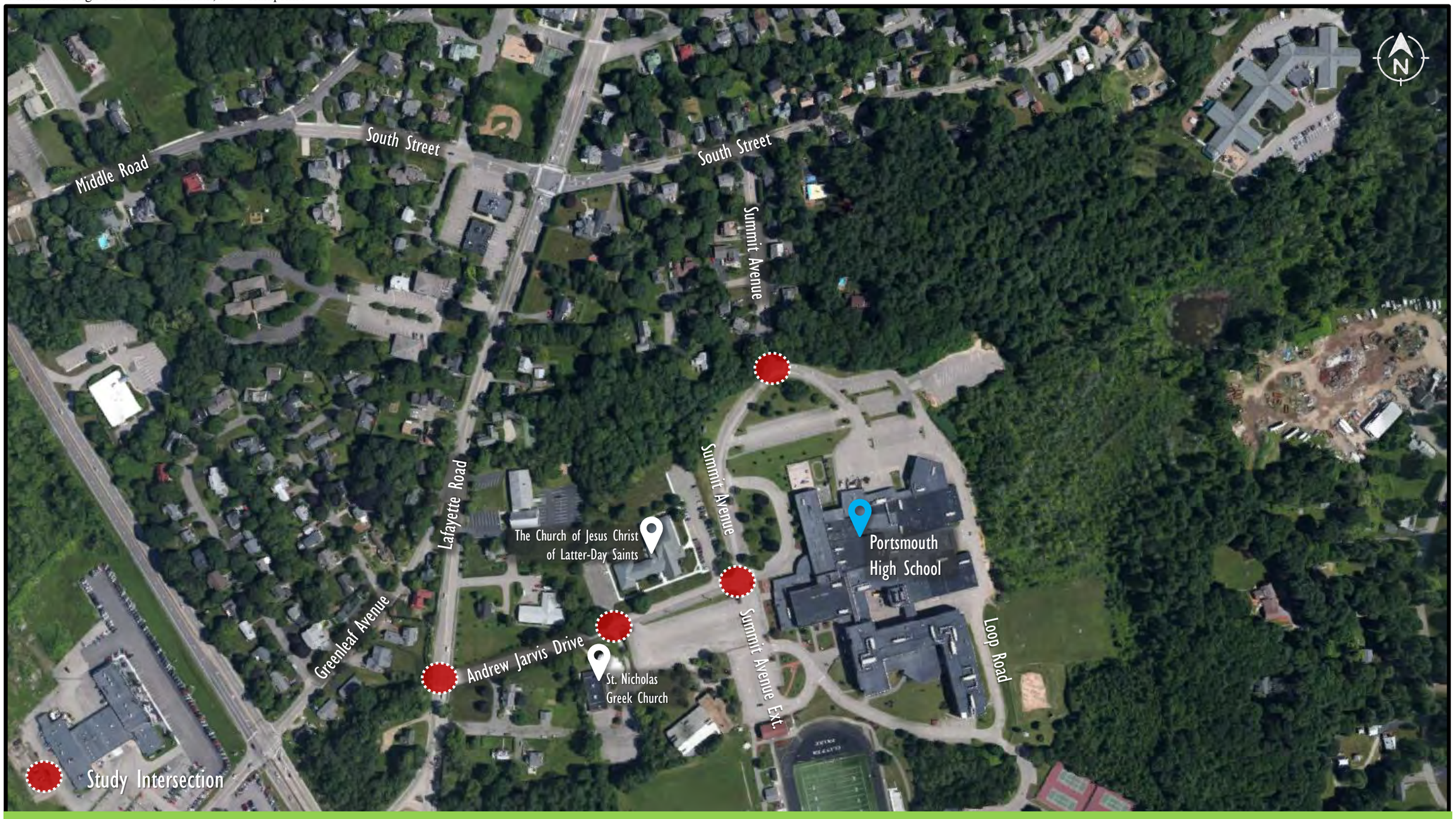


Figure 1
Project Location Map

DATA COLLECTION

The study began with a multi-phased data collection process, which included the following:

Kick-off Meeting

A project kick-off meeting was held on May 11, 2018 at the Portsmouth High School with representatives from GPI, the City of Portsmouth Planning Department, Public Works Department, School Department, and Portsmouth High School present. This meeting was intended to finalize the scope of the study and identify existing traffic operations and circulation patterns, as well as any safety or circulation deficiencies. GPI also conducted a field visit to observe existing circulation patterns, pavement markings, signage, and other elements impacting parking and traffic flow on the school campus.

Observation of School Arrival and Dismissal

GPI conducted observations of the morning arrival and afternoon dismissal patterns on Thursday, May 24, 2018 from 7:00 AM to 9:00 AM and from 2:30 PM to 4:00 PM. During this time, GPI observed vehicular, bus, pedestrian, and bicycle traffic flow around the campus, and identified causes of traffic congestion and potential safety issues.

Parking Utilization

The City of Portsmouth performed a Parking Utilization Study on Thursday, May 24, 2018 to record the number of occupied parking spaces within each of the parking lots on the campus, including all student, staff, visitor, and handicap parking spaces.

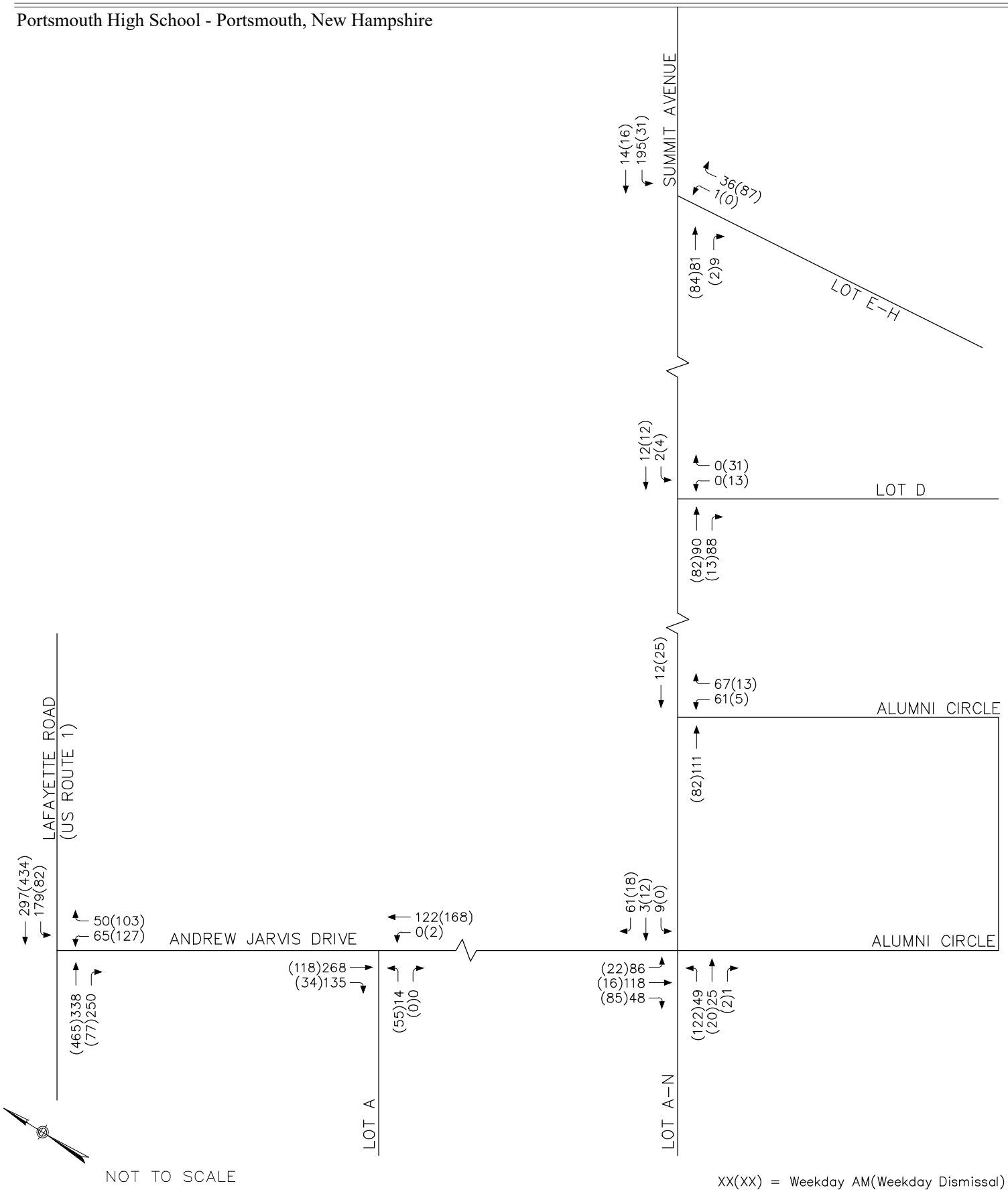
Traffic Volumes

Manual turning movement counts (TMCs) were collected by the City of Portsmouth Public Works Department at the study area intersections during the weekday morning arrival (AM) peak period (7:00 AM to 9:00 AM) and weekday afternoon dismissal (DIS) period (2:00 PM to 4:00 PM) on the following dates:

- Andrew Jarvis Drive / Summit Avenue / Alumni Circle – Thursday, May 24, 2018
- Andrew Jarvis Drive / Lot A Driveway – Wednesday, May 30, 2018
- Summit Avenue Gate – Thursday, May 24, 2018

TMCs were also collected at the Lafayette Road (Route 1) / Andrew Jarvis Drive intersection on Friday, May 4, 2018 from 3:00 PM to 6:00 PM, and on Monday, May 7, 2018 from 7:00 AM to 9:00 AM. The resulting traffic volumes are depicted in Figure 2. All traffic-count data are provided in the Appendix and are described in further detail in the *Existing Conditions* section of this report.

Portsmouth High School - Portsmouth, New Hampshire



GPI Greenman-Pedersen, Inc.

Engineering and Construction Services

Figure 2

Existing Conditions
Weekday AM and Dismissal
Peak Hour Traffic Volumes

EXISTING CONDITIONS

GPI developed a summary of the existing conditions at the Portsmouth High School based on the kick-off meeting, field visit, arrival and dismissal observations, parking utilization study, and traffic volume counts described in the *Data Collection* section. The detailed field notes and meeting notes are provided in the Appendix.

Campus Circulation and Parking

Portsmouth High School is a public high school serving 9th through 12th grade students from the City of Portsmouth, and the nearby towns of Rye, Greenland, New Castle and Newington. School enrollment is approximately 1,100 students.

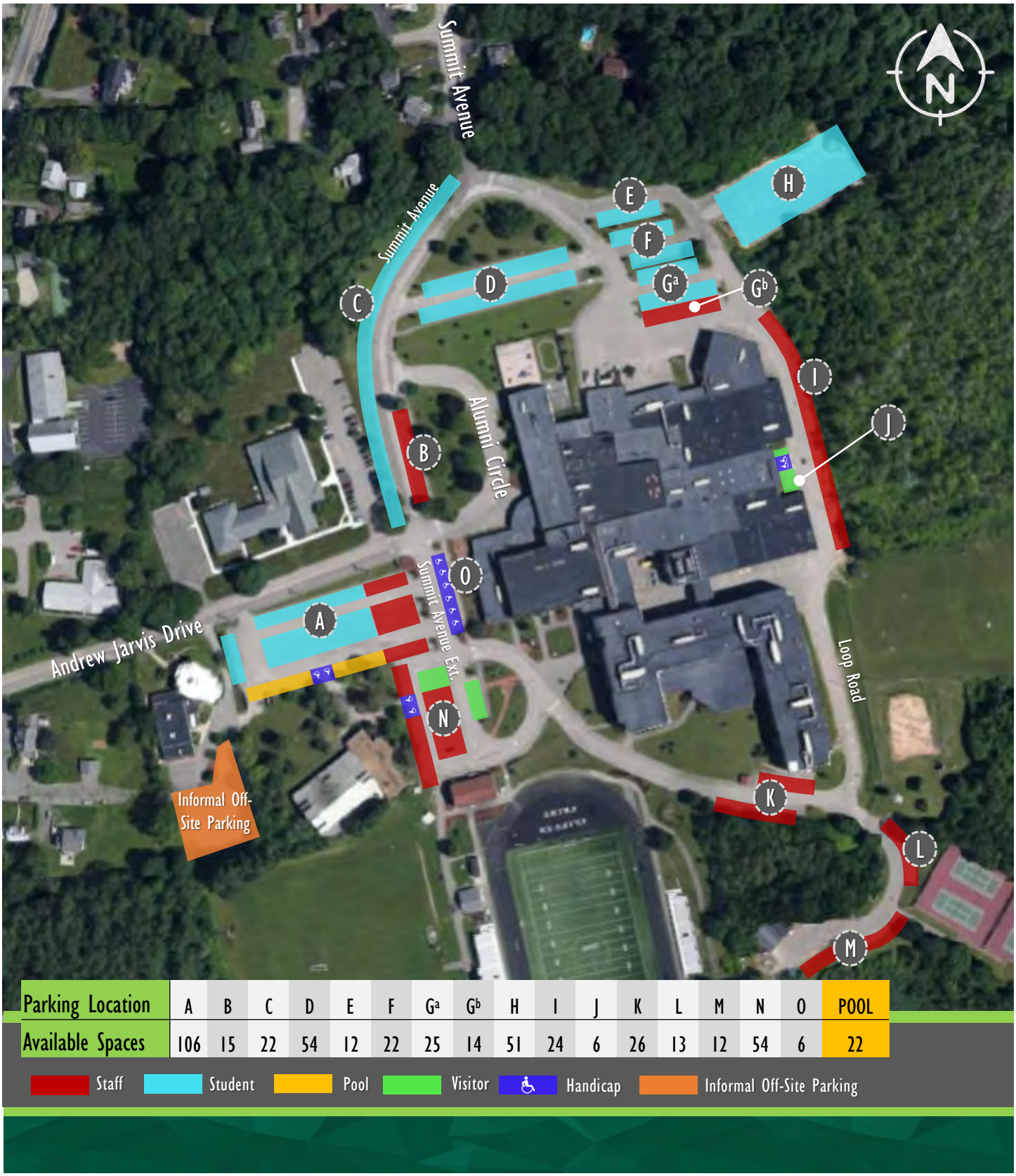
Access to Portsmouth High School is gained via Summit Avenue to the north of the campus and Andrew Jarvis Drive to the west. The school building complex is circumscribed by a loop road that provides access to the building, parking areas and athletic facilities. The athletic facilities are primarily located south of the building complex. The roads on the north side of the campus connecting to Summit Avenue are two-way streets; the drives connecting around the east and south sides of campus are one-way drives. Alumni Circle is a one-way loop at the end of Andrew Jarvis Drive. There is a gate at the end of Summit Avenue which is locked at 9:00 AM and opened at 2:30 PM to reduce school associated trips on this street during the day.

Parking. Parking is provided in lots and along the circulation drives. Parking spaces are designated for staff, students, visitors, and patrons of the Portsmouth Indoor Pool, which is located south of Lot A. The distribution of parking spaces on the site is shown in **Figure 2** and summarized in **Table 1**. In addition to the parking spaces provided on the campus, the adjoining St. Nicholas Church sells parking passes for student parking.

Table 1: Campus Parking by Type

TYPE OF PARKING	NUMBER OF SPACES	
	Standard	HC
Student	251	
Staff	181	2
Visitor	15	
Accessible		8
TOTAL	**447**	**10**

Note: Excludes 20 parking spaces designated for the Portsmouth Indoor Pool.



Parking Location	A	B	C	D	E	F	Ga	Gb	H	I	J	K	L	M	N	O	POOL
Available Spaces	106	15	22	54	12	22	25	14	51	24	6	26	13	12	54	6	22

Staff | Student | Pool | Visitor | Handicap | Informal Off-Site Parking

GPI Greenman-Pedersen, Inc.
Engineering and Construction Services

Figure 3
Existing Parking Layout Map

GPI Greenman-Pedersen, Inc.
Engineering and Construction Services

Figure 4
Existing Campus Circulation Map

Observed Concerns and Deficiencies

- Current geometry of parking lot layouts does not reinforce intended flow paths.
- There is a lack of compliance with current drop-off and pick-up protocol which creates congestion and inefficient traffic flow.
- Inconsistencies between arrival and dismissal protocols create confusion.
- There is an overall lack of ADA and MUTCD compliance regarding signage and pavement markings which are either damaged, faded, or inconsistent with current standards.

Image 1: Vehicles exiting Lot A and the church lot at dismissal.

- One-way counter-clockwise flow for Lot N is widely ignored for staff and visitor parking due to lack of signage and faded pavement markings.
- Wide drive aisles in Lot A lead to higher speeds and idled double parking from parents for drop-off or pick-up.
- Proximity of driveways from St. Nicholas Greek Church parking lot and Lot A creates bottle neck during dismissal along Andrew Jarvis Drive.
- Students walk through Lot A and N between parked cars. There are no designated routes (walkways or sidewalks) through the lots.
- The 'No Left Turn' restriction posted for Lot D and Alumni Circle are widely ignored in both the morning arrival and afternoon dismissal periods.
- The Summit Avenue northeast approach from Lot C is treated as a free movement which causes significant delay on the northwest approach. This results in drivers cutting through Lot D in order to by-pass the queue on the northwest approach.
- The one-way circulation on the south side of the school requires that traffic headed to the athletic fields or visitor spaces either drive through Lots A and N or drive all the way around the school. This is unnecessarily circuitous and inefficient. When through traffic uses the parking lot as a cut-through, this causes unnecessary conflicts between these vehicles and the vehicles accessing the parking as well as pedestrians going to/from parked vehicles.

Bus Circulation

Portsmouth High School has 15 buses in operation (excluding the specialized/adapted buses for students with special needs). In the morning, buses enter from Andrew Jarvis Drive, circulate around the perimeter of the school and drop off at the south building entrance. The specialized/adapted buses enter from Andrew Jarvis Drive, circulate through Lot A and utilize the accessible spaces in Lot O for drop-off.

At dismissal, buses use Alumni Circle for loading (parent pick-up is not allowed in Alumni Circle at that time). Buses also park along Lot B to load students at dismissal. This creates issues with double parking along Summit Avenue. Finally, buses from visiting teams for athletic events arrive and drop students off on the south side of the school before or during the afternoon dismissal period. After-school-activities begin prior to dismissal, causing conflicts with visiting team buses and parents entering the school at the dismissal period.

Observed Concerns and Deficiencies

- There is inadequate space for 15 buses to park for loading and this causes congestion at dismissal.
- Bus use of Alumni Circle creates a backup into the 4-way STOP controlled intersection as they do not pull up beyond the main doorway. This results in vehicle congestion.
- Bus parking along Lot B, instead of pulling into Alumni Circle, creates congestion along Summit Avenue and into the Summit Avenue/Andrew Jarvis Drive/Alumni Circle intersection.

Parent Drop-Off and Pick-Up

In the morning parents drop students off using Alumni Circle. They typically pull-up only as far as the building entry which causes traffic to queue through the Alumni Circle/Andrew Jarvis Drive/Summit Avenue intersection. To avoid the queue, some parents were observed driving through Lot A and dropping off at the accessible spaces in Lot O. This can create a bottle neck with parent drop-off conflicting with buses exiting the site and staff attempting to enter Lots A and N. Parents also drop-off on the north side of the school, entering via Summit Avenue and then typically turning around and exiting via Summit Avenue or Andrew Jarvis Drive.

Parents congregate within the aisles of lots A, D and N and the loading area adjacent to lot G to pick up students and often arrive an hour before dismissal. Parent parking for pick-up also occurs in the parking lot of Church of Jesus Christ and Latter Day Saints (north side of Andrew Jarvis Drive) in order to exit via Andrew Jarvis Drive. The school enforces no parking in the church lot on Wednesdays when the church has functions after school hours.

Observed Concerns and Deficiencies

- Parent drop-off in Alumni Circle in the morning causes an extended queue into the Summit Avenue/Andrew Jarvis Drive/Alumni Circle intersection as parents drop-off at the main door rather than pulling forward along the length of the circle.
- Parent drop-off in Lot O is accomplished by vehicles cutting through Lot A which results in a bottle neck at the intersection of Andrew Jarvis Drive/Summit Avenue/Alumni Circle.

Pedestrian and Bicyclist Circulation

Pedestrians and bicyclists enter the school campus primarily from Summit Avenue. Pedestrians from students parking lots A through H walk along the streets and through the parking areas primarily to the west and north building entries. The existing crosswalk at the Summit Avenue / Loop Road intersection (crossing the northwest approach from Lot E) does not correspond with desired path of travel and situates students within a shaded area where they are less visible. Students traverse Lot D and down the hill from Summit Avenue, instead of on the sidewalk along Summit Avenue, to reach the front of the school. This informal path within the grassed area down the hill is cleared in winter because of its heavy use by the students. Students walk through Lots A and N between parked cars to approach the school. Sidewalks or designated walkways are lacking through these lots. Students on bicycles have been observed traveling against the one-way Summit Avenue flow of traffic both north and south of Andrew Jarvis Drive.

Image 2: Students walking to school from Summit Avenue outside of marked crosswalk.

Observed Concerns and Deficiencies

- There is an overall lack of ADA compliance with pedestrian crosswalks and presence of accessible ramps, including at designated accessible parking spaces.
- The existing crosswalk at Summit Avenue does not correspond with desired path of travel and situates students in shaded area where they are less visible.
- There is a strong desire line for pedestrians from Summit Avenue to the school through Lot D and down a hill.

- Many pedestrians were observed walking through Lots A and N in between parked vehicles which is unsafe. Organized pedestrian routes should be provided to accommodate this strong desire line.

Parking Utilization

The occupancy of the parking areas was collected by the City at the following times:

- Friday May 4, 2018 at 2:00 PM
- Thursday May 24, 2018 at 9:00 AM

On both days, the weather was sunny with clear skies.

The parking utilization by lot is summarized in **Table 2**. In the aggregate, all parking was 86% utilized at 9:00 AM and 72% utilized at 2:00 PM. Lots with the highest utilization includes student lots C through G and Student/Staff Lot A, Staff Lots Gb and K – all of which were 90 to 100% utilized in the morning. Staff lot M was not used either in the morning or evening.

Table 2: Parking Utilization, May 2018

LOT	TYPE	AVAILABLE SPACES	9:00 AM OCCUPIED	9:00 AM UTILIZATION	2:00 PM OCCUPIED	2:00 PM UTILIZATION
A	Student/Staff	106	101	95%	87	82%
B	Staff	15	12	80%	7	47%
C	Student	22	24	109%	16	73%
D	Student	54	54	100%	38	70%
E	Student	12	12	100%	9	75%
F	Student	22	22	100%	18	82%
Ga	Student	25	25	100%	13	52%
Gb	Staff	14	13	93%	7	50%
H	Student	51	42	82%	34	67%
I	Staff	24	19	79%	20	83%
J	Accessible	6	0	0%	1	17%
K	Staff	26	24	92%	25	96%
L	Staff	13	7	54%	6	46%
M	Staff	12	0	0%	0	0%
N	Visitor/ Staff	54	45	83%	52	96%
O	Accessible	6	1	17%	2	33%
TOTAL		**457**	**401**	**87%**	**335**	**73%**

Note: Lot A excludes 22 parking spaces which are designated for the Portsmouth Indoor Pool.

ALTERNATIVES ANALYSIS

Based on the observed deficiencies and safety concerns, GPI developed three campus circulation concepts for analysis. This section highlights the key features and merits of each option.

Circulation Concept 1

The primary circulation changes for Concept 1 are described below and illustrated in Figure 4:

- **Summit Avenue Extension (Alumni Circle to Lot N)**. This concept alters the circulation on Summit Avenue Extension (south of Andrew Jarvis Drive and adjacent to the school) to two-way flow. The adjacent row of parallel accessible spaces are revised to 90-degree parking spaces accommodating visitor and accessible spaces (11 spaces of which 6 are accessible spaces – net gain of 5 spaces). Provide access to Lot A and Lot N.

- **Lot A**. Change the direct access to Andrew Jarvis Drive to egress only. Close northerly access from Summit Avenue Extension and restripe parking spaces within Lot A to angled parking spaces to reinforce one-way clockwise flow. Provide pedestrian walkways through the center of the parking lot and along the south edge of the parking lot (to serve the pool parking spaces). Stripe a crosswalk across Summit Avenue Extension to provide a marked connection to the new walkway in the center of Lot A. The 22 parking spaces closest to the pool will continue to serve as pool parking. The adjacent row of 23 spaces will serve as staff parking and the remainder will be student parking. The reconfiguration of the parking lot will result in a net loss of 24 parking spaces within this lot (82 spaces – loss of 24 spaces).

- **Lot N**. Construct a median island between parking spaces in Lot N and Lot A and close the northerly circulation aisle on LOT N. Provide a crosswalk/sidewalk through the median to connect the school and Lot A walkway. Place DO NOT ENTER signs at Lot N egress point (60 spaces – gain 6 spaces).

- **South Drop-off Loop**. Stripe a crosswalk from the walkway in the island to the school entry plaza; provide ADA compliant ramps and detectable warnings.

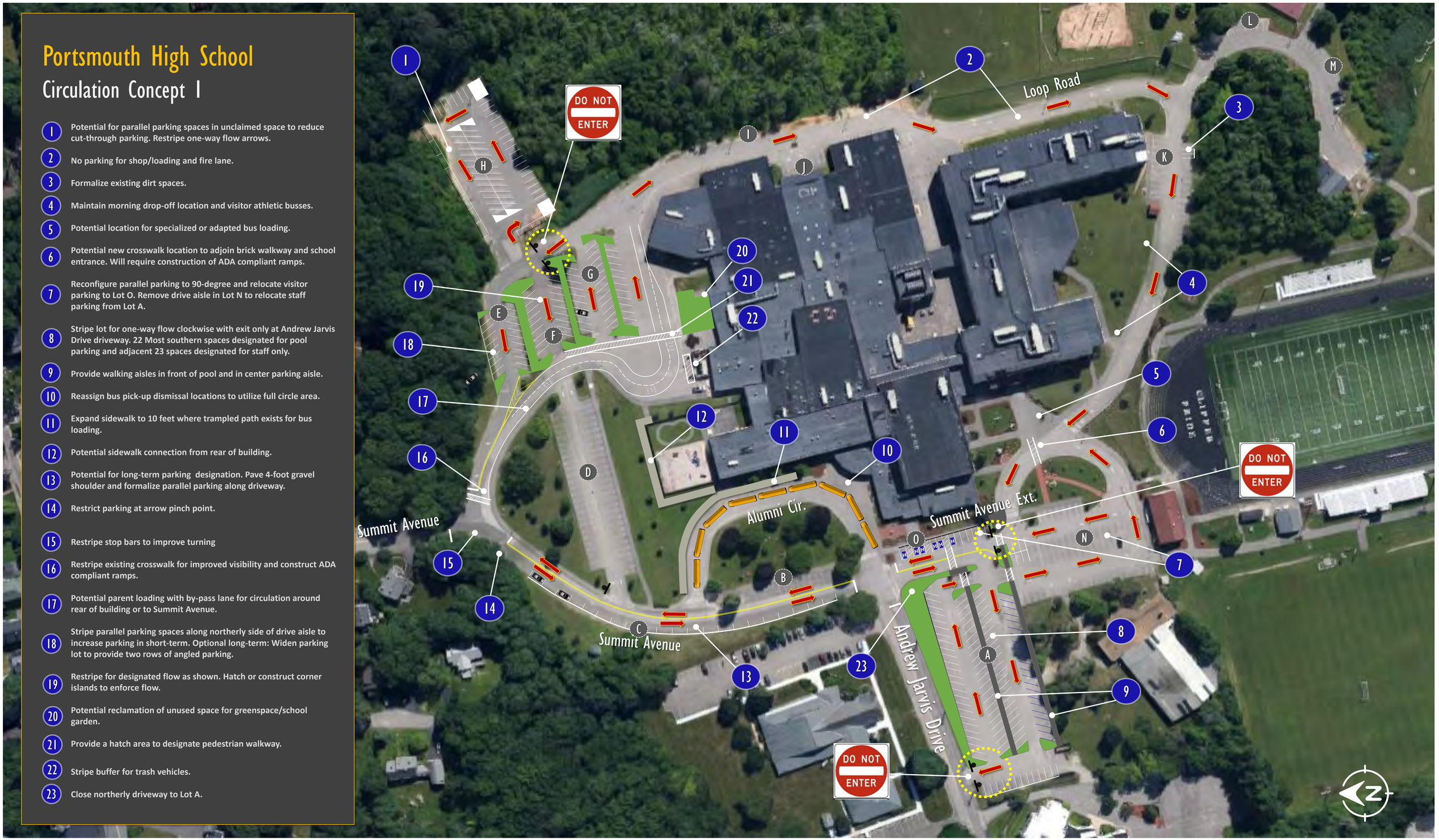
PORTSMOUTH HIGH SCHOOL CIRCULATION STUDY

Portsmouth High School – Portsmouth, New Hampshire

Portsmouth High School

Circulation Concept 1

1. Potential for parallel parking spaces in unclaimed space to reduce cut-through parking. Restripe one-way flow arrows.
2. No parking for shop/loading and fire lane.
3. Formalize existing dirt spaces.
4. Maintain morning drop-off location and visitor athletic busses.
5. Potential location for specialized or adapted bus loading.
6. Potential new crosswalk location to adjoin brick walkway and school entrance. Will require construction of ADA compliant ramps.
7. Reconfigure parallel parking to 90-degree and relocate visitor parking to Lot O. Remove drive aisle in Lot N to relocate staff parking from Lot A.
8. Stripe lot for one-way flow clockwise with exit only at Andrew Jarvis Drive driveway. 22 Most southern spaces designated for pool parking and adjacent 23 spaces designated for staff only.
9. Provide walking aisles in front of pool and in center parking aisle.
10. Reassign bus pick-up dismissal locations to utilize full circle area.
11. Expand sidewalk to 10 feet where trampled path exists for bus loading.
12. Potential sidewalk connection from rear of building.
13. Potential for long-term parking designation. Pave 4-foot gravel shoulder and formalize parallel parking along driveway.
14. Restrict parking at arrow pinch point.
15. Restripe stop bars to improve turning
16. Restripe existing crosswalk for improved visibility and construct ADA compliant ramps.
17. Potential parent loading with by-pass lane for circulation around rear of building or to Summit Avenue.
18. Stripe parallel parking spaces along northerly side of drive aisle to increase parking in short-term. Optional long-term: Widen parking lot to provide two rows of angled parking.
19. Restripe for designated flow as shown. Hatch or construct corner islands to enforce flow.
20. Potential reclamation of unused space for greenspace/school garden.
21. Provide a hatch area to designate pedestrian walkway.
22. Stripe buffer for trash vehicles.
23. Close northerly driveway to Lot A.



GPI Greenman-Pedersen, Inc.
Engineering and Construction Services

Figure 5
Parking Lot Concept 1

- **Alumni Circle**. In the morning Drop-Off period, utilize Alumni Circle for specialized/adapted bus drop off and parent drop-off. Designate an area by the door specifically for specialized/adapted bus drop off, and position a staff member in this area to wave parent drop-off vehicles further down Alumni Circle in order to minimize queues extending into the intersection of Summit Avenue / Andrew Jarvis Drive / Alumni Circle. In the afternoon dismissal period utilize Alumni Circle for bus loading only. Require buses to pull through the circle to maximize bus loading at this location. Widen the sidewalk for loading to 10 feet to accommodate pedestrian traffic.

- **Summit Avenue**. Formalize parallel parking spaces along Summit Avenue. Pave shoulder and stripe parallel spaces. Convert Summit Avenue to two-way traffic flow for improved circulation (21 spaces – loss of 1 space).

- **Summit Avenue Three-Way intersection**. Relocate/restripe stop bars for better sight distances. Relocate and restripe crosswalk for better sight distance and to align better with pedestrian desire line. Construct ADA compliant ramps and crossing.

- **Summit Avenue SE to North School Entrance**. Stripe access lane and bypass lane for parent drop-off. Stripe chevron pavement markings to formalize the drive aisle as a parent drop-off and pick-up lane with by-pass lane which will put students closer to the cafeteria. Construct a sidewalk connection between drop-off area and Alumni Circle. Stripe-out buffer in front of dumpster. Consider reclaiming unused paved area for greenspace or school garden.

- **Lots E, F and G**. Restripe to angled parking and stripe arrows to reinforce one-way counter clockwise circulation. Stripe Lot E and F one-way westbound and Lots Ga and Gb to be one-way eastbound. Add angled parking spaces along the north side of Lot E. Hatch or construct island ends to reinforce flow. (76 spaces, net gain of 3 spaces with the addition of angled spaces on north side of Lot E).

- **Lot H**. Potential to stripe parallel parking spaces along north side of Lot H. Restripe the angled parking in the center of the lot and extend the parking further west to provide additional parking spaces. Stripe flow arrows to reinforce one-way traffic flow. (65 spaces – Net gain of 14 spaces).

- **Lot K.** Formalize three additional parking spaces with pavement widening and markings. (29 spaces; net addition of 3 spaces).

- **South Access Road**. Maintain morning unloading for buses.

- **South Entry Plaza**. Possible location for specialized/adapted bus loading.

Table 3 provides a summary of the changes in parking supply that would occur in each of the existing parking lots with implementation of the recommendations described above for Concept 1. Overall, the proposed changes result in a net increase of 6 parking spaces on the campus. A graphical depiction of the proposed parking modifications is provided in Figure 7.

Table 3: Parking Reconfiguration Summary

	Existing Spaces				Proposed Spaces				Net Change			
Location	Student	Staff	Visitor	HC	Student	Staff	Visitor	HC	Student	Staff	Visitor	HC
A	70	36	0	0	59	23	0	0	-11	-13	0	0
B	0	15	0	0	0	15	0	0	0	0	0	0
C	22	0	0	0	21	0	0	0	-1	0	0	0
D	54	0	0	0	54	0	0	0	0	0	0	0
E	12	0	0	0	19	0	0	0	7	0	0	0
F	22	0	0	0	21	0	0	0	-1	0	0	0
Ga	25	0	0	0	24	0	0	0	-1	0	0	0
Gb	0	14	0	0	0	12	0	0	0	-2	0	0
H	51	0	0	0	65	0	0	0	14	0	0	0
I	0	24	0	0	0	24	0	0	0	0	0	0
J	0	0	4	2	0	0	4	2	0	0	0	0
K	0	26	0	0	0	29	0	0	0	3	0	0
L	0	13	0	0	0	13	0	0	0	0	0	0
M	0	12	0	0	0	12	0	0	0	0	0	0
N	0	41	11	2	0	51	7	2	0	10	-4	0
O	0	0	0	6	0	5	0	6	0	0	5	0
Total Spaces	**256**	**181**	**15**	**10**	**245**	**184**	**11**	**10**	**7**	**-2**	**1**	**0**

Note: Lot A excludes 22 parking spaces which are designated for the Portsmouth Indoor Pool.

Circulation Concept 1A

This concept is the same as Concept 1, except:

- **Alumni Circle**. In the morning drop-off period, utilize Alumni Circle for Bus drop-off only – not parent drop off. Parent drop-off displaced from Alumni Circle would be routed through Lot N and the South Drop-Off circle.

Circulation Concept 2

Circulation changes are described below and shown in Figure 5. Circulation Concept 2 is the same as Concept 1, except:

- **Lot A**. Change direct access on Andrew Jarvis Drive to ingress only. Close northerly access from Summit Avenue Extension and restripe parking spaces within Lot A to angled parking spaces to reinforce one-way clockwise flow. Provide pedestrian walkways through the center of the parking lot and along the south edge of the parking lot (to serve the pool parking spaces).

- **Summit Avenue Three-Way Intersection**. In addition to the improvements included in Concept 1, construct pedestrian walkway and crosswalk through Lot D to accommodate pedestrian desire line from Summit Avenue to the school.

- **Summit Avenue SE to North School Entrance**. Stripe a pedestrian path along the westerly edge of Lots F and G to provide pedestrian access between the student parking lots and the two northerly building entrances.

The redistribution of traffic on the site as a result of the proposed circulation and parking modifications is described in detail in the Appendix of this report. The resulting traffic volumes following implementation of the circulation modifications in Concept 1 and Concept 2 are presented in Figures 7 and 8, respectively.

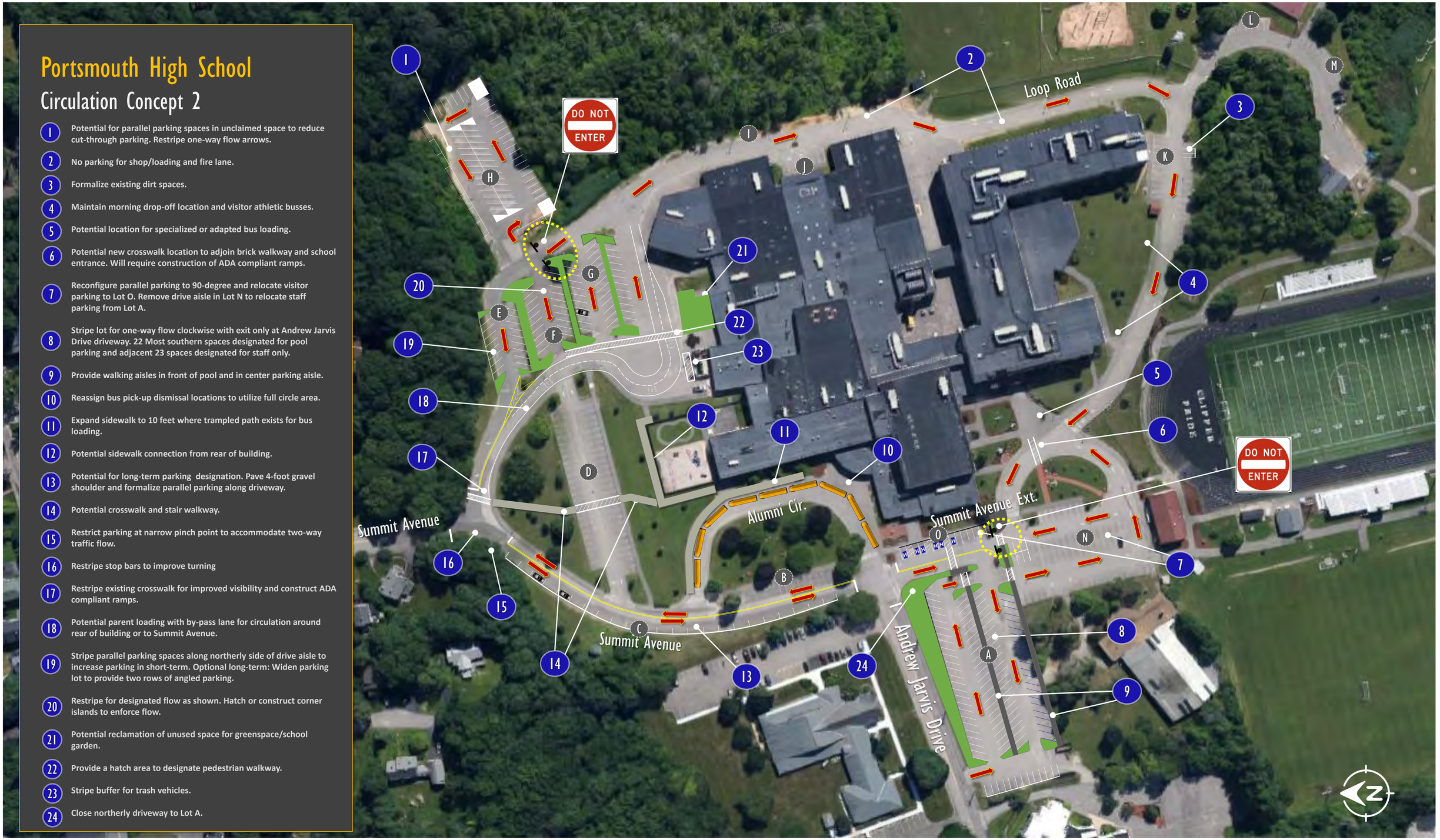
PORTSMOUTH HIGH SCHOOL CIRCULATION STUDY

Portsmouth High School – Portsmouth, New Hampshire

Portsmouth High School

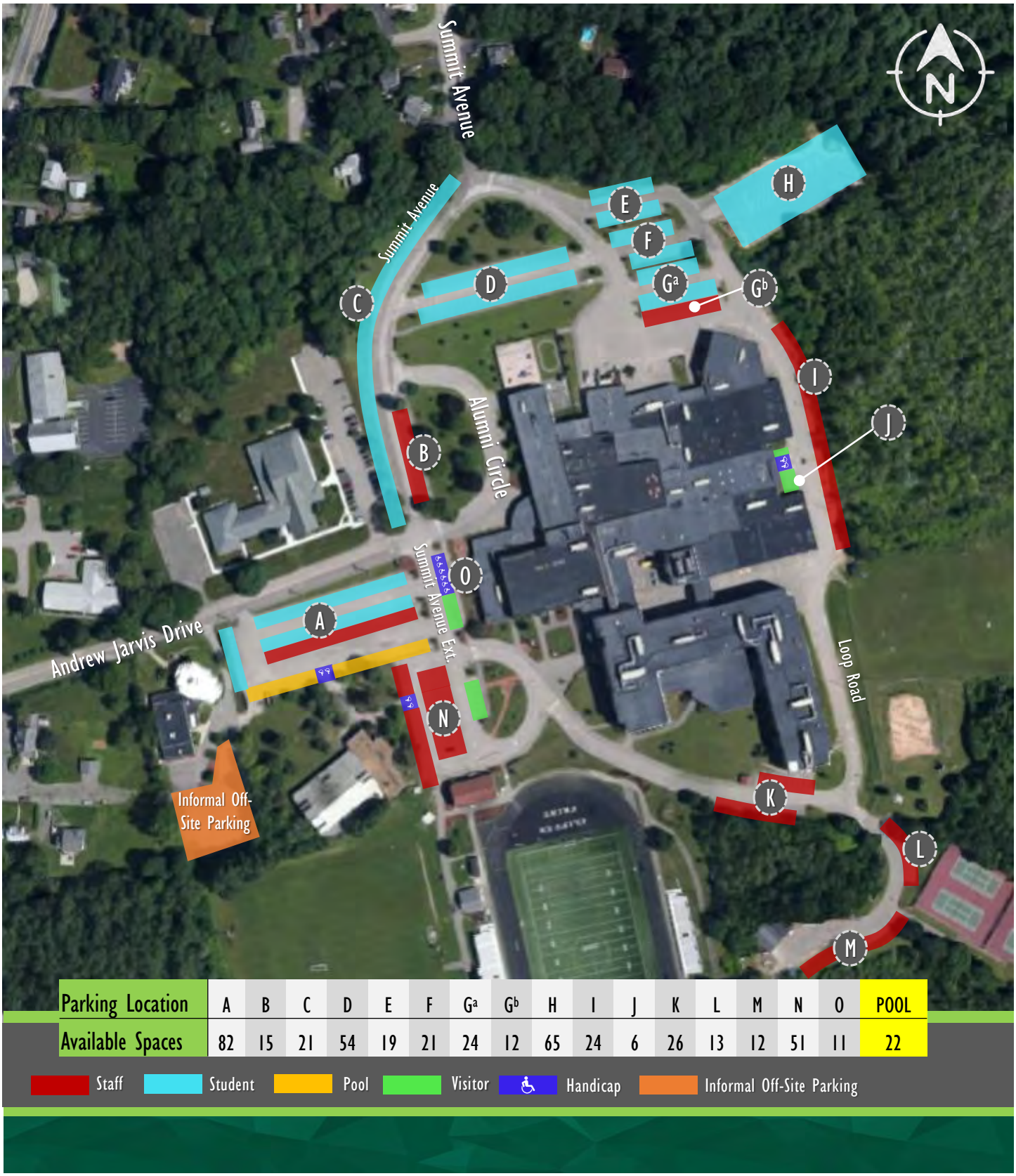
Circulation Concept 2

1. Potential for parallel parking spaces in unclaimed space to reduce cut-through parking. Restripe one-way flow arrows.
2. No parking for shop/loading and fire lane.
3. Formalize existing dirt spaces.
4. Maintain morning drop-off location and visitor athletic busses.
5. Potential location for specialized or adapted bus loading.
6. Potential new crosswalk location to adjoin brick walkway and school entrance. Will require construction of ADA compliant ramps.
7. Reconfigure parallel parking to 90-degree and relocate visitor parking to Lot O. Remove drive aisle in Lot N to relocate staff parking from Lot A.
8. Stripe lot for one-way flow clockwise with exit only at Andrew Jarvis Drive driveway. 22 Most southern spaces designated for pool parking and adjacent 23 spaces designated for staff only.
9. Provide walking aisles in front of pool and in center parking aisle.
10. Reassign bus pick-up dismissal locations to utilize full circle area.
11. Expand sidewalk to 10 feet where trampled path exists for bus loading.
12. Potential sidewalk connection from rear of building.
13. Potential for long-term parking designation. Pave 4-foot gravel shoulder and formalize parallel parking along driveway.
14. Potential crosswalk and stair walkway.
15. Restrict parking at narrow pinch point to accommodate two-way traffic flow.
16. Restripe stop bars to improve turning
17. Restripe existing crosswalk for improved visibility and construct ADA compliant ramps.
18. Potential parent loading with by-pass lane for circulation around rear of building or to Summit Avenue.
19. Stripe parallel parking spaces along northerly side of drive aisle to increase parking in short-term. Optional long-term: Widen parking lot to provide two rows of angled parking.
20. Restripe for designated flow as shown. Hatch or construct corner islands to enforce flow.
21. Potential reclamation of unused space for greenspace/school garden.
22. Provide a hatch area to designate pedestrian walkway.
23. Stripe buffer for trash vehicles.
24. Close northerly driveway to Lot A.



GPI Greenman-Pedersen, Inc.
Engineering and Construction Services

Figure 6
Parking Lot Concept 2



GPI Greenman-Pedersen, Inc.
Engineering and Construction Services

Figure 7
Proposed Parking Layout Map

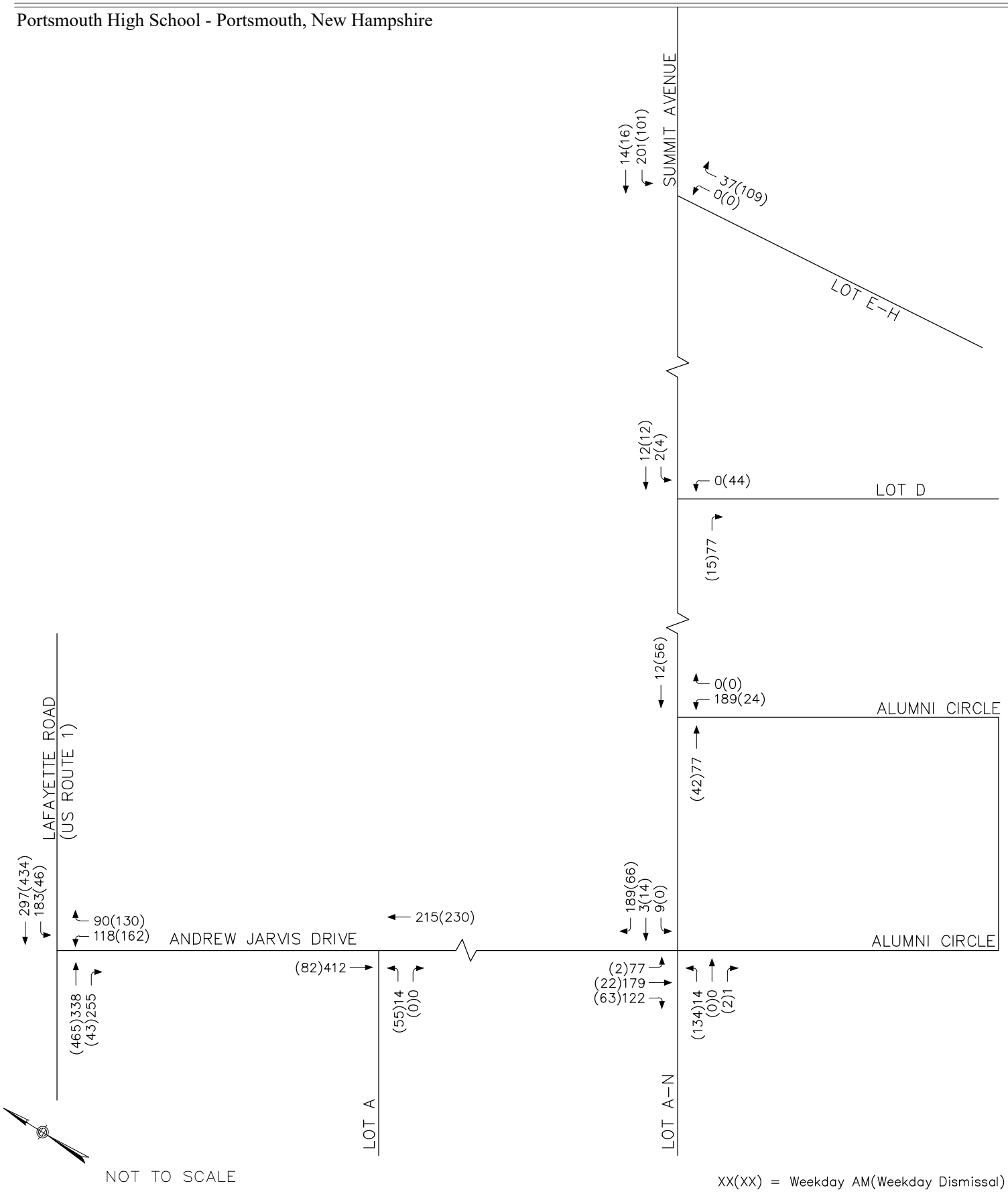
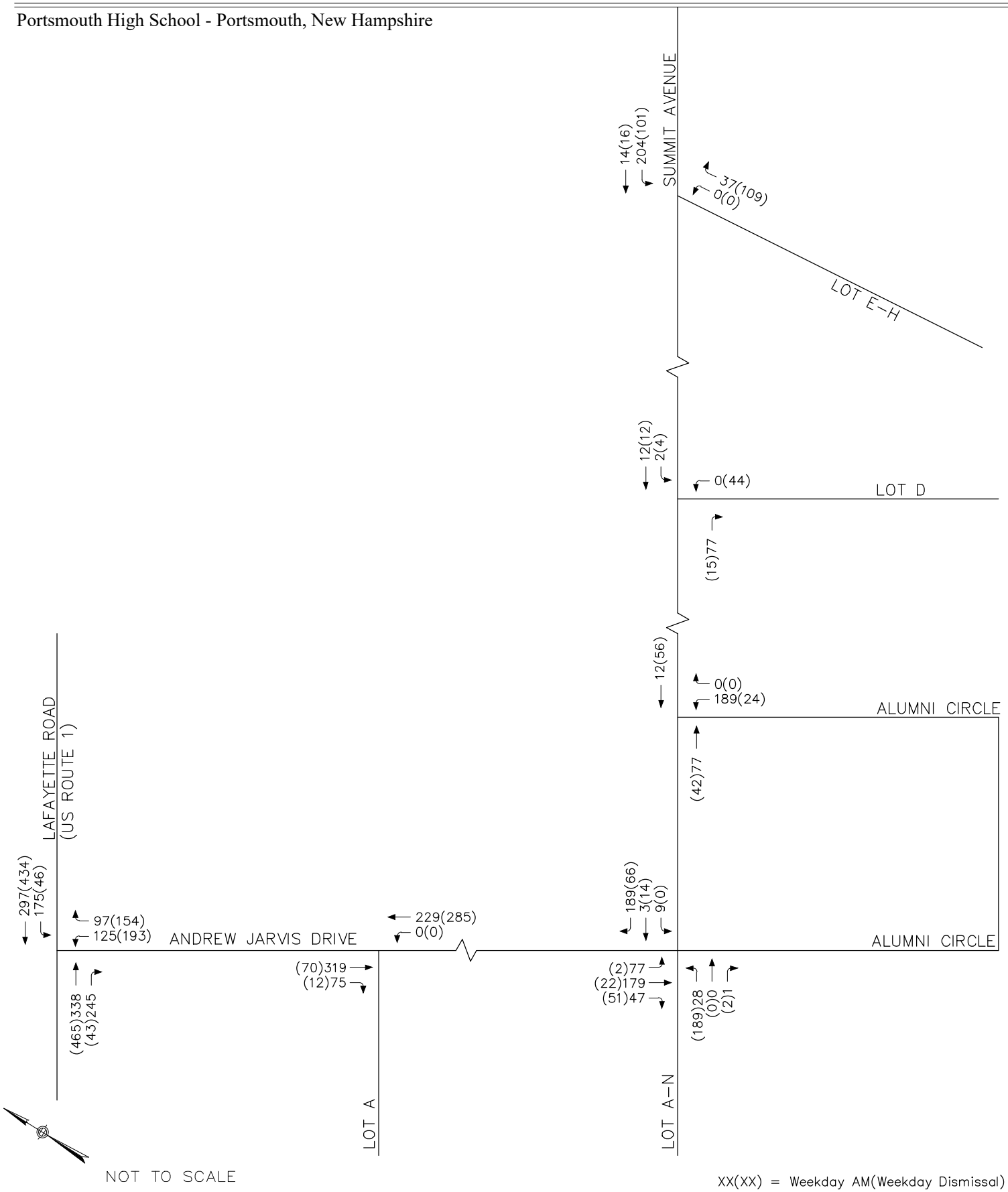


Figure 8

Concept 1 Proposed
Weekday AM and Dismissal
Peak Hour Traffic Volumes



Greenman-Pedersen, Inc.

Engineering and Construction Services

Figure 9

Concept 2 Proposed
Weekday AM and Dismissal
Peak Hour Traffic Volumes

CAPACITY AND QUEUE ANALYSIS

Capacity and queuing analyses were conducted at the study-area locations under 2018 Existing, 2018 Option 1, 2018 Option 1A, and 2018 Option 2 conditions during the weekday AM and weekday dismissal peak hours.

Methodology

The capacity analysis methodology is based on the concepts and procedures in the *Highway Capacity Manual* (HCM) and is described in the Appendix of this report.[1] The TIAS utilizes the HCM 2000 methodology for signalized intersections due to the fact that *HCM 2010 analysis* does not analyze exclusive pedestrian signal phases. NHDOT has recognized such inefficiencies with the HCM 2010 method and still accepts the HCM 2000 results as the most recently previously approved method. However, HCM 2010[2] is utilized for the unsignalized intersections within the study area to utilize the most recent analysis methodology.

For signalized intersections, the maximum back of queue during a typical (average) signal cycle and a 95th percentile signal cycle were calculated for each lane group during the peak periods studied. The back of queue is the length of a backup of vehicles from the stop line of a signalized intersection to the last vehicle in the queue that is required to stop, regardless of the signal indication. The length of this queue depends on a number of factors including signal timing, vehicle arrival patterns, and the saturation flow rate. For unsignalized intersections, the 95th percentile queue represents the length of the queue of the critical minor-street movement that is not expected to be exceeded 95 percent of the time during the analysis period (typically one hour). In this case, the queue length is a function of the capacity of the movement and the movement's degree of saturation.

Analysis Results

The results of the level of service (LOS) and queue analyses are shown in Table 4 and are discussed below. All analyses worksheets are provided in the Appendix.

Parking Lot A Driveway at Andrew Jarvis Drive

All movements at the intersection of Andrew Jarvis Drive and Parking Lot A Driveway are expected to operate at acceptable levels (LOS C or better) with queues not exceeding one vehicle

[1] Highway Capacity Manual 2000; Transportation Research Board; Washington, D.C.; 2000.
[2] Highway Capacity Manual 2010; Transportation Research Board; Washington, D.C.; 2012.

under all analysis conditions and proposed options. There is no analysis for this intersection under Option 2 because the driveway is ingress only.

Summit Avenue at Andrew Jarvis Drive / Alumni Circle

The Andrew Jarvis Drive eastbound approach is expected to operate at decreased levels (LOS E and LOS F) in Option 1 and Option 1A during the weekday arrival peak hour. Option 2 is expected to operate with a modest increase in delay of less than 11 seconds during the weekday arrival peak hour. All proposed options are expected to affect the delay of any given movement by less than one second with an increase in queue of less than one vehicle.

Summit Avenue at Summit Avenue (SE)

All movements at the intersection of Summit Avenue and Summit Avenue (SE) are expected to operate at acceptable levels (LOS B or better) with a reduction in delay during the weekday morning arrival. The increase in delay during the weekday dismissal for any movement is expected to be less than two seconds under all proposed options.

Lafayette Road at Andrew Jarvis Drive

The recent installation of a fully-actuated traffic signal at this intersection improved safety, operations and multimodal access to the High School. With implementation of this intersection control, all movements at this intersection are anticipated to operate at LOS D or better with volume-to-capacity (V/C) ratios well below 1.00 for all proposed circulation options, indicating there will be adequate capacity to accommodate any scenario.

Traffic operations were analyzed using the proposed timings submitted and approved by the City of Portsmouth. GPI recommends a monitoring period to assess whether or not timings require adjustment based on the redistribution of traffic on site as part of this study.

Table 4
INTERSECTION CAPACITY ANALYSIS SUMMARY

Intersection	2018 Existing Conditions				2018 Option 1				2018 Option 1A				2018 Option 2			
	V/C [a]	Delay [b]	LOS [c]	Queue [d]	V/C	Delay	LOS	Queue	V/C	Delay	LOS	Queue	V/C	Delay	LOS	Queue
Parking Lot A Driveway at Andrew Jarvis Drive																
Weekday Morning																
Andrew Jarvis Drive WB Approach	0.00	0.0	A	--/<25	-	-	-	-	-	-	-	-	-	-	-	-
Parking Lot A Driveway NB Approach	0.07	16.8	C	--/<25	0.10	22.4	C	--/<25	0.08	18.5	C	--/<25	-	-	-	-
Weekday Dismissal																
Andrew Jarvis Drive WB Approach	0.00	8.2	A	--/<25	-	-	-	-	Same As Option 1				-	-	-	-
Parking Lot A Driveway NB Approach	0.13	12.2	B	--/<25	0.13	12.2	B	--/<25					-	-	-	-
Summit Avenue at Andrew Jarvis Drive / Alumni Circle																
Weekday Morning																
Andrew Jarvis Drive EB Approach	0.60	14.4	B	--/103	0.97	48.3	E	--/375	1.20	122.9	F	--/705	0.80	25.0	C	--/205
Alumni Circle WB Approach	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Summit Avenue NB Approach	0.21	10.0	A	--/<25	0.05	10.1	B	--/<25	0.70	24.4	C	--/138	0.10	10.0	A	--/<25
Summit Avenue SB Approach	0.18	8.9	A	--/<25	0.55	14.7	B	--/85	0.25	11.9	B	--/25	0.53	13.4	B	--/78
Weekday Dismissal																
Andrew Jarvis Drive EB Approach	0.19	8.6	A	--/<25	0.14	8.3	A	--/<25					0.12	8.4	A	--/<25
Alumni Circle WB Approach	-	-	-	-	-	-	-	-					-	-	-	-
Summit Avenue NB Approach	0.23	8.8	A	--/<25	0.21	8.7	A	--/<25	Same As Option 1				0.30	9.3	A	--/30
Summit Avenue SB Approach	0.04	7.3	A	--/<25	0.11	7.3	A	--/<25					0.11	7.4	A	--/<25
Summit Avenue at Summit Avenue (SE)																
Weekday Morning																
Summit Avenue WB Approach	0.11	8.5	A	--/<25	0.10	8.0	A	--/<25	0.00	8.5	A	--/<25	0.10	8.0	A	--/<25
Summit Avenue NB Approach	0.28	9.7	A	--/28	-	-	-	-	0.46	11.3	B	--/60	-	-	-	-
Summit Avenue SB Approach	0.62	14.9	B	--/108	0.59	13.7	B	--/100	0.46	11.4	B	--/60	0.60	13.9	B	--/103
Weekday Dismissal																
Summit Avenue WB Approach	0.18	7.7	A	--/<25	0.22	7.9	A	--/<25					0.22	7.9	A	--/<25
Summit Avenue NB Approach	0.20	8.6	A	--/<25	-	-	-	-	Same As Option 1				-	-	-	-
Summit Avenue SB Approach	0.11	8.2	A	--/<25	0.28	9.3	A	--/28					0.28	9.3	A	--/28

[a] Volume-to-capacity ratio.
[b] Average control delay in seconds per vehicle.
[c] Level of service.
[d] 50th/95th percentile queue length in feet per lane (assuming 25 feet per vehicle) [95th percentile queue only for unsignalized intersections].

Table 4 (Continued)
INTERSECTION CAPACITY ANALYSIS SUMMARY

Intersection	2018 Existing Conditions				2018 Existing Conditions (Signalized)				2018 Option 1				2018 Option 1A				2018 Option 2			
	V/C [a]	Delay [b]	LOS [c]	Queue [d]	V/C	Delay	LOS	Queue	V/C	Delay	LOS	Queue	V/C	Delay	LOS	Queue	V/C	Delay	LOS	Queue
Lafayette Road at Andrew Jarvis Drive																				
Weekday Morning																				
Andrew Jarvis Drive WB Approach	1.37	277.3	F	<25/278	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Andrew Jarvis Drive WBL	-	-	-	-	0.42	29.6	C	31/85	0.62	33.4	C	61/146	0.68	38.8	D	66/153	0.64	33.7	C	65/153
Andrew Jarvis Drive WBR	-	-	-	-	0.04	14.3	B	<25/<25	0.08	17.8	B	<25/<25	0.12	20.2	C	<25/<25	0.08	17.9	B	<25/<25
Lafayette Road NB Approach	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lafayette Road NBT	-	-	-	-	0.72	22.5	C	132/397	0.76	26.8	C	155/425	0.80	32.4	C	164/427	0.76	26.7	C	155/419
Lafayette Road NBR	-	-	-	-	0.23	10.3	B	<25/<25	0.20	10.4	B	<25/<25	0.22	12.4	B	<25/<25	0.19	10.1	B	<25/<25
Lafayette Road SB Approach	0.32	11.7	B	<25/35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lafayette Road SBL	-	-	-	-	0.54	9.3	A	29/114	0.58	11.4	B	38/123	0.68	16.3	B	44/135	0.56	11.3	B	37/119
Lafayette Road SBT	-	-	-	-	0.40	6.9	A	54/191	0.41	8.2	A	69/204	0.43	10.1	B	72/204	0.41	8.4	A	71/204
Overall Intersection	-	-	-	-	**0.59**	**14.0**	**B**	**--/--**	**0.65**	**17.0**	**B**	**--/--**	**0.66**	**20.5**	**C**	**--/--**	**0.59**	**14.3**	**B**	**--/--**
Weekday Dismissal																				
Andrew Jarvis Drive WB Approach	1.14	145.9	F	<25/303	-	-	-	-	-	-	-	-					-	-	-	-
Andrew Jarvis Drive WBL	-	-	-	-	0.55	31.4	C	49/161	0.61	33.6	C	65/202					0.66	34.9	C	82/240
Andrew Jarvis Drive WBR	-	-	-	-	0.07	17.6	B	<25/39	0.09	22.3	C	<25/26					0.11	22.2	C	<25/27
Lafayette Road NB Approach	-	-	-	-	-	-	-	-	-	-	-	-					-	-	-	-
Lafayette Road NBT	-	-	-	-	0.75	24.9	C	151/517	0.76	26.8	C	160/568					0.78	28.6	C	170/599
Lafayette Road NBR	-	-	-	-	0.06	8.3	A	<25/<25	0.03	7.9	A	<25/<25		Same As Option 1			0.03	7.7	A	<25/<25
Lafayette Road SB Approach	0.1	9.3	A	<25/<25	-	-	-	-	-	-	-	-					-	-	-	-
Lafayette Road SBL	-	-	-	-	0.29	11.0	B	<25/66	0.17	11.9	B	<25/46					0.18	12.8	B	<25/48
Lafayette Road SBT	-	-	-	-	0.50	10.6	B	82/348	0.52	12.2	B	91/394					0.53	13.2	B	100/416
Overall Intersection	-	-	-	-	**0.62**	**18.2**	**B**	**--/--**	**0.63**	**21.1**	**C**	**--/--**					**0.65**	**22.5**	**C**	**--/--**

[a] Volume-to-capacity ratio.
[b] Average control delay in seconds per vehicle.
[c] Level of service.
[d] 50th/95th percentile queue length in feet per lane (assuming 25 feet per vehicle) [95th percentile queue only for unsignalized intersections].

RECOMMENDATIONS

Based on the current use of the site and the results of the traffic operations analysis, GPI recommends Option 2 as the preferred alternative. This plan provides the greatest overall improvement to operations while maintaining some of the existing desire paths of current users. The following section describes the recommended improvements in detail for short-term and long-term improvements.

Short-term improvements include items which can be addressed with minimal installation cost and are considered temporary. Improvements using signage, striping, and cones or other temporary barriers (i.e. planters) are all items that can be easily adjusted. Long-term improvements include items such as reconstruction of curbing, roadway widening, reconstruction of turning islands and are considered permanent, have higher associated costs, and would require greater time to implement.

Short-Term

- Lot E through F
    - Restripe parking stalls as angled parking with circulation flow arrows;
    - Formalize one-way flows for Lot E through Gb using paint, cones or other barriers. Lot E and Lot F will be one-way westbound, while lots Ga and Gb will be one-way eastbound. One-way flow counter-clockwise circulating around will reduce cut-through traffic through Lot D and will eliminate existing STOP control out of Lot E; and
    - Stripe chevron pavement markings to formalize the drive aisle as a parent drop-off and pick-up lane with by-pass lane which will put students closer to the cafeteria.

- Lot H
    - Stripe one-way circulation flow arrows to enforce counter-clockwise flow;
    - Extend the parking rows in the center of the lot to provide additional angled parking in this area;
    - Extend the parking rows along the easterly edge of the parking lot to provide an additional two parking spaces in this area; and
    - Formalize parallel parking spaces along the northerly side of the lot where space is underutilized. This will help to reduce cut-through parking in center aisle.

- Summit Avenue / Lot C
    - Eliminate "No Parking" zone along the northwest corner of the intersection to convert the Summit Avenue northbound approach to two-way traffic flow. Stripe a centerline on Summit Avenue along Lot C to reinforce the two-way traffic flow;
    - Restripe stop lines for all Summit Avenue approaches to reduce turning conflicts and improve sight lines;
    - Install NO PARKING signs along the westerly side of Summit Avenue approximately 100 feet south of the 3-way intersection to ensure adequate space for two-way traffic flow and turning movements without path conflicts; and
    - Replace existing signage with MUTCD-compliant signage corresponding to movement restrictions.

- Pedestrian and Bicycle Accommodations
    - Restripe crosswalk from southerly main entrance to pick-up circle at Lot N;
    - Overall reapplication of crosswalk pavement markings with consistent pattern consistent with the City of Portsmouth standards; and
    - Provide pedestrian refuge islands using paint, cones or other vertical barrier to reinforce vehicle and pedestrian separation.

- Lot A
    - Restrict driveway along Andrew Jarvis Drive to ingress only to Lot A with signs and pavement markings;
    - Restripe angled parking spaces with one-way counter-clockwise flow and narrow drive aisles to 20-feet wide to reduce bunching and dissuade parents from double-parking for drop-off and pick-up;
    - Remove existing guardrail to provide new connection to Lot N;
    - Stripe an 8-foot wide center walkway to reduce number of students walking through parking lot behind parked vehicles; and
    - Stripe an 8-foot wide walkway along the southerly edge of Lot A in front of the pool to provide a pedestrian walkway for pool patrons, as well as students walking between the Greek Church and the High School. This walkway would connect to the existing paved connection at the southwest corner of Lot A to the church parking lot.

- Lot N
    - Restrict access only from Lot O to enforce existing counter-clockwise flow and install "DO NOT ENTER" (R5-1) signage; and
    - Shift visitor parking to Lot O and stripe six (6) additional spaces to provide a Staff Only parking area.

- Lot O
    - Restripe handicap parking spaces from parallel to head-in to provide additional spaces for visitor parking; and
    - Maintain two-way flow between Alumni Circle and Lot N.

Long-Term

- Lot E through F
    - Reconstruct of corner islands for Lot E through Gb to formalize for one-way flow;
    - Widen paved surface area for an additional row of parking along the northerly side of Lot E to provide seven (7) additional spaces; and
    - Reclaim unused space outside cafeteria to be converted to greenspace / school garden which will also help with drainage.

- Summit Avenue / Lot C
    - Restripe existing crosswalk across Summit Avenue westbound approach to improve visibility of pedestrians and formalize existing desire path. The reconstructed crosswalk will include reconstruction of ramps to provide compliance with Americans with Disabilities Act (ADA) standards;
    - Minor roadway widening along Summit Avenue to formalize parallel parking for vehicles facing southbound only.

- Pedestrian and Bicycle Accommodations
    - Construct pedestrian refuge islands to provide vertical separation between vehicles and pedestrians.
    - Construct sidewalk from rear of building, along the outside of the preschool playground, and connecting to the existing sidewalk along the High School frontage;
    - Construct sidewalk expansion along Alumni Circle to 10-feet wide where evidence of grass is trampled from pedestrians and bicycles; and

  - Reconstruct or construct of ADA-compliant ramps at either end of existing and proposed crosswalks.

- Lot A
  - Construct corner islands and pedestrian refuge islands to formalize for one-way flow; and
  - Construct an 8-foot wide sidewalk along Portsmouth Indoor Pool frontage with connection to Greek Church rear parking lot to dissuade students from crossing across grass area or walking behind parked vehicles.

- Lot K
  - Formalize existing dirt spaces to provide two additional staff parking spaces with pavement and pavement markings.

- Lot O
  - Reconstruct access ramps to provide ADA-complaint ramps for handicap spaces.

The parking and circulation modifications described above will result in a net loss of 2 staff parking spaces on the site, which are mainly due to the conversion of the perpendicular parking spaces in Lot Gb to angled parking spaces to reinforce traffic flow and provide separation between the spaces in Lot Ga. However, the parking spaces in Lot Gb could remain perpendicular to maintain all existing parking on the site if desired. The changes result in a net gain of 7 student parking spaces and 1 visitor parking space. The recommended modifications will provide significant improvements in traffic operations, safety, and accessibility for all modes of travel.

APPENDIX

MEETING NOTES
TRAFFIC-COUNT DATA
PARKING UTILIZATION COUNTS
REDISTRIBUTION OF TRAFFIC
CAPACITY ANALYSIS METHODOLOGY
CAPACITY AND QUEUE ANALYSIS WORKSHEETS

MEETING NOTES

May 24, 2018

MAX-2014149.01

Portsmouth High School Circulation Study

Observation Notes by Douglas S. Halpert, P.E. and Rebecca L. Brown, P.E., PTOE

Weather: Clear, Dry, low 60's

General Observations

- Lack of ADA-compliant ramps at crosswalks. Some crosswalks do not provide ramps on both ends.
- "Bus Only" text is small and set farther back than what is efficient to be seen.
- Pavement markings are in overall poor condition and highly faded.
- Multiple signs are not MUTCD compliant, bent, faded, damaged, or facing the wrong way.
- No crosswalk provided from Lot "A" to sidewalk adjacent to school.
- Wide driveway aisle in Lot "A" promote speeding.
- A pre-school is provided on site which runs from 8:30 AM to 1:00 PM Monday – Thursday for ages 3-5.
- Circle at Lot "B" and "D" have NO LEFT-TURN restrictions which are widely ignored.
- 3-way stop at driveway and Summit Avenue.
- Driveway along parking area "C" is supposedly one-way northbound north of Lot "D" but it is unclear where it begins.
- Unofficial connection between Greek Church parking lot and Lot "A" is in poor condition and hatched to discourage use (markings faded).
- No crosswalks for Lots E, F, Ga, Gb, and H to school.
- Faculty parking spaces along the back of the school appear (Lot "I") to be shorter than 9-feet long.
- Evidence of additional parking in Lot "K" on grass / dirt area.
- Crosswalk at Summit Avenue is largely in the shade and set back from the intersection in such a manner that southbound vehicles might not see a pedestrian in the crosswalk.
    - Southbound vehicles expect exiting traffic to abide by NO LEFT-TURN restriction and might not look left before entering the intersection.
- DO NOT ENTER sign posted from Summit Avenue to front forces people around back
    - If students park along front access how do they get there?
- 17 Buses, possible pick up in back of parking lot

7:00 AM

- Lot "N" coned off to prohibit drop-off from using circle where buses drop off.
- Parents seen dropping off students in Lot "A" and "N".
- Pool patrons begin to leave in advance of school traffic.

- Bus drop-off at main entrance without incident.
- Vehicles parking along Lot “C” at side of road facing southerly and northerly.
- Vast majority of buses exit out Summit Avenue to either access Middle School or utilize the traffic signal at South Street / Lafayette Road.

8:00 AM

- Lot “N” mostly full.
- Students parking in Lot “A”, in center aisle, either back-in or pull through for easier exit onto Andrew Jarvis Drive.
- Driveway along Andrew Jarvis Drive preferred for entrance by students and faculty.
- Parent drop-off not pulling up beyond doors and disregard left-turn restriction upon exiting.
- Parent drop-off using Lot “A” to jump queue and unload in handicap spaces in Lot “O” in order to access Andrew Jarvis Drive.
- Student observed cutting through Lot “D” and grass areas instead of using sidewalks as a shorter route to school building.
- Bicycles entering Summit Avenue going the wrong way along Lot “C” to access bicycle parking at front of school. Some cut in circle driveway by Lot “D” and go wrong way towards parking area.
- Scooter parking, north of Lot “N” near main entry forces scooters to go wrong way against bus drop-off area.
- Students turn around in staff spaces at front to gain access to parallel spaces due to one-way flow
- Students loop through drop off at the front and turn around to park or go uphill
- Cars entering via Summit Ave queue back to South Street
- Students must cross heavy traffic due to lack of a clear path from cars to the school
- Summit queue back into school at 8:10AM

8:15 AM (First Bell Rings)

- Drivers in excess speed along Andrew Jarvis Drive despite poor pavement condition.
- Parent drop-off queue extends to Andrew Jarvis Drive for first time (max queue of 3 vehicles briefly).
- Disregard of one-way flow in Lot “N” from faded markings and lack of signage.
- Students seen walking from Church of Jesus Christ lot.
- Greek Church parking lot is full.

2:30 PM

- Some staff & students spaces empty in each lot.
- Sports practice ongoing at fields.
- Parents begin line up at main entrance (5 vehicle queue).
- 1st bus arrives with one vehicle in AM drop-off lane pulled alongside Lot “B”.
- Large group of walking students down Summit Avenue from possible field trip.
- Buses begin to arrive at 3:00 PM
- Confusing signage in rear contains conflicting messages

3:05 PM

- Cars begin to use Church of JC to park and wait (6+) and 12+ at 3:10 PM.
- Parking lot chain for Church of Jesus Christ is down, could be raised (Sometimes it is on Wednesday when the church has functions).
- Some parents pick up Lot C in empty spaces.
- Second bus pulled in front of first along Lot "B".
- No queue around southerly side of building.
- Buses double park in front of staff spaces at the front
- Parents began parking near cafeteria around 3:10 PM

3:15 PM

- Parents wait in Lot "A" aisles with engines on.
- Ground maintenance and landscaping leaves.
- Buses park across exit and block access for other buses
    - Kids who parked in opposite direction in AM conflict with buses leaving
- Some parents park on Summit Ave/Jenkins Ave to pick up kids
- Largest group of parents arrive at 3:15 PM, at dismissal bell

3:20 PM

- Short bus use Lot A to access handicap spaces.
- Students crossing in front of pick up lanes from main entrance.
- Cut behind pool to St. Nicholas Greek Church parking lot between cars in Lot "N".
- Andrew Jarvis Drive queued to three-way STOP by 3:25 PM.
- Student Lot and St. Nicholas Greek Church Lot fight for gaps at driveway and on AJD queues of 6+ vehicles. Witnessed 2 or vehicles attempting to exit from same driveway.
- Bus blocks others from leaving, and unable to go until it is loaded, only 3-4 buses arrive before dismissal bell.
-

3:25 PM

- Four buses depart, one out Andrew Jarvis Drive.
- Church lot of Jesus Christ cleared out.
- No parent queue at main entrance.
- Buses still entering at 3:30 PM buses don't pull all the way in and block intersection.
- Most students in Lot "A" use Andrew Jarvis Drive but later (3:30 PM or after), some use driveways closer to school.
- Buses have "their spots" where students are accustomed to wait.
- Crossing guard holds up traffic at STOP, bus is given right of way by most cars
- At 3:33PM front is clear but back is still queued up

3:35 PM

- Back is cleared and running free up Summit Ave to South Street, remaining cars and buses trickle out
- Queue on Andrew Jarvis Drive <4 vehicles, same with parent pick up.
- St. Nicholas Greek Church lot mostly empty.
- One bus in AM drop-off spot and one in Lot “D”.
- Dover High School bus arrives at 3:35 PM for sports from Andrew Jarvis Drive and circulated around back for drop-off.
- Governor Wentworth School bus arrived soon after

3:45 PM

- Parent pick-up trickles in Lots “A” & “N” into empty spaces.
- Steady stream in and out but not a huge issue – mostly free for all random approaches.
- Baseball game after school ~5:00 PM and multiple practices after school.

*Possible entrance only or exit only at Lot “A”, Andrew Jarvis Drive

TRAFFIC-COUNT DATA

High School Internal 4 Way Stop - TMC

Thu May 24, 2018

Full Length (7AM-9AM, 2PM-4PM)

All Classes (Motorcycles, Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 530533, Location: 43.05934, -70.766506

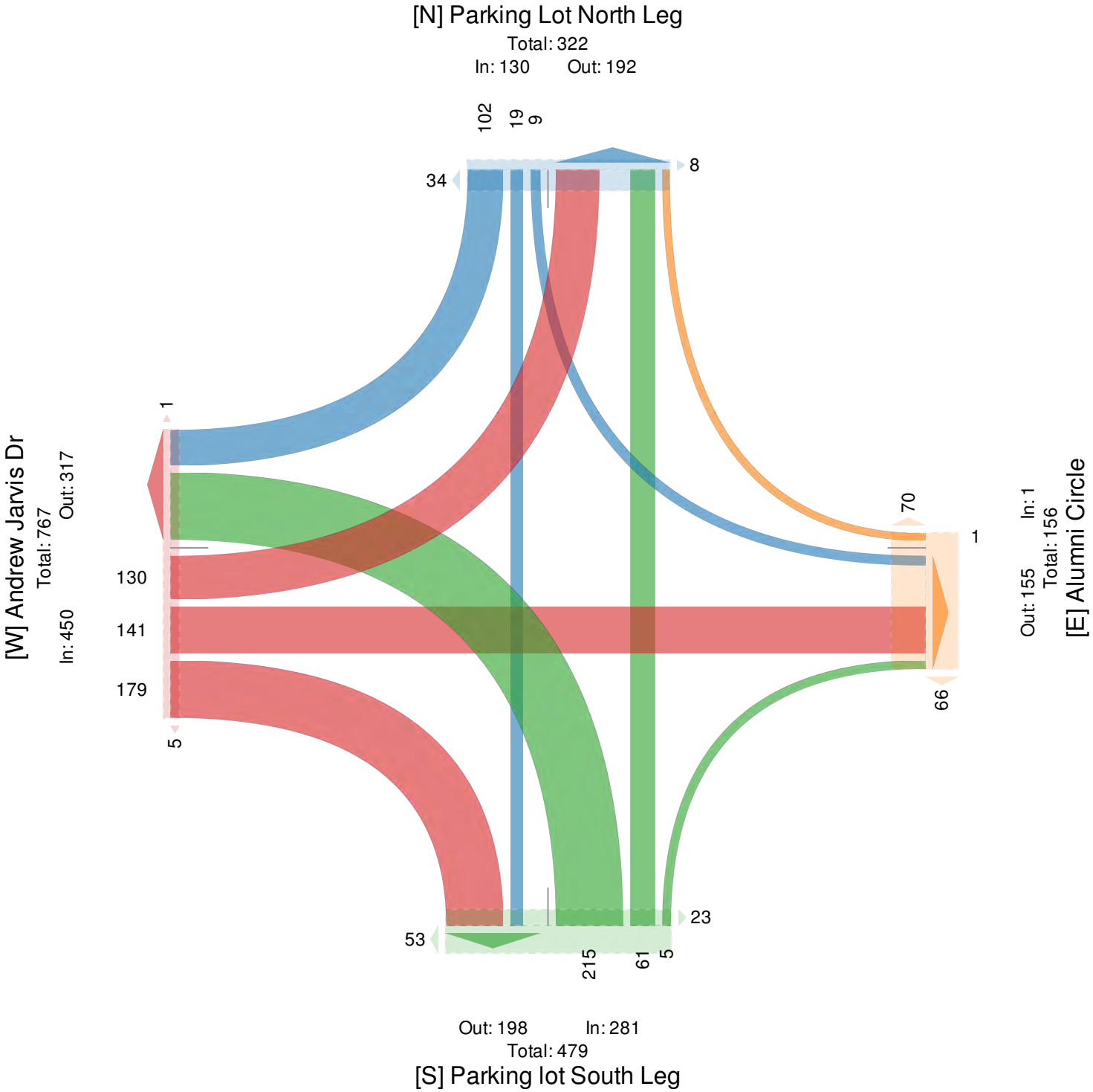
Provided by: City of Portsmouth
680 Peverly Hill Road,
Portsmouth, NH, 03801, US

Leg	Parking Lot North Leg						Alumni Circle						Parking lot South Leg						Andrew Jarvis Dr						
Direction	Southbound						Westbound						Northbound						Eastbound						
Time	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	Int
2018-05-24 7:00AM	11	3	5	0	**19**	1	0	0	0	0	**0**	21	0	15	11	0	**26**	2	30	33	39	0	**102**	0	**147**
8:00AM	57	2	4	0	**63**	7	0	0	0	0	**0**	23	1	16	53	0	**70**	18	36	90	64	0	**190**	5	**323**
9:00AM	0	0	0	0	**0**	0	0	0	0	0	**0**	0	0	0	0	0	**0**	0	0	0	0	0	**0**	0	**0**
2:00PM	16	2	0	0	**18**	1	1	0	0	0	**1**	12	2	10	29	0	**41**	2	28	2	5	0	**35**	1	**95**
3:00PM	18	12	0	0	**30**	33	0	0	0	0	**0**	80	2	20	122	0	**144**	54	85	16	22	0	**123**	0	**297**
4:00PM	0	0	0	0	**0**	0	0	0	0	0	**0**	0	0	0	0	0	**0**	0	0	0	0	0	**0**	0	**0**
Total	102	19	9	0	**130**	42	1	0	0	0	**1**	136	5	61	215	0	**281**	76	179	141	130	0	**450**	6	**862**
% Approach	78.5%	14.6%	6.9%	0%	**-**	-	100%	0%	0%	0%	**-**	-	1.8%	21.7%	76.5%	0%	**-**	-	39.8%	31.3%	28.9%	0%	**-**	-	-
% Total	11.8%	2.2%	1.0%	0%	**15.1%**	-	0.1%	0%	0%	0%	**0.1%**	-	0.6%	7.1%	24.9%	0%	**32.6%**	-	20.8%	16.4%	15.1%	0%	**52.2%**	-	-
Motorcycles	1	1	1	0	**3**	-	0	0	0	0	**0**	-	0	0	2	0	**2**	-	4	0	0	0	**4**	-	9
% Motorcycles	1.0%	5.3%	11.1%	0%	**2.3%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0.9%	0%	**0.7%**	-	2.2%	0%	0%	0%	**0.9%**	-	1.0%
Lights	95	18	4	0	**117**	-	1	0	0	0	**1**	-	5	49	206	0	**260**	-	174	131	122	0	**427**	-	805
% Lights	93.1%	94.7%	44.4%	0%	**90.0%**	-	100%	0%	0%	0%	**100%**	-	100%	80.3%	95.8%	0%	**92.5%**	-	97.2%	92.9%	93.8%	0%	**94.9%**	-	93.4%
Single-Unit Trucks	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0
% Single-Unit Trucks	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%
Articulated Trucks	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	1	0	**1**	-	0	0	0	0	**0**	-	1
% Articulated Trucks	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0.5%	0%	**0.4%**	-	0%	0%	0%	0%	**0%**	-	0.1%
Buses	6	0	0	0	**6**	-	0	0	0	0	**0**	-	0	12	6	0	**18**	-	0	9	7	0	**16**	-	40
% Buses	5.9%	0%	0%	0%	**4.6%**	-	0%	0%	0%	0%	**0%**	-	0%	19.7%	2.8%	0%	**6.4%**	-	0%	6.4%	5.4%	0%	**3.6%**	-	4.6%
Bicycles on Road	0	0	4	0	**4**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	1	1	1	0	**3**	-	7
% Bicycles on Road	0%	0%	44.4%	0%	**3.1%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0.6%	0.7%	0.8%	0%	**0.7%**	-	0.8%
Pedestrians	-	-	-	-	-	41	-	-	-	-	-	134	-	-	-	-	-	74	-	-	-	-	-	6	
% Pedestrians	-	-	-	-	-	97.6%	-	-	-	-	-	98.5%	-	-	-	-	-	97.4%	-	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	-	1	-	-	-	-	-	2	-	-	-	-	-	2	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	2.4%	-	-	-	-	-	1.5%	-	-	-	-	-	2.6%	-	-	-	-	-	0%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

High School Internal 4 Way Stop - TMC
Thu May 24, 2018
Full Length (7AM-9AM, 2PM-4PM)
All Classes (Motorcycles, Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 530533, Location: 43.05934, -70.766506

Provided by: City of Portsmouth
680 Peverly Hill Road,
Portsmouth, NH, 03801, US



High School Internal 4 Way Stop - TMC

Thu May 24, 2018

AM Peak (7:30AM - 8:30AM) - Overall Peak Hour

All Classes (Motorcycles, Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 530533, Location: 43.05934, -70.766506

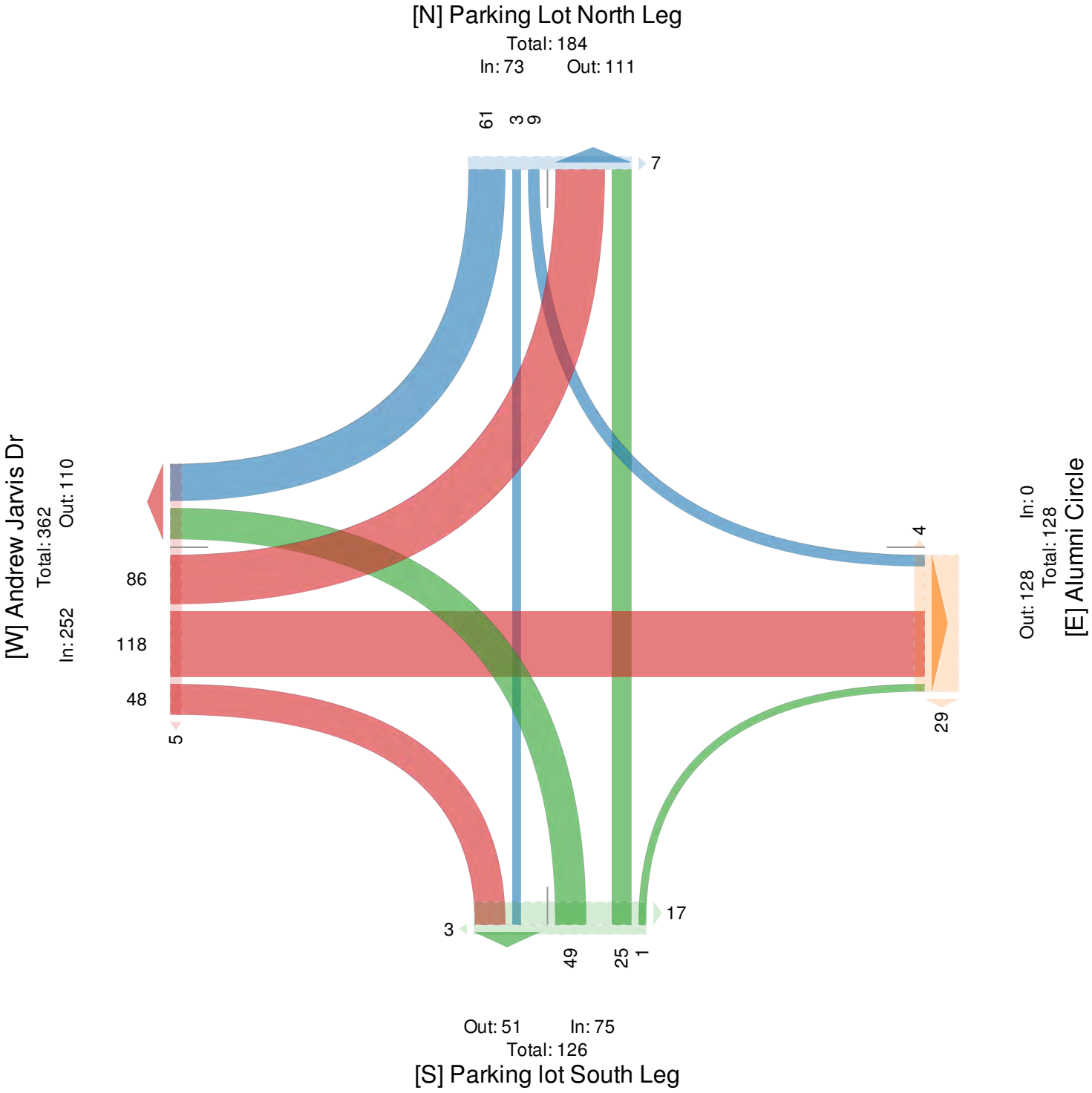
Provided by: City of Portsmouth
680 Peverly Hill Road,
Portsmouth, NH, 03801, US

Leg	Parking Lot North Leg						Alumni Circle						Parking lot South Leg						Andrew Jarvis Dr						
Direction	Southbound						Westbound						Northbound						Eastbound						
Time	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	Int
2018-05-24 7:30AM	4	1	4	0	**9**	0	0	0	0	0	**0**	2	0	1	4	0	**5**	0	6	5	6	0	**17**	0	**31**
7:45AM	5	0	1	0	**6**	1	0	0	0	0	**0**	10	0	9	7	0	**16**	2	14	24	21	0	**59**	0	**81**
8:00AM	34	1	0	0	**35**	1	0	0	0	0	**0**	13	0	9	23	0	**32**	13	18	55	48	0	**121**	2	**188**
8:15AM	18	1	4	0	**23**	5	0	0	0	0	**0**	8	1	6	15	0	**22**	5	10	34	11	0	**55**	3	**100**
Total	61	3	9	0	**73**	7	0	0	0	0	**0**	33	1	25	49	0	**75**	20	48	118	86	0	**252**	5	**400**
% Approach	83.6%	4.1%	12.3%	0%	-	-	0%	0%	0%	0%	-	-	1.3%	33.3%	65.3%	0%	-	-	19.0%	46.8%	34.1%	0%	-	-	-
% Total	15.3%	0.8%	2.3%	0%	**18.3%**	-	0%	0%	0%	0%	**0%**	-	0.3%	6.3%	12.3%	0%	**18.8%**	-	12.0%	29.5%	21.5%	0%	**63.0%**	-	-
PHF	0.449	0.750	0.563	-	**0.521**	-	-	-	-	-	-	-	0.250	0.694	0.533	-	**0.586**	-	0.667	0.536	0.448	-	**0.521**	-	0.532
Motorcycles	0	1	1	0	**2**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	4	0	0	0	**4**	-	6
% Motorcycles	0%	33.3%	11.1%	0%	**2.7%**	-	0%	0%	0%	0%	-	-	0%	0%	0%	0%	**0%**	-	8.3%	0%	0%	0%	**1.6%**	-	1.5%
Lights	61	2	4	0	**67**	-	0	0	0	0	**0**	-	1	13	46	0	**60**	-	43	118	84	0	**245**	-	372
% Lights	100%	66.7%	44.4%	0%	**91.8%**	-	0%	0%	0%	0%	-	-	100%	52.0%	93.9%	0%	**80.0%**	-	89.6%	100%	97.7%	0%	**97.2%**	-	93.0%
Single-Unit Trucks	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0
% Single-Unit Trucks	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	-	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%
Articulated Trucks	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0
% Articulated Trucks	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	-	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%
Buses	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	12	3	0	**15**	-	0	0	1	0	**1**	-	16
% Buses	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	-	-	0%	48.0%	6.1%	0%	**20.0%**	-	0%	0%	1.2%	0%	**0.4%**	-	4.0%
Bicycles on Road	0	0	4	0	**4**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	1	0	1	0	**2**	-	6
% Bicycles on Road	0%	0%	44.4%	0%	**5.5%**	-	0%	0%	0%	0%	-	-	0%	0%	0%	0%	**0%**	-	2.1%	0%	1.2%	0%	**0.8%**	-	1.5%
Pedestrians	-	-	-	-	-	6	-	-	-	-	-	32	-	-	-	-	-	20	-	-	-	-	-	5	
% Pedestrians	-	-	-	-	-	85.7%	-	-	-	-	-	97.0%	-	-	-	-	-	100%	-	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	14.3%	-	-	-	-	-	3.0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

High School Internal 4 Way Stop - TMC
Thu May 24, 2018
AM Peak (7:30AM - 8:30AM) - Overall Peak Hour
All Classes (Motorcycles, Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 530533, Location: 43.05934, -70.766506

Provided by: City of Portsmouth
680 Peverly Hill Road,
Portsmouth, NH, 03801, US



High School Internal 4 Way Stop - TMC

Thu May 24, 2018

PM Peak (3PM - 4PM)

All Classes (Motorcycles, Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 530533, Location: 43.05934, -70.766506

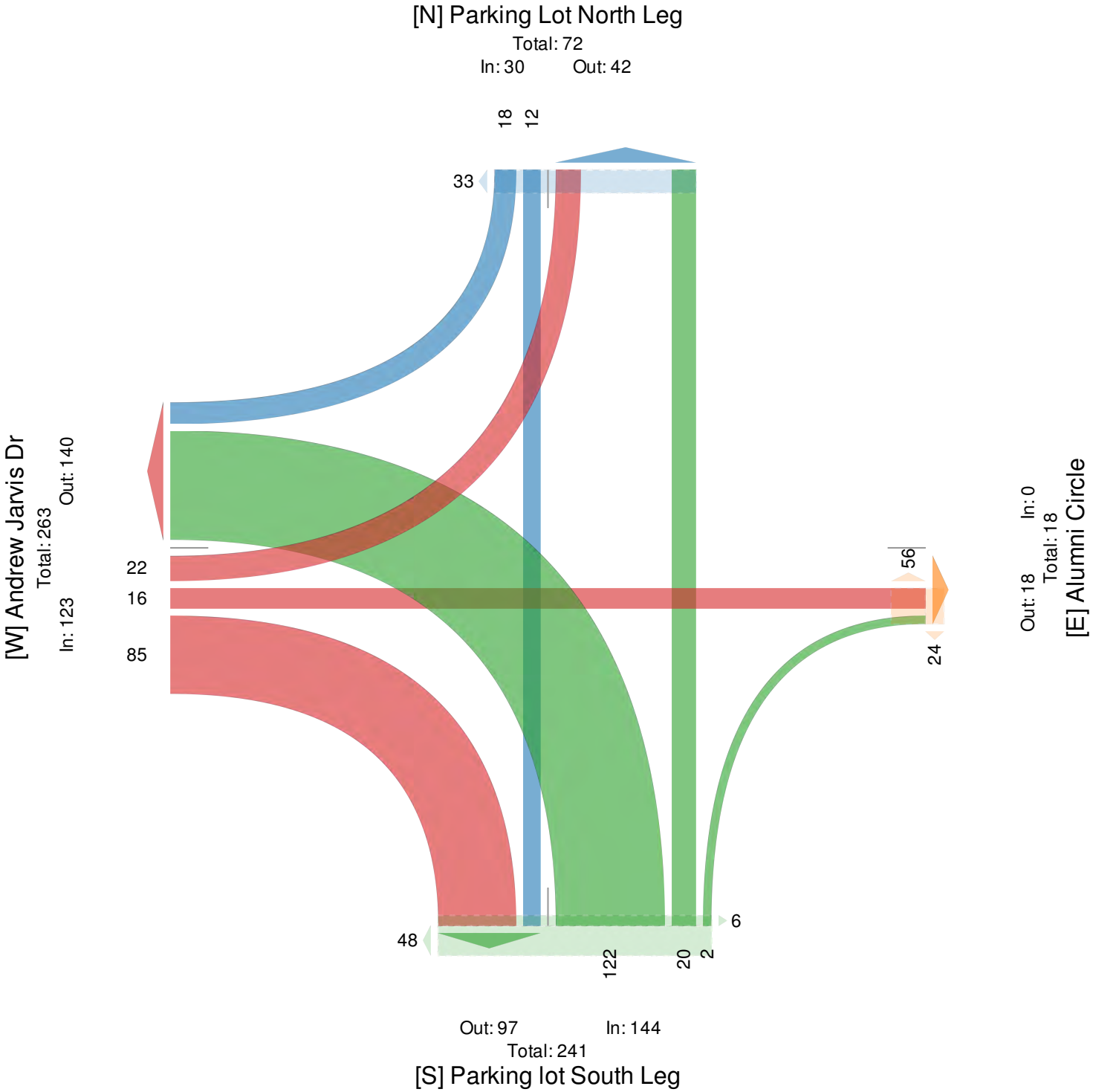
Provided by: City of Portsmouth
680 Peverly Hill Road,
Portsmouth, NH, 03801, US

Leg	Parking Lot North Leg						Alumni Circle						Parking lot South Leg						Andrew Jarvis Dr						
Direction	Southbound						Westbound						Northbound						Eastbound						
Time	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	Int
2018-05-24 3:00PM	1	0	0	0	**1**	0	0	0	0	0	**0**	12	0	2	13	0	**15**	2	17	1	6	0	**24**	0	**40**
3:15PM	6	1	0	0	**7**	31	0	0	0	0	**0**	61	0	1	39	0	**40**	43	17	6	5	0	**28**	0	**75**
3:30PM	6	2	0	0	**8**	0	0	0	0	0	**0**	4	1	12	36	0	**49**	4	24	4	9	0	**37**	0	**94**
3:45PM	5	9	0	0	**14**	2	0	0	0	0	**0**	3	1	5	34	0	**40**	5	27	5	2	0	**34**	0	**88**
Total	18	12	0	0	**30**	33	0	0	0	0	**0**	80	2	20	122	0	**144**	54	85	16	22	0	**123**	0	**297**
% Approach	60.0%	40.0%	0%	0%	**-**	-	0%	0%	0%	0%	**-**	-	1.4%	13.9%	84.7%	0%	**-**	-	69.1%	13.0%	17.9%	0%	**-**	-	**-**
% Total	6.1%	4.0%	0%	0%	**10.1%**	-	0%	0%	0%	0%	**0%**	-	0.7%	6.7%	41.1%	0%	**48.5%**	-	28.6%	5.4%	7.4%	0%	**41.4%**	-	**-**
PHF	0.750	0.333	-	-	**0.536**	-	-	-	-	-	**-**	-	0.500	0.417	0.782	-	**0.735**	-	0.787	0.667	0.611	-	**0.831**	-	0.790
Motorcycles	1	0	0	0	**1**	-	0	0	0	0	**0**	-	0	0	2	0	**2**	-	0	0	0	0	**0**	-	3
% Motorcycles	5.6%	0%	0%	0%	**3.3%**	-	0%	0%	0%	0%	**-**	-	0%	0%	1.6%	0%	**1.4%**	-	0%	0%	0%	0%	**0%**	-	1.0%
Lights	12	12	0	0	**24**	-	0	0	0	0	**0**	-	2	20	117	0	**139**	-	85	7	16	0	**108**	-	271
% Lights	66.7%	100%	0%	0%	**80.0%**	-	0%	0%	0%	0%	**-**	-	100%	100%	95.9%	0%	**96.5%**	-	100%	43.8%	72.7%	0%	**87.8%**	-	91.2%
Single-Unit Trucks	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0
% Single-Unit Trucks	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**-**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%
Articulated Trucks	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	1	0	**1**	-	0	0	0	0	**0**	-	1
% Articulated Trucks	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**-**	-	0%	0%	0.8%	0%	**0.7%**	-	0%	0%	0%	0%	**0%**	-	0.3%
Buses	5	0	0	0	**5**	-	0	0	0	0	**0**	-	0	0	2	0	**2**	-	0	9	6	0	**15**	-	22
% Buses	27.8%	0%	0%	0%	**16.7%**	-	0%	0%	0%	0%	**-**	-	0%	0%	1.6%	0%	**1.4%**	-	0%	56.3%	27.3%	0%	**12.2%**	-	7.4%
Bicycles on Road	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0
% Bicycles on Road	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**-**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%
Pedestrians	-	-	-	-	-	33	-	-	-	-	-	79	-	-	-	-	-	52	-	-	-	-	-	0	
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	-	98.8%	-	-	-	-	-	96.3%	-	-	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	2	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	0%	-	-	-	-	-	1.3%	-	-	-	-	-	3.7%	-	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

High School Internal 4 Way Stop - TMC
Thu May 24, 2018
PM Peak (3PM - 4PM)
All Classes (Motorcycles, Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 530533, Location: 43.05934, -70.766506

Provided by: City of Portsmouth
680 Peverly Hill Road,
Portsmouth, NH, 03801, US



Lafayette at Andrew Jarvis - TMC
Fri May 4, 2018
Full Length (3PM-6PM, 7AM-9AM)
All Classes (Motorcycles, Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 521085, Location: 43.058563, -70.769463

Provided by: City of Portsmouth
680 Peverly Hill Road,
Portsmouth, NH, 03801, US

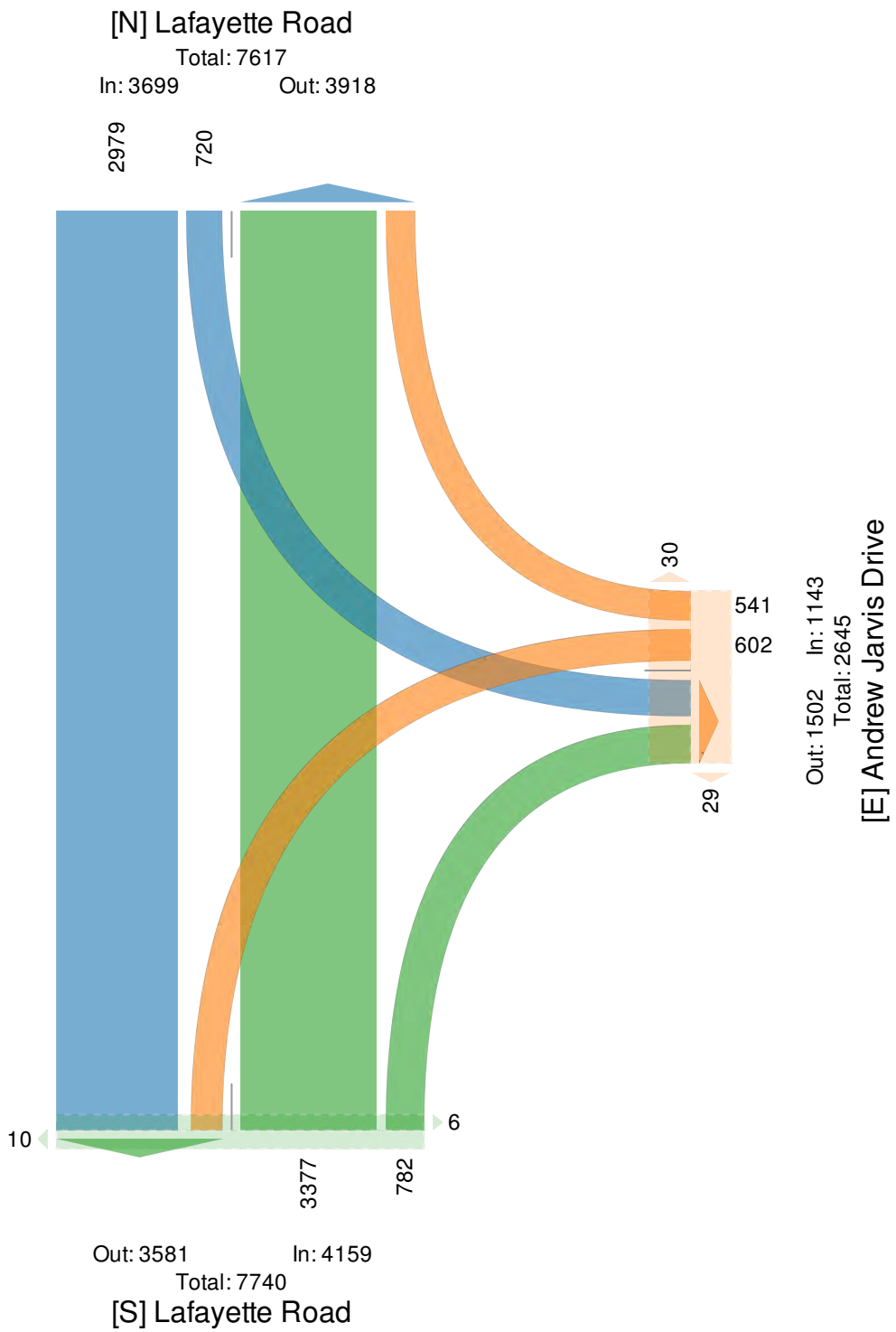
Leg Direction	Lafayette Road Southbound					Andrew Jarvis Drive Westbound					Lafayette Road Northbound					
Time	T	L	U	App	Ped*	R	L	U	App	Ped*	R	T	U	App	Ped*	Int
2018-05-04 3:00PM	95	25	0	**120**	0	11	9	0	**20**	2	24	116	0	**140**	0	**280**
3:15PM	112	28	0	**140**	0	35	48	0	**83**	1	27	104	0	**131**	2	**354**
3:30PM	111	20	0	**131**	0	39	52	0	**91**	4	16	127	0	**143**	0	**365**
3:45PM	116	9	0	**125**	0	18	18	0	**36**	1	10	118	0	**128**	0	**289**
Hourly Total	434	82	0	**516**	0	103	127	0	**230**	8	77	465	0	**542**	2	**1288**
4:00PM	104	10	0	**114**	0	14	9	0	**23**	1	7	103	0	**110**	0	**247**
4:15PM	92	6	0	**98**	0	11	9	0	**20**	0	6	122	0	**128**	0	**246**
4:30PM	98	10	0	**108**	0	9	14	0	**23**	1	13	120	0	**133**	0	**264**
4:45PM	103	5	0	**108**	0	9	15	0	**24**	3	22	125	0	**147**	0	**279**
Hourly Total	397	31	0	**428**	0	43	47	0	**90**	5	48	470	0	**518**	0	**1036**
5:00PM	103	11	0	**114**	0	13	16	0	**29**	3	25	102	0	**127**	0	**270**
5:15PM	104	16	0	**120**	0	9	12	0	**21**	1	18	129	0	**147**	0	**288**
5:30PM	107	15	0	**122**	0	15	14	0	**29**	7	18	117	0	**135**	0	**286**
5:45PM	92	10	0	**102**	0	3	4	0	**7**	1	11	106	0	**117**	0	**226**
Hourly Total	406	52	0	**458**	0	40	46	0	**86**	12	72	454	0	**526**	0	**1070**
6:00PM	1	0	0	**1**	0	0	0	0	**0**	0	0	1	0	**1**	0	**2**
Hourly Total	1	0	0	**1**	0	0	0	0	**0**	0	0	1	0	**1**	0	**2**
2018-05-07 7:00AM	45	11	0	**56**	0	5	2	0	**7**	0	7	54	0	**61**	0	**124**
7:15AM	54	11	0	**65**	0	3	0	0	**3**	0	7	56	0	**63**	0	**131**
7:30AM	63	20	0	**83**	0	4	5	0	**9**	1	27	71	0	**98**	0	**190**
7:45AM	63	37	0	**100**	0	14	7	0	**21**	3	71	122	0	**193**	1	**314**
Hourly Total	225	79	0	**304**	0	26	14	0	**40**	4	112	303	0	**415**	1	**759**
8:00AM	89	86	0	**175**	0	15	30	0	**45**	1	116	76	0	**192**	2	**412**
8:15AM	82	36	0	**118**	0	17	23	0	**40**	0	36	69	0	**105**	0	**263**
8:30AM	83	13	0	**96**	0	9	6	0	**15**	2	13	87	0	**100**	0	**211**
8:45AM	75	8	0	**83**	0	1	5	0	**6**	0	5	94	0	**99**	0	**188**
Hourly Total	329	143	0	**472**	0	42	64	0	**106**	3	170	326	0	**496**	2	**1074**
9:00AM	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	**0**
Hourly Total	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	**0**
3:00PM	89	24	0	**113**	0	16	8	0	**24**	2	22	100	0	**122**	0	**259**
3:15PM	78	31	0	**109**	0	39	48	0	**87**	5	28	95	0	**123**	3	**319**
3:30PM	95	33	0	**128**	0	38	44	0	**82**	5	28	114	0	**142**	0	**352**
3:45PM	101	52	0	**153**	0	25	22	0	**47**	0	42	117	0	**159**	2	**359**
Hourly Total	363	140	0	**503**	0	118	122	0	**240**	12	120	426	0	**546**	5	**1289**
4:00PM	92	35	0	**127**	0	12	15	0	**27**	1	26	120	0	**146**	0	**300**
4:15PM	106	22	0	**128**	0	16	10	0	**26**	2	21	115	0	**136**	0	**290**
4:30PM	98	24	0	**122**	0	18	12	0	**30**	3	25	112	0	**137**	0	**289**
4:45PM	108	25	0	**133**	0	21	24	0	**45**	3	28	119	0	**147**	2	**325**
Hourly Total	404	106	0	**510**	0	67	61	0	**128**	9	100	466	0	**566**	2	**1204**
5:00PM	124	16	0	**140**	0	24	26	0	**50**	3	26	112	0	**138**	4	**328**
5:15PM	111	27	0	**138**	0	27	28	0	**55**	0	14	119	0	**133**	0	**326**
5:30PM	96	15	0	**111**	0	25	28	0	**53**	3	14	116	0	**130**	0	**294**
5:45PM	89	29	0	**118**	0	26	39	0	**65**	0	29	119	0	**148**	0	**331**
Hourly Total	420	87	0	**507**	0	102	121	0	**223**	6	83	466	0	**549**	4	**1279**
6:00PM	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	**0**
Hourly Total	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	**0**
Total	2979	720	0	**3699**	0	541	602	0	**1143**	59	782	3377	0	**4159**	16	**9001**
% Approach	80.5%	19.5%	0%	-	-	47.3%	52.7%	0%	-	-	18.8%	81.2%	0%	-	-	-
% Total	33.1%	8.0%	0%	**41.1%**	-	6.0%	6.7%	0%	**12.7%**	-	8.7%	37.5%	0%	**46.2%**	-	-
Motorcycles	15	8	0	**23**	-	6	2	0	**8**	-	0	22	0	**22**	-	53
% Motorcycles	0.5%	1.1%	0%	**0.6%**	-	1.1%	0.3%	0%	**0.7%**	-	0%	0.7%	0%	**0.5%**	-	0.6%
Lights	2887	685	0	**3572**	-	522	582	0	**1104**	-	761	3266	0	**4027**	-	8703
% Lights	96.9%	95.1%	0%	**96.6%**	-	96.5%	96.7%	0%	**96.6%**	-	97.3%	96.7%	0%	**96.8%**	-	96.7%

Leg	Lafayette Road					Andrew Jarvis Drive					Lafayette Road					
Direction	Southbound					Westbound					Northbound					
Time	T	L	U	**App**	Ped*	R	L	U	**App**	Ped*	R	T	U	**App**	Ped*	**Int**
Single-Unit Trucks	42	4	0	**46**	-	3	1	0	**4**	-	2	41	0	**43**	-	93
% Single-Unit Trucks	1.4%	0.6%	0%	**1.2%**	-	0.6%	0.2%	0%	**0.3%**	-	0.3%	1.2%	0%	**1.0%**	-	1.0%
Articulated Trucks	1	0	0	**1**	-	1	0	0	**1**	-	1	12	0	**13**	-	15
% Articulated Trucks	0%	0%	0%	**0%**	-	0.2%	0%	0%	**0.1%**	-	0.1%	0.4%	0%	**0.3%**	-	0.2%
Buses	22	19	0	**41**	-	6	17	0	**23**	-	16	28	0	**44**	-	108
% Buses	0.7%	2.6%	0%	**1.1%**	-	1.1%	2.8%	0%	**2.0%**	-	2.0%	0.8%	0%	**1.1%**	-	1.2%
Bicycles on Road	12	4	0	**16**	-	3	0	0	**3**	-	2	8	0	**10**	-	29
% Bicycles on Road	0.4%	0.6%	0%	**0.4%**	-	0.6%	0%	0%	**0.3%**	-	0.3%	0.2%	0%	**0.2%**	-	0.3%
Pedestrians	-	-	-	-	0	-	-	-	-	49	-	-	-	-	15	
% Pedestrians	-	-	-	-	-	-	-	-	-	83.1%	-	-	-	-	93.8%	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	10	-	-	-	-	1	
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	16.9%	-	-	-	-	6.3%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Lafayette at Andrew Jarvis - TMC
Fri May 4, 2018
Full Length (3PM-6PM, 7AM-9AM)
All Classes (Motorcycles, Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 521085, Location: 43.058563, -70.769463

Provided by: City of Portsmouth
680 Peverly Hill Road,
Portsmouth, NH, 03801, US



Lafayette at Andrew Jarvis - TMC
Mon May 7, 2018
AM Peak (May 07 2018 7:45AM - 8:45AM)
All Classes (Motorcycles, Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 521085, Location: 43.058563, -70.769463

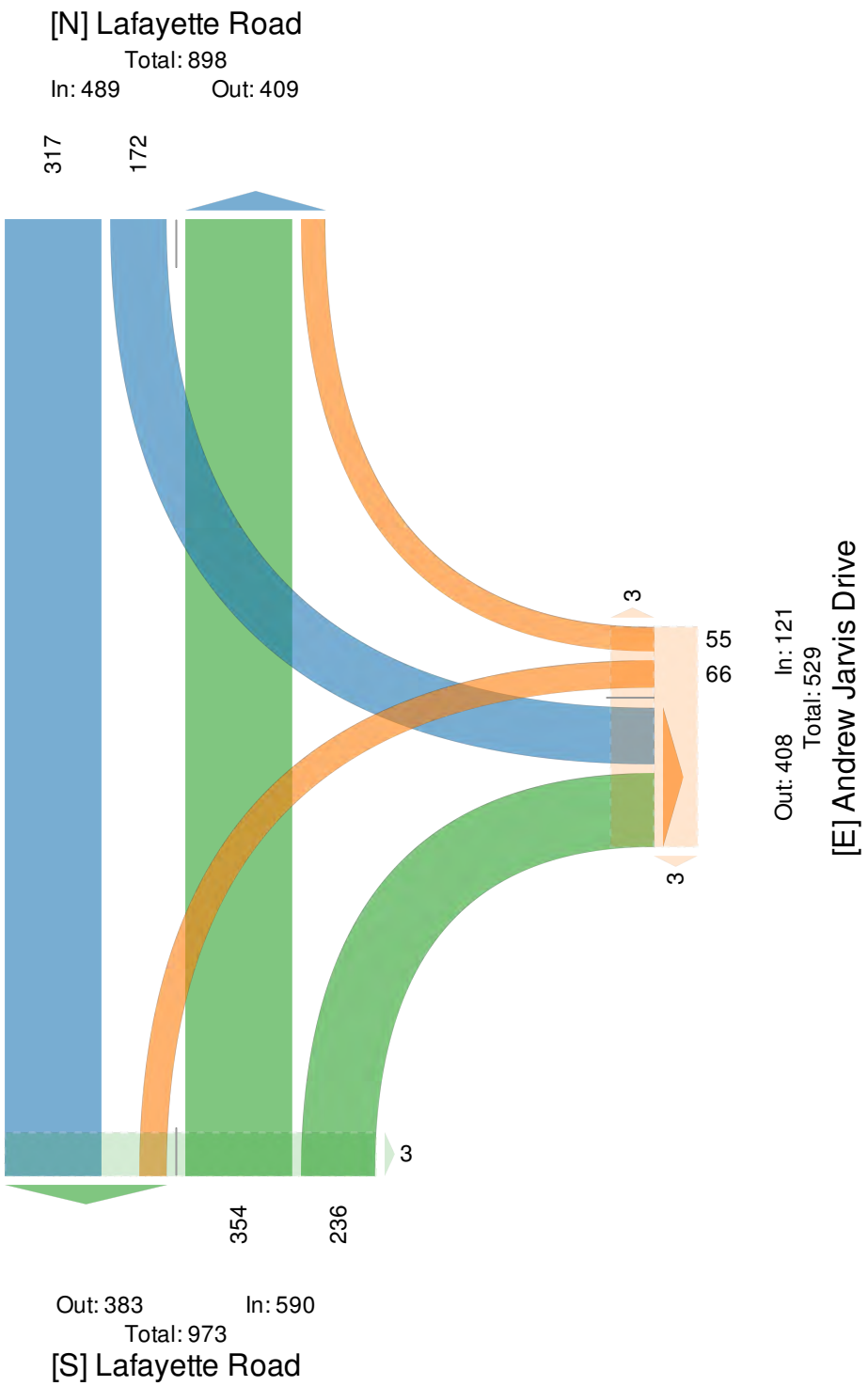
Provided by: City of Portsmouth
680 Peverly Hill Road,
Portsmouth, NH, 03801, US

Leg / Direction	Lafayette Road Southbound					Andrew Jarvis Drive Westbound					Lafayette Road Northbound					
Time	T	L	U	**App**	Ped*	R	L	U	**App**	Ped*	R	T	U	**App**	Ped*	**Int**
2018-05-07 7:45AM	63	37	0	**100**	0	14	7	0	**21**	3	71	122	0	**193**	1	**314**
8:00AM	89	86	0	**175**	0	15	30	0	**45**	1	116	76	0	**192**	2	**412**
8:15AM	82	36	0	**118**	0	17	23	0	**40**	0	36	69	0	**105**	0	**263**
8:30AM	83	13	0	**96**	0	9	6	0	**15**	2	13	87	0	**100**	0	**211**
Total	317	172	0	**489**	0	55	66	0	**121**	6	236	354	0	**590**	3	**1200**
% Approach	64.8%	35.2%	0%	-	-	45.5%	54.5%	0%	-	-	40.0%	60.0%	0%	-	-	-
% Total	26.4%	14.3%	0%	**40.8%**	-	4.6%	5.5%	0%	**10.1%**	-	19.7%	29.5%	0%	**49.2%**	-	-
PHF	0.890	0.500	-	**0.699**	-	0.809	0.550	-	**0.672**	-	0.509	0.725	-	**0.764**	-	0.728
Motorcycles	2	3	0	**5**	-	0	0	0	**0**	-	0	0	0	**0**	-	5
% Motorcycles	0.6%	1.7%	0%	**1.0%**	-	0%	0%	0%	**0%**	-	0%	0%	0%	**0%**	-	0.4%
Lights	301	168	0	**469**	-	53	63	0	**116**	-	231	332	0	**563**	-	1148
% Lights	95.0%	97.7%	0%	**95.9%**	-	96.4%	95.5%	0%	**95.9%**	-	97.9%	93.8%	0%	**95.4%**	-	95.7%
Single-Unit Trucks	9	0	0	**9**	-	0	0	0	**0**	-	1	7	0	**8**	-	17
% Single-Unit Trucks	2.8%	0%	0%	**1.8%**	-	0%	0%	0%	**0%**	-	0.4%	2.0%	0%	**1.4%**	-	1.4%
Articulated Trucks	1	0	0	**1**	-	1	0	0	**1**	-	1	5	0	**6**	-	8
% Articulated Trucks	0.3%	0%	0%	**0.2%**	-	1.8%	0%	0%	**0.8%**	-	0.4%	1.4%	0%	**1.0%**	-	0.7%
Buses	3	0	0	**3**	-	1	3	0	**4**	-	2	10	0	**12**	-	19
% Buses	0.9%	0%	0%	**0.6%**	-	1.8%	4.5%	0%	**3.3%**	-	0.8%	2.8%	0%	**2.0%**	-	1.6%
Bicycles on Road	1	1	0	**2**	-	0	0	0	**0**	-	1	0	0	**1**	-	3
% Bicycles on Road	0.3%	0.6%	0%	**0.4%**	-	0%	0%	0%	**0%**	-	0.4%	0%	0%	**0.2%**	-	0.3%
Pedestrians	-	-	-	-	0	-	-	-	-	3	-	-	-	-	3	
% Pedestrians	-	-	-	-	-	-	-	-	-	50.0%	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	3	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	50.0%	-	-	-	-	0%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Lafayette at Andrew Jarvis - TMC
Mon May 7, 2018
AM Peak (May 07 2018 7:45AM - 8:45AM)
All Classes (Motorcycles, Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 521085, Location: 43.058563, -70.769463

Provided by: City of Portsmouth
680 Peverly Hill Road,
Portsmouth, NH, 03801, US



Lafayette at Andrew Jarvis - TMC
Mon May 7, 2018
PM Peak (May 07 2018 3:15PM - 4:15PM) - Overall Peak Hour
All Classes (Motorcycles, Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 521085, Location: 43.058563, -70.769463

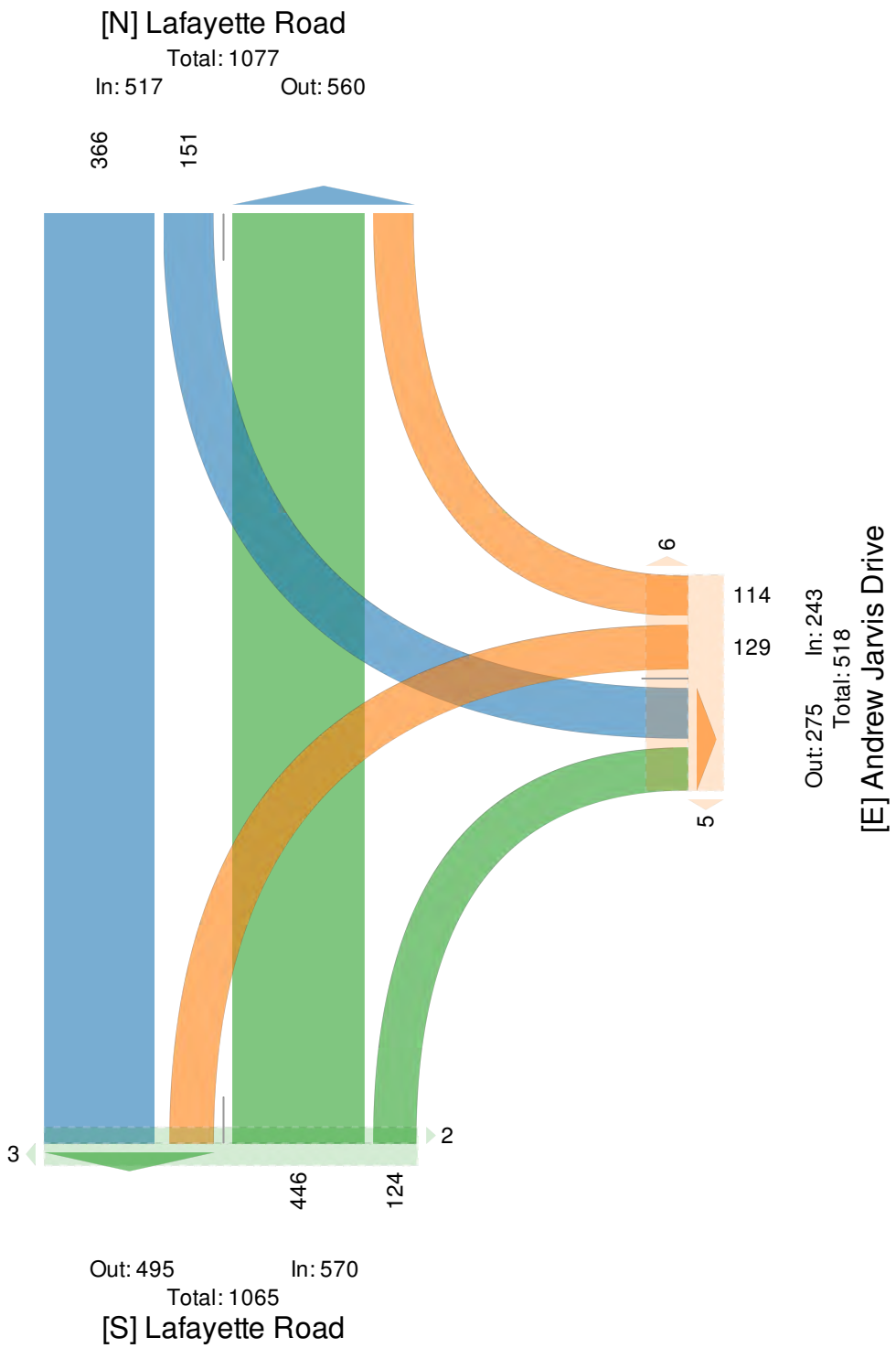
Provided by: City of Portsmouth
680 Peverly Hill Road,
Portsmouth, NH, 03801, US

Leg / Direction	Lafayette Road Southbound					Andrew Jarvis Drive Westbound					Lafayette Road Northbound					
Time	T	L	U	**App**	Ped*	R	L	U	**App**	Ped*	R	T	U	**App**	Ped*	**Int**
2018-05-07 3:15PM	78	31	0	**109**	0	39	48	0	**87**	5	28	95	0	**123**	3	**319**
3:30PM	95	33	0	**128**	0	38	44	0	**82**	5	28	114	0	**142**	0	**352**
3:45PM	101	52	0	**153**	0	25	22	0	**47**	0	42	117	0	**159**	2	**359**
4:00PM	92	35	0	**127**	0	12	15	0	**27**	1	26	120	0	**146**	0	**300**
Total	366	151	0	**517**	0	114	129	0	**243**	11	124	446	0	**570**	5	**1330**
% Approach	70.8%	29.2%	0%	**-**	-	46.9%	53.1%	0%	**-**	-	21.8%	78.2%	0%	**-**	-	-
% Total	27.5%	11.4%	0%	**38.9%**	-	8.6%	9.7%	0%	**18.3%**	-	9.3%	33.5%	0%	**42.9%**	-	-
PHF	0.906	0.726	-	**0.845**	-	0.731	0.672	-	**0.698**	-	0.738	0.929	-	**0.896**	-	0.926
Motorcycles	1	1	0	**2**	-	2	0	0	**2**	-	0	2	0	**2**	-	6
% Motorcycles	0.3%	0.7%	0%	**0.4%**	-	1.8%	0%	0%	**0.8%**	-	0%	0.4%	0%	**0.4%**	-	0.5%
Lights	356	138	0	**494**	-	110	119	0	**229**	-	117	428	0	**545**	-	1268
% Lights	97.3%	91.4%	0%	**95.6%**	-	96.5%	92.2%	0%	**94.2%**	-	94.4%	96.0%	0%	**95.6%**	-	95.3%
Single-Unit Trucks	5	2	0	**7**	-	0	1	0	**1**	-	0	10	0	**10**	-	18
% Single-Unit Trucks	1.4%	1.3%	0%	**1.4%**	-	0%	0.8%	0%	**0.4%**	-	0%	2.2%	0%	**1.8%**	-	1.4%
Articulated Trucks	0	0	0	**0**	-	0	0	0	**0**	-	0	0	0	**0**	-	0
% Articulated Trucks	0%	0%	0%	**0%**	-	0%	0%	0%	**0%**	-	0%	0%	0%	**0%**	-	0%
Buses	4	8	0	**12**	-	2	9	0	**11**	-	7	4	0	**11**	-	34
% Buses	1.1%	5.3%	0%	**2.3%**	-	1.8%	7.0%	0%	**4.5%**	-	5.6%	0.9%	0%	**1.9%**	-	2.6%
Bicycles on Road	0	2	0	**2**	-	0	0	0	**0**	-	0	2	0	**2**	-	4
% Bicycles on Road	0%	1.3%	0%	**0.4%**	-	0%	0%	0%	**0%**	-	0%	0.4%	0%	**0.4%**	-	0.3%
Pedestrians	-	-	-	-	0	-	-	-	-	10	-	-	-	-	5	
% Pedestrians	-	-	-	-	-	-	-	-	-	90.9%	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	1	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	9.1%	-	-	-	-	0%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Lafayette at Andrew Jarvis - TMC
Mon May 7, 2018
PM Peak (May 07 2018 3:15PM - 4:15PM) - Overall Peak Hour
All Classes (Motorcycles, Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 521085, Location: 43.058563, -70.769463

Provided by: City of Portsmouth
680 Peverly Hill Road,
Portsmouth, NH, 03801, US



Portsmouth High School Parking Lot - TMC
Wed May 30, 2018
Full Length (7AM-9AM, 2PM-4PM)
All Classes (Motorcycles, Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 531720, Location: 43.059091, -70.76752

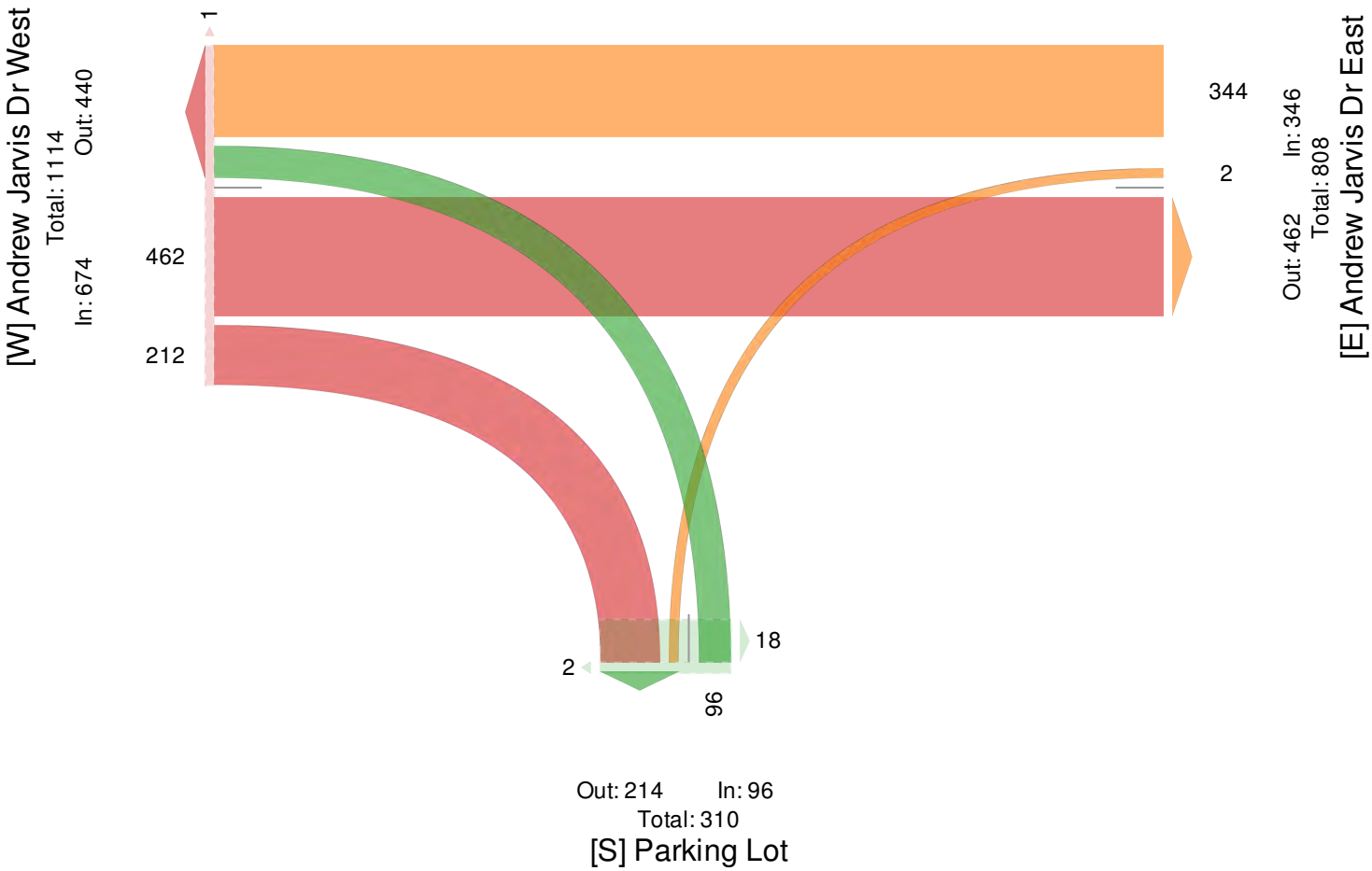
Provided by: City of Portsmouth
680 Peverly Hill Road,
Portsmouth, NH, 03801, US

Leg Direction	Andrew Jarvis Dr East Westbound					Parking Lot Northbound					Andrew Jarvis Dr West Eastbound					
Time	T	L	U	**App**	Ped*	R	L	U	**App**	Ped*	R	T	U	**App**	Ped*	**Int**
2018-05-30 7:00AM	24	0	0	**24**	0	0	17	0	**17**	6	72	114	0	**186**	0	**227**
8:00AM	121	0	0	**121**	0	0	11	0	**11**	12	102	189	0	**291**	0	**423**
9:00AM	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	**0**
2:00PM	31	0	0	**31**	0	0	13	0	**13**	1	4	41	0	**45**	0	**89**
3:00PM	168	2	0	**170**	0	0	55	0	**55**	1	34	118	0	**152**	1	**377**
Total	344	2	0	**346**	0	0	96	0	**96**	20	212	462	0	**674**	1	**1116**
% Approach	99.4%	0.6%	0%	**-**	-	0%	100%	0%	**-**	-	31.5%	68.5%	0%	**-**	-	-
% Total	30.8%	0.2%	0%	**31.0%**	-	0%	8.6%	0%	**8.6%**	-	19.0%	41.4%	0%	**60.4%**	-	-
Motorcycles	4	0	0	**4**	-	0	1	0	**1**	-	2	5	0	**7**	-	12
% Motorcycles	1.2%	0%	0%	**1.2%**	-	0%	1.0%	0%	**1.0%**	-	0.9%	1.1%	0%	**1.0%**	-	1.1%
Lights	322	1	0	**323**	-	0	95	0	**95**	-	206	437	0	**643**	-	1061
% Lights	93.6%	50.0%	0%	**93.4%**	-	0%	99.0%	0%	**99.0%**	-	97.2%	94.6%	0%	**95.4%**	-	95.1%
Single-Unit Trucks	0	0	0	**0**	-	0	0	0	**0**	-	0	1	0	**1**	-	1
% Single-Unit Trucks	0%	0%	0%	**0%**	-	0%	0%	0%	**0%**	-	0%	0.2%	0%	**0.1%**	-	0.1%
Articulated Trucks	0	0	0	**0**	-	0	0	0	**0**	-	0	1	0	**1**	-	1
% Articulated Trucks	0%	0%	0%	**0%**	-	0%	0%	0%	**0%**	-	0%	0.2%	0%	**0.1%**	-	0.1%
Buses	17	0	0	**17**	-	0	0	0	**0**	-	3	18	0	**21**	-	38
% Buses	4.9%	0%	0%	**4.9%**	-	0%	0%	0%	**0%**	-	1.4%	3.9%	0%	**3.1%**	-	3.4%
Bicycles on Road	1	1	0	**2**	-	0	0	0	**0**	-	1	0	0	**1**	-	3
% Bicycles on Road	0.3%	50.0%	0%	**0.6%**	-	0%	0%	0%	**0%**	-	0.5%	0%	0%	**0.1%**	-	0.3%
Pedestrians	-	-	-	-	0	-	-	-	-	20	-	-	-	-	1	
% Pedestrians	-	-	-	-	-	-	-	-	-	100%	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	0%	-	-	-	-	0%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Portsmouth High School Parking Lot - TMC
Wed May 30, 2018
Full Length (7AM-9AM, 2PM-4PM)
All Classes (Motorcycles, Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 531720, Location: 43.059091, -70.76752

Provided by: City of Portsmouth
680 Peverly Hill Road,
Portsmouth, NH, 03801, US



Portsmouth High School Parking Lot - TMC
Wed May 30, 2018
AM Peak (7:30AM - 8:30AM) - Overall Peak Hour
All Classes (Motorcycles, Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 531720, Location: 43.059091, -70.76752

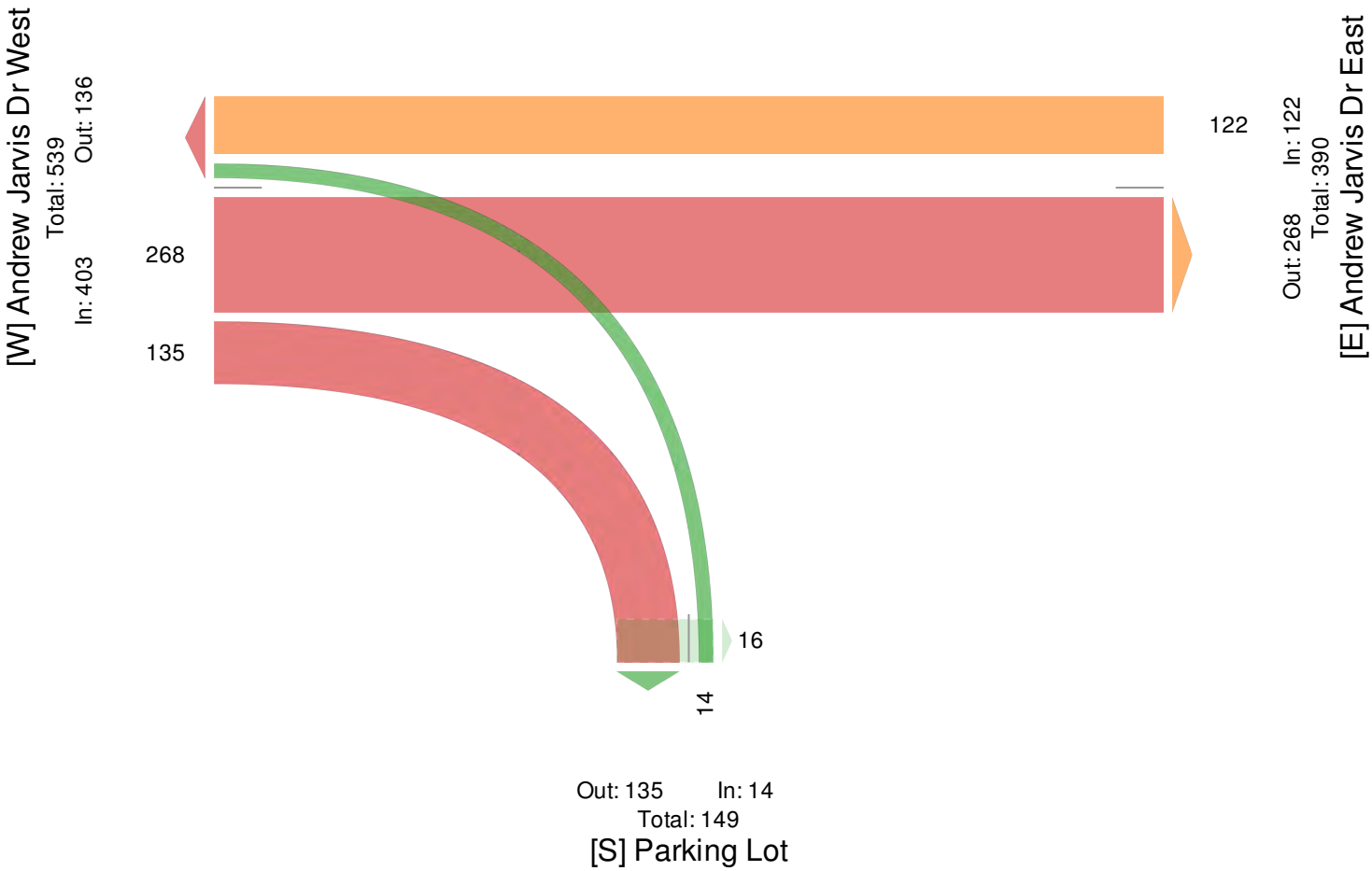
Provided by: City of Portsmouth
680 Peverly Hill Road,
Portsmouth, NH, 03801, US

Leg Direction	Andrew Jarvis Dr East Westbound					Parking Lot Northbound					Andrew Jarvis Dr West Eastbound					
Time	T	L	U	**App**	Ped*	R	L	U	**App**	Ped*	R	T	U	**App**	Ped*	**Int**
2018-05-30 7:30AM	6	0	0	**6**	0	0	6	0	**6**	2	13	31	0	**44**	0	**56**
7:45AM	15	0	0	**15**	0	0	4	0	**4**	2	39	60	0	**99**	0	**118**
8:00AM	52	0	0	**52**	0	0	1	0	**1**	9	62	117	0	**179**	0	**232**
8:15AM	49	0	0	**49**	0	0	3	0	**3**	3	21	60	0	**81**	0	**133**
Total	122	0	0	**122**	0	0	14	0	**14**	16	135	268	0	**403**	0	**539**
% Approach	100%	0%	0%	**-**	-	0%	100%	0%	**-**	-	33.5%	66.5%	0%	**-**	-	-
% Total	22.6%	0%	0%	**22.6%**	-	0%	2.6%	0%	**2.6%**	-	25.0%	49.7%	0%	**74.8%**	-	-
PHF	0.587	-	-	**0.587**	-	-	0.583	-	**0.583**	-	0.544	0.573	-	**0.563**	-	0.581
Motorcycles	0	0	0	**0**	-	0	0	0	**0**	-	2	3	0	**5**	-	5
% Motorcycles	0%	0%	0%	**0%**	-	0%	0%	0%	**0%**	-	1.5%	1.1%	0%	**1.2%**	-	0.9%
Lights	116	0	0	**116**	-	0	14	0	**14**	-	132	262	0	**394**	-	524
% Lights	95.1%	0%	0%	**95.1%**	-	0%	100%	0%	**100%**	-	97.8%	97.8%	0%	**97.8%**	-	97.2%
Single-Unit Trucks	0	0	0	**0**	-	0	0	0	**0**	-	0	1	0	**1**	-	1
% Single-Unit Trucks	0%	0%	0%	**0%**	-	0%	0%	0%	**0%**	-	0%	0.4%	0%	**0.2%**	-	0.2%
Articulated Trucks	0	0	0	**0**	-	0	0	0	**0**	-	0	0	0	**0**	-	0
% Articulated Trucks	0%	0%	0%	**0%**	-	0%	0%	0%	**0%**	-	0%	0%	0%	**0%**	-	0%
Buses	6	0	0	**6**	-	0	0	0	**0**	-	1	2	0	**3**	-	9
% Buses	4.9%	0%	0%	**4.9%**	-	0%	0%	0%	**0%**	-	0.7%	0.7%	0%	**0.7%**	-	1.7%
Bicycles on Road	0	0	0	**0**	-	0	0	0	**0**	-	0	0	0	**0**	-	0
% Bicycles on Road	0%	0%	0%	**0%**	-	0%	0%	0%	**0%**	-	0%	0%	0%	**0%**	-	0%
Pedestrians	-	-	-	-	0	-	-	-	-	16	-	-	-	-	0	
% Pedestrians	-	-	-	-	-	-	-	-	-	100%	-	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	0%	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Portsmouth High School Parking Lot - TMC
Wed May 30, 2018
AM Peak (7:30AM - 8:30AM) - Overall Peak Hour
All Classes (Motorcycles, Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 531720, Location: 43.059091, -70.76752

Provided by: City of Portsmouth
680 Peverly Hill Road,
Portsmouth, NH, 03801, US



Portsmouth High School Parking Lot - TMC
Wed May 30, 2018
PM Peak (3PM - 4PM)
All Classes (Motorcycles, Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 531720, Location: 43.059091, -70.76752

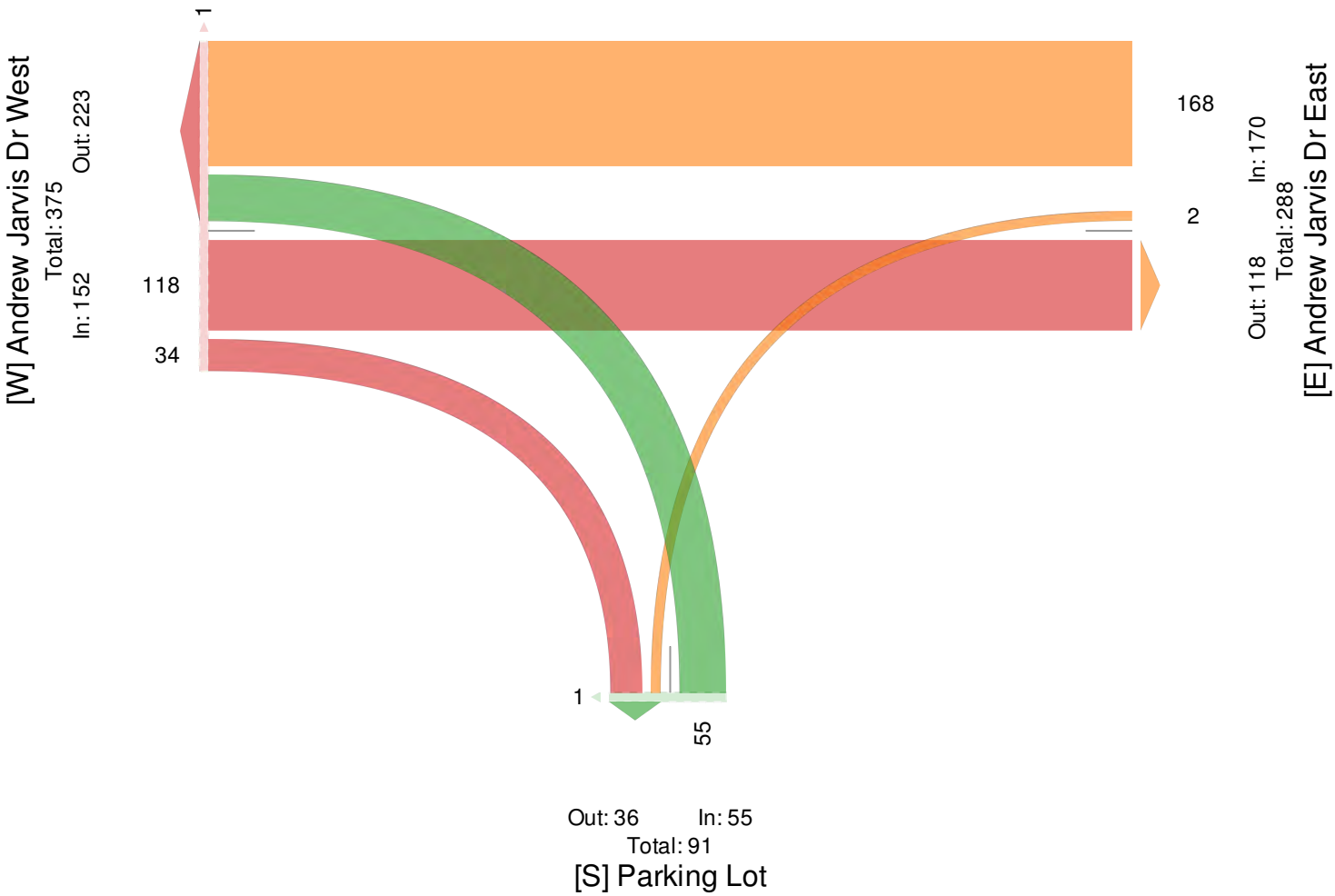
Provided by: City of Portsmouth
680 Peverly Hill Road,
Portsmouth, NH, 03801, US

Leg Direction	Andrew Jarvis Dr East Westbound					Parking Lot Northbound					Andrew Jarvis Dr West Eastbound					
Time	T	L	U	**App**	Ped*	R	L	U	**App**	Ped*	R	T	U	**App**	Ped*	**Int**
2018-05-30 3:00PM	17	1	0	**18**	0	0	3	0	**3**	0	8	37	0	**45**	0	**66**
3:15PM	61	1	0	**62**	0	0	26	0	**26**	0	5	39	0	**44**	1	**132**
3:30PM	61	0	0	**61**	0	0	23	0	**23**	1	9	31	0	**40**	0	**124**
3:45PM	29	0	0	**29**	0	0	3	0	**3**	0	12	11	0	**23**	0	**55**
Total	168	2	0	**170**	0	0	55	0	**55**	1	34	118	0	**152**	1	**377**
% Approach	98.8%	1.2%	0%	**-**	-	0%	100%	0%	**-**	-	22.4%	77.6%	0%	**-**	-	-
% Total	44.6%	0.5%	0%	**45.1%**	-	0%	14.6%	0%	**14.6%**	-	9.0%	31.3%	0%	**40.3%**	-	-
PHF	0.689	0.500	-	**0.685**	-	-	0.529	-	**0.529**	-	0.708	0.756	-	**0.844**	-	0.714
Motorcycles	3	0	0	**3**	-	0	1	0	**1**	-	0	0	0	**0**	-	4
% Motorcycles	1.8%	0%	0%	**1.8%**	-	0%	1.8%	0%	**1.8%**	-	0%	0%	0%	**0%**	-	1.1%
Lights	156	1	0	**157**	-	0	54	0	**54**	-	32	103	0	**135**	-	346
% Lights	92.9%	50.0%	0%	**92.4%**	-	0%	98.2%	0%	**98.2%**	-	94.1%	87.3%	0%	**88.8%**	-	91.8%
Single-Unit Trucks	0	0	0	**0**	-	0	0	0	**0**	-	0	0	0	**0**	-	0
% Single-Unit Trucks	0%	0%	0%	**0%**	-	0%	0%	0%	**0%**	-	0%	0%	0%	**0%**	-	0%
Articulated Trucks	0	0	0	**0**	-	0	0	0	**0**	-	0	1	0	**1**	-	1
% Articulated Trucks	0%	0%	0%	**0%**	-	0%	0%	0%	**0%**	-	0%	0.8%	0%	**0.7%**	-	0.3%
Buses	8	0	0	**8**	-	0	0	0	**0**	-	2	14	0	**16**	-	24
% Buses	4.8%	0%	0%	**4.7%**	-	0%	0%	0%	**0%**	-	5.9%	11.9%	0%	**10.5%**	-	6.4%
Bicycles on Road	1	1	0	**2**	-	0	0	0	**0**	-	0	0	0	**0**	-	2
% Bicycles on Road	0.6%	50.0%	0%	**1.2%**	-	0%	0%	0%	**0%**	-	0%	0%	0%	**0%**	-	0.5%
Pedestrians	-	-	-	-	0	-	-	-	-	1	-	-	-	-	1	
% Pedestrians	-	-	-	-	-	-	-	-	-	100%	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	0%	-	-	-	-	0%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Portsmouth High School Parking Lot - TMC
Wed May 30, 2018
PM Peak (3PM - 4PM)
All Classes (Motorcycles, Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 531720, Location: 43.059091, -70.76752

Provided by: City of Portsmouth
680 Peverly Hill Road,
Portsmouth, NH, 03801, US



Portsmouth High School Side Entrance - TMC
Thu May 24, 2018
Full Length (7AM-9AM, 2PM-4PM)
All Classes (Motorcycles, Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 531710, Location: 43.060901, -70.766186

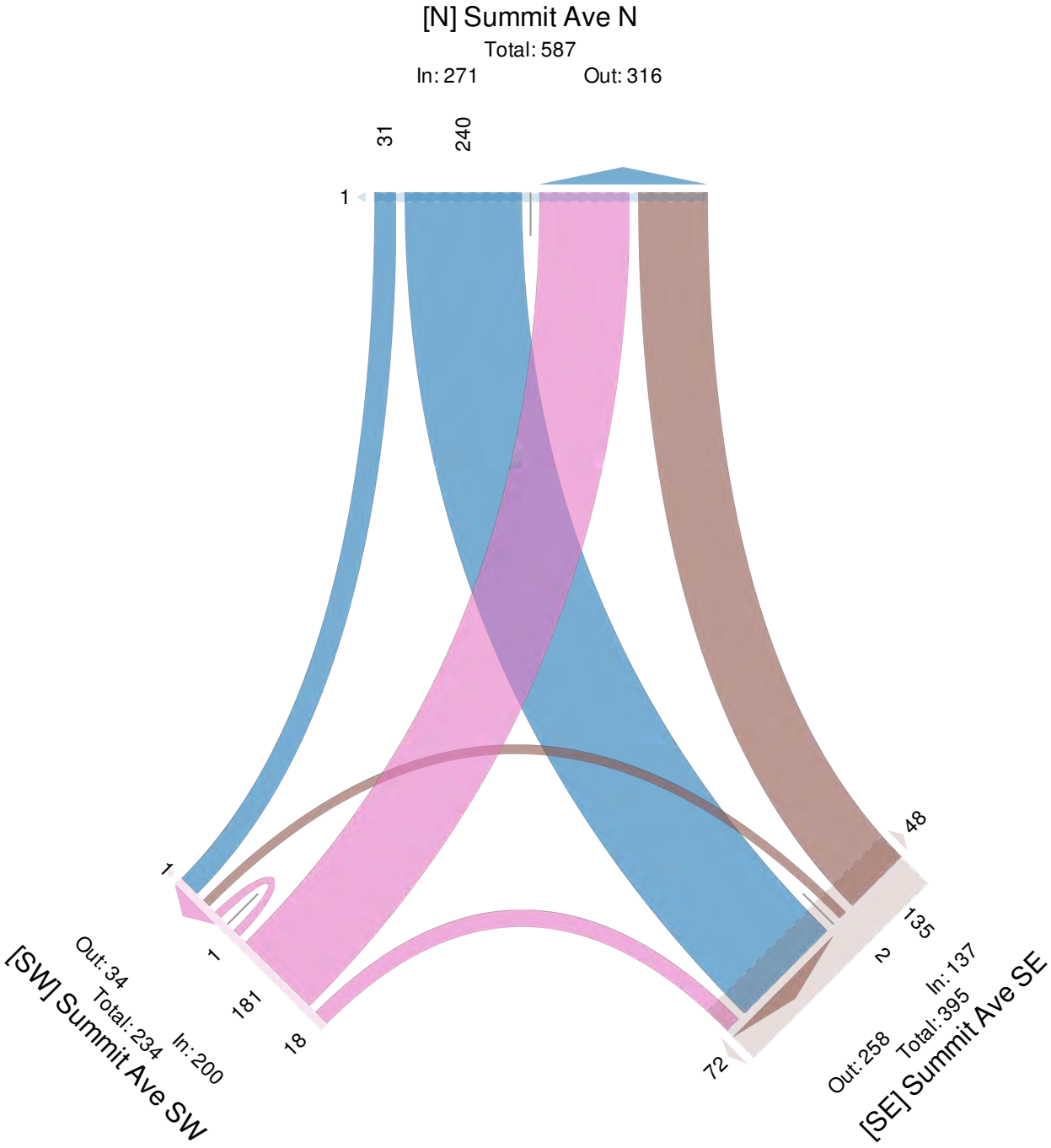
Provided by: City of Portsmouth
680 Peverly Hill Road,
Portsmouth, NH, 03801, US

Leg	Summit Ave N					Summit Ave SE					Summit Ave SW					
Direction	Southbound					Northwestbound					Northeastbound					
Time	BR	BL	U	App	Ped*	BR	L	U	App	Ped*	R	BL	U	App	Ped*	Int
2018-05-24 7:00AM	6	62	0	**68**	0	6	0	0	**6**	3	8	25	0	**33**	0	**107**
8:00AM	8	143	0	**151**	1	32	1	0	**33**	37	6	61	1	**68**	0	**252**
9:00AM	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	**0**
2:00PM	1	4	0	**5**	0	10	1	0	**11**	11	2	10	0	**12**	0	**28**
3:00PM	16	31	0	**47**	0	87	0	0	**87**	69	2	84	0	**86**	1	**220**
4:00PM	0	0	0	**0**	0	0	0	0	**0**	0	0	1	0	**1**	0	**1**
Total	31	240	0	**271**	1	135	2	0	**137**	120	18	181	1	**200**	1	**608**
% Approach	11.4%	88.6%	0%	-	-	98.5%	1.5%	0%	-	-	9.0%	90.5%	0.5%	-	-	-
% Total	5.1%	39.5%	0%	**44.6%**	-	22.2%	0.3%	0%	**22.5%**	-	3.0%	29.8%	0.2%	**32.9%**	-	-
Motorcycles	3	4	0	**7**	-	1	0	0	**1**	-	0	2	0	**2**	-	10
% Motorcycles	9.7%	1.7%	0%	**2.6%**	-	0.7%	0%	0%	**0.7%**	-	0%	1.1%	0%	**1.0%**	-	1.6%
Lights	20	219	0	**239**	-	128	2	0	**130**	-	17	158	1	**176**	-	545
% Lights	64.5%	91.3%	0%	**88.2%**	-	94.8%	100%	0%	**94.9%**	-	94.4%	87.3%	100%	**88.0%**	-	89.6%
Single-Unit Trucks	0	0	0	**0**	-	0	0	0	**0**	-	0	0	0	**0**	-	0
% Single-Unit Trucks	0%	0%	0%	**0%**	-	0%	0%	0%	**0%**	-	0%	0%	0%	**0%**	-	0%
Articulated Trucks	0	0	0	**0**	-	0	0	0	**0**	-	0	0	0	**0**	-	0
% Articulated Trucks	0%	0%	0%	**0%**	-	0%	0%	0%	**0%**	-	0%	0%	0%	**0%**	-	0%
Buses	0	16	0	**16**	-	0	0	0	**0**	-	1	21	0	**22**	-	38
% Buses	0%	6.7%	0%	**5.9%**	-	0%	0%	0%	**0%**	-	5.6%	11.6%	0%	**11.0%**	-	6.3%
Bicycles on Road	8	1	0	**9**	-	6	0	0	**6**	-	0	0	0	**0**	-	15
% Bicycles on Road	25.8%	0.4%	0%	**3.3%**	-	4.4%	0%	0%	**4.4%**	-	0%	0%	0%	**0%**	-	2.5%
Pedestrians	-	-	-	-	1	-	-	-	-	118	-	-	-	-	1	
% Pedestrians	-	-	-	-	100%	-	-	-	-	98.3%	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	2	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	0%	-	-	-	-	1.7%	-	-	-	-	0%	-

*Pedestrians and Bicycles on Crosswalk. BL: Bear left, BR: Bear right, L: Left, R: Right, U: U-Turn

Portsmouth High School Side Entrance - TMC
Thu May 24, 2018
Full Length (7AM-9AM, 2PM-4PM)
All Classes (Motorcycles, Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 531710, Location: 43.060901, -70.766186

Provided by: City of Portsmouth
680 Peverly Hill Road,
Portsmouth, NH, 03801, US



Portsmouth High School Side Entrance - TMC

Thu May 24, 2018
AM Peak (7:30AM - 8:30AM) - Overall Peak Hour
All Classes (Motorcycles, Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 531710, Location: 43.060901, -70.766186

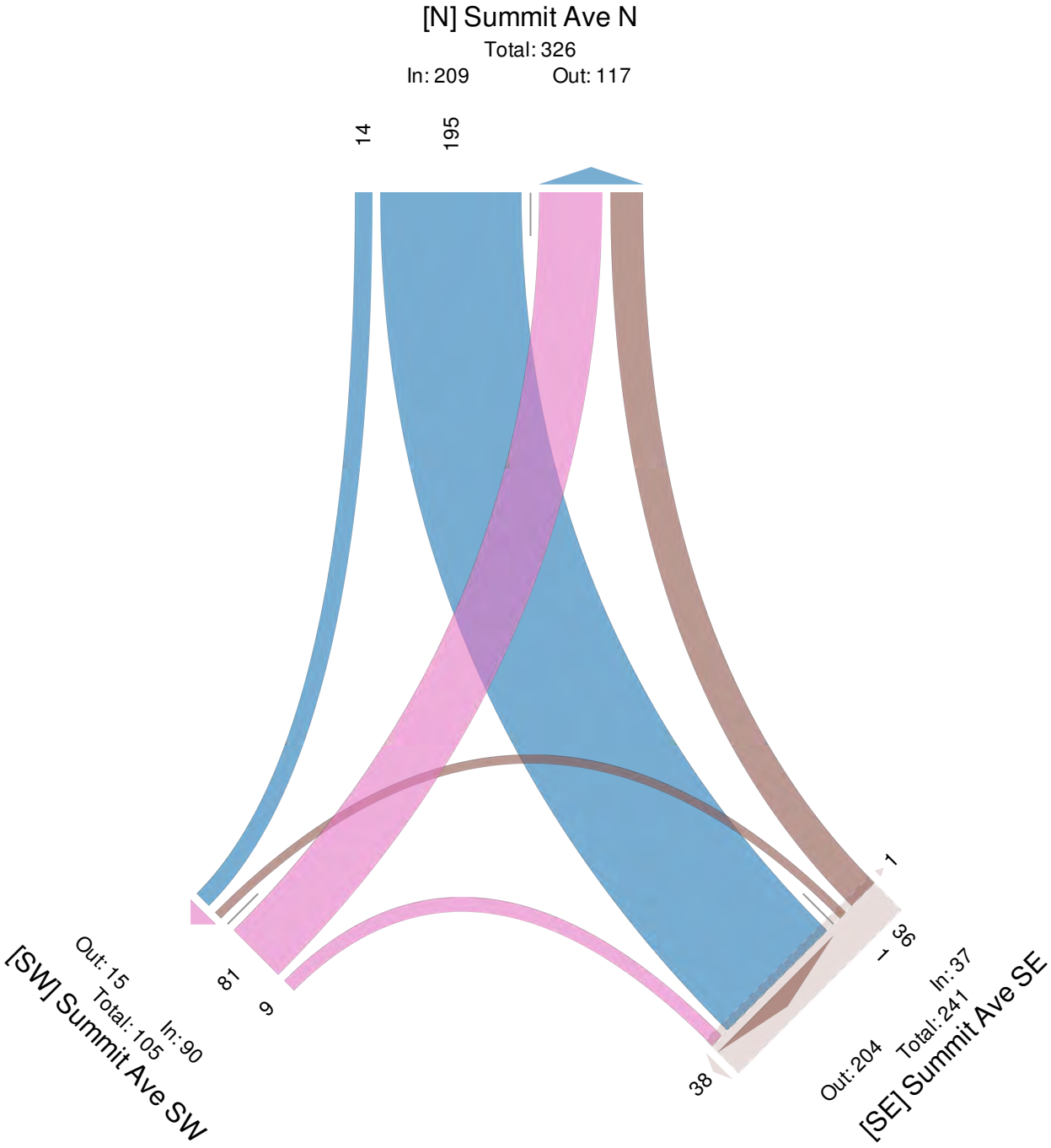
Provided by: City of Portsmouth
680 Peverly Hill Road,
Portsmouth, NH, 03801, US

Leg Direction	Summit Ave N Southbound					Summit Ave SE Northwestbound					Summit Ave SW Northeastbound					
Time	BR	BL	U	**App**	Ped*	BR	L	U	**App**	Ped*	R	BL	U	**App**	Ped*	**Int**
2018-05-24 7:30AM	4	12	0	**16**	0	1	0	0	**1**	0	1	3	0	**4**	0	**21**
7:45AM	2	41	0	**43**	0	5	0	0	**5**	2	4	18	0	**22**	0	**70**
8:00AM	4	125	0	**129**	0	22	0	0	**22**	31	3	35	0	**38**	0	**189**
8:15AM	4	17	0	**21**	0	8	1	0	**9**	6	1	25	0	**26**	0	**56**
Total	14	195	0	**209**	0	36	1	0	**37**	39	9	81	0	**90**	0	**336**
% Approach	6.7%	93.3%	0%	**-**	-	97.3%	2.7%	0%	**-**	-	10.0%	90.0%	0%	**-**	-	**-**
% Total	4.2%	58.0%	0%	**62.2%**	-	10.7%	0.3%	0%	**11.0%**	-	2.7%	24.1%	0%	**26.8%**	-	**-**
PHF	0.875	0.390	-	**0.405**	-	0.409	0.250	-	**0.420**	-	0.563	0.579	-	**0.592**	-	0.444
Motorcycles	2	4	0	**6**	-	0	0	0	**0**	-	0	0	0	**0**	-	6
% Motorcycles	14.3%	2.1%	0%	**2.9%**	-	0%	0%	0%	**0%**	-	0%	0%	0%	**0%**	-	1.8%
Lights	5	175	0	**180**	-	36	1	0	**37**	-	8	68	0	**76**	-	293
% Lights	35.7%	89.7%	0%	**86.1%**	-	100%	100%	0%	**100%**	-	88.9%	84.0%	0%	**84.4%**	-	87.2%
Single-Unit Trucks	0	0	0	**0**	-	0	0	0	**0**	-	0	0	0	**0**	-	0
% Single-Unit Trucks	0%	0%	0%	**0%**	-	0%	0%	0%	**0%**	-	0%	0%	0%	**0%**	-	0%
Articulated Trucks	0	0	0	**0**	-	0	0	0	**0**	-	0	0	0	**0**	-	0
% Articulated Trucks	0%	0%	0%	**0%**	-	0%	0%	0%	**0%**	-	0%	0%	0%	**0%**	-	0%
Buses	0	15	0	**15**	-	0	0	0	**0**	-	1	13	0	**14**	-	29
% Buses	0%	7.7%	0%	**7.2%**	-	0%	0%	0%	**0%**	-	11.1%	16.0%	0%	**15.6%**	-	8.6%
Bicycles on Road	7	1	0	**8**	-	0	0	0	**0**	-	0	0	0	**0**	-	8
% Bicycles on Road	50.0%	0.5%	0%	**3.8%**	-	0%	0%	0%	**0%**	-	0%	0%	0%	**0%**	-	2.4%
Pedestrians	-	-	-	-	0	-	-	-	-	39	-	-	-	-	0	
% Pedestrians	-	-	-	-	-	-	-	-	-	100%	-	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	0%	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. BL: Bear left, BR: Bear right, L: Left, R: Right, U: U-Turn

Portsmouth High School Side Entrance - TMC
Thu May 24, 2018
AM Peak (7:30AM - 8:30AM) - Overall Peak Hour
All Classes (Motorcycles, Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 531710, Location: 43.060901, -70.766186

Provided by: City of Portsmouth
680 Peverly Hill Road,
Portsmouth, NH, 03801, US



Portsmouth High School Side Entrance - TMC
Thu May 24, 2018
Forced Peak (8AM - 9AM)
All Classes (Motorcycles, Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 531710, Location: 43.060901, -70.766186

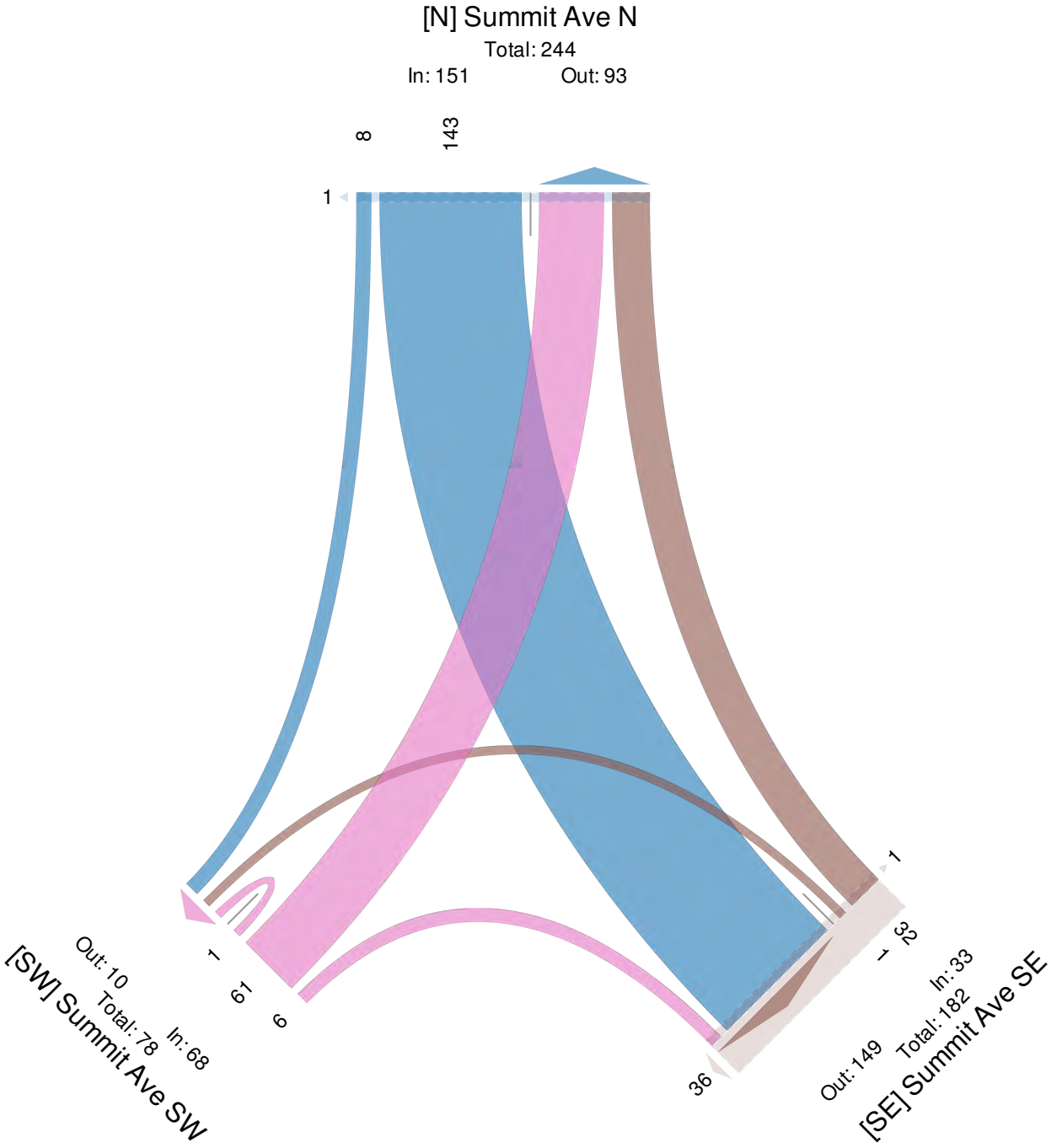
Provided by: City of Portsmouth
680 Peverly Hill Road,
Portsmouth, NH, 03801, US

Leg Direction	Summit Ave N Southbound					Summit Ave SE Northwestbound					Summit Ave SW Northeastbound					
Time	BR	BL	U	**App**	Ped*	BR	L	U	**App**	Ped*	R	BL	U	**App**	Ped*	**Int**
2018-05-24 8:00AM	4	125	0	**129**	0	22	0	0	**22**	31	3	35	0	**38**	0	**189**
8:15AM	4	17	0	**21**	0	8	1	0	**9**	6	1	25	0	**26**	0	**56**
8:30AM	0	1	0	**1**	1	2	0	0	**2**	0	2	1	1	**4**	0	**7**
8:45AM	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	**0**
Total	8	143	0	**151**	1	32	1	0	**33**	37	6	61	1	**68**	0	**252**
% Approach	5.3%	94.7%	0%	**-**	-	97.0%	3.0%	0%	**-**	-	8.8%	89.7%	1.5%	**-**	-	**-**
% Total	3.2%	56.7%	0%	**59.9%**	-	12.7%	0.4%	0%	**13.1%**	-	2.4%	24.2%	0.4%	**27.0%**	-	**-**
PHF	0.500	0.286	-	**0.293**	-	0.364	0.250	-	**0.375**	-	0.500	0.436	0.250	**0.447**	-	0.333
Motorcycles	2	3	0	**5**	-	0	0	0	**0**	-	0	1	0	**1**	-	6
% Motorcycles	25.0%	2.1%	0%	**3.3%**	-	0%	0%	0%	**0%**	-	0%	1.6%	0%	**1.5%**	-	2.4%
Lights	4	133	0	**137**	-	32	1	0	**33**	-	5	54	1	**60**	-	230
% Lights	50.0%	93.0%	0%	**90.7%**	-	100%	100%	0%	**100%**	-	83.3%	88.5%	100%	**88.2%**	-	91.3%
Single-Unit Trucks	0	0	0	**0**	-	0	0	0	**0**	-	0	0	0	**0**	-	0
% Single-Unit Trucks	0%	0%	0%	**0%**	-	0%	0%	0%	**0%**	-	0%	0%	0%	**0%**	-	0%
Articulated Trucks	0	0	0	**0**	-	0	0	0	**0**	-	0	0	0	**0**	-	0
% Articulated Trucks	0%	0%	0%	**0%**	-	0%	0%	0%	**0%**	-	0%	0%	0%	**0%**	-	0%
Buses	0	6	0	**6**	-	0	0	0	**0**	-	1	6	0	**7**	-	13
% Buses	0%	4.2%	0%	**4.0%**	-	0%	0%	0%	**0%**	-	16.7%	9.8%	0%	**10.3%**	-	5.2%
Bicycles on Road	2	1	0	**3**	-	0	0	0	**0**	-	0	0	0	**0**	-	3
% Bicycles on Road	25.0%	0.7%	0%	**2.0%**	-	0%	0%	0%	**0%**	-	0%	0%	0%	**0%**	-	1.2%
Pedestrians	-	-	-	-	1	-	-	-	-	37	-	-	-	-	0	
% Pedestrians	-	-	-	-	100%	-	-	-	-	100%	-	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	0%	-	-	-	-	0%	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. BL: Bear left, BR: Bear right, L: Left, R: Right, U: U-Turn

Portsmouth High School Side Entrance - TMC
Thu May 24, 2018
Forced Peak (8AM - 9AM)
All Classes (Motorcycles, Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 531710, Location: 43.060901, -70.766186

Provided by: City of Portsmouth
680 Peverly Hill Road,
Portsmouth, NH, 03801, US



Portsmouth High School Side Entrance - TMC
Thu May 24, 2018
PM Peak (3PM - 4PM)
All Classes (Motorcycles, Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 531710, Location: 43.060901, -70.766186

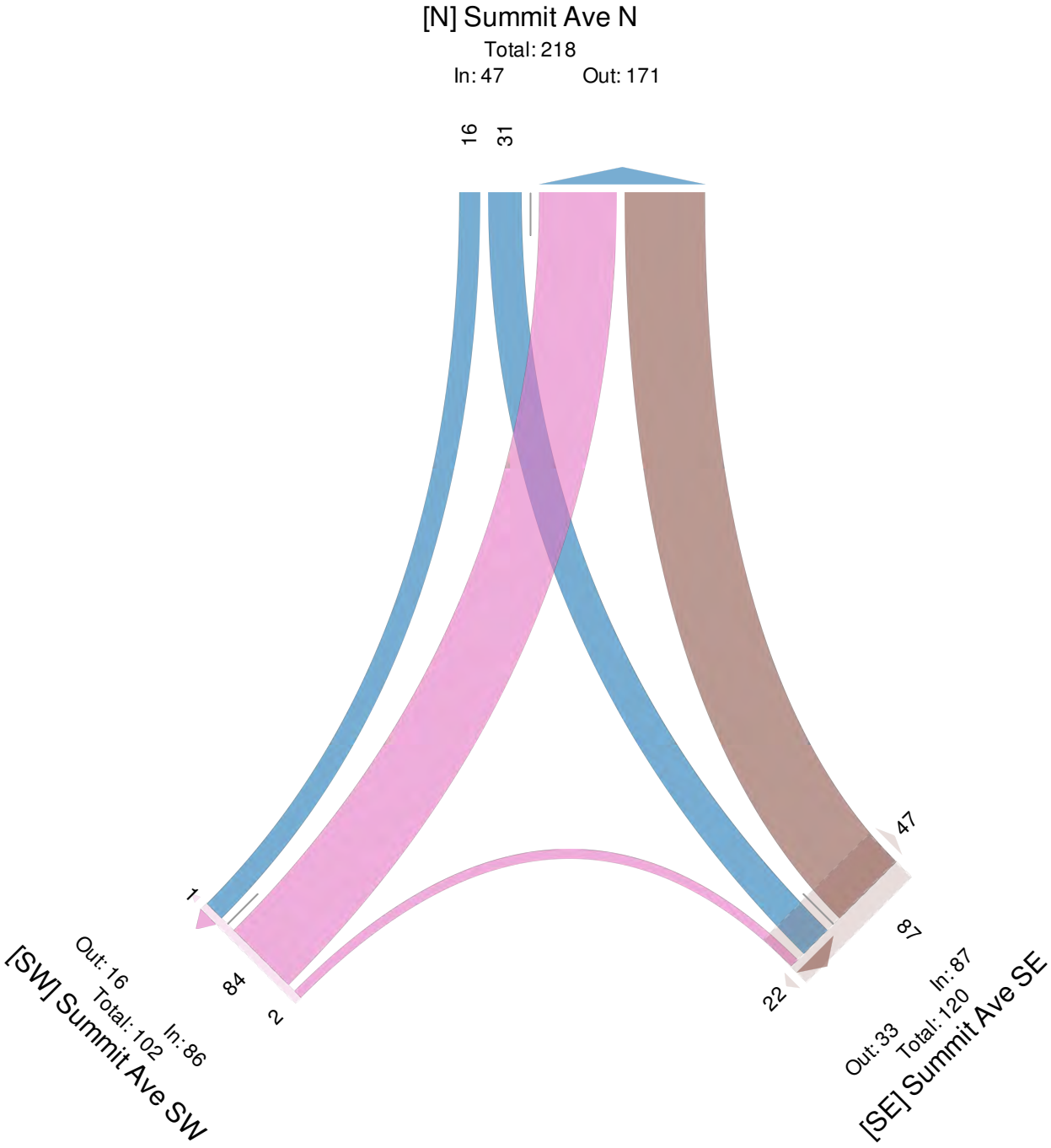
Provided by: City of Portsmouth
680 Peverly Hill Road,
Portsmouth, NH, 03801, US

Leg Direction	Summit Ave N Southbound					Summit Ave SE Northwestbound					Summit Ave SW Northeastbound					
Time	BR	BL	U	**App**	Ped*	BR	L	U	**App**	Ped*	R	BL	U	**App**	Ped*	**Int**
2018-05-24 3:00PM	0	8	0	**8**	0	9	0	0	**9**	21	1	3	0	**4**	0	**21**
3:15PM	0	14	0	**14**	0	43	0	0	**43**	42	1	46	0	**47**	1	**104**
3:30PM	2	6	0	**8**	0	31	0	0	**31**	4	0	27	0	**27**	0	**66**
3:45PM	14	3	0	**17**	0	4	0	0	**4**	2	0	8	0	**8**	0	**29**
Total	16	31	0	**47**	0	87	0	0	**87**	69	2	84	0	**86**	1	**220**
% Approach	34.0%	66.0%	0%	**-**	-	100%	0%	0%	**-**	-	2.3%	97.7%	0%	**-**	-	**-**
% Total	7.3%	14.1%	0%	**21.4%**	-	39.5%	0%	0%	**39.5%**	-	0.9%	38.2%	0%	**39.1%**	-	**-**
PHF	0.286	0.554	-	**0.691**	-	0.506	-	-	**0.506**	-	0.500	0.457	-	**0.457**	-	0.529
Motorcycles	1	0	0	**1**	-	1	0	0	**1**	-	0	1	0	**1**	-	3
% Motorcycles	6.3%	0%	0%	**2.1%**	-	1.1%	0%	0%	**1.1%**	-	0%	1.2%	0%	**1.2%**	-	1.4%
Lights	14	30	0	**44**	-	80	0	0	**80**	-	2	75	0	**77**	-	201
% Lights	87.5%	96.8%	0%	**93.6%**	-	92.0%	0%	0%	**92.0%**	-	100%	89.3%	0%	**89.5%**	-	91.4%
Single-Unit Trucks	0	0	0	**0**	-	0	0	0	**0**	-	0	0	0	**0**	-	0
% Single-Unit Trucks	0%	0%	0%	**0%**	-	0%	0%	0%	**0%**	-	0%	0%	0%	**0%**	-	0%
Articulated Trucks	0	0	0	**0**	-	0	0	0	**0**	-	0	0	0	**0**	-	0
% Articulated Trucks	0%	0%	0%	**0%**	-	0%	0%	0%	**0%**	-	0%	0%	0%	**0%**	-	0%
Buses	0	1	0	**1**	-	0	0	0	**0**	-	0	8	0	**8**	-	9
% Buses	0%	3.2%	0%	**2.1%**	-	0%	0%	0%	**0%**	-	0%	9.5%	0%	**9.3%**	-	4.1%
Bicycles on Road	1	0	0	**1**	-	6	0	0	**6**	-	0	0	0	**0**	-	7
% Bicycles on Road	6.3%	0%	0%	**2.1%**	-	6.9%	0%	0%	**6.9%**	-	0%	0%	0%	**0%**	-	3.2%
Pedestrians	-	-	-	-	0	-	-	-	-	67	-	-	-	-	1	
% Pedestrians	-	-	-	-	-	-	-	-	-	97.1%	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	2	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	2.9%	-	-	-	-	0%	-

*Pedestrians and Bicycles on Crosswalk. BL: Bear left, BR: Bear right, L: Left, R: Right, U: U-Turn

Portsmouth High School Side Entrance - TMC
Thu May 24, 2018
PM Peak (3PM - 4PM)
All Classes (Motorcycles, Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 531710, Location: 43.060901, -70.766186

Provided by: City of Portsmouth
680 Peverly Hill Road,
Portsmouth, NH, 03801, US



PARKING UTILIZATION COUNTS

Location	Available	Current	Type	% Occupancy
A	106	87	Student Staff	82%
B	15	7	Staff	47%
C	22	16	Student	73%
D	54	38	Student	70%
E	12	9	Student	75%
F	22	18	Student	82%
Ga	25	13	Student	52%
Gb	14	7	Staff	50%
H	51	34	Student	67%
I	24	20	Staff	83%
J	6	1	Handicapped	17%
K	26	25	Staff	96%
L	13	6	Staff	46%
M	12	0	Staff	0%
N	54	52	Visitor Staff	96%
O	6	2	Handicapped	33%
Total Spaces	462	335		73%

Date	Weather	Temperature (F)	Start Time
5/4/2018	Sunny	70	2:00 PM

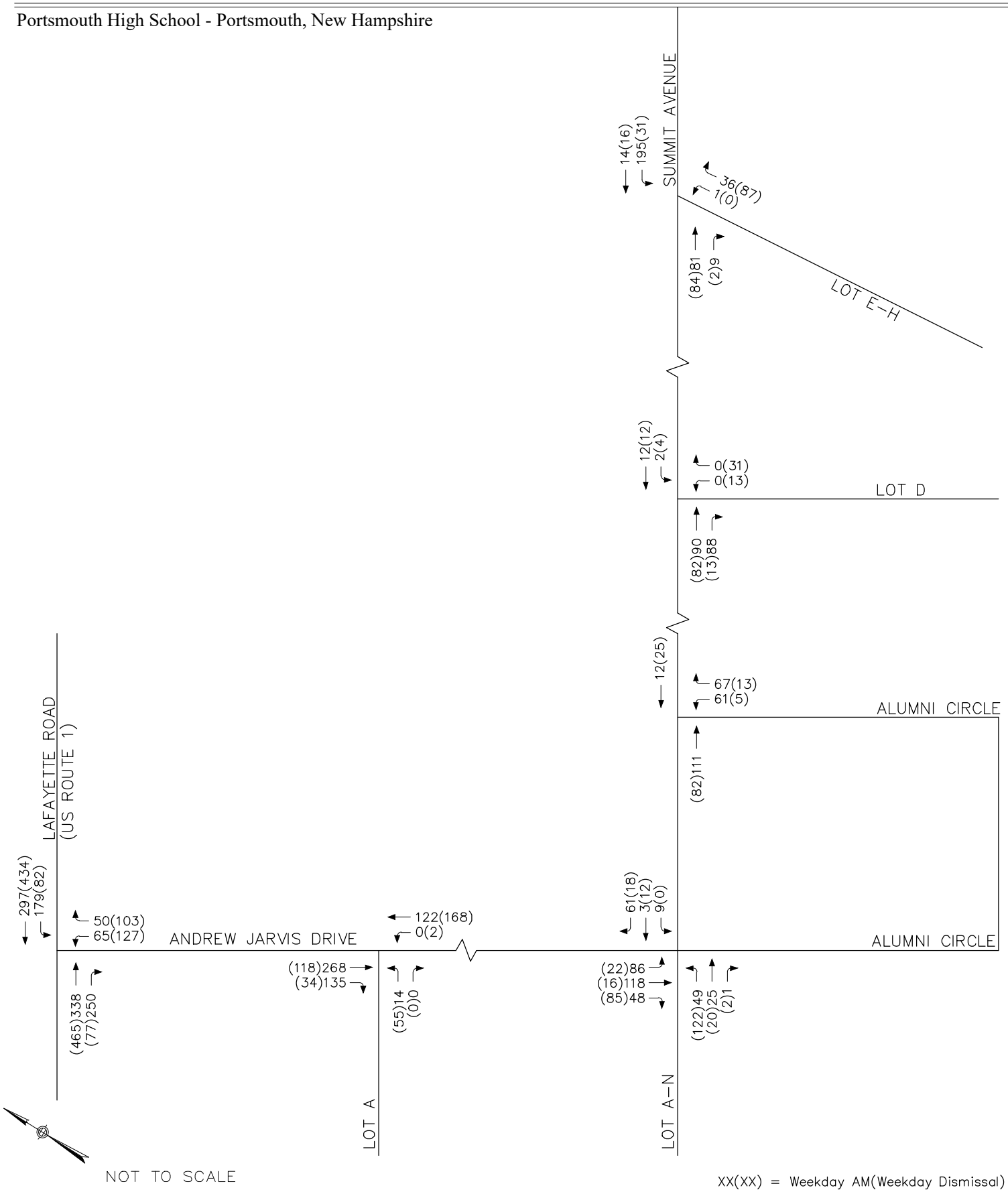
Staff	181
Student	256
Handicapped	10
Visitor	15

Date	Weather	Temperature (F)	Start Time	
5/24/2018	Sunny	63	9:00 AM	

Location	Available	Current	Type	% Occupancy
A	106	101	Student Staff	95%
B	15	12	Staff	80%
C	22	24	Student	109%
D	54	54	Student	100%
E	12	12	Student	100%
F	22	22	Student	100%
Ga	25	25	Student	100%
Gb	14	13	Staff	93%
H	51	42	Student	82%
I	24	19	Staff	79%
J	6	0	Handicapped	0%
K	26	24	Staff	92%
L	13	7	Staff	54%
M	12	0	Staff	0%
N	54	45	Visitor	83%
O	6	1	Handicapped	17%
Total Spaces	462	401		87%

Staff	181
Student	256
Handicapped	10
Visitor	15

REDISTRIBUTION OF TRAFFIC



Greenman-Pedersen, Inc.

Engineering and Construction Services

Figure A-1

Existing Conditions
Weekday AM and Dismissal
Peak Hour Traffic Volumes

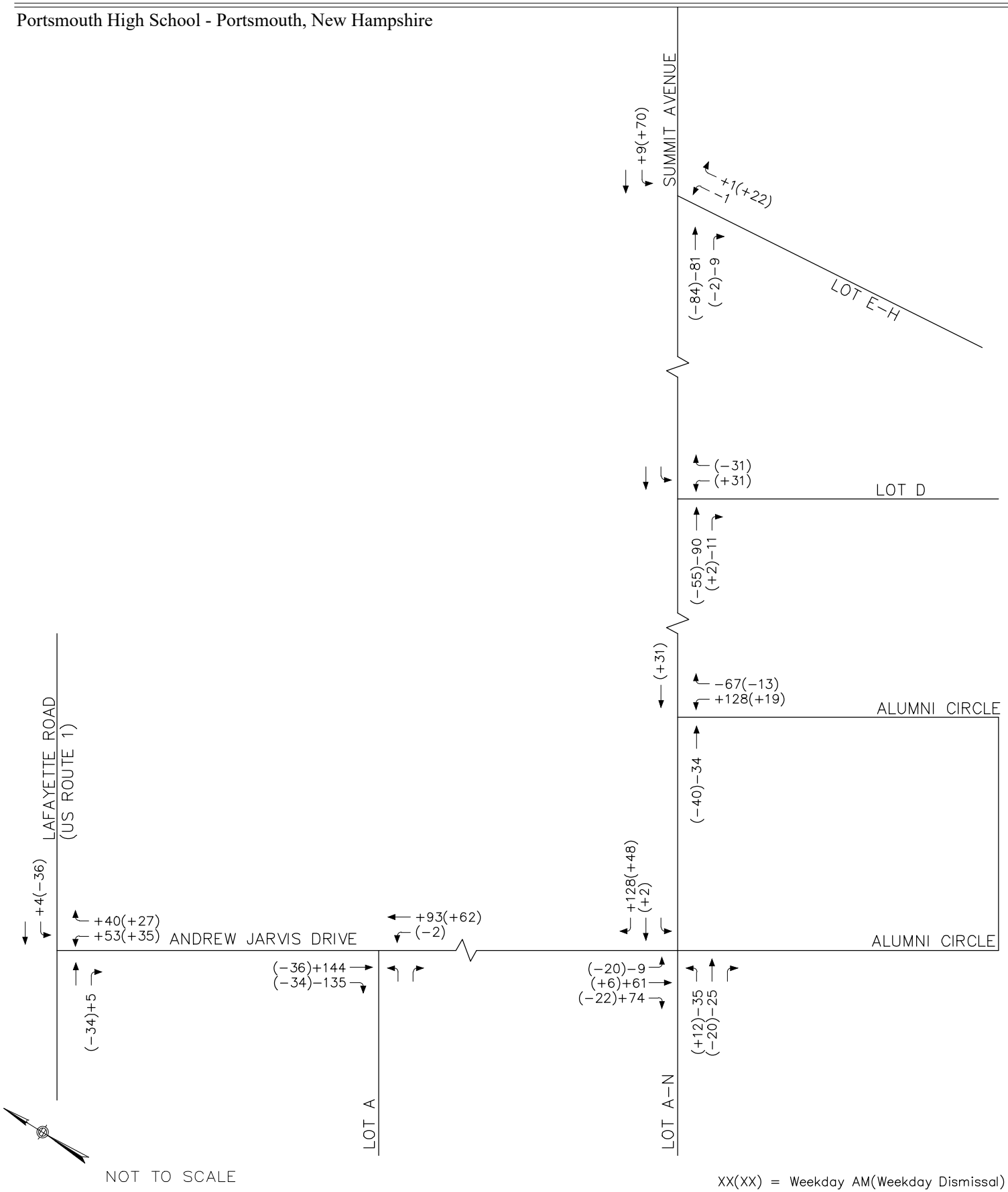


Figure A-2

Redistribution Option 1
Weekday AM and Dismissal
Peak Hour Traffic Volumes

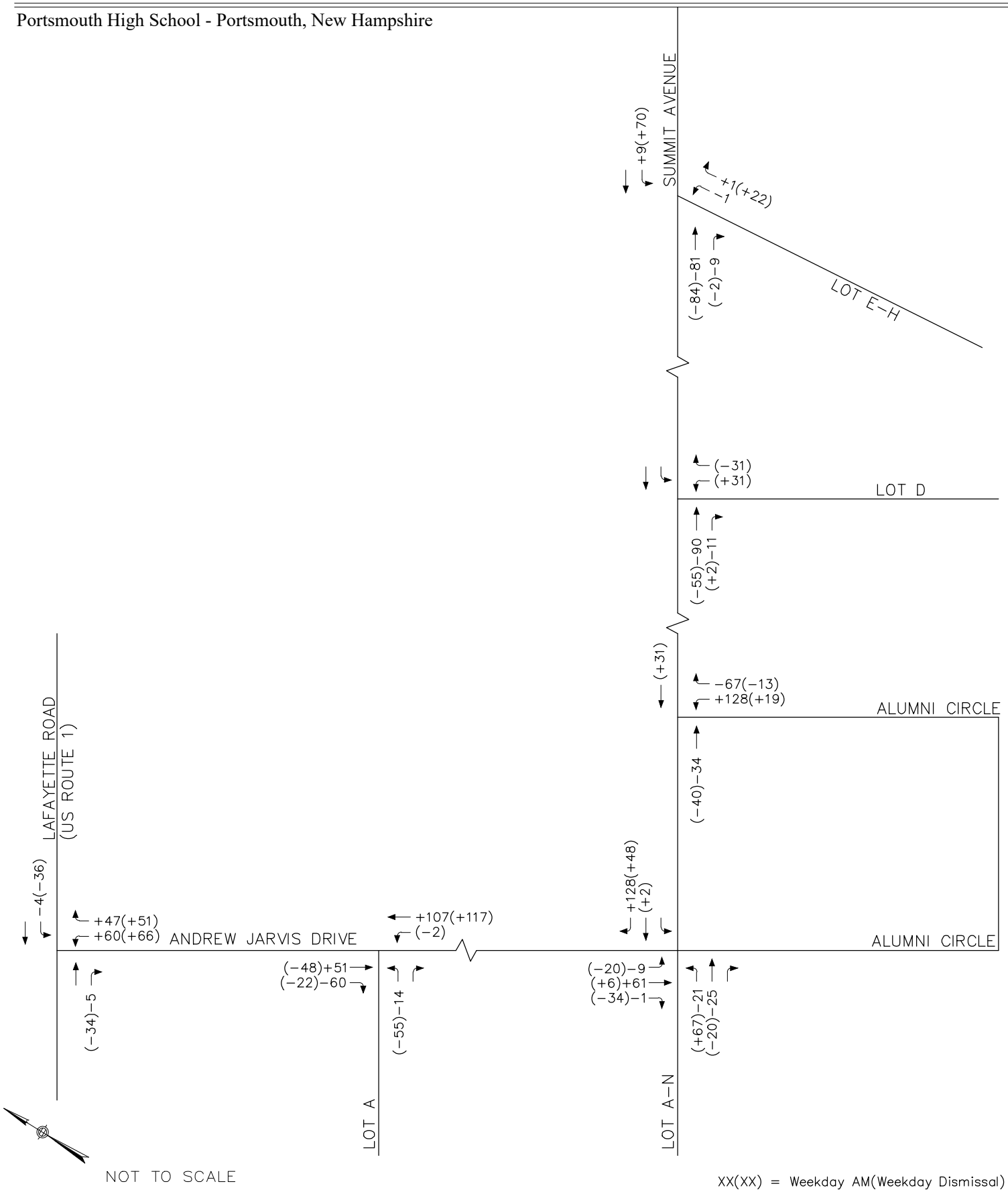


Figure A-3

Redistribution Option 2
Weekday AM and Dismissal
Peak Hour Traffic Volumes

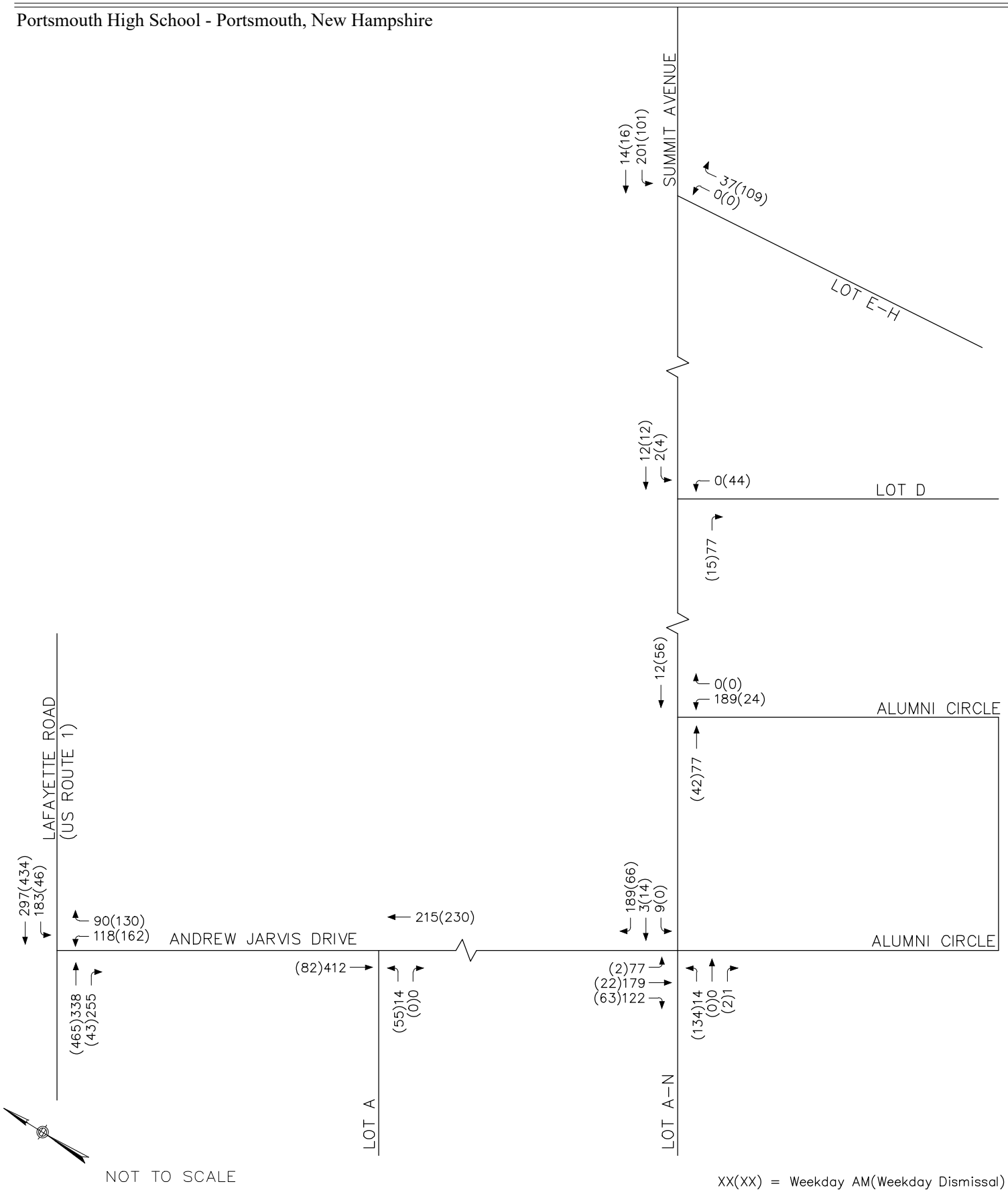


Figure A-4

Option 1 Proposed
Weekday AM and Dismissal
Peak Hour Traffic Volumes

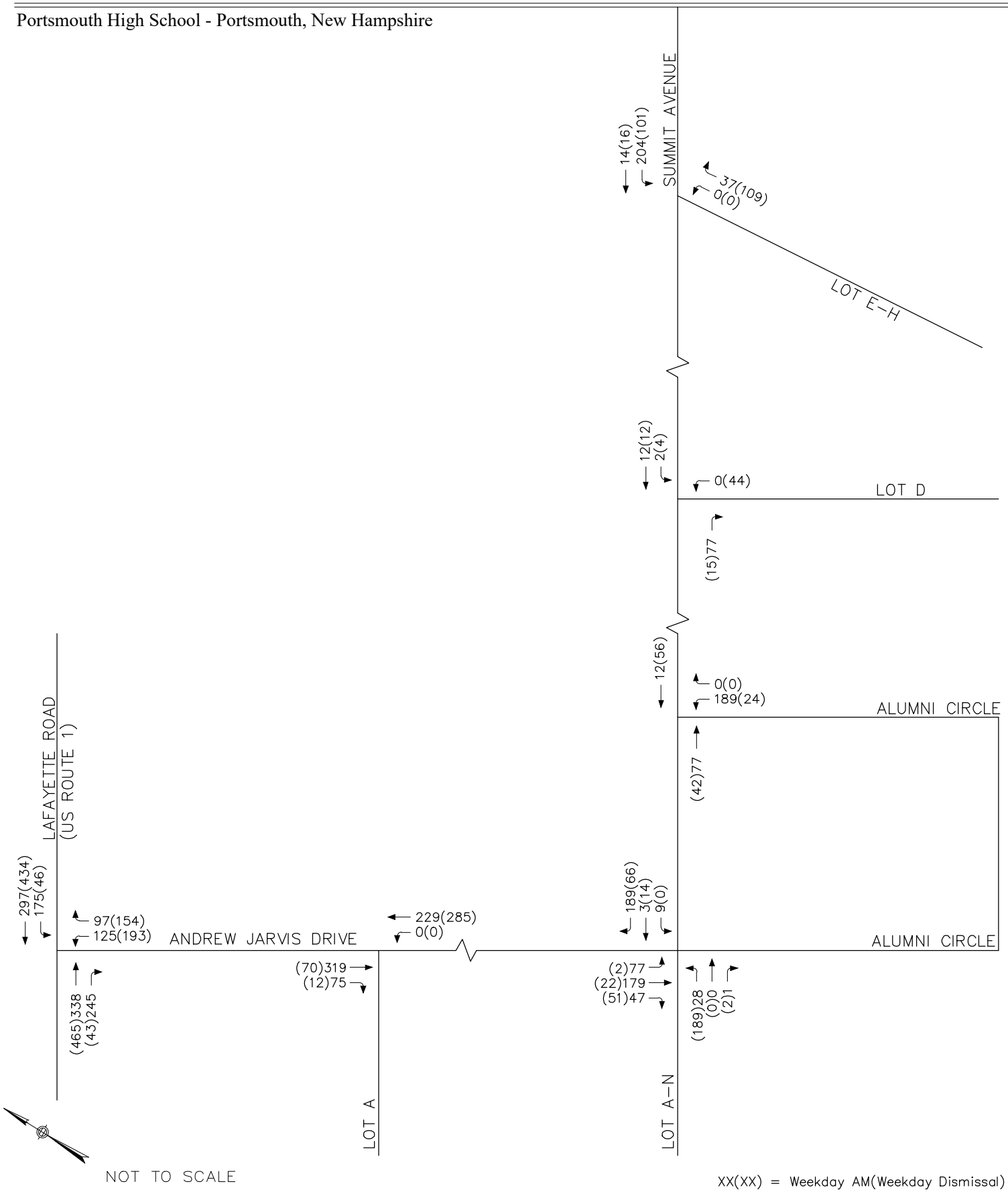


Figure A-5

Option 2 Proposed
Weekday AM and Dismissal
Peak Hour Traffic Volumes

Redistribution of Traffic

Reassignment for Arrival

- Specialized/adapted bus trips previously on eastbound right-turn at 4-way STOP and eastbound right-turn at Lot A driveway get redistributed to eastbound through for drop-off at Alumni Circle. Exiting trips are redistributed to southbound right-turn at 4-way STOP.
- Driveway is restricted to egress only.
    - Parent drop-off trips get reassigned to eastbound through movement to access Alumni Circle. It was assumed these trips had previously cut through Lots A and N. Accordingly, these trips are removed from the northbound approach at the 4-way STOP and assigned to the southbound right-turn for egress via the new signalized intersection.
    - Student and staff trips get reassigned to eastbound right-turn at 4-way STOP for access into either Lot A or Lot N. These trips do not exit the site.
    - Bus trips at the northbound approach for the 4-way STOP which previously exited the site via Summit Avenue are still assumed to circle behind the school but will now exit via Andrew Jarvis Drive.
- It was assumed that trips from eastbound left-turn at the 4-way STOP, northbound through at the 4-way STOP, and westbound right-turn at Alumni Circle get redistributed to eliminate the Summit Avenue northbound through and right-turn movements. Therefore, trips also get removed for northbound right-turn into Lot D which also accounts for the student/staff parking in Lots C and B.
- It was assumed that the trips entering Lots E through H via the Summit Avenue northbound right-turn entered the site via Andrew Jarvis Drive. These trips were reassigned to Summit Avenue southbound left-turn. These trips were assumed to be student/staff who do not exit.
- **Parent Drop-Off**. It was assumed that parent drop-off in Lots E through H stays the same.

Option 1

Reassignment for Dismissal

- **Lot A**: Driveway is restricted to egress only.
    - Trips that enter before 3:45 PM and assumed to be parents are redistributed to enter via Summit Avenue. Based on existing traffic patterns, approximately 86 percent of exiting vehicles travel via Andrew Jarvis Drive. It was assumed that 86 percent of parent pick-up will go around back of the building and out via the northbound left-turn at the 4-way STOP with the remaining 14 percent of trips exiting via Summit Avenue.

  - Trips that enter after 3:45 PM are assumed to be after school activities and are redistributed to enter via eastbound right-turn at the 4-way STOP and do not exit the site.
  - Trips that enter via the westbound left-turn at Andrew Jarvis Drive driveway are assumed to be afterschool activities and redistributed to the southbound through at the 4-way STOP and do not exit the site.
  - Lot A is assumed to provide 107 student spaces and Lot N is assumed to provide 61 staff spaces (64% student and 36% staff).
  - Trips which currently exit via the driveway along Andrew Jarvis Drive are assumed to be students which will continue to do so.
- Lot N:
  - Trips that enter the eastbound right-turn at the 4-way STOP before 3:30 PM are assumed to be parent pick-up and are redistributed to enter via Summit Avenue. The corresponding exiting trips follow the same distribution as explained above.
  - Trips that enter the eastbound right-turn at the 4-way STOP after 3:30 PM are assumed to be afterschool activities and are not redistributed.
- Bus Loop (Alumni Circle): It was assumed that all westbound right-turn trips will be redistributed to westbound left-turns to exit via Andrew Jarvis Drive.
  - All busses which currently make eastbound left-turn at 4-Way STOP will be redistributed to eastbound through and access via Alumni Circle.
  - Remaining trips that currently make an eastbound left-turn at 4-Way STOP are assumed to be parents and will be redistributed to enter and exit via Summit Avenue.
- Lot D: It was assumed that all westbound right-turn trips will now be westbound left-turns to exit via Andrew Jarvis Drive.
  - Trips that currently make a northbound right-turn at Summit Avenue 3-way will now cut through Lot D.

Option 1A
Reassignment for Arrival
Option 1A assumed two-way flow of Summit Avenue between the 3-way STOP and Lot N. This also assumed that parent drop-off occurs at circle at Lot N in addition the north entrance area at Lot Gb.

- It was assumed that entering bus trips at Summit Avenue southbound bear left are redistributed to enter via Andrew Jarvis Drive. Exiting trips from the northbound approach at the 4-way STOP are redistributed to a southbound right-turn.
- It was assumed that entering parent trips at Summit Avenue southbound bear left are redistributed to enter via Andrew Jarvis Drive. Exiting trips are redistributed to follow

existing patterns of approximately 46 percent via Summit Avenue and 54 percent via Andrew Jarvis Drive.

- Alumni Circle:
    - Of the bus trips previously exit northbound through at the 4-way STOP, are redistributed to Alumni Circle westbound right-turn to exit via Summit Avenue.
    - Of the bus trips previously exit northbound left-turn at the 4-way STOP, are redistributed to Alumni Circle westbound left-turn to exit via Andrew Jarvis Drive.
    - Of the southbound left-turn trips at the 4-way STOP are assumed to be parent drop-off which are redistributed southbound through.
- Lot A: Reassign specialized/adapted bus drop-off to eastbound through movement to Alumni Circle. Exiting trip gets removed from northbound left-turn at 4-way STOP as exiting movement.
- Lot A: Reassign eastbound right-turn entering into Lot A at driveway along Andrew Jarvis Drive.
    - Parent drop-off trips get reassigned to eastbound right-turn at 4-way STOP. Assumed these trips had previously cut through Lots A and N. Exiting trips are redistributed to follow existing patterns of approximately 46 percent via Summit Avenue and 54 percent via Andrew Jarvis Drive.
    - Students and staff trips get reassigned to eastbound right-turn at 4-way STOP for access into either Lot A or Lot N. These trips do not exit the site.
    - Bus trips at the northbound approach for the 4-way STOP which previously exited the site via Summit Avenue which are assumed to still circle the back of the school but will now exit via Andrew Jarvis Drive.
- Specialized/adapted bus trips previously on eastbound right-turn at 4-way STOP get redistributed to eastbound through for drop-off at Alumni Circle.

Option 1A
Reassignment for Dismissal
Same as Option 1

Option 2
Reassignment for Arrival

- Specialized/adapted bus trips previously on eastbound right-turn at 4-way STOP and eastbound right-turn at Lot A driveway get redistributed to eastbound through for drop-off at Alumni Circle. Exiting trips are redistributed to southbound right-turn at 4-way STOP.
- Lot A: Driveway is restricted to access only.
    - Parent drop-off trips get reassigned to eastbound through movement to access Alumni Circle. Assumed these trips had previously cut through Lots A and N. At

the northbound approach, these trips are redistributed to the southbound right-turn for egress via the new signalized intersection.
    - Student and staff access through Lot A driveway along Andrew Jarvis Drive is maintained.
    - Assumed that exiting trips from Lot A were patrons of the public pool which are redistributed to the northbound left-turn at 4-way STOP.
    - Bus trips at the northbound approach for the 4-way STOP which previously exited the site via Summit Avenue which are assumed to still circle the back of the school but will now exit via Andrew Jarvis Drive.
- Lot D: Assume that trips from eastbound left-turn, northbound through at 4-way STOP, and westbound right-turn at Alumni Circle get redistributed to eliminate the Summit Avenue northbound through and right-turn movements. Therefore, trips also get removed for northbound right-turn into Lot D which also accounts for the students/staff parking in Lots C and B.
- Assume that the trips entering Lots E through H via the Summit Avenue northbound right-turn entered the site via Andrew Jarvis Drive. These trips will be reassigned to Summit Avenue southbound left-turn. Trips assumed to be student/staff who do not exit.
- Assume parent drop-off in Lots E through H stays the same.

Option 2
Reassignment for Dismissal

- Lot A: Driveway is restricted to access only.
    - Trips which enter before 3:45 PM and assumed to be parents and are redistributed to enter via Summit Avenue. Based on existing traffic patterns, approximately 86 percent of exiting vehicles go via Andrew Jarvis Drive. Assume that 86 percent of parent pick-up will go around back of building and out via northbound left-turn at 4-way STOP with remaining 14 percent of trips exit via Summit Avenue.
    - Trips which enter westbound left-turn at Andrew Jarvis Drive driveway are assumed to be afterschool activity and redistributed to southbound through at 4-way STOP and do not exit the site.
    - Lot A is assumed to provide 107 student spaces and Lot N is assumed to provide 61 staff spaces (64% student and 36% staff) under proposed conditions.
    - Trips which currently exit via Lot A driveway along Andrew Jarvis Drive are redistributed to northbound left-turn at 4-way STOP.
- Lot N:
    - Trips which enter eastbound right-turn at 4-way STOP before 3:30 PM are assumed to be parent pick-up and are redistributed to enter via Summit Avenue. The corresponding exiting trips follow the same distribution as explained above.

  - Trips which enter eastbound right-turn at 4-way STOP after 3:30 PM are assumed to be assumed to be afterschool activities and are not redistributed.
- Bus Loop (Alumni Circle): Assume all westbound right-turn trips will be redistributed to westbound right-turns to exit via Andrew Jarvis Drive.
  - All busses which currently make eastbound left-turn at 4-Way STOP will be redistributed to eastbound through and access via Alumni Circle.
  - Remaining trips which currently make eastbound left-turn at 4-Way STOP are assumed to be parents and will be redistributed to enter and exit via Summit Avenue.
- Lot D: Assume all westbound right-turn trips will now be westbound left-turns to exit via Andrew Jarvis Drive.
  - Trips that currently make northbound right-turn at Summit Avenue 3-way will now cut through Lot D.

CAPACITY ANALYSIS METHODOLOGY

CAPACITY ANALYSIS METHODOLOGY

A primary result of capacity analysis is the assignment of levels of service to traffic facilities under various traffic flow conditions. The capacity analysis methodology is based on the concepts and procedures in the *Highway Capacity Manual* (HCM).[3] The concept of level of service (LOS) is defined as a qualitative measure describing operational conditions within a traffic stream and their perception by motorists and/or passengers. A level-of-service definition provides an index to quality of traffic flow in terms of such factors as speed, travel time, freedom to maneuver, traffic interruptions, comfort, convenience, and safety.

Six levels of service are defined for each type of facility. They are given letter designations from A to F, with LOS A representing the best operating conditions and LOS F the worst. Since the level of service of a traffic facility is a function of the traffic flows placed upon it, such a facility may operate at a wide range of levels of service, depending on the time of day, day of week, or period of year. A description of the operating condition under each level of service is provided below:

- *LOS A* describes conditions with little to no delay to motorists.
- *LOS B* represents a desirable level with relatively low delay to motorists.
- *LOS C* describes conditions with average delays to motorists.
- *LOS D* describes operations where the influence of congestion becomes more noticeable. Delays are still within an acceptable range.
- *LOS E* represents operating conditions with high delay values. This level is considered by many agencies to be the limit of acceptable delay.
- *LOS F* is considered to be unacceptable to most drivers with high delay values that often occur, when arrival flow rates exceed the capacity of the intersection.

Signalized Intersections

Levels of service for signalized intersections are also calculated using the operational analysis methodology of the HCM. The methodology for signalized intersections assesses the effects of signal type, timing, phasing, and progression; vehicle mix; and geometrics on average *control* delay. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and

[3] *Highway Capacity Manual 2000*, Transportation Research Board; Washington, D.C.; 2000.

final acceleration delay. Table A-1 summarizes the relationship between level of service and average control delay.

Table A-1
LEVEL-OF-SERVICE CRITERIA FOR INTERSECTIONS

Level of Service	**Signalized Intersection Criteria** Average Control Delay (Seconds per Vehicle)
A	≤10
B	>10 and ≤20
C	>20 and ≤35
D	>35 and ≤55
E	>55 and ≤80
F	>80

Source: *Highway Capacity Manual 2000*, Transportation Research Board; Washington, D.C.; 2000. Pages 10-16 and 17-2.

For signalized intersections, this delay criterion may be applied in assigning level-of-service designations to individual lane groups, to individual intersection approaches, or to the entire intersection. For unsignalized intersections, this delay criterion may be applied in assigning level-of-service designations to individual lane groups or to individual intersection approaches.

Unsignalized Intersections

Levels of service for unsignalized intersections are calculated using the operational analysis methodology of the *Highway Capacity Manual* (HCM).[4] The procedure accounts for lane configuration on both the minor and major street approaches, conflicting traffic stream volumes, and the type of intersection control (STOP, YIELD, or all-way STOP control). The definition of level of service for unsignalized intersections is a function of average *control* delay. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. The level-of-service criteria for unsignalized intersections are shown in Table A-2.

[4] *Highway Capacity Manual 2010*, Transportation Research Board; Washington, D.C.; 2010.

Table A-2
LEVEL-OF-SERVICE CRITERIA FOR INTERSECTIONS

Level of Service	**Unsignalized Intersection Criteria** Average Control Delay (Seconds per Vehicle)
A	≤10
B	>10 and ≤15
C	>15 and ≤25
D	>25 and ≤35
E	>35 and ≤50
F	>50 or v/c >1.0

Source: *Highway Capacity Manual 2010*, Transportation Research Board; Washington, D.C.; 2010. Pages 18-6 and 19-2.

For unsignalized intersections, this delay criterion may be applied in assigning level-of-service designations to individual lane groups or to individual intersection approaches.

CAPACITY AND QUEUE ANALYSIS WORKSHEETS

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	268	135	0	122	14	0
Future Volume (vph)	268	135	0	122	14	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30			30	30	
Link Distance (ft)	550			300	400	
Travel Time (s)	12.5			6.8	9.1	
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized

Intersection						
Int Delay, s/veh	0.4					

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	268	135	0	122	14	0
Future Vol, veh/h	268	135	0	122	14	0
Conflicting Peds, #/hr	0	21	20	0	21	20
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	58	58	58	58	58	58
Heavy Vehicles, %	1	1	0	5	0	0
Mvmt Flow	462	233	0	210	24	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	716	0	830	619
Stage 1	-	-	-	-	599	-
Stage 2	-	-	-	-	231	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	894	-	343	492
Stage 1	-	-	-	-	553	-
Stage 2	-	-	-	-	812	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	877	-	329	473
Mov Cap-2 Maneuver	-	-	-	-	329	-
Stage 1	-	-	-	-	542	-
Stage 2	-	-	-	-	796	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	16.8
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	329	-	-	877	-
HCM Lane V/C Ratio	0.073	-	-	-	-
HCM Control Delay (s)	16.8	-	-	0	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	86	118	48	0	0	0	49	25	1	9	3	61
Future Volume (vph)	86	118	48	0	0	0	49	25	1	9	3	61
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		300			350			400			660	
Travel Time (s)		6.8			8.0			9.1			15.0	
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized

Intersection	
Intersection Delay, s/veh	12.6
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	86	118	48	0	0	0	49	25	1	9	3	61
Future Vol, veh/h	86	118	48	0	0	0	49	25	1	9	3	61
Peak Hour Factor	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53
Heavy Vehicles, %	1	0	0	0	0	0	6	48	0	0	0	0
Mvmt Flow	162	223	91	0	0	0	92	47	2	17	6	115
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	14.4	0	10	8.9
HCM LOS	B	-	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	65%	34%	0%	12%
Vol Thru, %	33%	47%	100%	4%
Vol Right, %	1%	19%	0%	84%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	75	252	0	73
LT Vol	49	86	0	9
Through Vol	25	118	0	3
RT Vol	1	48	0	61
Lane Flow Rate	142	475	0	138
Geometry Grp	1	1	1	1
Degree of Util (X)	0.214	0.603	0	0.182
Departure Headway (Hd)	5.441	4.567	5.187	4.764
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	655	785	0	747
Service Time	3.515	2.618	3.278	2.839
HCM Lane V/C Ratio	0.217	0.605	0	0.185
HCM Control Delay	10	14.4	8.3	8.9
HCM Lane LOS	A	B	N	A
HCM 95th-tile Q	0.8	4.1	0	0.7

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	37	81	9	195	14
Future Volume (vph)	0	37	81	9	195	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30		30			30
Link Distance (ft)	447		660			400
Travel Time (s)	10.2		15.0			9.1
Sign Control	Stop		Stop			Stop

Intersection Summary

Area Type: Other
Control Type: Unsignalized

Intersection	
Intersection Delay, s/veh	12.8
Intersection LOS	B

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	37	81	9	195	14
Future Vol, veh/h	0	37	81	9	195	14
Peak Hour Factor	0.44	0.44	0.44	0.44	0.44	0.44
Heavy Vehicles, %	0	0	16	11	8	0
Mvmt Flow	0	84	184	20	443	32
Number of Lanes	0	1	1	0	0	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay	8.5	9.7	14.9
HCM LOS	A	A	B

Lane	NBLn1	WBLn1	SBLn1
Vol Left, %	0%	0%	93%
Vol Thru, %	90%	0%	7%
Vol Right, %	10%	100%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	90	37	209
LT Vol	0	0	195
Through Vol	81	0	14
RT Vol	9	37	0
Lane Flow Rate	205	84	475
Geometry Grp	1	1	1
Degree of Util (X)	0.275	0.114	0.615
Departure Headway (Hd)	4.841	4.866	4.658
Convergence, Y/N	Yes	Yes	Yes
Cap	740	734	774
Service Time	2.88	2.914	2.691
HCM Lane V/C Ratio	0.277	0.114	0.614
HCM Control Delay	9.7	8.5	14.9
HCM Lane LOS	A	A	B
HCM 95th-tile Q	1.1	0.4	4.3

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	65	50	338	250	179	297
Future Volume (vph)	65	50	338	250	179	297
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		0	65	
Storage Lanes	1	0		0	1	
Taper Length (ft)	25				25	
Link Speed (mph)	30		30			30
Link Distance (ft)	550		500			500
Travel Time (s)	12.5		11.4			11.4
Sign Control	Stop		Free			Free

Intersection Summary

Area Type: Other
Control Type: Unsignalized

Intersection	
Int Delay, s/veh	28.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	65	50	338	250	179	297
Future Vol, veh/h	65	50	338	250	179	297
Conflicting Peds, #/hr	9	5	0	9	5	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	65	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	70	70	70	70	70	70
Heavy Vehicles, %	0	2	2	0	0	3
Mvmt Flow	93	71	483	357	256	424

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1615	675	0	0	849	0
Stage 1	670	-	-	-	-	-
Stage 2	945	-	-	-	-	-
Critical Hdwy	6.4	6.22	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.318	-	-	2.2	-
Pot Cap-1 Maneuver	115	454	-	-	798	-
Stage 1	512	-	-	-	-	-
Stage 2	381	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 77	448	-	-	794	-
Mov Cap-2 Maneuver	~ 77	-	-	-	-	-
Stage 1	508	-	-	-	-	-
Stage 2	256	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	277.3	0	4.4
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	120	794	-
HCM Lane V/C Ratio	-	-	1.369	0.322	-
HCM Control Delay (s)	-	-	277.3	11.7	-
HCM Lane LOS	-	-	F	B	-
HCM 95th %tile Q(veh)	-	-	11.1	1.4	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	118	34	2	168	55	0
Future Volume (vph)	118	34	2	168	55	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30			30	30	
Link Distance (ft)	550			300	400	
Travel Time (s)	12.5			6.8	9.1	
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized

Intersection	
Int Delay, s/veh	1.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	118	34	2	168	55	0
Future Vol, veh/h	118	34	2	168	55	0
Conflicting Peds, #/hr	0	2	1	0	2	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	71	71	71	71	71	71
Heavy Vehicles, %	13	6	50	5	0	0
Mvmt Flow	166	48	3	237	77	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	216	0	436	193
Stage 1	-	-	-	-	192	-
Stage 2	-	-	-	-	244	-
Critical Hdwy	-	-	4.6	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.65	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1115	-	581	854
Stage 1	-	-	-	-	845	-
Stage 2	-	-	-	-	801	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1114	-	577	852
Mov Cap-2 Maneuver	-	-	-	-	577	-
Stage 1	-	-	-	-	843	-
Stage 2	-	-	-	-	797	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	12.2
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	577	-	-	1114	-
HCM Lane V/C Ratio	0.134	-	-	0.003	-
HCM Control Delay (s)	12.2	-	-	8.2	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.5	-	-	0	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	16	85	0	0	0	122	20	2	0	12	18
Future Volume (vph)	22	16	85	0	0	0	122	20	2	0	12	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		300			350			400			660	
Travel Time (s)		6.8			8.0			9.1			15.0	
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized

Intersection	
Intersection Delay, s/veh	8.6
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	22	16	85	0	0	0	122	20	2	0	12	18
Future Vol, veh/h	22	16	85	0	0	0	122	20	2	0	12	18
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Heavy Vehicles, %	27	56	0	0	0	0	2	0	0	0	0	28
Mvmt Flow	28	20	108	0	0	0	154	25	3	0	15	23
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.6	0	8.8	7.3
HCM LOS	A	-	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	85%	18%	0%	0%
Vol Thru, %	14%	13%	100%	40%
Vol Right, %	1%	69%	0%	60%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	144	123	0	30
LT Vol	122	22	0	0
Through Vol	20	16	0	12
RT Vol	2	85	0	18
Lane Flow Rate	182	156	0	38
Geometry Grp	1	1	1	1
Degree of Util (X)	0.228	0.194	0	0.043
Departure Headway (Hd)	4.507	4.492	4.594	4.114
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	800	802	0	872
Service Time	2.518	2.503	2.611	2.129
HCM Lane V/C Ratio	0.228	0.195	0	0.044
HCM Control Delay	8.8	8.6	7.6	7.3
HCM Lane LOS	A	A	N	A
HCM 95th-tile Q	0.9	0.7	0	0.1

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	87	84	2	31	16
Future Volume (vph)	0	87	84	2	31	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30		30			30
Link Distance (ft)	447		660			400
Travel Time (s)	10.2		15.0			9.1
Sign Control	Stop		Stop			Stop

Intersection Summary

Area Type: Other
Control Type: Unsignalized

Intersection	
Intersection Delay, s/veh	8.2
Intersection LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	87	84	2	31	16
Future Vol, veh/h	0	87	84	2	31	16
Peak Hour Factor	0.53	0.53	0.53	0.53	0.53	0.53
Heavy Vehicles, %	0	0	10	0	3	0
Mvmt Flow	0	164	158	4	58	30
Number of Lanes	0	1	1	0	0	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay	7.7	8.6	8.2
HCM LOS	A	A	A

Lane	NBLn1	WBLn1	SBLn1
Vol Left, %	0%	0%	66%
Vol Thru, %	98%	0%	34%
Vol Right, %	2%	100%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	86	87	47
LT Vol	0	0	31
Through Vol	84	0	16
RT Vol	2	87	0
Lane Flow Rate	162	164	89
Geometry Grp	1	1	1
Degree of Util (X)	0.199	0.177	0.114
Departure Headway (Hd)	4.415	3.887	4.614
Convergence, Y/N	Yes	Yes	Yes
Cap	802	927	781
Service Time	2.509	1.893	2.614
HCM Lane V/C Ratio	0.202	0.177	0.114
HCM Control Delay	8.6	7.7	8.2
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.7	0.6	0.4

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	127	103	465	77	82	434
Future Volume (vph)	127	103	465	77	82	434
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		0	65	
Storage Lanes	1	0		0	1	
Taper Length (ft)	25				25	
Link Speed (mph)	30		30			30
Link Distance (ft)	550		500			500
Travel Time (s)	12.5		11.4			11.4
Sign Control	Stop		Free			Free

Intersection Summary

Area Type: Other
Control Type: Unsignalized

Intersection	
Int Delay, s/veh	26.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	127	103	465	77	82	434
Future Vol, veh/h	127	103	465	77	82	434
Conflicting Peds, #/hr	10	8	0	10	8	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	65	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	7	2	1	6	5	1
Mvmt Flow	144	117	528	88	93	493

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1272	590	0	0	626	0
Stage 1	582	-	-	-	-	-
Stage 2	690	-	-	-	-	-
Critical Hdwy	6.47	6.22	-	-	4.15	-
Critical Hdwy Stg 1	5.47	-	-	-	-	-
Critical Hdwy Stg 2	5.47	-	-	-	-	-
Follow-up Hdwy	3.563	3.318	-	-	2.245	-
Pot Cap-1 Maneuver	181	508	-	-	941	-
Stage 1	549	-	-	-	-	-
Stage 2	489	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	160	499	-	-	934	-
Mov Cap-2 Maneuver	160	-	-	-	-	-
Stage 1	544	-	-	-	-	-
Stage 2	436	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	145.9	0	1.5
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	230	934	-
HCM Lane V/C Ratio	-	-	1.136	0.1	-
HCM Control Delay (s)	-	-	145.9	9.3	-
HCM Lane LOS	-	-	F	A	-
HCM 95th %tile Q(veh)	-	-	12.1	0.3	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø9
Lane Configurations							
Traffic Volume (vph)	65	50	338	250	179	297	
Future Volume (vph)	65	50	338	250	179	297	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	11	13	11	11	10	10	
Storage Length (ft)	305	0		210	195		
Storage Lanes	1	1		1	1		
Taper Length (ft)	25				25		
Right Turn on Red		Yes		Yes			
Link Speed (mph)	30		30			30	
Link Distance (ft)	550		500			500	
Travel Time (s)	12.5		11.4			11.4	
Turn Type	Prot	pt+ov	NA	pt+ov	pm+pt	NA	
Protected Phases	4	4 1	2	2 4	1	6	9
Permitted Phases					6		
Detector Phase	4	4 1	2	2 4	1	6	
Switch Phase							
Minimum Initial (s)	6.0		10.0		6.0	10.0	7.0
Minimum Split (s)	12.0		16.0		12.0	16.0	27.0
Total Split (s)	21.0		31.0		31.0	62.0	27.0
Total Split (%)	19.1%		28.2%		28.2%	56.4%	25%
Maximum Green (s)	15.0		25.0		25.0	56.0	24.0
Yellow Time (s)	4.0		4.0		4.0	4.0	2.0
All-Red Time (s)	2.0		2.0		2.0	2.0	1.0
Lost Time Adjust (s)	0.0		0.0		0.0	0.0	
Total Lost Time (s)	6.0		6.0		6.0	6.0	
Lead/Lag			Lag		Lead		
Lead-Lag Optimize?							
Vehicle Extension (s)	2.0		2.0		2.0	2.0	2.0
Recall Mode	None		Min		None	Min	None
Walk Time (s)							7.0
Flash Dont Walk (s)							17.0
Pedestrian Calls (#/hr)							14

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 70.3
Natural Cycle: 80
Control Type: Actuated-Uncoordinated

Splits and Phases: 4: Lafayette Road & Andrew Jarvis Drive

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	93	71	483	357	256	424
v/c Ratio	0.41	0.10	0.71	0.34	0.53	0.39
Control Delay	38.1	4.8	30.6	2.1	12.0	9.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.1	4.8	30.6	2.1	12.0	9.8
Queue Length 50th (ft)	31	0	132	0	29	54
Queue Length 95th (ft)	85	14	#397	4	114	191
Internal Link Dist (ft)	470		420			420
Turn Bay Length (ft)	305			210	195	
Base Capacity (vph)	396	981	681	1181	749	1453
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.07	0.71	0.30	0.34	0.29

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	65	50	338	250	179	297
Future Volume (vph)	65	50	338	250	179	297
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	13	11	11	10	10
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1745	1636	1801	1561	1685	1722
Flt Permitted	0.95	1.00	1.00	1.00	0.24	1.00
Satd. Flow (perm)	1745	1636	1801	1561	429	1722
Peak-hour factor, PHF	0.70	0.70	0.70	0.70	0.70	0.70
Adj. Flow (vph)	93	71	483	357	256	424
RTOR Reduction (vph)	0	44	0	179	0	0
Lane Group Flow (vph)	93	27	483	178	256	424
Heavy Vehicles (%)	0%	2%	2%	0%	0%	3%
Turn Type	Prot	pt+ov	NA	pt+ov	pm+pt	NA
Protected Phases	4	4 1	2	2 4	1	6
Permitted Phases					6	
Actuated Green, G (s)	9.1	27.1	26.9	36.0	44.9	44.9
Effective Green, g (s)	9.1	27.1	26.9	36.0	44.9	44.9
Actuated g/C Ratio	0.13	0.38	0.37	0.50	0.62	0.62
Clearance Time (s)	6.0		6.0		6.0	6.0
Vehicle Extension (s)	2.0		2.0		2.0	2.0
Lane Grp Cap (vph)	220	614	671	779	476	1072
v/s Ratio Prot	c0.05	0.02	c0.27	0.11	c0.09	0.25
v/s Ratio Perm					0.25	
v/c Ratio	0.42	0.04	0.72	0.23	0.54	0.40
Uniform Delay, d1	29.1	14.3	19.4	10.2	8.8	6.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	0.0	3.1	0.1	0.6	0.1
Delay (s)	29.6	14.3	22.5	10.3	9.3	6.9
Level of Service	C	B	C	B	A	A
Approach Delay (s)	22.9		17.3			7.8
Approach LOS	C		B			A

Intersection Summary

HCM 2000 Control Delay	14.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	72.1	Sum of lost time (s)	21.0
Intersection Capacity Utilization	47.7%	ICU Level of Service	A
Analysis Period (min)	15		

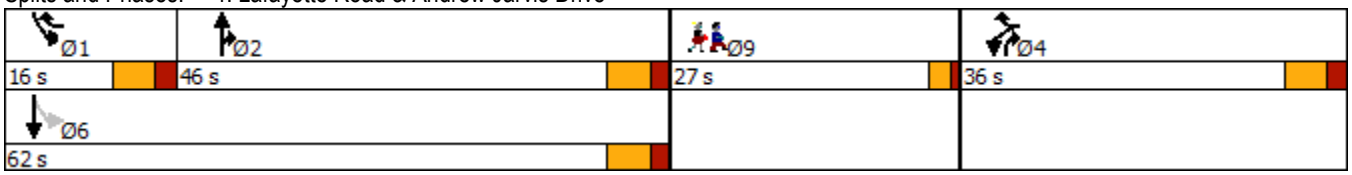
c Critical Lane Group

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø9
Lane Configurations							
Traffic Volume (vph)	127	103	465	77	82	434	
Future Volume (vph)	127	103	465	77	82	434	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	11	13	11	11	10	10	
Storage Length (ft)	305	0		210	195		
Storage Lanes	1	1		1	1		
Taper Length (ft)	25				25		
Right Turn on Red		Yes		Yes			
Link Speed (mph)	30		30			30	
Link Distance (ft)	550		500			500	
Travel Time (s)	12.5		11.4			11.4	
Turn Type	Prot	pt+ov	NA	pt+ov	pm+pt	NA	
Protected Phases	4	4 1	2	2 4	1	6	9
Permitted Phases					6		
Detector Phase	4	4 1	2	2 4	1	6	
Switch Phase							
Minimum Initial (s)	6.0		10.0		6.0	10.0	7.0
Minimum Split (s)	12.0		16.0		12.0	16.0	27.0
Total Split (s)	36.0		46.0		16.0	62.0	27.0
Total Split (%)	28.8%		36.8%		12.8%	49.6%	22%
Maximum Green (s)	30.0		40.0		10.0	56.0	24.0
Yellow Time (s)	4.0		4.0		4.0	4.0	2.0
All-Red Time (s)	2.0		2.0		2.0	2.0	1.0
Lost Time Adjust (s)	0.0		0.0		0.0	0.0	
Total Lost Time (s)	6.0		6.0		6.0	6.0	
Lead/Lag			Lag		Lead		
Lead-Lag Optimize?							
Vehicle Extension (s)	2.0		2.0		2.0	2.0	2.0
Recall Mode	None		Min		None	Min	None
Walk Time (s)							7.0
Flash Dont Walk (s)							17.0
Pedestrian Calls (#/hr)							15

Intersection Summary

Area Type: Other
Cycle Length: 125
Actuated Cycle Length: 77.9
Natural Cycle: 90
Control Type: Actuated-Uncoordinated

Splits and Phases: 4: Lafayette Road & Andrew Jarvis Drive



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	144	117	528	88	93	493
v/c Ratio	0.54	0.18	0.77	0.09	0.29	0.50
Control Delay	44.2	6.5	33.4	1.9	14.4	16.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.2	6.5	33.4	1.9	14.4	16.0
Queue Length 50th (ft)	49	0	151	0	12	82
Queue Length 95th (ft)	161	39	#517	13	66	348
Internal Link Dist (ft)	470		420			420
Turn Bay Length (ft)	305			210	195	
Base Capacity (vph)	716	807	1065	1263	384	1368
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.20	0.14	0.50	0.07	0.24	0.36

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	127	103	465	77	82	434
Future Volume (vph)	127	103	465	77	82	434
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	13	11	11	10	10
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1631	1636	1818	1473	1604	1756
Flt Permitted	0.95	1.00	1.00	1.00	0.21	1.00
Satd. Flow (perm)	1631	1636	1818	1473	356	1756
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	144	117	528	88	93	493
RTOR Reduction (vph)	0	77	0	40	0	0
Lane Group Flow (vph)	144	40	528	48	93	493
Heavy Vehicles (%)	7%	2%	1%	6%	5%	1%
Turn Type	Prot	pt+ov	NA	pt+ov	pm+pt	NA
Protected Phases	4	4 1	2	2 4	1	6
Permitted Phases					6	
Actuated Green, G (s)	12.7	26.5	30.3	43.0	44.1	44.1
Effective Green, g (s)	12.7	26.5	30.3	43.0	44.1	44.1
Actuated g/C Ratio	0.16	0.34	0.39	0.55	0.56	0.56
Clearance Time (s)	6.0		6.0		6.0	6.0
Vehicle Extension (s)	2.0		2.0		2.0	2.0
Lane Grp Cap (vph)	264	552	702	807	324	987
v/s Ratio Prot	c0.09	0.02	c0.29	0.03	0.03	c0.28
v/s Ratio Perm					0.13	
v/c Ratio	0.55	0.07	0.75	0.06	0.29	0.50
Uniform Delay, d1	30.2	17.6	20.8	8.3	10.8	10.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.2	0.0	4.1	0.0	0.2	0.1
Delay (s)	31.4	17.6	24.9	8.3	11.0	10.6
Level of Service	C	B	C	A	B	B
Approach Delay (s)	25.2		22.5			10.7
Approach LOS	C		C			B

Intersection Summary

HCM 2000 Control Delay	18.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	78.4	Sum of lost time (s)	21.0
Intersection Capacity Utilization	51.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	412	0	0	215	14	0
Future Volume (vph)	412	0	0	215	14	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30			30	30	
Link Distance (ft)	550			300	400	
Travel Time (s)	12.5			6.8	9.1	
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized

Intersection	
Int Delay, s/veh	0.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	412	0	0	215	14	0
Future Vol, veh/h	412	0	0	215	14	0
Conflicting Peds, #/hr	0	21	20	0	21	20
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	58	58	58	58	58	58
Heavy Vehicles, %	1	1	0	5	0	0
Mvmt Flow	710	0	0	371	24	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	1102	730
Stage 1	-	-	-	-	710	-
Stage 2	-	-	-	-	392	-
Critical Hdwy	-	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	-	0	0	-	236	426
Stage 1	-	0	0	-	491	-
Stage 2	-	0	0	-	687	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	231	418
Mov Cap-2 Maneuver	-	-	-	-	231	-
Stage 1	-	-	-	-	491	-
Stage 2	-	-	-	-	673	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	22.4
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	231	-	-
HCM Lane V/C Ratio	0.104	-	-
HCM Control Delay (s)	22.4	-	-
HCM Lane LOS	C	-	-
HCM 95th %tile Q(veh)	0.3	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	77	179	122	0	0	0	14	0	1	9	3	189
Future Volume (vph)	77	179	122	0	0	0	14	0	1	9	3	189
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		300			350			400			660	
Travel Time (s)		6.8			8.0			9.1			15.0	
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized

Intersection	
Intersection Delay, s/veh	36
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	77	179	122	0	0	0	14	0	1	9	3	189
Future Vol, veh/h	77	179	122	0	0	0	14	0	1	9	3	189
Peak Hour Factor	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53
Heavy Vehicles, %	1	0	0	0	0	0	6	48	0	0	0	0
Mvmt Flow	145	338	230	0	0	0	26	0	2	17	6	357
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	48.3	0	10.1	14.7
HCM LOS	E	-	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	93%	20%	0%	4%
Vol Thru, %	0%	47%	100%	1%
Vol Right, %	7%	32%	0%	94%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	15	378	0	201
LT Vol	14	77	0	9
Through Vol	0	179	0	3
RT Vol	1	122	0	189
Lane Flow Rate	28	713	0	379
Geometry Grp	1	1	1	1
Degree of Util (X)	0.053	0.971	0	0.555
Departure Headway (Hd)	6.694	4.9	6.101	5.267
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	533	742	0	683
Service Time	4.762	2.93	4.165	3.315
HCM Lane V/C Ratio	0.053	0.961	0	0.555
HCM Control Delay	10.1	48.3	9.2	14.7
HCM Lane LOS	B	E	N	B
HCM 95th-tile Q	0.2	15	0	3.4

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	37	0	0	201	14
Future Volume (vph)	0	37	0	0	201	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30		30			30
Link Distance (ft)	447		660			400
Travel Time (s)	10.2		15.0			9.1
Sign Control	Stop		Stop			Stop

Intersection Summary

Area Type: Other
Control Type: Unsignalized

Intersection	
Intersection Delay, s/veh	12.9
Intersection LOS	B

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	37	0	0	201	14
Future Vol, veh/h	0	37	0	0	201	14
Peak Hour Factor	0.44	0.44	0.44	0.44	0.44	0.44
Heavy Vehicles, %	0	0	16	11	8	0
Mvmt Flow	0	84	0	0	457	32
Number of Lanes	0	1	0	0	0	1

Approach	WB	SB
Opposing Approach		
Opposing Lanes	0	0
Conflicting Approach Left		WB
Conflicting Lanes Left	0	1
Conflicting Approach Right	SB	
Conflicting Lanes Right	1	0
HCM Control Delay	8	13.7
HCM LOS	A	B

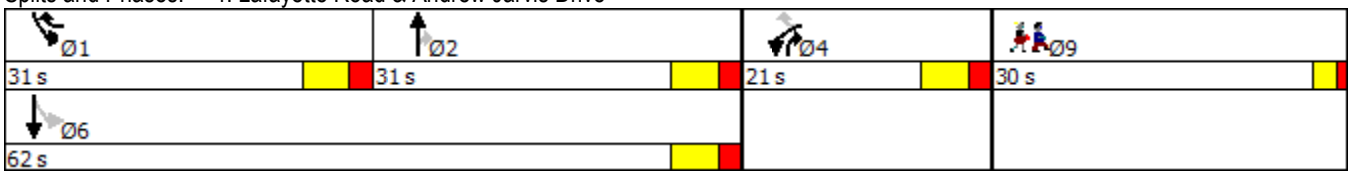
Lane	WBLn1	SBLn1
Vol Left, %	0%	93%
Vol Thru, %	0%	7%
Vol Right, %	100%	0%
Sign Control	Stop	Stop
Traffic Vol by Lane	37	215
LT Vol	0	201
Through Vol	0	14
RT Vol	37	0
Lane Flow Rate	84	489
Geometry Grp	1	1
Degree of Util (X)	0.104	0.593
Departure Headway (Hd)	4.459	4.371
Convergence, Y/N	Yes	Yes
Cap	809	821
Service Time	2.459	2.428
HCM Lane V/C Ratio	0.104	0.596
HCM Control Delay	8	13.7
HCM Lane LOS	A	B
HCM 95th-tile Q	0.3	4

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø9
Lane Configurations							
Traffic Volume (vph)	118	90	338	255	183	297	
Future Volume (vph)	118	90	338	255	183	297	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	11	13	11	11	10	10	
Storage Length (ft)	305	0		210	195		
Storage Lanes	1	1		1	1		
Taper Length (ft)	25				25		
Right Turn on Red		Yes		Yes			
Link Speed (mph)	30		30			30	
Link Distance (ft)	550		500			500	
Travel Time (s)	12.5		11.4			11.4	
Turn Type	Prot	pm+ov	NA	pm+ov	pm+pt	NA	
Protected Phases	4	1	2	4	1	6	9
Permitted Phases		4		2	6		
Detector Phase	4	1	2	4	1	6	
Switch Phase							
Minimum Initial (s)	6.0	6.0	10.0	6.0	6.0	10.0	5.0
Minimum Split (s)	12.0	12.0	16.0	12.0	12.0	16.0	30.0
Total Split (s)	21.0	31.0	31.0	21.0	31.0	62.0	30.0
Total Split (%)	18.6%	27.4%	27.4%	18.6%	27.4%	54.9%	27%
Maximum Green (s)	15.0	25.0	25.0	15.0	25.0	56.0	27.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	2.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	
Lead/Lag		Lead	Lag		Lead		
Lead-Lag Optimize?		Yes	Yes		Yes		
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	None	None	Min	None	None	Min	None
Walk Time (s)							7.0
Flash Dont Walk (s)							20.0
Pedestrian Calls (#/hr)							14

Intersection Summary

Area Type: Other
Cycle Length: 113
Actuated Cycle Length: 74.5
Natural Cycle: 90
Control Type: Actuated-Uncoordinated

Splits and Phases: 4: Lafayette Road & Andrew Jarvis Drive



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	169	129	483	364	261	424
v/c Ratio	0.61	0.17	0.75	0.34	0.56	0.40
Control Delay	43.1	2.8	34.7	2.9	13.9	11.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.1	2.8	34.7	2.9	13.9	11.1
Queue Length 50th (ft)	61	0	155	0	38	69
Queue Length 95th (ft)	146	8	#425	6	123	204
Internal Link Dist (ft)	470		420			420
Turn Bay Length (ft)	305			210	195	
Base Capacity (vph)	373	1018	641	1148	701	1374
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.45	0.13	0.75	0.32	0.37	0.31

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	118	90	338	255	183	297
Future Volume (vph)	118	90	338	255	183	297
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	13	11	11	10	10
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1745	1636	1801	1561	1685	1722
Flt Permitted	0.95	1.00	1.00	1.00	0.22	1.00
Satd. Flow (perm)	1745	1636	1801	1561	388	1722
Peak-hour factor, PHF	0.70	0.70	0.70	0.70	0.70	0.70
Adj. Flow (vph)	169	129	483	364	261	424
RTOR Reduction (vph)	0	87	0	179	0	0
Lane Group Flow (vph)	169	42	483	185	261	424
Heavy Vehicles (%)	0%	2%	2%	0%	0%	3%
Turn Type	Prot	pm+ov	NA	pm+ov	pm+pt	NA
Protected Phases	4	1	2	4	1	6
Permitted Phases		4		2	6	
Actuated Green, G (s)	11.9	24.9	26.9	38.8	45.9	45.9
Effective Green, g (s)	11.9	24.9	26.9	38.8	45.9	45.9
Actuated g/C Ratio	0.16	0.33	0.35	0.51	0.60	0.60
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	271	533	634	915	453	1034
v/s Ratio Prot	c0.10	0.01	c0.27	0.03	c0.10	0.25
v/s Ratio Perm		0.01		0.09	0.25	
v/c Ratio	0.62	0.08	0.76	0.20	0.58	0.41
Uniform Delay, d1	30.2	17.8	21.9	10.3	10.3	8.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.2	0.0	4.9	0.0	1.1	0.1
Delay (s)	33.4	17.8	26.8	10.4	11.4	8.2
Level of Service	C	B	C	B	B	A
Approach Delay (s)	26.6		19.7			9.4
Approach LOS	C		B			A

Intersection Summary

HCM 2000 Control Delay	17.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	76.4	Sum of lost time (s)	21.0
Intersection Capacity Utilization	49.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	82	0	0	230	55	0
Future Volume (vph)	82	0	0	230	55	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30			30	30	
Link Distance (ft)	550			300	400	
Travel Time (s)	12.5			6.8	9.1	
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized

Intersection	
Int Delay, s/veh	1.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	82	0	0	230	55	0
Future Vol, veh/h	82	0	0	230	55	0
Conflicting Peds, #/hr	0	2	1	0	2	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	71	71	71	71	71	71
Heavy Vehicles, %	13	6	50	5	0	0
Mvmt Flow	115	0	0	324	77	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	441	116
Stage 1	-	-	-	-	115	-
Stage 2	-	-	-	-	326	-
Critical Hdwy	-	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	-	0	0	-	577	942
Stage 1	-	0	0	-	915	-
Stage 2	-	0	0	-	736	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	576	941
Mov Cap-2 Maneuver	-	-	-	-	576	-
Stage 1	-	-	-	-	915	-
Stage 2	-	-	-	-	735	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	12.2
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	576	-	-
HCM Lane V/C Ratio	0.134	-	-
HCM Control Delay (s)	12.2	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	0.5	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	22	63	0	0	0	134	0	2	0	14	66
Future Volume (vph)	2	22	63	0	0	0	134	0	2	0	14	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		300			350			400			660	
Travel Time (s)		6.8			8.0			9.1			15.0	
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized

Intersection	
Intersection Delay, s/veh	8.2
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	22	63	0	0	0	134	0	2	0	14	66
Future Vol, veh/h	2	22	63	0	0	0	134	0	2	0	14	66
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Heavy Vehicles, %	27	56	0	0	0	0	2	0	0	0	0	28
Mvmt Flow	3	28	80	0	0	0	170	0	3	0	18	84
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.3	0	8.7	7.3
HCM LOS	A	-	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	99%	2%	0%	0%
Vol Thru, %	0%	25%	100%	18%
Vol Right, %	1%	72%	0%	82%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	136	87	0	80
LT Vol	134	2	0	0
Through Vol	0	22	0	14
RT Vol	2	63	0	66
Lane Flow Rate	172	110	0	101
Geometry Grp	1	1	1	1
Degree of Util (X)	0.21	0.139	0	0.108
Departure Headway (Hd)	4.395	4.529	4.635	3.854
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	804	795	0	934
Service Time	2.494	2.535	2.646	1.864
HCM Lane V/C Ratio	0.214	0.138	0	0.108
HCM Control Delay	8.7	8.3	7.6	7.3
HCM Lane LOS	A	A	N	A
HCM 95th-tile Q	0.8	0.5	0	0.4

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	109	0	0	101	16
Future Volume (vph)	0	109	0	0	101	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30		30			30
Link Distance (ft)	447		660			400
Travel Time (s)	10.2		15.0			9.1
Sign Control	Stop		Stop			Stop

Intersection Summary

Area Type: Other
Control Type: Unsignalized

Intersection	
Intersection Delay, s/veh	8.6
Intersection LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	109	0	0	101	16
Future Vol, veh/h	0	109	0	0	101	16
Peak Hour Factor	0.53	0.53	0.53	0.53	0.53	0.53
Heavy Vehicles, %	0	0	10	0	3	0
Mvmt Flow	0	206	0	0	191	30
Number of Lanes	0	1	0	0	0	1

Approach	WB	SB
Opposing Approach		
Opposing Lanes	0	0
Conflicting Approach Left		WB
Conflicting Lanes Left	0	1
Conflicting Approach Right	SB	
Conflicting Lanes Right	1	0
HCM Control Delay	7.9	9.3
HCM LOS	A	A

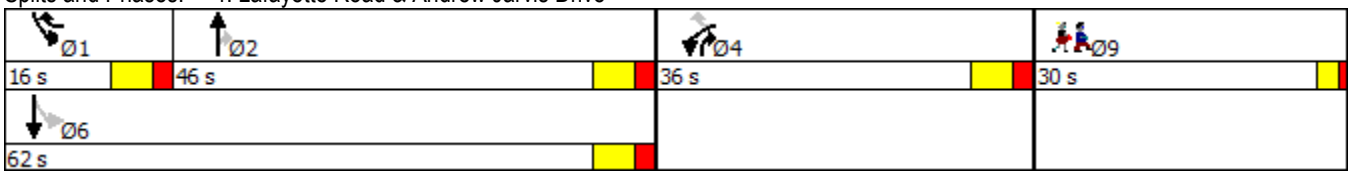
Lane	WBLn1	SBLn1
Vol Left, %	0%	86%
Vol Thru, %	0%	14%
Vol Right, %	100%	0%
Sign Control	Stop	Stop
Traffic Vol by Lane	109	117
LT Vol	0	101
Through Vol	0	16
RT Vol	109	0
Lane Flow Rate	206	221
Geometry Grp	1	1
Degree of Util (X)	0.219	0.275
Departure Headway (Hd)	3.838	4.484
Convergence, Y/N	Yes	Yes
Cap	942	795
Service Time	1.838	2.555
HCM Lane V/C Ratio	0.219	0.278
HCM Control Delay	7.9	9.3
HCM Lane LOS	A	A
HCM 95th-tile Q	0.8	1.1

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø9
Lane Configurations							
Traffic Volume (vph)	162	130	465	43	46	434	
Future Volume (vph)	162	130	465	43	46	434	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	11	13	11	11	10	10	
Storage Length (ft)	305	0		210	195		
Storage Lanes	1	1		1	1		
Taper Length (ft)	25				25		
Right Turn on Red		Yes		Yes			
Link Speed (mph)	30		30			30	
Link Distance (ft)	550		500			500	
Travel Time (s)	12.5		11.4			11.4	
Turn Type	Prot	pm+ov	NA	pm+ov	pm+pt	NA	
Protected Phases	4	1	2	4	1	6	9
Permitted Phases		4		2	6		
Detector Phase	4	1	2	4	1	6	
Switch Phase							
Minimum Initial (s)	6.0	6.0	10.0	6.0	6.0	10.0	5.0
Minimum Split (s)	12.0	12.0	16.0	12.0	12.0	16.0	30.0
Total Split (s)	36.0	16.0	46.0	36.0	16.0	62.0	30.0
Total Split (%)	28.1%	12.5%	35.9%	28.1%	12.5%	48.4%	23%
Maximum Green (s)	30.0	10.0	40.0	30.0	10.0	56.0	27.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	2.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	
Lead/Lag		Lead	Lag		Lead		
Lead-Lag Optimize?		Yes	Yes		Yes		
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	None	None	Min	None	None	Min	None
Walk Time (s)							7.0
Flash Dont Walk (s)							20.0
Pedestrian Calls (#/hr)							18

Intersection Summary

Area Type: Other
Cycle Length: 128
Actuated Cycle Length: 82
Natural Cycle: 90
Control Type: Actuated-Uncoordinated

Splits and Phases: 4: Lafayette Road & Andrew Jarvis Drive



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	184	148	528	49	52	493
v/c Ratio	0.61	0.23	0.78	0.05	0.17	0.51
Control Delay	45.0	3.9	35.9	3.3	15.8	18.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.0	3.9	35.9	3.3	15.8	18.7
Queue Length 50th (ft)	65	0	160	0	7	91
Queue Length 95th (ft)	202	26	#568	16	46	394
Internal Link Dist (ft)	470		420			420
Turn Bay Length (ft)	305			210	195	
Base Capacity (vph)	679	724	1010	1264	362	1327
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.27	0.20	0.52	0.04	0.14	0.37

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	162	130	465	43	46	434
Future Volume (vph)	162	130	465	43	46	434
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	13	11	11	10	10
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1631	1636	1818	1473	1604	1756
Flt Permitted	0.95	1.00	1.00	1.00	0.20	1.00
Satd. Flow (perm)	1631	1636	1818	1473	342	1756
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	184	148	528	49	52	493
RTOR Reduction (vph)	0	107	0	21	0	0
Lane Group Flow (vph)	184	41	528	28	52	493
Heavy Vehicles (%)	7%	2%	1%	6%	5%	1%
Turn Type	Prot	pm+ov	NA	pm+ov	pm+pt	NA
Protected Phases	4	1	2	4	1	6
Permitted Phases		4		2	6	
Actuated Green, G (s)	15.2	22.6	31.4	46.6	44.8	44.8
Effective Green, g (s)	15.2	22.6	31.4	46.6	44.8	44.8
Actuated g/C Ratio	0.18	0.27	0.38	0.56	0.54	0.54
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	300	448	691	939	298	953
v/s Ratio Prot	c0.11	0.01	c0.29	0.01	0.02	c0.28
v/s Ratio Perm		0.02		0.01	0.08	
v/c Ratio	0.61	0.09	0.76	0.03	0.17	0.52
Uniform Delay, d1	30.9	22.3	22.3	7.9	11.8	12.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.6	0.0	4.5	0.0	0.1	0.2
Delay (s)	33.6	22.3	26.8	7.9	11.9	12.2
Level of Service	C	C	C	A	B	B
Approach Delay (s)	28.6		25.2			12.2
Approach LOS	C		C			B

Intersection Summary

HCM 2000 Control Delay	21.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	82.5	Sum of lost time (s)	21.0
Intersection Capacity Utilization	53.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	320	0	0	211	14	0
Future Volume (vph)	320	0	0	211	14	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30			30	30	
Link Distance (ft)	550			300	400	
Travel Time (s)	12.5			6.8	9.1	
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized

Intersection	
Int Delay, s/veh	0.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	320	0	0	211	14	0
Future Vol, veh/h	320	0	0	211	14	0
Conflicting Peds, #/hr	0	21	20	0	21	20
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	58	58	58	58	58	58
Heavy Vehicles, %	1	1	0	5	0	0
Mvmt Flow	552	0	0	364	24	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	937	572
Stage 1	-	-	-	-	552	-
Stage 2	-	-	-	-	385	-
Critical Hdwy	-	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	-	0	0	-	296	523
Stage 1	-	0	0	-	581	-
Stage 2	-	0	0	-	692	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	290	513
Mov Cap-2 Maneuver	-	-	-	-	290	-
Stage 1	-	-	-	-	581	-
Stage 2	-	-	-	-	678	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	18.5
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	290	-	-
HCM Lane V/C Ratio	0.083	-	-
HCM Control Delay (s)	18.5	-	-
HCM Lane LOS	C	-	-
HCM 95th %tile Q(veh)	0.3	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	85	17	336	0	0	0	129	84	1	0	12	66
Future Volume (vph)	85	17	336	0	0	0	129	84	1	0	12	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		300			350			400			660	
Travel Time (s)		6.8			8.0			9.1			15.0	
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized

Intersection	
Intersection Delay, s/veh	82.2
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	85	17	336	0	0	0	129	84	1	0	12	66
Future Vol, veh/h	85	17	336	0	0	0	129	84	1	0	12	66
Peak Hour Factor	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53
Heavy Vehicles, %	1	0	0	0	0	0	6	48	0	0	0	0
Mvmt Flow	160	32	634	0	0	0	243	158	2	0	23	125
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	122.9	0	24.4	11.9
HCM LOS	F	-	C	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	60%	19%	0%	0%
Vol Thru, %	39%	4%	100%	15%
Vol Right, %	0%	77%	0%	85%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	214	438	0	78
LT Vol	129	85	0	0
Through Vol	84	17	0	12
RT Vol	1	336	0	66
Lane Flow Rate	404	826	0	147
Geometry Grp	1	1	1	1
Degree of Util (X)	0.703	1.2	0	0.248
Departure Headway (Hd)	6.826	5.228	7.342	6.687
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	533	702	0	540
Service Time	4.826	3.228	5.342	4.687
HCM Lane V/C Ratio	0.758	1.177	0	0.272
HCM Control Delay	24.4	122.9	10.3	11.9
HCM Lane LOS	C	F	N	B
HCM 95th-tile Q	5.5	28.2	0	1

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	0	152	9	143	14
Future Volume (vph)	0	0	152	9	143	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30		30			30
Link Distance (ft)	447		660			400
Travel Time (s)	10.2		15.0			9.1
Sign Control	Stop		Stop			Stop

Intersection Summary

Area Type: Other
Control Type: Unsignalized

Intersection	
Intersection Delay, s/veh	11.3
Intersection LOS	B

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	152	9	143	14
Future Vol, veh/h	0	0	152	9	143	14
Peak Hour Factor	0.44	0.44	0.44	0.44	0.44	0.44
Heavy Vehicles, %	0	0	16	11	8	0
Mvmt Flow	0	0	345	20	325	32
Number of Lanes	0	1	1	0	0	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay	0	11.3	11.4
HCM LOS	-	B	B

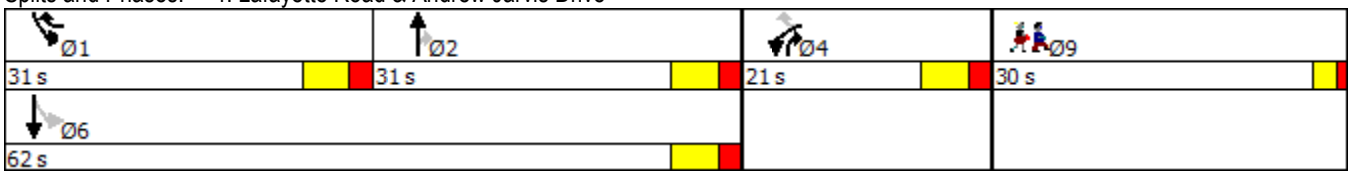
Lane	NBLn1	WBLn1	SBLn1
Vol Left, %	0%	0%	91%
Vol Thru, %	94%	100%	9%
Vol Right, %	6%	0%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	161	0	157
LT Vol	0	0	143
Through Vol	152	0	14
RT Vol	9	0	0
Lane Flow Rate	366	0	357
Geometry Grp	1	1	1
Degree of Util (X)	0.458	0	0.455
Departure Headway (Hd)	4.51	5.508	4.592
Convergence, Y/N	Yes	Yes	Yes
Cap	801	0	789
Service Time	2.518	3.541	2.601
HCM Lane V/C Ratio	0.457	0	0.452
HCM Control Delay	11.3	8.5	11.4
HCM Lane LOS	B	N	B
HCM 95th-tile Q	2.4	0	2.4

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø9
Lane Configurations							
Traffic Volume (vph)	124	142	338	280	201	297	
Future Volume (vph)	124	142	338	280	201	297	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	11	13	11	11	10	10	
Storage Length (ft)	305	0		210	195		
Storage Lanes	1	1		1	1		
Taper Length (ft)	25				25		
Right Turn on Red		Yes		Yes			
Link Speed (mph)	30		30			30	
Link Distance (ft)	550		500			500	
Travel Time (s)	12.5		11.4			11.4	
Turn Type	Prot	pm+ov	NA	pm+ov	pm+pt	NA	
Protected Phases	4	1	2	4	1	6	9
Permitted Phases		4		2	6		
Detector Phase	4	1	2	4	1	6	
Switch Phase							
Minimum Initial (s)	6.0	6.0	10.0	6.0	6.0	10.0	5.0
Minimum Split (s)	12.0	12.0	16.0	12.0	12.0	16.0	30.0
Total Split (s)	21.0	31.0	31.0	21.0	31.0	62.0	30.0
Total Split (%)	18.6%	27.4%	27.4%	18.6%	27.4%	54.9%	27%
Maximum Green (s)	15.0	25.0	25.0	15.0	25.0	56.0	27.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	2.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	
Lead/Lag		Lead	Lag		Lead		
Lead-Lag Optimize?		Yes	Yes		Yes		
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	None	None	Min	None	None	Min	None
Walk Time (s)							7.0
Flash Dont Walk (s)							20.0
Pedestrian Calls (#/hr)							14

Intersection Summary

Area Type: Other
Cycle Length: 113
Actuated Cycle Length: 81.8
Natural Cycle: 90
Control Type: Actuated-Uncoordinated

Splits and Phases: 4: Lafayette Road & Andrew Jarvis Drive



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	177	203	483	400	287	424
v/c Ratio	0.67	0.27	0.81	0.38	0.67	0.42
Control Delay	51.4	2.8	43.4	3.4	21.7	14.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.4	2.8	43.4	3.4	21.7	14.8
Queue Length 50th (ft)	66	0	164	0	44	72
Queue Length 95th (ft)	153	7	#427	4	135	204
Internal Link Dist (ft)	470		420			420
Turn Bay Length (ft)	305			210	195	
Base Capacity (vph)	347	978	597	1109	645	1280
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.51	0.21	0.81	0.36	0.44	0.33

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	124	142	338	280	201	297
Future Volume (vph)	124	142	338	280	201	297
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	13	11	11	10	10
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1745	1636	1801	1561	1685	1722
Flt Permitted	0.95	1.00	1.00	1.00	0.19	1.00
Satd. Flow (perm)	1745	1636	1801	1561	345	1722
Peak-hour factor, PHF	0.70	0.70	0.70	0.70	0.70	0.70
Adj. Flow (vph)	177	203	483	400	287	424
RTOR Reduction (vph)	0	139	0	207	0	0
Lane Group Flow (vph)	177	64	483	193	287	424
Heavy Vehicles (%)	0%	2%	2%	0%	0%	3%
Turn Type	Prot	pm+ov	NA	pm+ov	pm+pt	NA
Protected Phases	4	1	2	4	1	6
Permitted Phases		4		2	6	
Actuated Green, G (s)	12.4	26.3	27.7	40.1	47.6	47.6
Effective Green, g (s)	12.4	26.3	27.7	40.1	47.6	47.6
Actuated g/C Ratio	0.15	0.32	0.33	0.48	0.57	0.57
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	261	519	601	868	422	988
v/s Ratio Prot	c0.10	0.02	c0.27	0.03	c0.11	0.25
v/s Ratio Perm		0.02		0.09	0.28	
v/c Ratio	0.68	0.12	0.80	0.22	0.68	0.43
Uniform Delay, d1	33.4	20.1	25.1	12.4	12.8	10.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.4	0.0	7.3	0.0	3.6	0.1
Delay (s)	38.8	20.2	32.4	12.4	16.3	10.1
Level of Service	D	C	C	B	B	B
Approach Delay (s)	28.8		23.3			12.6
Approach LOS	C		C			B

Intersection Summary

HCM 2000 Control Delay	20.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	82.9	Sum of lost time (s)	21.0
Intersection Capacity Utilization	50.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	319	75	0	229	0	0
Future Volume (vph)	319	75	0	229	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30			30	30	
Link Distance (ft)	550			300	400	
Travel Time (s)	12.5			6.8	9.1	
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	77	179	47	0	0	0	28	0	1	9	3	189
Future Volume (vph)	77	179	47	0	0	0	28	0	1	9	3	189
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		300			350			400			660	
Travel Time (s)		6.8			8.0			9.1			15.0	
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized

Intersection	
Intersection Delay, s/veh	19.8
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	77	179	47	0	0	0	28	0	1	9	3	189
Future Vol, veh/h	77	179	47	0	0	0	28	0	1	9	3	189
Peak Hour Factor	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53
Heavy Vehicles, %	1	0	0	0	0	0	6	48	0	0	0	0
Mvmt Flow	145	338	89	0	0	0	53	0	2	17	6	357
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	25	0	10	13.4
HCM LOS	C	-	A	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	97%	25%	0%	4%
Vol Thru, %	0%	59%	100%	1%
Vol Right, %	3%	16%	0%	94%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	29	303	0	201
LT Vol	28	77	0	9
Through Vol	0	179	0	3
RT Vol	1	47	0	189
Lane Flow Rate	55	572	0	379
Geometry Grp	1	1	1	1
Degree of Util (X)	0.096	0.799	0	0.525
Departure Headway (Hd)	6.32	5.029	5.952	4.986
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	566	720	0	721
Service Time	4.372	3.053	4.003	3.024
HCM Lane V/C Ratio	0.097	0.794	0	0.526
HCM Control Delay	10	25	9	13.4
HCM Lane LOS	A	C	N	B
HCM 95th-tile Q	0.3	8.2	0	3.1

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	37	0	0	204	14
Future Volume (vph)	0	37	0	0	204	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30		30			30
Link Distance (ft)	447		660			400
Travel Time (s)	10.2		15.0			9.1
Sign Control	Stop		Stop			Stop

Intersection Summary

Area Type: Other
Control Type: Unsignalized

Intersection	
Intersection Delay, s/veh	13
Intersection LOS	B

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	37	0	0	204	14
Future Vol, veh/h	0	37	0	0	204	14
Peak Hour Factor	0.44	0.44	0.44	0.44	0.44	0.44
Heavy Vehicles, %	0	0	16	11	8	0
Mvmt Flow	0	84	0	0	464	32
Number of Lanes	0	1	0	0	0	1

Approach	WB	SB
Opposing Approach		
Opposing Lanes	0	0
Conflicting Approach Left		WB
Conflicting Lanes Left	0	1
Conflicting Approach Right	SB	
Conflicting Lanes Right	1	0
HCM Control Delay	8	13.9
HCM LOS	A	B

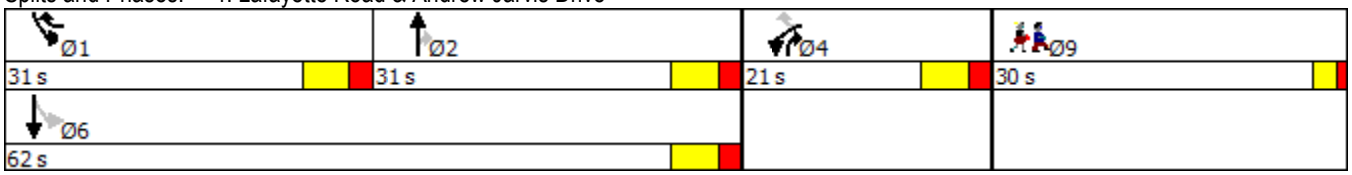
Lane	WBLn1	SBLn1
Vol Left, %	0%	94%
Vol Thru, %	0%	6%
Vol Right, %	100%	0%
Sign Control	Stop	Stop
Traffic Vol by Lane	37	218
LT Vol	0	204
Through Vol	0	14
RT Vol	37	0
Lane Flow Rate	84	495
Geometry Grp	1	1
Degree of Util (X)	0.105	0.602
Departure Headway (Hd)	4.477	4.371
Convergence, Y/N	Yes	Yes
Cap	806	822
Service Time	2.477	2.43
HCM Lane V/C Ratio	0.104	0.602
HCM Control Delay	8	13.9
HCM Lane LOS	A	B
HCM 95th-tile Q	0.4	4.1

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø9
Lane Configurations							
Traffic Volume (vph)	125	97	338	245	175	297	
Future Volume (vph)	125	97	338	245	175	297	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	11	13	11	11	10	10	
Storage Length (ft)	305	0		210	195		
Storage Lanes	1	1		1	1		
Taper Length (ft)	25				25		
Right Turn on Red		Yes		Yes			
Link Speed (mph)	30		30			30	
Link Distance (ft)	550		500			500	
Travel Time (s)	12.5		11.4			11.4	
Turn Type	Prot	pm+ov	NA	pm+ov	pm+pt	NA	
Protected Phases	4	1	2	4	1	6	9
Permitted Phases		4		2	6		
Detector Phase	4	1	2	4	1	6	
Switch Phase							
Minimum Initial (s)	6.0	6.0	10.0	6.0	6.0	10.0	5.0
Minimum Split (s)	12.0	12.0	16.0	12.0	12.0	16.0	30.0
Total Split (s)	21.0	31.0	31.0	21.0	31.0	62.0	30.0
Total Split (%)	18.6%	27.4%	27.4%	18.6%	27.4%	54.9%	27%
Maximum Green (s)	15.0	25.0	25.0	15.0	25.0	56.0	27.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	2.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	
Lead/Lag		Lead	Lag		Lead		
Lead-Lag Optimize?		Yes	Yes		Yes		
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	None	None	Min	None	None	Min	None
Walk Time (s)							7.0
Flash Dont Walk (s)							20.0
Pedestrian Calls (#/hr)							14

Intersection Summary

Area Type: Other
Cycle Length: 113
Actuated Cycle Length: 74.2
Natural Cycle: 90
Control Type: Actuated-Uncoordinated

Splits and Phases: 4: Lafayette Road & Andrew Jarvis Drive



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	179	139	483	350	250	424
v/c Ratio	0.62	0.19	0.75	0.32	0.55	0.40
Control Delay	43.1	2.8	34.5	2.8	14.0	11.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.1	2.8	34.5	2.8	14.0	11.4
Queue Length 50th (ft)	65	0	155	0	37	71
Queue Length 95th (ft)	153	8	#419	8	119	204
Internal Link Dist (ft)	470		420			420
Turn Bay Length (ft)	305			210	195	
Base Capacity (vph)	373	1031	641	1144	699	1374
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.48	0.13	0.75	0.31	0.36	0.31

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	125	97	338	245	175	297
Future Volume (vph)	125	97	338	245	175	297
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	13	11	11	10	10
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1745	1636	1801	1561	1685	1722
Flt Permitted	0.95	1.00	1.00	1.00	0.22	1.00
Satd. Flow (perm)	1745	1636	1801	1561	388	1722
Peak-hour factor, PHF	0.70	0.70	0.70	0.70	0.70	0.70
Adj. Flow (vph)	179	139	483	350	250	424
RTOR Reduction (vph)	0	94	0	171	0	0
Lane Group Flow (vph)	179	45	483	179	250	424
Heavy Vehicles (%)	0%	2%	2%	0%	0%	3%
Turn Type	Prot	pm+ov	NA	pm+ov	pm+pt	NA
Protected Phases	4	1	2	4	1	6
Permitted Phases		4		2	6	
Actuated Green, G (s)	12.2	24.7	26.8	39.0	45.3	45.3
Effective Green, g (s)	12.2	24.7	26.8	39.0	45.3	45.3
Actuated g/C Ratio	0.16	0.32	0.35	0.51	0.60	0.60
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	279	531	634	923	444	1025
v/s Ratio Prot	c0.10	0.01	c0.27	0.03	c0.09	0.25
v/s Ratio Perm		0.01		0.08	0.24	
v/c Ratio	0.64	0.08	0.76	0.19	0.56	0.41
Uniform Delay, d1	29.9	17.9	21.8	10.0	10.3	8.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.7	0.0	4.9	0.0	1.0	0.1
Delay (s)	33.7	17.9	26.7	10.1	11.3	8.4
Level of Service	C	B	C	B	B	A
Approach Delay (s)	26.8		19.7			9.5
Approach LOS	C		B			A

Intersection Summary

HCM 2000 Control Delay	17.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	76.1	Sum of lost time (s)	21.0
Intersection Capacity Utilization	49.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	166	12	0	285	0	0
Future Volume (vph)	166	12	0	285	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30			30	30	
Link Distance (ft)	550			300	400	
Travel Time (s)	12.5			6.8	9.1	
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	22	51	0	0	0	189	0	2	0	14	66
Future Volume (vph)	2	22	51	0	0	0	189	0	2	0	14	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		300			350			400			660	
Travel Time (s)		6.8			8.0			9.1			15.0	
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized

Intersection	
Intersection Delay, s/veh	8.7
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	22	51	0	0	0	189	0	2	0	14	66
Future Vol, veh/h	2	22	51	0	0	0	189	0	2	0	14	66
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Heavy Vehicles, %	27	56	0	0	0	0	2	0	0	0	0	28
Mvmt Flow	3	28	65	0	0	0	239	0	3	0	18	84
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.4	0	9.3	7.4
HCM LOS	A	-	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	99%	3%	0%	0%
Vol Thru, %	0%	29%	100%	18%
Vol Right, %	1%	68%	0%	82%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	191	75	0	80
LT Vol	189	2	0	0
Through Vol	0	22	0	14
RT Vol	2	51	0	66
Lane Flow Rate	242	95	0	101
Geometry Grp	1	1	1	1
Degree of Util (X)	0.293	0.124	0	0.11
Departure Headway (Hd)	4.37	4.715	4.785	3.898
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	810	764	0	924
Service Time	2.468	2.722	2.796	1.906
HCM Lane V/C Ratio	0.299	0.124	0	0.109
HCM Control Delay	9.3	8.4	7.8	7.4
HCM Lane LOS	A	A	N	A
HCM 95th-tile Q	1.2	0.4	0	0.4

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	109	0	0	101	16
Future Volume (vph)	0	109	0	0	101	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30		30			30
Link Distance (ft)	447		660			400
Travel Time (s)	10.2		15.0			9.1
Sign Control	Stop		Stop			Stop

Intersection Summary

Area Type: Other
Control Type: Unsignalized

Intersection	
Intersection Delay, s/veh	8.6
Intersection LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	109	0	0	101	16
Future Vol, veh/h	0	109	0	0	101	16
Peak Hour Factor	0.53	0.53	0.53	0.53	0.53	0.53
Heavy Vehicles, %	0	0	10	0	3	0
Mvmt Flow	0	206	0	0	191	30
Number of Lanes	0	1	0	0	0	1

Approach	WB	SB
Opposing Approach		
Opposing Lanes	0	0
Conflicting Approach Left		WB
Conflicting Lanes Left	0	1
Conflicting Approach Right	SB	
Conflicting Lanes Right	1	0
HCM Control Delay	7.9	9.3
HCM LOS	A	A

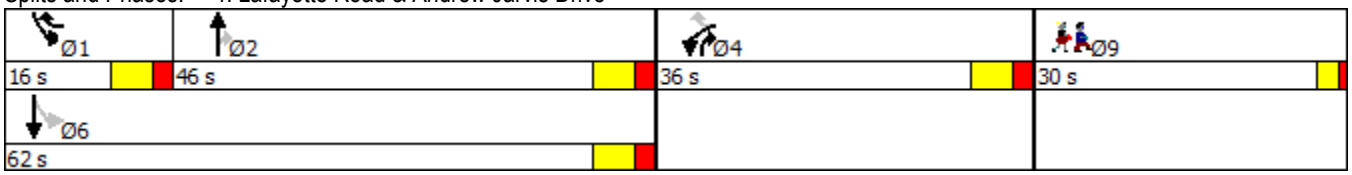
Lane	WBLn1	SBLn1
Vol Left, %	0%	86%
Vol Thru, %	0%	14%
Vol Right, %	100%	0%
Sign Control	Stop	Stop
Traffic Vol by Lane	109	117
LT Vol	0	101
Through Vol	0	16
RT Vol	109	0
Lane Flow Rate	206	221
Geometry Grp	1	1
Degree of Util (X)	0.219	0.275
Departure Headway (Hd)	3.838	4.484
Convergence, Y/N	Yes	Yes
Cap	942	795
Service Time	1.838	2.555
HCM Lane V/C Ratio	0.219	0.278
HCM Control Delay	7.9	9.3
HCM Lane LOS	A	A
HCM 95th-tile Q	0.8	1.1

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø9
Lane Configurations							
Traffic Volume (vph)	193	154	465	43	46	434	
Future Volume (vph)	193	154	465	43	46	434	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	11	13	11	11	10	10	
Storage Length (ft)	305	0		210	195		
Storage Lanes	1	1		1	1		
Taper Length (ft)	25				25		
Right Turn on Red		Yes		Yes			
Link Speed (mph)	30		30			30	
Link Distance (ft)	550		500			500	
Travel Time (s)	12.5		11.4			11.4	
Turn Type	Prot	pm+ov	NA	pm+ov	pm+pt	NA	
Protected Phases	4	1	2	4	1	6	9
Permitted Phases		4		2	6		
Detector Phase	4	1	2	4	1	6	
Switch Phase							
Minimum Initial (s)	6.0	6.0	10.0	6.0	6.0	10.0	5.0
Minimum Split (s)	12.0	12.0	16.0	12.0	12.0	16.0	30.0
Total Split (s)	36.0	16.0	46.0	36.0	16.0	62.0	30.0
Total Split (%)	28.1%	12.5%	35.9%	28.1%	12.5%	48.4%	23%
Maximum Green (s)	30.0	10.0	40.0	30.0	10.0	56.0	27.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	2.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	
Lead/Lag		Lead	Lag		Lead		
Lead-Lag Optimize?		Yes	Yes		Yes		
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	None	None	Min	None	None	Min	None
Walk Time (s)							7.0
Flash Dont Walk (s)							20.0
Pedestrian Calls (#/hr)							18

Intersection Summary

Area Type: Other
Cycle Length: 128
Actuated Cycle Length: 84.9
Natural Cycle: 90
Control Type: Actuated-Uncoordinated

Splits and Phases: 4: Lafayette Road & Andrew Jarvis Drive



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	219	175	528	49	52	493
v/c Ratio	0.66	0.25	0.79	0.05	0.18	0.52
Control Delay	45.5	3.6	37.9	3.2	17.1	20.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.5	3.6	37.9	3.2	17.1	20.1
Queue Length 50th (ft)	82	0	170	0	8	100
Queue Length 95th (ft)	240	27	#599	16	48	416
Internal Link Dist (ft)	470		420			420
Turn Bay Length (ft)	305			210	195	
Base Capacity (vph)	655	758	974	1242	346	1289
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.33	0.23	0.54	0.04	0.15	0.38

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	193	154	465	43	46	434
Future Volume (vph)	193	154	465	43	46	434
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	13	11	11	10	10
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1631	1636	1818	1473	1604	1756
Flt Permitted	0.95	1.00	1.00	1.00	0.19	1.00
Satd. Flow (perm)	1631	1636	1818	1473	329	1756
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	219	175	528	49	52	493
RTOR Reduction (vph)	0	124	0	21	0	0
Lane Group Flow (vph)	219	51	528	28	52	493
Heavy Vehicles (%)	7%	2%	1%	6%	5%	1%
Turn Type	Prot	pm+ov	NA	pm+ov	pm+pt	NA
Protected Phases	4	1	2	4	1	6
Permitted Phases		4		2	6	
Actuated Green, G (s)	17.4	24.9	32.0	49.4	45.5	45.5
Effective Green, g (s)	17.4	24.9	32.0	49.4	45.5	45.5
Actuated g/C Ratio	0.20	0.29	0.37	0.58	0.53	0.53
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	332	477	681	955	287	935
v/s Ratio Prot	c0.13	0.01	c0.29	0.01	0.02	c0.28
v/s Ratio Perm		0.02		0.01	0.08	
v/c Ratio	0.66	0.11	0.78	0.03	0.18	0.53
Uniform Delay, d1	31.3	22.1	23.5	7.7	12.7	13.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.6	0.0	5.0	0.0	0.1	0.2
Delay (s)	34.9	22.2	28.6	7.7	12.8	13.2
Level of Service	C	C	C	A	B	B
Approach Delay (s)	29.2		26.8			13.2
Approach LOS	C		C			B

Intersection Summary

HCM 2000 Control Delay	22.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	85.4	Sum of lost time (s)	21.0
Intersection Capacity Utilization	55.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group