APPENDIX H

STATE POLLUTANT DISCHARGE ELIMINATION SYSTEM FOR CONSTRUCTION ACTIVITIES

CONSTRUCTION SITE LOG BOOK

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Properly completing forms such as those contained in Appendix H meet the inspection requirement of NYS-DEC SPDES GP for Construction Activities. Completed forms shall be kept on site at all times and made available to authorities upon request.

I. PRE-CONSTRUCTION MEETING DOCUMENTS

Project Name _____

Permit No. _____ **Date of Authorization** _____

Name of Operator _____

Prime Contractor _____

a. Preamble to Site Assessment and Inspections

The Following Information To Be Read By All Person's Involved in The Construction of Stormwater Related Activities:

The Operator agrees to have a qualified professional[1] conduct an assessment of the site prior to the commencement of construction[2] and certify in this inspection report that the appropriate erosion and sediment controls described in the SWPPP have been adequately installed or implemented to ensure overall preparedness of the site for the commencement of construction.

Prior to the commencement of construction, the Operator shall certify in this site logbook that the SWPPP has been prepared in accordance with the State's standards and meets all Federal, State and local erosion and sediment control requirements.

When construction starts, site inspections shall be conducted by the qualified professional at least every 7 calendar days and within 24 hours of the end of a storm event of 0.5 inches or greater (Construction Duration Inspections). The Operator shall maintain a record of all inspection reports in this site logbook. The site logbook shall be maintained on site and be made available to the permitting authorities upon request. The Operator shall post at the site, in a publicly accessible location, a summary of the site inspection activities on a monthly basis (Monthly Summary Report).

The operator shall also prepare a written summary of compliance with this general permit at a minimum frequency of every three months (Operator's Compliance Response Form), while coverage exists. The summary should address the status of achieving each component of the SWPPP.

Prior to filing the Notice of Termination or the end of permit term, the Operator shall have a qualified professional perform a final site inspection. The qualified professional shall certify that the site has undergone final stabilization[3] using either vegetative or structural stabilization methods and that all temporary erosion and sediment controls (such as silt fencing) not needed for long-term erosion control have been removed. In addition, the Operator must identify and certify that all permanent structures described in the SWPPP have been constructed and provide the owner(s) with an operation and maintenance plan that ensures the structure(s) continuously functions as designed.

1 "Qualified Professional means a person knowledgeable in the principles and practice of erosion and sediment controls, such as a Certified Professional in Erosion and Sediment Control (CPESC), soil scientist, licensed engineer or someone working under the direction and supervision of a licensed engineer (person must have experience in the principles and practices of erosion and sediment control).

2 "Commencement of construction" means the initial removal of vegetation and disturbance of soils associated with clearing, grading or excavating activities or other construction activities.

3 "Final stabilization" means that all soil-disturbing activities at the site have been completed and a uniform, perennial vegetative cover with a density of eighty (80) percent has been established or equivalent stabilization measures (such as the use of mulches or geotextiles) have been employed on all unpaved areas and areas not covered by permanent structures.

b. Operators Certification

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. Further, I hereby certify that the SWPPP meets all Federal, State, and local erosion and sediment control requirements. I am aware that false statements made herein are punishable as a class A misdemeanor pursuant to Section 210.45 of the Penal Law.

Name (please print): _____

Title _____ **Date:** _____

Address: _____

Phone: _____ **Email:** _____

Signature: _____

c. Qualified Professional's Credentials & Certification

"I hereby certify that I meet the criteria set forth in the General Permit to conduct site inspections for this project and that the appropriate erosion and sediment controls described in the SWPPP and as described in the following Pre-construction Site Assessment Checklist have been adequately installed or implemented, ensuring the overall preparedness of this site for the commencement of construction."

Name (please print): _____

Title _____ **Date:** _____

Address: _____

Phone: _____ **Email:** _____

Signature: _____

d. Pre-construction Site Assessment Checklist
(NOTE: Provide comments below as necessary)

1. Notice of Intent, SWPPP, and Contractors Certification:

Yes No NA

[ ] [ ] [ ] Has a Notice of Intent been filed with the NYS Department of Conservation?
[ ] [ ] [ ] Is the SWPPP on-site? Where?_____
[ ] [ ] [ ] Is the Plan current? What is the latest revision date?_____
[ ] [ ] [ ] Is a copy of the NOI (with brief description) onsite? Where?_____
[ ] [ ] [ ] Have all contractors involved with stormwater related activities signed a contractor's certification?

2. Resource Protection

Yes No NA

[ ] [ ] [ ] Are construction limits clearly flagged or fenced?
[ ] [ ] [ ] Important trees and associated rooting zones, on-site septic system absorption fields, existing vegetated areas suitable for filter strips, especially in perimeter areas, have been flagged for protection.
[ ] [ ] [ ] Creek crossings installed prior to land-disturbing activity, including clearing and blasting.

3. Surface Water Protection

Yes No NA

[ ] [ ] [ ] Clean stormwater runoff has been diverted from areas to be disturbed.
[ ] [ ] [ ] Bodies of water located either on site or in the vicinity of the site have been identified and protected.
[ ] [ ] [ ] Appropriate practices to protect on-site or downstream surface water are installed.
[ ] [ ] [ ] Are clearing and grading operations divided into areas <5 acres?

4. Stabilized Construction Entrance

Yes No NA

[ ] [ ] [ ] A temporary construction entrance to capture mud and debris from construction vehicles before they enter the public highway has been installed.
[ ] [ ] [ ] Other access areas (entrances, construction routes, equipment parking areas) are stabilized immediately as work takes place with gravel or other cover.
[ ] [ ] [ ] Sediment tracked onto public streets is removed or cleaned on a regular basis.

5. Perimeter Sediment Controls

Yes No NA

[ ] [ ] [ ] Silt fence material and installation comply with the standard drawing and specifications.
[ ] [ ] [ ] Silt fences are installed at appropriate spacing intervals
[ ] [ ] [ ] Sediment/detention basin was installed as first land disturbing activity.
[ ] [ ] [ ] Sediment traps and barriers are installed.

6. Pollution Prevention for Waste and Hazardous Materials

Yes No NA

[ ] [ ] [ ] The Operator or designated representative has been assigned to implement the spill prevention avoidance and response plan.
[ ] [ ] [ ] The plan is contained in the SWPPP on page _____
[ ] [ ] [ ] Appropriate materials to control spills are onsite. Where? _____

II. CONSTRUCTION DURATION INSPECTIONS

a. Directions:
Inspection Forms will be filled out during the entire construction phase of the project.
Required Elements:

(1) On a site map, indicate the extent of all disturbed site areas and drainage pathways. Indicate site areas that are expected to undergo initial disturbance or significant site work within the next 14-day period;

(2) Indicate on a site map all areas of the site that have undergone temporary or permanent stabilization;

(3) Indicate all disturbed site areas that have not undergone active site work during the previous 14-day period;

(4) Inspect all sediment control practices and record the approximate degree of sediment accumulation as a percentage of sediment storage volume (for example, 10 percent, 20 percent, 50 percent);

(5) Inspect all erosion and sediment control practices and record all maintenance requirements such as verifying the integrity of barrier or diversion systems (earthen berms or silt fencing) and containment systems (sediment basins and sediment traps). Identify any evidence of rill or gully erosion occurring on slopes and any loss of stabilizing vegetation or seeding/mulching. Document any excessive deposition of sediment or ponding water along barrier or diversion systems. Record the depth of sediment within containment structures, any erosion near outlet and overflow structures, and verify the ability of rock filters around perforated riser pipes to pass
water; and

(6) Immediately report to the Operator any deficiencies that are identified with the implementation of the SWPPP.

CONSTRUCTION DURATION INSPECTIONS **Page 1 of _____**

SITE PLAN/SKETCH

Inspector (print name)	**Date of Inspection**
Qualified Professional (print name)	**Qualified Professional Signature**

The above signed acknowledges that, to the best of his/her knowledge, all information provided on the forms is accurate and complete.

Maintaining Water Quality

Yes No NA
[ ] [ ] [ ] Is there an increase in turbidity causing a substantial visible contrast to natural conditions?
[ ] [ ] [ ] Is there residue from oil and floating substances, visible oil film, or globules or grease?
[ ] [ ] [ ] All disturbance is within the limits of the approved plans.
[ ] [ ] [ ] Have receiving lake/bay, stream, and/or wetland been impacted by silt from project?

Housekeeping

1. General Site Conditions

Yes No NA
[ ] [ ] [ ] Is construction site litter and debris appropriately managed?
[ ] [ ] [ ] Are facilities and equipment necessary for implementation of erosion and sediment control in working order and/or properly maintained?
[ ] [ ] [ ] Is construction impacting the adjacent property?
[ ] [ ] [ ] Is dust adequately controlled?

2. Temporary Stream Crossing

Yes No NA
[ ] [ ] [ ] Maximum diameter pipes necessary to span creek without dredging are installed.
[ ] [ ] [ ] Installed non-woven geotextile fabric beneath approaches.
[ ] [ ] [ ] Is fill composed of aggregate (no earth or soil)?
[ ] [ ] [ ] Rock on approaches is clean enough to remove mud from vehicles & prevent sediment from entering stream during high flow.

Runoff Control Practices

1. Excavation Dewatering

Yes No NA
[ ] [ ] [ ] Upstream and downstream berms (sandbags, inflatable dams, etc.) are installed per plan.
[ ] [ ] [ ] Clean water from upstream pool is being pumped to the downstream pool.
[ ] [ ] [ ] Sediment laden water from work area is being discharged to a silt-trapping device.
[ ] [ ] [ ] Constructed upstream berm with one-foot minimum freeboard.

2. Level Spreader

Yes No NA
[ ] [ ] [ ] Installed per plan.
[ ] [ ] [ ] Constructed on undisturbed soil, not on fill, receiving only clear, non-sediment laden flow.
[ ] [ ] [ ] Flow sheets out of level spreader without erosion on downstream edge.

3. Interceptor Dikes and Swales

Yes No NA
[ ] [ ] [ ] Installed per plan with minimum side slopes 2H:1V or flatter.
[ ] [ ] [ ] Stabilized by geotextile fabric, seed, or mulch with no erosion occurring.
[ ] [ ] [ ] Sediment-laden runoff directed to sediment trapping structure

Runoff Control Practices (continued)

4. Stone Check Dam
Yes No NA
[ ] [ ] [ ] Is channel stable? (flow is not eroding soil underneath or around the structure).
[ ] [ ] [ ] Check is in good condition (rocks in place and no permanent pools behind the structure).
[ ] [ ] [ ] Has accumulated sediment been removed?.

5. Rock Outlet Protection
Yes No NA
[ ] [ ] [ ] Installed per plan.
[ ] [ ] [ ] Installed concurrently with pipe installation.

Soil Stabilization

1. Topsoil and Spoil Stockpiles
Yes No NA
[ ] [ ] [ ] Stockpiles are stabilized with vegetation and/or mulch.
[ ] [ ] [ ] Sediment control is installed at the toe of the slope.

2. Revegetation
Yes No NA
[ ] [ ] [ ] Temporary seedings and mulch have been applied to idle areas.
[ ] [ ] [ ] 4 inches minimum of topsoil has been applied under permanent seedings

Sediment Control Practices

1. Stabilized Construction Entrance
Yes No NA
[ ] [ ] [ ] Stone is clean enough to effectively remove mud from vehicles.
[ ] [ ] [ ] Installed per standards and specifications?
[ ] [ ] [ ] Does all traffic use the stabilized entrance to enter and leave site?
[ ] [ ] [ ] Is adequate drainage provided to prevent ponding at entrance?

2. Silt Fence
Yes No NA
[ ] [ ] [ ] Installed on Contour, 10 feet from toe of slope (not across conveyance channels).
[ ] [ ] [ ] Joints constructed by wrapping the two ends together for continuous support.
[ ] [ ] [ ] Fabric buried 6 inches minimum.
[ ] [ ] [ ] Posts are stable, fabric is tight and without rips or frayed areas.
Sediment accumulation is ___% of design capacity.

Sediment Control Practices (continued)

3. Storm Drain Inlet Protection (Use for Stone & Block; Filter Fabric; Curb; or, Excavated practices)

Yes No NA

[ ] [ ] [ ] Installed concrete blocks lengthwise so open ends face outward, not upward.
[ ] [ ] [ ] Placed wire screen between No. 3 crushed stone and concrete blocks.
[ ] [ ] [ ] Drainage area is 1acre or less.
[ ] [ ] [ ] Excavated area is 900 cubic feet.
[ ] [ ] [ ] Excavated side slopes should be 2:1.
[ ] [ ] [ ] 2" x 4" frame is constructed and structurally sound.
[ ] [ ] [ ] Posts 3-foot maximum spacing between posts.
[ ] [ ] [ ] Fabric is embedded 1 to 1.5 feet below ground and secured to frame/posts with staples at max 8-inch spacing.
[ ] [ ] [ ] Posts are stable, fabric is tight and without rips or frayed areas.

Sediment accumulation ___% of design capacity.

4. Temporary Sediment Trap

Yes No NA

[ ] [ ] [ ] Outlet structure is constructed per the approved plan or drawing.
[ ] [ ] [ ] Geotextile fabric has been placed beneath rock fill.

Sediment accumulation is ___% of design capacity.

5. Temporary Sediment Basin

Yes No NA

[ ] [ ] [ ] Basin and outlet structure constructed per the approved plan.
[ ] [ ] [ ] Basin side slopes are stabilized with seed/mulch.
[ ] [ ] [ ] Drainage structure flushed and basin surface restored upon removal of sediment basin facility.

Sediment accumulation is ___% of design capacity.

Note: Not all erosion and sediment control practices are included in this listing. Add additional pages to this list as required by site specific design.
Construction inspection checklists for post-development stormwater management practices can be found in Appendix F of the New York Stormwater Management Design Manual.

CONSTRUCTION DURATION INSPECTIONS

b. Modifications to the SWPPP (To be completed as described below)

The Operator shall amend the SWPPP whenever:
1. There is a significant change in design, construction, operation, or maintenance which may have a significant effect on the potential for the discharge of pollutants to the waters of the United States and which has not otherwise been addressed in the SWPPP; or
2. The SWPPP proves to be ineffective in:
   a. Eliminating or significantly minimizing pollutants from sources identified in the SWPPP and as required by this permit; or
   b. Achieving the general objectives of controlling pollutants in stormwater discharges from permitted construction activity; and
3. Additionally, the SWPPP shall be amended to identify any new contractor or subcontractor that will implement any measure of the SWPPP.

Modification & Reason:

III. Monthly Summary of Site Inspection Activities

Name of Permitted Facility:	Today's Date:	Reporting Month:
Location:	Permit Identification #:	
Name and Telephone Number of Site Inspector:		

Date of Inspection	Regular / Rainfall based Inspection	Name of Inspector	Items of Concern

Owner/Operator Certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that false statements made herein are punishable as a class A misdemeanor pursuant to Section 210.45 of the Penal Law."

Signature of Permittee or Duly Authorized Representative

Name of Permittee or Duly Authorized Representative Date

Duly authorized representatives must have written authorization, submitted to DEC, to sign any permit documents.

NYSDEC SPDES General Permit for Stormwater Discharges from Construction Activity
Permit Number GP-02-01
Monthly Summary of Site Inspection Activities

Name of Permitted Facility:	**Permit Identification #:**	
Location:	**Today's Date:**	**Reporting Month:**
Name and Telephone Number of Site Inspector:	**Name and Telephone Number of Site Inspector:**	

Permit Reference; Part III.D.3.b (page 15):

"The operator shall post at the site, in a publicly-accessible location, a summary of the site inspection activities on a monthly basis."

Date of Inspection	Type of Inspection and 24 hr Rainfall	Name of Qualified Professional conducting Site Inspections	Major items of concern related to compliance of the SWPPP with all conditions of the general permit	Date Corrected

Owner/Operator Certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that false statements made herein are punishable as a class A misdemeanor pursuant to Section 210.45 of the Penal Law."

_____ _____ _____

Signature of Permittee or Duly Authorized Representative | Name of Permittee or Duly Authorized Representative | Date

Duly authorized representatives of the Permittee (Owner/Operator) must have written authorization, submitted to DEC, to sign any permit documents.

Inspection and Maintenance Checklist
Catch Basins, Manholes, and Inlets

Date: _____

Type of Inspection: Storm ☐ Weekly ☐ Monthly ☐ Annual ☐

Site: _____ Inspector(s): _____

Description or location of Project: _____

Defect	Conditions when Maintenance is Needed	Maintenance (1 or 2)*	Comments
General			
Trash and Debris	Trash and debris which are located immediately in front of the catch basin opening or is blocking inletting capacity of the basin by more than 10%.		
	Trash or debris (in the basin) that exceeds 60 percent of the sump depth as measured from the bottom of basin to invert of the lowest pipe into or out of the basin, but in no case less than a minimum of six inches clearance from the debris surface to the invert of the lowest pipe.		
	Trash or debris in any inlet or outlet pipe blocking more then 1/3 of its height.		
	Dead animals or vegetation that could generate odors that could cause complaints or dangerous gases (e.g., methane).		
Sediment	Sediment (in the basin) that exceeds 60 percent of the sump depth as measured from the bottom of basin to invert of the lowest pipe into or out of the basin, but in no case less than a minimum of 6 inches clearance from the sediment surface to the invert of the lowest pipe.		
Structure Damage to Frame and/or Top Slab	Top slab has holes larger than 2 square inches or cracks wider then ¼ inch.		
	Frame not sitting flush on top slab, i.e., separation of more than ¾ inch of the frame from the top slab. Frame not securely attached.		

*Maintenance: Enter 1 if maintenance is needed. Enter 2 if maintenance was preformed same day.

Defect	Conditions when Maintenance is Needed	Maintenance (1 or 2)*	Comments
Fractures or Cracks in Basin Walls/Bottom	Maintenance person judges that structure is unsound.		
	Grout fillet has separated or cracked wider then ½ inch and longer than 1 foot at the joint of any inlet/outlet pipe or any evidence of soil particles entering catch basin through cracks.		
Settlement/Misalignment	If failure of basin has created a safety, function, or design problem.		
Vegetation	Vegetation growing across and blocking more than 10% of the basin opening.		
	Vegetation growing in inlet/outlet pipe joints that is more than 6 inches tall and less than 6 inches apart.		
Contamination and Pollution	Any evidence of oil, gasoline, contaminants or other pollutants.		
Catch Basin Cover			
Cover Not in Place	Cover is missing or only partially in place. Any open catch basin requires maintenance.		
Locking Mechanism Not Working	Mechanism cannot be opened by one maintenance person with proper tools. Bolts into frame have less than ½ inch of thread.		
Cover Difficult to Remove	One maintenance person cannot remove lid after applying normal lifting pressure. (Intent is keep cover from sealing off access to maintenance).		
Ladder			
Ladder Rungs Unsafe	Ladder is unsafe due to missing rungs, not securely attached to basin wall, misalignment, rust, cracks, or sharp edges.		
Metal Grates (If Applicable)			
Grate opening Unsafe	Grate with opening wider than 7/8 inch.		
Trash and Debris	Trash and debris that is blocking more than 20% of grate surface inletting capacity.		
Damaged or Missing	Grate missing or broken member(s) of the grate.		

*Maintenance: Enter 1 if maintenance is needed. Enter 2 if maintenance was preformed same day.

Inspection and Maintenance Checklist
Conveyance Systems (Pipes & Ditches)

Date: _____

Type of Inspection: Storm ☐ Weekly ☐ Monthly ☐ Annual ☐

Site: _____ Inspector(s): _____

Defect	Conditions When Maintenance is Needed	Maintenance (1 or 2)*	Comments
Pipes			
Sediment & Debris	Accumulated Sediment that exceeds 20% of the diameter of the pipe.		
Vegetation	Vegetation that reduces free movement of water through pipes		
Damaged Pipe	Protective coating is damaged; rust is causing more than 50% deterioration to any part of pipe.		
	Any dent that decreases the cross section area of pipe by more than 20% or puncture that impacts performance.		
Open Ditches			
Trash and Debris	Trash and debris > 5 cf/1000 sf (one standard size garbage can) Visual evidence of dumping		
Sediment	Accumulated sediment that exceeds 20% of the design depth.		
Vegetation	Vegetation that reduces free movement of water through ditches.		
Erosion Damage to Slopes and Channel Bottom	Eroded damage over 2 inches deep where cause of damage is still present or where there is potential for continued erosion.		
Rock Lining Out of Place or Missing (If Applicable)	Maintenance person can see native soil beneath the rock lining.		

*Maintenance: Enter 1 if maintenance is needed. Enter 2 if maintenance was preformed same day.

Hudson Engineering Flood Storage Analysis

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January 14, 2019

Robin Kramer, Chair
Board of Appeals
Village of Mamaroneck
Village Hall (Third Floor)
169 Mt. Pleasant Avenue
Mamaroneck, New York 10543

Re: Site Plan Review
416 Waverly Avenue (560 Fenimore Avenue)
Village of Mamaroneck

Dear Ms. Kramer,

Regarding the above referenced application, the grading on the subject site was performed to replicate the existing storage capacity of flood waters on the site. As verified by the charts below, in the proposed condition the storage of flood water on site increases slightly. Therefore, this development does not negatively impact the elevation of flood water in the area, and in fact it results in a theoretical decrease in the flood elevation.

Volumetric Analysis - Existing Conditions			
Elevation	Surface Area	Incremental Storage (Cubic Feet)	Cumulative Storage (Cubic Feet)
21	0	0	0
22	388	194	194
23	2,961	1,675	1,869
24	16,517	9,739	11,608
25	21,073	18,795	30,403
26	27,420	24,247	54,649

Volumetric Analysis - Proposed Conditions			
Elevation	Surface Area	Incremental Storage (Cubic Feet)	Cumulative Storage (Cubic Feet)
21	0	0	0
22	704	352	352
23	5,344	3,024	3,376
24	15,142	10,243	13,619
25	22,826	18,984	32,603
26	26,110	24,468	57,071

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&
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Refer to the attached volumetric analysis (Sheet C-5).

If you should have any additional questions or comments, please do not hesitate to contact our office at (914) 909-0420.

Sincerely,

Michael F. Stein, P.E.
President

Stormwater Control Facility Maintenance Agreement

STORMWATER CONTROL FACILITY
MAINTENANCE AGREEMENT

Whereas, the Municipality of Village of Mamaroneck ("Municipality") and the _____("facility owner") want to enter into an agreement to provide for the long term maintenance and continuation of stormwater control measures approved by the Municipality for the below named project, and

Whereas, the Municipality and the facility owner desire that the stormwater control measures be built in accordance with the approved project plans and thereafter be maintained, cleaned, repaired, replaced and continued in perpetuity in order to ensure optimum performance of the components. Therefore, the Municipality and the facility owner agree as follows:

1. This agreement binds the Municipality and the facility owner, its successors and assigns, to the maintenance provisions depicted in the approved project plans which are attached as Schedule A of this agreement.

2. The facility owner shall maintain, clean, repair, replace and continue the stormwater control measures as necessary to ensure optimum performance of the measures to design specifications. The stormwater control measures shall include, but shall not be limited to, the following: drop inlets, pipes, culverts, soil absorption devices and hydrodynamic separator devices.

3. The facility owner shall be responsible for all expenses related to the maintenance of the stormwater control measures and shall establish a means for the collection and distribution of expenses among parties for any commonly owned facilities.

4. The facility owner shall provide for the periodic inspection of the stormwater control measures, not less than once in every five year period, to determine the condition and integrity of the measures. Such inspection shall be performed by a Professional Engineer licensed by the State of New York. The inspecting engineer shall prepare and submit to the Municipality within 30 days of the inspection, a written report of the findings including recommendations for those actions necessary for the continuation of the stormwater control measures.

5. The facility owner shall not authorize, undertake or permit alteration, abandonment, modification or discontinuation of the stormwater control measures except in accordance with written approval of the Municipality.

6. The facility owner shall undertake necessary repairs and replacement of the stormwater control measures at the direction of the Municipality or in accordance with the recommendations of the inspecting engineer.

7. This agreement shall be recorded in the Office of the County Clerk, County of _____ together with the deed for the common property and shall be included in the offering plan and/or prospectus approved pursuant to_____.

8. If ever the Municipality determines that the facility owner has failed to construct or maintain the stormwater control measures in accordance with the project plan or has failed to undertake corrective action specified by the Municipality or by the inspecting engineer, the Municipality is authorized to undertake such steps as reasonably necessary for the preservation, continuation or maintenance of the stormwater control measures and to affix the expenses thereof as a lien against the property.

9. This agreement is effective_____.

_____ _____

Provident Engineering
Traffic & Parking Study

TRAFFIC AND PARKING STUDY

Murphy Brothers - Mamaroneck Self Storage
416 Waverly Avenue
Village of Mamaroneck, New York

Prepared for

East Coast North Properties, LLC
and
Murphy Brothers Contracting
Village of Mamaroneck, NY

Prepared by

Provident Design Engineering, PLLC
formerly TRC Engineers, Inc.
Hawthorne, New York

Revised September 29, 2020

Project No. 17-060

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TRAFFIC AND PARKING STUDY
Murphy Brothers - Mamaroneck Self Storage
416 Waverly Avenue
Village of Mamaroneck, New York

1.0 INTRODUCTION

Provident Design Engineering, PLLC (PDE), formerly TRC Engineers, Inc., has been retained by East Coast North Properties, LLC and Murphy Brothers Contracting to review the traffic circulation and the parking conditions for the proposed Mamaroneck Self Storage facility addition to be located at 416 Waverly Avenue in the Village of Mamaroneck. Similar to the storage facility that was recently constructed at the Site (269 units), the additional storage facility (321 units) would replace some existing structures on the site which currently house various contractors/workers. Self Storage facilities tend to generate minimal traffic or parking. The existing Self Storage facility generally has one employee on site, while at times there could be two employees present. With the additional Self Storage units, there will be a maximum of three employees at any one time but would generally be only 1 or 2. In addition to the new Self Storage facility, there will also be a limited amount of retail space (700 sf) along the Waverly Avenue frontage in the existing Self Storage building that will service the Self Storage patrons.

Parking is currently provided on-site, with the provision of additional on-street parking spaces located along Waverly Avenue. Previous to the construction of the original Self Storage facility, some of the vehicles would have had to back out of their parking spaces

directly onto Waverly Avenue.

With the additional Self Storage facility, there will be 25 parking spaces on-site along with four (4) loading spaces as well as the on-street parking spaces.

PDE, TRC at the time, prepared the Traffic and Parking Study for the original Self Storage facility at the Site. To perform this latest Study, PDE followed a similar methodology including performing various observations of the traffic operations at the existing facility, as well as conducted parking counts at various times during the day and week. Utilization data of the Self Storage facility over an extended period of time was also reviewed. PDE conducted traffic analysis for the intersection of Waverly Avenue and Fenimore Road as well as at the Site Driveways.

The following is a summary of PDE's observations and findings in relation to the Self Storage facility in regards to traffic operations and parking.

2.0 TRAFFIC AND PARKING GENERATION

PDE has reviewed the amount of traffic that is generated by the proposed Self Storage facility utilizing the Institute of Transportation Engineers' (ITE) publication, "Trip Generation", 10th Edition, for this type of facility (ITE Land Use 151). The 321 additional storage units would conservatively generate approximately 3 entering vehicles and 3 exiting vehicles in the Peak AM Hour and approximately 2 entering vehicles and 3 exiting vehicles during the Peak PM Roadway Hour. During the Weekend Peak Hour, the 321 additional storage units would generate similar amounts, 3 entering vehicles and 2 exiting vehicles. This is minimal traffic and in general, the same vehicle that enters is also the vehicle that exits within the hour, as well as the occasional employee potentially entering or exiting. This minimal traffic will have no impact upon traffic operating conditions in the area. It is less traffic than utilized the previous uses of the site.

The following Table is a summary of the Weekday Peak Hour Trip Generation:

TABLE NO. 1
TRIP GENERATION
FOR ADDITIONAL 321 STORAGE UNITS

	Weekday Peak AM Roadway Hour			**Weekday Peak PM Roadway Hour**
ENTER	3			2
EXIT	3			3

The 700 sf of retail space will also generate minimal traffic as the retail will be limited to Self Storage supplies. The ITE 10th Edition (Land Use 920) estimates that this space would conservatively generate approximately 2 entering vehicles and 0 exiting vehicles in the Weekday Peak AM Hour and approximately 2 entering vehicles and 3 exiting vehicles during the Peak PM Roadway Hour. In reality, there would be even less traffic than these amounts as the employee for the retail portion will be the same as for the Self Storage portion and the customers would be the Self Storage patrons. Similar conditions would be experienced during the Weekend Peak Hour.

The supporting information from the ITE 10th Edition is contained in Appendix D.

Parking Generation

A Self Storage facility of a total of 590 units, based upon the Institute of Transportation Engineers' (ITE) publication "Parking Generation", 5th Edition, would generate a Peak parking demand of 8 spaces. The supporting information from the ITE 5th Edition is contained in Appendix D.

The 700-sf retail space is estimated to generate a parking demand of approximately two parking spaces but would actually require less as the retail will be limited to self storage supplies and be sold to the self storage patrons. In addition, the employee for the self

storage supplies will be the same as the employee for the self storage facility.

Parking is described in more detail in Section 4.0 below.

3.0 TRAFFIC CIRCULATION AND OPERATIONS

Existing Circulation

The previous site was served by various curbcuts and driveways along both Waverly Avenue and Fenimore Road. The access was "cleaned up" with the construction of the original Self Storage Building, which also improved the safety along Waverly Avenue as vehicles were backing out onto Waverly Avenue. Along Waverly Avenue currently, the access to the northern portion of the site is an unsignalized entrance/exit (with only right turns out permitted). A second curbcut along Waverly Avenue is located at the southern end of the site and serves the Self Storage Building and other contractor/worker parking but does not provide a vehicular connection to the rest of the property.

Along Fenimore Road, there is an existing curbcut between the barn and the front building that was converted to a right turn exiting movement only as part of the original Self Storage project. An additional curbcut provides limited access to the barn area. Vehicles sometimes back out of this driveway onto Fenimore Road.

Future Circulation and Operations

The number of curbcuts under the future scenario with the additional Self Storage facility will be reduced from four to two. The curbcut along Waverly Avenue currently serving

the northern portion of the facility will be closed. The curbcut that currently serves the southern portion of the site along Waverly Avenue will remain.

The curbcut along Fenimore Road between the barn and the front building will remain an exit only driveway (right turns only). The curbcut that serves the barn will be removed.

The two remaining driveways will continue to operate under STOP control.

In addition to the modifications to the driveways, the internal circulation at the site will also be improved. Elimination of some of the buildings will improve traffic flow. In addition, as illustrated on the Site Plan, circulation will become more organized and striped islands will be provided to provide clearer direction. The signage also will be upgraded to improve traffic control. The northern portion will now be connected with the southern portion of the site. These improvements will significantly improve vehicular and pedestrian traffic flow and safety throughout the site and off-site as well as improve Waverly Avenue and Fenimore Road by reducing the number of curbcuts. Sidewalks are provided on both Waverly Avenue and Fenimore Road adjacent to the Site. The signalized intersection of Waverly Place and Fenimore Road has crosswalks and pedestrian signals.

Adjacent Roadway Network

The intersection of Waverly Avenue and Fenimore Road is controlled by a multi-phase traffic signal. PDE conducted traffic counts at this intersection as well as at the Site Driveways. The Peak Hours for the intersection are 7:30 AM to 8:30 AM and 4:45 PM to 5:45 PM.

Railroad Way

The intersection of Fenimore Road and Railroad Way is an unsignalized "T" intersection. For the traveling public, Railroad Way does not appear to be a roadway and has railroad tracks traveling through it. Railroad Way is narrow with no curbing but having two buildings forming its borders. Railroad Way also does not have an official Village street sign. For vehicles traveling eastbound on Fenimore Road, there is a non-typical sign on the side of a warehouse building indicating Railroad Way, while no signs are present in the westbound direction. There are no One-Way Signs at the intersection and no striping along the roadway. However, at the southern end of the alleyway, there is a Do Not Enter Sign so the alleyway is assumed to be one-way southbound. There is also no physical indication to the public when a train may be traveling on Railroad Way. There are no pedestrian facilities or sidewalks along Railroad Way. Thus, limited traffic utilizes Railroad Way at the intersection. There are other ways to connect to other portions of Railroad Way such as Ogden Avenue.

Fenimore Road at Railroad Way consists on one lane per direction. There are two sets of double yellow lines across from Railroad Way and there is no break in the double yellow lines for left turns.

Existing Traffic Volumes

PDE utilized 2016 Existing Traffic Volumes conducted on behalf of the Village and grew them for one year by using a growth rate of 0.5%. This resulted in the 2017 Existing Traffic Volumes that were supplemented with Site Driveway observations and Traffic Counts conducted in November of 2017. These volumes are consistent with volumes from other Studies. Because of the change in traffic patterns due to the current world conditions, traffic was conservatively applied to Railroad Way. For the Fenimore Road and Railroad Way intersection, 10 vehicles turning in from both the Eastbound and Westbound Fenimore Road directions were conservatively utilized as current conditions do not permit for traffic counts being performed. The 2017 Existing Traffic Volumes are illustrated on Figure 1 in Appendix A.

No-Build Traffic Volumes

The Future Conditions without the Proposed Action ("No Build") were developed based upon discussions with the Village Planner and Village Engineer as well as various

documents provided by the Village's Planner and Engineer including the Village Comprehensive Plan, the various Village Transit Oriented Development Studies, the Waverly Avenue Study, the Village's Vision zero Documents, the Village's Moratorium Traffic Study and NYSDOT Traffic Data. A growth factor of 0.5% per year was provided by the Village and is consistent with the other Village documents. There were no known adjacent developments that would impact traffic in the area that would not be accounted for in the growth rate. Thus, existing traffic was grown to the Build Year by utilizing the growth factored compounded over the years.

Thus, the Existing Traffic Volumes were then grown for five years by a compounded growth factor of 0.5% per year to result in the 2022 No-Build Traffic Volumes. The 2022 No-Build Traffic Volume Figure is illustrated on Figure 2.

Build Traffic Volumes

Arrival and Departure distributions are illustrated on Figures 3 and 4 and are based on Existing Traffic patterns and Site Driveway observations. Using the Arrival and Departure distributions, the Site Generated Traffic Volumes (Figure 5) were distributed onto the Roadway Network and this resulted in the 2022 Build Traffic Volumes. The 2022 Build Traffic Volumes are illustrated on Figure 6. The Build conditions were also analyzed and incorporate a background growth rate in addition to the Site modifications including the additional Self Storage units as illustrated on Figure 6. PDE also conducted

Level of Service capacity analyses for the intersection of Waverly Avenue and Fenimore Road, the intersection of Railroad Way and Fenimore Road, and the Site Driveways. Copies of these analyses are contained in Appendix B.

Table No. 2 summarizes the Levels of Services for the intersections and the Site Driveways:

TABLE NO. 2
LEVEL OF SERVICE

	AM Peak			PM Peak		
Intersection	**Existing**	**No-Build**	**Build**	**Existing**	**No-Build**	**Build**
Fenimore Road & Waverly Avenue	C 22.6	C 23.2	C 23.2	C 21.4	C 21.8	C 21.9
Fenimore Road and Existing Exit Driveway	c 15.0	c 15.3	c 15.4	a 0.0	a 0.0	a 0.0
Waverly Avenue & Existing Driveway 1 (Contractor Offices)	b 14.7	b 14.9	- -	c 15.0	c 15.1	- -
Waverly Avenue & Existing Driveway 2 (Self-Storage)	b 11.0	b 11.1	b 13.9	b 11.9	b 12.0	b 12.3
Fenimore Road and Railroad Way	a 0.4	a 0.4	a 0.4	a 0.4	a 0.4	a 0.4

Note: Signalized intersection Levels of Service are represented by Upper Case letters while unsignalized intersections are represented by lower case letters. Average Delay is provided below the Levels of Service and is illustrated in seconds per vehicle. To be conservative, no credit was taken for the traffic contractors/workers at the Site that will no longer be present during the Build condition.

As illustrated in the Table above, the analysis shows that the intersection of Fenimore Road and Waverly Avenue currently operates at Level of Service C in the Peak AM and PM Hours and these Levels of Service will remain. The Site Driveways will also

continue to operate at Level of Service C or better. Thus, good Levels of Service are maintained at each of the intersections/driveways. To be conservative, no credit was taken for the traffic contractors/workers at the Site that will no longer be present during the Build condition, which would remove approximately 19 vehicles. Thus, there will actually be less vehicles than current conditions.

The Proposed Project will result in a minimal change in traffic operations at the intersection of Fenimore Road and Railroad Way, with only a very conservative estimated 2 eastbound trips and 1 westbound trip during the Peak AM Hour and 1 eastbound trip and 1 westbound trip during the Peak PM Hour. In reality, there would be a reduction in trips as a result of the Proposed Project as a result of the traffic from the contractors/workers that will no longer be at the Site. Existing, No Build and Build Traffic Volumes were performed for the intersection which indicated that the intersection currently and will continue to operate at appropriate Levels of Service and the Project will have no impact on the operation of the intersection.

As described in Section 2.0, the Self Storage facility will not generate significant traffic and will not have any significant impact upon the traffic operating conditions of this intersection or on the Site Driveways and adjacent streets.

4.0 PARKING

a. Existing Parking Conditions

The current parking spaces on-site are split between two separate lots, as well as on-street parking spaces along Waverly Avenue.

PDE conducted parking observations on various days (both weekdays and weekends) and at various times throughout the day at the site. There were very few vehicles ever parked for the existing Self Storage facility and there were never times that ample parking spaces was not available on the property.

In addition, PDE reviewed data for the entrance and exit into the existing Self Storage facility from July 1, 2017 to August 24, 2017. These indicated that the maximum number of parking spaces for the Self Storage facility utilized at any one time throughout the entire period was five spaces, which included two parking spaces utilized by employees. A copy of this data is contained in Appendix C. Recent observations indicated similar amounts.

In addition to the parking for Murphy Brothers, approximately 19 other contractors/workers currently park at the Site. These 19 vehicles will be removed from the Site after the additional Self Storage units are constructed. Thus, there

would be less vehicles parking on the Site.

b. Future Parking

To determine the parking that was to be required for the original Self Storage facility at the Site, the parking requirements at other Self Storage facilities in the area was reviewed. The following table, similar to the Table that was contained in the previous Traffic and Parking Study illustrates the parking spaces provided for other Self Storage facilities in Westchester.

TABLE NO. 3
PARKING FOR OTHER SELF STORAGE FACILITIES

Facility	Location	No. of Units	Parking Spaces Initially Required by Zoning	Variance Granted or Parking Spaces to be installed
Westy's Self Storage	Port Chester	900	83	22
Safeguard Storage	Elmsford	550	68	12
Safeguard Storage	New Rochelle	653	48	14
Westy's Self Storage	Tuckahoe	1,500	N/A	24
Black Mountain	New Rochelle	1,182	N/A	12
Tarrytown Self Storage	Tarrytown	577	52	3 *
Cube Smart (proposed)	Port Chester	1,000	N/A	10
Project	*Mamaroneck*	*590*	*137*	*25*

* Based upon maximum recorded

Table No. 4 compares the Parking Spaces per Unit as well as the number of Units per Parking Space for other Self Storage in the area.

TABLE NO. 4 PARKING RATIOS FOR OTHER SELF STORAGE FACILITIES				
Facility	**Location**	**No. of Units**	**Parking Spaces per Unit**	**Units per Parking Space**
Westy's Self Storage	Port Chester	900	0.0244	41
Safeguard Storage	Elmsford	550	0.0218	46
Safeguard Storage	New Rochelle	653	0.0214	47
Westy's Self Storage	Tuckahoe	1,500	0.0160	63
Black Mountain	New Rochelle	1,182	0.0101	99
Tarrytown Self Storage	Tarrytown	577	0.0052	192
354 North Main St.	Port Chester	1,000	0.0100	100
Project	*Mamaroneck*	*590*	*0.0424*	*24*

As illustrated in the above Tables, some of these other facilities have significantly more storage units yet provide a similar or less number of parking spaces as proposed for the Mamaroneck Self Storage facility. Observations of the parking in these lots indicate minimal vehicles are parked there.

The Mamaroneck Self Storage facility currently has 1-2 employees on-site at any one time. With additional units, this could increase to a maximum of 3 employees on-site at times. As described earlier, a Self Storage facility of a total of 590 units, based upon the Institute of Transportation Engineers' (ITE) publication "Parking Generation", 4th Edition, would generate a Peak parking demand of 8 spaces. The supporting information from the ITE 4th Edition is contained in Appendix D.

The 700-sf retail space is estimated to require approximately two parking spaces based upon the potential use of Site. The Murphy Brothers Contracting portion of the Site will have four full time employees and two Project Managers on-site and are projected to utilize six parking spaces. Murphy Brothers Contracting will generally not generate any visits from the general public or contractors. The other nineteen contractors/workers that currently park on the Site will no longer be parking there as that usage will be replaced by the additional Self Storage units and thus the overall parking demand will be reduced.

With the proposed additional Self Storage facility and the modifications to the layout of the site, there will be 25 parking spaces provided on-site along with four (4) loading spaces, in addition to the on-street parking spaces. The four loading spaces will be utilized by the patrons of the Self Storage facility, thus freeing up even more parking spaces. Thus, the parking to be provided will be sufficient to support the Self Storage facility and the other various uses on the site.

5.0 CONCLUSIONS

The proposed modifications to the internal circulation of the site will improve traffic flow and operations. The elimination of a driveway along Waverly Avenue and the elimination of a curb cut on Fenimore Road will also improve safety within the site and along Waverly Avenue and Fenimore Road such as vehicles will no longer back out of the barn driveway onto Fenimore Road. The additional Self Storage facility will not generate significant traffic and will not impact traffic operating conditions along the adjacent roadways or within the site.

The Self Storage facility with the additional units would conservatively require up to 8 parking spaces while the Murphy Brothers Contracting will require 6 parking spaces and up to 2 parking spaces will be required for the retail space. In addition, the peak of all of the above uses would not occur at the same time, with the Murphy Brothers Contracting peaking in the early morning, the Self Storage facility peaking mid-late morning and the retail portion generating insignificant parking. Thus, the 25 parking spaces to be provided will result in more than sufficient parking be provided for the entire site, including for the additional Self Storage facility. There will be also 4 loading spaces that will be provided and these will be utilized by the patrons of the Self Storage facility, thus freeing up even more parking spaces.

Respectively submitted:

PROVIDENT DESIGN ENGINEERING, PLLC

Brian E. Dempsey, P.E., PTOE
Senior Project Manager

Danny Cuya, EIT
Engineer

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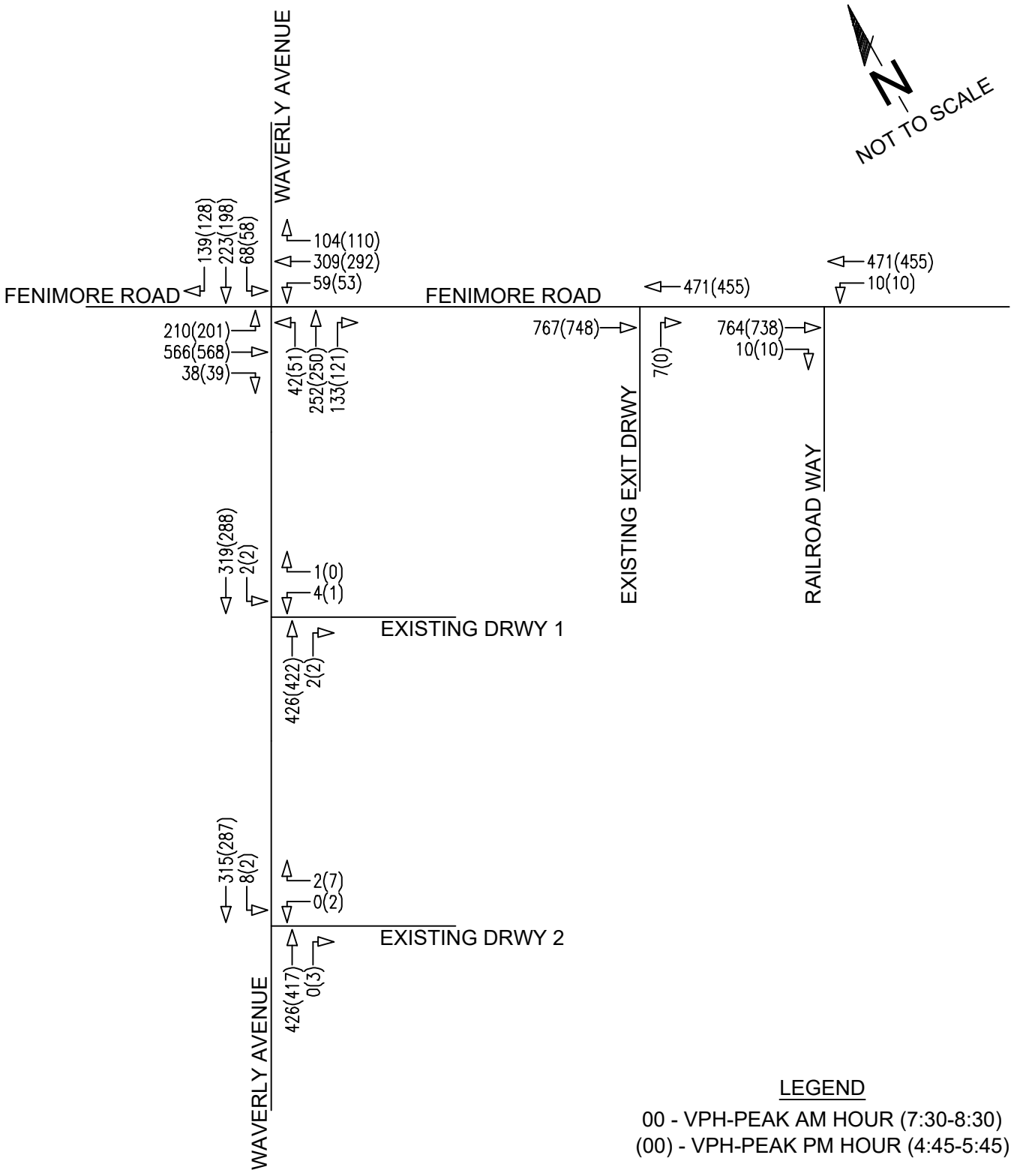
APPENDIX A

Figures



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Project No. 17-060
September 2020

Existing Traffic Volumes
Mamaroneck, Westchester, NY

Figure No. 01

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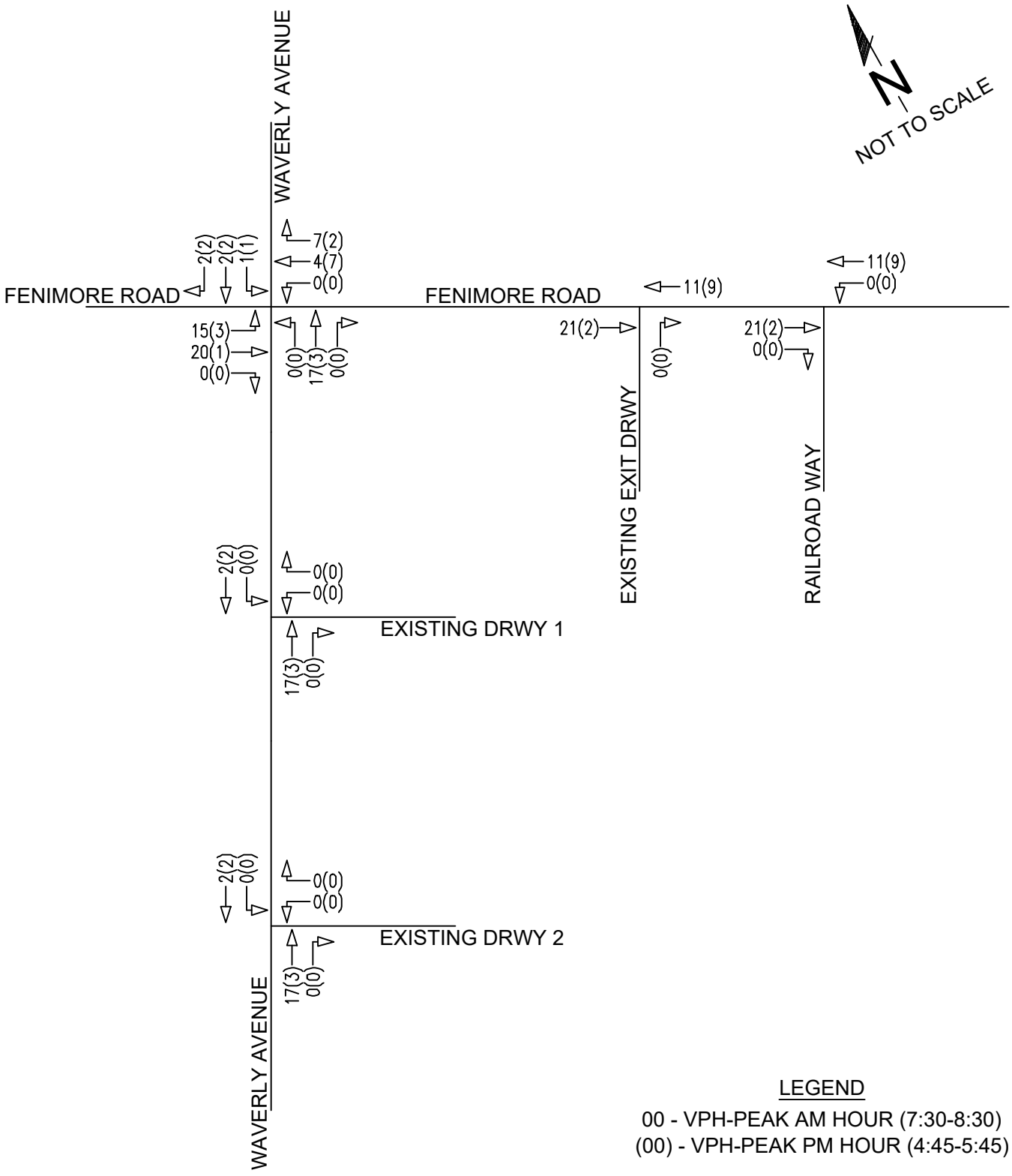

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Adjacent Development Traffic Volumes
Mamaroneck, Westchester, NY

Figure No. 02

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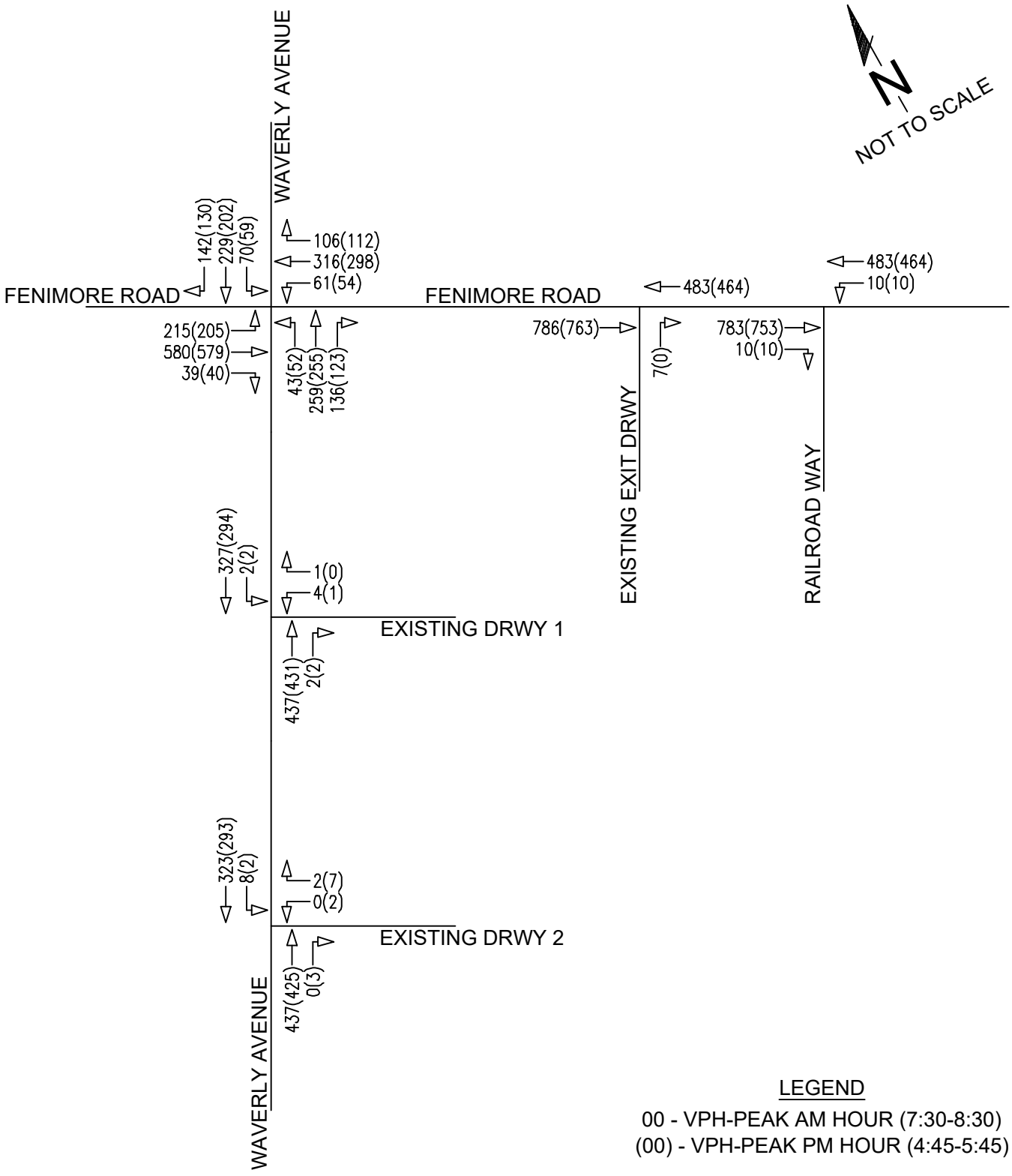

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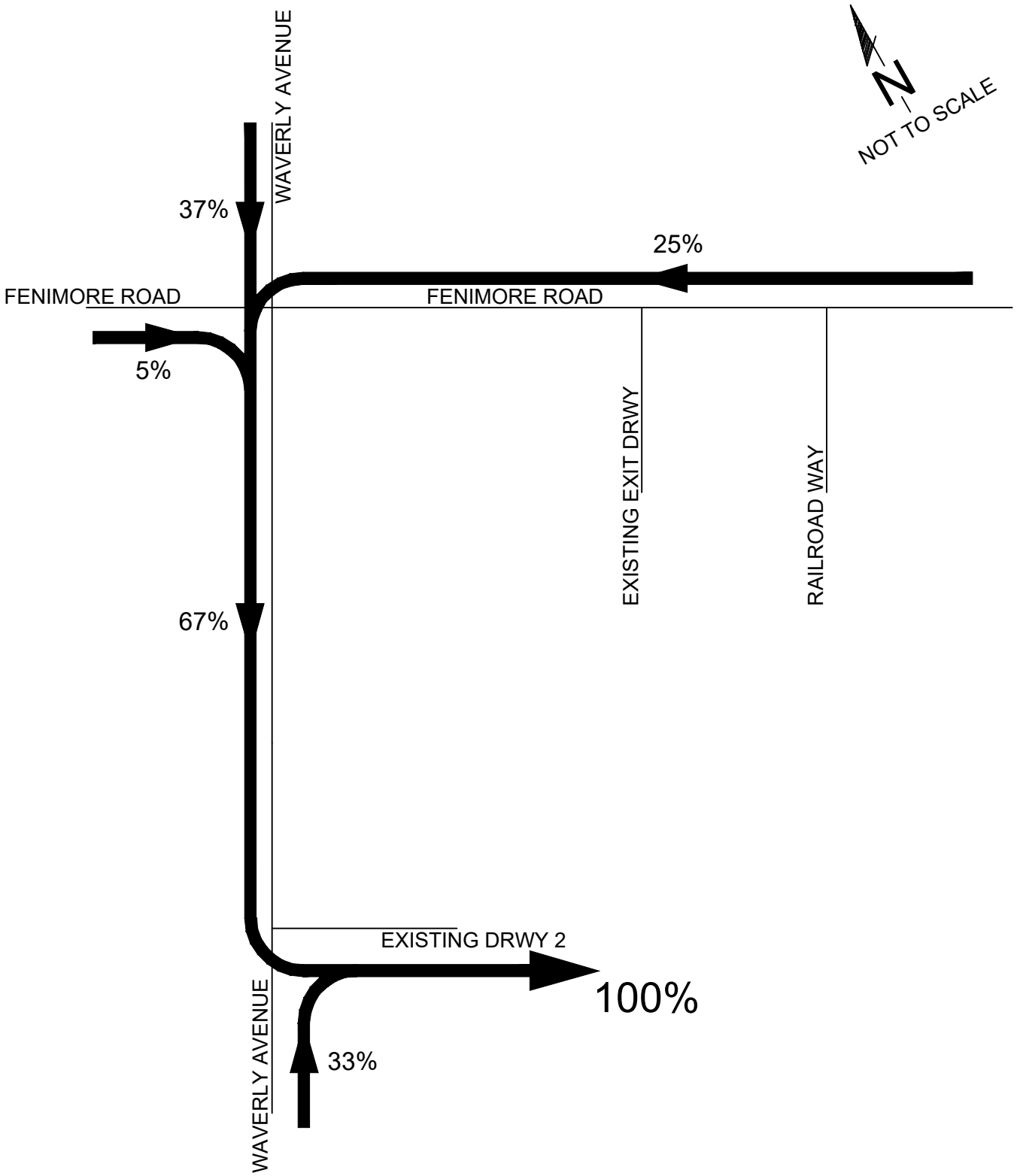
No-Build Traffic Volumes
Mamaroneck, Westchester, NY

Figure No. 03



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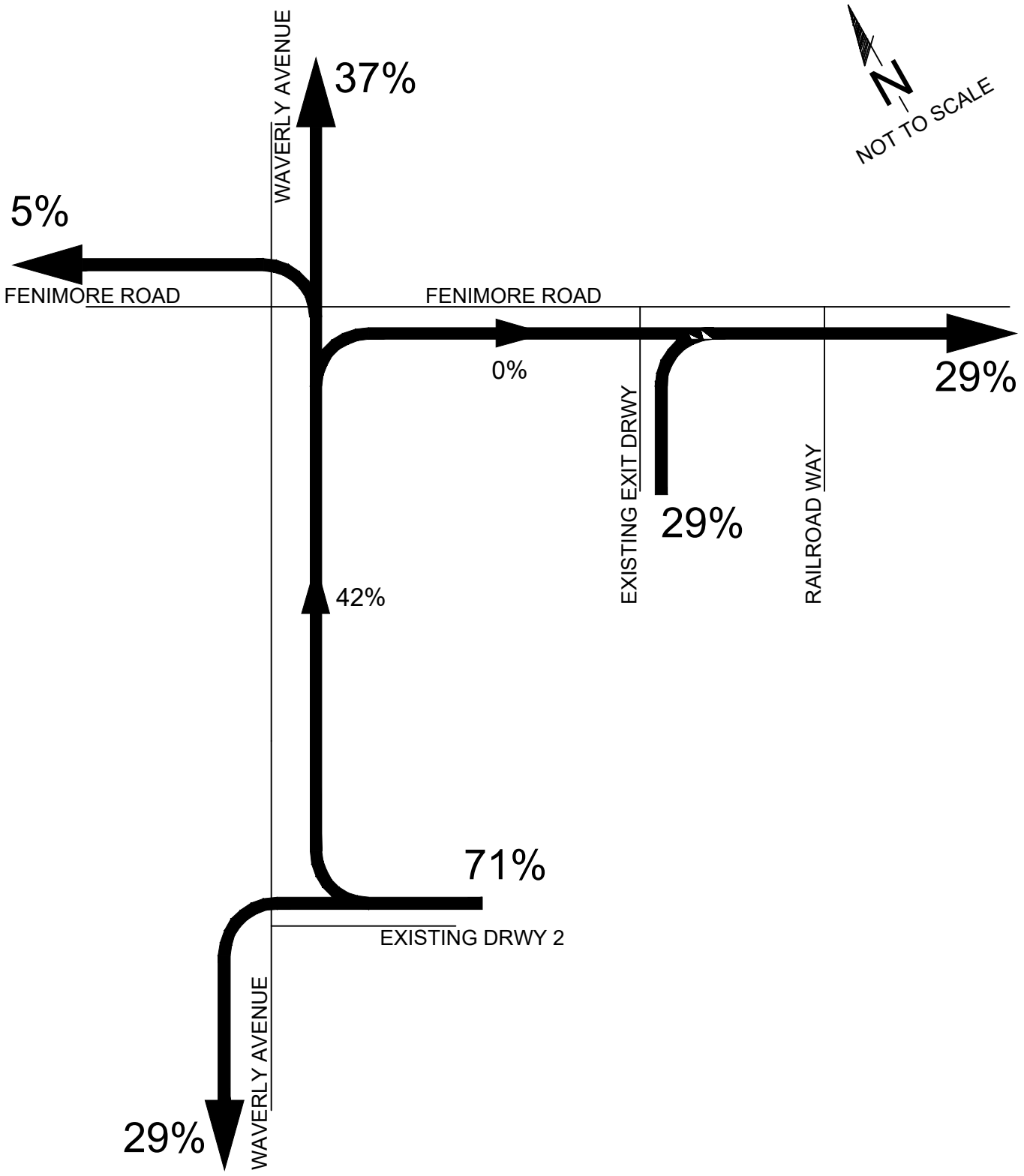
Arrival Distribution
Mamaroneck, Westchester, NY

Figure No. 04



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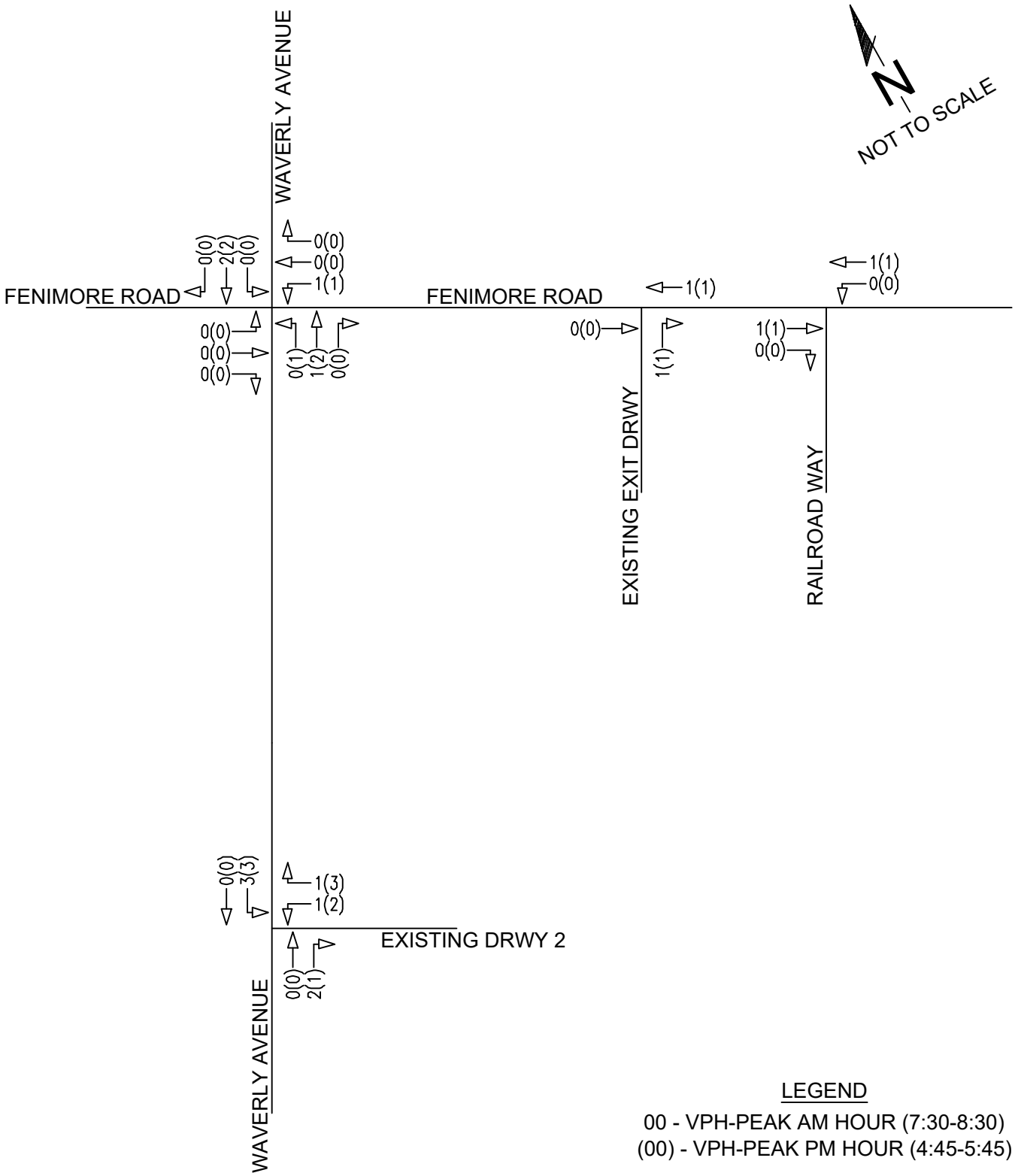
Departure Distribution
Mamaroneck, Westchester, NY

Figure No. 05



LEGEND

00 - VPH-PEAK AM HOUR (7:30-8:30)

(00) - VPH-PEAK PM HOUR (4:45-5:45)

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Project Generated Traffic Volumes
Mamaroneck, Westchester, NY

Figure No. 06

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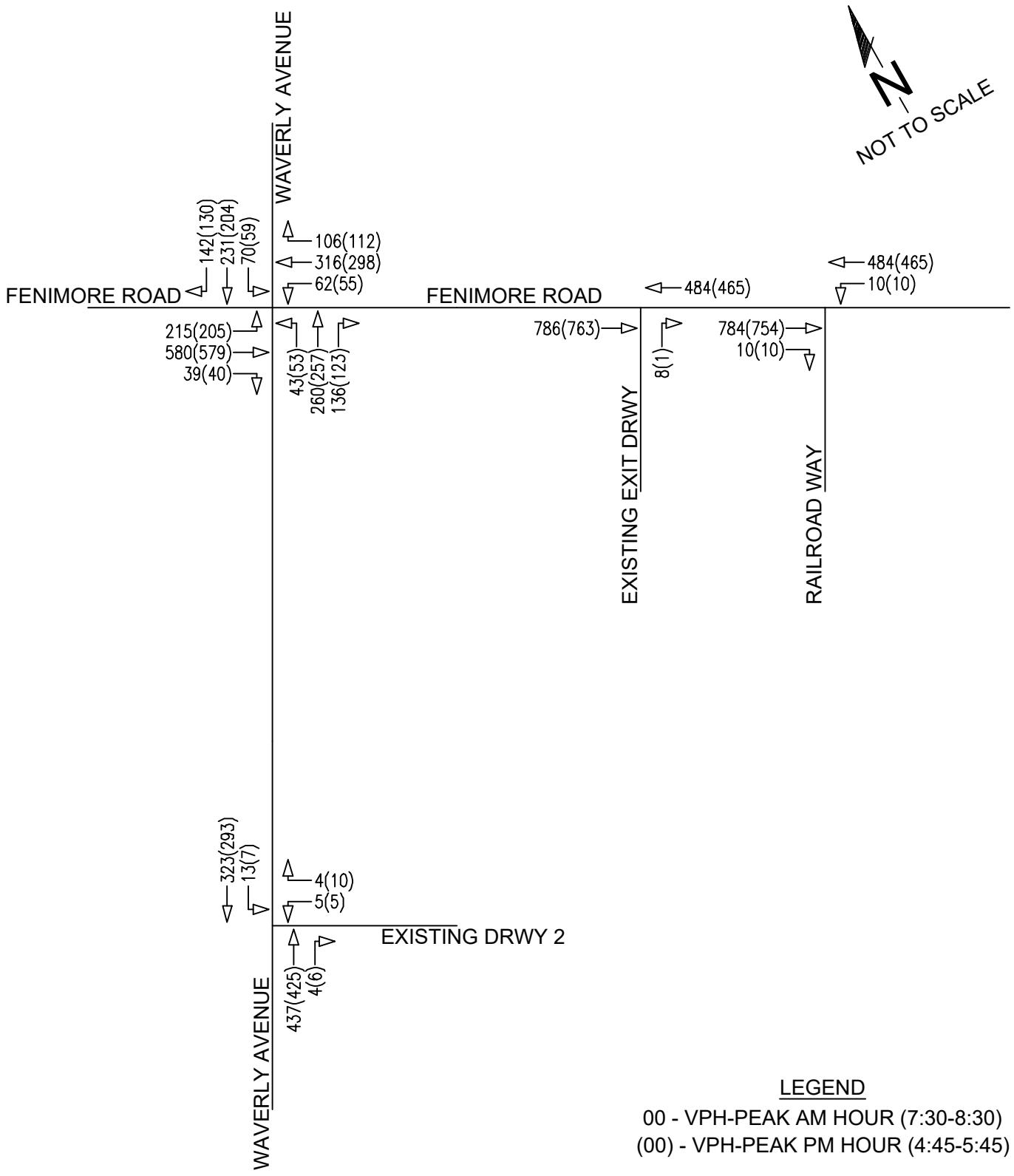

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Project No. 17-060
September 2020

Build Traffic Figures

Mamaroneck, Westchester, NY

Figure No. 07

APPENDIX B

Level of Service Analysis

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	210	566	38	59	309	104	42	252	133	68	223	139
Future Volume (veh/h)	210	566	38	59	309	104	42	252	133	68	223	139
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj (A_pbT)	1.00		0.99	1.00		0.99	1.00		0.98	1.00		0.98
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	228	615	41	64	336	113	46	274	145	74	242	151
Adj No. of Lanes	1	1	1	1	1	1	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	542	1068	899	368	795	667	202	361	191	185	338	211
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.10	0.57	0.57	0.43	0.43	0.43	0.32	0.32	0.32	0.32	0.32	0.32
Ln Grp Delay, s/veh	13.2	13.4	7.8	19.2	18.1	15.1	36.2	0.0	34.6	42.3	0.0	32.6
Ln Grp LOS	B	B	A	B	B	B	D		C	D		C
Approach Vol, veh/h		884			513			465			467	
Approach Delay, s/veh		13.1			17.6			34.8			34.1	
Approach LOS		B			B			C			C	

Timer:	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6	7	8
Case No		6.0		3.0		6.0	1.2	5.0
Phs Duration (G+Y+Rc), s		30.0		52.0		30.0	12.0	40.0
Change Period (Y+Rc), s		4.0		5.0		4.0	4.0	5.0
Max Green (Gmax), s		26.0		47.0		26.0	8.0	35.0
Max Allow Headway (MAH), s		5.3		5.2		5.3	3.8	5.1
Max Q Clear (g_c+I1), s		22.0		19.3		25.9	7.5	12.3
Green Ext Time (g_e), s		1.1		4.7		0.0	0.0	2.9
Prob of Phs Call (p_c)		1.00		1.00		1.00	1.00	1.00
Prob of Max Out (p_x)		0.00		0.00		0.00	0.00	0.00
Left-Turn Movement Data								
Assigned Mvmt		5				1	7	3
Mvmt Sat Flow, veh/h		986				963	1774	771
Through Movement Data								
Assigned Mvmt		2		4		6		8
Mvmt Sat Flow, veh/h		1139		1863		1065		1863
Right-Turn Movement Data								
Assigned Mvmt		12		14		16		18
Mvmt Sat Flow, veh/h		603		1568		664		1563
Left Lane Group Data								
Assigned Mvmt	0	5	0	0	0	1	7	3
Lane Assignment							(Pr/Pm)	

Lanes in Grp	0	1	0	0	0	1	1	1
Grp Vol (v), veh/h	0	46	0	0	0	74	228	64
Grp Sat Flow (s), veh/h/ln	0	986	0	0	0	963	1774	771
Q Serve Time (g_s), s	0.0	3.5	0.0	0.0	0.0	6.1	5.5	4.7
Cycle Q Clear Time (g_c), s	0.0	20.0	0.0	0.0	0.0	23.9	5.5	10.0
Perm LT Sat Flow (s_l), veh/h/ln	0	986	0	0	0	963	936	771
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	0.0	26.0	0.0	0.0	0.0	26.0	37.0	35.0
Perm LT Serve Time (g_u), s	0.0	9.5	0.0	0.0	0.0	8.3	24.7	29.7
Perm LT Q Serve Time (g_ps), s	0.0	3.5	0.0	0.0	0.0	6.1	4.0	4.7
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	0.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00
Lane Grp Cap (c), veh/h	0	202	0	0	0	185	542	368
V/C Ratio (X)	0.00	0.23	0.00	0.00	0.00	0.40	0.42	0.17
Avail Cap (c_a), veh/h	0	202	0	0	0	185	542	368
Upstream Filter (I)	0.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d1), s/veh	0.0	33.6	0.0	0.0	0.0	35.9	10.8	18.2
Incr Delay (d2), s/veh	0.0	2.6	0.0	0.0	0.0	6.4	2.4	1.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	36.2	0.0	0.0	0.0	42.3	13.2	19.2
1st-Term Q (Q1), veh/ln	0.0	1.0	0.0	0.0	0.0	1.6	2.6	1.0
2nd-Term Q (Q2), veh/ln	0.0	0.1	0.0	0.0	0.0	0.3	0.4	0.1
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00
%ile Back of Q (50%), veh/ln	0.0	1.1	0.0	0.0	0.0	2.0	3.0	1.1
%ile Storage Ratio (RQ%)	0.00	0.56	0.00	0.00	0.00	0.76	0.94	1.55
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Middle Lane Group Data								
Assigned Mvmt	0	2	0	4	0	6	0	8
Lane Assignment				T				T
Lanes in Grp	0	0	0	1	0	0	0	1
Grp Vol (v), veh/h	0	0	0	615	0	0	0	336
Grp Sat Flow (s), veh/h/ln	0	0	0	1863	0	0	0	1863
Q Serve Time (g_s), s	0.0	0.0	0.0	17.3	0.0	0.0	0.0	10.3
Cycle Q Clear Time (g_c), s	0.0	0.0	0.0	17.3	0.0	0.0	0.0	10.3
Lane Grp Cap (c), veh/h	0	0	0	1068	0	0	0	795
V/C Ratio (X)	0.00	0.00	0.00	0.58	0.00	0.00	0.00	0.42
Avail Cap (c_a), veh/h	0	0	0	1068	0	0	0	795
Upstream Filter (I)	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	0.0	0.0	11.2	0.0	0.0	0.0	16.4
Incr Delay (d2), s/veh	0.0	0.0	0.0	2.3	0.0	0.0	0.0	1.6
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	0.0	13.4	0.0	0.0	0.0	18.1
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	8.7	0.0	0.0	0.0	5.3

2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.4
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.0	0.0	9.4	0.0	0.0	0.0	5.7
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	1.07	0.00	0.00	0.00	8.02
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Right Lane Group Data								
Assigned Mvmt	0	12	0	14	0	16	0	18
Lane Assignment		T+R		R		T+R		R
Lanes in Grp	0	1	0	1	0	1	0	1
Grp Vol (v), veh/h	0	419	0	41	0	393	0	113
Grp Sat Flow (s), veh/h/ln	0	1742	0	1568	0	1729	0	1563
Q Serve Time (g_s), s	0.0	17.7	0.0	0.9	0.0	16.5	0.0	3.7
Cycle Q Clear Time (g_c), s	0.0	17.7	0.0	0.9	0.0	16.5	0.0	3.7
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	0.35	0.00	1.00	0.00	0.38	0.00	1.00
Lane Grp Cap (c), veh/h	0	552	0	899	0	548	0	667
V/C Ratio (X)	0.00	0.76	0.00	0.05	0.00	0.72	0.00	0.17
Avail Cap (c_a), veh/h	0	552	0	899	0	548	0	667
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	25.2	0.0	7.7	0.0	24.7	0.0	14.5
Incr Delay (d2), s/veh	0.0	9.4	0.0	0.1	0.0	7.8	0.0	0.5
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	34.6	0.0	7.8	0.0	32.6	0.0	15.1
1st-Term Q (Q1), veh/ln	0.0	8.5	0.0	0.4	0.0	7.9	0.0	1.6
2nd-Term Q (Q2), veh/ln	0.0	1.4	0.0	0.0	0.0	1.2	0.0	0.1
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	9.9	0.0	0.4	0.0	9.1	0.0	1.7
%ile Storage Ratio (RQ%)	0.00	4.95	0.00	0.14	0.00	0.53	0.00	2.36
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	22.6
HCM 2010 LOS	C

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	767	0	0	471	0	7
Future Vol, veh/h	767	0	0	471	0	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	834	0	0	512	0	8

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	-	834
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.319
Pot Cap-1 Maneuver	-	0	0	-	0	367
Stage 1	-	0	0	-	0	-
Stage 2	-	0	0	-	0	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	-	367
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	15
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	367	-	-
HCM Lane V/C Ratio	0.021	-	-
HCM Control Delay (s)	15	-	-
HCM Lane LOS	C	-	-
HCM 95th %tile Q(veh)	0.1	-	-

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	1	426	2	2	319
Future Vol, veh/h	4	1	426	2	2	319
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	1	463	2	2	347

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	815	464	0	0	465	0
Stage 1	464	-	-	-	-	-
Stage 2	351	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	347	598	-	-	1096	-
Stage 1	633	-	-	-	-	-
Stage 2	713	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	346	598	-	-	1096	-
Mov Cap-2 Maneuver	346	-	-	-	-	-
Stage 1	633	-	-	-	-	-
Stage 2	712	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.7	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	378	1096	-
HCM Lane V/C Ratio	-	-	0.014	0.002	-
HCM Control Delay (s)	-	-	14.7	8.3	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	2	426	0	8	315
Future Vol, veh/h	0	2	426	0	8	315
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	2	463	0	9	342

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	823	463	0	0	463	0
Stage 1	463	-	-	-	-	-
Stage 2	360	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	343	599	-	-	1098	-
Stage 1	634	-	-	-	-	-
Stage 2	706	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	340	599	-	-	1098	-
Mov Cap-2 Maneuver	340	-	-	-	-	-
Stage 1	634	-	-	-	-	-
Stage 2	699	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11	0	0.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	599	1098	-
HCM Lane V/C Ratio	-	-	0.004	0.008	-
HCM Control Delay (s)	-	-	11	8.3	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Volume (veh/h)	764	10	10	471	0	0
Future Volume (Veh/h)	764	10	10	471	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	830	11	11	512	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	182					
pX, platoon unblocked			0.76		0.76	0.76
vC, conflicting volume			841		1370	836
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			635		1329	628
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		100	100
cM capacity (veh/h)			722		128	368

Direction, Lane #	EB 1	WB 1
Volume Total	841	523
Volume Left	0	11
Volume Right	11	0
cSH	1700	722
Volume to Capacity	0.49	0.02
Queue Length 95th (ft)	0	1
Control Delay (s)	0.0	0.4
Lane LOS		A
Approach Delay (s)	0.0	0.4
Approach LOS		

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	44.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	215	580	39	61	316	106	43	259	136	70	229	142
Future Volume (veh/h)	215	580	39	61	316	106	43	259	136	70	229	142
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj (A_pbT)	1.00		0.99	1.00		0.99	1.00		0.98	1.00		0.98
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	234	630	42	66	343	115	47	282	148	76	249	154
Adj No. of Lanes	1	1	1	1	1	1	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	537	1068	899	358	795	667	195	362	190	177	339	210
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.10	0.57	0.57	0.43	0.43	0.43	0.32	0.32	0.32	0.32	0.32	0.32
Ln Grp Delay, s/veh	13.5	13.7	7.8	19.8	18.2	15.1	37.1	0.0	35.8	44.1	0.0	33.4
Ln Grp LOS	B	B	A	B	B	B	D		D	D		C
Approach Vol, veh/h		906			524			477			479	
Approach Delay, s/veh		13.4			17.7			35.9			35.1	
Approach LOS		B			B			D			D	

Timer:	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6	7	8
Case No		6.0		3.0		6.0	1.2	5.0
Phs Duration (G+Y+Rc), s		30.0		52.0		30.0	12.0	40.0
Change Period (Y+Rc), s		4.0		5.0		4.0	4.0	5.0
Max Green (Gmax), s		26.0		47.0		26.0	8.0	35.0
Max Allow Headway (MAH), s		5.3		5.2		5.3	3.8	5.1
Max Q Clear (g_c+I1), s		22.7		19.9		26.8	7.6	12.9
Green Ext Time (g_e), s		0.9		4.8		0.0	0.0	3.0
Prob of Phs Call (p_c)		1.00		1.00		1.00	1.00	1.00
Prob of Max Out (p_x)		0.00		0.00		0.00	0.00	0.00

Left-Turn Movement Data								
Assigned Mvmt		5				1	7	3
Mvmt Sat Flow, veh/h		977				954	1774	760

Through Movement Data								
Assigned Mvmt		2		4		6		8
Mvmt Sat Flow, veh/h		1143		1863		1069		1863

Right-Turn Movement Data								
Assigned Mvmt		12		14		16		18
Mvmt Sat Flow, veh/h		600		1568		661		1563

Left Lane Group Data								
Assigned Mvmt	0	5	0	0	0	1	7	3
Lane Assignment							(Pr/Pm)	

Lanes in Grp	0	1	0	0	0	1	1	1
Grp Vol (v), veh/h	0	47	0	0	0	76	234	66
Grp Sat Flow (s), veh/h/ln	0	977	0	0	0	954	1774	760
Q Serve Time (g_s), s	0.0	3.7	0.0	0.0	0.0	6.4	5.6	5.0
Cycle Q Clear Time (g_c), s	0.0	20.7	0.0	0.0	0.0	24.8	5.6	10.9
Perm LT Sat Flow (s_l), veh/h/ln	0	977	0	0	0	954	928	760
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	0.0	26.0	0.0	0.0	0.0	26.0	37.0	35.0
Perm LT Serve Time (g_u), s	0.0	9.0	0.0	0.0	0.0	7.6	24.4	29.1
Perm LT Q Serve Time (g_ps), s	0.0	3.7	0.0	0.0	0.0	6.4	4.3	5.0
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	0.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00
Lane Grp Cap (c), veh/h	0	195	0	0	0	177	537	358
V/C Ratio (X)	0.00	0.24	0.00	0.00	0.00	0.43	0.44	0.18
Avail Cap (c_a), veh/h	0	195	0	0	0	177	537	358
Upstream Filter (I)	0.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d1), s/veh	0.0	34.1	0.0	0.0	0.0	36.6	10.9	18.7
Incr Delay (d2), s/veh	0.0	2.9	0.0	0.0	0.0	7.5	2.6	1.1
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	37.1	0.0	0.0	0.0	44.1	13.5	19.8
1st-Term Q (Q1), veh/ln	0.0	1.0	0.0	0.0	0.0	1.7	2.7	1.0
2nd-Term Q (Q2), veh/ln	0.0	0.2	0.0	0.0	0.0	0.4	0.4	0.1
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00
%ile Back of Q (50%), veh/ln	0.0	1.1	0.0	0.0	0.0	2.1	3.0	1.2
%ile Storage Ratio (RQ%)	0.00	0.57	0.00	0.00	0.00	0.80	0.97	1.63
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Middle Lane Group Data								
Assigned Mvmt	0	2	0	4	0	6	0	8
Lane Assignment				T				T
Lanes in Grp	0	0	0	1	0	0	0	1
Grp Vol (v), veh/h	0	0	0	630	0	0	0	343
Grp Sat Flow (s), veh/h/ln	0	0	0	1863	0	0	0	1863
Q Serve Time (g_s), s	0.0	0.0	0.0	17.9	0.0	0.0	0.0	10.6
Cycle Q Clear Time (g_c), s	0.0	0.0	0.0	17.9	0.0	0.0	0.0	10.6
Lane Grp Cap (c), veh/h	0	0	0	1068	0	0	0	795
V/C Ratio (X)	0.00	0.00	0.00	0.59	0.00	0.00	0.00	0.43
Avail Cap (c_a), veh/h	0	0	0	1068	0	0	0	795
Upstream Filter (I)	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	0.0	0.0	11.3	0.0	0.0	0.0	16.5
Incr Delay (d2), s/veh	0.0	0.0	0.0	2.4	0.0	0.0	0.0	1.7
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	0.0	13.7	0.0	0.0	0.0	18.2
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	9.1	0.0	0.0	0.0	5.4

2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.4
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.0	0.0	9.8	0.0	0.0	0.0	5.8
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	1.12	0.00	0.00	0.00	8.19
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Right Lane Group Data								
Assigned Mvmt	0	12	0	14	0	16	0	18
Lane Assignment		T+R		R		T+R		R
Lanes in Grp	0	1	0	1	0	1	0	1
Grp Vol (v), veh/h	0	430	0	42	0	403	0	115
Grp Sat Flow (s), veh/h/ln	0	1742	0	1568	0	1730	0	1563
Q Serve Time (g_s), s	0.0	18.4	0.0	1.0	0.0	17.0	0.0	3.7
Cycle Q Clear Time (g_c), s	0.0	18.4	0.0	1.0	0.0	17.0	0.0	3.7
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	0.34	0.00	1.00	0.00	0.38	0.00	1.00
Lane Grp Cap (c), veh/h	0	552	0	899	0	548	0	667
V/C Ratio (X)	0.00	0.78	0.00	0.05	0.00	0.73	0.00	0.17
Avail Cap (c_a), veh/h	0	552	0	899	0	548	0	667
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	25.4	0.0	7.7	0.0	24.9	0.0	14.5
Incr Delay (d2), s/veh	0.0	10.4	0.0	0.1	0.0	8.5	0.0	0.6
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	35.8	0.0	7.8	0.0	33.4	0.0	15.1
1st-Term Q (Q1), veh/ln	0.0	8.8	0.0	0.4	0.0	8.1	0.0	1.6
2nd-Term Q (Q2), veh/ln	0.0	1.6	0.0	0.0	0.0	1.3	0.0	0.1
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	10.4	0.0	0.4	0.0	9.4	0.0	1.7
%ile Storage Ratio (RQ%)	0.00	5.19	0.00	0.15	0.00	0.55	0.00	2.40
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	23.2
HCM 2010 LOS	C

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	786	0	0	483	0	7
Future Vol, veh/h	786	0	0	483	0	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	854	0	0	525	0	8

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	-	854
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.319
Pot Cap-1 Maneuver	-	0	0	-	0	357
Stage 1	-	0	0	-	0	-
Stage 2	-	0	0	-	0	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	-	357
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	15.3
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	357	-	-
HCM Lane V/C Ratio	0.021	-	-
HCM Control Delay (s)	15.3	-	-
HCM Lane LOS	C	-	-
HCM 95th %tile Q(veh)	0.1	-	-

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	1	437	2	2	327
Future Vol, veh/h	4	1	437	2	2	327
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	1	475	2	2	355

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	835	476	0	0	477	0
Stage 1	476	-	-	-	-	-
Stage 2	359	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	338	589	-	-	1085	-
Stage 1	625	-	-	-	-	-
Stage 2	707	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	337	589	-	-	1085	-
Mov Cap-2 Maneuver	337	-	-	-	-	-
Stage 1	625	-	-	-	-	-
Stage 2	706	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.9	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	369	1085	-
HCM Lane V/C Ratio	-	-	0.015	0.002	-
HCM Control Delay (s)	-	-	14.9	8.3	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	2	437	0	8	323
Future Vol, veh/h	0	2	437	0	8	323
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	2	475	0	9	351

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	844	475	0	0	475	0
Stage 1	475	-	-	-	-	-
Stage 2	369	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	334	590	-	-	1087	-
Stage 1	626	-	-	-	-	-
Stage 2	699	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	331	590	-	-	1087	-
Mov Cap-2 Maneuver	331	-	-	-	-	-
Stage 1	626	-	-	-	-	-
Stage 2	692	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.1	0	0.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	590	1087	-
HCM Lane V/C Ratio	-	-	0.004	0.008	-
HCM Control Delay (s)	-	-	11.1	8.3	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Volume (veh/h)	783	10	10	483	0	0
Future Volume (Veh/h)	783	10	10	483	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	851	11	11	525	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	182					
pX, platoon unblocked			0.75		0.75	0.75
vC, conflicting volume			862		1404	856
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			652		1372	644
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		100	100
cM capacity (veh/h)			703		119	355

Direction, Lane #	EB 1	WB 1
Volume Total	862	536
Volume Left	0	11
Volume Right	11	0
cSH	1700	703
Volume to Capacity	0.51	0.02
Queue Length 95th (ft)	0	1
Control Delay (s)	0.0	0.4
Lane LOS		A
Approach Delay (s)	0.0	0.4
Approach LOS		

Intersection Summary				
Average Delay	0.2			
Intersection Capacity Utilization	45.1%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	215	580	39	62	316	106	43	260	136	70	231	142
Future Volume (veh/h)	215	580	39	62	316	106	43	260	136	70	231	142
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj (A_pbT)	1.00		0.99	1.00		0.99	1.00		0.98	1.00		0.98
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	234	630	42	67	343	115	47	283	148	76	251	154
Adj No. of Lanes	1	1	1	1	1	1	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	537	1068	899	358	795	667	194	363	190	176	340	209
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.10	0.57	0.57	0.43	0.43	0.43	0.32	0.32	0.32	0.32	0.32	0.32
Ln Grp Delay, s/veh	13.5	13.7	7.8	19.9	18.2	15.1	37.2	0.0	35.9	44.2	0.0	33.6
Ln Grp LOS	B	B	A	B	B	B	D		D	D		C
Approach Vol, veh/h		906			525			478			481	
Approach Delay, s/veh		13.4			17.7			36.0			35.3	
Approach LOS		B			B			D			D	

Timer:	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6	7	8
Case No		6.0		3.0		6.0	1.2	5.0
Phs Duration (G+Y+Rc), s		30.0		52.0		30.0	12.0	40.0
Change Period (Y+Rc), s		4.0		5.0		4.0	4.0	5.0
Max Green (Gmax), s		26.0		47.0		26.0	8.0	35.0
Max Allow Headway (MAH), s		5.3		5.2		5.3	3.8	5.1
Max Q Clear (g_c+I1), s		22.8		19.9		26.9	7.6	13.0
Green Ext Time (g_e), s		0.9		4.8		0.0	0.0	3.0
Prob of Phs Call (p_c)		1.00		1.00		1.00	1.00	1.00
Prob of Max Out (p_x)		0.00		0.00		0.00	0.00	0.00
Left-Turn Movement Data								
Assigned Mvmt		5				1	7	3
Mvmt Sat Flow, veh/h		975				953	1774	760
Through Movement Data								
Assigned Mvmt		2		4		6		8
Mvmt Sat Flow, veh/h		1144		1863		1072		1863
Right-Turn Movement Data								
Assigned Mvmt		12		14		16		18
Mvmt Sat Flow, veh/h		598		1568		658		1563
Left Lane Group Data								
Assigned Mvmt	0	5	0	0	0	1	7	3
Lane Assignment							(Pr/Pm)	

Lanes in Grp	0	1	0	0	0	1	1	1
Grp Vol (v), veh/h	0	47	0	0	0	76	234	67
Grp Sat Flow (s), veh/h/ln	0	975	0	0	0	953	1774	760
Q Serve Time (g_s), s	0.0	3.7	0.0	0.0	0.0	6.4	5.6	5.1
Cycle Q Clear Time (g_c), s	0.0	20.8	0.0	0.0	0.0	24.9	5.6	11.0
Perm LT Sat Flow (s_l), veh/h/ln	0	975	0	0	0	953	928	760
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	0.0	26.0	0.0	0.0	0.0	26.0	37.0	35.0
Perm LT Serve Time (g_u), s	0.0	8.9	0.0	0.0	0.0	7.6	24.4	29.1
Perm LT Q Serve Time (g_ps), s	0.0	3.7	0.0	0.0	0.0	6.4	4.3	5.1
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	0.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00
Lane Grp Cap (c), veh/h	0	194	0	0	0	176	537	358
V/C Ratio (X)	0.00	0.24	0.00	0.00	0.00	0.43	0.44	0.19
Avail Cap (c_a), veh/h	0	194	0	0	0	176	537	358
Upstream Filter (I)	0.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d1), s/veh	0.0	34.2	0.0	0.0	0.0	36.7	10.9	18.7
Incr Delay (d2), s/veh	0.0	3.0	0.0	0.0	0.0	7.5	2.6	1.2
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	37.2	0.0	0.0	0.0	44.2	13.5	19.9
1st-Term Q (Q1), veh/ln	0.0	1.0	0.0	0.0	0.0	1.7	2.7	1.1
2nd-Term Q (Q2), veh/ln	0.0	0.2	0.0	0.0	0.0	0.4	0.4	0.1
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00
%ile Back of Q (50%), veh/ln	0.0	1.2	0.0	0.0	0.0	2.1	3.0	1.2
%ile Storage Ratio (RQ%)	0.00	0.54	0.00	0.00	0.00	0.80	0.97	1.66
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Middle Lane Group Data								
Assigned Mvmt	0	2	0	4	0	6	0	8
Lane Assignment				T				T
Lanes in Grp	0	0	0	1	0	0	0	1
Grp Vol (v), veh/h	0	0	0	630	0	0	0	343
Grp Sat Flow (s), veh/h/ln	0	0	0	1863	0	0	0	1863
Q Serve Time (g_s), s	0.0	0.0	0.0	17.9	0.0	0.0	0.0	10.6
Cycle Q Clear Time (g_c), s	0.0	0.0	0.0	17.9	0.0	0.0	0.0	10.6
Lane Grp Cap (c), veh/h	0	0	0	1068	0	0	0	795
V/C Ratio (X)	0.00	0.00	0.00	0.59	0.00	0.00	0.00	0.43
Avail Cap (c_a), veh/h	0	0	0	1068	0	0	0	795
Upstream Filter (I)	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	0.0	0.0	11.3	0.0	0.0	0.0	16.5
Incr Delay (d2), s/veh	0.0	0.0	0.0	2.4	0.0	0.0	0.0	1.7
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	0.0	13.7	0.0	0.0	0.0	18.2
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	9.1	0.0	0.0	0.0	5.4

2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.4
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.0	0.0	9.8	0.0	0.0	0.0	5.8
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	1.12	0.00	0.00	0.00	8.19
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Right Lane Group Data								
Assigned Mvmt	0	12	0	14	0	16	0	18
Lane Assignment		T+R		R		T+R		R
Lanes in Grp	0	1	0	1	0	1	0	1
Grp Vol (v), veh/h	0	431	0	42	0	405	0	115
Grp Sat Flow (s), veh/h/ln	0	1742	0	1568	0	1730	0	1563
Q Serve Time (g_s), s	0.0	18.4	0.0	1.0	0.0	17.1	0.0	3.7
Cycle Q Clear Time (g_c), s	0.0	18.4	0.0	1.0	0.0	17.1	0.0	3.7
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	0.34	0.00	1.00	0.00	0.38	0.00	1.00
Lane Grp Cap (c), veh/h	0	552	0	899	0	549	0	667
V/C Ratio (X)	0.00	0.78	0.00	0.05	0.00	0.74	0.00	0.17
Avail Cap (c_a), veh/h	0	552	0	899	0	549	0	667
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	25.4	0.0	7.7	0.0	25.0	0.0	14.5
Incr Delay (d2), s/veh	0.0	10.5	0.0	0.1	0.0	8.6	0.0	0.6
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	35.9	0.0	7.8	0.0	33.6	0.0	15.1
1st-Term Q (Q1), veh/ln	0.0	8.9	0.0	0.4	0.0	8.1	0.0	1.6
2nd-Term Q (Q2), veh/ln	0.0	1.6	0.0	0.0	0.0	1.3	0.0	0.1
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	10.5	0.0	0.4	0.0	9.4	0.0	1.7
%ile Storage Ratio (RQ%)	0.00	4.92	0.00	0.15	0.00	0.55	0.00	2.40
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	23.3
HCM 2010 LOS	C

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	786	0	0	484	0	8
Future Vol, veh/h	786	0	0	484	0	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	854	0	0	526	0	9

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	-	854
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.319
Pot Cap-1 Maneuver	-	0	0	-	0	357
Stage 1	-	0	0	-	0	-
Stage 2	-	0	0	-	0	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	-	357
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	15.3
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	357	-	-
HCM Lane V/C Ratio	0.024	-	-
HCM Control Delay (s)	15.3	-	-
HCM Lane LOS	C	-	-
HCM 95th %tile Q(veh)	0.1	-	-

Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	5	4	437	4	13	323
Future Vol, veh/h	5	4	437	4	13	323
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	4	475	4	14	351

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	856	477	0	0	479	0
Stage 1	477	-	-	-	-	-
Stage 2	379	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	328	588	-	-	1083	-
Stage 1	624	-	-	-	-	-
Stage 2	692	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	323	588	-	-	1083	-
Mov Cap-2 Maneuver	323	-	-	-	-	-
Stage 1	624	-	-	-	-	-
Stage 2	681	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.1	0	0.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	404	1083	-
HCM Lane V/C Ratio	-	-	0.024	0.013	-
HCM Control Delay (s)	-	-	14.1	8.4	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Volume (veh/h)	784	10	10	484	0	0
Future Volume (Veh/h)	784	10	10	484	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	852	11	11	526	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	182					
pX, platoon unblocked			0.75		0.75	0.75
vC, conflicting volume			863		1406	858
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			653		1374	646
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		100	100
cM capacity (veh/h)			702		119	355

Direction, Lane #	EB 1	WB 1
Volume Total	863	537
Volume Left	0	11
Volume Right	11	0
cSH	1700	702
Volume to Capacity	0.51	0.02
Queue Length 95th (ft)	0	1
Control Delay (s)	0.0	0.4
Lane LOS		A
Approach Delay (s)	0.0	0.4
Approach LOS		

Intersection Summary				
Average Delay	0.2			
Intersection Capacity Utilization	45.2%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	201	568	39	53	292	110	51	250	121	58	198	128
Future Volume (veh/h)	201	568	39	53	292	110	51	250	121	58	198	128
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj (A_pbT)	1.00		0.99	1.00		0.99	1.00		0.98	1.00		0.98
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	218	617	42	58	317	120	55	272	132	63	215	139
Adj No. of Lanes	1	1	1	1	1	1	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	553	1068	899	366	795	667	231	373	181	197	332	215
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.10	0.57	0.57	0.43	0.43	0.43	0.32	0.32	0.32	0.32	0.32	0.32
Ln Grp Delay, s/veh	12.7	13.4	7.8	19.0	17.7	15.2	34.4	0.0	33.1	38.8	0.0	29.9
Ln Grp LOS	B	B	A	B	B	B	C		C	D		C
Approach Vol, veh/h		877			495			459			417	
Approach Delay, s/veh		13.0			17.3			33.2			31.2	
Approach LOS		B			B			C			C	

Timer:	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6	7	8
Case No		6.0		3.0		6.0	1.2	5.0
Phs Duration (G+Y+Rc), s		30.0		52.0		30.0	12.0	40.0
Change Period (Y+Rc), s		4.0		5.0		4.0	4.0	5.0
Max Green (Gmax), s		26.0		47.0		26.0	8.0	35.0
Max Allow Headway (MAH), s		5.3		5.2		5.3	3.8	5.0
Max Q Clear (g_c+I1), s		20.5		19.3		23.9	7.2	11.6
Green Ext Time (g_e), s		1.4		4.7		0.5	0.1	2.8
Prob of Phs Call (p_c)		1.00		1.00		1.00	1.00	1.00
Prob of Max Out (p_x)		0.00		0.00		0.00	0.00	0.00
Left-Turn Movement Data								
Assigned Mvmt		5				1	7	3
Mvmt Sat Flow, veh/h		1020				976	1774	769
Through Movement Data								
Assigned Mvmt		2		4		6		8
Mvmt Sat Flow, veh/h		1177		1863		1049		1863
Right-Turn Movement Data								
Assigned Mvmt		12		14		16		18
Mvmt Sat Flow, veh/h		571		1568		678		1563
Left Lane Group Data								
Assigned Mvmt	0	5	0	0	0	1	7	3
Lane Assignment							(Pr/Pm)	

Lanes in Grp	0	1	0	0	0	1	1	1
Grp Vol (v), veh/h	0	55	0	0	0	63	218	58
Grp Sat Flow (s), veh/h/ln	0	1020	0	0	0	976	1774	769
Q Serve Time (g_s), s	0.0	4.0	0.0	0.0	0.0	5.0	5.2	4.3
Cycle Q Clear Time (g_c), s	0.0	18.5	0.0	0.0	0.0	21.9	5.2	9.6
Perm LT Sat Flow (s_l), veh/h/ln	0	1020	0	0	0	976	946	769
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	0.0	26.0	0.0	0.0	0.0	26.0	37.0	35.0
Perm LT Serve Time (g_u), s	0.0	11.6	0.0	0.0	0.0	9.2	25.4	29.7
Perm LT Q Serve Time (g_ps), s	0.0	4.0	0.0	0.0	0.0	5.0	3.5	4.3
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	0.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00
Lane Grp Cap (c), veh/h	0	231	0	0	0	197	553	366
V/C Ratio (X)	0.00	0.24	0.00	0.00	0.00	0.32	0.39	0.16
Avail Cap (c_a), veh/h	0	231	0	0	0	197	553	366
Upstream Filter (I)	0.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d1), s/veh	0.0	32.0	0.0	0.0	0.0	34.6	10.6	18.1
Incr Delay (d2), s/veh	0.0	2.4	0.0	0.0	0.0	4.2	2.1	0.9
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	34.4	0.0	0.0	0.0	38.8	12.7	19.0
1st-Term Q (Q1), veh/ln	0.0	1.1	0.0	0.0	0.0	1.3	2.5	0.9
2nd-Term Q (Q2), veh/ln	0.0	0.2	0.0	0.0	0.0	0.2	0.3	0.1
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00
%ile Back of Q (50%), veh/ln	0.0	1.3	0.0	0.0	0.0	1.6	2.8	1.0
%ile Storage Ratio (RQ%)	0.00	0.64	0.00	0.00	0.00	0.62	0.89	1.41
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Middle Lane Group Data								
Assigned Mvmt	0	2	0	4	0	6	0	8
Lane Assignment				T				T
Lanes in Grp	0	0	0	1	0	0	0	1
Grp Vol (v), veh/h	0	0	0	617	0	0	0	317
Grp Sat Flow (s), veh/h/ln	0	0	0	1863	0	0	0	1863
Q Serve Time (g_s), s	0.0	0.0	0.0	17.3	0.0	0.0	0.0	9.6
Cycle Q Clear Time (g_c), s	0.0	0.0	0.0	17.3	0.0	0.0	0.0	9.6
Lane Grp Cap (c), veh/h	0	0	0	1068	0	0	0	795
V/C Ratio (X)	0.00	0.00	0.00	0.58	0.00	0.00	0.00	0.40
Avail Cap (c_a), veh/h	0	0	0	1068	0	0	0	795
Upstream Filter (I)	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	0.0	0.0	11.2	0.0	0.0	0.0	16.2
Incr Delay (d2), s/veh	0.0	0.0	0.0	2.3	0.0	0.0	0.0	1.5
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	0.0	13.4	0.0	0.0	0.0	17.7
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	8.7	0.0	0.0	0.0	4.9

2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.3
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.0	0.0	9.4	0.0	0.0	0.0	5.3
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	1.08	0.00	0.00	0.00	7.42
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Right Lane Group Data								
Assigned Mvmt	0	12	0	14	0	16	0	18
Lane Assignment		T+R		R		T+R		R
Lanes in Grp	0	1	0	1	0	1	0	1
Grp Vol (v), veh/h	0	404	0	42	0	354	0	120
Grp Sat Flow (s), veh/h/ln	0	1748	0	1568	0	1726	0	1563
Q Serve Time (g_s), s	0.0	16.8	0.0	1.0	0.0	14.4	0.0	3.9
Cycle Q Clear Time (g_c), s	0.0	16.8	0.0	1.0	0.0	14.4	0.0	3.9
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	0.33	0.00	1.00	0.00	0.39	0.00	1.00
Lane Grp Cap (c), veh/h	0	554	0	899	0	547	0	667
V/C Ratio (X)	0.00	0.73	0.00	0.05	0.00	0.65	0.00	0.18
Avail Cap (c_a), veh/h	0	554	0	899	0	547	0	667
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	24.9	0.0	7.7	0.0	24.1	0.0	14.6
Incr Delay (d2), s/veh	0.0	8.2	0.0	0.1	0.0	5.8	0.0	0.6
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	33.1	0.0	7.8	0.0	29.9	0.0	15.2
1st-Term Q (Q1), veh/ln	0.0	8.1	0.0	0.4	0.0	6.9	0.0	1.7
2nd-Term Q (Q2), veh/ln	0.0	1.3	0.0	0.0	0.0	0.9	0.0	0.1
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	9.3	0.0	0.4	0.0	7.8	0.0	1.8
%ile Storage Ratio (RQ%)	0.00	4.65	0.00	0.15	0.00	0.46	0.00	2.51
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	21.4
HCM 2010 LOS	C

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	748	0	0	455	0	0
Future Vol, veh/h	748	0	0	455	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	813	0	0	495	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	-	813
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.319
Pot Cap-1 Maneuver	-	0	0	-	0	377
Stage 1	-	0	0	-	0	-
Stage 2	-	0	0	-	0	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	-	377
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

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

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	0	422	2	2	288
Future Vol, veh/h	1	0	422	2	2	288
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	0	459	2	2	313

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	777	460	0	0	461	0
Stage 1	460	-	-	-	-	-
Stage 2	317	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	365	601	-	-	1100	-
Stage 1	636	-	-	-	-	-
Stage 2	738	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	364	601	-	-	1100	-
Mov Cap-2 Maneuver	364	-	-	-	-	-
Stage 1	636	-	-	-	-	-
Stage 2	737	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.9	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	364	1100	-
HCM Lane V/C Ratio	-	-	0.003	0.002	-
HCM Control Delay (s)	-	-	14.9	8.3	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	2	7	417	3	2	287
Future Vol, veh/h	2	7	417	3	2	287
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	8	453	3	2	312

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	771	455	0	0	456	0
Stage 1	455	-	-	-	-	-
Stage 2	316	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	368	605	-	-	1105	-
Stage 1	639	-	-	-	-	-
Stage 2	739	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	367	605	-	-	1105	-
Mov Cap-2 Maneuver	367	-	-	-	-	-
Stage 1	639	-	-	-	-	-
Stage 2	738	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.9	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	529	1105	-
HCM Lane V/C Ratio	-	-	0.018	0.002	-
HCM Control Delay (s)	-	-	11.9	8.3	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Volume (veh/h)	738	10	10	455	0	0
Future Volume (Veh/h)	738	10	10	455	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	802	11	11	495	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	182					
pX, platoon unblocked			0.77		0.77	0.77
vC, conflicting volume			813		1324	808
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			604		1271	597
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		100	100
cM capacity (veh/h)			747		140	386

Direction, Lane #	EB 1	WB 1
Volume Total	813	506
Volume Left	0	11
Volume Right	11	0
cSH	1700	747
Volume to Capacity	0.48	0.01
Queue Length 95th (ft)	0	1
Control Delay (s)	0.0	0.4
Lane LOS		A
Approach Delay (s)	0.0	0.4
Approach LOS		

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	42.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	205	579	40	54	298	112	52	255	123	59	202	130
Future Volume (veh/h)	205	579	40	54	298	112	52	255	123	59	202	130
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj (A_pbT)	1.00		0.99	1.00		0.99	1.00		0.98	1.00		0.98
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	223	629	43	59	324	122	57	277	134	64	220	141
Adj No. of Lanes	1	1	1	1	1	1	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	548	1068	899	358	795	667	226	374	181	192	334	214
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.10	0.57	0.57	0.43	0.43	0.43	0.32	0.32	0.32	0.32	0.32	0.32
Ln Grp Delay, s/veh	12.9	13.7	7.8	19.4	17.9	15.2	35.0	0.0	33.7	39.6	0.0	30.3
Ln Grp LOS	B	B	A	B	B	B	D		C	D		C
Approach Vol, veh/h		895			505			468			425	
Approach Delay, s/veh		13.2			17.4			33.8			31.7	
Approach LOS		B			B			C			C	

Timer:	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6	7	8
Case No		6.0		3.0		6.0	1.2	5.0
Phs Duration (G+Y+Rc), s		30.0		52.0		30.0	12.0	40.0
Change Period (Y+Rc), s		4.0		5.0		4.0	4.0	5.0
Max Green (Gmax), s		26.0		47.0		26.0	8.0	35.0
Max Allow Headway (MAH), s		5.3		5.2		5.3	3.8	5.0
Max Q Clear (g_c+I1), s		21.0		19.8		24.4	7.3	12.3
Green Ext Time (g_e), s		1.3		4.8		0.4	0.0	2.8
Prob of Phs Call (p_c)		1.00		1.00		1.00	1.00	1.00
Prob of Max Out (p_x)		0.00		0.00		0.00	0.00	0.00

Left-Turn Movement Data								
Assigned Mvmt		5				1	7	3
Mvmt Sat Flow, veh/h		1013				970	1774	760

Through Movement Data								
Assigned Mvmt		2		4		6		8
Mvmt Sat Flow, veh/h		1178		1863		1053		1863

Right-Turn Movement Data								
Assigned Mvmt		12		14		16		18
Mvmt Sat Flow, veh/h		570		1568		675		1563

Left Lane Group Data								
Assigned Mvmt	0	5	0	0	0	1	7	3
Lane Assignment							(Pr/Pm)	

Lanes in Grp	0	1	0	0	0	1	1	1
Grp Vol (v), veh/h	0	57	0	0	0	64	223	59
Grp Sat Flow (s), veh/h/ln	0	1013	0	0	0	970	1774	760
Q Serve Time (g_s), s	0.0	4.2	0.0	0.0	0.0	5.2	5.3	4.4
Cycle Q Clear Time (g_c), s	0.0	19.0	0.0	0.0	0.0	22.4	5.3	10.3
Perm LT Sat Flow (s_l), veh/h/ln	0	1013	0	0	0	970	938	760
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	0.0	26.0	0.0	0.0	0.0	26.0	37.0	35.0
Perm LT Serve Time (g_u), s	0.0	11.2	0.0	0.0	0.0	8.8	25.1	29.2
Perm LT Q Serve Time (g_ps), s	0.0	4.2	0.0	0.0	0.0	5.2	3.7	4.4
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	0.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00
Lane Grp Cap (c), veh/h	0	226	0	0	0	192	548	358
V/C Ratio (X)	0.00	0.25	0.00	0.00	0.00	0.33	0.41	0.16
Avail Cap (c_a), veh/h	0	226	0	0	0	192	548	358
Upstream Filter (I)	0.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d1), s/veh	0.0	32.4	0.0	0.0	0.0	35.0	10.7	18.5
Incr Delay (d2), s/veh	0.0	2.7	0.0	0.0	0.0	4.6	2.2	1.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	35.0	0.0	0.0	0.0	39.6	12.9	19.4
1st-Term Q (Q1), veh/ln	0.0	1.2	0.0	0.0	0.0	1.4	2.5	0.9
2nd-Term Q (Q2), veh/ln	0.0	0.2	0.0	0.0	0.0	0.2	0.3	0.1
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00
%ile Back of Q (50%), veh/ln	0.0	1.3	0.0	0.0	0.0	1.6	2.9	1.0
%ile Storage Ratio (RQ%)	0.00	0.67	0.00	0.00	0.00	0.64	0.91	1.46
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Middle Lane Group Data								
Assigned Mvmt	0	2	0	4	0	6	0	8
Lane Assignment				T				T
Lanes in Grp	0	0	0	1	0	0	0	1
Grp Vol (v), veh/h	0	0	0	629	0	0	0	324
Grp Sat Flow (s), veh/h/ln	0	0	0	1863	0	0	0	1863
Q Serve Time (g_s), s	0.0	0.0	0.0	17.8	0.0	0.0	0.0	9.9
Cycle Q Clear Time (g_c), s	0.0	0.0	0.0	17.8	0.0	0.0	0.0	9.9
Lane Grp Cap (c), veh/h	0	0	0	1068	0	0	0	795
V/C Ratio (X)	0.00	0.00	0.00	0.59	0.00	0.00	0.00	0.41
Avail Cap (c_a), veh/h	0	0	0	1068	0	0	0	795
Upstream Filter (I)	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	0.0	0.0	11.3	0.0	0.0	0.0	16.3
Incr Delay (d2), s/veh	0.0	0.0	0.0	2.4	0.0	0.0	0.0	1.5
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	0.0	13.7	0.0	0.0	0.0	17.9
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	9.1	0.0	0.0	0.0	5.0

2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.3
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.0	0.0	9.8	0.0	0.0	0.0	5.4
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	1.12	0.00	0.00	0.00	7.59
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Right Lane Group Data								
Assigned Mvmt	0	12	0	14	0	16	0	18
Lane Assignment		T+R		R		T+R		R
Lanes in Grp	0	1	0	1	0	1	0	1
Grp Vol (v), veh/h	0	411	0	43	0	361	0	122
Grp Sat Flow (s), veh/h/ln	0	1748	0	1568	0	1727	0	1563
Q Serve Time (g_s), s	0.0	17.2	0.0	1.0	0.0	14.8	0.0	4.0
Cycle Q Clear Time (g_c), s	0.0	17.2	0.0	1.0	0.0	14.8	0.0	4.0
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	0.33	0.00	1.00	0.00	0.39	0.00	1.00
Lane Grp Cap (c), veh/h	0	554	0	899	0	548	0	667
V/C Ratio (X)	0.00	0.74	0.00	0.05	0.00	0.66	0.00	0.18
Avail Cap (c_a), veh/h	0	554	0	899	0	548	0	667
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	25.0	0.0	7.7	0.0	24.2	0.0	14.6
Incr Delay (d2), s/veh	0.0	8.7	0.0	0.1	0.0	6.1	0.0	0.6
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	33.7	0.0	7.8	0.0	30.3	0.0	15.2
1st-Term Q (Q1), veh/ln	0.0	8.2	0.0	0.4	0.0	7.0	0.0	1.7
2nd-Term Q (Q2), veh/ln	0.0	1.3	0.0	0.0	0.0	0.9	0.0	0.1
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	9.6	0.0	0.4	0.0	7.9	0.0	1.8
%ile Storage Ratio (RQ%)	0.00	4.76	0.00	0.15	0.00	0.47	0.00	2.55
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	21.8
HCM 2010 LOS	C

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑↑↑		↱
Traffic Vol, veh/h	763	0	0	464	0	0
Future Vol, veh/h	763	0	0	464	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	829	0	0	504	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	-	829
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.319
Pot Cap-1 Maneuver	-	0	0	-	0	370
Stage 1	-	0	0	-	0	-
Stage 2	-	0	0	-	0	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	-	370
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

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

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	0	431	2	2	294
Future Vol, veh/h	1	0	431	2	2	294
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	0	468	2	2	320

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	793	469	0	0	470	0
Stage 1	469	-	-	-	-	-
Stage 2	324	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	358	594	-	-	1092	-
Stage 1	630	-	-	-	-	-
Stage 2	733	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	357	594	-	-	1092	-
Mov Cap-2 Maneuver	357	-	-	-	-	-
Stage 1	630	-	-	-	-	-
Stage 2	732	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.1	0	0.1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	357	1092	-
HCM Lane V/C Ratio	-	-	0.003	0.002	-
HCM Control Delay (s)	-	-	15.1	8.3	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	2	7	425	3	2	293
Future Vol, veh/h	2	7	425	3	2	293
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	8	462	3	2	318

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	786	464	0	0	465	0
Stage 1	464	-	-	-	-	-
Stage 2	322	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	361	598	-	-	1096	-
Stage 1	633	-	-	-	-	-
Stage 2	735	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	360	598	-	-	1096	-
Mov Cap-2 Maneuver	360	-	-	-	-	-
Stage 1	633	-	-	-	-	-
Stage 2	734	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	521	1096	-
HCM Lane V/C Ratio	-	-	0.019	0.002	-
HCM Control Delay (s)	-	-	12	8.3	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Volume (veh/h)	753	10	10	464	0	0
Future Volume (Veh/h)	753	10	10	464	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	818	11	11	504	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	182					
pX, platoon unblocked			0.76		0.76	0.76
vC, conflicting volume			829		1350	824
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			616		1302	609
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		100	100
cM capacity (veh/h)			732		133	376

Direction, Lane #	EB 1	WB 1
Volume Total	829	515
Volume Left	0	11
Volume Right	11	0
cSH	1700	732
Volume to Capacity	0.49	0.02
Queue Length 95th (ft)	0	1
Control Delay (s)	0.0	0.4
Lane LOS		A
Approach Delay (s)	0.0	0.4
Approach LOS		

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	43.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	205	579	40	55	298	112	53	257	123	59	204	130
Future Volume (veh/h)	205	579	40	55	298	112	53	257	123	59	204	130
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj (A_pbT)	1.00		0.99	1.00		0.99	1.00		0.98	1.00		0.98
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	223	629	43	60	324	122	58	279	134	64	222	141
Adj No. of Lanes	1	1	1	1	1	1	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	548	1068	899	358	795	667	225	375	180	190	335	213
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.10	0.57	0.57	0.43	0.43	0.43	0.32	0.32	0.32	0.32	0.32	0.32
Ln Grp Delay, s/veh	12.9	13.7	7.8	19.5	17.9	15.2	35.3	0.0	33.8	39.8	0.0	30.4
Ln Grp LOS	B	B	A	B	B	B	D		C	D		C
Approach Vol, veh/h		895			506			471			427	
Approach Delay, s/veh		13.2			17.4			34.0			31.8	
Approach LOS		B			B			C			C	

Timer:	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6	7	8
Case No		6.0		3.0		6.0	1.2	5.0
Phs Duration (G+Y+Rc), s		30.0		52.0		30.0	12.0	40.0
Change Period (Y+Rc), s		4.0		5.0		4.0	4.0	5.0
Max Green (Gmax), s		26.0		47.0		26.0	8.0	35.0
Max Allow Headway (MAH), s		5.3		5.2		5.3	3.8	5.0
Max Q Clear (g_c+I1), s		21.2		19.8		24.5	7.3	12.4
Green Ext Time (g_e), s		1.2		4.8		0.4	0.0	2.8
Prob of Phs Call (p_c)		1.00		1.00		1.00	1.00	1.00
Prob of Max Out (p_x)		0.00		0.00		0.00	0.00	0.00
Left-Turn Movement Data								
Assigned Mvmt		5				1	7	3
Mvmt Sat Flow, veh/h		1012				968	1774	760
Through Movement Data								
Assigned Mvmt		2		4		6		8
Mvmt Sat Flow, veh/h		1181		1863		1057		1863
Right-Turn Movement Data								
Assigned Mvmt		12		14		16		18
Mvmt Sat Flow, veh/h		567		1568		671		1563
Left Lane Group Data								
Assigned Mvmt	0	5	0	0	0	1	7	3
Lane Assignment							(Pr/Pm)	

Lanes in Grp	0	1	0	0	0	1	1	1
Grp Vol (v), veh/h	0	58	0	0	0	64	223	60
Grp Sat Flow (s), veh/h/ln	0	1012	0	0	0	968	1774	760
Q Serve Time (g_s), s	0.0	4.3	0.0	0.0	0.0	5.2	5.3	4.5
Cycle Q Clear Time (g_c), s	0.0	19.2	0.0	0.0	0.0	22.5	5.3	10.4
Perm LT Sat Flow (s_l), veh/h/ln	0	1012	0	0	0	968	938	760
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	0.0	26.0	0.0	0.0	0.0	26.0	37.0	35.0
Perm LT Serve Time (g_u), s	0.0	11.1	0.0	0.0	0.0	8.7	25.1	29.2
Perm LT Q Serve Time (g_ps), s	0.0	4.3	0.0	0.0	0.0	5.2	3.7	4.5
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	0.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00
Lane Grp Cap (c), veh/h	0	225	0	0	0	190	548	358
V/C Ratio (X)	0.00	0.26	0.00	0.00	0.00	0.34	0.41	0.17
Avail Cap (c_a), veh/h	0	225	0	0	0	190	548	358
Upstream Filter (I)	0.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d1), s/veh	0.0	32.5	0.0	0.0	0.0	35.1	10.7	18.5
Incr Delay (d2), s/veh	0.0	2.8	0.0	0.0	0.0	4.7	2.2	1.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	35.3	0.0	0.0	0.0	39.8	12.9	19.5
1st-Term Q (Q1), veh/ln	0.0	1.2	0.0	0.0	0.0	1.4	2.5	0.9
2nd-Term Q (Q2), veh/ln	0.0	0.2	0.0	0.0	0.0	0.2	0.3	0.1
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00
%ile Back of Q (50%), veh/ln	0.0	1.4	0.0	0.0	0.0	1.6	2.9	1.1
%ile Storage Ratio (RQ%)	0.00	0.65	0.00	0.00	0.00	0.64	0.91	1.48
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Middle Lane Group Data								
Assigned Mvmt	0	2	0	4	0	6	0	8
Lane Assignment				T				T
Lanes in Grp	0	0	0	1	0	0	0	1
Grp Vol (v), veh/h	0	0	0	629	0	0	0	324
Grp Sat Flow (s), veh/h/ln	0	0	0	1863	0	0	0	1863
Q Serve Time (g_s), s	0.0	0.0	0.0	17.8	0.0	0.0	0.0	9.9
Cycle Q Clear Time (g_c), s	0.0	0.0	0.0	17.8	0.0	0.0	0.0	9.9
Lane Grp Cap (c), veh/h	0	0	0	1068	0	0	0	795
V/C Ratio (X)	0.00	0.00	0.00	0.59	0.00	0.00	0.00	0.41
Avail Cap (c_a), veh/h	0	0	0	1068	0	0	0	795
Upstream Filter (I)	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	0.0	0.0	11.3	0.0	0.0	0.0	16.3
Incr Delay (d2), s/veh	0.0	0.0	0.0	2.4	0.0	0.0	0.0	1.5
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	0.0	13.7	0.0	0.0	0.0	17.9
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	9.1	0.0	0.0	0.0	5.0

2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.3
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.0	0.0	9.8	0.0	0.0	0.0	5.4
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	1.12	0.00	0.00	0.00	7.59
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Right Lane Group Data								
Assigned Mvmt	0	12	0	14	0	16	0	18
Lane Assignment		T+R		R		T+R		R
Lanes in Grp	0	1	0	1	0	1	0	1
Grp Vol (v), veh/h	0	413	0	43	0	363	0	122
Grp Sat Flow (s), veh/h/ln	0	1749	0	1568	0	1728	0	1563
Q Serve Time (g_s), s	0.0	17.3	0.0	1.0	0.0	14.9	0.0	4.0
Cycle Q Clear Time (g_c), s	0.0	17.3	0.0	1.0	0.0	14.9	0.0	4.0
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	0.32	0.00	1.00	0.00	0.39	0.00	1.00
Lane Grp Cap (c), veh/h	0	554	0	899	0	548	0	667
V/C Ratio (X)	0.00	0.74	0.00	0.05	0.00	0.66	0.00	0.18
Avail Cap (c_a), veh/h	0	554	0	899	0	548	0	667
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	25.0	0.0	7.7	0.0	24.2	0.0	14.6
Incr Delay (d2), s/veh	0.0	8.8	0.0	0.1	0.0	6.2	0.0	0.6
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	33.8	0.0	7.8	0.0	30.4	0.0	15.2
1st-Term Q (Q1), veh/ln	0.0	8.4	0.0	0.4	0.0	7.1	0.0	1.7
2nd-Term Q (Q2), veh/ln	0.0	1.4	0.0	0.0	0.0	0.9	0.0	0.1
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	9.7	0.0	0.4	0.0	8.0	0.0	1.8
%ile Storage Ratio (RQ%)	0.00	4.58	0.00	0.15	0.00	0.47	0.00	2.55
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	21.8
HCM 2010 LOS	C

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑↑↑		↱
Traffic Vol, veh/h	763	0	0	465	0	1
Future Vol, veh/h	763	0	0	465	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	829	0	0	505	0	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	-	829
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.319
Pot Cap-1 Maneuver	-	0	0	-	0	370
Stage 1	-	0	0	-	0	-
Stage 2	-	0	0	-	0	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	-	370
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	14.8
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	370	-	-
HCM Lane V/C Ratio	0.003	-	-
HCM Control Delay (s)	14.8	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	0	-	-

Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	5	10	425	6	7	293
Future Vol, veh/h	5	10	425	6	7	293
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	11	462	7	8	318

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	800	466	0	0	469	0
Stage 1	466	-	-	-	-	-
Stage 2	334	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	354	597	-	-	1093	-
Stage 1	632	-	-	-	-	-
Stage 2	725	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	351	597	-	-	1093	-
Mov Cap-2 Maneuver	351	-	-	-	-	-
Stage 1	632	-	-	-	-	-
Stage 2	718	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.7	0	0.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	484	1093	-
HCM Lane V/C Ratio	-	-	0.034	0.007	-
HCM Control Delay (s)	-	-	12.7	8.3	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Volume (veh/h)	754	10	10	465	0	0
Future Volume (Veh/h)	754	10	10	465	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	820	11	11	505	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	182					
pX, platoon unblocked			0.76		0.76	0.76
vC, conflicting volume			831		1352	826
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			619		1306	612
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		100	100
cM capacity (veh/h)			730		132	375

Direction, Lane #	EB 1	WB 1
Volume Total	831	516
Volume Left	0	11
Volume Right	11	0
cSH	1700	730
Volume to Capacity	0.49	0.02
Queue Length 95th (ft)	0	1
Control Delay (s)	0.0	0.4
Lane LOS		A
Approach Delay (s)	0.0	0.4
Approach LOS		

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	43.6%	ICU Level of Service	A
Analysis Period (min)	15		

APPENDIX C

Self Storage Facility Usage Data

DATE	# E	# T	2 in 15	3 IN 15	
	Employees	# Tenants	# X 15 minutes	# X 15 minutes	# of parking Space needed
Saturday, July 1, 2017	1	10	5	1	4
Sunday, July 2, 2017	1	4	2	0	3
Monday, July 3, 2017	1	6	4	0	3
Tuesday, July 4, 2017	0	3	0	0	1
Wednesday, July 5, 2017	2	11	2	0	4
Thursday, July 6, 2017	2	12	5	0	4
Friday, July 7, 2017	2	13	3	3	5
Saturday, July 8, 2017	2	12	3	3	5
Sunday, July 9, 2017	2	11	3	1	5
Monday, July 10, 2017	1	6	1	0	3
Tuesday, July 11, 2017	2	15	3	0	4
Wednesday, July 12, 2017	1	4	0	0	2
Thursday, July 13, 2017	1	14	1	1	4
Friday, July 14, 2017	1	10	2	0	3
Saturday, July 15, 2017	1	11	4	1	4
Sunday, July 16, 2017	1	9	1	0	3
Monday, July 17, 2017	1	21	4	3	4
Tuesday, July 18, 2017	1	16	6	1	4
Wednesday, July 19, 2017	2	10	1	1	5
Thursday, July 20, 2017	1	8	1	1	4
Friday, July 21, 2017	2	9	3	0	4
Saturday, July 22, 2017	1	11	1	0	3
Sunday, July 23, 2017	2	9	3	1	5
Monday, July 24, 2017	1	10	1	0	3
Tuesday, July 25, 2017	1	14	4	0	3
Wednesday, July 26, 2017	2	9	5	0	4
Thursday, July 27, 2017	2	11	3	0	4
Friday, July 28, 2017	2	10	1	1	5
Saturday, July 29, 2017	1	11	1	0	3
Sunday, July 30, 2017	1	7	0	0	2
Monday, July 31, 2017	1	9	3	0	3

DATE	# E (Employees)	# T (# Tenants)	2 in 15 (# X 15 minutes)	3 IN 15 (# X 15 minutes)	(# of parking Space needed)
Tuesday, August 1, 2017	2	13	4	0	4
Wednesday, August 2, 2017	2	9	1	0	4
Thursday, August 3, 2017	1	10	6	0	3
Friday, August 4, 2017	1	8	0	1	4
Saturday, August 5, 2017	2	8	1	1	5
Sunday, August 6, 2017	1	7	0	1	4
Monday, August 7, 2017	2	5	1	0	4
Tuesday, August 8, 2017	2	7	1	0	4
Wednesday, August 9, 2017	1	9	3	2	4
Thursday, August 10, 2017	1	7	1	0	3
Friday, August 11, 2017	2	5	0	0	3
Saturday, August 12, 2017	2	7	3	0	4
Sunday, August 13, 2017	1	6	0	0	2
Monday, August 14, 2017	1	8	3	0	3
Tuesday, August 15, 2017	2	6	0	0	3
Wednesday, August 16, 2017	1	5	1	0	3
Thursday, August 17, 2017	1	4	0	0	2
Friday, August 18, 2017	1	4	0	0	2
Saturday, August 19, 2017	2	8	3	0	4
Sunday, August 20, 2017	1	7	1	0	3
Monday, August 21, 2017	1	7	1	0	3
Tuesday, August 22, 2017	1	10	1	1	4
Wednesday, August 23, 2017	1	6	1	0	3
Thursday, August 24, 2017	1	6	1	0	3

APPENDIX D

Institute of Transportation Engineers Trip Generation and Parking Generation Data

Trip Generation Manual

10th Edition • Volume 2: Data

Industrial (Land Uses 100–199)

SEPTEMBER 2017
INSTITUTE OF TRANSPORTATION ENGINEERS

Land Use: 151
Mini-Warehouse

Description

A mini-warehouse is a building in which a number of storage units or vaults are rented for the storage of goods. They are typically referred to as "self-storage" facilities. Each unit is physically separated from other units, and access is usually provided through an overhead door or other common access point.

Additional Data

Time-of-day distribution data for this land use are presented in Appendix A. For the 10 general urban/suburban sites with data, the overall highest vehicle volumes during the AM and PM on a weekday were counted between 10:30 and 11:30 a.m. and 1:15 and 2:15 p.m., respectively.

The sites were surveyed in the 1980s, the 1990s, the 2000s, and the 2010s in California, Colorado, Massachusetts, Minnesota, New Jersey, Texas, and Utah.

Source Numbers

212, 403, 551, 568, 642, 708, 724, 850, 868, 876

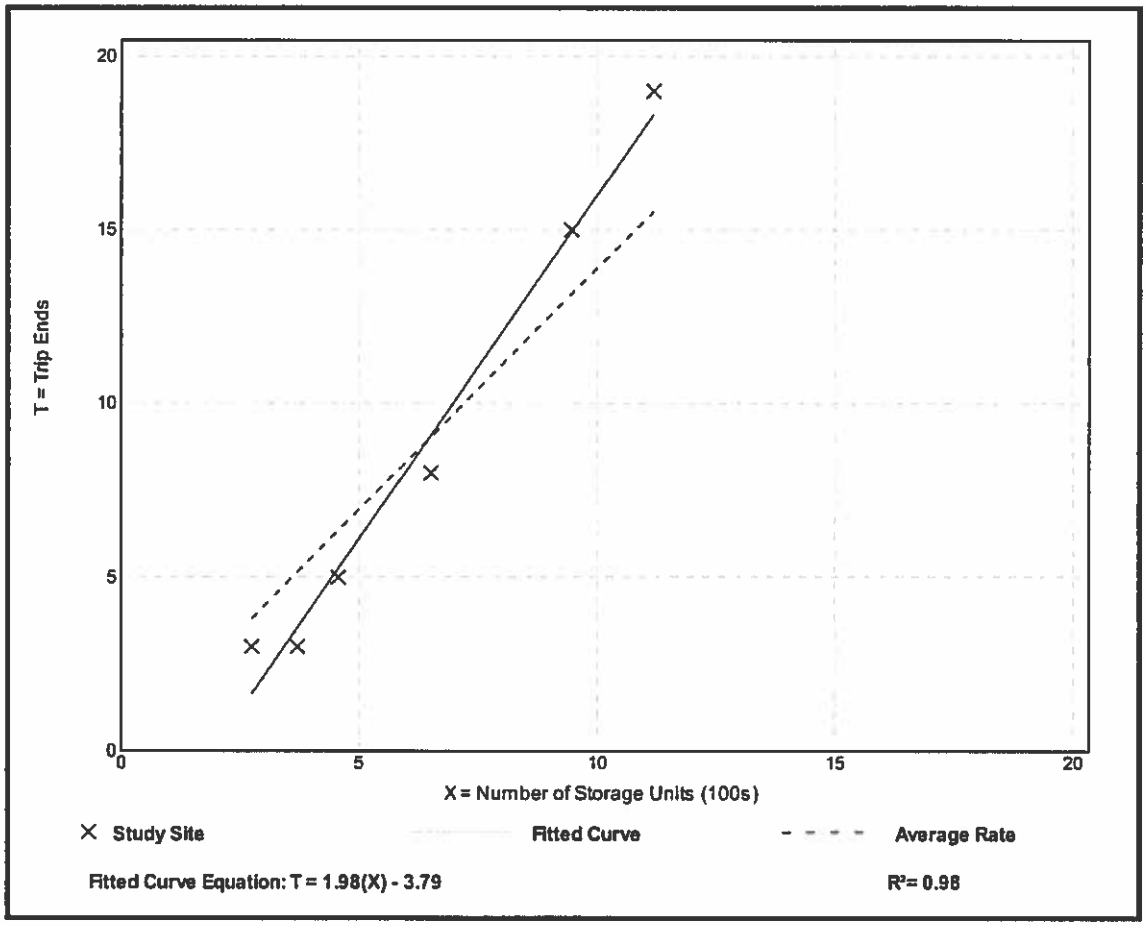
Mini-Warehouse
(151)

Vehicle Trip Ends vs: **Storage Units (100s)**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 6
Avg. Num. of Storage Units (100s): 6
Directional Distribution: 51% entering, 49% exiting

Vehicle Trip Generation per Storage Unit (100s)

Average Rate	Range of Rates	Standard Deviation
1.39	0.81 - 1.70	0.33

Data Plot and Equation



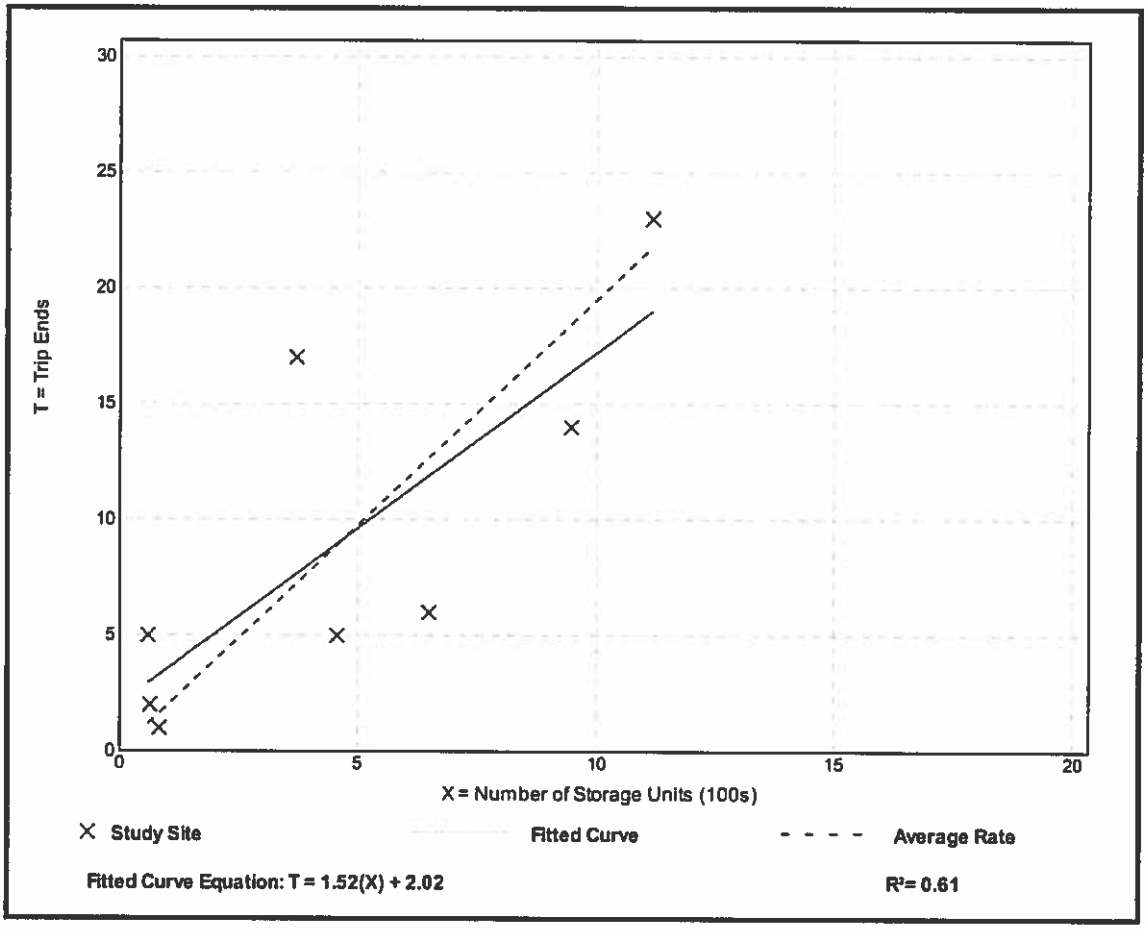
Mini-Warehouse
(151)

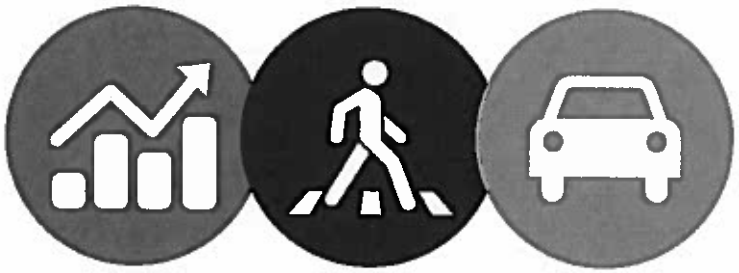
Vehicle Trip Ends vs: **Storage Units (100s)**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 8
Avg. Num. of Storage Units (100s): 5
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Storage Unit (100s)

Average Rate	Range of Rates	Standard Deviation
1.95	0.92 - 8.33	1.40

Data Plot and Equation





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SEPTEMBER 2017
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