

**TRAFFIC IMPACT AND ACCESS STUDY
FOR SUBMISSION WITH EXPANDED
ENVIRONMENTAL NOTIFICATION FORM (EENF)**

***Walmart and Meineke Expansions and
Lowe's Home Improvement Warehouse
Salem, Massachusetts***

Prepared for:

Lowe's Home Centers, Inc.
1605 Curtis Bridge Road, REEC Dock
Wilkesboro, NC 28697

Walmart Stores, Inc.
702 SW 8th Street
Bentonville, Arkansas 72716-8611

Meineke Car Care Center
462 Highland Avenue
Salem, Massachusetts 01970-1765

December 2009

GPI Greenman-Pedersen, Inc.

TABLE OF CONTENTS

EXECUTIVE SUMMARY.....	4
EXISTING CONDITIONS.....	8
Introduction.....	8
Geometrics and Traffic Control.....	9
Traffic Volumes.....	13
Traffic Accidents.....	14
Vehicle Speeds.....	17
Sight Distance.....	18
Public Transportation.....	20
FUTURE CONDITIONS.....	21
Traffic Growth.....	21
Planned Roadway Improvements.....	23
Trip Generation.....	24
Project Environmental Review (MEPA) Thresholds.....	27
Trip Distribution.....	28
Site Access.....	29
Traffic Increases.....	29
ANALYSIS.....	30
Capacity Analysis Methodology.....	30
Queue Analysis Methodology.....	32
Capacity and Queue Analysis Results.....	33
MITIGATION.....	48
Highland Avenue at the Site Driveways.....	48
Western Avenue at Fays Avenue.....	49
Analysis Results with Mitigation.....	50
Transportation Demand Management Measures.....	54
Corridor Emmissions.....	55
APPENDIX	

LIST OF TABLES

<u>No.</u>	<u>Title</u>
1	Roadway Classification and Jurisdictional Responsibility
2	Existing Traffic-Volume Summary
3	Accident Summary
4	Observed Travel Speeds
5	Sight Distance Summary
6	Peak-Hour Trip-Generation Summary
7	New Vs. Pass-By Trips
8	Trip-Generation Summary – MEPA Transportation Thresholds
9	Trip-Distribution Summary
10	Level-of-Service Criteria for Intersections
11	Level-of-Service Analysis Summary
12	Queue Analysis Summary
13	Intersection Capacity Analysis Summary – With Mitigation

LIST OF FIGURES

<u>No.</u>	<u>Title</u>
1	Site Location Map
2	2009 Existing AM Peak Hour Traffic Volumes
3	2009 Existing PM Peak Hour Traffic Volumes
4	2009 Existing Saturday Midday Peak Hour Traffic Volumes
5	2014 No-Build Weekday AM Peak Hour Traffic Volumes
6	2014 No-Build Weekday PM Peak Hour Traffic Volumes
7	2014 No-Build Saturday Midday Peak Hour Traffic Volumes
8	Additional Site-Generated Weekday AM Peak Hour Traffic Volumes
9	Additional Site-Generated Weekday PM Peak Hour Traffic Volumes
10	Additional Site-Generated Saturday Midday Peak Hour Traffic Volumes
11	2014 Build Weekday AM Peak Hour Traffic Volumes
12	2014 Build Weekday PM Peak Hour Traffic Volumes
13	2014 Build Saturday Midday Peak Hour Traffic Volumes
14	Conceptual Improvement Plan

EXECUTIVE SUMMARY

Greenman-Pedersen, Inc. (GPI) has prepared this Traffic Impact and Access Study (TIAS) to analyze the traffic impacts of a proposed expansion to an existing Walmart and Meineke Car Care Center (Meineke) as well as the construction of a Lowe's Home Improvement Warehouse to be located at 440 Highland Avenue (Route 107) in Salem, Massachusetts. The project site is located on the west side of Highland Avenue and contains a 109,500± square foot Walmart store and a 3,084± square foot Meineke. The proposed project consists of expanding the existing Walmart building to 152,192± square feet, constructing a 153,063± square foot Lowe's Home Improvement Warehouse (including a 31,204± square foot garden center), and expanding the Meineke Car Care Center up to 6,084± square feet. As part of the project, the existing Camp Lion's facility will be demolished and preliminary site work will be constructed for future finished site development by others. The changes to the Camp Lion's facility are to provide additional and improved accommodations for the existing users. Concurrently with the project, the City of Salem is expected to build a new water storage tower. Access to the water storage tower will be provided by way of a common access drive through the project site. Neither the Camp Lion's improvement nor the water storage tower is anticipated to result in a traffic impact.

The project site is bounded by Highland Avenue to the east, retail uses to the north and south, and undeveloped land to the west and south. Access to and egress from the Walmart portion of the site is currently provided via a signalized driveway on Highland Avenue and two right-in/right-out driveways. An internal cross connection is also provided with the adjacent retail parcel to the north. Access to and egress from the Meineke is currently provided through an open curb cut along Highland Avenue allowing right-turns in and right-turns out only.

As proposed, the existing signalized driveway to Walmart will be closed and relocated further south on Highland Avenue to the location of the existing southerly right-in/right-out driveway. The existing right-in/right-out driveway on the northern end of the property will be reconstructed to provide better accessibility and meet current state design standards. The existing internal cross connection with the retail parcel to the north will be maintained as part of the project and a right-in/right-out cross connection will be provided for the Meineke along the proposed site driveway.

TRAFFIC IMPACT AND ACCESS STUDY

Walmart and Meineke Expansions and Lowe's Home Improvement Warehouse - Salem, Massachusetts

The existing driveways to the Meineke will be modified as part of the roadway improvements but continue to provide right-turns in and right-turns out. The proposed project will also improve the existing Camp Lion site driveway located just south of the project site.

The project will require the issuance of a Highway Access Permit from the Massachusetts Department of Transportation (MassDOT) as well as the filing an Environmental Notification Form (ENF) and an Environmental Impact Report (EIR) through the Massachusetts Environmental Policy Act (MEPA) office of the Executive Office of Energy and Environmental Affairs (EOEEA).

EXISTING CONDITIONS

The study area consists of six intersections within the City of Salem as well as one intersection in the City of Lynn, which are all located along Route 107 (Highland Avenue in Salem and Western Avenue in Lynn). In Salem, three of the study locations are signalized and include the intersections with Ravenna Avenue and Barnes Road, Olde Village Drive, and the Walmart main site driveway. The other three Salem intersections are unsignalized allowing right-turns movements only and include the Highland Avenue intersections with Clark Street and the north Walmart site driveway, the south Walmart site driveway, and the Meineke driveway. The study location in Lynn includes the signalized intersection of Western Avenue (Route 107) and Fays Avenue.

Existing conditions within the study area were developed by conducting traffic counts in May and June 2008; comparing the traffic-count data to average-month condition traffic volumes; researching accident history; inventorying roadways, intersections, and traffic controls; evaluating vehicle speeds and sight distances; and assessing the availability of public transportation. Traffic counts were collected during the weekday AM peak period (7:00 to 9:00 AM), the weekday PM peak period (4:00 to 6:00 PM), and the Saturday midday peak period (11:00 AM to 2:00 PM) at each of the study area locations.

FUTURE CONDITIONS

Future conditions were derived by projecting existing volumes to the year 2014, representing a five-year design horizon consistent with MassDOT and EOEEA guidelines. The future No-Build peak-hour traffic volumes were developed by applying a 1.0 percent compounded annual growth rate to the existing volumes and by adding traffic associated with six specific development projects that are planned to be constructed within the five-year design horizon.

TRAFFIC IMPACT AND ACCESS STUDY

Walmart and Meineke Expansions and Lowe's Home Improvement Warehouse - Salem, Massachusetts

As proposed, the existing Walmart store will be expanded to 152,192± square feet, the existing Meineke will be expanded up to 6,084± square feet, and a 121,859± square foot Lowe's Home Improvement Warehouse building with a 31,204± square foot garden center will be constructed. Access to the Walmart and Lowe's portion of the site will be provided via two driveways on Highland Avenue; a right-in/right-out driveway on the north side of the property and a full access/egress signalized driveway on the south side. The internal cross connection with the parcel to the north will also be maintained and a right-in/right-out cross connection will be provided for the Meineke along the proposed site driveway. The existing Meineke and Camp Lion facility driveways along Highland Avenue will also be improved to meet current state design standards

The proposed redevelopment project is expected to generate an additional 5,960 total vehicle trips (2,980 entering and 2,980 exiting) on a weekday. During the critical peak hours, the proposed development is expected to generate 118 additional vehicle trips (72 entering and 46 exiting) during the weekday AM peak hour, 583 additional vehicle trips (286 entering and 297 exiting) during the weekday PM peak hour, and 752 additional vehicle trips (391 entering and 361 exiting) during the Saturday midday peak hour. Due to the effect of *pass-by* traffic (traffic that is already on the adjacent roadway), the development will increase *new* vehicles trips on roadways leading beyond the study area during the weekday AM, weekday PM, and Saturday midday peak hours, respectively. The most significant increases will occur along Highland Avenue in the range of 38 to 282 vehicles per hour, which represents on average, one to five additional vehicles every minute during the peak hours. Smaller increases are expected during all other times.

ANALYSIS

Capacity and queue analyses were conducted at the site driveways as well as at the study area intersections under 2009 Existing, 2014 No-Build, and 2014 Build traffic-volume conditions. The impact of traffic expected to be generated as a result of the development of the proposed project can be measured by comparing 2014 No-Build conditions to 2014 Build conditions. The capacity analysis methodology is based on the concepts and procedures in the *Highway Capacity Manual* (HCM). The concept of level of service (LOS) is defined as a qualitative measure describing operational conditions within a traffic stream and their perception by motorists and/or passengers.

TRAFFIC IMPACT AND ACCESS STUDY

Walmart and Meineke Expansions and Lowe's Home Improvement Warehouse - Salem, Massachusetts

Most study intersections operate at acceptable levels with vehicle queue lengths that do not exceed the available storage. At the intersection of Western Avenue and Fays Avenue, deficiencies exist under the No-Build condition without the development of the proposed project. At the intersection of Highland Avenue and the main signalized site driveway, the redevelopment of the site is expected to result in queue lengths that exceed the available storage lengths. As part of this project, mitigation measures are proposed at these locations to address the traffic related impacts of the project as well as the deficiencies that are expected independent of the project.

MITIGATION

The final component of the traffic study is the identification of “mitigation” measures that are expected to be effective in eliminating or improving anticipated deficiencies resulting from the combination of existing, background, and project-generated traffic. As part of the proposed site redevelopment, mitigation measures are proposed at the main site driveway intersection with Highland Avenue as well as at the Western Avenue intersection with Fays Avenue.

The main signalized site driveway will be relocated further south to the location of the existing southerly right-turn in/right-turn out driveway. The existing main site driveway will be closed, reducing the number of curb cuts along Highland Avenue. The proposed intersection will be widened to include additional turn lanes, provide signalized control to existing uses along Highland Avenue, and provide an additional location for Highland Avenue southbound traffic to U-turn to travel northbound. The existing northerly right-in/right-out driveway will be modified to meet current state design standards. The southbound travel lanes along Highland Avenue past the main site driveway will be realigned to improve the existing merge area from two lanes to one. Additional signage will be added along Highland Avenue to better define the intersection geometry as well as identify the merge area. With the implementation of the improvements described, the intersection and merge area are expected to operate at acceptable levels and vehicle queue lengths are not expected to exceed the available storage lengths.

Under No-Build conditions, deficiencies are expected at the intersection of Western Avenue and Fays Avenue during the weekday PM peak hour independent of the proposed project. To mitigate the project's traffic impact at this location and address existing operational deficiencies, an exclusive right-turn lane is proposed on the Western Avenue southbound approach to Fays Avenue. In addition, the existing traffic signal equipment will be upgraded and traffic signal timing changes are proposed to increase the amount of “green time” provided to the Western Avenue approaches during each signal cycle. The combination of these measures will mitigate the traffic impact of the project and improve the intersection operations over the No-Build condition.

EXISTING CONDITIONS

INTRODUCTION

Greenman-Pedersen, Inc. (GPI) has prepared this Traffic Impact and Access Study (TIAS) to analyze the traffic impacts of a proposed expansion to an existing Walmart store and Meineke Car Care Center (Meineke) as well as the construction of a Lowe's Home Improvement Warehouse to be located along Highland Avenue (Route 107) in Salem, Massachusetts. This study identifies traffic mitigation measures necessary to minimize those impacts. The project site is located on the west side of Highland Avenue just north of the Lynn City line. The existing site contains a 109,438± square foot Walmart store and a 3,084± square foot Meineke Car Care Center. The proposed project consists of expanding the existing Walmart building to 152,192± square feet, expanding the existing Meineke up to 6,084± square feet, and constructing a 153,063± square foot Lowe's Home Improvement Warehouse (including a 31,204± square foot garden center). As part of the project, the existing Camp Lion's facility will be demolished and preliminary site work (e.g. rough grading, stubbed utilities, and a new access drive) will be constructed for future finished site development (e.g. paved parking, buildings, etc.) by others. The changes to the Camp Lion's facility are to provide additional and improved accommodations for the existing users. Concurrently with the project, the City of Salem is expected to build a new water storage tower. Access to the water storage tower will be provided by way of a common access drive through the project site. Neither the Camp Lion's improvement nor the water storage tower is anticipated to result in a traffic impact.

The project site is bounded by Highland Avenue to the east, undeveloped land to the south and west, and a retail development to the north. Access to and egress from the Walmart portion of the site is currently provided via a signalized driveway on Highland Avenue and two right-in/right-out driveways. An internal cross connection is also provided with the adjacent retail parcel to the north. A right-in/right-out driveway along Highland Avenue is provided for Meineke. As proposed, the signalized site driveway will be closed and relocated further south on Highland Avenue to the location of the existing southerly right-in/right-out site driveway. The existing right-in/right-out driveway on the northern end of the property will be reconstructed to provide better accessibility and meet current state design standards. Current access to the Meineke and the Camp Lion site along Highland Avenue to the south of the site will be

TRAFFIC IMPACT AND ACCESS STUDY

Walmart and Meineke Expansions and Lowe's Home Improvement Warehouse - Salem, Massachusetts

maintained and improved to meet current state design standards. The existing internal cross connection with the parcel to the north will be maintained as part of the project. A right-turn in and right-turn out only cross connection will also be provided to the existing Meineke located along the proposed main site driveway. The site location in relation to the surrounding roadways is shown on the map on Figure 1.

Since the project is located on Highland Avenue (Route 107), a state-maintained roadway, the project will require the issuance of a Highway Access Permit from the Massachusetts Department of Transportation (MassDOT). The proposed project is expected to generate more than 3,000 total vehicle trips per day (including both inbound trips and outbound trips) and, accordingly, requires the filing of an Environmental Notification Form (ENF) and an Environmental Impact Report (EIR) through the Massachusetts Environmental Policy Act (MEPA) office of the Executive Office of Energy and Environmental Affairs (EOEEA).

GEOMETRICS AND TRAFFIC CONTROL

Evaluation of the traffic impacts associated with the proposed Walmart and Meineke expansion and the Lowe's Home Improvement Warehouse development involves the description and quantification of existing roadway and traffic conditions in the area. In preparing this study for the proposed development, the following intersections have been analyzed and evaluated:

- Highland Avenue (Route 107) at Ravenna Avenue and Barnes Road – City of Salem
- Highland Avenue at Olde Village Drive – City of Salem
- Highland Avenue at Walmart north driveway and Clark Street – City of Salem
- Highland Avenue at Walmart main (signalized) driveway – City of Salem
- Highland Avenue at Walmart south driveway – City of Salem
- Highland Avenue at Meineke driveway (462 Highland Avenue) – City of Salem
- Western Avenue (Route 107) at Fays Avenue – City of Lynn

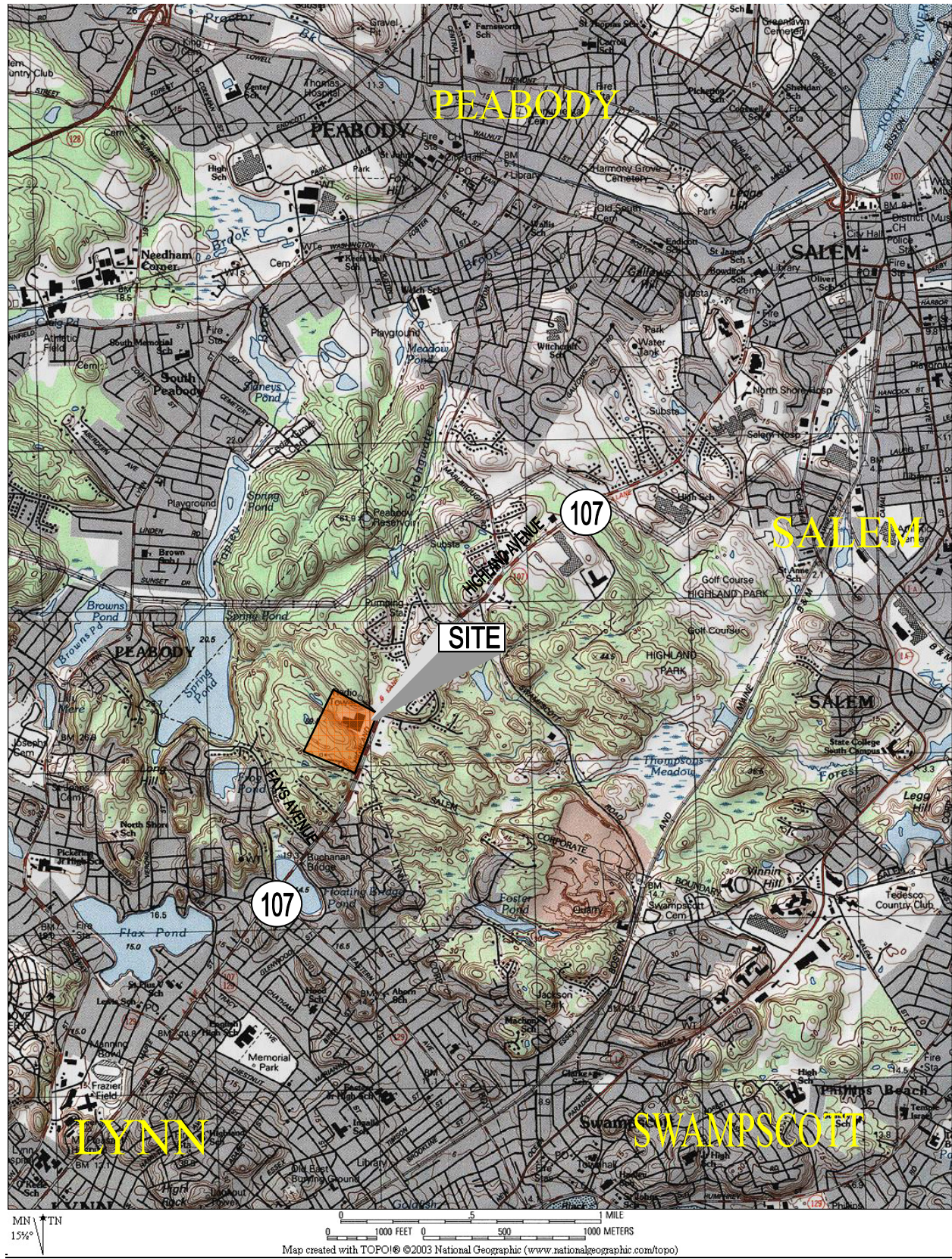
A description of each roadway and the geometric and traffic control characteristics of each of these intersections are provided below, followed by quantification of existing traffic volumes, accident history, vehicle speeds, and sight distance.

Study Area Roadways

The jurisdictional responsibility and classification of each study area roadway is listed in Table 1. As shown, Highland Avenue is under MassDOT jurisdiction while Western Avenue, Ravenna Avenue, Barnes Road, Olde Village Drive, Clark Street, and Fays Avenue are under local jurisdiction.

TRAFFIC IMPACT AND ACCESS STUDY

Walmart and Meineke Expansions and Lowe's Home Improvement Warehouse - Salem, Massachusetts



GPI Greenman-Pedersen, Inc.

Engineers, Architects, Planners, Construction Engineers & Inspectors

Figure 1
Site Location Map

Table 1
ROADWAY CLASSIFICATION AND JURISDICTIONAL RESPONSIBILITY

<u>Roadway</u>	<u>Roadway Classification</u>	<u>Responsible Agency</u>
Highland Avenue (Route 107)	Urban Principal Arterial	MassDOT
Western Avenue (Route 107)	Urban Principal Arterial	Local Jurisdiction (City of Lynn)
Ravenna Avenue	Local Road	Local Jurisdiction (City of Salem)
Barnes Road	Local Road	Local Jurisdiction (City of Salem)
Olde Village Drive	Local Road	Local Jurisdiction (City of Salem)
Clark Street	Local Road	Local Jurisdiction (City of Salem)
Fays Avenue	Local Road	Local Jurisdiction (City of Lynn)

Study Area Intersections

Highland Avenue at Ravenna Avenue and Barnes Road

Highland Avenue, Ravenna Avenue, and Barnes Road intersect to form a four-way intersection under actuated signal control. The Highland Avenue northbound and southbound approaches each consist of a 12-foot wide exclusive left-turn lane, a 13-foot wide through lane, and a 12-foot wide shared through/right-turn lane. Directional travel on Highland Avenue is separated by a raised median with guardrail. The Ravenna Avenue eastbound approach consists of a 16-foot wide general-purpose travel lane with no pavement markings separating directional flow. The Barnes Road westbound approach consists of a 12-foot wide general-purpose travel lane with no pavement markings separating directional flow. The posted speed limit on Highland Avenue is 45 miles per hour (mph) at this intersection. Sidewalks are provided along the east side of Highland Avenue and a crosswalk is striped across the Highland Avenue southern leg. Land use in the vicinity of the intersection consists of residential homes.

Highland Avenue at Olde Village Drive

Olde Village Drive intersects Highland Avenue from the west to form a three-way intersection under actuated signal control. The Highland Avenue northbound approach consists of a 13-foot wide exclusive left-turn lane and two 12-foot wide through lanes. The Highland Avenue southbound approach consists of a 12-foot wide through lane and a 12-foot wide shared through/right-turn lane. Directional travel on Highland Avenue is separated by a raised median with guardrail. The Olde Village Drive eastbound approach consists of 30-foot wide general-

purpose travel lane. Directional travel on Olde Village Drive is separated by a raised median island at the intersection. The posted speed limit on Highland Avenue is 45 mph. Sidewalks are provided along both sides of Highland Avenue and along the south side of Olde Village Drive. There are no crosswalks provided in the vicinity of the intersection. Land use in the vicinity of the intersection consists of a retail plaza (400 Highland Place), a self storage facility, residential homes, and vacant land.

Highland Avenue at Walmart North Driveway and Clark Street

Highland Avenue is intersected by the Walmart north driveway from the west and Clark Street from the east to form two unsignalized T-type intersections separated along Highland Avenue by a raised median with guardrail. The Highland Avenue northbound and southbound approaches each consist of a 12-foot wide through lane and a 12-foot wide shared through/right-turn lane. The Walmart north driveway consists of a 20-foot wide right-in/right-out driveway under STOP-sign control. There are no pavement markings separating directional travel on the Walmart north driveway. The Clark Street westbound approach consists of a 19-foot wide travel lane and only allows right turns to and from the side street roadway. Directional flow on Clark Street is separated by a faded double yellow centerline. The posted speed limit on Highland Avenue is 35 mph in the northbound direction and 45 mph in the southbound direction. Sidewalks are present along the east side of Highland Avenue and no crosswalks are provided in the vicinity of the intersection. Land use in the vicinity of the intersection consists of Walmart, Dunkin' Donuts, a retail plaza (400 Highland Place), and residential homes.

Highland Avenue at Walmart Main (Signalized) Driveway

The Walmart main driveway intersects Highland Avenue from the west to form a T-type intersection under actuated signal control. The Highland Avenue northbound approach consists of a 12-foot wide exclusive left-turn lane and two 12-foot wide through lanes. The Highland Avenue southbound approach consists of two 12-foot wide through lanes and an 11-foot wide exclusive right-turn lane. Directional travel on Highland Avenue is separated by a median with guardrail. The Walmart main driveway eastbound approach consists of a 27-foot wide lane that is used as an exclusive left-turn lane and an exclusive right-turn lane. Directional travel on the Walmart main driveway eastbound approach is separated by a raised median island at the intersection. The posted speed limit on Highland Avenue is 35 mph in the northbound direction and 45 mph in the southbound direction. Sidewalks are present along the east side of Highland Avenue. Land use in the vicinity of the intersection consists of Walmart and Uncle Bob's Self-Storage facility.

Highland Avenue at Walmart South Driveway

Highland Avenue is intersected by the Walmart south driveway from the west to form an unsignalized T-type intersection. The Highland Avenue northbound approach consists of two 12-foot wide through lanes. The Highland Avenue southbound approach consists of a 12-foot wide through lane and a 12-foot wide shared through/right-turn lane. Directional flow along Highland Avenue is separated by a raised median with guardrail. The Walmart south driveway consists of a 30-foot wide right-in/right-out driveway under STOP-sign control. There are no pavement markings separating directional travel on the Walmart south driveway. The posted speed limit on Highland Avenue is 35 mph in the northbound direction and 45 mph in the southbound direction. Sidewalks are present along the east side of Highland Avenue and no crosswalks are provided in the vicinity of the intersection. Land use in the vicinity of the intersection consists of Walmart, commercial businesses, and the Meineke Car Care Center.

Highland Avenue at Meineke Driveway (462 Highland Avenue)

Highland Avenue is intersected by the Meineke driveway from the west to form an unsignalized T-type intersection. The Highland Avenue northbound approach consists of two 12-foot wide through lanes. The Highland Avenue southbound approach consists of a 12-foot wide through lane and a 12-foot wide shared through/right-turn lane. Directional flow along Highland Avenue is separated by a raised median with guardrail. The Meineke driveway is 26 feet wide and is under STOP control. There are no pavement markings separating directional travel on the Meineke driveway. The posted speed limit on Highland Avenue is 35 mph in the northbound direction and 45 mph in the southbound direction. Sidewalks are present along the east side of Highland Avenue and no crosswalks are provided in the vicinity of the intersection. Land use in the vicinity of the intersection consists of Walmart, commercial business, and the Meineke Car Care Center.

Western Avenue at Fays Avenue

Fays Avenue intersects Western Avenue from the west to form a T-type intersection under actuated signal control. The Western Avenue northbound approach consists of a 12-foot wide exclusive left-turn lane and an 11-foot wide through lane. The Western Avenue southbound approach consists of a 16-foot wide general-purpose travel lane. Directional travel on Western Avenue is separated by a painted median and a double yellow centerline. The Fays Avenue eastbound approach consists of a 15-foot wide general-purpose travel lane. There are no pavement markings separating directional travel on Fays Avenue. The posted speed limit on Western Avenue is 35 mph. Sidewalks are provided along both sides of Western Avenue and Fays Avenue. Crosswalks are striped across the Western Avenue north leg and Fays Avenue. Land use in the vicinity of the intersection consists of residential homes.

TRAFFIC VOLUMES

Base traffic conditions within the study area were developed by conducting manual turning movement counts (TMCs), vehicle classification counts, and automatic traffic recorder (ATR) counts in May and June 2008. The TMCs and vehicle classification counts were performed at the study area intersection locations during the weekday AM peak period (7:00 to 9:00 AM), the weekday PM peak period (4:00 to 6:00 PM), and the Saturday midday peak period (11:00 AM to 2:00 PM). The ATR counts were conducted along Highland Avenue adjacent to the site to collect both weekday and Saturday daily traffic volumes as well as vehicle speed measurements. Since historical traffic volume data along roadways in the vicinity of the site have shown a slight decrease in traffic volumes over the past few years the counts collected are used in the study to represent current existing traffic volumes. All traffic-count data are provided in the Appendix.

Traffic on a given roadway typically fluctuates throughout the year depending on the area and the type of roadway. To determine if the traffic-count data needed to be adjusted to account for this fluctuation, seasonal and historical traffic-volume data were reviewed from nearby MassDOT Permanent Count Stations.¹ This information revealed that May traffic volumes are approximately 3 to 4 percent higher than annual average-month conditions and June traffic volumes are approximately 3 to 12 percent higher than annual average-month conditions. Therefore, the May and June traffic counts were used as collected to provide a conservative (higher than average) analytical framework. This further supports the use of the collected traffic volumes to represent existing 2009 traffic conditions. The MassDOT seasonal adjustment data are provided in the Appendix.

Table 2 summarizes the existing daily and peak-hour traffic volumes along Highland Avenue. Figures 2 through 4 graphically depict the 2009 Existing weekday AM, weekday PM, and Saturday midday peak-hour traffic flow networks, respectively.

¹MassDOT 2006 Traffic Volumes; Permanent Count Station 35 located on Route 128, north of Brimbal Avenue in Beverly; and Permanent Count Station 550 located on Route 1, north of Lowell Street in Peabody.

TRAFFIC IMPACT AND ACCESS STUDY

Walmart and Meineke Expansions and Lowe's Home Improvement Warehouse - Salem, Massachusetts

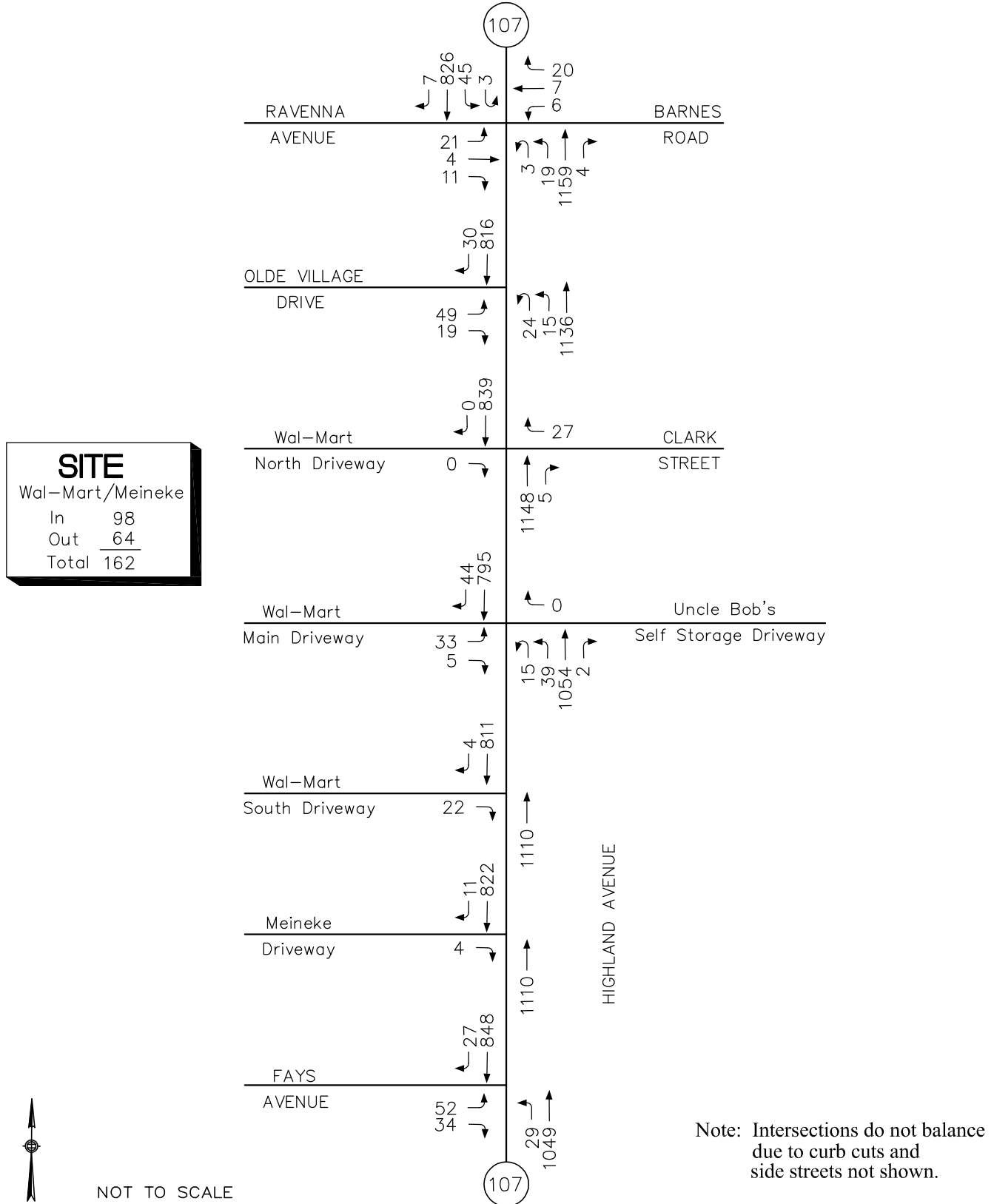


Figure 2
2009 Existing
Weekday AM
Peak Hour Traffic Volumes

TRAFFIC IMPACT AND ACCESS STUDY

Walmart and Meineke Expansions and Lowe's Home Improvement Warehouse - Salem, Massachusetts

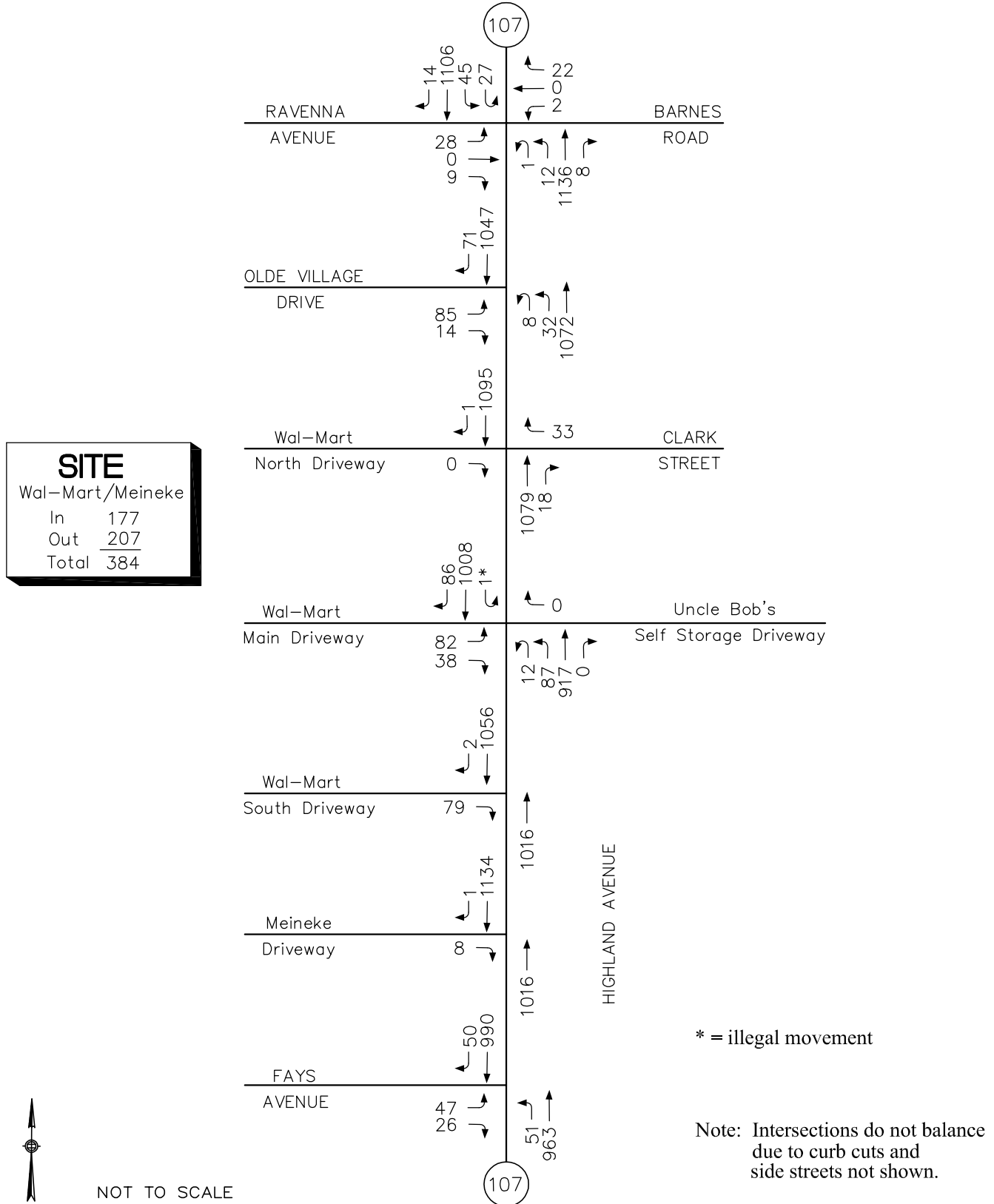


Figure 3
2009 Existing
Weekday PM
Peak Hour Traffic Volumes

TRAFFIC IMPACT AND ACCESS STUDY

Walmart and Meineke Expansions and Lowe's Home Improvement Warehouse - Salem, Massachusetts

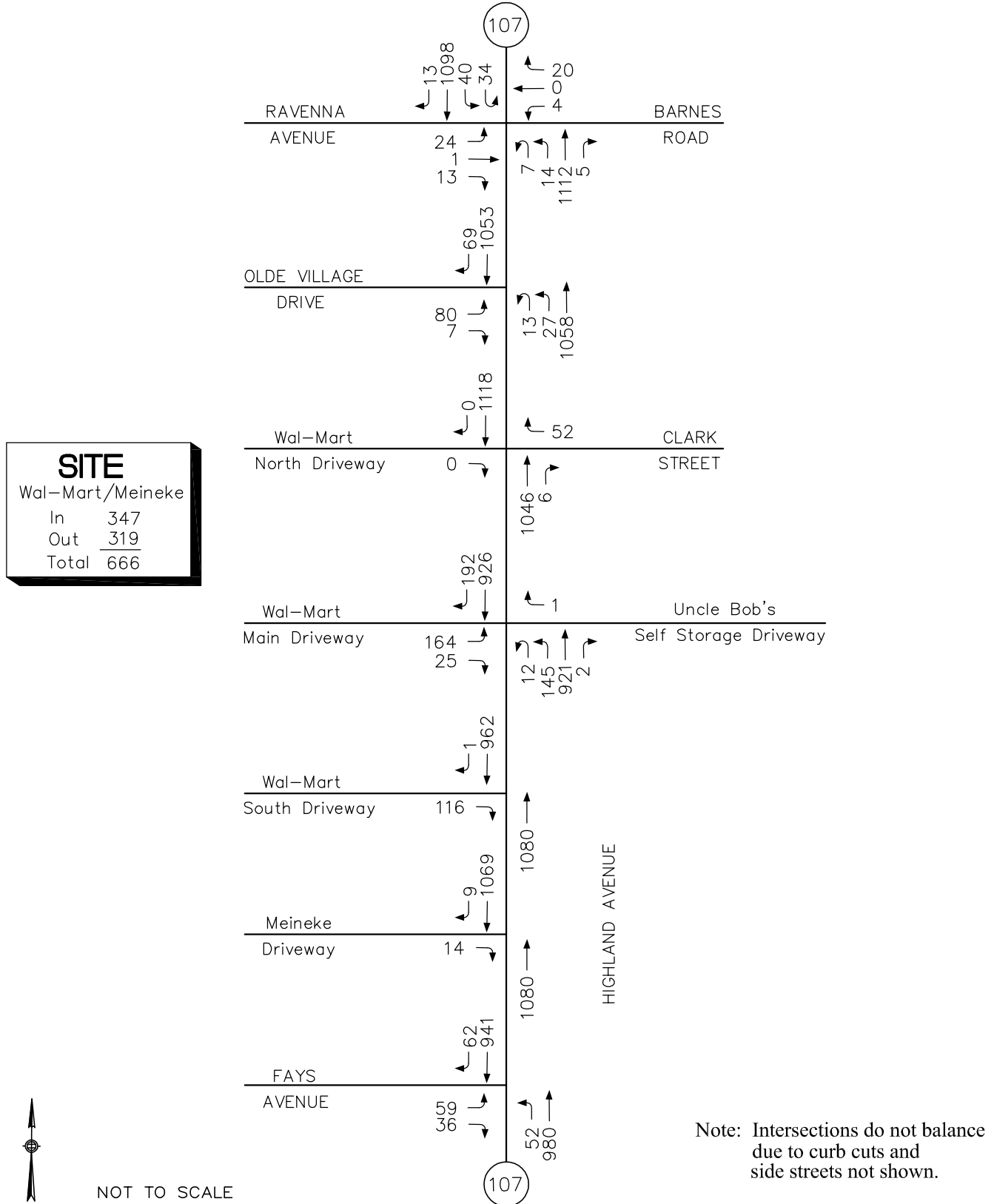


Figure 4
2009 Existing
Saturday MIDDAY
Peak Hour Traffic Volumes

TRAFFIC IMPACT AND ACCESS STUDY

Walmart and Meineke Expansions and Lowe's Home Improvement Warehouse - Salem, Massachusetts

Table 2
EXISTING TRAFFIC-VOLUME SUMMARY

Location/Time Period	Daily Volume (vpd) ^a	Peak-Hour Volume (vph) ^b	K Factor ^c	Directional Distribution ^d
Highland Avenue adjacent to the site:				
<i>Weekday</i>	26,360	2,062	7.8	51% SB
<i>Saturday</i>	25,310	2,031	8.0	53% NB

^a Vehicles per day.

^b Vehicles per hour.

^c Percent of average daily traffic occurring during the peak hour.

^d SB = southbound; NB = northbound.

TRAFFIC ACCIDENTS

Accident data for the study area intersections were obtained from MassDOT for the most recent three-year period available (between 2004 and 2006). These data were supplemented with accident data from the Salem Police Department (between 2005 and 2007) to verify the accuracy of the MassDOT data. Based on a review of the available accident data, the MassDOT data appears to be consistent with the Salem Police Department data. A summary of the accident data at the study area intersections is provided in Table 3.

In addition to the accident summary, incident occurrence should be compared to the volume of traffic through a particular intersection to determine any significance. Accordingly, the accident rates were calculated for each study area intersection and compared with the statewide and district-wide (MassDOT District 4) averages. An intersection accident rate is a measure of the frequency of accidents compared to the volume of traffic through an intersection and is presented in accidents per million entering vehicles (acc/mev). For unsignalized intersections, the statewide average is 0.66 acc/mev and the district-wide average is 0.63 acc/mev. For signalized intersections, the statewide average is 0.87 acc/mev and the district-wide average is 0.88 acc/mev. A comparison of the calculated accident rate to these averages can be used to establish the significance of accident occurrence and whether or not potential safety problems exist. All crash rate worksheets are provided in the Appendix.

TRAFFIC IMPACT AND ACCESS STUDY

Walmart and Meineke Expansions and Lowe’s Home Improvement Warehouse - Salem, Massachusetts

**Table 3
ACCIDENT SUMMARY**

Location	Number of Accidents			Severity ^a			Accident Type ^b						Percent During	
	Total	Average per Year	Accident Rate ^c	PD	PI	F	CM	RE	HO	FO	Ped	Other	Commuter Peak ^d	Wet/Icy Conditions
Highland Avenue at Ravenna Avenue and Barnes Road	7	2.3	0.21	5	2	0	2	1	0	2	0	2	43%	57%
Highland Avenue at Olde Village Drive	18	6.0	0.55	11	7	0	1	6	0	2	0	9	17%	39%
Highland Avenue at and Clark Street	2	0.7	0.06	1	1	0	1	1	0	0	0	0	0%	50%
Highland Avenue at Walmart driveways ^e	24	8.0	0.77	18	5	1	4	7	0	2	0	11	42%	25%
Highland Avenue at Meineke driveway	0	0.0	0.00	0	0	0	0	0	0	0	0	0	0%	0%
Western Avenue at Fays Avenue	10	3.3	0.33	6	4	0	4	6	0	0	0	0	30%	30%

Source: Salem Police Department and MassDOT Traffic Operations Safety Management System for the Western Avenue and Fays Avenue intersection.

^a PD = property damage only; PI = personal injury; F = fatality.

^b CM = cross movement/angle; RE = rear end; HO = head on; FO = fixed object; Ped = pedestrian.

^c Measured in accidents per million entering vehicles.

^d Percent of vehicle incidents that occurred during the weekday AM and weekday PM commuter peak periods.

^e Accident data did not distinguish between the Walmart north, main, and south driveways.

TRAFFIC IMPACT AND ACCESS STUDY

Walmart and Meineke Expansions and Lowe's Home Improvement Warehouse - Salem, Massachusetts

The intersection of Highland Avenue at Olde Village Road has experienced, on average, six accidents per year, of which, approximately 61 percent (11 of 18) resulted in property damage only. Approximately 33 percent (6 of 18) of the reported accidents involved rear-end-type collisions, and approximately 11 percent (2 of 18) involved a collision with a fixed object. Approximately 17 percent (3 of 18) of the reported accidents occurred during the weekday commuter peak period, and approximately 38 percent (7 of 18) occurred under wet/icy roadway conditions. This intersection has experienced an accident rate of 0.55, which is lower than the district-wide and statewide averages for signalized intersections. There were no fatalities reported at this intersection during the times periods studied. Based on the accident history data, there does not appear to be a safety concern at this location.

The intersections of Highland Avenue and the Walmart driveways have experienced, on average, eight accidents per year; however, the accident data did not distinguish between the three existing Walmart driveways. Approximately 75 percent (18 of 24) of the reported accidents resulted in property damage only and approximately 29 percent (7 of 24) involved rear-end-type collisions. Approximately 42 percent (10 of 24) of the reported accidents occurred during the weekday commuter peak period, and approximately 25 percent (6 of 24) occurred under wet/icy roadway conditions.

Although the Walmart driveway intersections with Highland Avenue were considered as one location, the data revealed an accident rate of 0.77 which is lower than the district-wide and statewide averages for signalized intersections. There was one fatality on Highland Avenue at the Walmart main driveway on June 13, 2007. The accident occurred when a vehicle traveling in the Highland Avenue southbound right-turn only lane continued to travel southbound on Highland Avenue and collided with another vehicle in the southbound through lane. Accordingly, additional signage is proposed as part of the development project to provide advance lane use signs to better define the intersection geometry. This will inform drivers prior to the intersection on which lane to travel.

The remaining study area intersections have experienced, on average, three accidents or less per year. No fatalities were reported at these intersections during the time periods studied, and the accident rates are lower than the district-wide and state-wide averages. Based on the accident history data, there does not appear to be a safety concern at these locations.

VEHICLE SPEEDS

Speed measurements were conducted along Highland Avenue by measuring the elapsed time for vehicles traveling a short, pre-measured distance between two checkpoints. The travel time is recorded using ATRs over a 24-hour period, thereby also recording travel speeds during non-peak hours when vehicle speeds are not affected by platooning. Dividing the elapsed time by the measured distance between checkpoints derives the speed. The results of the speed measurements are summarized in Table 4.

Table 4
OBSERVED TRAVEL SPEEDS ^a

<u>Location/Direction</u>	<u>Posted Speed Limit</u>	<u>Median Speed</u>	<u>85th Percentile Speed ^b</u>
Highland Avenue adjacent to the site:			
<i>Northbound</i>	35	40	46
<i>Southbound</i>	45	31	41

^a In miles per hour (mph).

^b Speed at, or below which 85 percent of all observed vehicles travel.

As shown, the median speeds on Highland Avenue were found to be 40 and 31 mph with 85th percentile speeds of 46 and 41 mph for northbound and southbound travel, respectively. Speeds in the southbound direction were observed to be below the posted speed limit of 45 mph for Highland Avenue. However, vehicles traveling northbound on Highland Avenue were observed to be traveling at speeds in excess of the posted speed limit of 35 mph.

SIGHT DISTANCE

To identify potential safety concerns associated with site access and egress, sight distances have been evaluated at the proposed site driveway locations to determine if the available sight distances for vehicles exiting the site meet or exceed the minimum distances required for approaching vehicles to safely stop. The available sight distances were compared with minimum requirements, as established by the American Association of State Highway and Transportation Officials (AASHTO).² AASHTO is the national standard by which vehicle sight distance is calculated, measured, and reported. The Massachusetts Executive Office of Transportation (EOT) and the EOEEA require the use of AASHTO sight distance standards when preparing traffic impact assessments and studies, as stated in their guidelines for traffic impact assessments.

Sight distance is the length of roadway ahead that is visible to the driver. Stopping Sight Distance (SSD) is the minimum distance required for a vehicle traveling at a certain speed to safely stop before reaching a stationary object in its path. The values are based on a driver perception and reaction time of 2.5 seconds and a braking distance calculated for wet, level pavements. When the roadway is on either an upgrade or downgrade, grade correction factors are applied. Stopping sight distance is measured from an eye height of 3.5 feet to an object height of 2 feet above street level, equivalent to the taillight height of a passenger car. The SSD is measured along the centerline of the traveled way of the major road.

Intersection sight distance (ISD) is provided on minor street approaches to allow the drivers of stopped vehicles a sufficient view of the major roadway to decide when to enter the major roadway. By definition, ISD is the minimum distance required for a motorist exiting a minor street to turn onto the major street, without being overtaken by an approaching vehicle reducing its speed from the design speed to 70 percent of the design speed. ISD is measured from an eye height of 3.5 feet to an object height of 3.5 feet above street level. The use of an object height equal to the driver eye height makes intersection sight distances reciprocal (i.e., if one driver can see another vehicle, then the driver of that vehicle can also see the first vehicle). When the minor street is on an upgrade that exceeds 3 percent, grade correction factors are applied.

²A *Policy on Geometric Design of Highways and Streets*; American Association of State Highway and Transportation Officials (AASHTO); 2004.

TRAFFIC IMPACT AND ACCESS STUDY

Walmart and Meineke Expansions and Lowe's Home Improvement Warehouse - Salem, Massachusetts

SSD is generally more important as it represents the minimum distance required for safe stopping while ISD is based only upon acceptable speed reductions to the approaching traffic stream. However, the ISD must be equal to or greater than the minimum required SSD in order to provide safe operations at the intersection. In accordance with the AASHTO manual, *"If the available sight distance for an entering or crossing vehicle is at least equal to the appropriate stopping sight distance for the major road, then drivers have sufficient sight distance to anticipate and avoid collisions. However, in some cases, this may require a major-road vehicle to stop or slow to accommodate the maneuver by a minor-road vehicle. To enhance traffic operations, intersection sight distances that exceed stopping sight distances are desirable along the major road."* Accordingly, ISD should be at least equal to the distance required to allow a driver approaching the minor road to safely stop.

For signalized intersections, the first vehicle stopped on one approach should be visible to the driver of the first vehicle stopped on each of the other approaches. However, both proposed site driveways were evaluated as unsignalized intersections to provide a conservative (worst case) comparison. For sight distance to traffic signals, all efforts should be made to meet the minimum sight distance recommendations based on the 85th percentile speeds.

The available SSD and ISD at the proposed site driveway locations were measured and compared to minimum requirements as established by AASHTO. Since the distance required to stop a vehicle is dependent on the speed of that vehicle, speed studies were conducted as presented in the *Vehicle Speeds* section. Based on the posted speed limit and the observed speeds, the SSD and ISD requirements at the two proposed site driveways were calculated. The required minimum sight distances for each speed are compared to the available distances, as shown in Table 5.

As indicated in Table 5, available sight distances at the proposed site driveways exceed the minimum and desirable SSD and ISD requirements for safe operation based on both the posted and desirable travel speeds. To ensure the safe and efficient flow of traffic to and from the site, it is recommended that any proposed plantings, vegetation, landscaping, and signing along the site frontage be kept low to the ground or set back sufficiently from the edge of the roadways so as not to inhibit the available sight lines.

TRAFFIC IMPACT AND ACCESS STUDY

Walmart and Meineke Expansions and Lowe's Home Improvement Warehouse - Salem, Massachusetts

Table 5
SIGHT DISTANCE SUMMARY

Location/Direction	Stopping Sight Distance (feet)		Intersection Sight Distance (feet)		
	Measured	Minimum Required ^a	Measured	Minimum Required ^b	Desirable ^c
Highland Avenue at North Site Driveway: <i>North of intersection</i>	570	395	600	395	430
Highland Avenue at Main Site Driveway: <i>North of intersection</i>	570	360	600+	360	465
<i>South of intersection</i>	600	375	600+	375	465
Highland Avenue at Meineke Driveway: <i>North of intersection</i>	500+	360	500+	360	465

^aValues based on AASHTO requirements for posted speed limit of 45 mph in the southbound direction and the observed 85th percentile speed (46 mph) in the northbound direction.

^bValues based on AASHTO requirements for SSD.

^cValues based on AASHTO ISD guidelines for posted speed limit of 35 mph northbound and 45 mph southbound on Highland Avenue.

PUBLIC TRANSPORTATION

The Massachusetts Bay Transportation Authority (MBTA) provides bus service in the study area via Bus Routes 450 and 456. Bus Route 450 begins at the Salem Depot, travels south along Route 107, and ends at Haymarket Station and/or Wonderland Station. Bus Route 450 runs between 4:50 AM and 1:27 AM on weekdays, between 6:05 AM and 12:49 AM on Saturdays, and between 7:45 AM and 12:15 AM on Sundays. Bus Route 456 begins at the Salem Depot, travels south along Route 107 and Route 129, and ends at Central Square in Lynn. Bus Route 456 runs between 7:00 AM and 4:16 PM on weekdays. Both Bus Routes 450 and 456 stop at the existing Walmart site. The public transportation information is provided in the Appendix.

FUTURE CONDITIONS

To estimate the impact of site-generated traffic within the study area, existing traffic volumes were projected to the year 2014. This represents a five-year design horizon in accordance with EOEEA/EOT traffic impact assessment guidelines. Traffic volumes on the roadway network at that time will include existing traffic, new traffic due to normal traffic growth, and traffic related to any significant development by others expected to be completed within the area by 2014. Consideration of these factors resulted in the development of 2014 No-Build traffic volumes, which assume that the proposed development is not built. The incremental impacts of the proposed retail development may then be determined by adding site-generated traffic volumes (Build conditions) and making comparisons to the No-Build conditions.

TRAFFIC GROWTH

To develop the 2014 No-Build forecast volumes, two components of traffic growth were considered. First, an annual average traffic-growth percentage was determined based on MassDOT historical traffic-volume data. These data revealed that there has been a 1.32 percent decrease in traffic between 1997 and 2004 in the vicinity of the site. However, such a decline in traffic may not continue. Therefore, to provide a conservative (worse than expected) basis for the analysis, a 1.0 percent compounded annual growth rate was assumed to account for general population growth and the traffic generated by smaller area developments.

TRAFFIC IMPACT AND ACCESS STUDY

Walmart and Meineke Expansions and Lowe's Home Improvement Warehouse - Salem, Massachusetts

Second, any traffic that may be generated by planned developments that could add substantial volumes of traffic through the study area within the next five years was considered. Based on discussions with officials from the City of Salem, there are six projects in the area that could add significant traffic volumes to the adjacent roadways since the time of the traffic counts.

The first project is Saint Jean's Credit Union located at 370 Highland Avenue, which opened on May 27, 2008. This development consists of a 7,200 square foot bank with office space and three drive-up windows. At the time of the May 2008 weekday AM and weekday PM traffic counts, the development was not yet opened. Therefore, to estimate the volume of traffic to be generated by the Saint Jean's Credit Union during the weekday AM and weekday PM peak hours, traffic volumes were obtained from the traffic study conducted for the project.³

The second project is a retail development to be located at 262-272 Highland Avenue at the intersection with Marlborough Road. The proposed development will consist of a 12,900 square foot CVS Pharmacy with two drive-through windows and a 10,400± square foot building containing Tri-City Sales and Dunkin' Donuts. The project was under construction at the time of the traffic counts. Therefore, to estimate the volume of traffic to be generated by the retail development, traffic volumes were obtained from the traffic study conducted for the project.⁴

The third project is Osborne Hills, which consists of 131 single-family residences to be located on Marlborough Road. This project is proposed to be constructed in phases, of which, Phase One (11 single-family homes) has been constructed and occupied. Therefore, to estimate the volume of traffic to be generated by the remaining 120 homes, traffic volumes were obtained from a technical memorandum prepared for the project and compared with trip-generation data published in the Institute of Transportation Engineers (ITE) *Trip Generation* manual for Land Use Code (LUC) 210 (Single-Family Detached Housing) for 120 units.^{5,6}

The fourth project is Chapel Hill, which consists of 26 single family residences to be located on Clark Street. At the time of this study, this residential project has been approved by the Salem Planning Board but has not been constructed. To estimate the volume of traffic to be generated by the Chapel Hill development, traffic volumes for the weekday AM and weekday PM peak hours were obtained from the traffic study prepared for the project.⁷ Traffic volumes for the Saturday midday peak hour were estimated using ITE LUC 210 (Single-Family Detached Housing) for 26 units.

³ *Traffic Impact Assessment; Proposed Commercial Development; 376 Highland Avenue; Salem, MA; Abend Associates; June 13, 2006.*

⁴ *Traffic Impact and Access Study; Proposed Tri-City Sales & CVS Pharmacy Development; 272 Highland Avenue; Vanasse Hangen Brustlin, Inc.; November 2006.*

⁵ *Response to Traffic Peer Review Comments; Osborne Hills Residential Subdivision; Salem, MA; Abend Associates; 10/13/06.*

⁶ *Trip Generation; 7th Edition; Institute of Transportation Engineers; Washington, DC; 2003.*

⁷ *Traffic Impact Assessment; Chapel Hill Residential Subdivision, Salem, Massachusetts; Abend Associates; August 21, 2006.*

TRAFFIC IMPACT AND ACCESS STUDY

Walmart and Meineke Expansions and Lowe's Home Improvement Warehouse - Salem, Massachusetts

The fifth project is the Witch Hill residential development located on Durkin Road. Roadway construction has begun, however, no homes have been constructed at the time of this study. Therefore, to estimate the volume of traffic to be generated by the residential development, traffic volumes for the weekday AM and weekday PM peak hours were obtained from the traffic study prepared for the project.⁸ Traffic volumes for the Saturday midday peak hour were estimated using ITE LUC 210 (Single-Family Detached Housing) for 28 units.

The sixth project is the expansion of an existing transfer station located on Swampscott Road. This project has been approved by the Salem Planning Board and is currently under construction. The transfer station development is not expected to generate a significant amount of traffic within the study area and will be accounted for within the annual background growth rate for the area.

The 2014 No-Build peak-hour traffic volumes were accordingly developed by applying a 1.0 percent per year traffic growth rate (5.1 percent compounded over five years) to the 2009 Existing volumes and by adding the traffic associated with the Saint Jean's Credit Union, Tri-City retail development, and the Osborne Hills, Chapel Hill, and Witch Hill residential developments. The 2014 No-Build traffic volumes are shown graphically on Figures 5 through 7 for the weekday AM, weekday PM, and Saturday midday peak hours, respectively.

PLANNED ROADWAY IMPROVEMENTS

Based on discussions with officials from the City of Salem and MassDOT, there is a State roadway improvement project nearing completion in the vicinity of the site. The MassDOT project (#602186) included traffic signal equipment and coordination improvements at seven locations on Highland Avenue. This project has upgraded the existing traffic signal equipment at these intersections so that travel delays and vehicle emissions will be reduced, and traffic flow and pedestrian safety will be enhanced. The seven locations along Highland Avenue are split into two separate coordinated signal systems. The first system includes the existing Walmart site driveway, Olde Village Drive, and Ravenna Avenue/Barnes Road. The second system includes Swampscott Road, Marlborough Road/Traders Way, Hawthorne Plaza Drive, and Cherry Hill Avenue/Wilson Street.

⁸ *Traffic Impact Assessment; Witch Hill Residential Subdivision, Salem, Massachusetts*; Abend Associates; October 7, 2004.

TRAFFIC IMPACT AND ACCESS STUDY

Walmart and Meineke Expansions and Lowe's Home Improvement Warehouse - Salem, Massachusetts

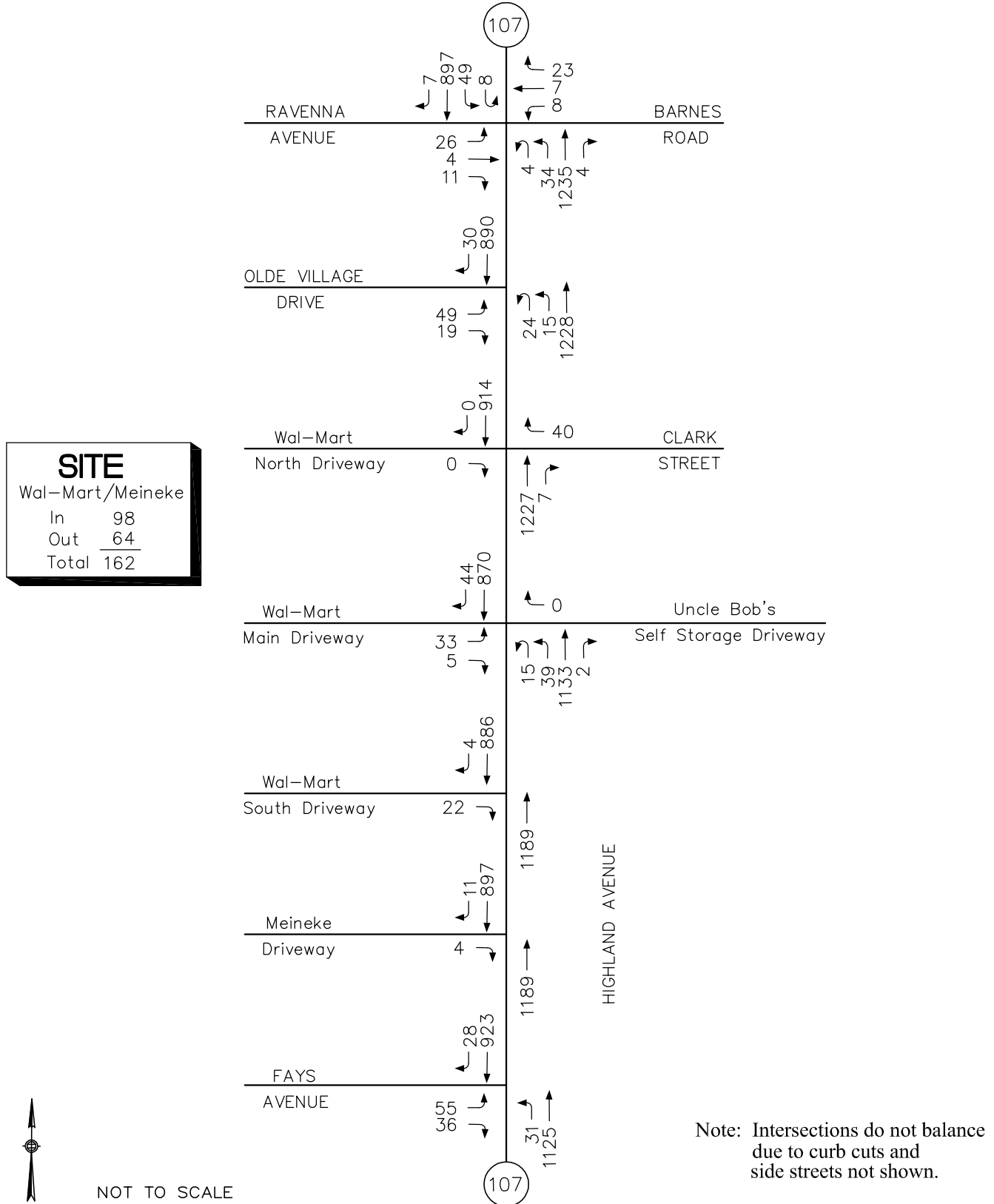


Figure 5
2014 No-Build
Weekday AM
Peak Hour Traffic Volumes

TRAFFIC IMPACT AND ACCESS STUDY

Walmart and Meineke Expansions and Lowe's Home Improvement Warehouse - Salem, Massachusetts

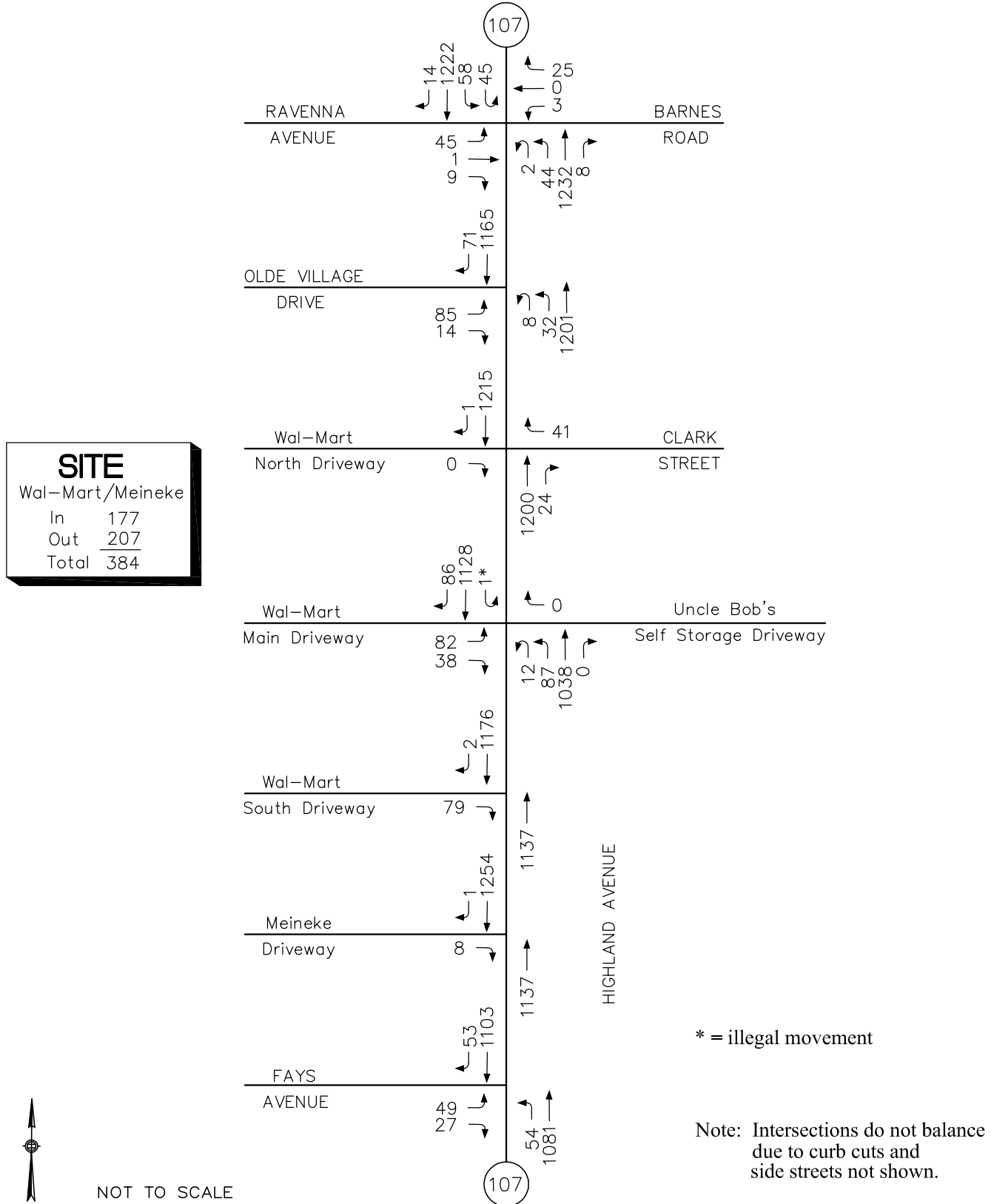


Figure 6
2014 No-Build
Weekday PM
Peak Hour Traffic Volumes

TRAFFIC IMPACT AND ACCESS STUDY

Walmart and Meineke Expansions and Lowe's Home Improvement Warehouse - Salem, Massachusetts

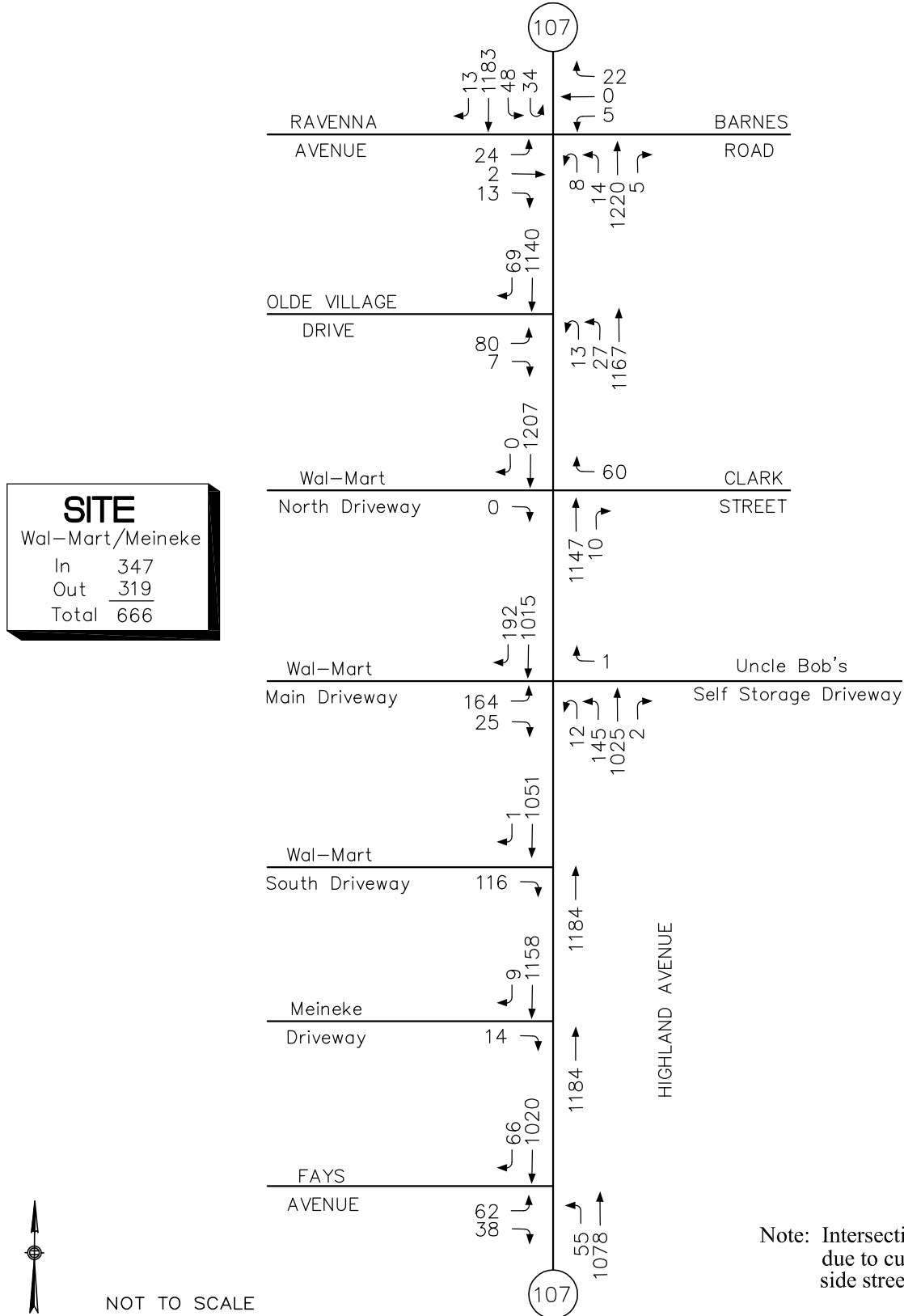


Figure 7
2014 No-Build
Saturday MIDDAY
Peak Hour Traffic Volumes

TRAFFIC IMPACT AND ACCESS STUDY

Walmart and Meineke Expansions and Lowe's Home Improvement Warehouse - Salem, Massachusetts

The project also includes the installation of an Emergency Vehicle Preemption System, which provides safer access for emergency vehicles along the Highland Avenue corridor. Traffic signal equipment has been installed and the traffic signal timing changes implemented. There are still changes being made to the northern coordinated traffic signal changes but not additional changes are proposed to the southerly coordinated system which includes the Walmart signal. Since the project is nearing completion, these improvements were assumed to be in place in the design horizon and are included in the 2014 No-Build and 2014 Build conditions.

TRIP GENERATION

The proposed retail development consists of modifying and expanding the existing Walmart store from 109,438± square feet to 152,192± square feet, expanding the existing Meineke Car Care Center from 3,084± square feet up to 6,084± square feet, and constructing a 121,859± square foot Lowe's Home Improvement Warehouse with a 31,204± square foot garden center. To estimate the volume of traffic to be generated by the proposed retail development, a comparison was made between trip-generation rates published in the ITE *Trip Generation* manual for the full build-out of the site as a shopping center as well as the generation of the individual land uses.

To estimate the volume of traffic to be generated by the proposed retail development, LUC 820 (Shopping Center) for the total build-out of the site (rounded up to 281,000 square feet) was used and compared to the generation of the existing Walmart store (109,438 square feet) and the Meineke Car Care Center (3,084 square feet) using the same methodology. The full-build out of the site does not include the size of the Lowe's garden center which will be located outside the principal faces of the exterior building walls, to be consistent with ITE trip generation methodologies. The difference between the existing and full build-out trip generation estimates provides the total additional site traffic due to the proposed retail expansion and development.

As a comparison, the trip generation of the individual land uses was calculated. To estimate the volume of traffic to be generated by the proposed Walmart expansion component of the proposed retail development, the actual driveway traffic counts were subtracted from LUC 813 (Free-Standing Discount Superstore) for 152,192 square feet. For the Meineke expansion, LUC 942 (Automobile Care Center) was used for the potential addition of up to 3,000 square feet. To estimate the volume of traffic to be generated by the proposed home improvement store component of the proposed development, LUC 862 (Home Improvement Superstore) was used for the 121,859 square foot retail store. The building size does not include the Lowe's garden center which will be located outside the principal faces of the exterior building walls, to be consistent with ITE trip generation methodologies.

TRAFFIC IMPACT AND ACCESS STUDY

Walmart and Meineke Expansions and Lowe's Home Improvement Warehouse - Salem, Massachusetts

The sum of these components (LUC 813 for 152,192 square feet minus the actual driveway counts, LUC 942 for 3,000 square feet, and LUC 862 for 121,859 square feet) provides a lower generation of the proposed development during the critical peak hours being analyzed. Therefore, the trip generation of the proposed retail development was calculated using LUC 820 for the full build-out of the site to provide a conservative (worst case) scenario. All trip-generation data are provided in the Appendix.

As discussed in the *Introduction* section of this study, an internal cross connection is provided with the adjacent retail parcel to the north. The existing internal cross connection will be maintained as part of the project. Existing traffic counts shown that these trips represent 24 vehicle trips (13 entering and 11 exiting) during the weekday AM peak hour, 47 vehicle trips (29 entering and 18 exiting) during the weekday PM peak hour, and 84 vehicle trips (48 entering and 36 exiting) during the Saturday midday peak hour. Since it is expected that these trips will not change in the future, they were not included in the existing external trip generation of the site as shown in Table 6. It is also assumed that the changes to the Camp Lion site will maintain existing traffic volumes in the study area. All additional site generated traffic as part of the project is assumed to use the Highland Avenue site driveways providing a conservative (worse-case) analysis condition.

Table 6
PEAK-HOUR TRIP-GENERATION SUMMARY

Time Period/Direction	Existing Trips ^a	Additional Trips ^b	Total Trips ^c
Weekday AM Peak Hour:			
<i>Enter</i>	98	72	170
<i>Exit</i>	<u>64</u>	<u>46</u>	<u>110</u>
<i>Total</i>	162	118	280
Weekday PM Peak Hour:			
<i>Enter</i>	177	286	463
<i>Exit</i>	<u>207</u>	<u>297</u>	<u>504</u>
<i>Total</i>	384	583	967
Saturday Midday Peak Hour:			
<i>Enter</i>	347	391	738
<i>Exit</i>	<u>319</u>	<u>361</u>	<u>680</u>
<i>Total</i>	666	752	1,418

^a Traffic counts conducted at the site driveways on May 21, 2008, May 22, 2008, and May 31, 2008.

^b ITE LUC 820 (Shopping Center) for 281,000 sf minus ITE LUC 820 for 112,522 sf.

^c Existing Trips plus Additional Trips equals the Total Trips accommodated at the site driveways.

TRAFFIC IMPACT AND ACCESS STUDY

Walmart and Meineke Expansions and Lowe's Home Improvement Warehouse - Salem, Massachusetts

Not all of the vehicle trips expected to be generated by the retail development represent *new* trips on the study area roadway system. Based on data presented in the *ITE Trip Generation Handbook*, the average *pass-by* trip percentage for a shopping center is 34 percent during the weekday PM peak hour and 26 percent during the Saturday midday peak hour.⁹ However, in order to be consistent with state guidelines for the preparation of traffic impact studies and to provide a conservative (worse than expected) basis for the analysis, only 25 percent of the site-generated traffic was considered *pass-by* traffic. Table 7 summarizes the expected peak-hour trip-generation characteristics of the proposed retail project.

Table 7
NEW VS. PASS-BY TRIPS

Time Period/Direction	Additional Site Trips		
	Total Additional Trips ^a	Pass-By Trips ^b	New Trips ^c
Weekday AM Peak Hour:			
<i>Enter</i>	72	15	57
<i>Exit</i>	<u>46</u>	<u>15</u>	<u>31</u>
<i>Total</i>	118	30	88
Weekday PM Peak Hour:			
<i>Enter</i>	286	73	213
<i>Exit</i>	<u>297</u>	<u>73</u>	<u>224</u>
<i>Total</i>	583	146	437
Saturday Midday Peak Hour:			
<i>Enter</i>	391	94	297
<i>Exit</i>	<u>361</u>	<u>94</u>	<u>267</u>
<i>Total</i>	752	188	564

^a From Table 6, Additional Trips

^b 25 percent of Total Additional Trips.

^c Total Additional Trips minus Pass-By Trips.

As shown in Table 7, the proposed project is expected to generate 88 *new* vehicle trips (57 entering and 31 exiting) during the weekday AM peak hour, 437 *new* vehicle trips (213 entering and 224 exiting) during the weekday PM peak hour, and 564 *new* vehicle trips (297 entering and 267 exiting) during the Saturday midday peak hour.

⁹ *Trip Generation Handbook*; 2nd Edition; Institute of Transportation Engineers; Washington, DC; 2004.

PROJECT ENVIRONMENTAL REVIEW (MEPA) THRESHOLDS

The trip generation of the proposed retail development was assessed to determine if the proposed project would meet or exceed any thresholds that would require formal MEPA environmental review with respect to traffic. One of the thresholds for MEPA environmental review is the total volume of daily traffic generated by a project. If a proposed development project requires a state permit and generates a total of more than 3,000 new daily vehicle trips or the construction of 1,000 total parking spaces, then both an ENF and an EIR must be prepared and filed with the MEPA office. These documents must then be subject to both governmental agency and public review and comment, and the primary government entity responsible for reviewing the proposed project plans and issuing the permits and approvals that are required to allow for the construction of the proposed project (in this case, the City of Salem) must take the comments made by other government agencies and the public on these documents into consideration as part of its decision-making process on the proposed project.

The proposed project site is currently occupied by a 109,438± square foot Walmart store and a 3,084± square foot Meineke Car Care Center, which results in the generation of a certain volume of total vehicles trips per day. To determine the daily trip generation of this existing uses within the property, the ITE *Trip Generation* manual trip rates for LUC 820 (Shopping Center) were used. Based on the existing and proposed trip generation of the site, the additional daily vehicle trips associated with the proposed project are summarized in Table 8.

**Table 8
TRIP-GENERATION SUMMARY -
MEPA Transportation Thresholds**

Time Period/Direction	Full Build-Out Trips ^a	Existing Trips ^b	Additional Trips
Weekday Daily:			
<i>Enter</i>	6,646	3,666	2,980
<i>Exit</i>	<u>6,646</u>	<u>3,666</u>	<u>2,980</u>
<i>Total</i>	13,292	7,332	5,960

^a ITE LUC 820 (Shopping Center) for 281,000 square feet.

^b ITE LUC 820 (Shopping Center) for 112,522 square feet.

TRAFFIC IMPACT AND ACCESS STUDY

Walmart and Meineke Expansions and Lowe's Home Improvement Warehouse - Salem, Massachusetts

As shown in Table 8, the net increase in daily traffic as a result of the proposed project is estimated to be 5,960 trips. As a result, the project is expected to exceed the MEPA *Transportation* review thresholds set forth in 301 CMR 11.10(6)(a) for the preparation of an ENF and an EIR.

TRIP DISTRIBUTION

After project-generated vehicle trips have been estimated, the next step in the TIAS is to determine the distribution of project traffic and assign these trips to the local roadway network. The directional distribution of *new* site traffic is dependent on the combination of a number of factors, including: existing travel patterns, site access routes, area demographics, and competing shopping opportunities. The directional distribution of *pass-by* traffic is expected to follow the existing travel patterns. The trip distribution for the expected additional *new* traffic for the proposed project is shown in Table 9 for the proposed retail development.

Table 9
TRIP-DISTRIBUTION SUMMARY

Roadway	Direction To/From	Percent New Site Traffic
Highland Avenue	North	50
Highland Avenue	South	45
Fays Avenue	South	<u>5</u>
TOTAL		100

Based on the traffic generation and distribution estimates for the proposed retail development, the traffic volumes associated with the proposed project were assigned to the local roadway network. The additional project-generated traffic volumes are shown on Figures 8 through 10 for the weekday AM, weekday PM, and Saturday midday peak hours, respectively. The project-generated traffic volumes were assigned to the roadway network and combined with the 2014 No-Build traffic volumes to develop the 2014 Build peak-hour traffic-volume networks. The 2014 Build weekday AM, weekday PM, and Saturday midday traffic volumes are illustrated on Figures 11 through 13, respectively.

TRAFFIC IMPACT AND ACCESS STUDY

Walmart and Meineke Expansions and Lowe's Home Improvement Warehouse - Salem, Massachusetts

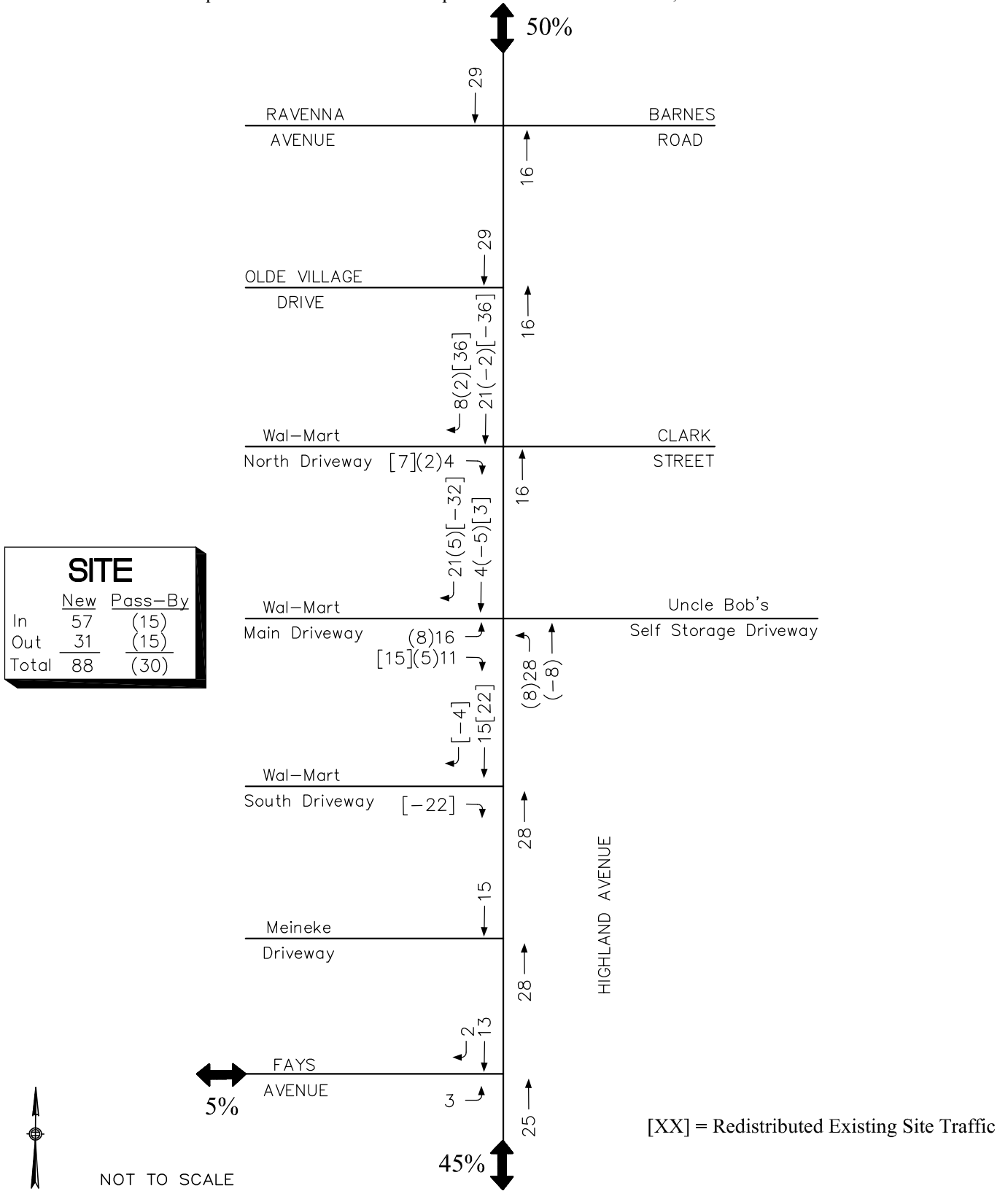


Figure 8
 Additional Site Generated
 Weekday AM
 Peak Hour Traffic Volumes

TRAFFIC IMPACT AND ACCESS STUDY

Walmart and Meineke Expansions and Lowe's Home Improvement Warehouse - Salem, Massachusetts

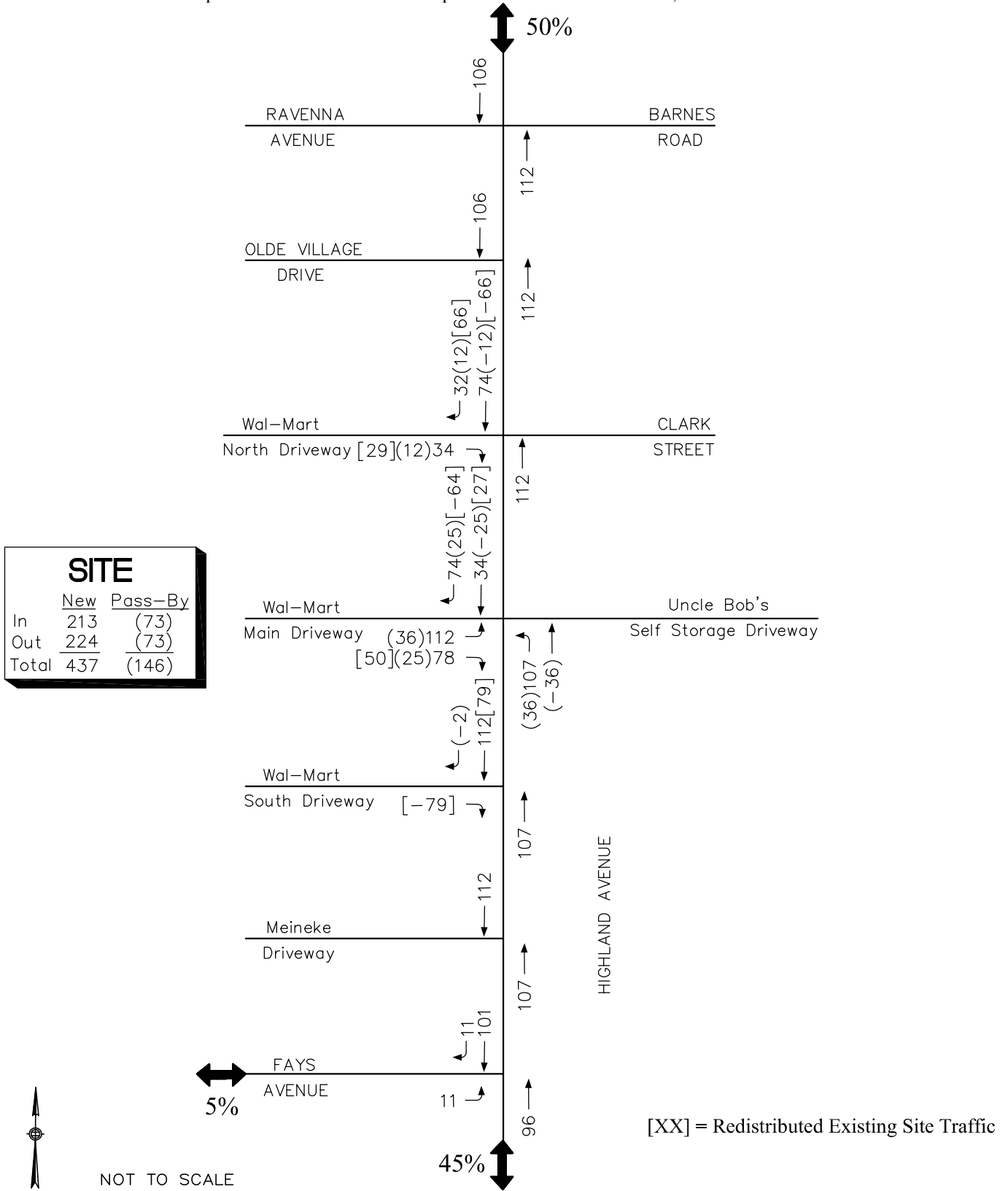


Figure 9
 Additional Site Generated
 Weekday PM
 Peak Hour Traffic Volumes

TRAFFIC IMPACT AND ACCESS STUDY

Walmart and Meineke Expansions and Lowe's Home Improvement Warehouse - Salem, Massachusetts

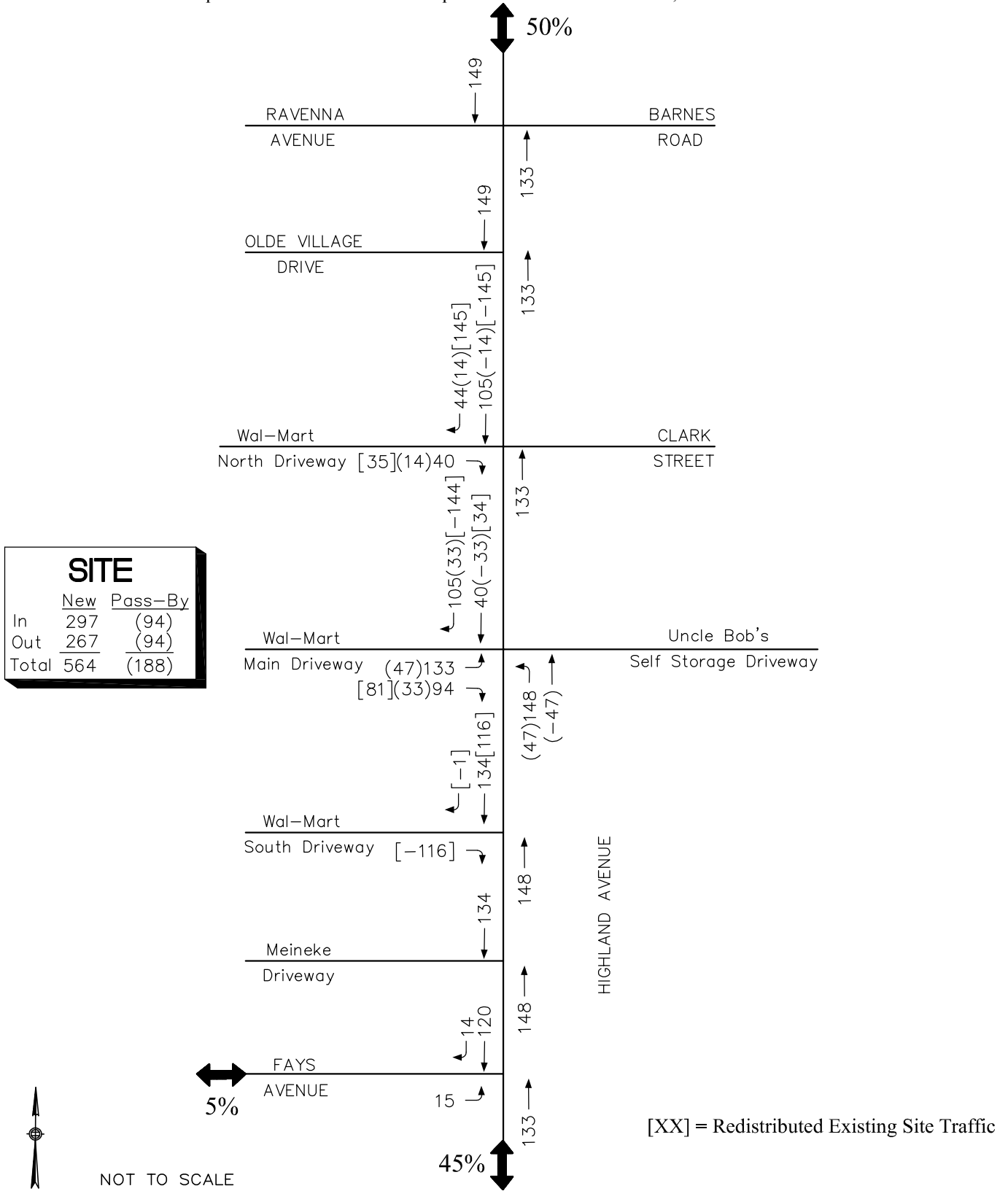


Figure 10
Additional Site Generated
Saturday MIDDAY
Peak Hour Traffic Volumes

TRAFFIC IMPACT AND ACCESS STUDY

Walmart and Meineke Expansions and Lowe's Home Improvement Warehouse - Salem, Massachusetts

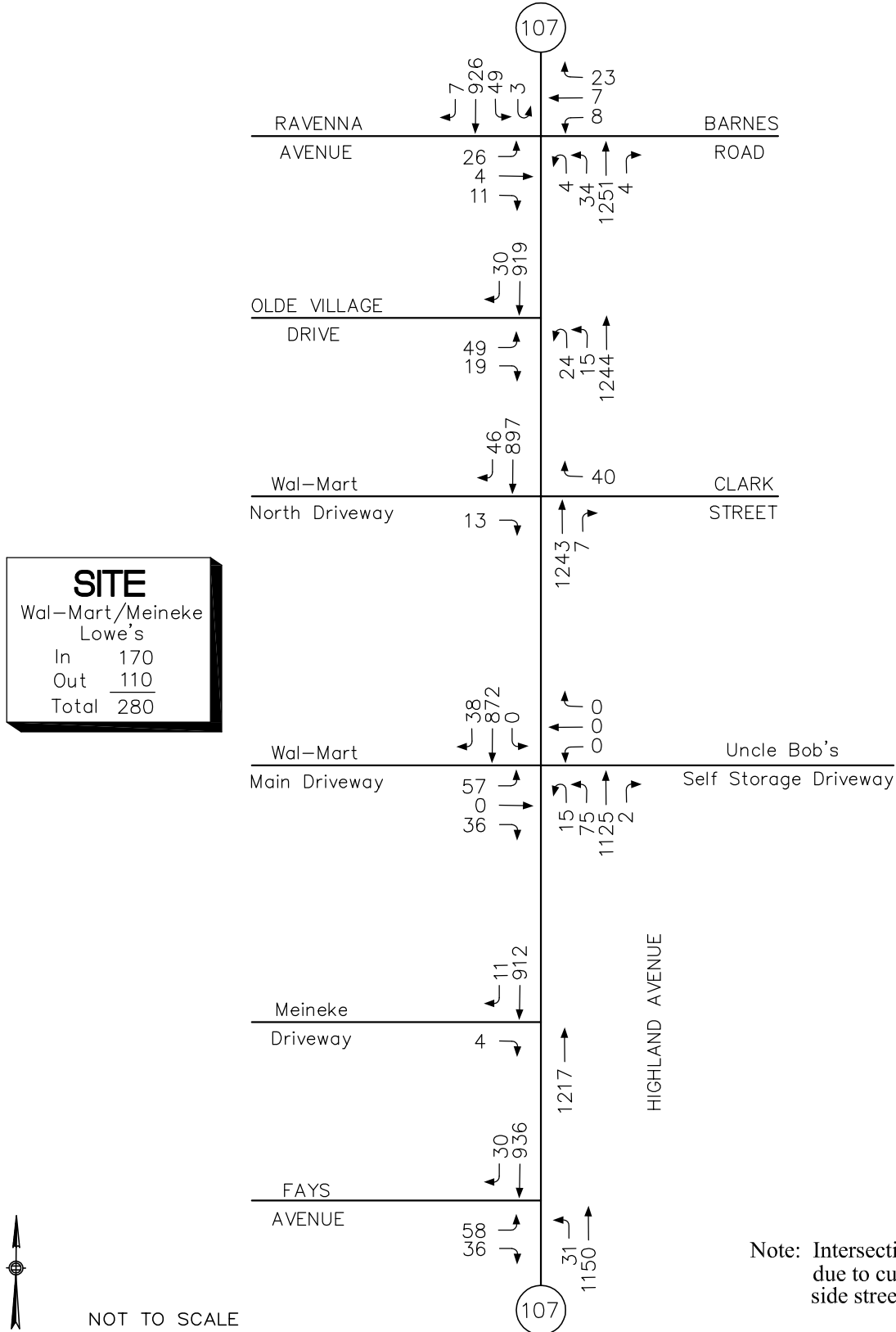


Figure 11
2014 Build
Weekday AM
Peak Hour Traffic Volumes

TRAFFIC IMPACT AND ACCESS STUDY

Walmart and Meineke Expansions and Lowe's Home Improvement Warehouse - Salem, Massachusetts

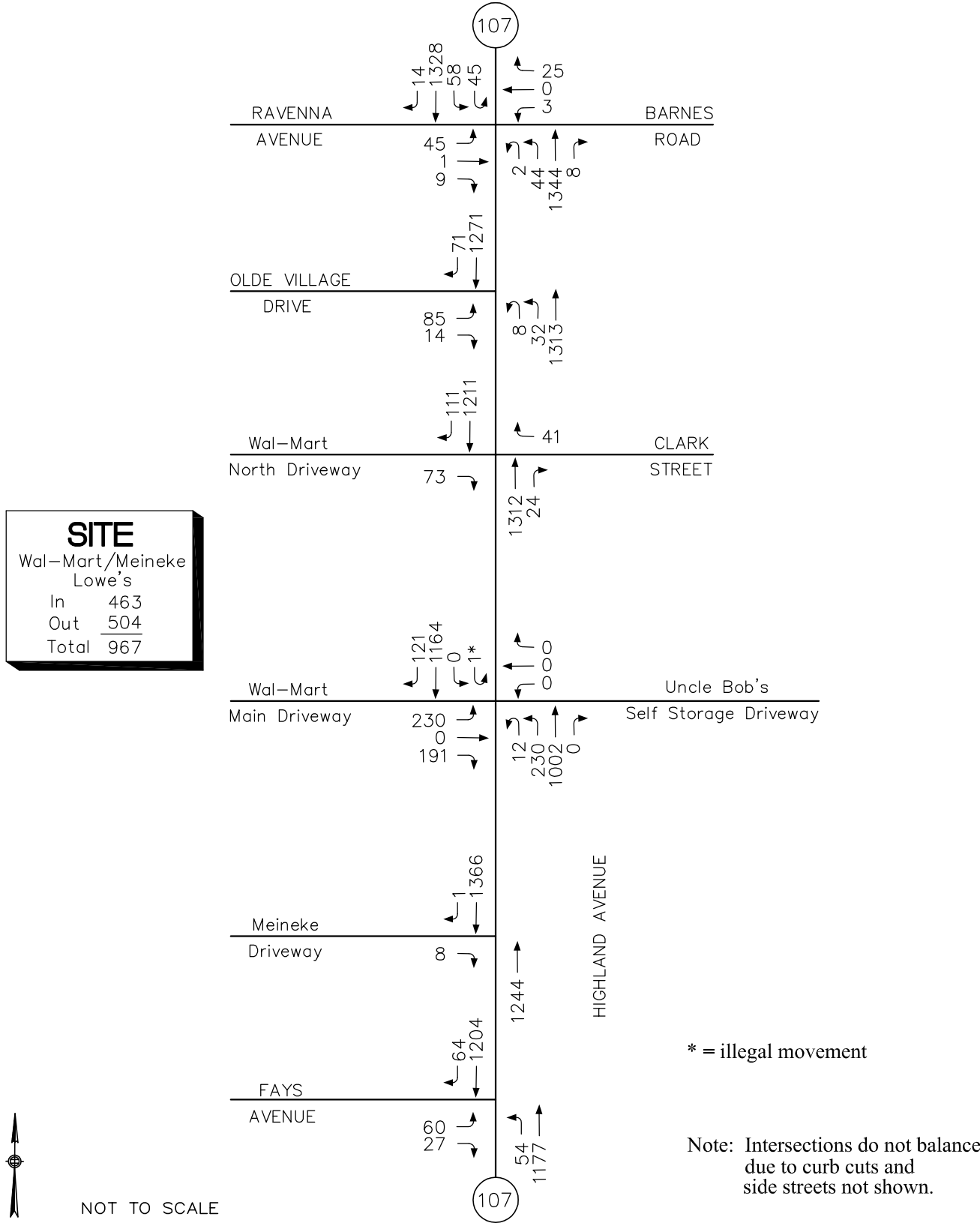


Figure 12
2014 Build
Weekday PM
Peak Hour Traffic Volumes

TRAFFIC IMPACT AND ACCESS STUDY

Walmart and Meineke Expansions and Lowe's Home Improvement Warehouse - Salem, Massachusetts

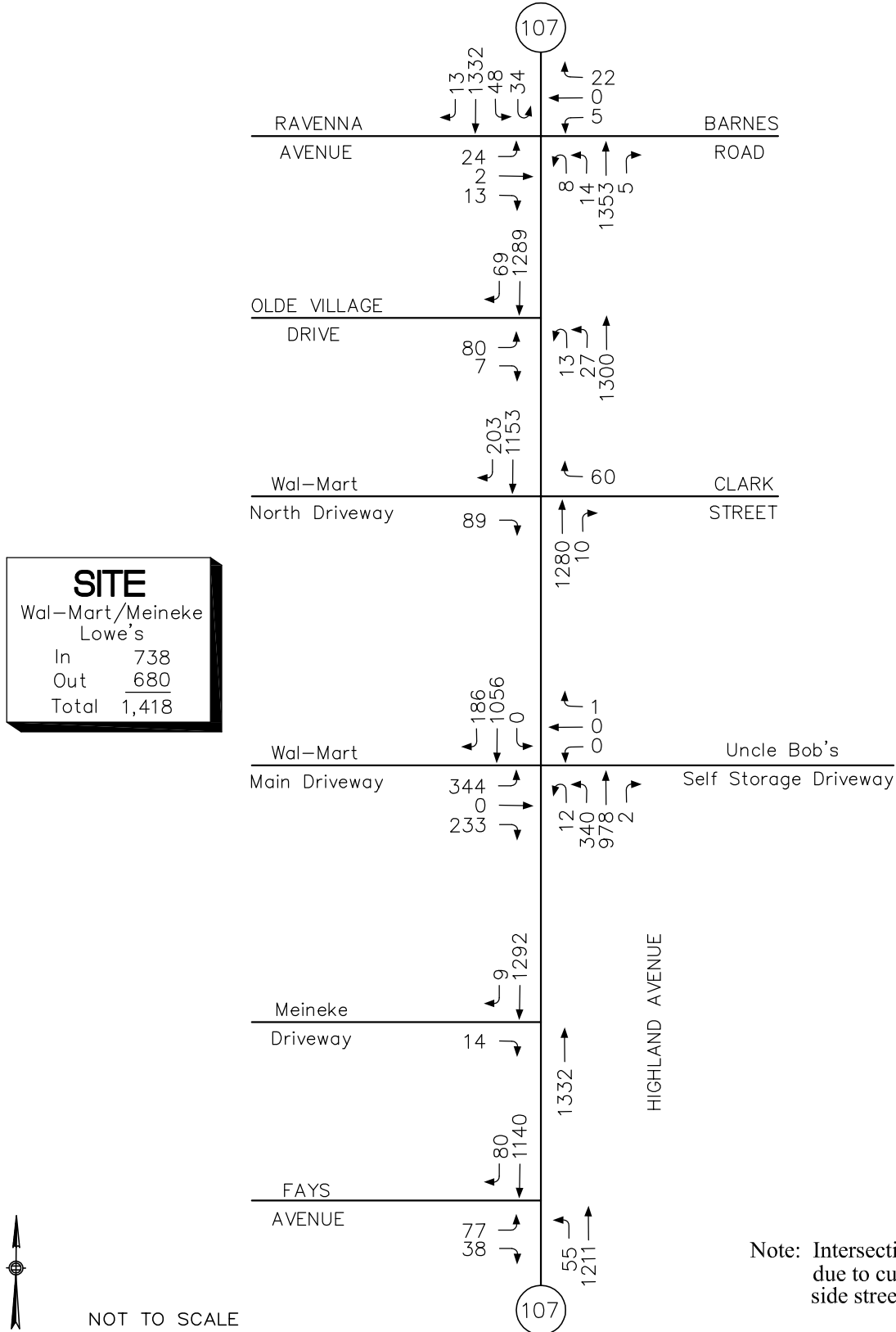


Figure 13
2014 Build
Saturday MIDDAY
Peak Hour Traffic Volumes

SITE ACCESS

Access to and egress from the Walmart portion of the site is currently provided via a signalized main driveway on Highland Avenue with two right-in/right-out driveways located on either side of the main site driveway. An internal cross connection to the retail parcel to the north is also provided for site access and egress. A right-in/right-out driveway along Highland Avenue is provided for Meineke. As proposed, the signalized site driveway will be closed and relocated further south on Highland Avenue to the location of the existing southerly right-in/right-out site driveway. The existing right-in/right-out driveway on the northern end of the property will be reconstructed to provide better accessibility and meet current state design standards. Current access to the Meineke and the Camp Lion site along Highland Avenue to the south of the site will be maintained and improved to meet current state design standards. The existing internal cross connection with the parcel to the north will be maintained as part of the project. A right-turn in and right-turn out only cross connection will also be provided to the existing Meineke located along the proposed main site driveway. All driveways will be designed in accordance with current local and state standards.

The proposed relocated signalized main site driveway will consist of an exclusive left-turn lane, a shared left-/through lane, and a right-turn lane exiting the site. The Highland Avenue northbound approach will be modified to include two exclusive left-turn lanes, a through travel lane, and a shared through/right-turn lane. The Highland Avenue southbound approach will consist of a shared left/U-turn lane, two through travel lanes, and an exclusive right-turn lane. Due to the relocation of the signalized driveway, the existing commercial property located opposite the southerly site driveway will gain access through the signal, which will improve safety for vehicles using the commercial facility as well as Highland Avenue. The addition of the Highland Avenue southbound left-turn lane will also provide for U-turn movements which currently are not permitted at the existing Walmart site driveway signalized intersection.

TRAFFIC INCREASES

Development of the proposed project will result in increases in traffic on study area roadways. As shown on Figures 8 through 10, the traffic-volume increases beyond the study area are expected to be in the range of 38 to 282 vehicles on Highland Avenue during the peak hours. These increases represent, on average, one to five additional vehicles every minute during the peak hours. It is important to note that these projected increases in traffic are based on a conservative pass-by rate of 25 percent, as required by MEPA. In reality, traffic-volume increases beyond the study area will be lower as the number of *pass-by* trips will be greater than estimated in this study.

ANALYSIS

Capacity and queue analyses were conducted at the site driveways and at the study area intersections. These analyses were conducted under 2009 Existing, 2014 No-Build, and 2014 Build traffic-volume conditions. The impact of traffic expected to be generated as a result of the development of the proposed project can be measured by comparing 2014 No-Build conditions to 2014 Build conditions.

CAPACITY ANALYSIS METHODOLOGY

The primary function of capacity analysis is to assign levels of service within specific roadway areas and at specific intersections under various traffic flow conditions. The capacity analysis methodology is based on the concepts and procedures in the *Highway Capacity Manual* (HCM).¹⁰ The concept of level of service (LOS) is defined as a qualitative measure describing operational conditions within a traffic stream and their perception by motorists and/or passengers. A level-of-service definition provides an index to quality of traffic flow in terms of such factors as speed, travel time, freedom to maneuver, traffic interruptions, comfort, convenience, and safety.

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

¹⁰*Highway Capacity Manual 2000*, Transportation Research Board; Washington, D.C.; 2000.

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

Unsignalized Intersections

Levels of service for unsignalized intersections are calculated using the operational analysis methodology of the HCM. The procedure accounts for lane configuration on both the minor and major street approaches, conflicting traffic stream volumes, and the type of intersection control (STOP, YIELD, or all-way STOP control). The definition of level of service for unsignalized intersections is a function of average *control* delay. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. The level-of-service criteria for unsignalized intersections are shown in Table 10. For unsignalized intersections, this delay criterion may be applied in assigning level-of-service designations to individual lane groups or to individual intersection approaches.

Signalized Intersections

Levels of service for signalized intersections are also calculated using the operational analysis methodology of the HCM. The methodology for signalized intersections assesses the effects of signal type, timing, phasing, and progression; vehicle mix; and geometrics on average control delay. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. Table 10 summarizes the relationship between level of service and average control delay.

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

Table 10
LEVEL-OF-SERVICE CRITERIA FOR INTERSECTIONS

Level of Service	Unsignalized Intersection Criteria	Signalized Intersection Criteria
	Average Control Delay (Seconds per Vehicle)	Average Control Delay (Seconds per Vehicle)
A	≤10	≤10
B	>10 and ≤15	>10 and ≤20
C	>15 and ≤25	>20 and ≤35
D	>25 and ≤35	>35 and ≤55
E	>35 and ≤50	>55 and ≤80
F	>50	>80

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

QUEUE ANALYSIS METHODOLOGY

The maximum “back of queue” during a typical (average) signal cycle and a 95th percentile signal cycle was calculated for each lane group during the peak periods studied in this analysis. The “back of queue” is the length of a backup of vehicles from the stop line of a signalized intersection to the last vehicle in the queue that is required to stop, regardless of the signal indication. The length of this queue depends on a number of factors including signal timing, vehicle arrival patterns, and the saturation flow rate.

For unsignalized intersections, the 95th percentile queue represents the length of queue of the critical minor-street movement that is not expected to be exceeded 95 percent of the time during the analysis period (typically one hour). In this case, the queue length is a function of the capacity of the movement and the movement’s degree of saturation.

CAPACITY AND QUEUE ANALYSIS RESULTS

The study area intersections and site driveways have been analyzed through application of the procedures described above. Capacity and queue analyses were conducted under 2009 Existing, 2014 No-Build, and 2014 Build conditions. The capacity results of the intersection analyses are discussed below and are summarized in Table 11. The results of the queue analyses are shown in Table 12. All analysis worksheets are provided in the Appendix.

Highland Avenue at Ravenna Avenue and Barnes Road

Under all analyzed conditions, the intersection of Highland Avenue with Ravenna Avenue and Barnes Road is expected to operate at LOS B or better with all lane groups operating at LOS D or better. The project development will result in insignificant impact at this location as evident by no changes in LOS or increases in delay by more than 1.6 seconds on any movement over the No-Build condition. Although the 95th percentile queue length may extend beyond the short storage lane for the Highland Avenue southbound left-turn movement, the duration would be short and exceeded by approximately one vehicle. This occurs under both the No-Build and Build conditions (independent of the project). The average maximum back of queue length for all movements does not exceed the available storage lengths.

Highland Avenue at Olde Village Drive

Under all analyzed conditions, the intersection of Highland Avenue with Olde Village Drive is expected to operate at LOS A with all lane groups operating at LOS D or better. The project development will result in insignificant impact at this location as evident by no changes in LOS or increases in delay by more than 2.3 seconds on any movement over the No-Build condition. The average and 95th percentile maximum back of queue lengths for all movements do not exceed the available storage lengths.

Highland Avenue at Walmart North Driveway and Clark Street

Under all analyzed conditions, all movements at the intersection of Highland Avenue with the north site driveway and Clark Street are expected to operate at LOS C or better. Ample capacity is available at this location as evident by low vehicle delays and low volume to capacity (v/c) ratios. The average and 95th percentile maximum back of queue lengths for all movements do not exceed the available storage lengths.

Highland Avenue at the Main (Signalized) Site Driveway

Under Existing and No-Build conditions, the main site driveway intersection with Highland Avenue operates at LOS B or better with all lane groups operating at LOS D or better during the analyzed peak hours. The average and 95th percentile maximum back of queue lengths for all movements do not exceed the available storage lengths during these conditions. Under the 2014 Build condition, the intersection is expected to operate at LOS C or better with all lane groups operating at LOS D or better with the exception of the Highland Avenue northbound left-turn lane which is expected to operate at LOS E during the Saturday midday peak hour. Although the average maximum back of queue length for all movements does not exceed the available storage lengths, the 95th percentile maximum back of queue is expected to exceed the available storage length for the Highland Avenue northbound left-turn lane as well as the main site driveway eastbound left-turn lane. Accordingly, mitigation measures are proposed at this location as described in the *Mitigation* section of this report that include roadway widening for additional turn lanes and lengthening the available queue storage lengths.

Highland Avenue at South Site Driveway

Under all analyzed conditions, all lane groups at the intersection of Highland Avenue with the south site driveway are expected to operate at LOS B or better. As part of the project development, however, the main signalized site driveway will be relocated to the current location of the south site driveway. The current curb cut at the location of the existing signalized site driveway will be closed reducing the number of curb cuts along Highland Avenue.

Highland Avenue at Meineke Driveway

Under all analyzed conditions, all lane groups at the intersection of Highland Avenue with the Meineke driveway are expected to operate at LOS B or better. Ample capacity remains available as evident by low vehicle delays and low v/c ratios. The average and 95th percentile maximum back of queue lengths for all lane groups do not exceed the available storage lengths.

Western Avenue at Fays Avenue

Under Existing traffic-volume conditions, the intersection of Western Avenue and Fays Avenue operates at LOS B with all lane groups operating at LOS C or better. Under the future 2014 No-Build condition, this intersection is expected to operate at LOS D or better. However, the Western Avenue southbound approach is expected at LOS E during the weekday PM peak hour. The 95th percentile maximum back of queue lengths for the Western Avenue southbound approach is expected to extend past the site driveway under the No-Build condition, independent of the proposed project. Since the proposed project is expected to add traffic to this intersection, mitigation measures are proposed as described in the *Mitigation* section of this report that include roadway widening/restriping to provide an exclusive Western Avenue southbound right-turn lane and traffic signal timing changes to provide more “green time” for the southbound movements.

TRAFFIC IMPACT AND ACCESS STUDY

Walmart and Meineke Expansions and Lowe’s Home Improvement Warehouse - Salem, Massachusetts

**Table 11
LEVEL-OF-SERVICE ANALYSIS SUMMARY**

Intersection/Peak Hour/Lane Group	2009 Existing			2014 No-Build			2014 Build		
	V/C ^a	Del. ^b	LOS ^c	V/C	Del.	LOS	V/C	Del.	LOS
Highland Avenue at Ravenna Avenue and Barnes Road									
<i>Weekday AM:</i>									
Ravenna Avenue EB approach	0.38	34.6	C	0.41	36.1	D	0.41	36.1	D
Barnes Road WB approach	0.14	32.1	C	0.15	34.6	C	0.15	34.6	C
Highland Avenue NB left-turns	0.31	35.1	D	0.21	31.2	C	0.21	31.0	C
Highland Avenue NB throughs/right-turns	0.62	6.1	A	0.66	8.8	A	0.67	8.6	A
Highland Avenue SB left-turns	0.58	42.0	D	0.45	36.3	D	0.45	36.3	D
Highland Avenue SB throughs/right-turns	0.39	4.5	A	0.48	8.4	A	0.49	8.4	A
Overall Intersection	0.59	7.5	A	0.64	10.6	B	0.64	10.4	B
<i>Weekday PM:</i>									
Ravenna Avenue EB approach	0.46	35.0	D	0.35	39.4	D	0.52	39.8	D
Barnes Road WB approach	0.05	31.0	C	0.06	38.0	D	0.06	36.6	D
Highland Avenue NB left-turns	0.11	31.3	C	0.32	38.5	D	0.31	37.9	D
Highland Avenue NB throughs/right-turns	0.50	5.5	A	0.55	7.5	A	0.62	8.8	A
Highland Avenue SB left-turns	0.60	39.4	D	0.57	40.6	D	0.59	41.7	D
Highland Avenue SB throughs/right-turns	0.50	5.5	A	0.54	7.5	A	0.61	9.1	A
Overall Intersection	0.51	7.7	A	0.52	10.4	B	0.59	11.8	B
<i>Saturday Midday:</i>									
Ravenna Avenue EB approach	0.29	32.5	C	0.31	36.1	D	0.31	36.1	D
Barnes Road WB approach	0.07	30.6	C	0.09	35.0	D	0.09	35.0	D
Highland Avenue NB left-turns	0.18	31.8	C	0.18	34.2	C	0.18	34.6	C
Highland Avenue NB throughs/right-turns	0.50	5.5	A	0.55	7.0	A	0.61	7.9	A
Highland Avenue SB left-turns	0.63	42.1	D	0.47	34.5	C	0.47	34.5	C
Highland Avenue SB throughs/right-turns	0.49	5.4	A	0.51	6.0	A	0.57	6.7	A
Overall Intersection	0.49	7.7	A	0.54	8.5	A	0.59	9.0	A

^a Volume-to-capacity ratio.

^b Average control delay in seconds per vehicle.

^c Level of service.

TRAFFIC IMPACT AND ACCESS STUDY

Walmart and Meineke Expansions and Lowe’s Home Improvement Warehouse - Salem, Massachusetts

**Table 11 (continued)
LEVEL-OF-SERVICE ANALYSIS SUMMARY**

Intersection/Peak Hour/Lane Group	2009 Existing			2014 No-Build			2014 Build		
	V/C ^a	Del. ^b	LOS ^c	V/C	Del.	LOS	V/C	Del.	LOS
Highland Avenue at Olde Village Drive									
<i>Weekday AM:</i>									
Olde Village Drive EB left-turns	0.44	21.3	C	0.42	34.8	C	0.42	34.8	C
Olde Village Drive EB right-turns	0.02	18.6	B	0.01	26.2	C	0.01	26.2	C
Highland Avenue NB left-turns	0.25	19.5	B	0.25	34.5	C	0.25	34.8	C
Highland Avenue NB throughs	0.52	2.8	A	0.51	2.9	A	0.51	2.8	A
Highland Avenue SB throughs/right-turns	0.49	6.5	A	0.44	2.4	A	0.46	2.5	A
Overall Intersection	0.51	5.3	A	0.50	4.3	A	0.50	4.3	A
<i>Weekday PM:</i>									
Olde Village Drive EB left-turns	0.60	28.1	C	0.58	41.3	D	0.58	41.3	D
Olde Village Drive EB right-turns	0.01	21.3	C	0.01	31.2	C	0.01	31.3	C
Highland Avenue NB left-turns	0.15	19.5	B	0.39	45.0	D	0.40	45.9	D
Highland Avenue NB throughs	0.45	2.7	A	0.46	2.7	A	0.51	2.5	A
Highland Avenue SB throughs/right-turns	0.69	10.7	B	0.56	2.1	A	0.61	1.5	A
Overall Intersection	0.64	8.0	A	0.56	4.7	A	0.61	4.2	A
<i>Saturday MIDDAY:</i>									
Olde Village Drive EB left-turns	0.44	21.1	C	0.55	35.2	D	0.55	35.2	D
Olde Village Drive EB right-turns	0.01	18.7	B	0.00	26.9	C	0.00	26.9	C
Highland Avenue NB left-turns	0.31	23.1	C	0.37	39.4	D	0.37	41.7	D
Highland Avenue NB throughs	0.47	3.5	A	0.47	2.7	A	0.52	2.5	A
Highland Avenue SB throughs/right-turns	0.62	8.5	A	0.54	3.1	A	0.61	3.4	A
Overall Intersection	0.59	7.0	A	0.55	4.9	A	0.60	4.7	A

^a Volume-to-capacity ratio.

^b Average control delay in seconds per vehicle.

^c Level of service.

TRAFFIC IMPACT AND ACCESS STUDY

Walmart and Meineke Expansions and Lowe’s Home Improvement Warehouse - Salem, Massachusetts

**Table 11 (continued)
LEVEL-OF-SERVICE ANALYSIS SUMMARY**

Intersection/Peak Hour/Lane Group	2009 Existing			2014 No-Build			2014 Build		
	V/C ^a	Del. ^b	LOS ^c	V/C	Del.	LOS	V/C	Del.	LOS
Highland Avenue at Walmart North Driveway and Clark Street									
<i>Weekday AM:</i>									
Walmart north driveway EB right-turns	0.00	0.0	A	0.00	0.0	A	0.02	11.0	B
Clark Street WB right-turns	0.10	14.2	B	0.17	15.8	C	0.17	15.8	C
Highland Avenue NB throughs/right-turns	0.27	0.0	A	0.29	0.0	A	0.30	0.0	A
Highland Avenue SB throughs/right-turns	0.18	0.0	A	0.20	0.0	A	0.23	0.0	A
<i>Weekday PM:</i>									
Walmart north driveway EB right-turns	0.00	0.0	A	0.00	0.0	A	0.17	13.7	B
Clark Street WB right-turns	0.10	12.5	B	0.14	14.0	B	0.15	14.6	B
Highland Avenue NB throughs/right-turns	0.23	0.0	A	0.26	0.0	A	0.28	0.0	A
Highland Avenue SB throughs/right-turns	0.24	0.0	A	0.27	0.0	A	0.34	0.0	A
<i>Saturday MIDDAY:</i>									
Walmart north driveway EB right-turns	0.00	0.0	A	0.00	0.0	A	0.19	13.7	B
Clark Street WB right-turns	0.12	12.5	B	0.15	13.3	B	0.16	13.9	B
Highland Avenue NB throughs/right-turns	0.22	0.0	A	0.25	0.0	A	0.27	0.0	A
Highland Avenue SB throughs/right-turns	0.23	0.0	A	0.25	0.0	A	0.37	0.0	A

^a Volume-to-capacity ratio.

^b Average control delay in seconds per vehicle.

^c Level of service.

TRAFFIC IMPACT AND ACCESS STUDY

Walmart and Meineke Expansions and Lowe's Home Improvement Warehouse - Salem, Massachusetts

Table 11 (continued)
LEVEL-OF-SERVICE ANALYSIS SUMMARY

Intersection/Peak Hour/Lane Group	2009 Existing			2014 No-Build			2014 Build		
	V/C ^a	Del. ^b	LOS ^c	V/C	Del.	LOS	V/C	Del.	LOS
Highland Avenue at Walmart Main Driveway									
<i>Weekday AM:</i>									
Walmart main driveway EB left-turns	0.44	26.5	C	0.40	35.0	D	0.55	35.4	D
Walmart main driveway EB right-turns	0.01	14.4	B	0.01	24.6	C	0.05	21.4	C
Highland Avenue NB left-turns	0.30	22.7	C	0.48	36.4	D	0.54	35.0	C
Highland Avenue NB throughs	0.46	2.3	A	0.48	3.0	A	0.49	3.6	A
Highland Avenue SB throughs	0.44	6.7	A	0.41	1.8	A	0.44	2.6	A
Highland Avenue SB right-turns	0.03	5.0	A	0.03	0.0	A	0.02	0.2	A
Overall Intersection	0.46	5.3	A	0.47	4.1	A	0.50	6.1	A
<i>Weekday PM:</i>									
Walmart main driveway EB left-turns	0.35	24.5	C	0.55	40.8	D	0.77	43.5	D
Walmart main driveway EB right-turns	0.03	10.9	B	0.05	26.1	C	0.31	17.9	B
Highland Avenue NB left-turns	0.30	21.4	C	0.56	40.7	D	0.80	47.6	D
Highland Avenue NB throughs	0.38	3.3	A	0.38	2.6	A	0.41	5.4	A
Highland Avenue SB throughs	0.68	14.1	B	0.52	2.6	A	0.73	11.7	B
Highland Avenue SB right-turns	0.06	9.2	A	0.06	0.1	A	0.08	1.6	A
Overall Intersection	0.56	10.2	B	0.53	5.7	A	0.75	15.1	B
<i>Saturday MIDDAY:</i>									
Walmart main driveway EB left-turns	0.81	40.8	D	0.64	34.8	C	0.83	39.5	D
Walmart main driveway EB right-turns	0.02	11.9	B	0.02	16.0	B	0.29	10.5	B
Highland Avenue NB left-turns	0.77	37.4	D	0.62	34.2	C	1.01	78.1	E
Highland Avenue NB throughs	0.40	3.0	A	0.44	4.6	A	0.48	8.2	A
Highland Avenue SB throughs	0.55	8.9	A	0.59	6.9	A	0.88	22.8	C
Highland Avenue SB right-turns	0.13	6.6	A	0.12	2.4	A	0.15	4.3	A
Overall Intersection	0.63	10.6	B	0.60	9.2	A	0.90	24.3	C

^a Volume-to-capacity ratio.

^b Average control delay in seconds per vehicle.

^c Level of service.

TRAFFIC IMPACT AND ACCESS STUDY

Walmart and Meineke Expansions and Lowe’s Home Improvement Warehouse - Salem, Massachusetts

**Table 11 (continued)
LEVEL-OF-SERVICE ANALYSIS SUMMARY**

Intersection/Peak Hour/Lane Group	2009 Existing			2014 No-Build			2014 Build		
	V/C ^a	Del. ^b	LOS ^c	V/C	Del.	LOS	V/C	Del.	LOS
Highland Avenue at Walmart South Driveway									
<i>Weekday AM:</i>									
Walmart south driveway EB right-turns	0.05	10.4	B	0.05	11.1	B	--	--	--
Highland Avenue SB throughs/right-turns	0.18	0.0	A	0.20	0.0	A	--	--	--
<i>Weekday PM:</i>									
Walmart south driveway EB right-turns	0.13	10.7	B	0.17	12.8	B	--	--	--
Highland Avenue SB throughs/right-turns	0.22	0.0	A	0.25	0.0	A	--	--	--
<i>Saturday Midday:</i>									
Walmart south driveway EB right-turns	0.18	11.5	B	0.19	11.9	B	--	--	--
Highland Avenue SB throughs/right-turns	0.21	0.0	A	0.23	0.0	A	--	--	--
Highland Avenue at Meineke Driveway									
<i>Weekday AM:</i>									
Meineke driveway EB right-turns	0.01	10.4	B	0.01	11.0	B	0.01	10.8	B
Highland Avenue SB throughs/right-turns	0.19	0.0	A	0.20	0.0	A	0.21	0.0	A
<i>Weekday PM:</i>									
Meineke driveway EB right-turns	0.01	11.0	B	0.02	12.9	B	0.02	12.2	B
Highland Avenue SB throughs/right-turns	0.25	0.0	A	0.27	0.0	A	0.30	0.0	A
<i>Saturday Midday:</i>									
Meineke driveway EB right-turns	0.03	11.4	B	0.04	11.7	B	0.03	11.3	B
Highland Avenue SB throughs/right-turns	0.24	0.0	A	0.26	0.0	A	0.29	0.0	A

^a Volume-to-capacity ratio.

^b Average control delay in seconds per vehicle.

^c Level of service.

TRAFFIC IMPACT AND ACCESS STUDY

Walmart and Meineke Expansions and Lowe’s Home Improvement Warehouse - Salem, Massachusetts

**Table 11 (continued)
LEVEL-OF-SERVICE ANALYSIS SUMMARY**

Intersection/Peak Hour/Lane Group	2009 Existing			2014 No-Build			2014 Build		
	V/C ^a	Del. ^b	LOS ^c	V/C	Del.	LOS	V/C	Del.	LOS
Western Avenue at Fays Avenue									
<i>Weekday AM:</i>									
Fays Avenue EB approach	0.43	30.7	C	0.48	32.5	C	0.50	33.2	C
Western Avenue NB left-turns	0.08	7.8	A	0.09	9.9	A	0.09	10.4	B
Western Avenue NB throughs	0.85	9.7	A	0.91	13.7	B	0.92	15.9	B
Western Avenue SB throughs/right-turns	0.91	25.0	C	0.96	32.4	C	0.96	33.9	C
Overall Intersection	0.87	16.8	B	0.86	22.1	C	0.88	23.9	C
<i>Weekday PM:</i>									
Fays Avenue EB approach	0.39	28.8	C	0.41	29.0	C	0.54	31.0	C
Western Avenue NB left-turns	0.21	14.5	B	0.22	28.9	C	0.22	28.9	C
Western Avenue NB throughs	0.69	4.9	A	0.78	6.7	A	0.85	9.5	A
Western Avenue SB throughs/right-turns	0.98	31.6	C	1.08	64.1	E	1.19	106.1	F
Overall Intersection	0.90	19.4	B	1.00	36.7	D	1.10	59.0	E
<i>Saturday Midday:</i>									
Fays Avenue EB approach	0.45	29.3	C	0.48	30.7	C	0.63	36.1	D
Western Avenue NB left-turns	0.18	11.4	B	0.20	15.2	B	0.20	27.9	C
Western Avenue NB throughs	0.73	5.5	A	0.79	7.2	A	0.89	12.5	B
Western Avenue SB throughs/right-turns	0.94	26.7	C	1.00	38.1	D	1.12	78.5	E
Overall Intersection	0.87	16.6	B	0.93	22.7	C	1.06	44.4	D

^a Volume-to-capacity ratio.

^b Average control delay in seconds per vehicle.

^c Level of service.

TRAFFIC IMPACT AND ACCESS STUDY

Walmart and Meineke Expansions and Lowe's Home Improvement Warehouse - Salem, Massachusetts

Table 12
QUEUE ANALYSIS SUMMARY

Intersection/Peak Hour/Lane Group	Available Storage ^a	Maximum Back of Queue ^b		
		2009 Existing	2014 No-Build	2014 Build
Highland Avenue at Ravenna Avenue and Barnes Road				
<i>Weekday AM:</i>				
Ravenna Avenue EB approach	1,000+	11/28	21/39	21/39
Barnes Road WB approach	1,000+	5/25	8/33	8/33
Highland Avenue NB left-turns	125	9/25	22/47	22/47
Highland Avenue NB throughs/right-turns	470	176/185	342/361	348/331
Highland Avenue SB left-turns	80	18/46	28/60	28/60
Highland Avenue SB throughs/right-turns	1,000+	86/120	192/214	196/222
<i>Weekday PM:</i>				
Ravenna Avenue EB approach	1,000+	15/29	25/38	44/57
Barnes Road WB approach	1,000+	1/12	3/15	3/14
Highland Avenue NB left-turns	125	5/18	26/59	27/55
Highland Avenue NB throughs/right-turns	470	135/190	60/391	201/465
Highland Avenue SB left-turns	80	26/61	61/107	61/110
Highland Avenue SB throughs/right-turns	1,000+	135/190	195/325	242/393
<i>Saturday MIDDAY:</i>				
Ravenna Avenue EB approach	1,000+	9/32	14/40	15/41
Barnes Road WB approach	1,000+	2/15	3/19	3/19
Highland Avenue NB left-turns	125	7/26	12/26	12/24
Highland Avenue NB throughs/right-turns	470	120/169	155/264	196/437
Highland Avenue SB left-turns	80	26/71	41/81	41/81
Highland Avenue SB throughs/right-turns	1,000+	116/165	65/276	78/333

^a Approximate length (feet per lane) of available storage. Represents either the length of an exclusive turn lane, or for through lanes the distance to the nearest upstream intersection.

^b Maximum queue length in feet per lane during an average/95th percentile cycle.

TRAFFIC IMPACT AND ACCESS STUDY

Walmart and Meineke Expansions and Lowe's Home Improvement Warehouse - Salem, Massachusetts

Table 12 (continued)
QUEUE ANALYSIS SUMMARY

Intersection/Peak Hour/Lane Group	Available Storage ^a	Maximum Back of Queue ^b		
		2009 Existing	2014 No-Build	2014 Build
Highland Avenue at Olde Village Drive				
<i>Weekday AM:</i>				
Olde Village Drive EB left-turns	500	19/38	32/53	32/53
Olde Village Drive EB right-turns	1,000+	0/12	0/11	0/11
Highland Avenue NB left-turns	130	13/38	20/48	21/47
Highland Avenue NB throughs	725	66/97	83/136	81/134
Highland Avenue SB throughs/right-turns	430	75/112	11/24	11/25
<i>Weekday PM:</i>				
Olde Village Drive EB left-turns	500	35/64	60/90	60/90
Olde Village Drive EB right-turns	1,000+	0/12	0/12	0/12
Highland Avenue NB left-turns	130	13/37	24/58	25/54
Highland Avenue NB throughs	725	58/83	81/117	71/110
Highland Avenue SB throughs/right-turns	430	146/204	7/15	8/16
<i>Saturday Midday:</i>				
Olde Village Drive EB left-turns	500	32/56	53/75	53/75
Olde Village Drive EB right-turns	1,000+	0/8	0/7	0/7
Highland Avenue NB left-turns	130	14/38	23/51	23/43
Highland Avenue NB throughs	725	58/83	74/119	71/114
Highland Avenue SB throughs/right-turns	430	109/158	95/95	117/117

^a Approximate length (feet per lane) of available storage. Represents either the length of an exclusive turn lane, or for through lanes the distance to the nearest upstream intersection.

^b Maximum queue length in feet per lane during an average/95th percentile cycle.

TRAFFIC IMPACT AND ACCESS STUDY

Walmart and Meineke Expansions and Lowe's Home Improvement Warehouse - Salem, Massachusetts

**Table 12 (continued)
QUEUE ANALYSIS SUMMARY**

Intersection/Peak Hour/Lane Group	Available Storage ^a	Maximum Back of Queue ^b		
		2009 Existing	2014 No-Build	2014 Build
Highland Avenue at Walmart North Driveway and Clark Street				
<i>Weekday AM:</i>				
Walmart north driveway EB right-turns	120	--/0	--/0	--/2
Clark Street WB right-turns	500+	--/9	--/15	--/15
Highland Avenue NB throughs/right-turns	230	--/0	--/0	--/0
Highland Avenue SB throughs/right-turns	500	--/0	--/0	--/0
<i>Weekday PM:</i>				
Walmart north driveway EB right-turns	120	--/0	--/0	--/15
Clark Street WB right-turns	500+	--/8	--/12	--/13
Highland Avenue NB throughs/right-turns	230	--/0	--/0	--/0
Highland Avenue SB throughs/right-turns	500	--/0	--/0	--/0
<i>Saturday Midday:</i>				
Walmart north driveway EB right-turns	120	--/0	--/0	--/18
Clark Street WB right-turns	500+	--/10	--/13	--/14
Highland Avenue NB throughs/right-turns	230	--/0	--/0	--/0
Highland Avenue SB throughs/right-turns	500	--/0	--/0	--/0

^a Approximate length (feet per lane) of available storage. Represents either the length of an exclusive turn lane, or for through lanes the distance to the nearest upstream intersection.

^b Maximum queue length in feet per lane during an average/95th percentile cycle.

TRAFFIC IMPACT AND ACCESS STUDY

Walmart and Meineke Expansions and Lowe's Home Improvement Warehouse - Salem, Massachusetts

**Table 12 (continued)
QUEUE ANALYSIS SUMMARY**

Intersection/Peak Hour/Lane Group	Available Storage ^a	Maximum Back of Queue ^b		
		2009 Existing	2014 No-Build	2014 Build
Highland Avenue at Walmart Main Driveway				
<i>Weekday AM:</i>				
Walmart main driveway EB left-turns	200	18/30	27/38	46/55
Walmart main driveway EB right-turns	200	0/5	0/5	1/9
Highland Avenue NB left-turns	300	20/48	29/61	49/88
Highland Avenue NB throughs	1,000+	60/81	77/125	90/154
Highland Avenue SB throughs	750	80/117	10/25	14/28
Highland Avenue SB right-turns	130	0/11	0/0	1/1
<i>Weekday PM:</i>				
Walmart main driveway EB left-turns	200	33/70	51/92	140/213
Walmart main driveway EB right-turns	200	0/16	5/26	64/114
Highland Avenue NB left-turns	300	38/78	56/102	133/265
Highland Avenue NB throughs	1,000+	66/91	66/112	109/156
Highland Avenue SB throughs	750	172/235	24/40	321/321
Highland Avenue SB right-turns	130	0/21	0/0	3/3
<i>Saturday Midday:</i>				
Walmart main driveway EB left-turns	200	63/159	87/141	183/368
Walmart main driveway EB right-turns	200	0/14	0/13	61/119
Highland Avenue NB left-turns	300	59/153	82/136	214/380
Highland Avenue NB throughs	1,000+	45/64	93/154	131/144
Highland Avenue SB throughs	750	98/141	42/128	272/272
Highland Avenue SB right-turns	130	0/22	0/0	25/25

^a Approximate length (feet per lane) of available storage. Represents either the length of an exclusive turn lane, or for through lanes the distance to the nearest upstream intersection.

^b Maximum queue length in feet per lane during an average/95th percentile cycle.

Table 12 (continued)
QUEUE ANALYSIS SUMMARY

Intersection/Peak Hour/Lane Group	Available Storage ^a	Maximum Back of Queue ^b		
		2009 Existing	2014 No-Build	2014 Build
Highland Avenue at Walmart South Driveway				
<i>Weekday AM:</i>				
Walmart south driveway EB right-turns	150	--/4	--/4	--
Highland Avenue SB throughs/right-turns	275	--/0	--/0	--
<i>Weekday PM:</i>				
Walmart south driveway EB right-turns	150	--/11	--/15	--
Highland Avenue SB throughs/right-turns	275	--/0	--/0	--
<i>Saturday Midday:</i>				
Walmart south driveway EB right-turns	150	--/17	--/18	--
Highland Avenue SB throughs/right-turns	275	--/0	--/0	--
Highland Avenue at Meineke Driveway				
<i>Weekday AM:</i>				
Meineke driveway EB right-turns	100	--/1	--/1	--/1
Highland Avenue SB throughs/right-turns	420	--/0	--/0	--/0
<i>Weekday PM:</i>				
Meineke driveway EB right-turns	100	--/1	--/1	--/1
Highland Avenue SB throughs/right-turns	420	--/0	--/0	--/0
<i>Saturday Midday:</i>				
Meineke driveway EB right-turns	100	--/3	--/3	--/3
Highland Avenue SB throughs/right-turns	420	--/0	--/0	--/0

^a Approximate length (feet per lane) of available storage. Represents either the length of an exclusive turn lane, or for through lanes the distance to the nearest upstream intersection.

^b Maximum queue length in feet per lane during an average/95th percentile cycle.

TRAFFIC IMPACT AND ACCESS STUDY

Walmart and Meineke Expansions and Lowe's Home Improvement Warehouse - Salem, Massachusetts

Table 12 (continued)
QUEUE ANALYSIS SUMMARY

Intersection/Peak Hour/Lane Group	Available Storage ^a	Maximum Back of Queue ^b		
		2009 Existing	2014 No-Build	2014 Build
Western Avenue at Fays Avenue^c				
<i>Weekday AM:</i>				
Fays Avenue EB approach	1,000+	53/99	50/93	48/80
Western Avenue NB left-turns	100	26/54	31/62	17/64
Western Avenue NB throughs	1,000+	125/274	170/394	144/349
Western Avenue SB throughs/right-turns	1,600	268/586	404/661	370/694
<i>Weekday PM:</i>				
Fays Avenue EB approach	1,000+	56/103	43/77	60/130
Western Avenue NB left-turns	100	27/55	45/93	50/101
Western Avenue NB throughs	1,000+	111/236	202/537	245/618
Western Avenue SB throughs/right-turns	1,600	422/1,026	1,150/2,180	1,241/2,300
<i>Saturday MIDDAY:</i>				
Fays Avenue EB approach	1,000+	55/97	62/114	64/103
Western Avenue NB left-turns	100	37/82	34/72	32/65
Western Avenue NB throughs	1,000+	141/328	184/375	462/1,035
Western Avenue SB throughs/right-turns	1,600	426/863	492/841	1,698/1,887

^a Approximate length (feet per lane) of available storage. Represents either the length of an exclusive turn lane, or for through lanes the distance to the nearest upstream intersection.

^b Maximum queue length in feet per lane during an average/95th percentile cycle.

^c Since volume to capacity ratios are at or exceed 1.0 at this location, the SimTraffic modeling program was used to determine queue lengths.

MITIGATION

The final component of a traffic impact and access study is the identification of “mitigation” measures that are expected to be effective in eliminating or improving anticipated deficiencies resulting from the combination of existing, background, and project-generated traffic. Mitigation measures considered desirable to improve roadway system deficiencies are proposed and discussed below as they relate to the impacts of the proposed project and other developments within the study area. A description of the proposed mitigation measures is provided below along with capacity and queue analyses to document the effects of the mitigation measures.

HIGHLAND AVENUE AT THE SITE DRIVEWAYS

As part of the proposed site redevelopment, the existing main signalized site driveway will be relocated further south to the location of the existing southerly right-turn in/right-turn out driveway. The curb cut at the location of the existing main site driveway will be closed, thereby reducing the number of curb cuts along Highland Avenue.

Although acceptable service levels are expected at the main site driveway under the Build (without improvements) condition during the analyzed peak hours, the Highland Avenue northbound left-turn lane is expected to operate at LOS E during the Saturday midday peak hour with queue lengths extended beyond the available storage length. In addition, the expected queue length for vehicles turning left out of the main site driveway onto Highland Avenue is also expected to extend beyond the available storage length without improvements. Accordingly, to address these issues, the proposed signalized site driveway intersection with Highland Avenue will be widened to include additional turn lanes.

TRAFFIC IMPACT AND ACCESS STUDY

Walmart and Meineke Expansions and Lowe's Home Improvement Warehouse - Salem, Massachusetts

The relocated driveway will be located opposite an existing commercial driveway providing signalized access/egress to this use which is currently not provided. A Highland Avenue exclusive southbound left-turn lane will be constructed providing access into the commercial site as well as allow U-turn movements which are currently not allowed at the existing signalized site driveway location. With a high percentage of truck traffic using the storage facility along Highland Avenue, the inclusion of this U-turn movement into the signal control will provide increased safety to the corridor.

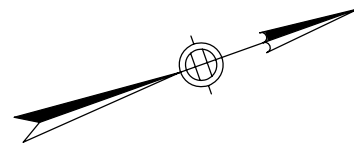
On the Highland Avenue northbound approach to the proposed signalized site driveway location, the roadway will be widened to provide two exclusive left-turn lanes into the site. The storage length for this movement will also be extended as part of the project. The site driveway approach will be modified to provide an exclusive left-turn lane, a shared left-turn/through lane, and an exclusive right-turn lane. The storage length of the main site driveway approach will also be extended as part of the proposed project. All left turns at this intersection will be protected movements only, which will allow these movements to be made without conflicting traffic. The Highland Avenue southbound travel lanes beyond the site driveway will be realigned to improve the weave area from two lanes to one. Additional signage will be installed to better define the lane usage on Highland Avenue and site driveway approaches as well as the southbound merge.

Current access to the Meineke and the Camp Lion site along Highland Avenue to the south of the site will be maintained and improved to meet current state design standards. A right-turn in and right-turn out only cross connection will also be provided to the existing Meineke located along the proposed main site driveway. All driveways will be designed in accordance with current local and state standards. A conceptual improvement plan illustrating these changes is shown on Figure 14.

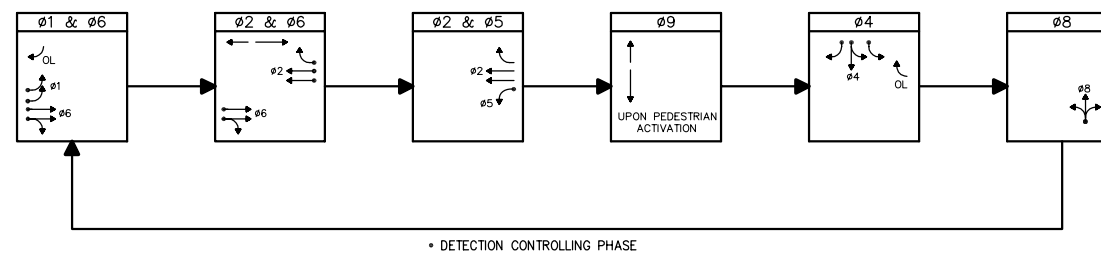
WESTERN AVENUE AT FAYS AVENUE

Under No-Build conditions, the intersection of Western Avenue at Fays Avenue is expected to operate at capacity during the weekday PM peak hour with the Western Avenue southbound approach operating at LOS E. Deficiencies are expected to continue with the addition of site traffic without intersection improvements. To mitigate the project's traffic impact at this location and address existing operational deficiencies, an exclusive right-turn lane is proposed on the Western Avenue southbound approach to Fays Avenue. In addition, the existing traffic signal equipment will be replaced and traffic signal timing changes are proposed to increase the amount of "green time" provided to the Western Avenue approaches during each signal cycle. The combination of these measures will mitigate the traffic impact of the project and improve the intersection operations over the No-Build condition.

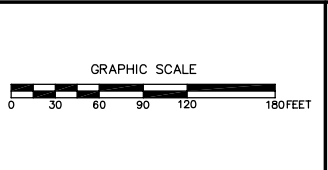
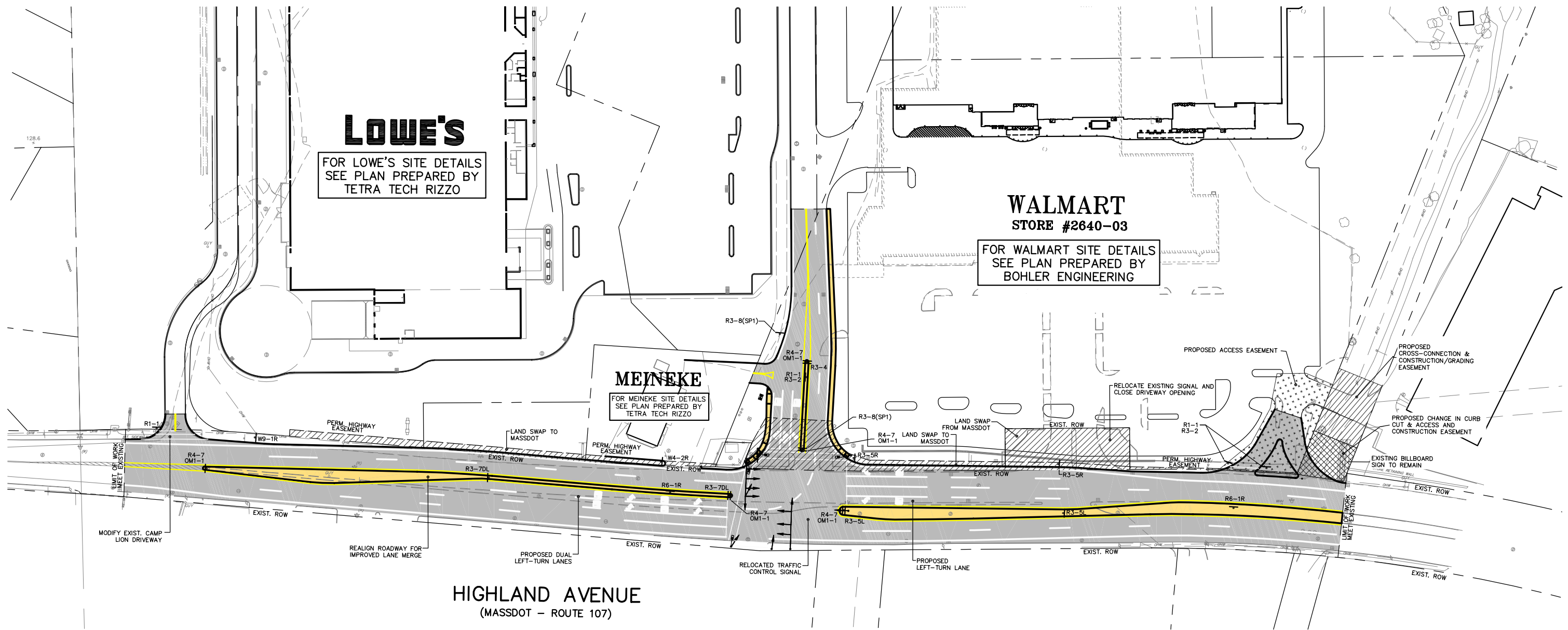
NOTES: 1. THIS PLAN IS FOR REVIEW PURPOSES ONLY AND IS NOT INTENDED FOR CONSTRUCTION.
 2. EXISTING CONDITIONS INFORMATION TAKEN FROM FIELD SURVEY.



PREFERENTIAL PHASE SEQUENCE



SIGN SUMMARY					
R1-1	STOP	R3-5R	ONLY	R6-1R	ONE WAY
R3-2	No Left Turn	R3-7DL	ONLY ONLY	OM1-1	Yellow Diamond
R3-4	No Right Turn	R3-8(SP1)	ONLY ONLY	W4-2R	Yellow Diamond
R3-5L	ONLY	R4-7	ONLY	W9-1R	RIGHT LANE ENDS

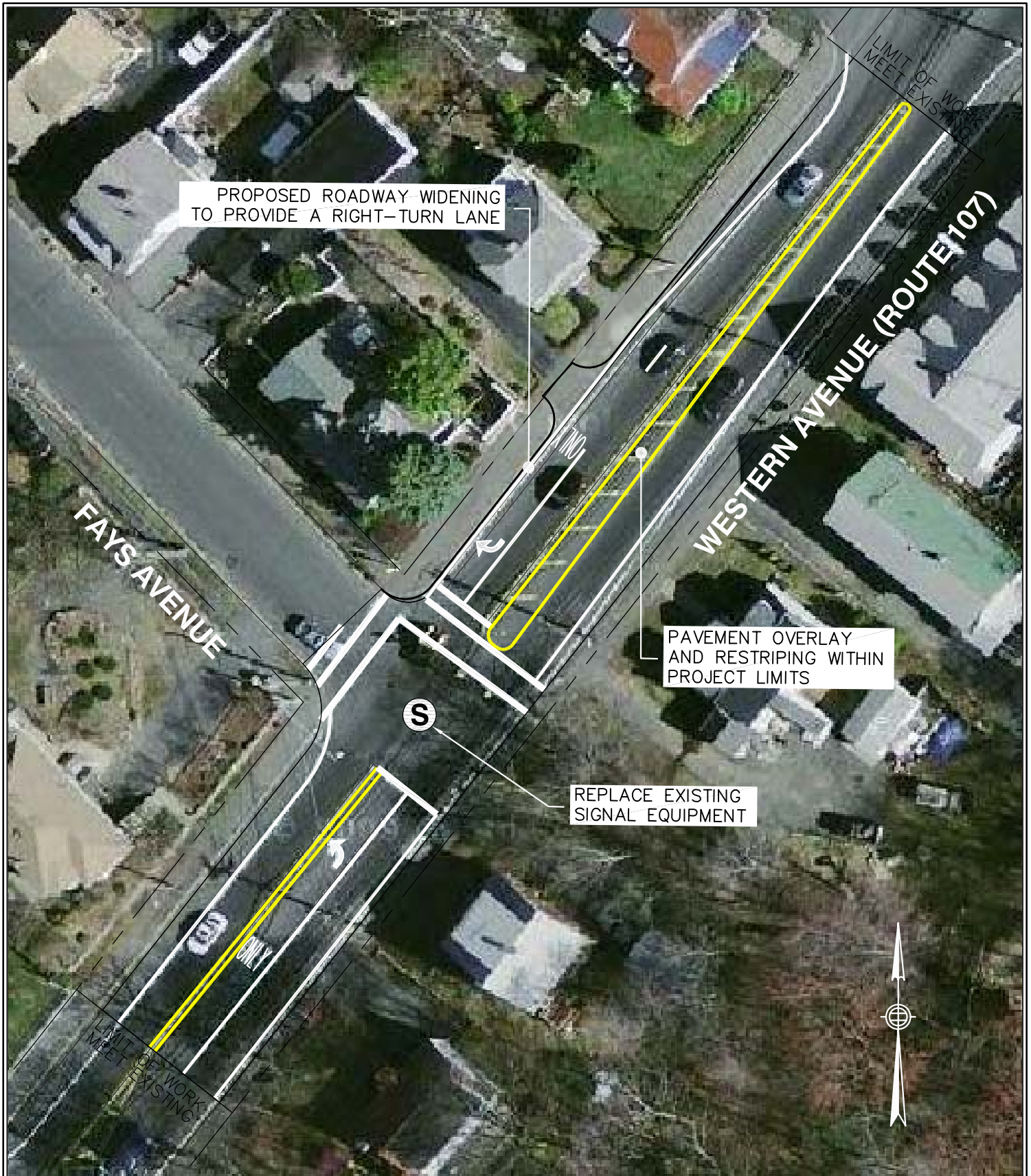


CONCEPTUAL IMPROVEMENT PLAN
HIGHLAND AVE. (ROUTE 107)
SALEM, MASSACHUSETTS

PROJECT: **PROPOSED WAL*MART EXPANSION/LOWE'S HOME IMPROVEMENT SALEM, MASSACHUSETTS**
 PREPARED FOR: **BOLHER ENGINEERING, P.C.** 352 TURNPIKE ROAD, SOUTHBORO, MA 01772
LOWE'S HOME CENTERS 1605 CURTIS BRIDGE ROAD, REEC DOCK, WILKESBORO, NC 28697

GPI Greenman-Pedersen, Inc.
 Engineers, Architects, Planners, Construction Engineers & Inspectors
 61 Spit Brook Road, Suite 110, Nashua, NH 03060 - Tel. (603) 891-2213
 800 South Main Street, 1st Floor, Mansfield, MA 02048 - Tel. (508) 339-9350
 105 Central Street, Suite 4100, Stoneham, MA 02180 - Tel. (781) 279-5500
 Other Offices In: FL, MD, MI, NJ, NY, OH, PA, VA, VT, WA <http://www.gplnet.com>

NO.	REVISION	DATE	DESIGN/DRAWN BY: JW
			CHECK BY: HM
			DATE: 12/22/09
			SCALE: 1"=120'
			JOB NO.: NHX-2008571
			FILE NAME: CONCEPT
			DRAWING NO.: FIGURE 14



**WESTERN AVE. (RTE. 107)
AT FAYS AVENUE
LYNN, MASSACHUSETTS**

GPI Greenman-Pedersen, Inc.
Engineers, Architects, Planners, Construction Engineers & Inspectors

61 Spit Brook Road, Suite 110, Nashua, NH 03060 - Tel. (603) 891-2213
800 South Main Street, 1st Floor, Mansfield, MA 02048 - Tel. (508) 339-9350
105 Central Street, Suite 4100, Stoneham, MA 02180 - Tel. (781) 279-5500
Other Offices In: FL, MD, MI, NJ, NY, OH, PA, VA, VT, WA <http://www.gplnet.com>

DATE:	12/22/09
SCALE:	1" = 40'
JOB NO.:	NHX-2008571
FILE NAME:	FAYS CONCEPT
DRAWING NO.:	Figure 14
	2 OF 2

ANALYSIS RESULTS WITH MITIGATION

Level-of-service and queue analyses were completed at the intersection of Highland Avenue and the main site driveway as well as at the intersection of Western Avenue and Fays Avenue, assuming implementation of the recommended traffic mitigation measures. The results of these analyses under 2014 Build Mitigated conditions are summarized in Table 13. All analysis worksheets are provided in the Appendix.

With the implementation of the improvements described at the intersection of Highland Avenue and the main site driveway, the intersection is expected to operate at an overall LOS B or better during the analyzed peak hours with all lane groups operating at LOS D or better. Vehicle queue lengths are not expected to exceed the available storage lengths with the implementation of the proposed mitigation measures. The existing northerly right-in/right-out site driveway is expected to operate at LOS B during the analyzed peak hours.

With the implementation of the improvements described at the intersection of Western Avenue and Fays Avenue, the intersection is expected to operate at an overall LOS C or better during the analyzed peak hours with all lane groups operating at LOS D or better. Vehicle queue lengths are not expected to exceed the available storage lengths with the implementation of the proposed mitigation measures.

TRAFFIC IMPACT AND ACCESS STUDY

Walmart and Meineke Expansions and Lowe's Home Improvement Warehouse - Salem, Massachusetts

**Table 13
INTERSECTION CAPACITY ANALYSIS SUMMARY – WITH MITIGATION**

Intersection/Peak Hour/Lane Group	2014 No-Build				2014 Build				2014 Build Mitigated			
	V/C ^a	Del. ^b	LOS ^c	Queue ^d	V/C	Del.	LOS	Queue	V/C	Del.	LOS	Queue
Highland Avenue at Walmart Main Driveway												
<i>Weekday AM:</i>												
Walmart main driveway EB left-turns	0.40	35.0	D	27/38	0.55	35.4	D	46/55	0.37	34.9	C	24/35
Walmart main driveway EB left-turns/throughs	--	--	--	--	--	--	--	--	0.37	34.9	C	25/36
Walmart main driveway EB right-turns	0.01	24.6	C	0/5	0.05	21.4	C	1/9	0.05	33.3	C	0/12
Self-Storage driveway WB approach	--	--	--	--	--	--	--	--	0.05	38.5	D	1/9
Highland Avenue NB left-turns	0.48	36.4	D	29/61	0.54	35.0	C	49/88	0.38	35.2	D	25/46
Highland Avenue NB throughs	0.48	3.0	A	77/125	0.49	3.6	A	90/154	0.58	8.6	A	76/315
Highland Avenue SB left-turns	--	--	--	--	--	--	--	--	0.25	25.6	C	5/12
Highland Avenue SB throughs	0.41	1.8	A	10/25	0.44	2.6	A	14/28	0.46	3.2	A	6/38
Highland Avenue SB right-turns	0.03	0.0	A	0/0	0.02	0.2	A	1/1	0.02	0.0	A	0/0
Overall Intersection	0.47	4.1	A	--	0.50	6.1	A	--	0.52	9.3	A	--
<i>Weekday PM:</i>												
Walmart main driveway EB left-turns	0.55	40.8	D	51/92	0.77	43.5	D	140/213	0.58	38.9	D	76/141
Walmart main driveway EB left-turns/throughs	--	--	--	--	--	--	--	--	0.58	38.9	D	88/154
Walmart main driveway EB right-turns	0.05	26.1	C	5/26	0.31	17.9	B	64/114	0.14	34.6	C	60/120
Self-Storage driveway WB approach	--	--	--	--	--	--	--	--	0.06	44.0	D	5/24
Highland Avenue NB left-turns	0.56	40.7	D	56/102	0.80	47.6	D	133/265	0.60	39.0	D	75/118
Highland Avenue NB throughs	0.38	2.6	A	66/112	0.41	5.4	A	109/156	0.47	9.4	A	128/292
Highland Avenue SB left-turns	--	--	--	--	--	--	--	--	0.16	27.7	C	11/24
Highland Avenue SB throughs	0.52	2.6	A	24/40	0.73	11.7	B	321/321	0.66	8.0	A	194/349
Highland Avenue SB right-turns	0.06	0.1	A	0/0	0.08	1.6	A	3/3	0.08	0.0	A	9/30
Overall Intersection	0.53	5.7	A	--	0.75	15.1	B	--	0.62	15.1	B	--

^a Volume-to-capacity ratio.

^c Level of service.

^b Average control delay in seconds per vehicle.

^d Average/95th percentile queue length in feet per lane (assuming 25 feet per vehicle).

TRAFFIC IMPACT AND ACCESS STUDY

Walmart and Meineke Expansions and Lowe's Home Improvement Warehouse - Salem, Massachusetts

Table 13 (continued)
INTERSECTION CAPACITY ANALYSIS SUMMARY – WITH MITIGATION

Intersection/Peak Hour/Lane Group	2014 No-Build				2014 Build				2014 Build Mitigated			
	V/C ^a	Del. ^b	LOS ^c	Queue ^d	V/C	Del.	LOS	Queue	V/C	Del.	LO S	Queue
Highland Avenue at Walmart Main Driveway												
<i>Saturday Midday:</i>												
Walmart main driveway EB left-turns	0.64	34.8	C	87/141	0.83	39.5	D	183/368	0.66	34.8	C	85/148
Walmart main driveway EB left-turns/throughs	--	--	--	--	--	--	--	--	0.66	34.8	C	102/172
Walmart main driveway EB right-turns	0.02	16.0	B	0/13	0.29	10.5	B	61/119	0.16	28.2	C	68/129
Self-Storage driveway WB approach	--	--	--	--	--	--	--	--	0.05	38.8	D	4/229
Highland Avenue NB left-turns	0.62	34.2	C	82/136	1.01	78.1	E	214/380	0.66	33.2	C	90/140
Highland Avenue NB throughs	0.44	4.6	A	93/154	0.48	8.2	A	131/144	0.47	7.6	A	74/139
Highland Avenue SB left-turns	--	--	--	--	--	--	--	--	0.05	9.8	A	9/30
Highland Avenue SB throughs	0.59	6.9	A	42/128	0.88	22.8	C	272/272	0.75	15.3	B	200/315
Highland Avenue SB right-turns	0.12	2.4	A	0/0	0.15	4.3	A	25/25	0.12	0.2	A	36/79
Overall Intersection	0.60	9.2	A	--	0.90	24.3	C	--	0.69	17.2	B	--

^a Volume-to-capacity ratio.

^b Average control delay in seconds per vehicle.

^c Level of service.

^d Average/95th percentile queue length in feet per lane (assuming 25 feet per vehicle).

TRAFFIC IMPACT AND ACCESS STUDY

Walmart and Meineke Expansions and Lowe's Home Improvement Warehouse - Salem, Massachusetts

Table 13 (continued)
INTERSECTION CAPACITY ANALYSIS SUMMARY – WITH MITIGATION

Intersection/Peak Hour/Lane Group	2014 No-Build				2014 Build				2014 Build Mitigated			
	V/C ^a	Del. ^b	LOS ^c	Queue ^d	V/C	Del.	LOS	Queue	V/C	Del.	LOS	Queue
Western Avenue at Fays Avenue^e												
<i>Weekday AM:</i>												
Fays Avenue EB approach	0.48	32.5	C	50/93	0.50	33.2	C	48/80	0.63	44.9	D	58/104
Western Avenue NB left-turns	0.09	9.9	A	31/62	0.09	10.4	B	17/64	0.09	8.4	A	25/61
Western Avenue NB throughs	0.91	13.7	B	170/394	0.92	15.9	B	144/349	0.90	12.2	B	242/574
Western Avenue SB throughs/right-turns	0.96	32.4	C	404/661	0.96	33.9	C	370/694	--	--	--	--
Western Avenue SB throughs	--	--	--	--	--	--	--	--	0.87	19.9	B	374/678
Western Avenue SB right-turns	--	--	--	--	--	--	--	--	0.02	5.7	A	8/46
Overall Intersection	0.86	22.1	C	--	0.88	23.9	C	--	0.87	16.6	B	--
<i>Weekday PM:</i>												
Fays Avenue EB approach	0.41	29.0	C	43/77	0.54	31.0	C	60/130	0.68	48.0	D	48/99
Western Avenue NB left-turns	0.22	28.9	C	45/93	0.22	28.9	C	50/101	0.27	36.3	D	40/75
Western Avenue NB throughs	0.78	6.7	A	202/537	0.85	9.5	A	245/618	0.81	7.1	A	145/389
Western Avenue SB throughs/right-turns	1.08	64.1	E	1,150/2,180	1.19	106.1	F	1,241/2,300	--	--	--	--
Western Avenue SB throughs	--	--	--	--	--	--	--	--	1.02	42.6	D	309/608
Western Avenue SB right-turns	--	--	--	--	--	--	--	--	0.05	3.6	A	17/80
Overall Intersection	1.00	36.7	D	--	1.10	59.0	E	--	0.99	26.1	C	--
<i>Saturday Midday:</i>												
Fays Avenue EB approach	0.48	30.7	C	62/114	0.63	36.1	D	64/103	0.67	46.5	D	73/122
Western Avenue NB left-turns	0.20	15.2	B	34/72	0.20	27.9	C	32/65	0.23	19.6	B	39/79
Western Avenue NB throughs	0.79	7.2	A	184/375	0.89	12.5	B	462/1,035	0.86	10.4	B	192/375
Western Avenue SB throughs/right-turns	1.00	38.1	D	492/841	1.12	78.5	E	1,698/1,887	--	--	--	--
Western Avenue SB throughs	--	--	--	--	--	--	--	--	0.97	31.0	C	406/701
Western Avenue SB right-turns	--	--	--	--	--	--	--	--	0.06	4.9	A	36/113
Overall Intersection	0.93	22.7	C	--	1.06	44.4	D	--	0.94	21.0	C	--

^a Volume-to-capacity ratio

^c Level of service

^b Average control delay in seconds per vehicle

^d Average/95th percentile queue length in feet per lane (assuming 25 feet per vehicle)

^e Since volume to capacity ratios are at or exceed 1.00 at this location, the SimTraffic modeling program was used to determine queue lengths.

TRANSPORTATION DEMAND MANAGEMENT MEASURES

In recognition of the existing and future traffic demands on the study area roadway system, a number of Transportation Demand Management (TDM) measures are proposed and will be implemented by the proponent to help reduce the number of single occupant vehicles (SOV) traveling to and from the site and to encourage the use of alternative modes of transportation to reach the site and better manage the traffic generated by the project. Retail uses generally do not lend themselves well to TDM strategies since most of the traffic generated is customer related, rather than employee trips. However, in an effort to maximize employee vehicle occupancy and thereby reduce the vehicular demand to the site, TDM strategies are being considered by the proponent that include ridesharing, public transportation, bicycling, and pedestrian travel. These strategies are discussed below:

- Investigate the feasibility of creating a local Transportation Management Association (TMA) with other nearby businesses, as there is no TMA currently serving the project area.
- Provide secure bicycle racks/storage.
- Provide promotions to increase participation in all TDM practices, post and distribute announcements and newsletters regarding available TDM programs to employees, and provide materials that publicize the economic and environmental benefits of the available TDM practices.
- Institute a ride-matching program (carpool/vanpool) to assist employees to find appropriate carpool and vanpool matches. This program will be coordinated with MassRides (formerly Caravan for Commuters, Inc.). This organization operates a commuter hotline, a vanpool program, and a computerized ride-match program.
- Act as a resource and provide MBTA bus schedules and other up-to-date information about the program's services.
- Provide staggered work shifts to reduce peak period traffic volumes. The resulting decrease in peak period traffic congestion may result in reduced vehicle emissions from increased travel speeds and reduced delays (idling emissions) at intersections.
- Promote the establishment and use of direct deposit of employee paychecks.
- Provide on-site food service within Walmart for employees and customers of both Lowe's and Walmart.
- Advocate the use of the internet and shop-by-phone as shopping alternatives for the project.
- Encourage suppliers to schedule their deliveries during weekday afternoon non-peak hours to reduce traffic congestion during busy periods.
- Construct sidewalks, marked crosswalks, pedestrian traffic signals, lighting, and landscaping to encourage pedestrian use within the project.

CORRIDOR EMISSIONS

MEPA has established a GHG Emissions Policy and Protocol¹¹ which requires a quantified analysis of carbon dioxide (CO₂) emissions resulting from both “direct” (i.e. stack emissions) and “indirect” sources (i.e. vehicle travel and generation of supplied electricity). Tech Environmental has prepared a *Greenhouse Gas Analysis* for the project evaluating both direct and indirect emission sources based on the current requirements. GPI is offering additional vehicle travel emission analyses to supplement the analyses already performed based on current requirements.

Although the current approved models provide a general estimation of greenhouse gas emissions from mobile sources (specifically CO₂), the models do not consider key factors such as actual travel speeds, idling time, and the rate of acceleration/deceleration related to traffic controls and congestion. GPI has developed a method using a traffic simulation model to estimate mobile emissions of CO₂ that considers these key factors such that the benefits of the proposed mitigation measures can be assessed.

Assumptions

Based on estimates provided by the United States Environmental Protection Agency's (U.S. EPA's) Office of Transportation and Air Quality, the amount of CO₂ emitted from mobile sources is related to the amount of carbon in the fuel.¹² The EPA further suggests that, for all oil and oil products, the oxidation factor for carbon used is 0.99 (99 percent of the carbon in the fuel is eventually oxidized, while 1 percent remains un-oxidized). Based on these factors and the molecular weight ratio of CO₂ (44) to carbon (12), a gallon of gasoline will release 8,788 grams (19.37 pounds) of CO₂ and a gallon of diesel fuel 10,084 grams (22.23 pounds). Accordingly, an accurate calculation of CO₂ emissions can be determined by calculating the amount of fuel consumed within the study area.

Method

By using a traffic simulation model (i.e. SimTraffic or an equivalent program), the amount of fuel consumed within the roadway network can be determined. These models simulate the travel of each vehicle in the study area as a single entity, providing a more accurate calculation of fuel consumption based on actual travel speeds, idling time, acceleration/deceleration rates, and vehicle type throughout the roadway network. As suggested by the U.S. EPA, the amount of fuel consumed within the study area can be directly converted to a volume of CO₂ as required in MEPA's GHG Emissions Policy and Protocol.

¹¹ *MEPA Greenhouse Gas Emissions Policy and Protocol*; provided on MEPA's website as of December 18, 2008.

¹² *Emission Facts: Average Carbon Dioxide Emissions Resulting from Gasoline and Diesel Fuel*; U.S. Department of Environmental Protection Office of Transportation and Air Quality; EPA420-F-05-001; February 2005.

TRAFFIC IMPACT AND ACCESS STUDY

Walmart and Meineke Expansions and Lowe's Home Improvement Warehouse - Salem, Massachusetts

Since weekday and weekend traffic volumes can differ significantly, separate weekday and weekend calculations and analyses were performed for this project. The weekday PM peak hour volumes were used to calculate the weekday daily traffic volumes based on the percentage of daily traffic that occurs for each hour of the day (called K factors). These K factors were determined from ATR counts conducted along Highland Avenue. The Saturday midday peak hour volumes and the ATR count data were also used to estimate the volume of traffic on the roadways for each hour of the day on a weekend condition. The weekday and weekend traffic count data were then further adjusted to reflect average month conditions using the MassDOT seasonal adjustment data referenced earlier in this study.

Based on the SimTraffic modeling program results, the total vehicle miles traveled and the amount of fuel consumed for a typical weekday and weekend condition can be determined. From these results, the amount of CO₂ emitted from vehicles within the roadway network can be determined for both a typical weekday and weekend condition and multiplied by the 260 and 105, respectively, to determine the yearly emission of CO₂ as result of vehicle travel through the roadway network.

These results also provide a rate of CO₂ emission per vehicle mile traveled (VMT) within the roadway network. The emissions rate per VMT is important as it provides the basis for comparison between Existing, No-Build, Build, and Build Mitigated conditions. As traffic increases through a roadway network, so will total emissions. However, the implementation of traffic improvements can have the effect of reducing the rate at which CO₂ is emitted per VMT by reducing traffic congestion, idling time, the rate of acceleration and deceleration, and increasing travel speeds. It is important to note that from a regional perspective, total emissions are generally not increased by the development since the increase in traffic through the study area is off-set by a reduction in traffic elsewhere due to a redistribution of shopping opportunities.

Results

Based on the method described above, emission rates in terms of CO₂ per VMT were determined for an average weekday and weekend condition under 2009 Existing, 2014 No-Build, and 2014 Build traffic volume conditions. As described in this traffic study, mitigation measures are proposed to not only reduce the amount of vehicle delay through the study area, but also reduce the amount of CO₂ being emitted by vehicle travel. Two strategies to mitigate traffic related impacts are being implemented as part of this project including: 1) roadway and intersection improvements to improve traffic flow and 2) Transportation Demand Management (TDM) strategies to minimize the reliance on single-occupant vehicle travel.

Although a site generated traffic volume reduction of 2 percent was determined as a result of the TDM strategies as described in the *Greenhouse Gas Analysis* report prepared by Tech Environmental, the benefits of the roadway and intersection improvements were further determined using the method described above. The emission rates with the inclusion of the

TRAFFIC IMPACT AND ACCESS STUDY

Walmart and Meineke Expansions and Lowe's Home Improvement Warehouse - Salem, Massachusetts

strategies being proposed as part of this project are calculated under the 2014 Build with Mitigation condition. The results of this alternative analysis method are summarized in Table 14 for the Existing, No-Build, Build, and Build Mitigated conditions for the weekday and weekends conditions. The emission rates as presented in the *Greenhouse Gas Analysis* report is also summarized which based on the current method, shows a consistent vehicle emission rate for the future No-Build, Build, and Build mitigated conditions.

Table 14
SIMTRAFFIC RESULTS

Variable	Analysis Condition			
	2009 Existing	2014 No-Build	2014 Build	2014 Build Mitigated
Avg. Weekday VMT (mi/day)	37,778	42,080	46,889	46,948
Avg. Weekend VMT (mi/day)	35,256	38,263	44,306	44,719
Avg. VMT (mi/day)	37,052	40,982	46,151	46,311
Annual VMT (mi/yr)	13,524,160	14,958,415	16,845,115	16,903,515
Weekday Fuel Used (gal/day)	2,751	3,062	3,672	3,589
Weekend Fuel Used (gal/day)	2,654	2,756	5,730	3,389
Average Fuel Used (gal/day)	2,723	2,974	4,260	3,531
CO ₂ Emissions (lbs/day)	52,897	57,777	82,755	68,593
CO ₂ Emissions (tons/yr)	9,654	10,544	15,103	12,518
SimTraffic - CO ₂ (g/mi)	647.56	639.49	813.59	672.01
Mobile 6.2 - CO ₂ (g/mi) ^a	554.48	562.70	562.70	562.70

^a *Greenhouse Gas Analysis - Walmart Expansion and Lowe's Home Improvement Store Project, Salem, Massachusetts*; prepared by Tech Environmental.

As shown in Table 14, the VMT traveled increases between the Existing, No-Build, and Build conditions. As a result of the MassDOT project coordinating the study are intersections (nearing completion), there is a decrease in the rate of CO₂ being emitted by vehicle travel between the existing and No-Build conditions. This rate is expected to increase by 27 percent with the addition of site generated traffic and without the proposed mitigation measures. The impact of the project on vehicle emissions is significantly reduced (22 percent) with the proposed mitigation measures with only a slight increase in emission rate (5 percent) between the No-Build and Build Mitigated conditions.

TRAFFIC IMPACT AND ACCESS STUDY

Walmart and Meineke Expansions and Lowe's Home Improvement Warehouse - Salem, Massachusetts

APPENDIX

TRAFFIC COUNT DATA

TRAFFIC-VOLUME ADJUSTMENT DATA

MASSDOT CRASH RATE WORKSHEETS

PUBLIC TRANSPORTATION INFORMATION

TRIP-GENERATION DATA

CAPACITY AND QUEUE ANALYSIS WORKSHEETS

CORRIDOR EMISSION WORKSHEETS

TRAFFIC IMPACT AND ACCESS STUDY

Walmart and Meineke Expansions and Lowe's Home Improvement Warehouse - Salem, Massachusetts

TRAFFIC COUNT DATA



61 Spit Brook Road Suite 110
Nashua, NH. 03060

File Name : Highland Ave @ Ravenna_Barnes - AM

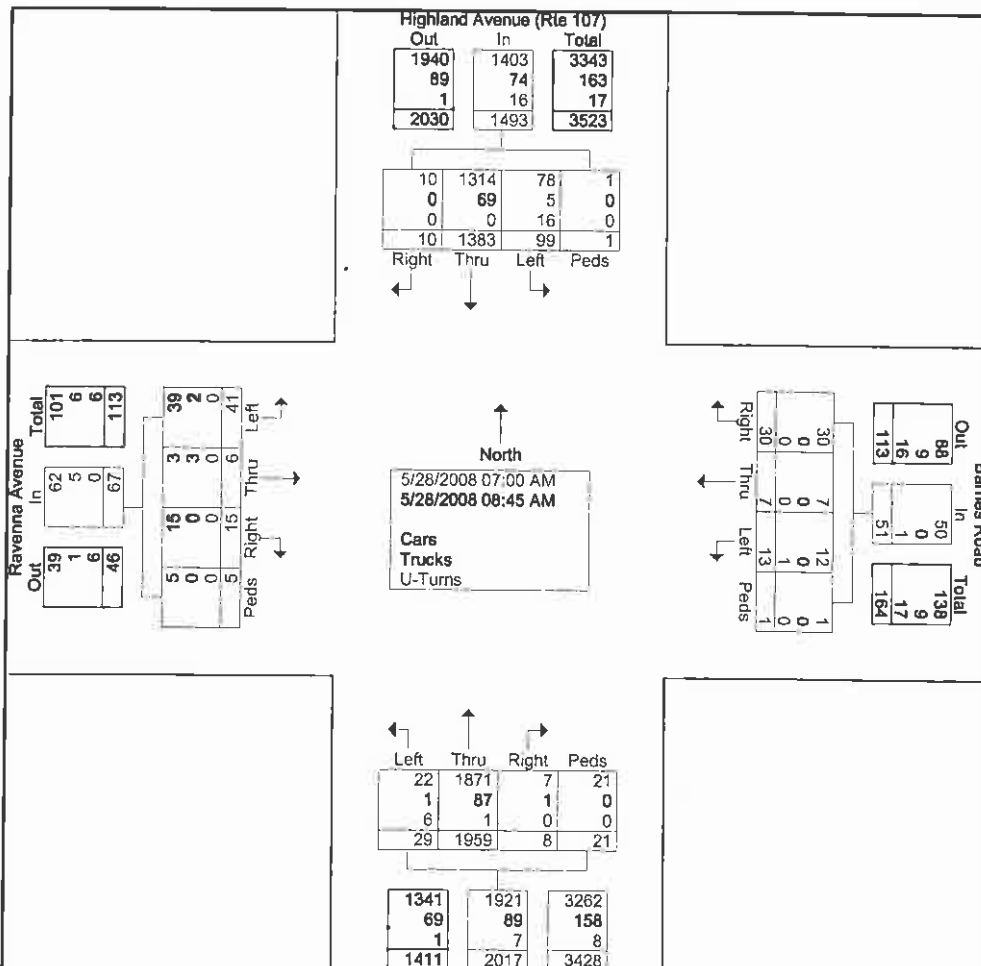
Site Code : 08571

Start Date : 5/28/2008

Page No : 1

Groups Printed- Cars - Trucks - Turns

Start Time	Highland Avenue (Rte 107) Southbound					Barnes Road Westbound					Highland Avenue (Rte 107) Northbound					Ravenna Avenue Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
07:00 AM	17	184	1	0	202	4	0	4	0	8	3	233	0	16	252	8	0	2	5	15	477
07:15 AM	16	215	1	0	232	3	0	3	0	6	2	243	3	2	250	6	2	0	0	8	496
07:30 AM	7	172	1	0	180	3	0	6	0	9	7	287	1	0	295	2	1	2	0	5	489
07:45 AM	11	209	2	0	222	1	0	5	0	6	11	372	1	0	384	6	2	3	0	11	623
Total	51	780	5	0	836	11	0	18	0	29	23	1135	5	18	1181	22	5	7	5	39	2085
08:00 AM	14	195	0	0	209	0	0	9	0	9	3	240	2	0	245	10	0	3	0	13	476
08:15 AM	16	153	4	0	173	2	7	0	1	10	1	260	0	1	262	3	1	3	0	7	452
08:30 AM	8	53	0	0	61	0	0	0	0	0	1	51	1	0	53	1	0	2	0	3	117
08:45 AM	10	202	1	1	214	0	0	3	0	3	1	273	0	2	276	5	0	0	0	5	498
Total	48	603	5	1	657	2	7	12	1	22	6	824	3	3	836	19	1	8	0	28	1543
Grand Total	99	1383	10	1	1493	13	7	30	1	51	29	1959	8	21	2017	41	6	15	5	67	3628
Apprch %	6.6	92.6	0.7	0.1		25.5	13.7	58.8	2		1.4	97.1	0.4	1		61.2	9	22.4	7.5		
Total %	2.7	38.1	0.3	0	41.2	0.4	0.2	0.8	0	1.4	0.8	54	0.2	0.6	55.6	1.1	0.2	0.4	0.1	1.8	
Cars	78	1314	10	1	1403	12	7	30	1	50	22	1871	7	21	1921	39	3	15	5	62	3436
% Cars	78.8	95	100	100	94	92.3	100	100	100	98	75.9	95.5	87.5	100	95.2	95.1	50	100	100	92.5	94.7
Trucks	5	69	0	0	74	0	0	0	0	0	1	87	1	0	89	2	3	0	0	5	168
% Trucks	5.1	5	0	0	5	0	0	0	0	0	3.4	4.4	12.5	0	4.4	4.9	50	0	0	7.5	4.6
U-Turns	16	0	0	0	16	1	0	0	0	1	6	1	0	0	7	0	0	0	0	0	24
% U-Turns	16.2	0	0	0	1.1	7.7	0	0	0	2	20.7	0.1	0	0	0.3	0	0	0	0	0	0.7

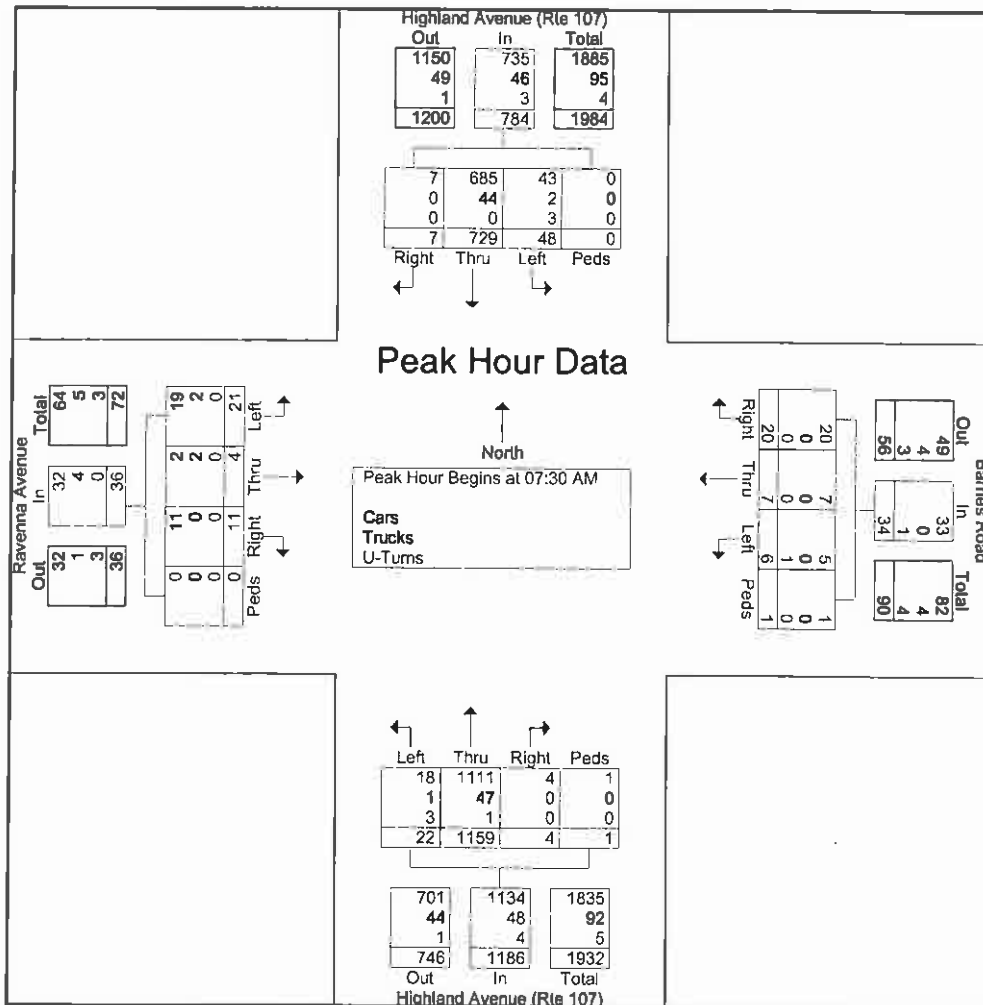


GPI

61 Spit Brook Road Suite 110
Nashua, NH. 03060

File Name : Highland Ave @ Ravenna_Barnes - AM
Site Code : 08571
Start Date : 5/28/2008
Page No : 2

Start Time	Highland Avenue (Rte 107) Southbound					Barnes Road Westbound					Highland Avenue (Rte 107) Northbound					Ravenna Avenue Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	7	172	1	0	180	3	0	6	0	9	7	287	1	0	295	2	1	2	0	5	489
07:45 AM	11	209	2	0	222	1	0	5	0	6	11	372	1	0	384	6	2	3	0	11	623
08:00 AM	14	195	0	0	209	0	0	9	0	9	3	240	2	0	245	10	0	3	0	13	476
08:15 AM	16	153	4	0	173	2	7	0	1	10	1	260	0	1	262	3	1	3	0	7	452
Total Volume	48	729	7	0	784	6	7	20	1	34	22	1159	4	1	1186	21	4	11	0	36	2040
% App. Total	6.1	93	0.9	0		17.6	20.6	58.8	2.9		1.9	97.7	0.3	0.1		58.3	11.1	30.6	0		
PIIF	.750	.872	.438	.000	.883	.500	.250	.556	.250	.850	.500	.779	.500	.250	.772	.525	.500	.917	.000	.692	.819
Cars	43	685	7	0	735	5	7	20	1	33	18	1111	4	1	1134	19	2	11	0	32	1934
% Cars	89.6	94.0	100	0	93.8	83.3	100	100	100	97.1	81.8	95.9	100	100	95.6	90.5	50.0	100	0	88.9	94.8
Trucks	2	44	0	0	46	0	0	0	0	0	1	47	0	0	48	2	2	0	0	4	98
% Trucks	4.2	6.0	0	0	5.9	0	0	0	0	0	4.5	4.1	0	0	4.0	9.5	50.0	0	0	11.1	4.8
U-Turns	3	0	0	0	3	1	0	0	0	1	3	1	0	0	4	0	0	0	0	0	8
% U-Turns	6.3	0	0	0	0.4	16.7	0	0	0	2.9	13.6	0.1	0	0	0.3	0	0	0	0	0	0.4



GPI

61 Spit Brook Road Suite 110
Nashua, NH. 03060

File Name : Highland Ave @ Ravenna_Barnes - AM

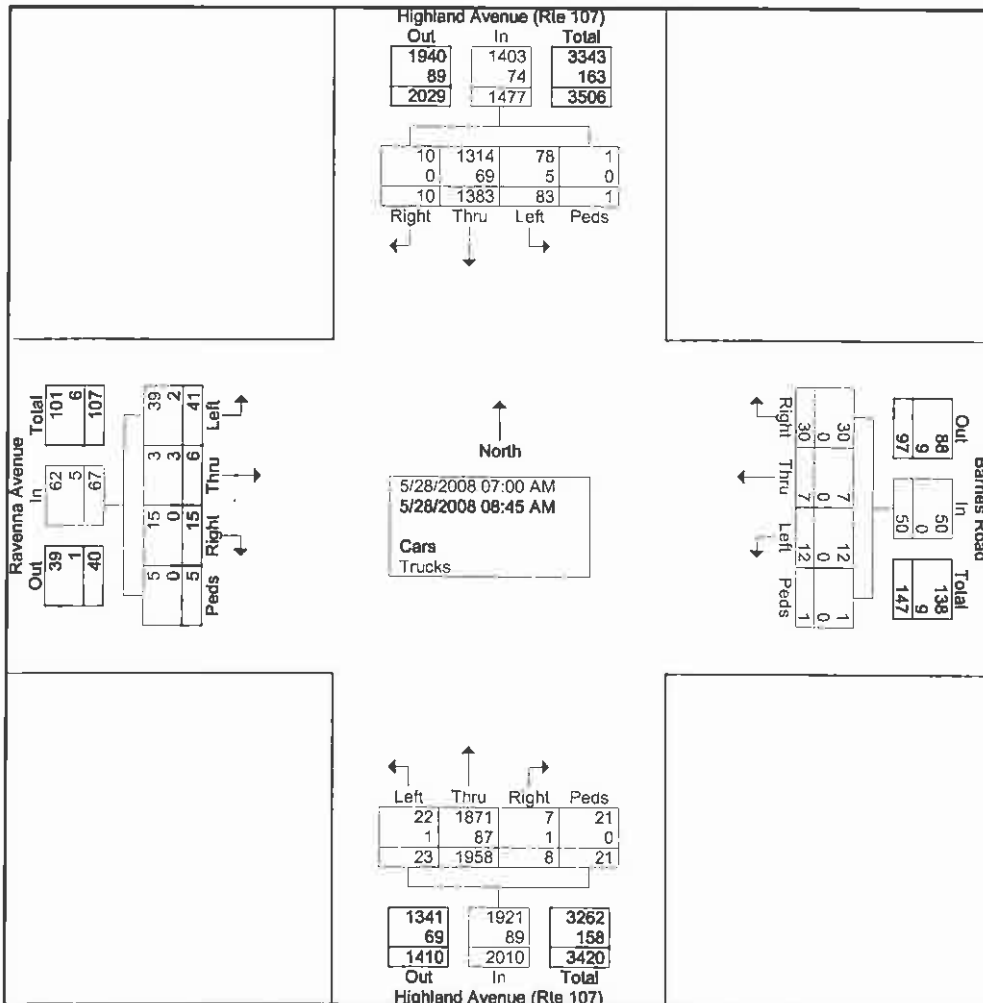
Site Code : 08571

Start Date : 5/28/2008

Page No : 1

Groups Printed- Cars - Trucks

Start Time	Highland Avenue (Rte 107) Southbound					Barnes Road Westbound					Highland Avenue (Rte 107) Northbound					Ravenna Avenue Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
07:00 AM	14	184	1	0	199	4	0	4	0	8	1	233	0	16	250	8	0	2	5	15	472
07:15 AM	12	215	1	0	228	3	0	3	0	6	1	243	3	2	249	6	2	0	0	8	491
07:30 AM	7	172	1	0	180	3	0	6	0	9	6	287	1	0	294	2	1	2	0	5	488
07:45 AM	10	209	2	0	221	1	0	5	0	6	9	372	1	0	382	6	2	3	0	11	620
Total	43	780	5	0	828	11	0	18	0	29	17	1135	5	18	1175	22	5	7	5	39	2071
08:00 AM	14	195	0	0	209	0	0	9	0	9	3	240	2	0	245	10	0	3	0	13	476
08:15 AM	14	153	4	0	171	1	7	0	1	9	1	259	0	1	261	3	1	3	0	7	448
08:30 AM	4	53	0	0	57	0	0	0	0	0	1	51	1	0	53	1	0	2	0	3	113
08:45 AM	8	202	1	1	212	0	0	3	0	3	1	273	0	2	276	5	0	0	0	5	496
Total	40	603	5	1	649	1	7	12	1	21	6	823	3	3	835	19	1	8	0	28	1533
Grand Total	83	1383	10	1	1477	12	7	30	1	50	23	1958	8	21	2010	41	6	15	5	67	3604
Apprch %	5.6	93.6	0.7	0.1		24	14	60	2		1.1	97.4	0.4	1		61.2	9	22.4	7.5		
Total %	2.3	38.4	0.3	0	41	0.3	0.2	0.8	0	1.4	0.6	54.3	0.2	0.6	55.8	1.1	0.2	0.4	0.1	1.9	
Cars	78	1314	10	1	1403	12	7	30	1	50	22	1871	7	21	1921	39	3	15	5	62	3436
% Cars	94	95	100	100	95	100	100	100	100	100	95.7	95.6	87.5	100	95.6	95.1	50	100	100	92.5	95.3
Trucks	5	69	0	0	74	0	0	0	0	0	1	87	1	0	89	2	3	0	0	5	168
% Trucks	6	5	0	0	5	0	0	0	0	0	4.3	4.4	12.5	0	4.4	4.9	50	0	0	7.5	4.7



GPI

61 Spit Brook Road Suite 110
Nashua, NH. 03060

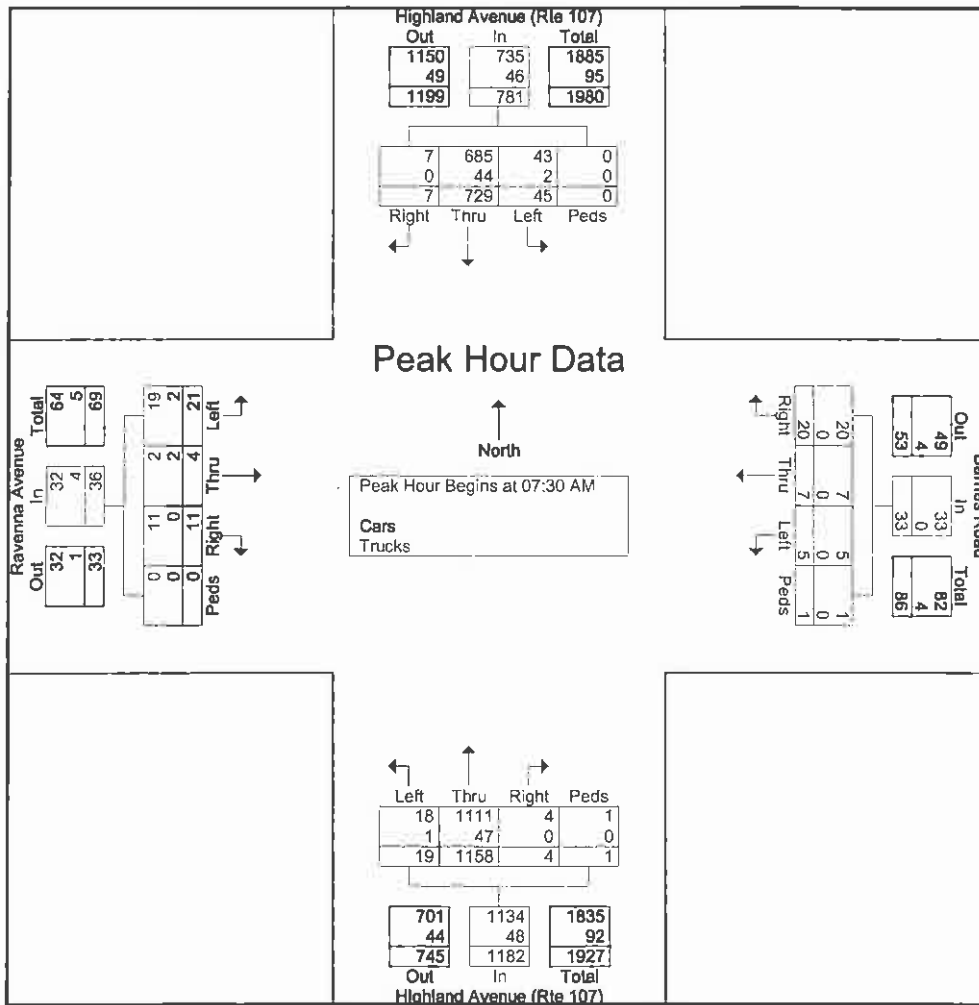
File Name : Highland Ave @ Ravenna_Barnes - AM

Site Code : 08571

Start Date : 5/28/2008

Page No : 2

Start Time	Highland Avenue (Rte 107) Southbound					Barnes Road Westbound					Highland Avenue (Rte 107) Northbound					Ravenna Avenue Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	7	172	1	0	180	3	0	6	0	9	6	287	1	0	294	2	1	2	0	5	488
07:45 AM	10	209	2	0	221	1	0	5	0	6	9	372	1	0	382	6	2	3	0	11	620
08:00 AM	14	195	0	0	209	0	0	9	0	9	3	240	2	0	245	10	0	3	0	13	476
08:15 AM	14	153	4	0	171	1	7	0	1	9	1	259	0	1	261	3	1	3	0	7	448
Total Volume	45	729	7	0	781	5	7	20	1	33	19	1158	4	1	1182	21	4	11	0	36	2032
% App. Total	5.8	93.3	0.9	0		15.2	21.2	60.6	3		1.6	98	0.3	0.1		58.3	11.1	30.6	0		
PHT	804	872	438	000	883	417	250	556	250	917	528	778	500	250	774	525	500	917	000	692	819
Cars	43	685	7	0	735	5	7	20	1	33	18	1111	4	1	1134	19	2	11	0	32	1934
% Cars	95.6	94.0	100	0	94.1	100	100	100	100	100	94.7	95.9	100	100	95.9	90.5	50.0	100	0	88.9	95.2
Trucks	2	44	0	0	46	0	0	0	0	0	1	47	0	0	48	2	2	0	0	4	98
% Trucks	4.4	6.0	0	0	5.9	0	0	0	0	0	5.3	4.1	0	0	4.1	9.5	50.0	0	0	11.1	4.8



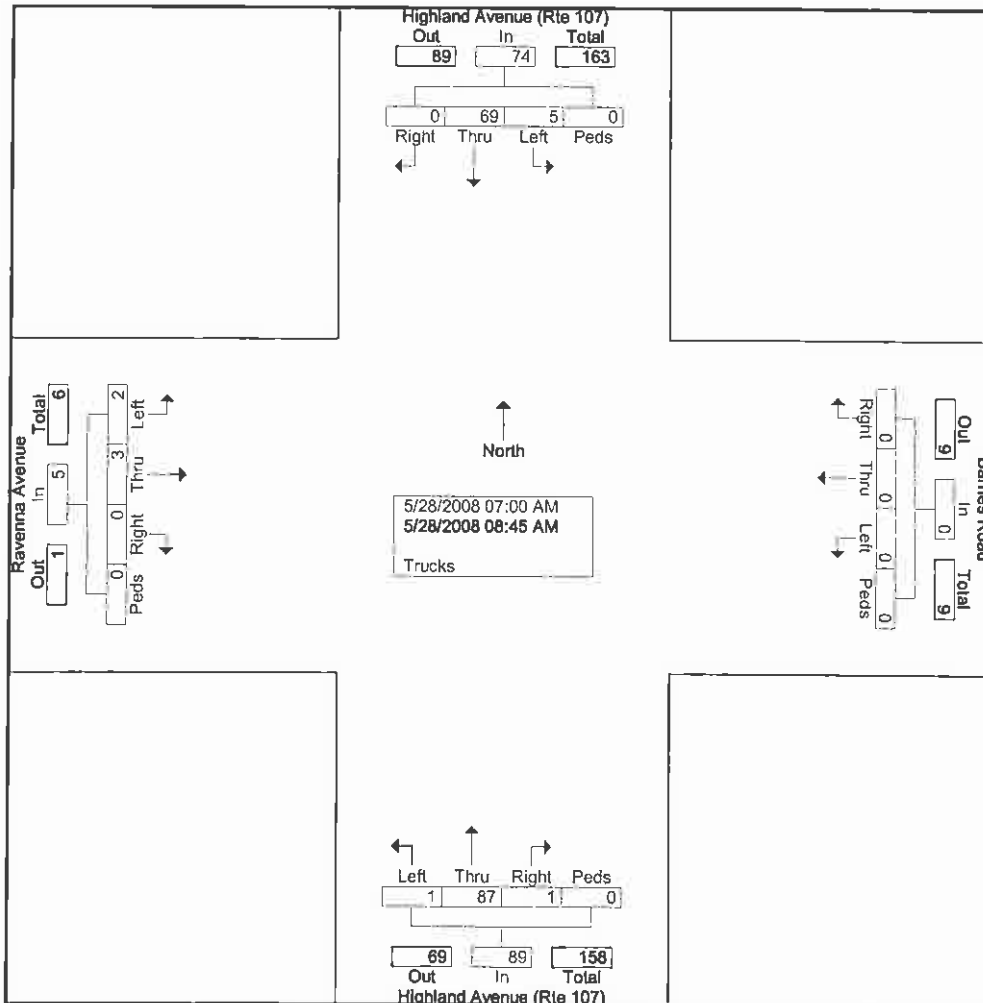
GPI

61 Spit Brook Road Suite 110
Nashua, NH. 03060

File Name : Highland Ave @ Ravenna_Barnes - AM
Site Code : 08571
Start Date : 5/28/2008
Page No : 1

Groups Printed- Trucks

Start Time	Highland Avenue (Rte 107) Southbound					Barnes Road Westbound					Highland Avenue (Rte 107) Northbound					Ravenna Avenue Eastbound					Incl. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
07:00 AM	1	6	0	0	7	0	0	0	0	0	0	15	0	0	15	0	0	0	0	0	22
07:15 AM	2	10	0	0	12	0	0	0	0	0	0	17	1	0	18	0	1	0	0	1	31
07:30 AM	1	11	0	0	12	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	20
07:45 AM	1	14	0	0	15	0	0	0	0	0	1	22	0	0	23	2	2	0	0	4	42
Total	5	41	0	0	46	0	0	0	0	0	1	62	1	0	64	2	3	0	0	5	115
08:00 AM	0	6	0	0	6	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	11
08:15 AM	0	13	0	0	13	0	0	0	0	0	0	12	0	0	12	0	0	0	0	0	25
08:30 AM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
08:45 AM	0	8	0	0	8	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	16
Total	0	28	0	0	28	0	0	0	0	0	0	25	0	0	25	0	0	0	0	0	53
Grand Total	5	69	0	0	74	0	0	0	0	0	1	87	1	0	89	2	3	0	0	5	168
Apprch %	6.8	93.2	0	0		0	0	0	0		1.1	97.8	1.1	0		40	60	0	0		
Total %	3	41.1	0	0	44	0	0	0	0	0	0.6	51.8	0.6	0	53	1.2	1.8	0	0	3	

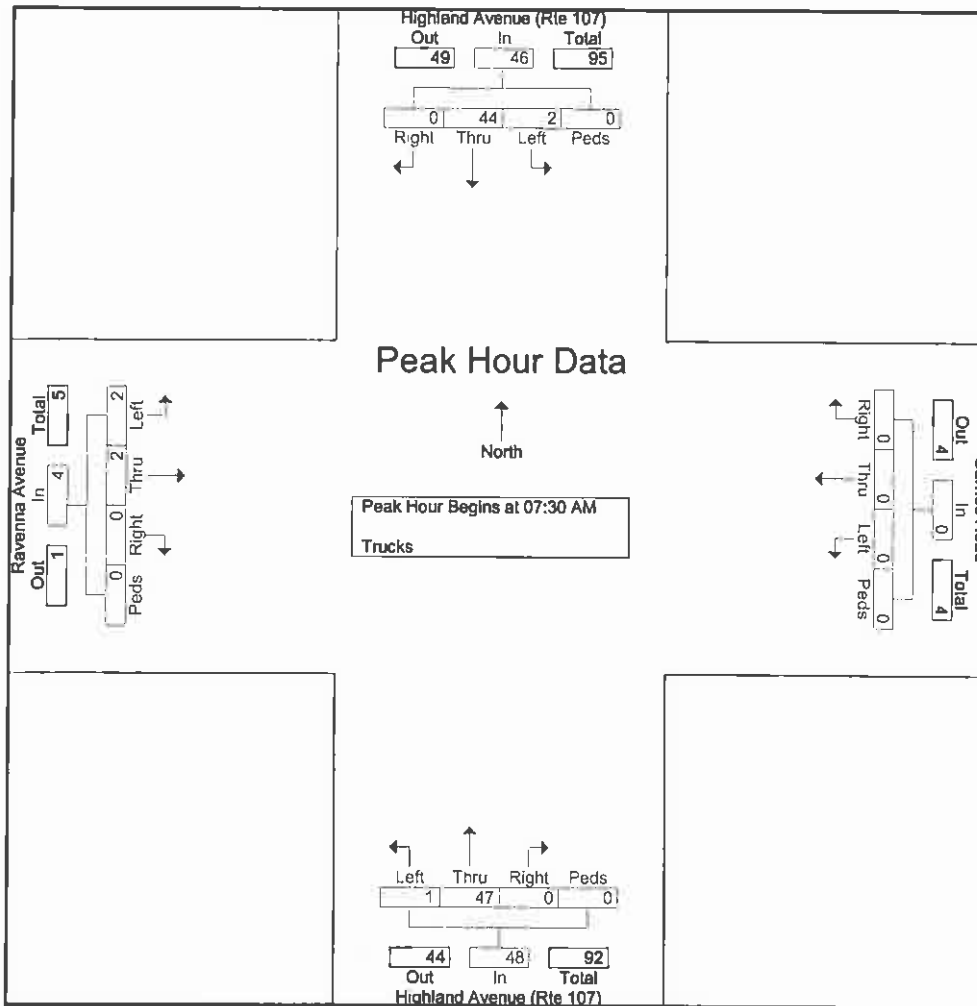


GPI

61 Spit Brook Road Suite 110
Nashua, NH. 03060

File Name : Highland Ave @ Ravenna_Barnes - AM
Site Code : 08571
Start Date : 5/28/2008
Page No : 2

Start Time	Highland Avenue (Rte 107) Southbound					Barnes Road Westbound					Highland Avenue (Rte 107) Northbound					Ravenna Avenue Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	1	11	0	0	12	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	20
07:45 AM	1	14	0	0	15	0	0	0	0	0	1	22	0	0	23	2	2	0	0	4	42
08:00 AM	0	6	0	0	6	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	11
08:15 AM	0	13	0	0	13	0	0	0	0	0	0	12	0	0	12	0	0	0	0	0	25
Total Volume	2	44	0	0	46	0	0	0	0	0	1	47	0	0	48	2	2	0	0	4	98
% App. Total	4.3	95.7	0	0		0	0	0	0		2.1	97.9	0	0		50	50	0	0		
PHF	.500	.786	.000	.000	.767	.000	.000	.000	.000	.000	.250	.534	.000	.000	.522	.250	.250	.000	.000	.250	.583



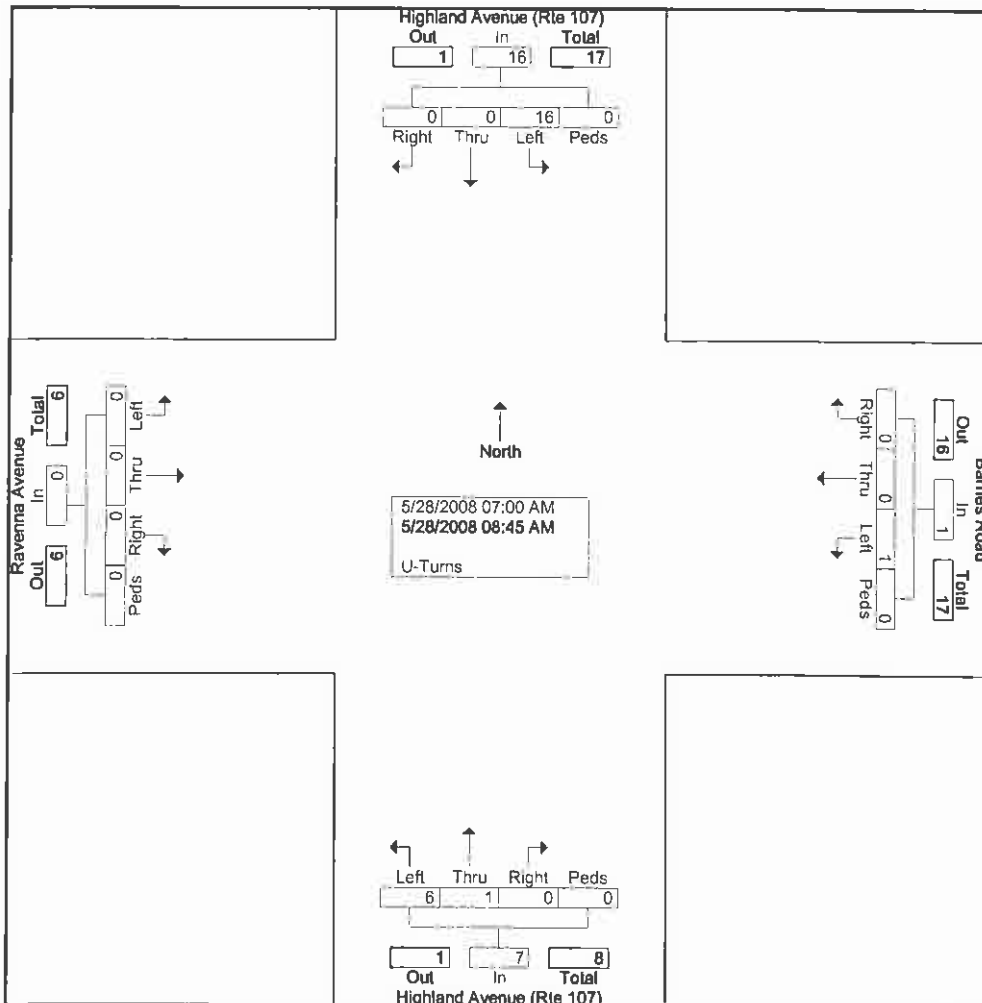
GPI

61 Spit Brook Road Suite 110
Nashua, NH. 03060

File Name : Highland Ave @ Ravenna_Barnes - AM
Site Code : 08571
Start Date : 5/28/2008
Page No : 1

Groups Printed- Turns

Start Time	Highland Avenue (Rte 107) Southbound					Barnes Road Westbound					Highland Avenue (Rte 107) Northbound					Ravenna Avenue Eastbound					Int. Total	
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total		
07:00 AM	3	0	0	0	3	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	5
07:15 AM	4	0	0	0	4	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	5
07:30 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	1
07:45 AM	1	0	0	0	1	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	3
Total	8	0	0	0	8	0	0	0	0	0	6	0	0	0	6	0	0	0	0	0	0	14
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	2	0	0	0	2	1	0	0	0	1	0	1	0	0	1	0	0	0	0	0	0	4
08:30 AM	4	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
08:45 AM	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Total	8	0	0	0	8	1	0	0	0	1	0	1	0	0	1	0	0	0	0	0	0	10
Grand Total	16	0	0	0	16	1	0	0	0	1	6	1	0	0	7	0	0	0	0	0	0	24
Apprch %	100	0	0	0		100	0	0	0		85.7	14.3	0	0		0	0	0	0	0	0	
Total %	66.7	0	0	0	66.7	4.2	0	0	0	4.2	25	4.2	0	0	29.2	0	0	0	0	0	0	

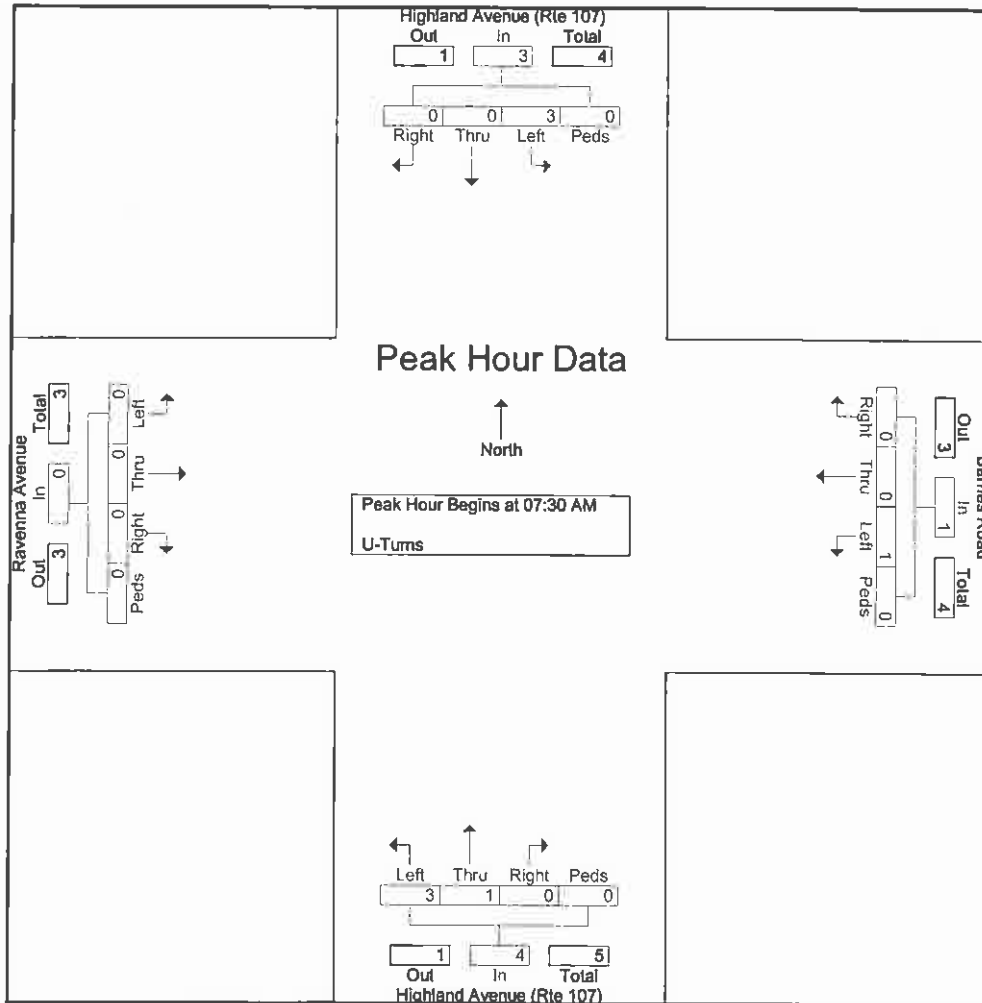


GPI

61 Spit Brook Road Suite 110
Nashua, NH. 03060

File Name : Highland Ave @ Ravenna_Barnes - AM
Site Code : 08571
Start Date : 5/28/2008
Page No : 2

Start Time	Highland Avenue (Rte 107) Southbound					Barnes Road Westbound					Highland Avenue (Rte 107) Northbound					Ravenna Avenue Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1
07:45 AM	1	0	0	0	1	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	3
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	2	0	0	0	2	1	0	0	0	1	0	1	0	0	1	0	0	0	0	0	4
Total Volume	3	0	0	0	3	1	0	0	0	1	3	1	0	0	4	0	0	0	0	0	8
% App. Total	100	0	0	0		100	0	0	0		75	25	0	0		0	0	0	0		8
PHF	.375	.000	.000	.000	.375	.250	.000	.000	.000	.250	.375	.250	.000	.000	.500	.000	.000	.000	.000	.000	.500





61 Spit Brook Road Suite 110
Nashua, NH. 03060

File Name : Highland Ave @ Olde Village Dr - AM

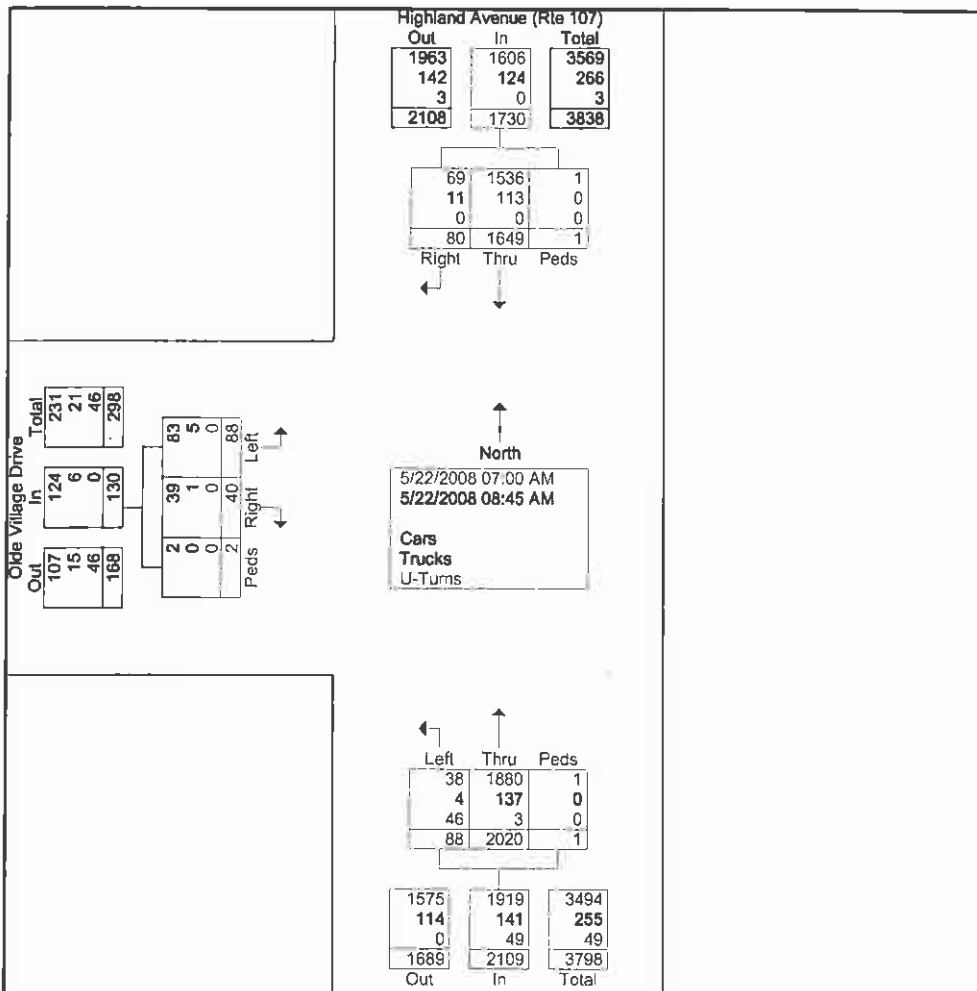
Site Code : 08571

Start Date : 5/22/2008

Page No : 1

Groups Printed- Cars - Trucks - Turns

Start Time	Highland Avenue (Rte 107) Southbound				Highland Avenue (Rte 107) Northbound				Olde Village Drive Eastbound				Int. Total
	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	
07:00 AM	186	12	0	198	13	220	0	233	11	6	0	17	448
07:15 AM	215	6	1	222	11	202	0	213	8	6	0	14	449
07:30 AM	193	3	0	196	4	240	0	244	11	5	1	17	457
07:45 AM	204	7	0	211	12	294	0	306	10	3	0	13	530
Total	798	28	1	827	40	956	0	996	40	20	1	61	1884
08:00 AM	207	7	0	214	13	264	0	277	11	4	0	15	506
08:15 AM	212	13	0	225	10	259	1	270	17	7	0	24	519
08:30 AM	230	15	0	245	13	274	0	287	13	4	0	17	549
08:45 AM	202	17	0	219	12	267	0	279	7	5	1	13	511
Total	851	52	0	903	48	1064	1	1113	48	20	1	69	2085
Grand Total	1649	80	1	1730	88	2020	1	2109	88	40	2	130	3969
Apprch %	95.3	4.6	0.1		4.2	95.8	0		67.7	30.8	1.5		
Total %	41.5	2	0	43.6	2.2	50.9	0	53.1	2.2	1	0.1	3.3	
Cars	1536	69	1	1606	38	1880	1	1919	83	39	2	124	3649
% Cars	93.1	86.2	100	92.8	43.2	93.1	100	91	94.3	97.5	100	95.4	91.9
Trucks	113	11	0	124	4	137	0	141	5	1	0	6	271
% Trucks	6.9	13.8	0	7.2	4.5	6.8	0	6.7	5.7	2.5	0	4.6	6.8
U-Turns	0	0	0	0	46	3	0	49	0	0	0	0	49
% U-Turns	0	0	0	0	52.3	0.1	0	2.3	0	0	0	0	1.2



GPI

61 Spit Brook Road Suite 110
Nashua, NH. 03060

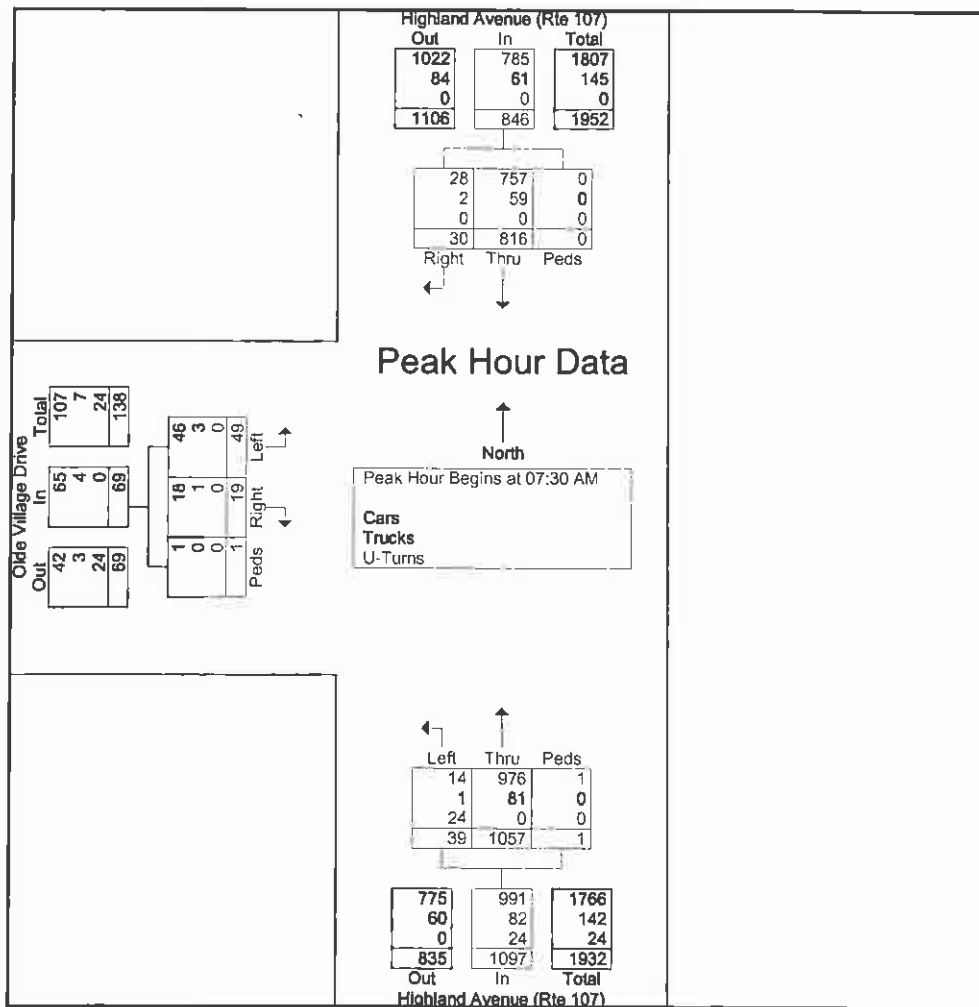
File Name : Highland Ave @ Olde Village Dr - AM

Site Code : 08571

Start Date : 5/22/2008

Page No : 2

Start Time	Highland Avenue (Rte 107) Southbound				Highland Avenue (Rte 107) Northbound				Olde Village Drive Eastbound				Int. Total
	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:30 AM													
07:30 AM	193	3	0	196	4	240	0	244	11	5	1	17	457
07:45 AM	204	7	0	211	12	294	0	306	10	3	0	13	530
08:00 AM	207	7	0	214	13	264	0	277	11	4	0	15	506
08:15 AM	212	13	0	225	10	259	1	270	17	7	0	24	519
Total Volume	816	30	0	846	39	1057	1	1097	49	19	1	69	2012
% App. Total	96.5	3.5	0		3.6	96.4	0.1		71	27.5	1.4		
PHF	.962	.577	.000	.940	.750	.899	.250	.896	.721	.679	.250	.719	.949
Cars	757	28	0	785	14	976	1	991	46	18	1	65	1841
% Cars	92.8	93.3	0	92.8	35.9	92.3	100	90.3	93.9	94.7	100	94.2	91.5
Trucks	59	2	0	61	1	81	0	82	3	1	0	4	147
% Trucks	7.2	6.7	0	7.2	2.6	7.7	0	7.5	6.1	5.3	0	5.8	7.3
U-Turns	0	0	0	0	24	0	0	24	0	0	0	0	24
% U-Turns	0	0	0	0	61.5	0	0	2.2	0	0	0	0	1.2





61 Spit Brook Road Suite 110
Nashua, NH. 03060

File Name : Highland Ave @ Olde Village Dr - AM

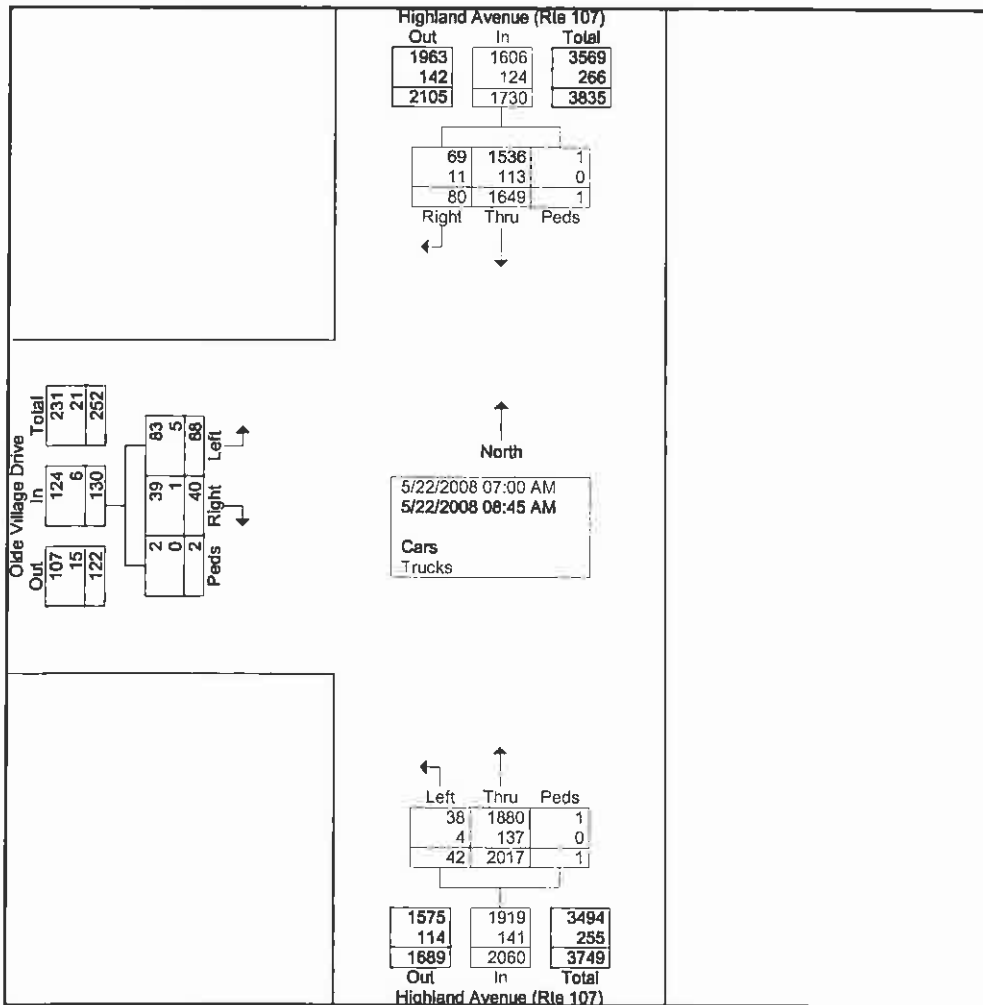
Site Code : 08571

Start Date : 5/22/2008

Page No : 1

Groups Printed- Cars - Trucks

Start Time	Highland Avenue (Rte 107) Southbound				Highland Avenue (Rte 107) Northbound				Olde Village Drive Eastbound				Int. Total
	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	
07:00 AM	186	12	0	198	2	220	0	222	11	6	0	17	437
07:15 AM	215	6	1	222	9	199	0	208	8	6	0	14	444
07:30 AM	193	3	0	196	0	240	0	240	11	5	1	17	453
07:45 AM	204	7	0	211	5	294	0	299	10	3	0	13	523
Total	798	28	1	827	16	953	0	969	40	20	1	61	1857
08:00 AM	207	7	0	214	4	264	0	268	11	4	0	15	497
08:15 AM	212	13	0	225	6	259	1	266	17	7	0	24	515
08:30 AM	230	15	0	245	8	274	0	282	13	4	0	17	544
08:45 AM	202	17	0	219	8	267	0	275	7	5	1	13	507
Total	851	52	0	903	26	1064	1	1091	48	20	1	69	2063
Grand Total	1649	80	1	1730	42	2017	1	2060	88	40	2	130	3920
Apprch %	95.3	4.6	0.1		2	97.9	0		67.7	30.8	1.5		
Total %	42.1	2	0	44.1	1.1	51.5	0	52.6	2.2	1	0.1	3.3	
Cars	1536	69	1	1606	38	1880	1	1919	83	39	2	124	3649
% Cars	93.1	86.2	100	92.8	90.5	93.2	100	93.2	94.3	97.5	100	95.4	93.1
Trucks	113	11	0	124	4	137	0	141	5	1	0	6	271
% Trucks	6.9	13.8	0	7.2	9.5	6.8	0	6.8	5.7	2.5	0	4.6	6.9



GPI

61 Spit Brook Road Suite 110
Nashua, NH. 03060

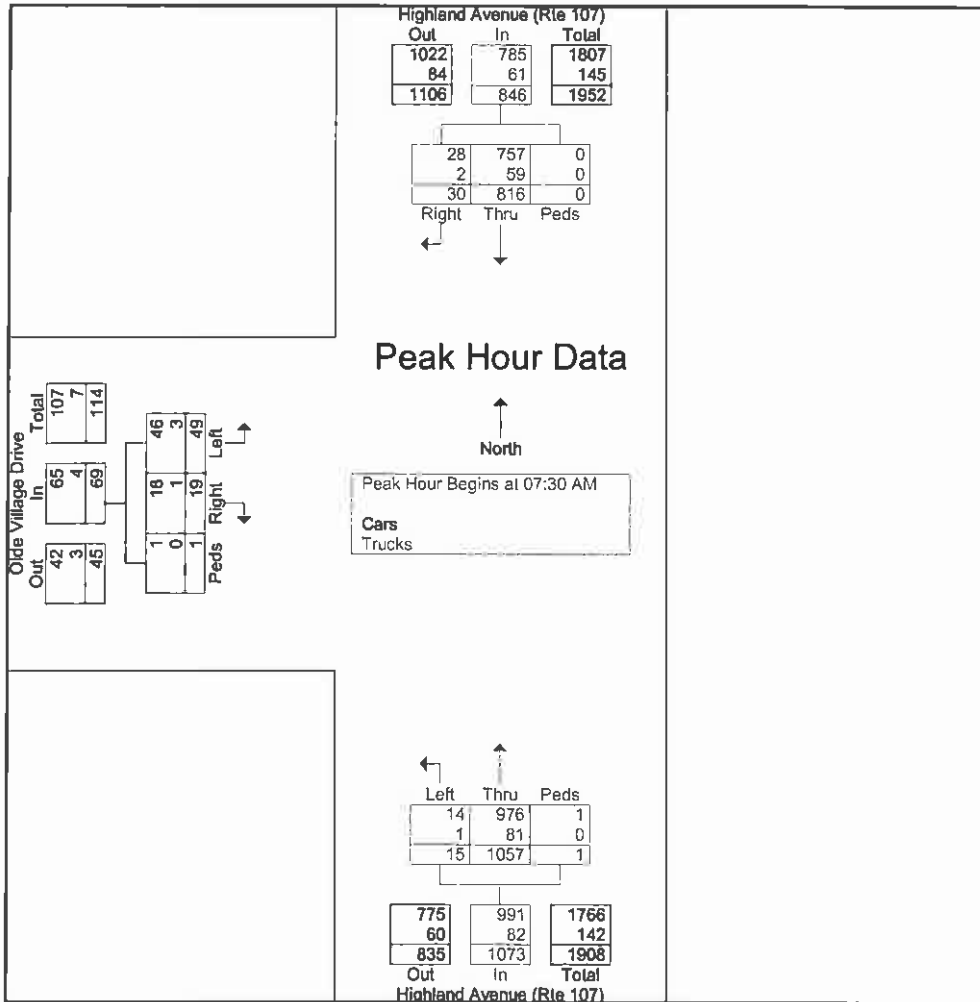
File Name : Highland Ave @ Olde Village Dr - AM

Site Code : 08571

Start Date : 5/22/2008

Page No : 2

Start Time	Highland Avenue (Rte 107) Southbound				Highland Avenue (Rte 107) Northbound				Olde Village Drive Eastbound				Int. Total
	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:30 AM													
07:30 AM	193	3	0	196	0	240	0	240	11	5	1	17	453
07:45 AM	204	7	0	211	5	294	0	299	10	3	0	13	523
08:00 AM	207	7	0	214	4	264	0	268	11	4	0	15	497
08:15 AM	212	13	0	225	6	259	1	266	17	7	0	24	515
Total Volume	816	30	0	846	15	1057	1	1073	49	19	1	69	1988
% App. Total	96.5	3.5	0		1.4	98.5	0.1		71	27.5	1.4		
PHF	.962	.577	.000	.940	.625	.899	.250	.897	.721	.679	.250	.719	.950
Cars	757	28	0	785	14	976	1	991	46	18	1	65	1841
% Cars	92.8	93.3	0	92.8	93.3	92.3	100	92.4	93.9	94.7	100	94.2	92.6
Trucks	59	2	0	61	1	81	0	82	3	1	0	4	147
% Trucks	7.2	6.7	0	7.2	6.7	7.7	0	7.6	6.1	5.3	0	5.8	7.4



GPI

61 Spit Brook Road Suite 110
Nashua, NH. 03060

File Name : Highland Ave @ Olde Village Dr - AM

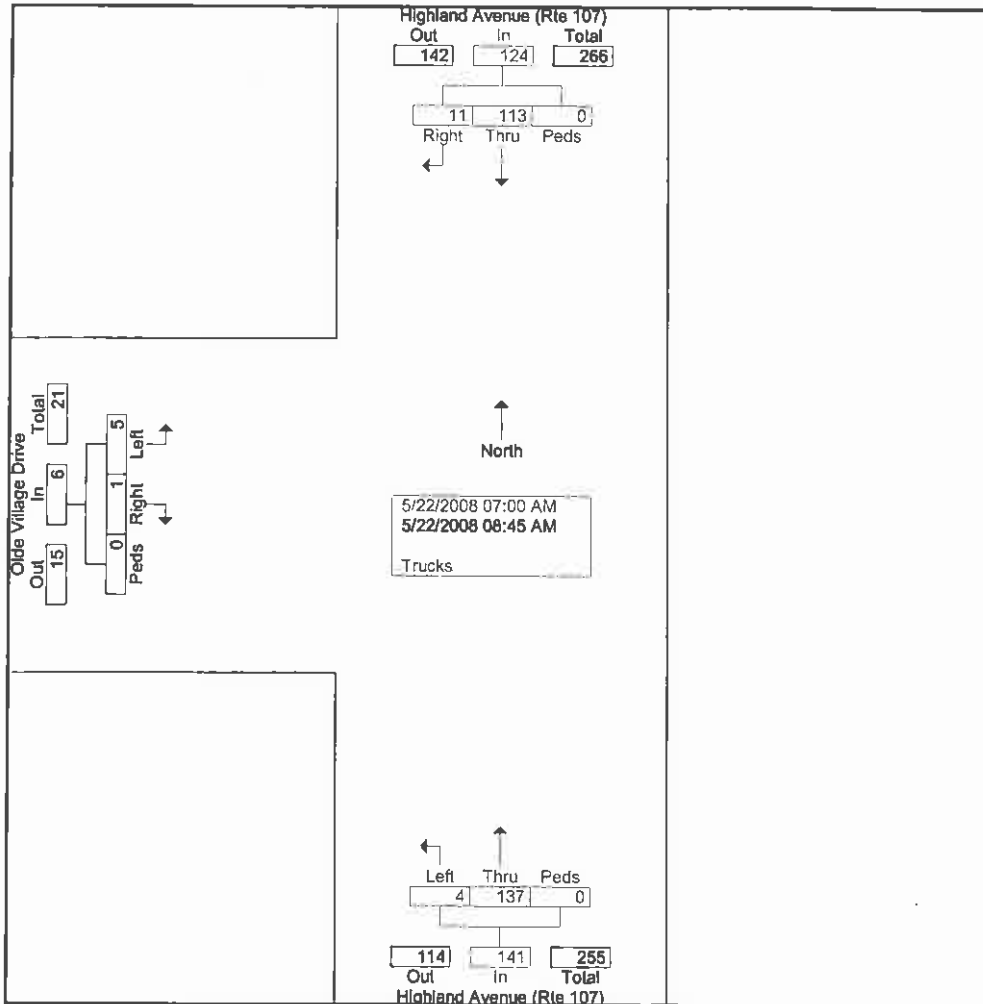
Site Code : 08571

Start Date : 5/22/2008

Page No : 1

Groups Printed- Trucks

Start Time	Highland Avenue (Rte 107) Southbound				Highland Avenue (Rte 107) Northbound				Olde Village Drive Eastbound				Int. Total
	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	
07:00 AM	7	4	0	11	0	18	0	18	0	0	0	0	29
07:15 AM	7	1	0	8	3	11	0	14	1	0	0	1	23
07:30 AM	15	1	0	16	0	16	0	16	1	1	0	2	34
07:45 AM	10	0	0	10	1	17	0	18	1	0	0	1	29
Total	39	6	0	45	4	62	0	66	3	1	0	4	115
08:00 AM	14	0	0	14	0	21	0	21	0	0	0	0	35
08:15 AM	20	1	0	21	0	27	0	27	1	0	0	1	49
08:30 AM	21	0	0	21	0	10	0	10	0	0	0	0	31
08:45 AM	19	4	0	23	0	17	0	17	1	0	0	1	41
Total	74	5	0	79	0	75	0	75	2	0	0	2	156
Grand Total	113	11	0	124	4	137	0	141	5	1	0	6	271
Apprch %	91.1	8.9	0		2.8	97.2	0		83.3	16.7	0		
Total %	41.7	4.1	0	45.8	1.5	50.6	0	52	1.8	0.4	0	2.2	



GPI

61 Spit Brook Road Suite 110
Nashua, NH. 03060

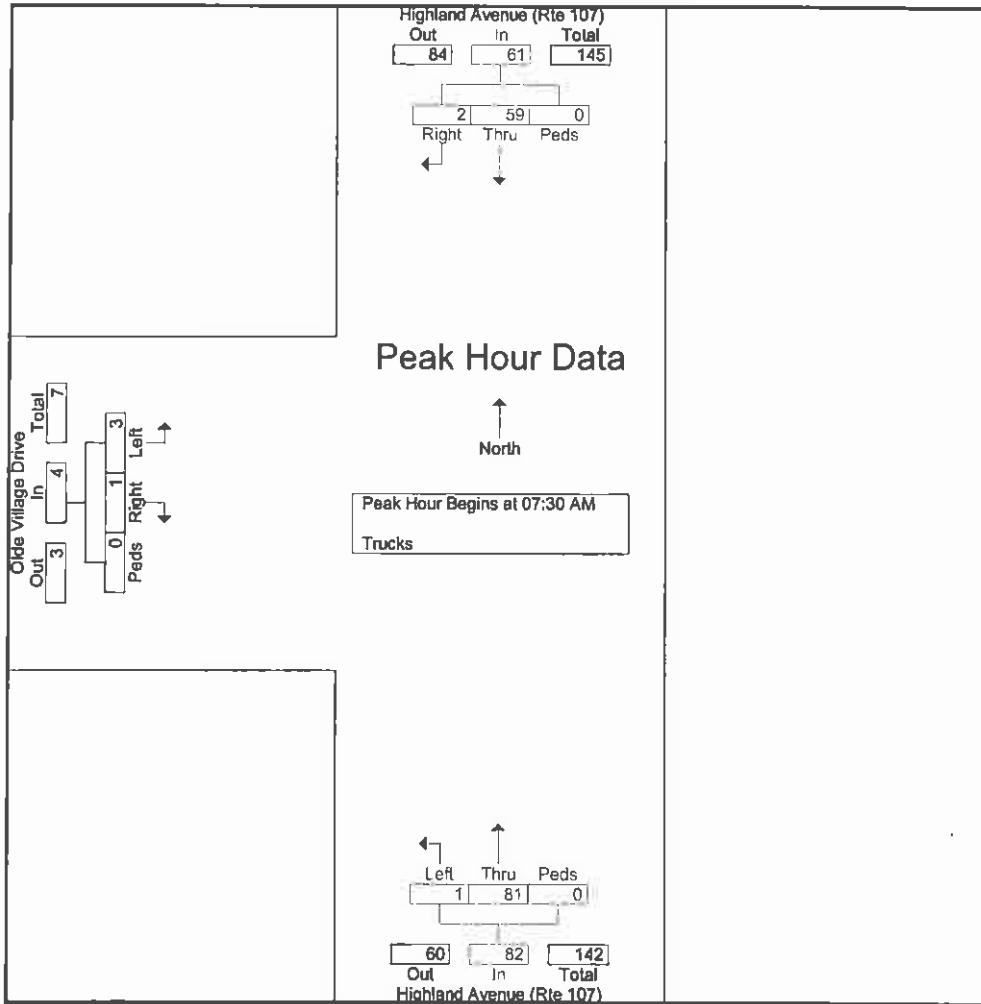
File Name : Highland Ave @ Olde Village Dr - AM

Site Code : 08571

Start Date : 5/22/2008

Page No : 2

Start Time	Highland Avenue (Rte 107) Southbound				Highland Avenue (Rte 107) Northbound				Olde Village Drive Eastbound				Int. Total
	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:30 AM													
07:30 AM	15	1	0	16	0	16	0	16	1	1	0	2	34
07:45 AM	10	0	0	10	1	17	0	18	1	0	0	1	29
08:00 AM	14	0	0	14	0	21	0	21	0	0	0	0	35
08:15 AM	20	1	0	21	0	27	0	27	1	0	0	1	49
Total Volume	59	2	0	61	1	81	0	82	3	1	0	4	147
% App. Total	96.7	3.3	0		1.2	98.8	0		75	25	0		
PHF	.738	.500	.000	.726	.250	.750	.000	.759	.750	.250	.000	.500	.750



GPI

61 Spit Brook Road Suite 110
Nashua, NH. 03060

File Name : Highland Ave @ Olde Village Dr - AM

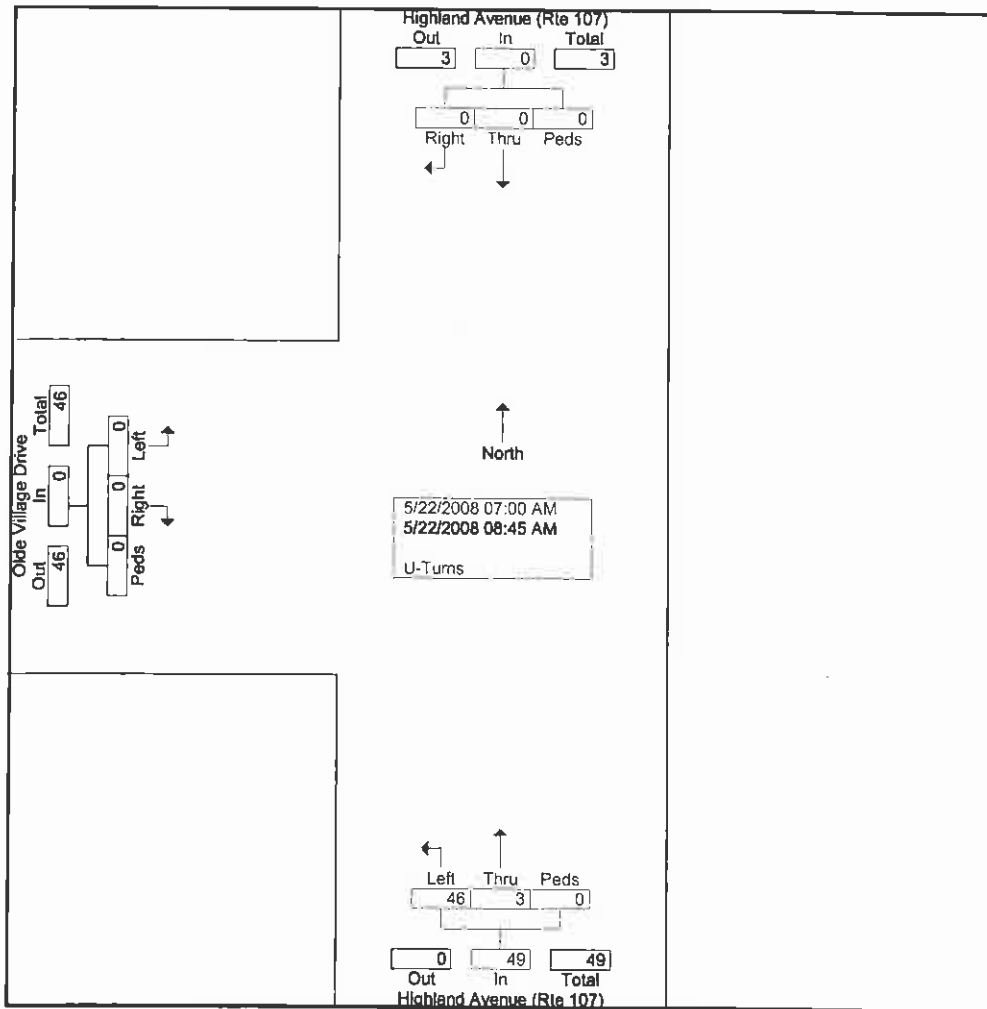
Site Code : 08571

Start Date : 5/22/2008

Page No : 1

Groups Printed- Turns

Start Time	Highland Avenue (Rte 107) Southbound				Highland Avenue (Rte 107) Northbound				Olde Village Drive Eastbound				Int. Total
	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	
07:00 AM	0	0	0	0	11	0	0	11	0	0	0	0	11
07:15 AM	0	0	0	0	2	3	0	5	0	0	0	0	5
07:30 AM	0	0	0	0	4	0	0	4	0	0	0	0	4
07:45 AM	0	0	0	0	7	0	0	7	0	0	0	0	7
Total	0	0	0	0	24	3	0	27	0	0	0	0	27
08:00 AM	0	0	0	0	9	0	0	9	0	0	0	0	9
08:15 AM	0	0	0	0	4	0	0	4	0	0	0	0	4
08:30 AM	0	0	0	0	5	0	0	5	0	0	0	0	5
08:45 AM	0	0	0	0	4	0	0	4	0	0	0	0	4
Total	0	0	0	0	22	0	0	22	0	0	0	0	22
Grand Total	0	0	0	0	46	3	0	49	0	0	0	0	49
Apprch %	0	0	0	0	93.9	6.1	0		0	0	0	0	
Total %	0	0	0	0	93.9	6.1	0	100	0	0	0	0	



GPI

61 Spit Brook Road Suite 110
Nashua, NH. 03060

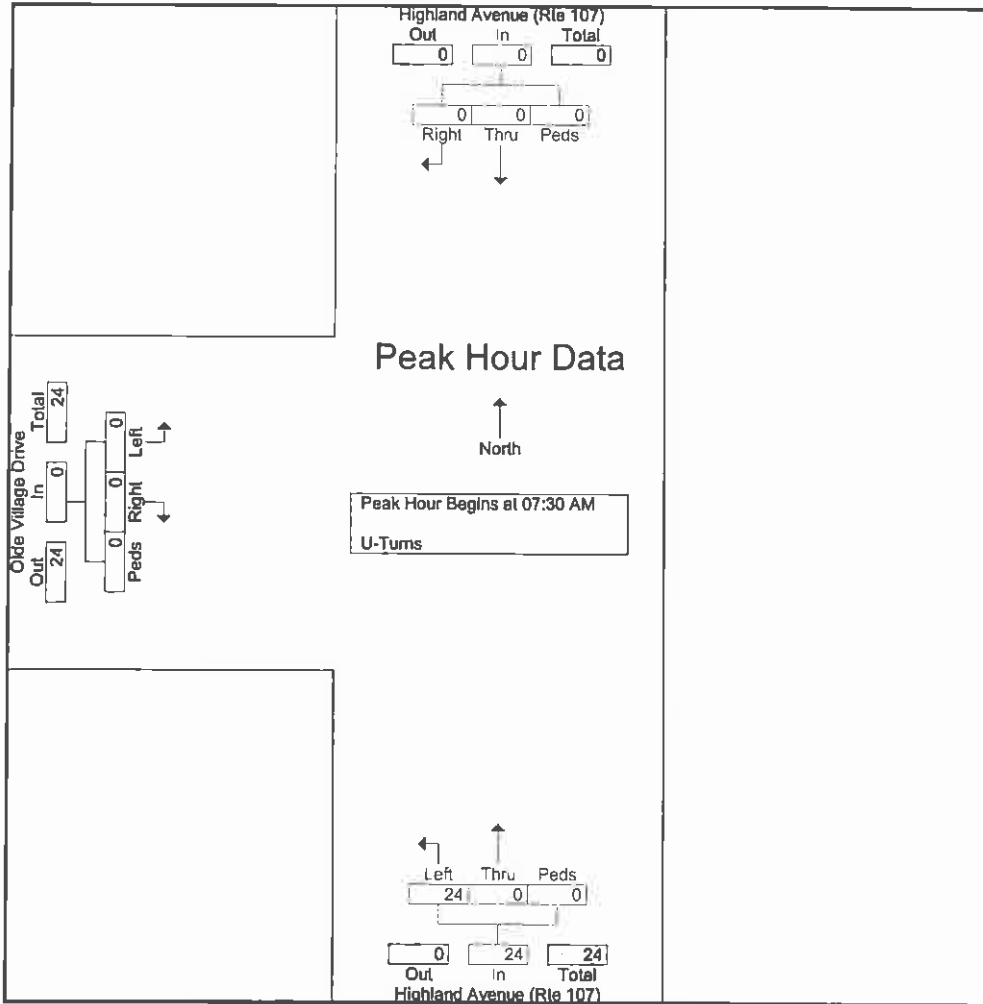
File Name : Highland Ave @ Olde Village Dr - AM

Site Code : 08571

Start Date : 5/22/2008

Page No : 2

Start Time	Highland Avenue (Rte 107) Southbound				Highland Avenue (Rte 107) Northbound				Olde Village Drive Eastbound				Int. Total
	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:30 AM													
07:30 AM	0	0	0	0	4	0	0	4	0	0	0	0	4
07:45 AM	0	0	0	0	7	0	0	7	0	0	0	0	7
08:00 AM	0	0	0	0	9	0	0	9	0	0	0	0	9
08:15 AM	0	0	0	0	4	0	0	4	0	0	0	0	4
Total Volume	0	0	0	0	24	0	0	24	0	0	0	0	24
% App. Total	0	0	0	0	100	0	0	100	0	0	0	0	100
PHF	.000	.000	.000	.000	.667	.000	.000	.667	.000	.000	.000	.000	.667



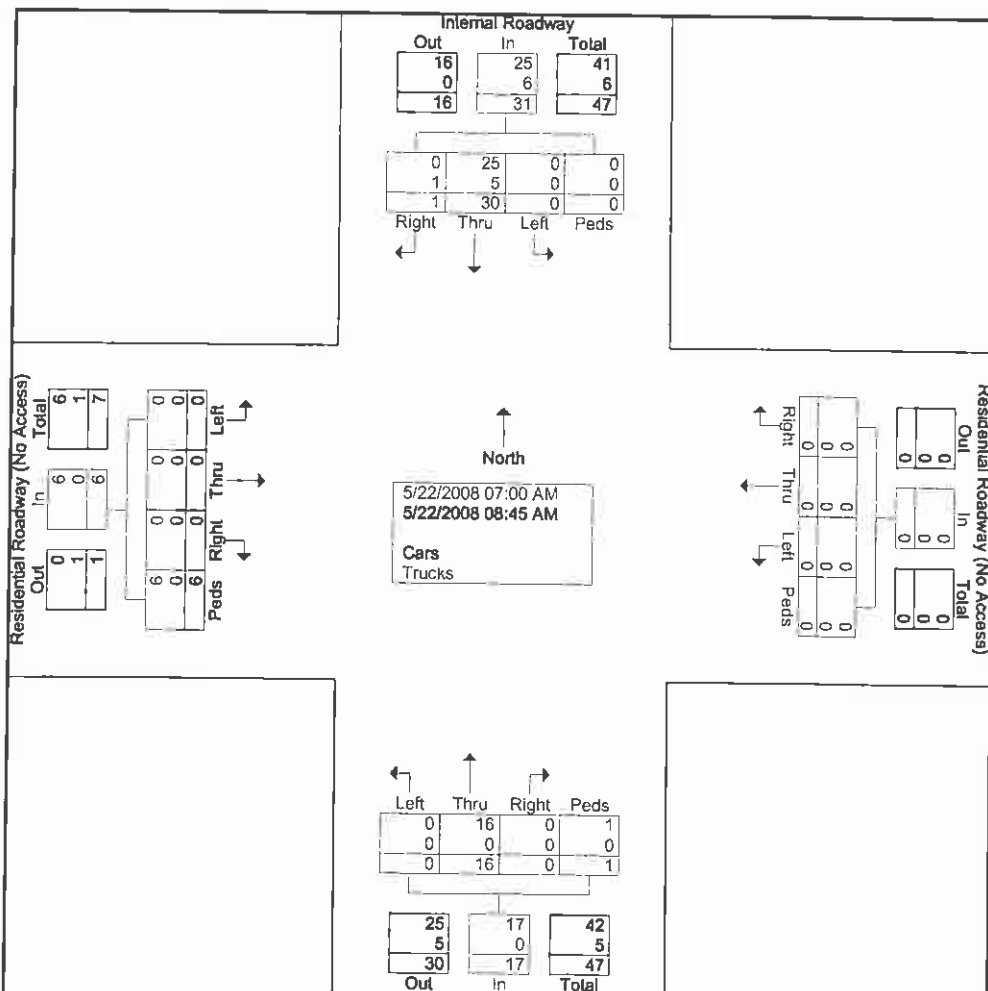


61 Spit Brook Road Suite 110
Nashua, NH. 03060

File Name : WalMart Internal Roadway - AM
Site Code : 08571
Start Date : 5/22/2008
Page No : 1

Groups Printed- Cars - Trucks

Start Time	Internal Roadway Southbound					Residential Roadway (No Access) Westbound					Internal Roadway Northbound					Residential Roadway (No Access) Eastbound					Int. Total	
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total		
07:00 AM	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
07:15 AM	0	4	0	0	4	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1	6
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1	2
07:45 AM	0	4	0	0	4	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	6
Total	0	11	0	0	11	0	0	0	0	0	0	4	0	0	4	0	0	0	2	2	0	17
08:00 AM	0	5	0	0	5	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	8
08:15 AM	0	4	0	0	4	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	9
08:30 AM	0	6	1	0	7	0	0	0	0	0	0	2	0	1	3	0	0	0	3	3	3	13
08:45 AM	0	4	0	0	4	0	0	0	0	0	0	2	0	0	2	0	0	0	1	1	1	7
Total	0	19	1	0	20	0	0	0	0	0	0	12	0	1	13	0	0	0	4	4	0	37
Grand Total	0	30	1	0	31	0	0	0	0	0	0	16	0	1	17	0	0	0	6	6	6	54
Apprch %	0	96.8	3.2	0		0	0	0	0		0	94.1	0	5.9		0	0	0	100			
Total %	0	55.6	1.9	0	57.4	0	0	0	0	0	0	29.6	0	1.9	31.5	0	0	0	11.1	11.1		
Cars	0	25	0	0	25	0	0	0	0	0	0	16	0	1	17	0	0	0	6	6	6	48
% Cars	0	83.3	0	0	80.6	0	0	0	0	0	0	100	0	100	100	0	0	0	100	100	100	88.9
Trucks	0	5	1	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
% Trucks	0	16.7	100	0	19.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11.1

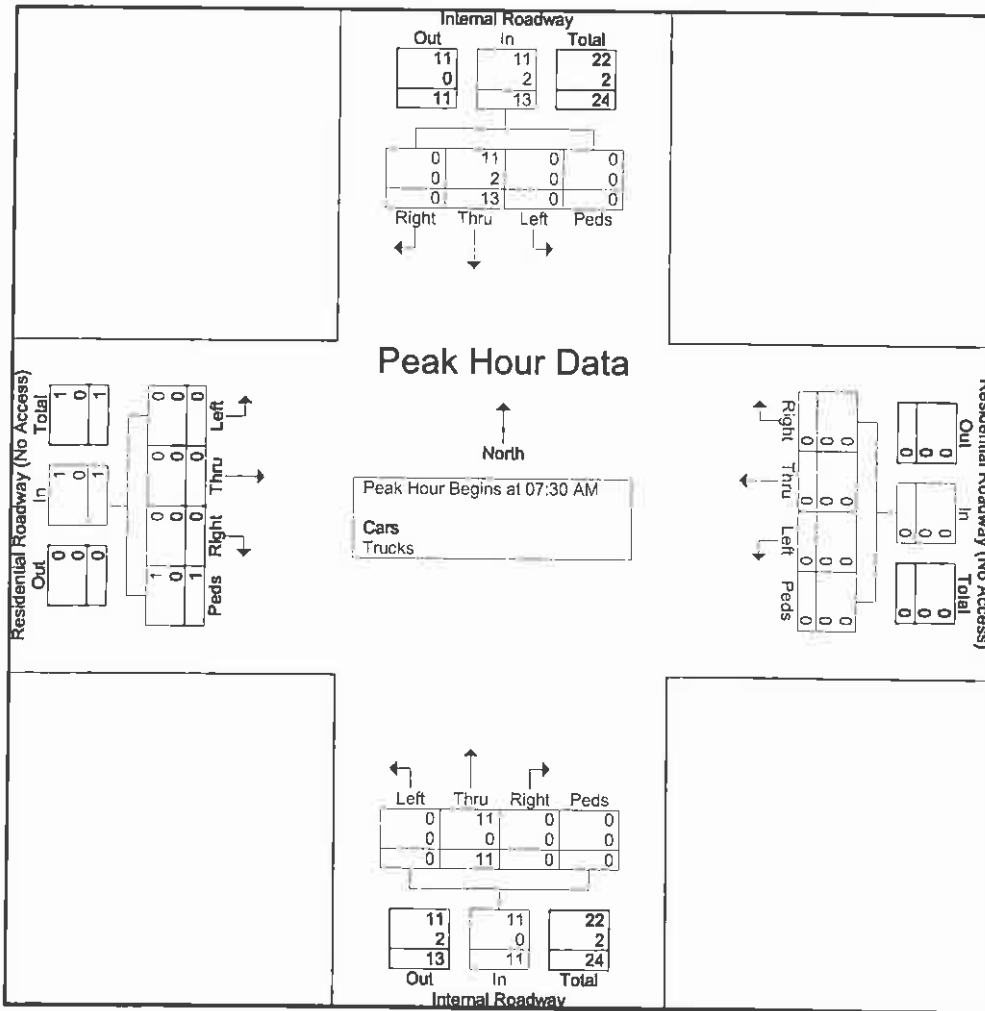




61 Spit Brook Road Suite 110
Nashua, NH. 03060

File Name : WalMart Internal Roadway - AM
Site Code : 08571
Start Date : 5/22/2008
Page No : 2

Start Time	Internal Roadway Southbound					Residential Roadway (No Access) Westbound					Internal Roadway Northbound					Residential Roadway (No Access) Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	1	1	2
07:45 AM	0	4	0	0	4	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	6
08:00 AM	0	5	0	0	5	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	8
08:15 AM	0	4	0	0	4	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	9
Total Volume	0	13	0	0	13	0	0	0	0	0	0	11	0	0	11	0	0	0	1	1	25
% App. Total	0	100	0	0		0	0	0	0		0	100	0	0		0	0	0	100		
PHF	.000	.650	.000	.000	.650	.000	.000	.000	.000	.000	.000	.550	.000	.000	.550	.000	.000	.000	.250	.250	.694
Cars	0	11	0	0	11	0	0	0	0	0	0	11	0	0	11	0	0	0	1	1	23
% Cars	0	84.6	0	0	84.6	0	0	0	0	0	0	100	0	0	100	0	0	0	100	100	92.0
Trucks	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
% Trucks	0	15.4	0	0	15.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8.0



GPI

61 Spit Brook Road Suite 110
Nashua, NH. 03060

File Name : WalMart Internal Roadway - AM

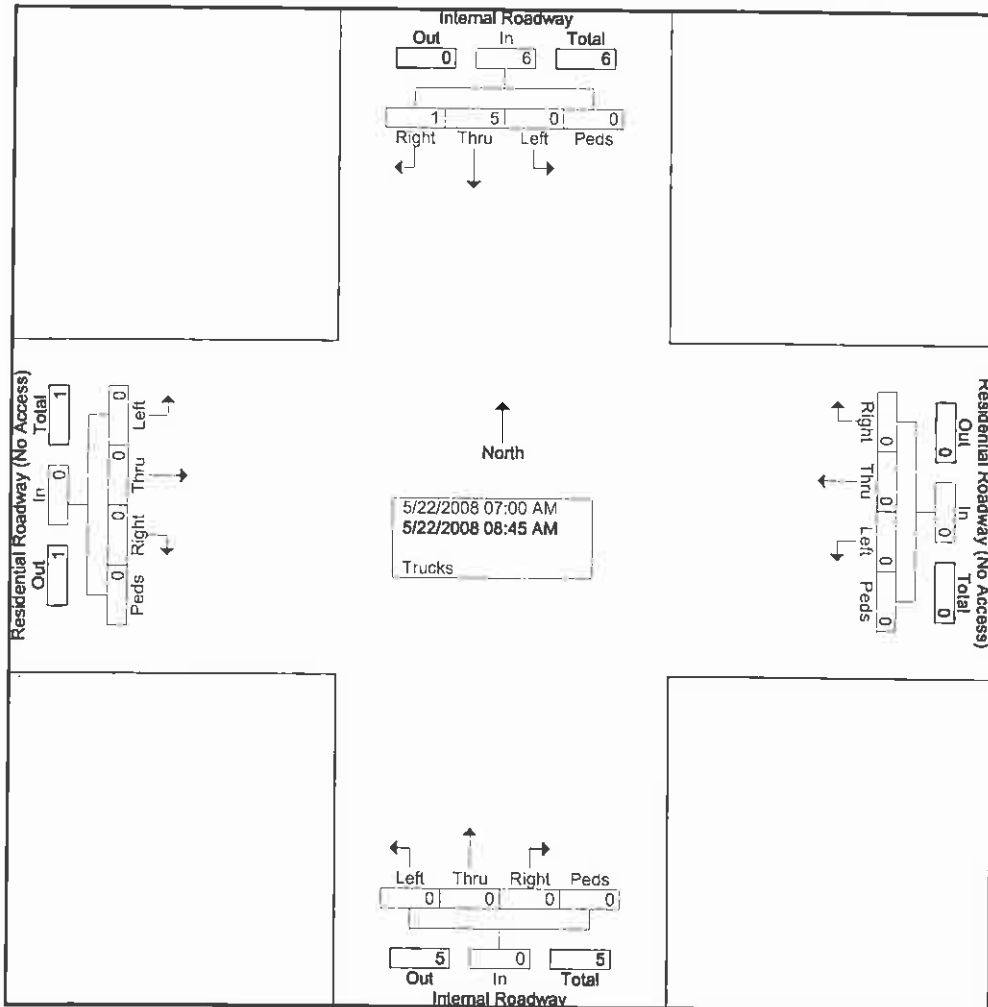
Site Code : 08571

Start Date : 5/22/2008

Page No : 1

Groups Printed- Trucks

Start Time	Internal Roadway Southbound					Residential Roadway (No Access) Westbound					Internal Roadway Northbound					Residential Roadway (No Access) Eastbound					Int. Total					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total						
07:00 AM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
08:30 AM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
08:45 AM	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Total	0	4	1	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
Grand Total	0	5	1	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
Apprch %	0	83.3	16.7	0		0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		
Total %	0	83.3	16.7	0	100	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		





61 Spit Brook Road Suite 110
Nashua, NH. 03060

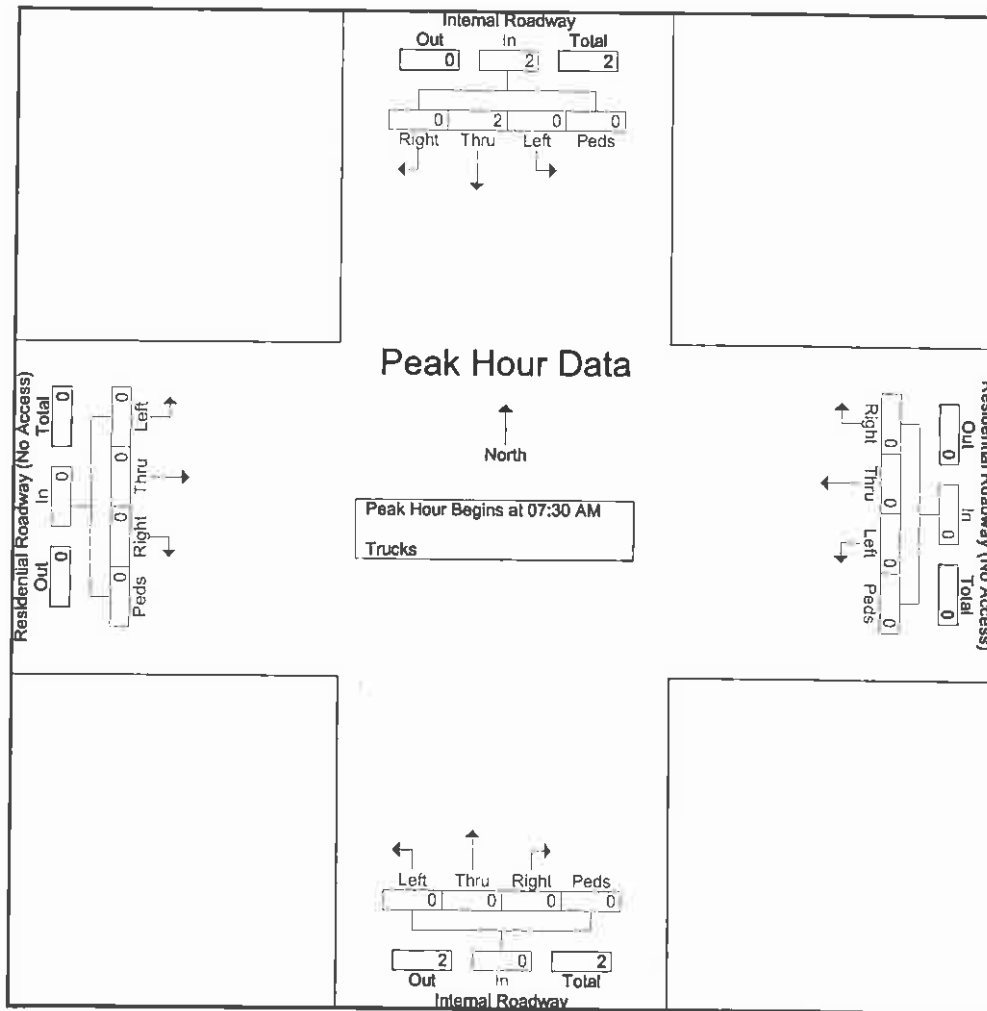
File Name : WalMart Internal Roadway - AM

Site Code : 08571

Start Date : 5/22/2008

Page No : 2

Start Time	Internal Roadway Southbound					Residential Roadway (No Access) Westbound					Internal Roadway Northbound					Residential Roadway (No Access) Eastbound					Int. Total	
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total		
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																						
Peak Hour for Entire Intersection Begins at 07:30 AM																						
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
% App. Total	0	100	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0	100
PHF	.000	.250	.000	.000	.250	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250



GPI

61 Spit Brook Road Suite 110
Nashua, NH. 03060

File Name : Highland Ave @ North Wal-Mart Driveway_Clark St - AM

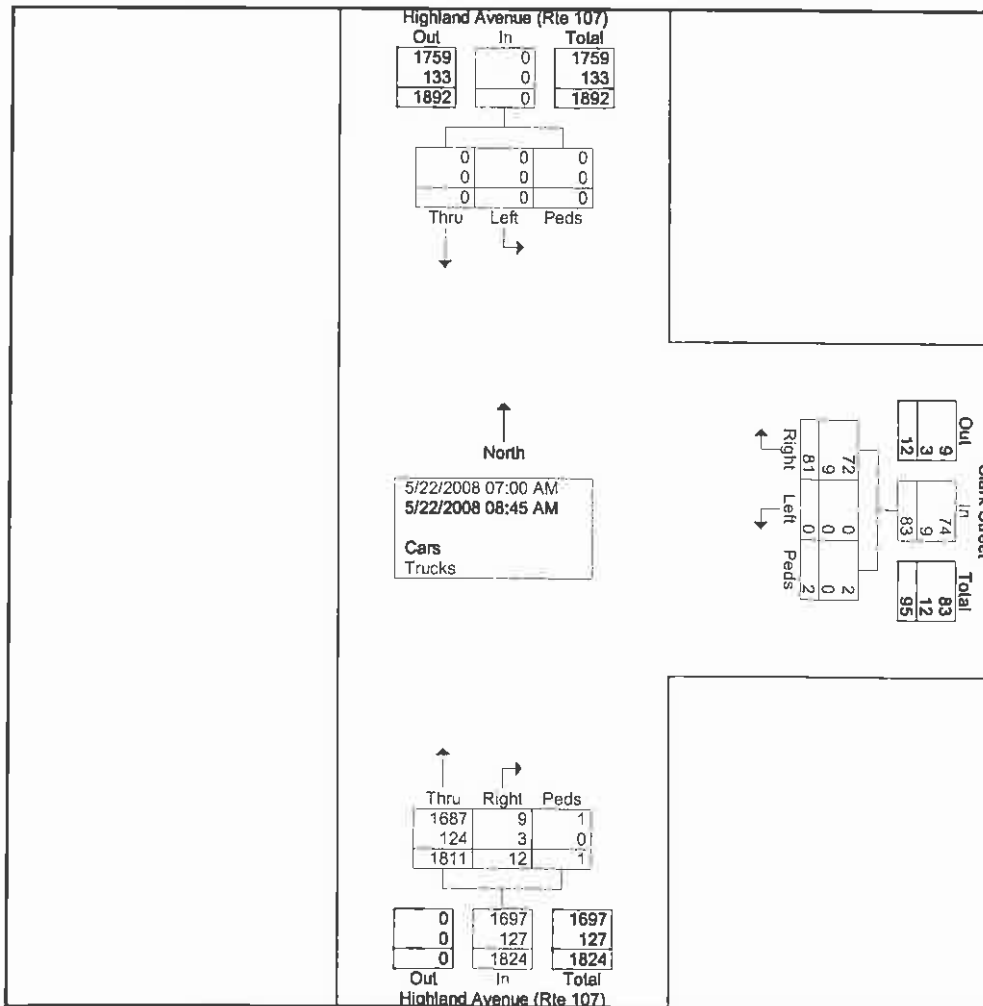
Site Code : 08571

Start Date : 5/22/2008

Page No : 1

Groups Printed- Cars - Trucks

Start Time	Highland Avenue (Rte 107) Southbound				Clark Street Westbound				Highland Avenue (Rte 107) Northbound				Int. Total
	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	
07:00 AM	0	0	0	0	0	40	0	40	164	2	0	166	206
07:15 AM	0	0	0	0	0	5	0	5	202	1	0	203	208
07:30 AM	0	0	0	0	0	4	0	4	202	1	0	203	207
07:45 AM	0	0	0	0	0	12	0	12	286	3	0	289	301
Total	0	0	0	0	0	61	0	61	854	7	0	861	922
08:00 AM	0	0	0	0	0	7	0	7	230	0	0	230	237
08:15 AM	0	0	0	0	0	4	2	6	235	1	0	236	242
08:30 AM	0	0	0	0	0	7	0	7	247	1	1	249	256
08:45 AM	0	0	0	0	0	2	0	2	245	3	0	248	250
Total	0	0	0	0	0	20	2	22	957	5	1	963	985
Grand Total	0	0	0	0	0	81	2	83	1811	12	1	1824	1907
Apprch %	0	0	0	0	0	97.6	2.4	99.3	99.3	0.7	0.1	99.6	
Total %	0	0	0	0	0	4.2	0.1	4.4	95	0.6	0.1	95.6	
Cars	0	0	0	0	0	72	2	74	1687	9	1	1697	1771
% Cars	0	0	0	0	0	88.9	100	89.2	93.2	75	100	93	92.9
Trucks	0	0	0	0	0	9	0	9	124	3	0	127	136
% Trucks	0	0	0	0	0	11.1	0	10.8	6.8	25	0	7	7.1



GPI

61 Spit Brook Road Suite 110
Nashua, NH. 03060

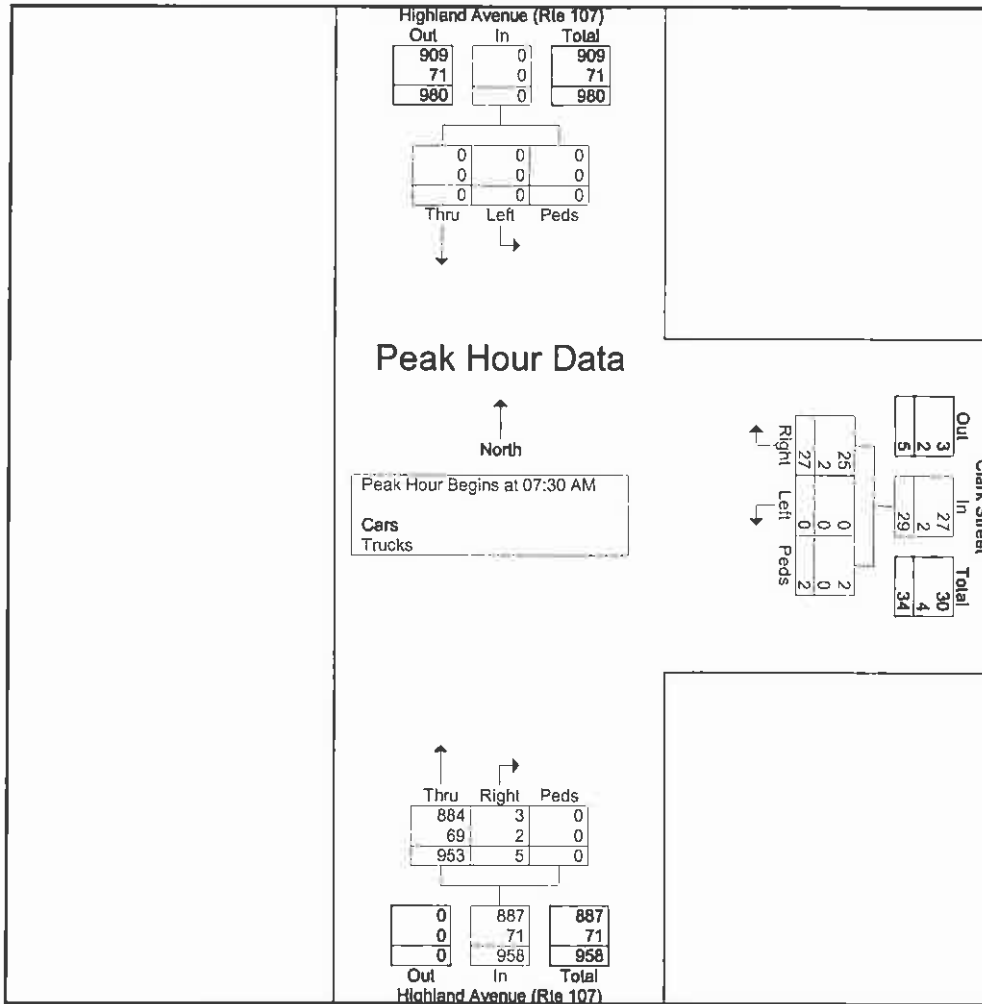
File Name : Highland Ave @ North Wal-Mart Driveway_Clark St - AM

Site Code : 08571

Start Date : 5/22/2008

Page No : 2

Start Time	Highland Avenue (Rte 107) Southbound				Clark Street Westbound				Highland Avenue (Rte 107) Northbound				Int. Total
	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:30 AM													
07:30 AM	0	0	0	0	0	4	0	4	202	1	0	203	207
07:45 AM	0	0	0	0	0	12	0	12	286	3	0	289	301
08:00 AM	0	0	0	0	0	7	0	7	230	0	0	230	237
08:15 AM	0	0	0	0	0	4	2	6	235	1	0	236	242
Total Volume	0	0	0	0	0	27	2	29	953	5	0	958	987
% App. Total	0	0	0	0	0	93.1	6.9	93.1	99.5	0.5	0	92.6	92.6
PHF	.000	.000	.000	.000	.000	.563	.250	.604	.833	.417	.000	.829	.820
Cars	0	0	0	0	0	25	2	27	884	3	0	887	914
% Cars	0	0	0	0	0	92.6	100	93.1	92.8	60.0	0	92.6	92.6
Trucks	0	0	0	0	0	2	0	2	69	2	0	71	73
% Trucks	0	0	0	0	0	7.4	0	6.9	7.2	40.0	0	7.4	7.4



GPI

61 Spit Brook Road Suite 110
Nashua, NH. 03060

File Name : Highland Ave @ North Wal-Mart Driveway_Clark St - AM

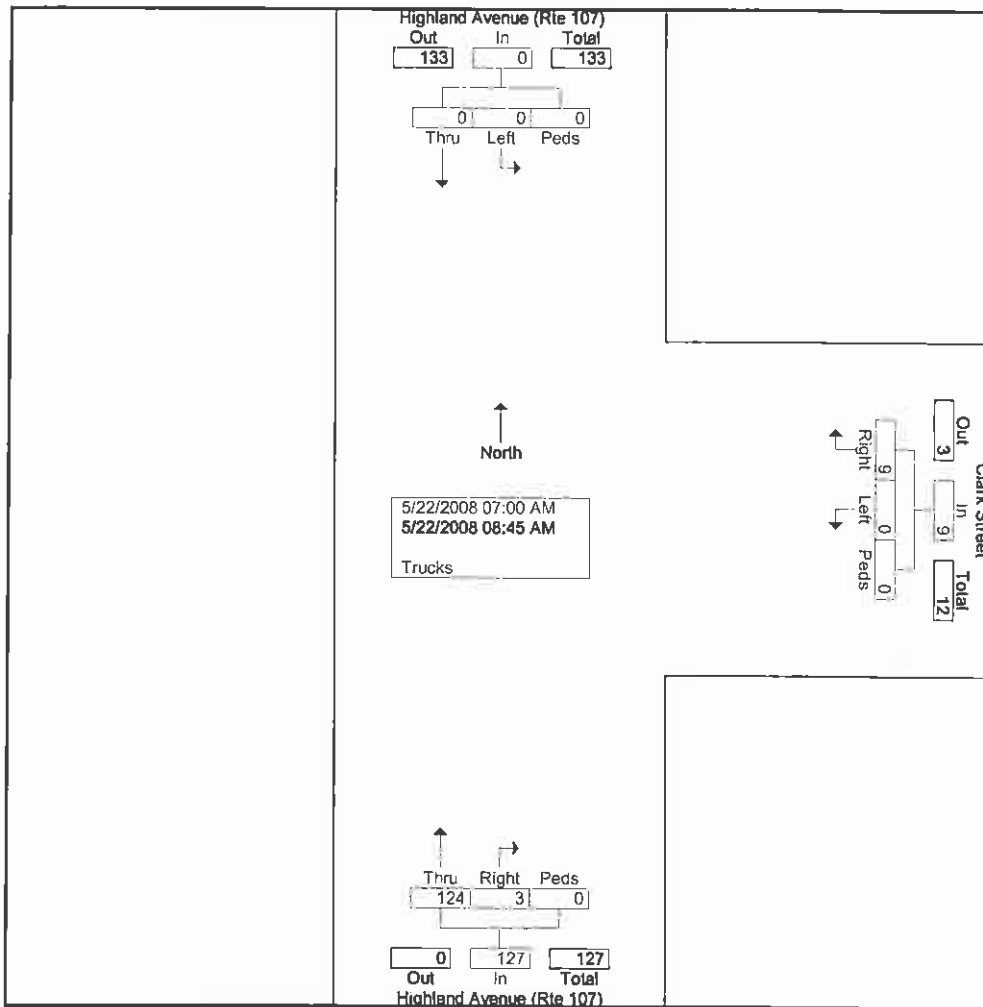
Site Code : 08571

Start Date : 5/22/2008

Page No : 1

Groups Printed- Trucks

Start Time	Highland Avenue (Rte 107) Southbound				Clark Street Westbound				Highland Avenue (Rte 107) Northbound				Int. Total
	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	
07:00 AM	0	0	0	0	0	5	0	5	15	0	0	15	20
07:15 AM	0	0	0	0	0	2	0	2	11	0	0	11	13
07:30 AM	0	0	0	0	0	1	0	1	13	0	0	13	14
07:45 AM	0	0	0	0	0	1	0	1	13	2	0	15	16
Total	0	0	0	0	0	9	0	9	52	2	0	54	63
08:00 AM	0	0	0	0	0	0	0	0	20	0	0	20	20
08:15 AM	0	0	0	0	0	0	0	0	23	0	0	23	23
08:30 AM	0	0	0	0	0	0	0	0	12	0	0	12	12
08:45 AM	0	0	0	0	0	0	0	0	17	1	0	18	18
Total	0	0	0	0	0	0	0	0	72	1	0	73	73
Grand Total	0	0	0	0	0	9	0	9	124	3	0	127	136
Apprch %	0	0	0	0	0	100	0	0	97.6	2.4	0	0	
Total %	0	0	0	0	0	6.6	0	6.6	91.2	2.2	0	93.4	



GPI

61 Spit Brook Road Suite 110
Nashua, NH. 03060

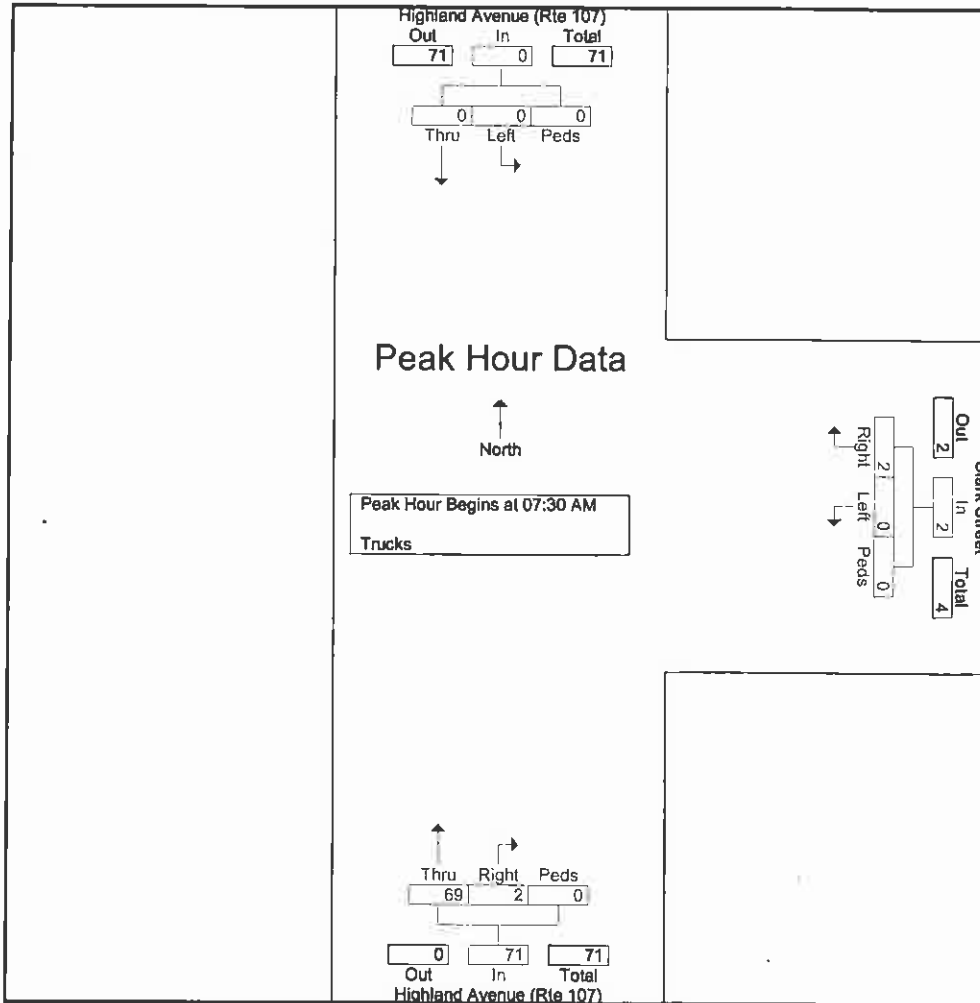
File Name : Highland Ave @ North Wal-Mart Driveway_Clark St - AM

Site Code : 08571

Start Date : 5/22/2008

Page No : 2

Start Time	Highland Avenue (Rte 107) Southbound				Clark Street Westbound				Highland Avenue (Rte 107) Northbound				Int. Total
	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:30 AM													
07:30 AM	0	0	0	0	0	1	0	1	13	0	0	13	14
07:45 AM	0	0	0	0	0	1	0	1	13	2	0	15	16
08:00 AM	0	0	0	0	0	0	0	0	20	0	0	20	20
08:15 AM	0	0	0	0	0	0	0	0	23	0	0	23	23
Total Volume	0	0	0	0	0	2	0	2	69	2	0	71	73
% App. Total	0	0	0	0	0	100	0	0	97.2	2.8	0	71	73
PHF	.000	.000	.000	.000	.000	.500	.000	.500	.750	.250	.000	.772	.793



GPI

61 Spit Brook Road Suite 110
Nashua, NH. 03060

File Name : Highland Ave @ Main Wal-Mart Driveway - AM

Site Code : 08571

Start Date : 5/22/2008

Page No : 1

Groups Printed- Cars - Trucks - Turns

Start Time	Highland Avenue (Rte 107) Southbound					Self-Storage Driveway Westbound					Highland Avenue (Rte 107) Northbound					Main Wal-Mart Driveway Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
07:00 AM	0	171	11	0	182	0	0	0	0	0	10	201	0	0	211	6	0	3	0	9	402
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	194	8	0	202	0	0	0	0	0	6	221	0	0	227	6	0	1	0	7	436
07:45 AM	0	218	6	1	225	0	0	0	0	0	16	303	1	1	321	8	0	0	0	8	554
Total	0	583	25	1	609	0	0	0	0	0	32	725	1	1	759	20	0	4	0	24	1392
08:00 AM	0	187	16	0	203	0	0	0	0	0	16	258	0	0	274	6	0	1	0	7	484
08:15 AM	0	196	14	0	210	0	0	0	0	0	16	272	1	0	289	13	0	3	0	16	515
08:30 AM	0	218	18	0	236	0	0	0	0	0	18	265	0	0	283	12	0	1	0	13	532
08:45 AM	0	176	26	0	202	0	0	0	0	0	18	242	0	0	260	20	0	6	1	27	489
Total	0	777	74	0	851	0	0	0	0	0	68	1037	1	0	1106	51	0	11	1	63	2020
Grand Total	0	1360	99	1	1460	0	0	0	0	0	100	1762	2	1	1865	71	0	15	1	87	3412
Apprch %	0	93.2	6.8	0.1		0	0	0	0		5.4	94.5	0.1	0.1		81.6	0	17.2	1.1		
Total %	0	39.9	2.9	0	42.8	0	0	0	0	0	2.9	51.6	0.1	0	54.7	2.1	0	0.4	0	2.5	
Cars	0	1252	96	1	1349	0	0	0	0	0	77	1653	2	1	1733	61	0	13	1	75	3157
% Cars	0	92.1	97	100	92.4	0	0	0	0	0	77	93.8	100	100	92.9	85.9	0	86.7	100	86.2	92.5
Trucks	0	108	3	0	111	0	0	0	0	0	6	108	0	0	114	10	0	2	0	12	237
% Trucks	0	7.9	3	0	7.6	0	0	0	0	0	6	6.1	0	0	6.1	14.1	0	13.3	0	13.8	6.9
U-Turns	0	0	0	0	0	0	0	0	0	0	17	1	0	0	18	0	0	0	0	0	18
% U-Turns	0	0	0	0	0	0	0	0	0	0	17	0.1	0	0	1	0	0	0	0	0	0.5

GPI

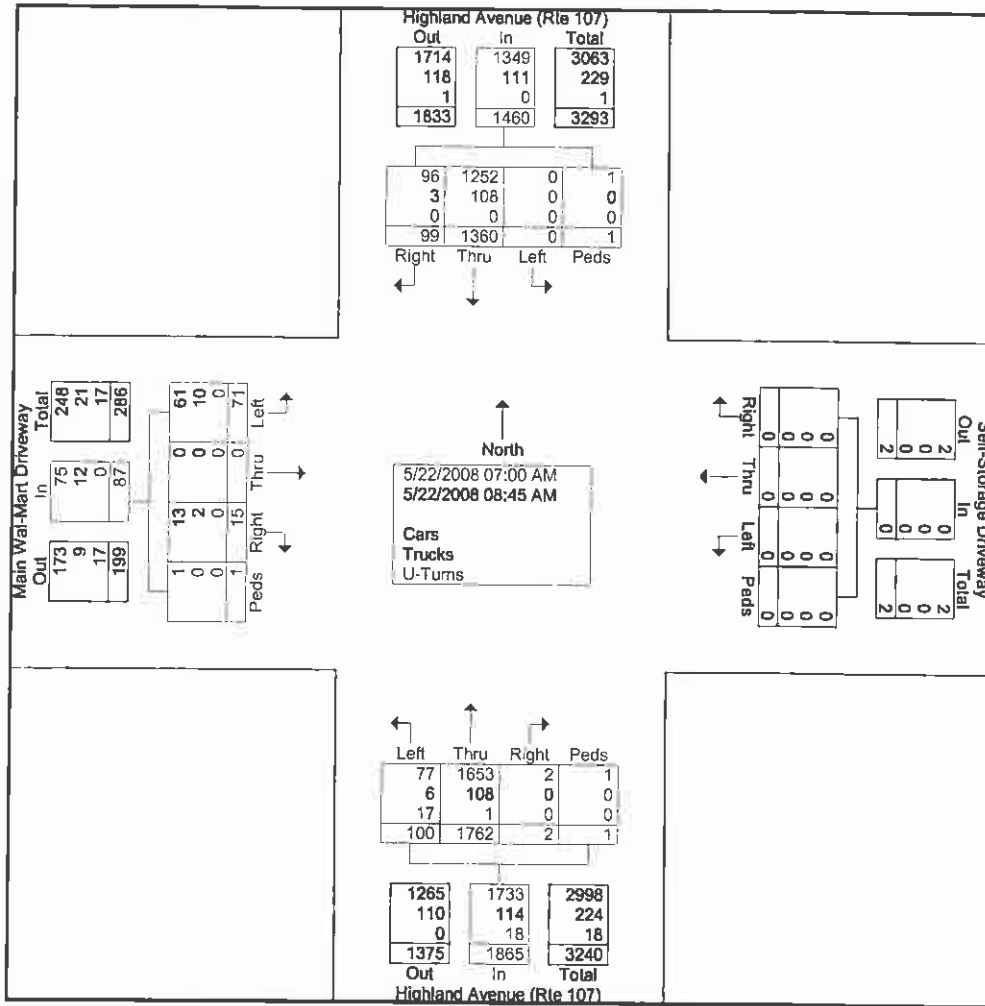
61 Spit Brook Road Suite 110
Nashua, NH. 03060

File Name : Highland Ave @ Main Wal-Mart Driveway - AM

Site Code : 08571

Start Date : 5/22/2008

Page No : 2



GPI

61 Spit Brook Road Suite 110
Nashua, NH. 03060

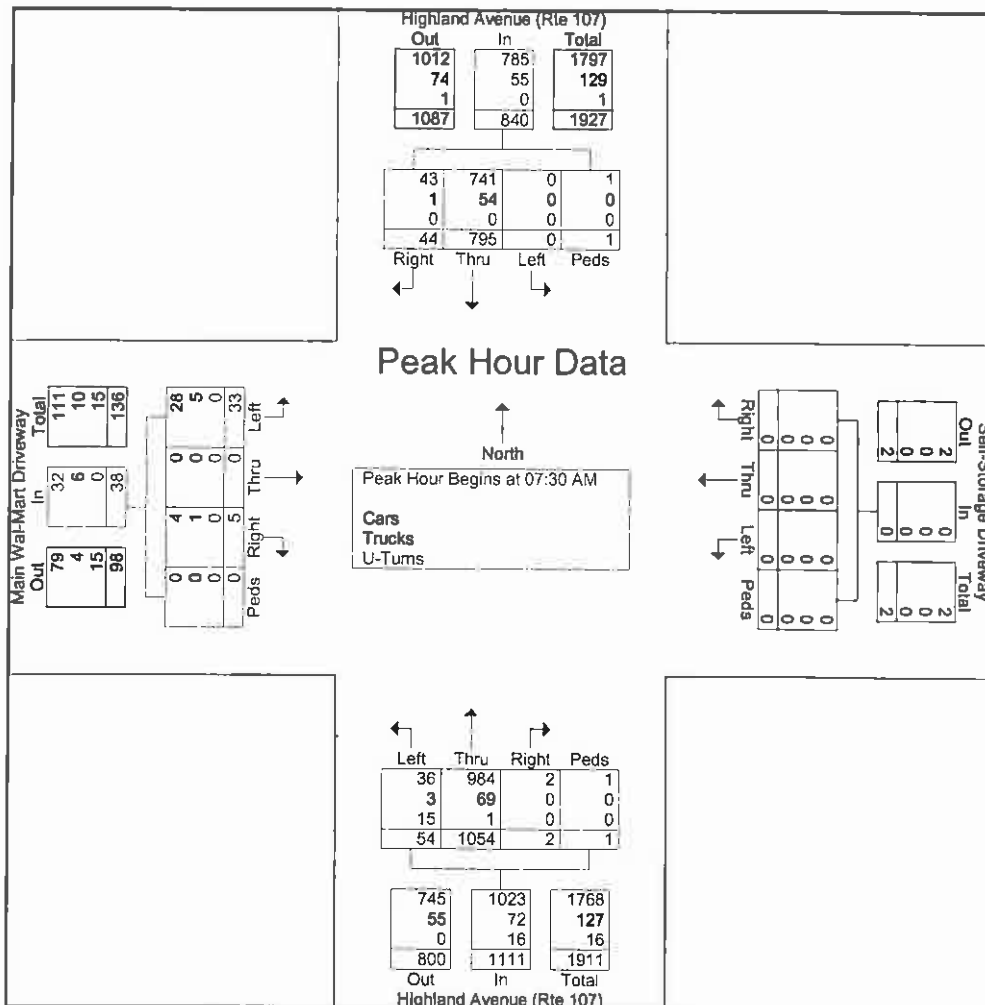
File Name : Highland Ave @ Main Wal-Mart Driveway - AM

Site Code : 08571

Start Date : 5/22/2008

Page No : 3

Start Time	Highland Avenue (Rte 107) Southbound					Self-Storage Driveway Westbound					Highland Avenue (Rte 107) Northbound					Main Wal-Mart Driveway Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	0	194	8	0	202	0	0	0	0	0	6	221	0	0	227	6	0	1	0	7	436
07:45 AM	0	218	6	1	225	0	0	0	0	0	16	303	1	1	321	8	0	0	0	8	554
08:00 AM	0	187	16	0	203	0	0	0	0	0	16	258	0	0	274	6	0	1	0	7	484
08:15 AM	0	196	14	0	210	0	0	0	0	0	16	272	1	0	289	13	0	3	0	16	515
Total Volume	0	795	44	1	840	0	0	0	0	0	54	1054	2	1	1111	33	0	5	0	38	1989
% App. Total	0	94.6	5.2	0.1		0	0	0	0		4.9	94.9	0.2	0.1		86.8	0	13.2	0		
PHF	.000	.912	.688	.250	.933	.000	.000	.000	.000	.000	.844	.870	.500	.250	.865	.635	.000	.417	.000	.594	.898
Cars	0	741	43	1	785	0	0	0	0	0	36	984	2	1	1023	28	0	4	0	32	1840
% Cars	0	93.2	97.7	100	93.5	0	0	0	0	0	66.7	93.4	100	100	92.1	84.8	0	80.0	0	84.2	92.5
Trucks	0	54	1	0	55	0	0	0	0	0	3	69	0	0	72	5	0	1	0	6	133
% Trucks	0	6.8	2.3	0	6.5	0	0	0	0	0	5.6	6.5	0	0	6.5	15.2	0	20.0	0	15.8	6.7
U-Turns	0	0	0	0	0	0	0	0	0	0	15	1	0	0	16	0	0	0	0	0	16
% U-Turns	0	0	0	0	0	0	0	0	0	0	27.8	0.1	0	0	1.4	0	0	0	0	0	0.8



GPI

61 Spit Brook Road Suite 110
Nashua, NH. 03060

File Name : Highland Ave @ Main Wal-Mart Driveway - AM

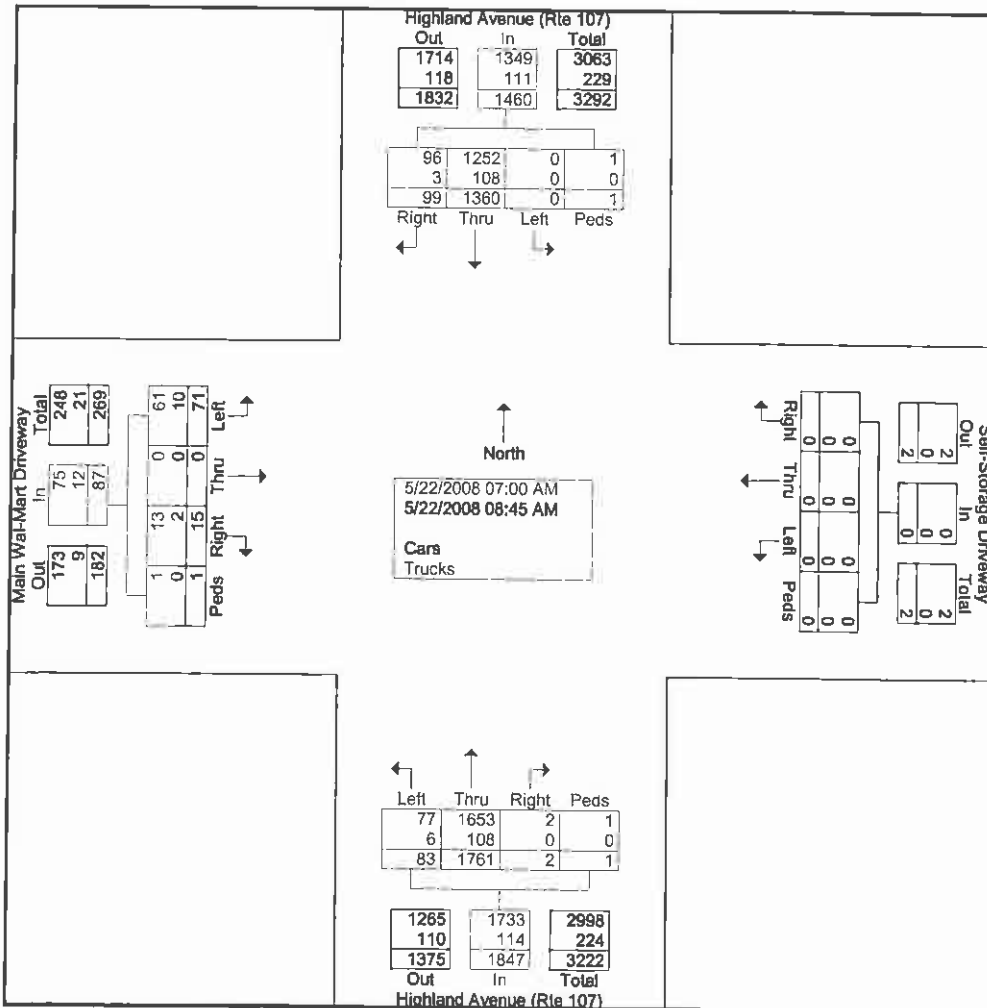
Site Code : 08571

Start Date : 5/22/2008

Page No : 1

Groups Printed- Cars - Trucks

Start Time	Highland Avenue (Rte 107) Southbound					Self-Storage Driveway Westbound					Highland Avenue (Rte 107) Northbound					Main Wal-Mart Driveway Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
07:00 AM	0	171	11	0	182	0	0	0	0	0	10	201	0	0	211	6	0	3	0	9	402
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	194	8	0	202	0	0	0	0	0	4	221	0	0	225	6	0	1	0	7	434
07:45 AM	0	218	6	1	225	0	0	0	0	0	12	303	1	1	317	8	0	0	0	8	550
Total	0	583	25	1	609	0	0	0	0	0	26	725	1	1	753	20	0	4	0	24	1386
08:00 AM	0	187	16	0	203	0	0	0	0	0	13	258	0	0	271	6	0	1	0	7	481
08:15 AM	0	196	14	0	210	0	0	0	0	0	10	271	1	0	282	13	0	3	0	16	508
08:30 AM	0	218	18	0	236	0	0	0	0	0	17	265	0	0	282	12	0	1	0	13	531
08:45 AM	0	176	26	0	202	0	0	0	0	0	17	242	0	0	259	20	0	6	1	27	488
Total	0	777	74	0	851	0	0	0	0	0	57	1036	1	0	1094	51	0	11	1	63	2008
Grand Total	0	1360	99	1	1460	0	0	0	0	0	83	1761	2	1	1847	71	0	15	1	87	3394
Apprch %	0	93.2	6.8	0.1		0	0	0	0		4.5	95.3	0.1	0.1		81.6	0	17.2	1.1		
Total %	0	40.1	2.9	0	43	0	0	0	0	0	2.4	51.9	0.1	0	54.4	2.1	0	0.4	0	2.6	
Cars	0	1252	96	1	1349	0	0	0	0	0	77	1653	2	1	1733	61	0	13	1	75	3157
% Cars	0	92.1	97	100	92.4	0	0	0	0	0	92.8	93.9	100	100	93.8	85.9	0	86.7	100	86.2	93
Trucks	0	108	3	0	111	0	0	0	0	0	6	108	0	0	114	10	0	2	0	12	237
% Trucks	0	7.9	3	0	7.6	0	0	0	0	0	7.2	6.1	0	0	6.2	14.1	0	13.3	0	13.8	7



GPI

61 Spit Brook Road Suite 110
Nashua, NH. 03060

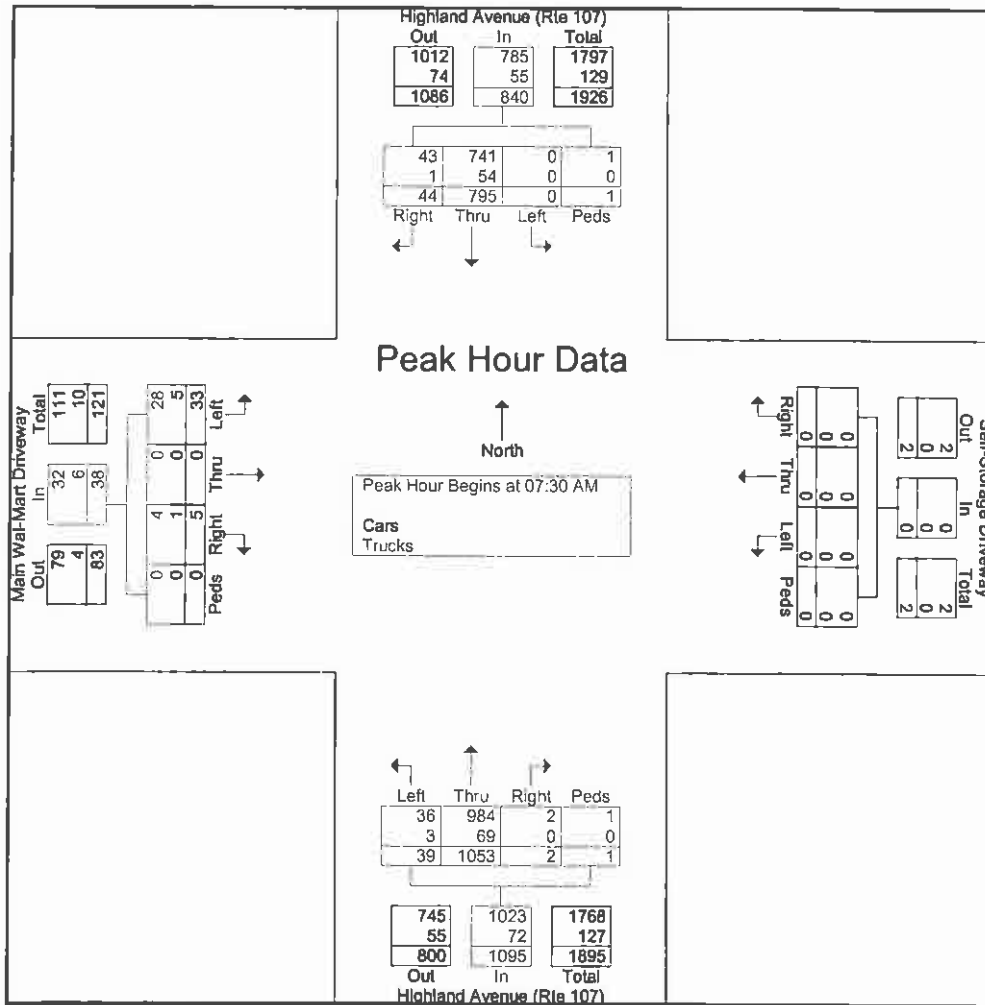
File Name : Highland Ave @ Main Wal-Mart Driveway - AM

Site Code : 08571

Start Date : 5/22/2008

Page No : 2

Start Time	Highland Avenue (Rte 107) Southbound					Self-Storage Driveway Westbound					Highland Avenue (Rte 107) Northbound					Main Wal-Mart Driveway Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	0	194	8	0	202	0	0	0	0	0	4	221	0	0	225	6	0	1	0	7	434
07:45 AM	0	218	6	1	225	0	0	0	0	0	12	303	1	1	317	8	0	0	0	8	550
08:00 AM	0	187	16	0	203	0	0	0	0	0	13	258	0	0	271	6	0	1	0	7	481
08:15 AM	0	196	14	0	210	0	0	0	0	0	10	271	1	0	282	13	0	3	0	16	508
Total Volume	0	795	44	1	840	0	0	0	0	0	39	1053	2	1	1095	33	0	5	0	38	1973
% App. Total	0	94.6	5.2	0.1		0	0	0	0	0	3.6	96.2	0.2	0.1		86.8	0	13.2	0		
PHF	.000	.912	.688	.250	.933	.000	.000	.000	.000	.000	.750	.869	.500	.250	.864	.635	.000	.417	.000	.594	.897
Cars	0	741	43	1	785	0	0	0	0	0	36	984	2	1	1023	28	0	4	0	32	1840
% Cars	0	93.2	97.7	100	93.5	0	0	0	0	0	92.3	93.4	100	100	93.4	84.8	0	80.0	0	84.2	93.3
Trucks	0	54	1	0	55	0	0	0	0	0	3	69	0	0	72	5	0	1	0	6	133
% Trucks	0	6.8	2.3	0	6.5	0	0	0	0	0	7.7	6.6	0	0	6.6	15.2	0	20.0	0	15.8	6.7



GPI

61 Spit Brook Road Suite 110
Nashua, NH. 03060

File Name : Highland Ave @ Main Wal-Mart Driveway - AM

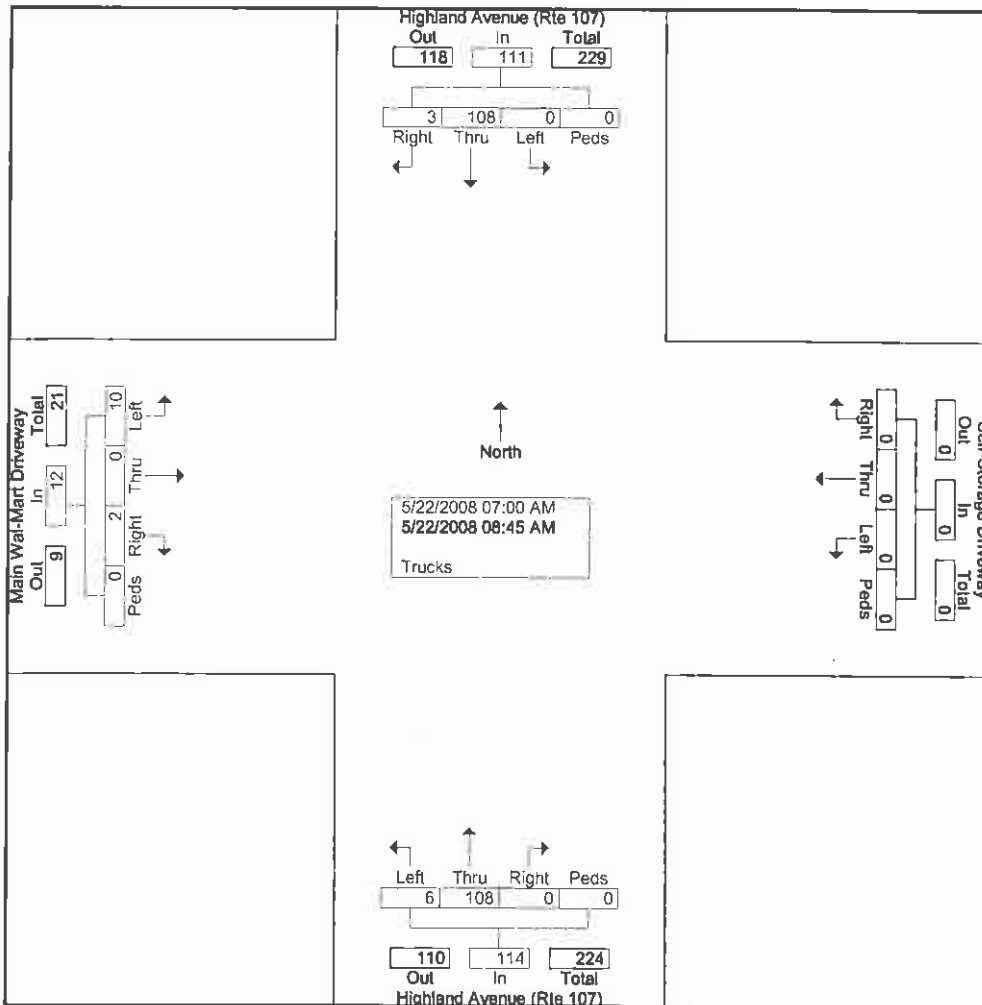
Site Code : 08571

Start Date : 5/22/2008

Page No : 1

Groups Printed- Trucks

Start Time	Highland Avenue (Rte 107) Southbound					Self-Storage Driveway Westbound					Highland Avenue (Rte 107) Northbound					Main Wal-Mart Driveway Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
07:00 AM	0	9	1	0	10	0	0	0	0	0	2	16	0	0	18	1	0	0	0	1	29
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	14	0	0	14	0	0	0	0	0	1	13	0	0	14	0	0	0	0	0	28
07:45 AM	0	15	0	0	15	0	0	0	0	0	0	12	0	0	12	4	0	0	0	4	31
Total	0	38	1	0	39	0	0	0	0	0	3	41	0	0	44	5	0	0	0	5	88
08:00 AM	0	11	0	0	11	0	0	0	0	0	1	21	0	0	22	1	0	1	0	2	35
08:15 AM	0	14	1	0	15	0	0	0	0	0	1	23	0	0	24	0	0	0	0	0	39
08:30 AM	0	25	0	0	25	0	0	0	0	0	0	13	0	0	13	1	0	0	0	1	39
08:45 AM	0	20	1	0	21	0	0	0	0	0	1	10	0	0	11	3	0	1	0	4	36
Total	0	70	2	0	72	0	0	0	0	0	3	67	0	0	70	5	0	2	0	7	149
Grand Total	0	108	3	0	111	0	0	0	0	0	6	108	0	0	114	10	0	2	0	12	237
Apprch %	0	97.3	2.7	0		0	0	0	0	0	5.3	94.7	0	0		83.3	0	16.7	0		
Total %	0	45.6	1.3	0	46.8	0	0	0	0	0	2.5	45.6	0	0	48.1	4.2	0	0.8	0	5.1	



GPI

61 Spit Brook Road Suite 110
Nashua, NH, 03060

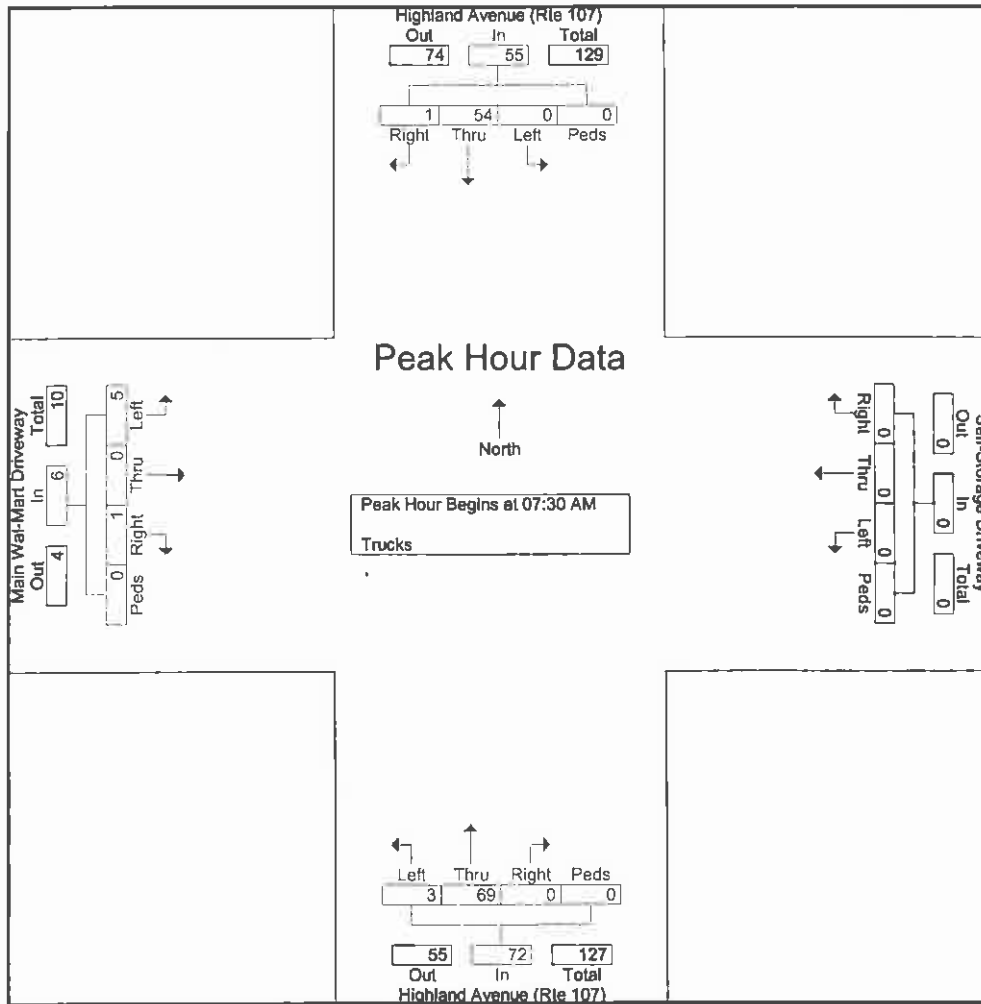
File Name : Highland Ave @ Main Wal-Mart Driveway - AM

Site Code : 08571

Start Date : 5/22/2008

Page No : 2

Start Time	Highland Avenue (Rte 107) Southbound					Self-Storage Driveway Westbound					Highland Avenue (Rte 107) Northbound					Main Wal-Mart Driveway Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	0	14	0	0	14	0	0	0	0	0	1	13	0	0	14	0	0	0	0	0	28
07:45 AM	0	15	0	0	15	0	0	0	0	0	0	12	0	0	12	4	0	0	0	4	31
08:00 AM	0	11	0	0	11	0	0	0	0	0	1	21	0	0	22	1	0	1	0	2	35
08:15 AM	0	14	1	0	15	0	0	0	0	0	1	23	0	0	24	0	0	0	0	0	39
Total Volume	0	54	1	0	55	0	0	0	0	0	3	69	0	0	72	5	0	1	0	6	133
% App. Total	0	98.2	1.8	0		0	0	0	0		4.2	95.8	0	0		83.3	0	16.7	0		
PHF	.000	.900	.250	.000	.917	.000	.000	.000	.000	.000	.750	.750	.000	.000	.750	.313	.000	.250	.000	.375	.853



GPI

61 Spit Brook Road Suite 110
Nashua, NH. 03060

File Name : Highland Ave @ Main Wal-Mart Driveway - AM

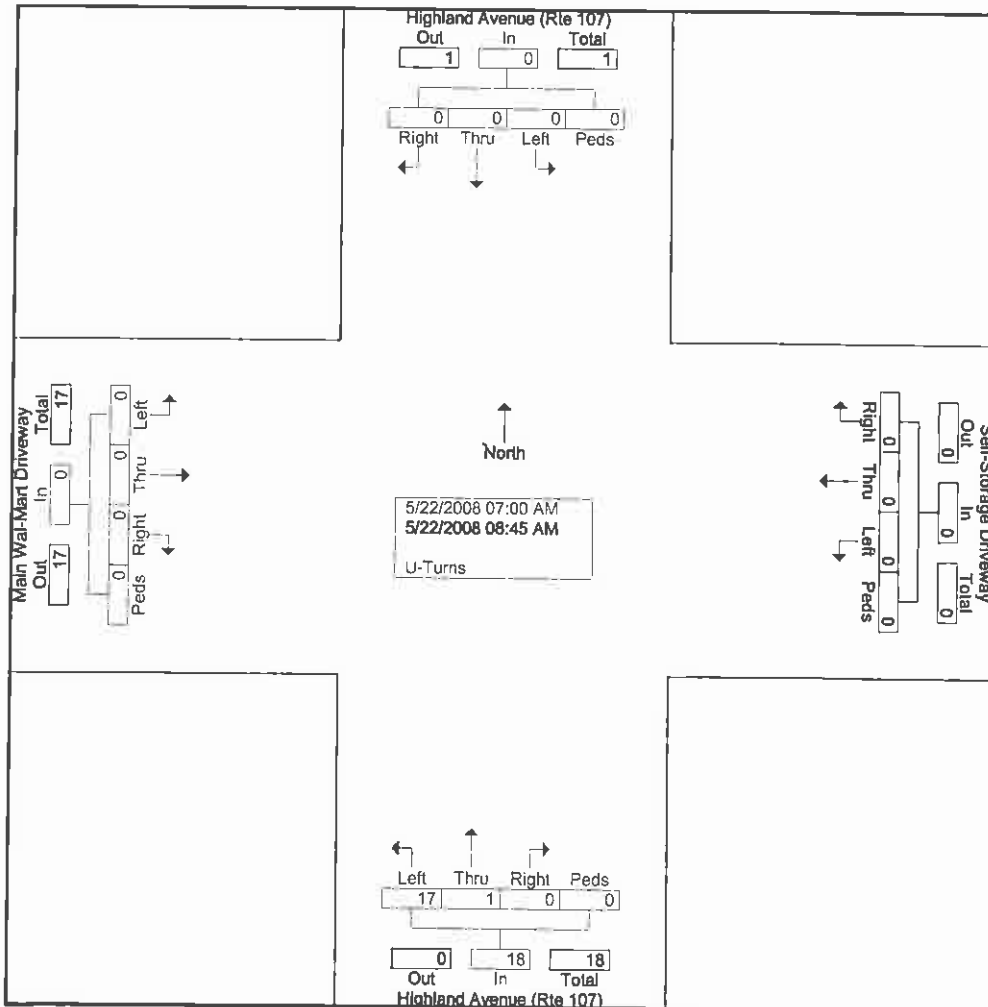
Site Code : 08571

Start Date : 5/22/2008

Page No : 1

Groups Printed- Turns

Start Time	Highland Avenue (Rte 107) Southbound					Self-Storage Driveway Westbound					Highland Avenue (Rte 107) Northbound					Main Wal-Mart Driveway Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	2
07:45 AM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4	0	0	0	0	0	4
Total	0	0	0	0	0	0	0	0	0	0	6	0	0	0	6	0	0	0	0	0	6
08:00 AM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	0	0	0	0	0	3
08:15 AM	0	0	0	0	0	0	0	0	0	0	6	1	0	0	7	0	0	0	0	0	7
08:30 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1
08:45 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1
Total	0	0	0	0	0	0	0	0	0	0	11	1	0	0	12	0	0	0	0	0	12
Grand Total	0	0	0	0	0	0	0	0	0	0	17	1	0	0	18	0	0	0	0	0	18
Apprch %	0	0	0	0		0	0	0	0		94.4	5.6	0	0		0	0	0	0	0	
Total %	0	0	0	0	0	0	0	0	0	0	94.4	5.6	0	0	100	0	0	0	0	0	



GPI

61 Spit Brook Road Suite 110
Nashua, NH. 03060

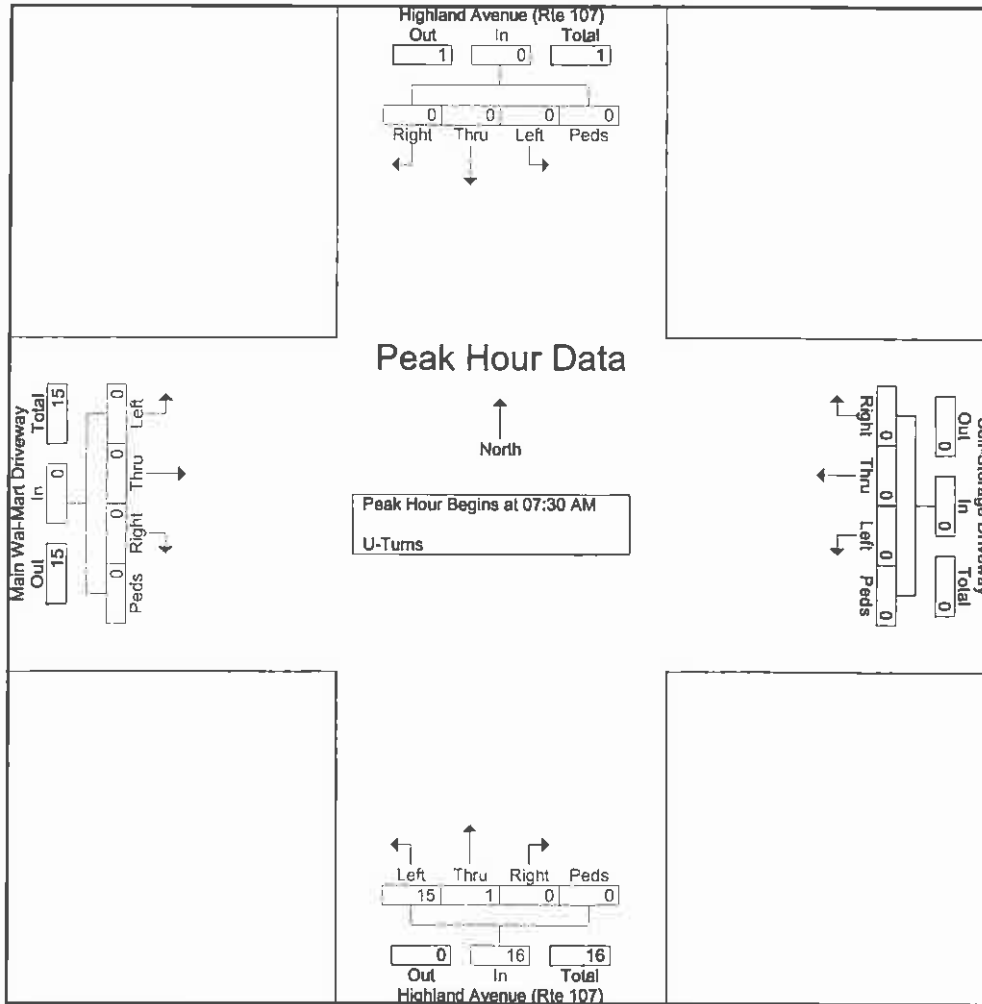
File Name : Highland Ave @ Main Wal-Mart Driveway - AM

Site Code : 08571

Start Date : 5/22/2008

Page No : 2

Start Time	Highland Avenue (Rte 107) Southbound					Self-Storage Driveway Westbound					Highland Avenue (Rte 107) Northbound					Main Wal-Mart Driveway Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	2
07:45 AM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4	0	0	0	0	0	4
08:00 AM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	0	0	0	0	0	3
08:15 AM	0	0	0	0	0	0	0	0	0	0	6	1	0	0	7	0	0	0	0	0	7
Total Volume	0	0	0	0	0	0	0	0	0	0	15	1	0	0	16	0	0	0	0	0	16
% App. Total	0	0	0	0	0	0	0	0	0	0	93.8	6.2	0	0		0	0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.625	.250	.000	.000	.571	.000	.000	.000	.000	.000	.571



GPI

61 Spit Brook Road Suite 110
Nashua, NH. 03060

File Name : Highland Ave @ S Wal-Mart Driveway - AM

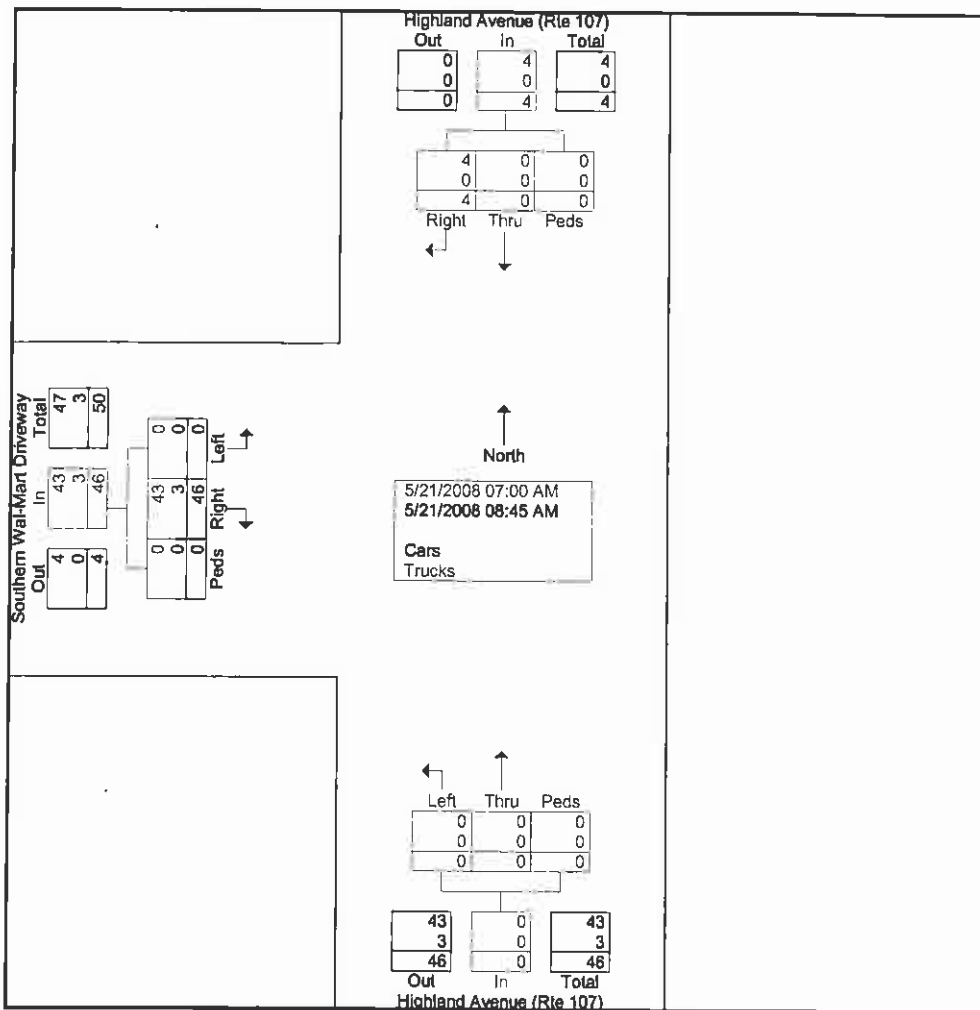
Site Code : 08571

Start Date : 5/21/2008

Page No : 1

Groups Printed- Cars - Trucks

Start Time	Highland Avenue (Rte 107) Southbound				Highland Avenue (Rte 107) Northbound				Southern Wal-Mart Driveway Eastbound				Int. Total
	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	
07:00 AM	0	0	0	0	0	0	0	0	0	4	0	4	4
07:15 AM	0	0	0	0	0	0	0	0	0	5	0	5	5
07:30 AM	0	0	0	0	0	0	0	0	0	3	0	3	3
07:45 AM	0	1	0	1	0	0	0	0	0	8	0	8	9
Total	0	1	0	1	0	0	0	0	0	20	0	20	21
08:00 AM	0	1	0	1	0	0	0	0	0	7	0	7	8
08:15 AM	0	2	0	2	0	0	0	0	0	4	0	4	6
08:30 AM	0	0	0	0	0	0	0	0	0	5	0	5	5
08:45 AM	0	0	0	0	0	0	0	0	0	10	0	10	10
Total	0	3	0	3	0	0	0	0	0	26	0	26	29
Grand Total	0	4	0	4	0	0	0	0	0	46	0	46	50
Apprch %	0	100	0	100	0	0	0	0	0	100	0	100	100
Total %	0	8	0	8	0	0	0	0	0	92	0	92	92
Cars	0	4	0	4	0	0	0	0	0	43	0	43	47
% Cars	0	100	0	100	0	0	0	0	0	93.5	0	93.5	94
Trucks	0	0	0	0	0	0	0	0	0	3	0	3	3
% Trucks	0	0	0	0	0	0	0	0	0	6.5	0	6.5	6



GPI

61 Spit Brook Road Suite 110
Nashua, NH. 03060

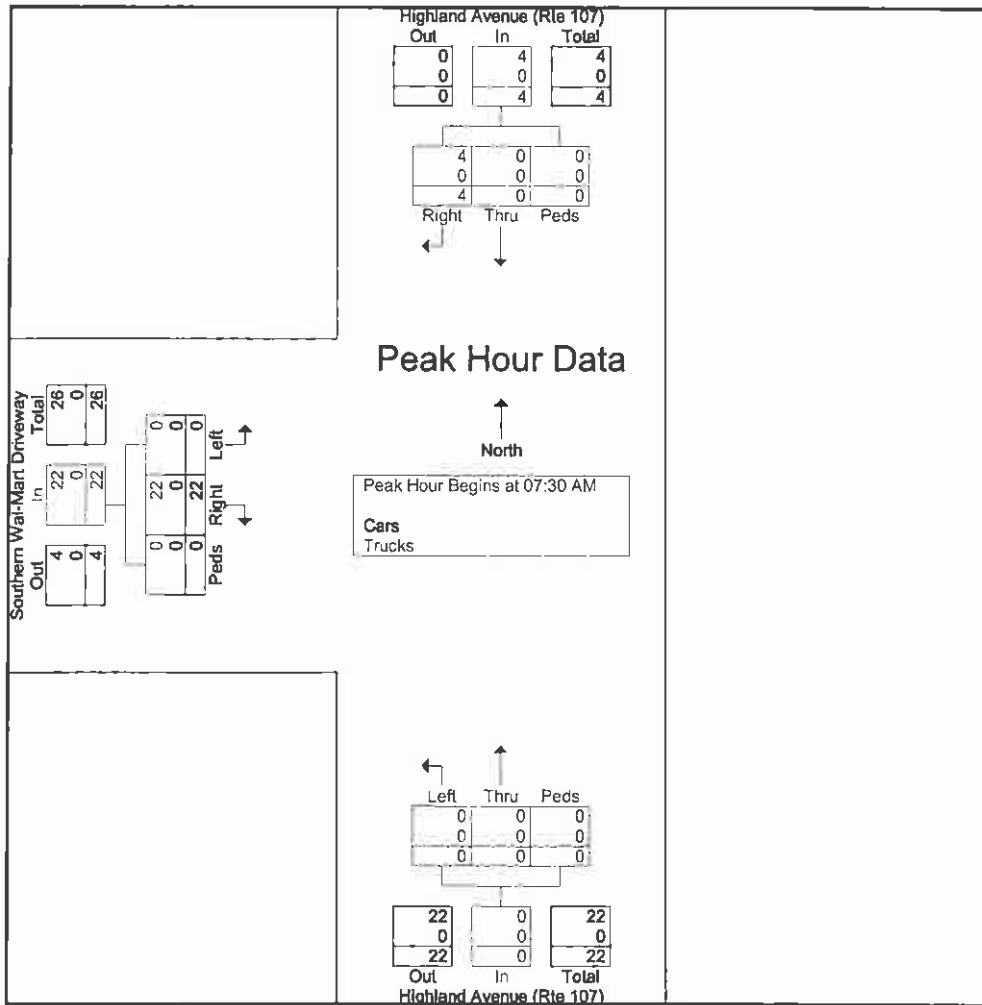
File Name : Highland Ave @ S Wal-Mart Driveway - AM

Site Code : 08571

Start Date : 5/21/2008

Page No : 2

Start Time	Highland Avenue (Rte 107) Southbound				Highland Avenue (Rte 107) Northbound				Southern Wal-Mart Driveway Eastbound				Int. Total
	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:30 AM													
07:30 AM	0	0	0	0	0	0	0	0	0	3	0	3	3
07:45 AM	0	1	0	1	0	0	0	0	0	8	0	8	9
08:00 AM	0	1	0	1	0	0	0	0	0	7	0	7	8
08:15 AM	0	2	0	2	0	0	0	0	0	4	0	4	6
Total Volume	0	4	0	4	0	0	0	0	0	22	0	22	26
% App. Total	0	100	0	100	0	0	0	0	0	100	0	100	100
PHF	.000	.500	.000	.500	.000	.000	.000	.000	.000	.688	.000	.688	.722
Cars	0	4	0	4	0	0	0	0	0	22	0	22	26
% Cars	0	100	0	100	0	0	0	0	0	100	0	100	100
Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0
% Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0



GPI

61 Spit Brook Road Suite 110
Nashua, NH. 03060

File Name : Highland Ave @ S Wal-Mart Driveway - AM

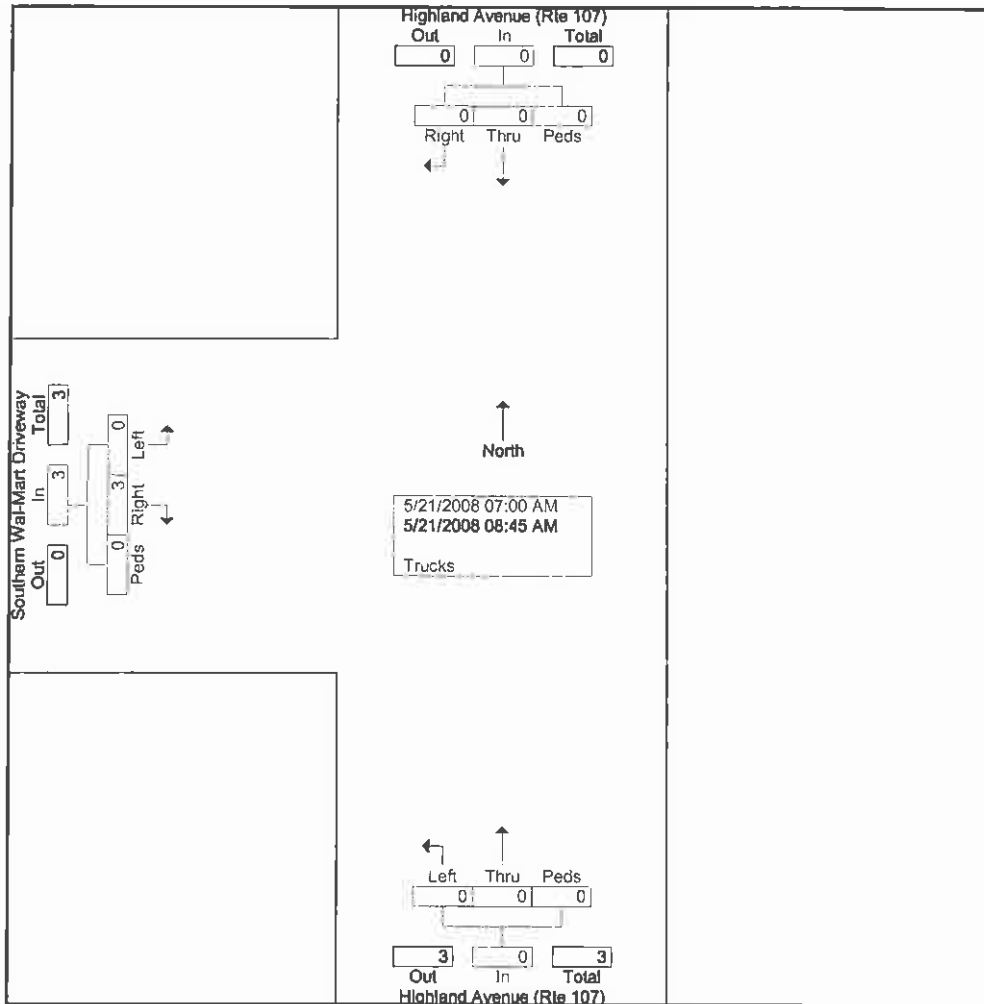
Site Code : 08571

Start Date : 5/21/2008

Page No : 1

Groups Printed- Trucks

Start Time	Highland Avenue (Rte 107) Southbound				Highland Avenue (Rte 107) Northbound				Southern Wal-Mart Driveway Eastbound				Int. Total
	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	
07:00 AM	0	0	0	0	0	0	0	0	0	1	0	1	1
07:15 AM	0	0	0	0	0	0	0	0	0	2	0	2	2
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	3	0	3	3
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	3	0	3	3
Apprch %	0	0	0	0	0	0	0	0	0	100	0	100	
Total %	0	0	0	0	0	0	0	0	0	100	0	100	



GPI

61 Spit Brook Road Suite 110
Nashua, NH. 03060

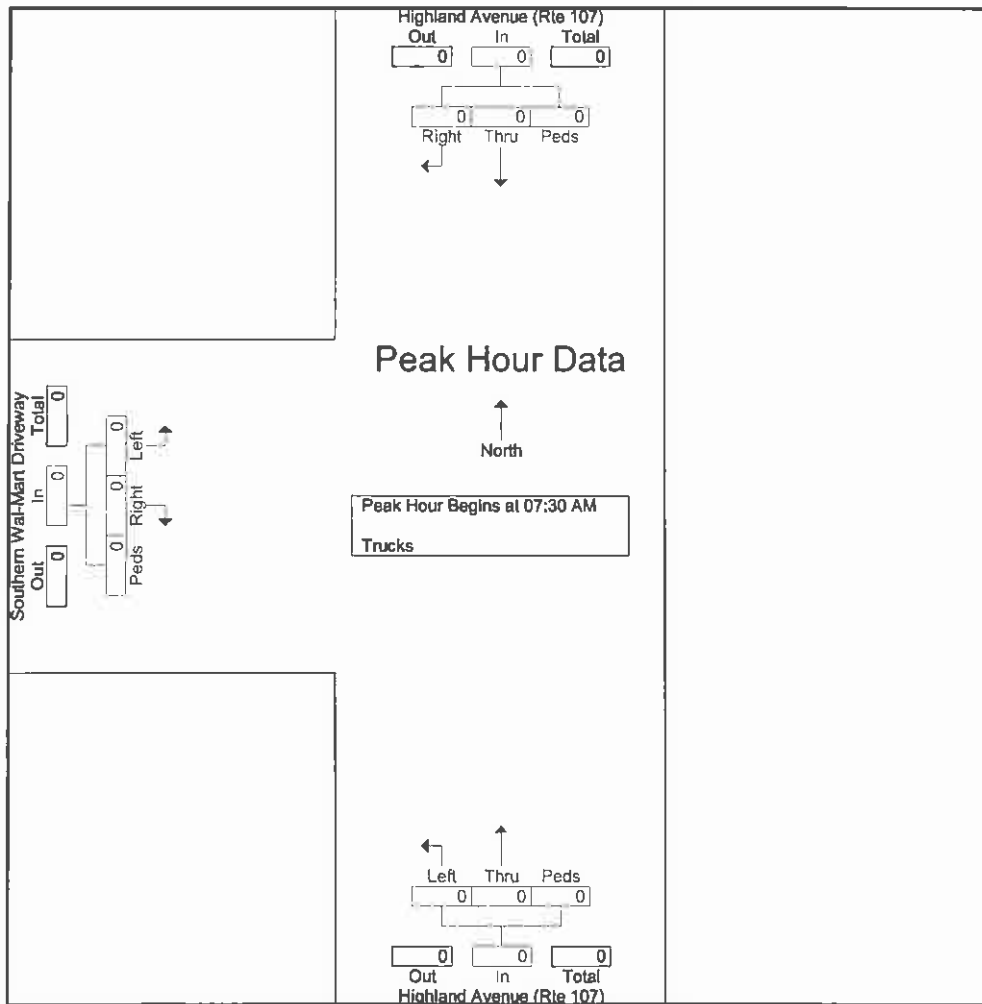
File Name : Highland Ave @ S Wal-Mart Driveway - AM

Site Code : 08571

Start Date : 5/21/2008

Page No : 2

Start Time	Highland Avenue (Rte 107) Southbound				Highland Avenue (Rte 107) Northbound				Southern Wal-Mart Driveway Eastbound				Int. Total
	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:30 AM													
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0	0	0	0	0	0	0	0	0	0	0
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000



GPI

61 Spit Brook Road Suite 110
Nashua, NH. 03060

File Name : Highland Ave @ Meineke Driveway - AM

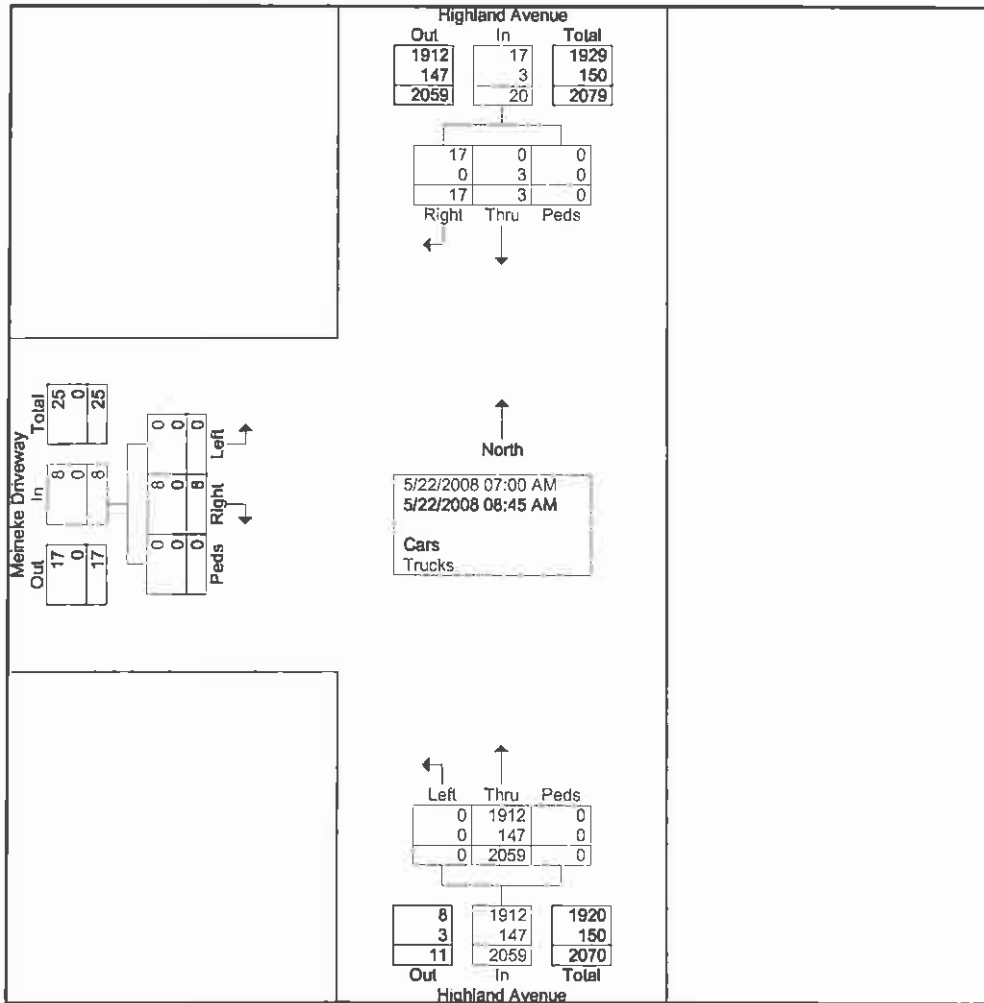
Site Code : 08571

Start Date : 5/22/2008

Page No : 1

Groups Printed- Cars - Trucks

Start Time	Highland Avenue Southbound				Highland Avenue Northbound				Meineke Driveway Eastbound				Int. Total
	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	
07:00 AM	0	1	0	1	0	203	0	203	0	0	0	0	204
07:15 AM	0	0	0	0	0	228	0	228	0	0	0	0	228
07:30 AM	0	0	0	0	0	170	0	170	0	0	0	0	170
07:45 AM	0	3	0	3	0	335	0	335	0	0	0	0	338
Total	0	4	0	4	0	936	0	936	0	0	0	0	940
08:00 AM	3	4	0	7	0	292	0	292	0	3	0	3	302
08:15 AM	0	4	0	4	0	287	0	287	0	1	0	1	292
08:30 AM	0	3	0	3	0	277	0	277	0	2	0	2	282
08:45 AM	0	2	0	2	0	267	0	267	0	2	0	2	271
Total	3	13	0	16	0	1123	0	1123	0	8	0	8	1147
Grand Total	3	17	0	20	0	2059	0	2059	0	8	0	8	2087
Apprch %	15	85	0		0	100	0		0	100	0		
Total %	0.1	0.8	0	1	0	98.7	0	98.7	0	0.4	0	0.4	
Cars	0	17	0	17	0	1912	0	1912	0	8	0	8	1937
% Cars	0	100	0	85	0	92.9	0	92.9	0	100	0	100	92.8
Trucks	3	0	0	3	0	147	0	147	0	0	0	0	150
% Trucks	100	0	0	15	0	7.1	0	7.1	0	0	0	0	7.2



GPI

61 Spit Brook Road Suite 110
Nashua, NH. 03060

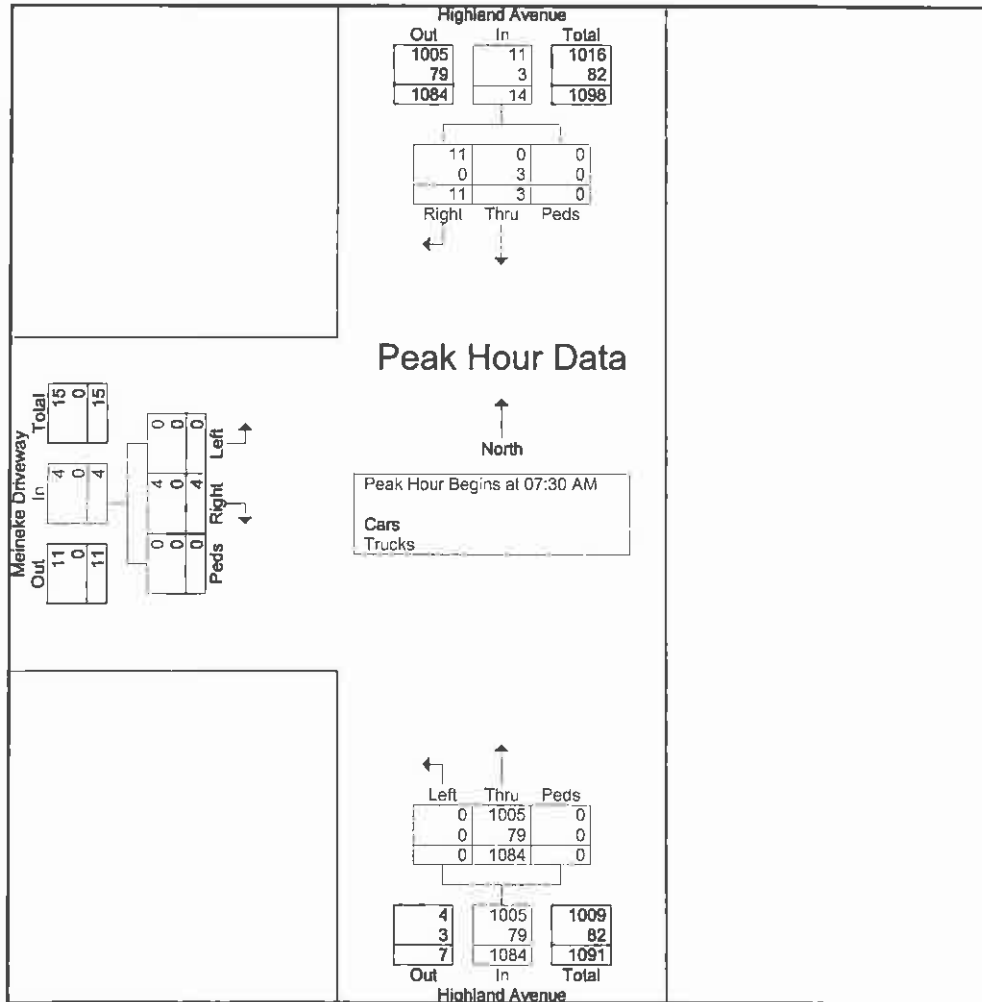
File Name : Highland Ave @ Meineke Driveway - AM

Site Code : 08571

Start Date : 5/22/2008

Page No : 2

Start Time	Highland Avenue Southbound				Highland Avenue Northbound				Meineke Driveway Eastbound				Int. Total
	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:30 AM													
07:30 AM	0	0	0	0	0	170	0	170	0	0	0	0	170
07:45 AM	0	3	0	3	0	335	0	335	0	0	0	0	338
08:00 AM	3	4	0	7	0	292	0	292	0	3	0	3	302
08:15 AM	0	4	0	4	0	287	0	287	0	1	0	1	292
Total Volume	3	11	0	14	0	1084	0	1084	0	4	0	4	1102
% App. Total	21.4	78.6	0		0	100	0		0	100	0		
PHF	.250	.688	.000	.500	.000	.809	.000	.809	.000	.333	.000	.333	.815
Cars	0	11	0	11	0	1005	0	1005	0	4	0	4	1020
% Cars	0	100	0	78.6	0	92.7	0	92.7	0	100	0	100	92.6
Trucks	3	0	0	3	0	79	0	79	0	0	0	0	82
% Trucks	100	0	0	21.4	0	7.3	0	7.3	0	0	0	0	7.4



GPI

61 Spit Brook Road Suite 110
Nashua, NH. 03060

File Name : Highland Ave @ Meineke Driveway - AM

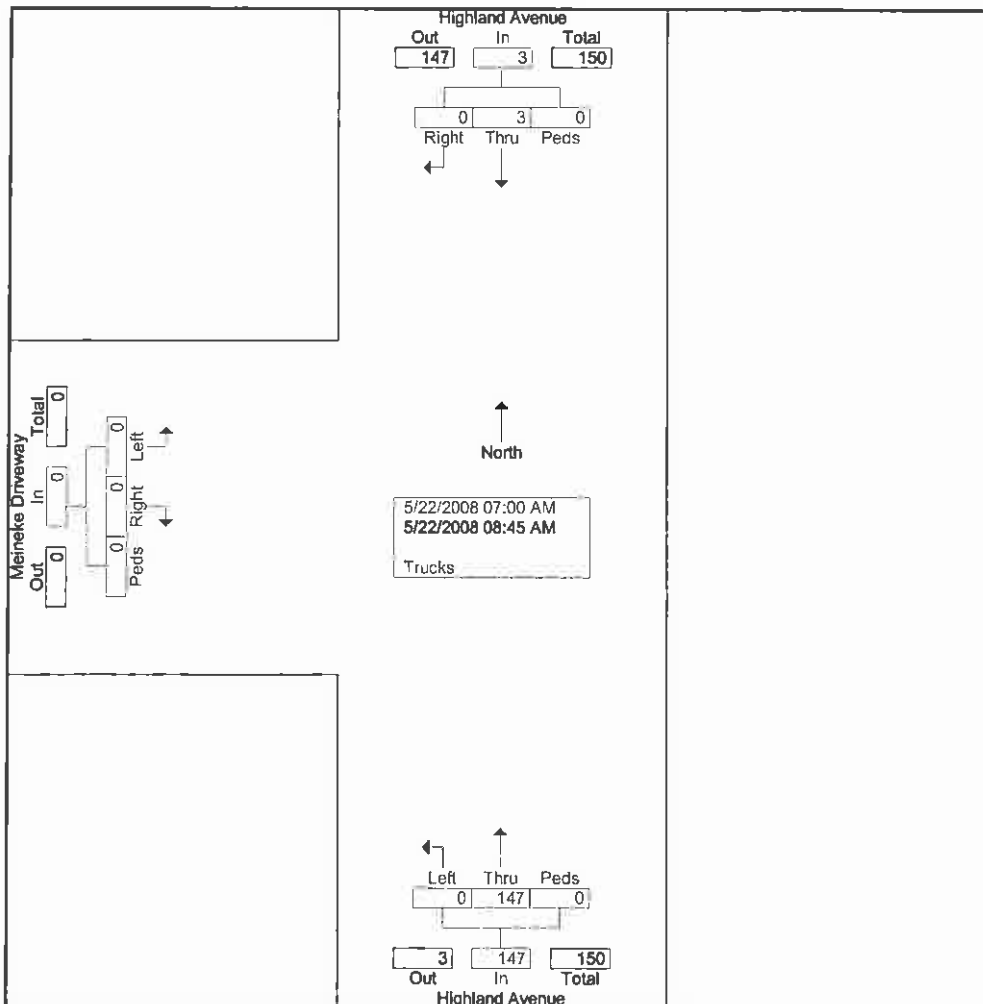
Site Code : 08571

Start Date : 5/22/2008

Page No : 1

Groups Printed- Trucks

Start Time	Highland Avenue Southbound				Highland Avenue Northbound				Meineke Driveway Eastbound				Int. Total
	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	
07:00 AM	0	0	0	0	0	16	0	16	0	0	0	0	16
07:15 AM	0	0	0	0	0	21	0	21	0	0	0	0	21
07:30 AM	0	0	0	0	0	14	0	14	0	0	0	0	14
07:45 AM	0	0	0	0	0	19	0	19	0	0	0	0	19
Total	0	0	0	0	0	70	0	70	0	0	0	0	70
08:00 AM	3	0	0	3	0	19	0	19	0	0	0	0	22
08:15 AM	0	0	0	0	0	27	0	27	0	0	0	0	27
08:30 AM	0	0	0	0	0	15	0	15	0	0	0	0	15
08:45 AM	0	0	0	0	0	16	0	16	0	0	0	0	16
Total	3	0	0	3	0	77	0	77	0	0	0	0	80
Grand Total	3	0	0	3	0	147	0	147	0	0	0	0	150
Apprch %	100	0	0		0	100	0		0	0	0		
Total %	2	0	0	2	0	98	0	98	0	0	0	0	



GPI

61 Spit Brook Road Suite 110
Nashua, NH. 03060

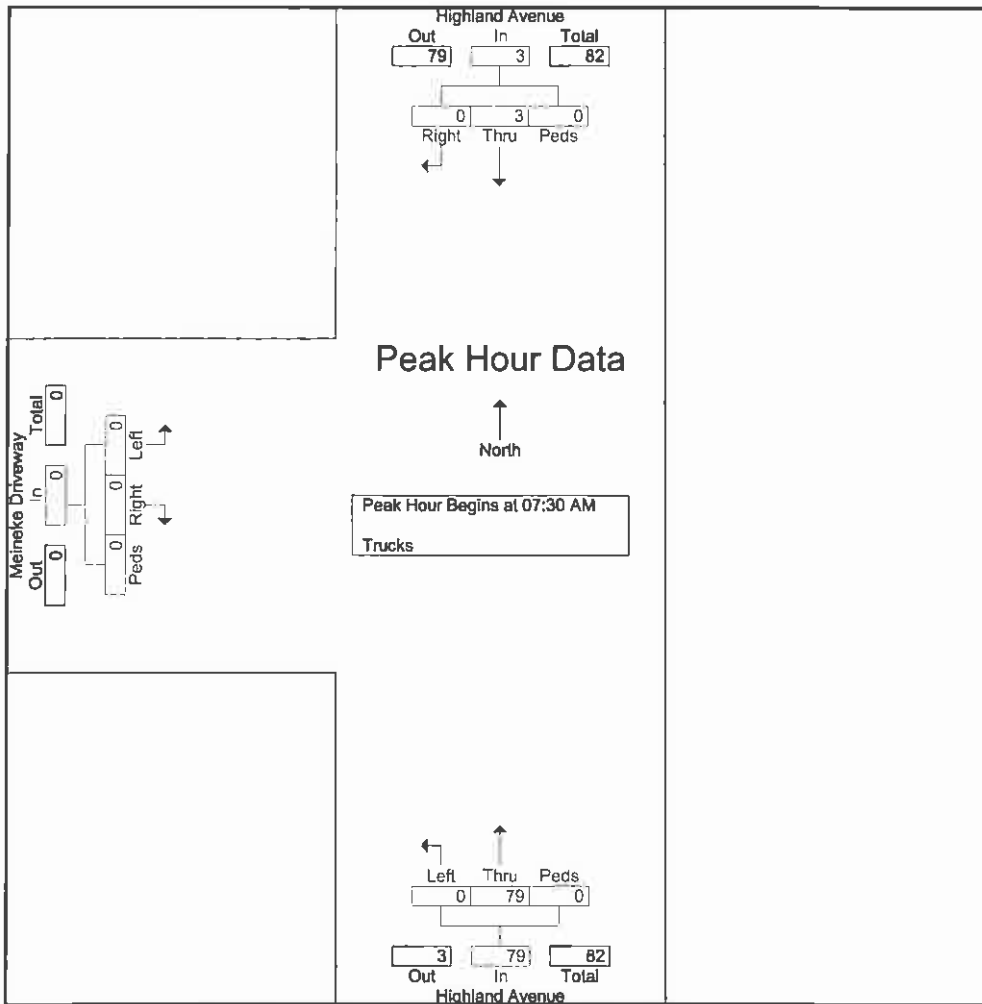
File Name : Highland Ave @ Meineke Driveway - AM

Site Code : 08571

Start Date : 5/22/2008

Page No : 2

Start Time	Highland Avenue Southbound				Highland Avenue Northbound				Meineke Driveway Eastbound				Int. Total
	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:30 AM													
07:30 AM	0	0	0	0	0	14	0	14	0	0	0	0	14
07:45 AM	0	0	0	0	0	19	0	19	0	0	0	0	19
08:00 AM	3	0	0	3	0	19	0	19	0	0	0	0	22
08:15 AM	0	0	0	0	0	27	0	27	0	0	0	0	27
Total Volume	3	0	0	3	0	79	0	79	0	0	0	0	82
% App. Total	100	0	0		0	100	0		0	0	0		
PHF	.250	.000	.000	.250	.000	.731	.000	.731	.000	.000	.000	.000	.759



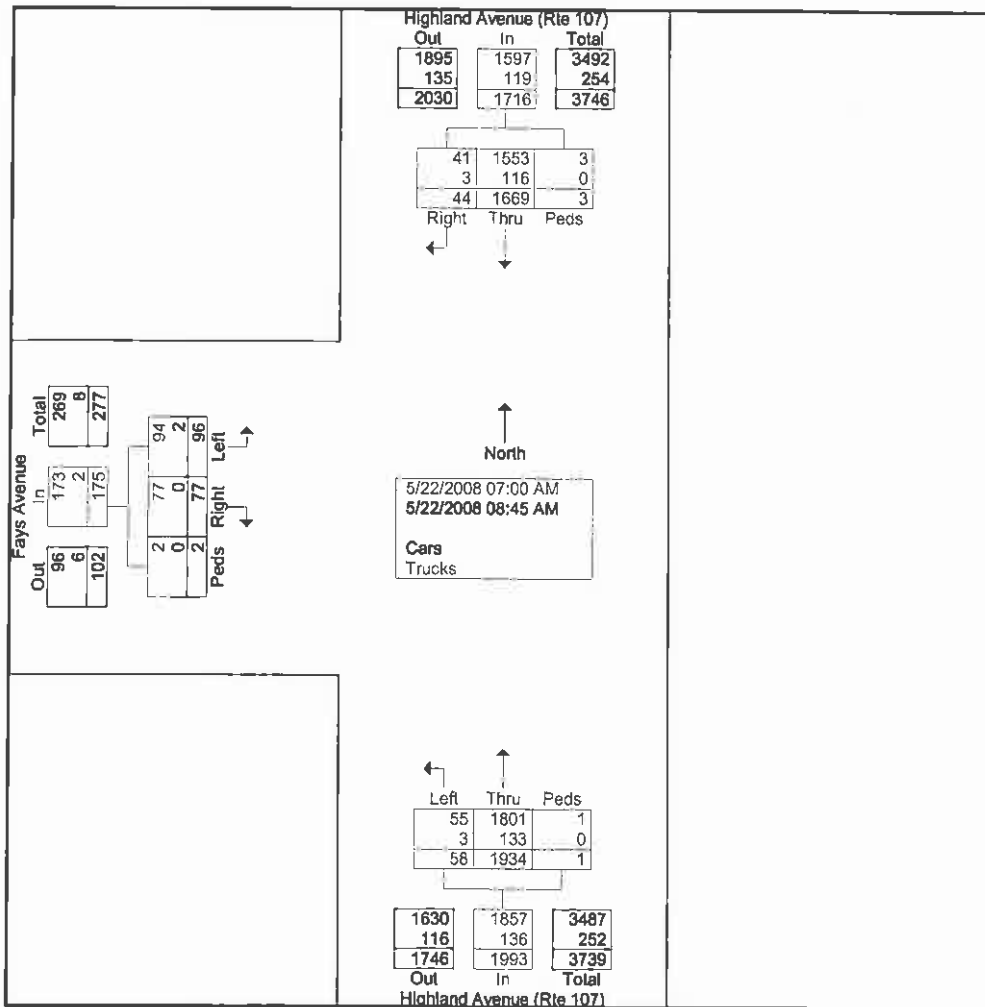


61 Spit Brook Road Suite 110
Nashua, NH. 03060

File Name : Highland Ave @ Fays Ave - AM
Site Code : 08571
Start Date : 5/22/2008
Page No : 1

Groups Printed- Cars - Trucks

Start Time	Highland Avenue (Rte 107) Southbound				Highland Avenue (Rte 107) Northbound				Fays Avenue Eastbound				Int. Total
	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	
07:00 AM	189	3	0	192	6	206	0	212	9	14	0	23	427
07:15 AM	234	4	0	238	11	192	0	203	7	16	0	23	464
07:30 AM	222	5	0	227	7	244	0	251	15	10	1	26	504
07:45 AM	210	4	0	214	12	296	0	308	12	10	1	23	545
Total	855	16	0	871	36	938	0	974	43	50	2	95	1940
08:00 AM	203	11	3	217	5	262	0	267	13	10	0	23	507
08:15 AM	213	7	0	220	5	247	1	253	12	4	0	16	489
08:30 AM	202	5	0	207	6	245	0	251	17	5	0	22	480
08:45 AM	196	5	0	201	6	242	0	248	11	8	0	19	468
Total	814	28	3	845	22	996	1	1019	53	27	0	80	1944
Grand Total	1669	44	3	1716	58	1934	1	1993	96	77	2	175	3884
Apprch %	97.3	2.6	0.2		2.9	97	0.1		54.9	44	1.1		
Total %	43	1.1	0.1	44.2	1.5	49.8	0	51.3	2.5	2	0.1	4.5	
Cars	1553	41	3	1597	55	1801	1	1857	94	77	2	173	3627
% Cars	93	93.2	100	93.1	94.8	93.1	100	93.2	97.9	100	100	98.9	93.4
Trucks	116	3	0	119	3	133	0	136	2	0	0	2	257
% Trucks	7	6.8	0	6.9	5.2	6.9	0	6.8	2.1	0	0	1.1	6.6



GPI

61 Spit Brook Road Suite 110
Nashua, NH. 03060

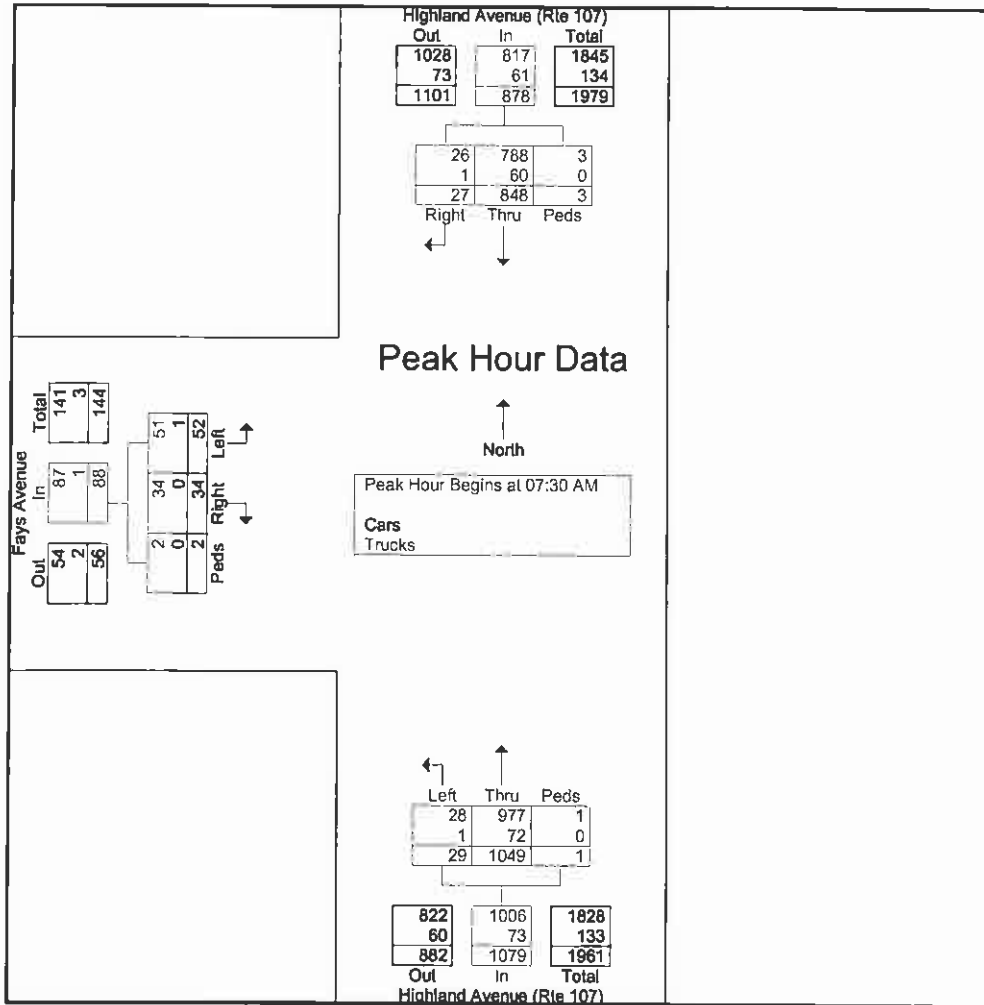
File Name : Highland Ave @ Fays Ave - AM

Site Code : 08571

Start Date : 5/22/2008

Page No : 2

Start Time	Highland Avenue (Rte 107) Southbound				Highland Avenue (Rte 107) Northbound				Fays Avenue Eastbound				Int. Total
	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:30 AM													
07:30 AM	222	5	0	227	7	244	0	251	15	10	1	26	504
07:45 AM	210	4	0	214	12	296	0	308	12	10	1	23	545
08:00 AM	203	11	3	217	5	262	0	267	13	10	0	23	507
08:15 AM	213	7	0	220	5	247	1	253	12	4	0	16	489
Total Volume	848	27	3	878	29	1049	1	1079	52	34	2	88	2045
% App. Total	96.6	3.1	0.3		2.7	97.2	0.1		59.1	38.6	2.3		
PHF	.955	.614	.250	.967	.604	.886	.250	.876	.867	.850	.500	.846	.938
Cars	788	26	3	817	28	977	1	1006	51	34	2	87	1910
% Cars	92.9	96.3	100	93.1	96.6	93.1	100	93.2	98.1	100	100	98.9	93.4
Trucks	60	1	0	61	1	72	0	73	1	0	0	1	135
% Trucks	7.1	3.7	0	6.9	3.4	6.9	0	6.8	1.9	0	0	1.1	6.6



GPI

61 Spit Brook Road Suite 110
Nashua, NH. 03060

File Name : Highland Ave @ Fays Ave - AM

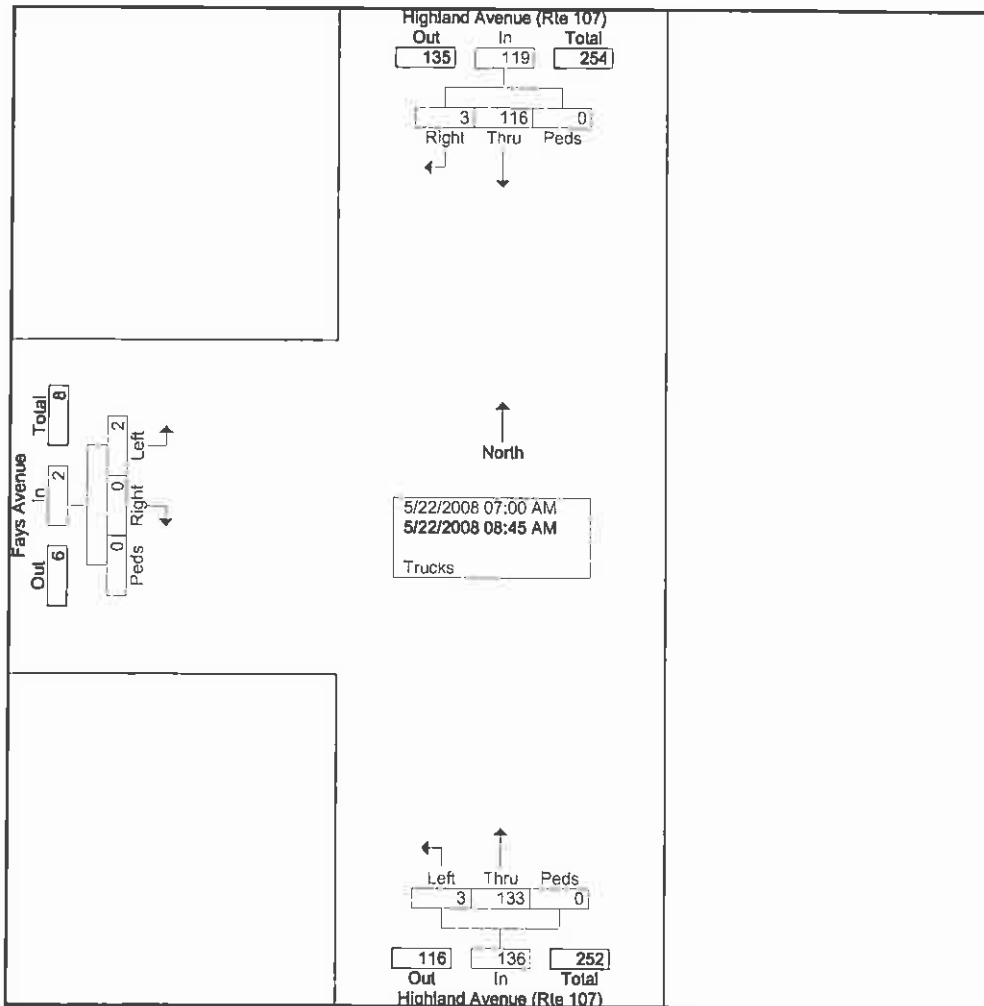
Site Code : 08571

Start Date : 5/22/2008

Page No : 1

Groups Printed- Trucks

Start Time	Highland Avenue (Rte 107) Southbound				Highland Avenue (Rte 107) Northbound				Fays Avenue Eastbound				Int. Total
	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	
07:00 AM	10	2	0	12	0	19	0	19	1	0	0	1	32
07:15 AM	6	0	0	6	1	17	0	18	0	0	0	0	24
07:30 AM	18	0	0	18	0	10	0	10	0	0	0	0	28
07:45 AM	10	0	0	10	1	20	0	21	0	0	0	0	31
Total	44	2	0	46	2	66	0	68	1	0	0	1	115
08:00 AM	13	1	0	14	0	21	0	21	1	0	0	1	36
08:15 AM	19	0	0	19	0	21	0	21	0	0	0	0	40
08:30 AM	19	0	0	19	0	10	0	10	0	0	0	0	29
08:45 AM	21	0	0	21	1	15	0	16	0	0	0	0	37
Total	72	1	0	73	1	67	0	68	1	0	0	1	142
Grand Total	116	3	0	119	3	133	0	136	2	0	0	2	257
Apprch %	97.5	2.5	0		2.2	97.8	0		100	0	0		
Total %	45.1	1.2	0	46.3	1.2	51.8	0	52.9	0.8	0	0	0.8	

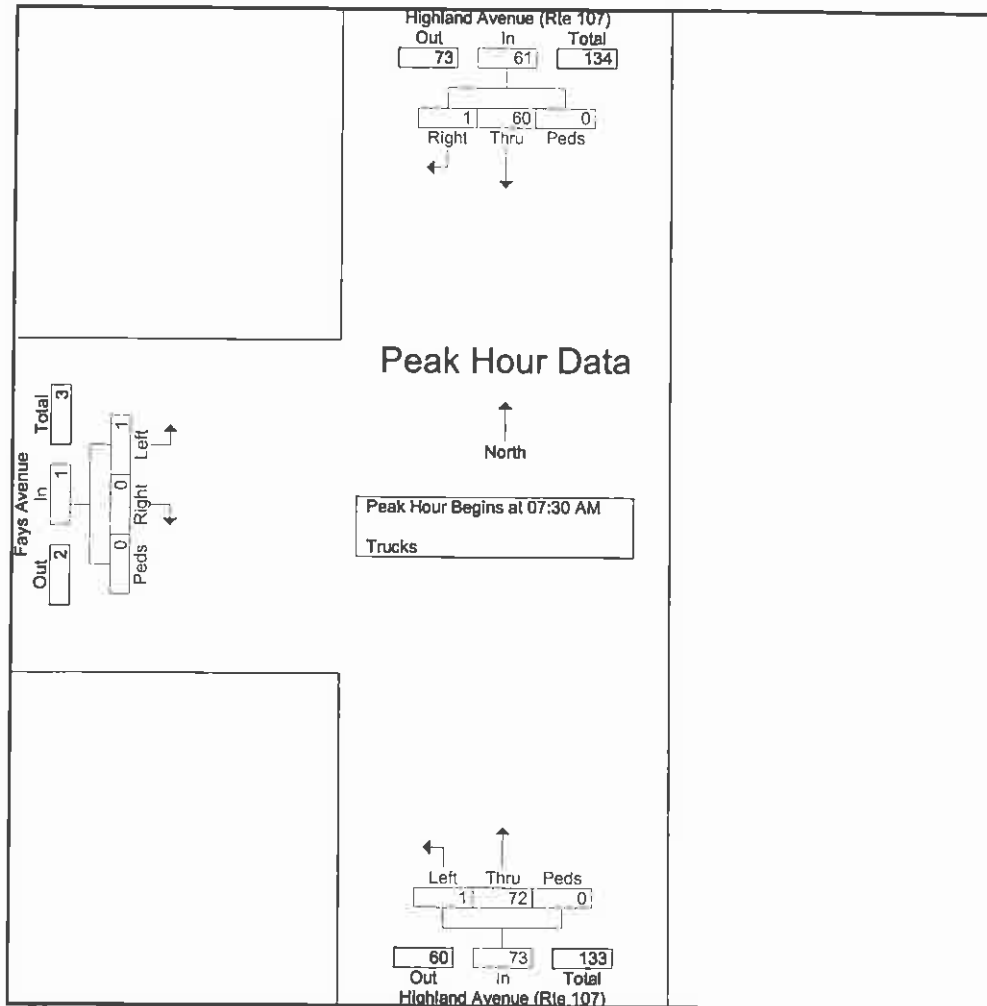


GPI

61 Spit Brook Road Suite 110
Nashua, NH. 03060

File Name : Highland Ave @ Fays Ave - AM
Site Code : 08571
Start Date : 5/22/2008
Page No : 2

Start Time	Highland Avenue (Rte 107) Southbound				Highland Avenue (Rte 107) Northbound				Fays Avenue Eastbound				Int. Total
	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:30 AM													
07:30 AM	18	0	0	18	0	10	0	10	0	0	0	0	28
07:45 AM	10	0	0	10	1	20	0	21	0	0	0	0	31
08:00 AM	13	1	0	14	0	21	0	21	1	0	0	1	36
08:15 AM	19	0	0	19	0	21	0	21	0	0	0	0	40
Total Volume	60	1	0	61	1	72	0	73	1	0	0	1	135
% App. Total	98.4	1.6	0		1.4	98.6	0		100	0	0		
PHF	.789	.250	.000	.803	.250	.857	.000	.869	.250	.000	.000	.250	.844





61 Spit Brook Road Suite 110
Nashua, NH. 03060

File Name : Highland Ave @ Ravenna_Barnes - PM

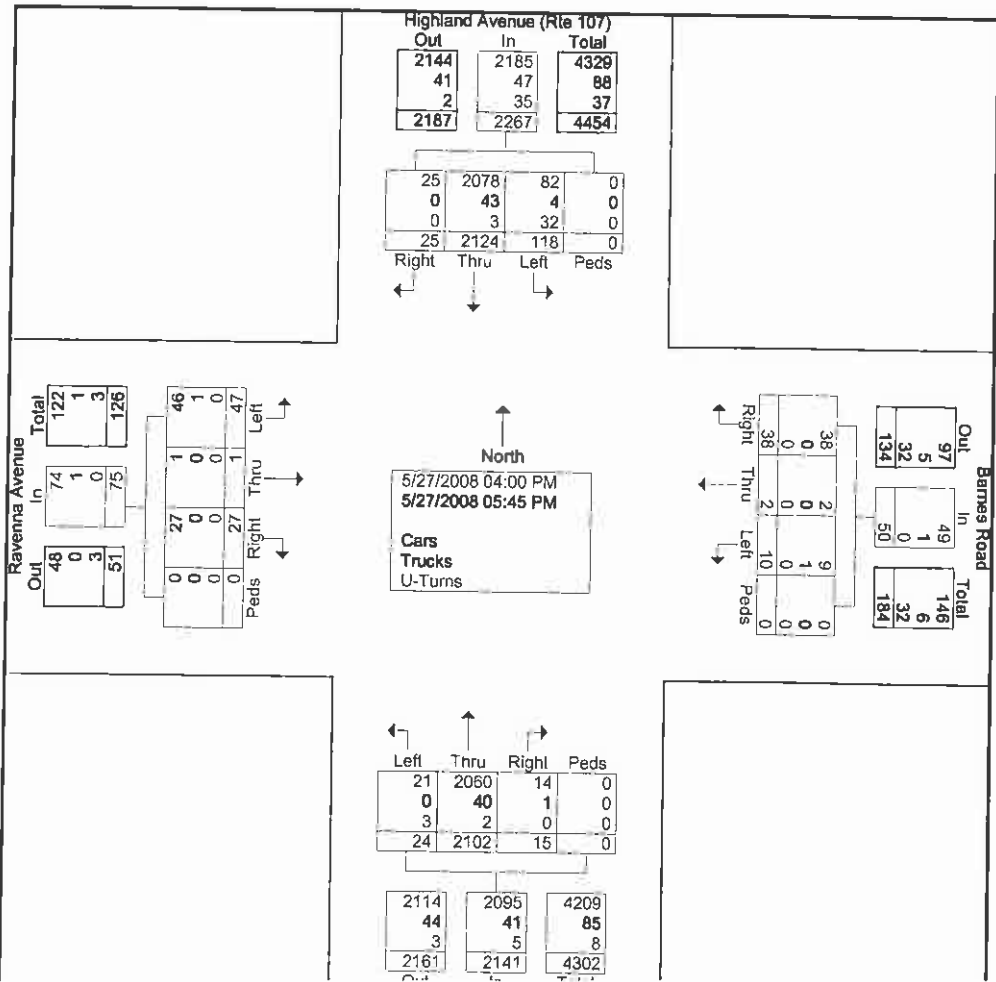
Site Code : 08571

Start Date : 5/27/2008

Page No : 1

Groups Printed- Cars - Trucks - Turns

Start Time	Highland Avenue (Rte 107) Southbound					Barnes Road Westbound					Highland Avenue (Rte 107) Northbound					Ravenna Avenue Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
04:00 PM	10	251	3	0	264	1	0	4	0	5	2	225	1	0	228	5	0	5	0	10	507
04:15 PM	11	246	3	0	260	3	2	3	0	8	1	215	0	0	216	5	1	6	0	12	496
04:30 PM	22	272	1	0	295	1	0	5	0	6	1	270	2	0	273	9	0	6	0	15	589
04:45 PM	20	268	3	0	291	0	0	4	0	4	7	267	2	0	276	6	0	1	0	7	578
Total	63	1037	10	0	1110	5	2	16	0	23	11	977	5	0	993	25	1	18	0	44	2170
05:00 PM	14	303	7	0	324	0	0	4	0	4	3	300	4	0	307	5	0	1	0	6	641
05:15 PM	16	263	3	0	282	1	0	9	0	10	2	299	0	0	301	8	0	1	0	9	602
05:30 PM	12	262	3	0	277	0	0	6	0	6	4	269	5	0	278	7	0	3	0	10	571
05:45 PM	13	259	2	0	274	4	0	3	0	7	4	257	1	0	262	2	0	4	0	6	549
Total	55	1087	15	0	1157	5	0	22	0	27	13	1125	10	0	1148	22	0	9	0	31	2363
Grand Total	118	2124	25	0	2267	10	2	38	0	50	24	2102	15	0	2141	47	1	27	0	75	4533
Approch %	5.2	93.7	1.1	0		20	4	76	0		1.1	98.2	0.7	0		62.7	1.3	36	0		
Total %	2.6	46.9	0.6	0	50	0.2	0	0.8	0	1.1	0.5	46.4	0.3	0	47.2	1	0	0.6	0	1.7	
Cars	82	2078	25	0	2185	9	2	38	0	49	21	2060	14	0	2095	46	1	27	0	74	4403
% Cars	69.5	97.8	100	0	96.4	90	100	100	0	98	87.5	98	93.3	0	97.9	97.9	100	100	0	98.7	97.1
Trucks	4	43	0	0	47	1	0	0	0	1	0	40	1	0	41	1	0	0	0	1	90
% Trucks	3.4	2	0	0	2.1	10	0	0	0	2	0	1.9	6.7	0	1.9	2.1	0	0	0	1.3	2
U-Turns	32	3	0	0	35	0	0	0	0	0	3	2	0	0	5	0	0	0	0	0	40
% U-Turns	27.1	0.1	0	0	1.5	0	0	0	0	0	12.5	0.1	0	0	0.2	0	0	0	0	0	0.9

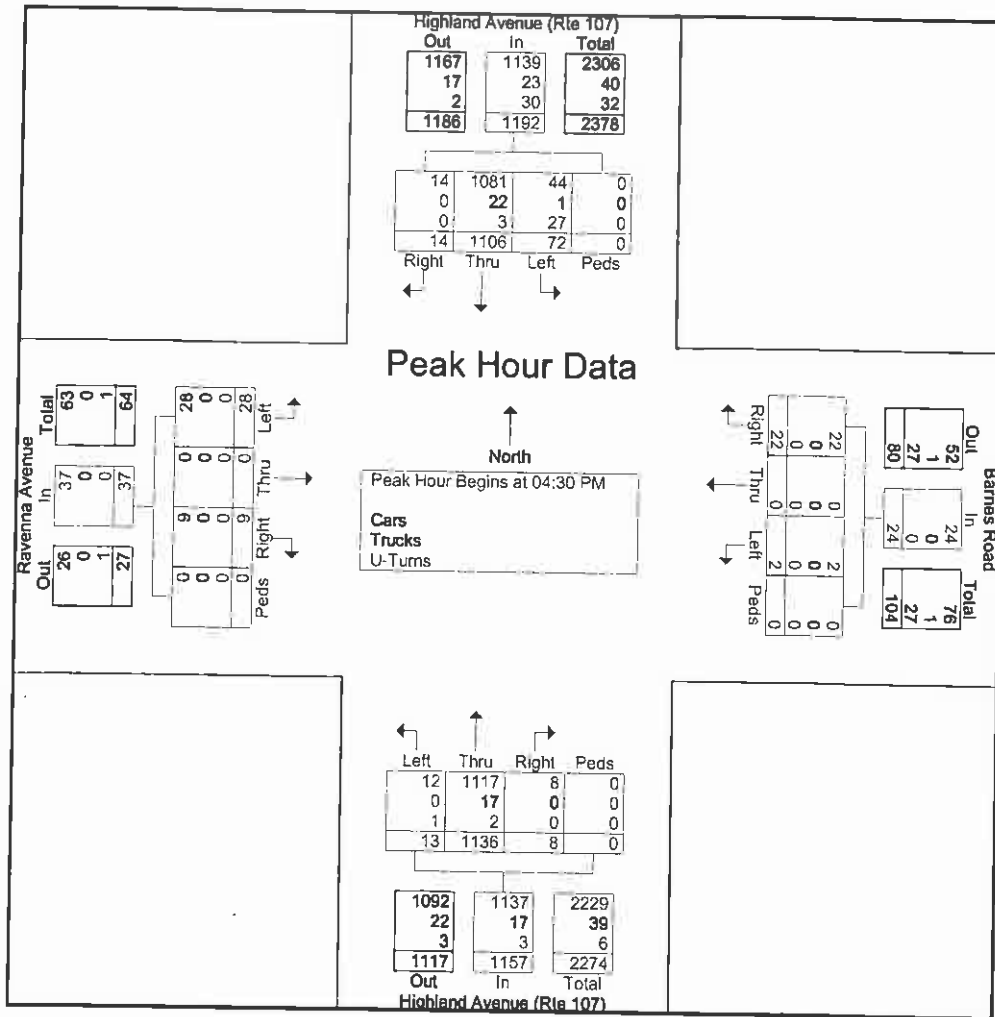


GPI

61 Spit Brook Road Suite 110
Nashua, NH. 03060

File Name : Highland Ave @ Ravenna_Barnes - PM
Site Code : 08571
Start Date : 5/27/2008
Page No : 2

Start Time	Highland Avenue (Rte 107) Southbound					Barnes Road Westbound					Highland Avenue (Rte 107) Northbound					Ravenna Avenue Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	22	272	1	0	295	1	0	5	0	6	1	270	2	0	273	9	0	6	0	15	589
04:45 PM	20	268	3	0	291	0	0	4	0	4	7	267	2	0	276	6	0	1	0	7	578
05:00 PM	14	303	7	0	324	0	0	4	0	4	3	300	4	0	307	5	0	1	0	6	641
05:15 PM	16	263	3	0	282	1	0	9	0	10	2	299	0	0	301	8	0	1	0	9	602
Total Volume	72	1106	14	0	1192	2	0	22	0	24	13	1136	8	0	1157	28	0	9	0	37	2410
% App. Total	6	92.8	1.2	0		8.3	0	91.7	0		1.1	98.2	0.7	0		75.7	0	24.3	0		
PHF	.818	.913	.500	.000	.920	.500	.000	.611	.000	.600	.464	.947	.500	.000	.942	.778	.000	.375	.000	.617	.940
Cars	44	1081	14	0	1139	2	0	22	0	24	12	1117	8	0	1137	28	0	9	0	37	2337
% Cars	61.1	97.7	100	0	95.6	100	0	100	0	100	92.3	98.3	100	0	98.3	100	0	100	0	100	97.0
Trucks	1	22	0	0	23	0	0	0	0	0	0	17	0	0	17	0	0	0	0	0	40
% Trucks	1.4	2.0	0	0	1.9	0	0	0	0	0	0	1.5	0	0	1.5	0	0	0	0	0	1.7
U-Turns	27	3	0	0	30	0	0	0	0	0	1	2	0	0	3	0	0	0	0	0	33
% U-Turns	37.5	0.3	0	0	2.5	0	0	0	0	0	7.7	0.2	0	0	0.3	0	0	0	0	0	1.4





61 Spit Brook Road Suite 110
Nashua, NH. 03060

File Name : Highland Ave @ Ravenna_Barnes - PM

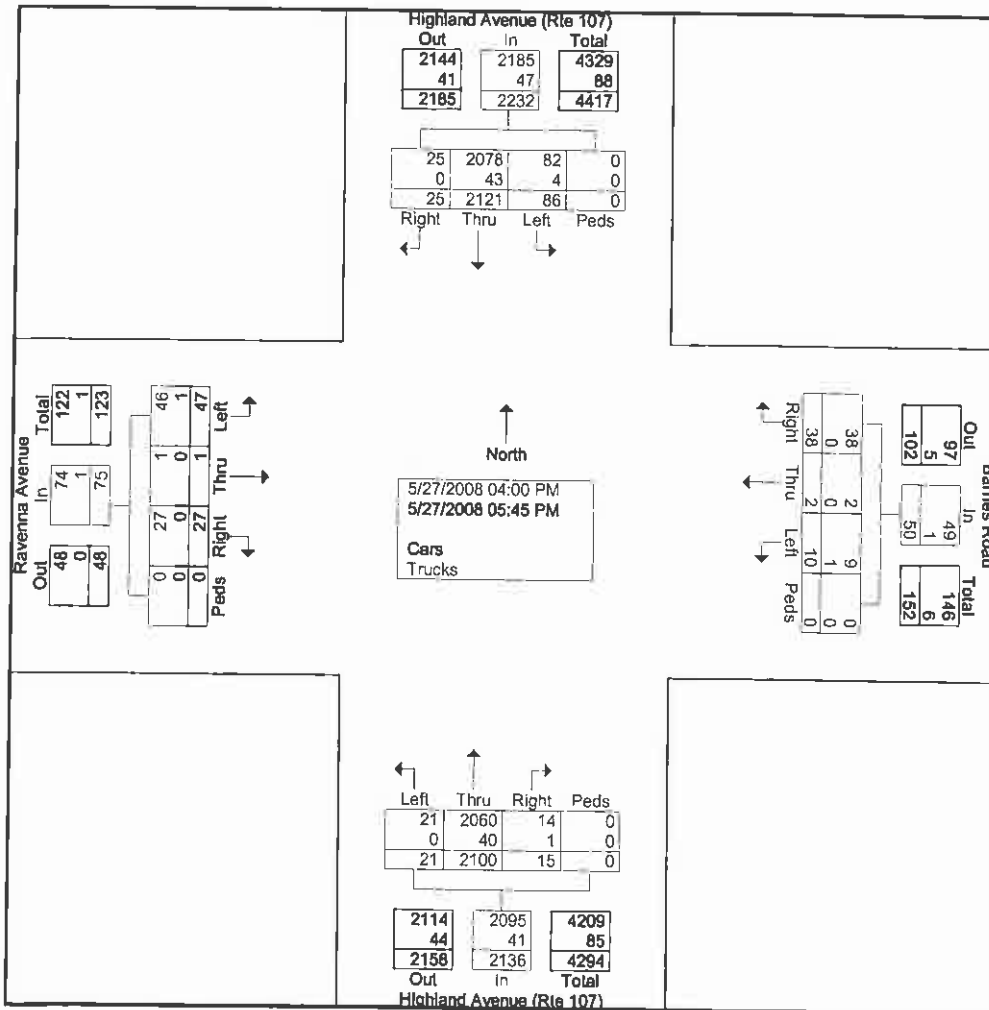
Site Code : 08571

Start Date : 5/27/2008

Page No : 1

Groups Printed- Cars - Trucks

Start Time	Highland Avenue (Rte 107) Southbound					Barnes Road Westbound					Highland Avenue (Rte 107) Northbound					Ravenna Avenue Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
04:00 PM	10	251	3	0	264	1	0	4	0	5	2	225	1	0	228	5	0	5	0	10	507
04:15 PM	11	246	3	0	260	3	2	3	0	8	1	215	0	0	216	5	1	6	0	12	496
04:30 PM	11	272	1	0	284	1	0	5	0	6	1	270	2	0	273	9	0	6	0	15	578
04:45 PM	12	266	3	0	281	0	0	4	0	4	6	265	2	0	273	6	0	1	0	7	565
Total	44	1035	10	0	1089	5	2	16	0	23	10	975	5	0	990	25	1	18	0	44	2146
05:00 PM	11	303	7	0	321	0	0	4	0	4	3	300	4	0	307	5	0	1	0	6	638
05:15 PM	11	262	3	0	276	1	0	9	0	10	2	299	0	0	301	8	0	1	0	9	596
05:30 PM	10	262	3	0	275	0	0	6	0	6	3	269	5	0	277	7	0	3	0	10	568
05:45 PM	10	259	2	0	271	4	0	3	0	7	3	257	1	0	261	2	0	4	0	6	545
Total	42	1086	15	0	1143	5	0	22	0	27	11	1125	10	0	1146	22	0	9	0	31	2347
Grand Total	86	2121	25	0	2232	10	2	38	0	50	21	2100	15	0	2136	47	1	27	0	75	4493
Apprch %	3.9	95	1.1	0		20	4	76	0		1	98.3	0.7	0		62.7	1.3	36	0		
Total %	1.9	47.2	0.6	0	49.7	0.2	0	0.8	0	1.1	0.5	46.7	0.3	0	47.5	1	0	0.6	0	1.7	
Cars	82	2078	25	0	2185	9	2	38	0	49	21	2060	14	0	2095	46	1	27	0	74	4403
% Cars	95.3	98	100	0	97.9	90	100	100	0	98	100	98.1	93.3	0	98.1	97.9	100	100	0	98.7	98
Trucks	4	43	0	0	47	1	0	0	0	1	0	40	1	0	41	1	0	0	0	1	90
% Trucks	4.7	2	0	0	2.1	10	0	0	0	2	0	1.9	6.7	0	1.9	2.1	0	0	0	1.3	2





61 Spit Brook Road Suite 110
Nashua, NH. 03060

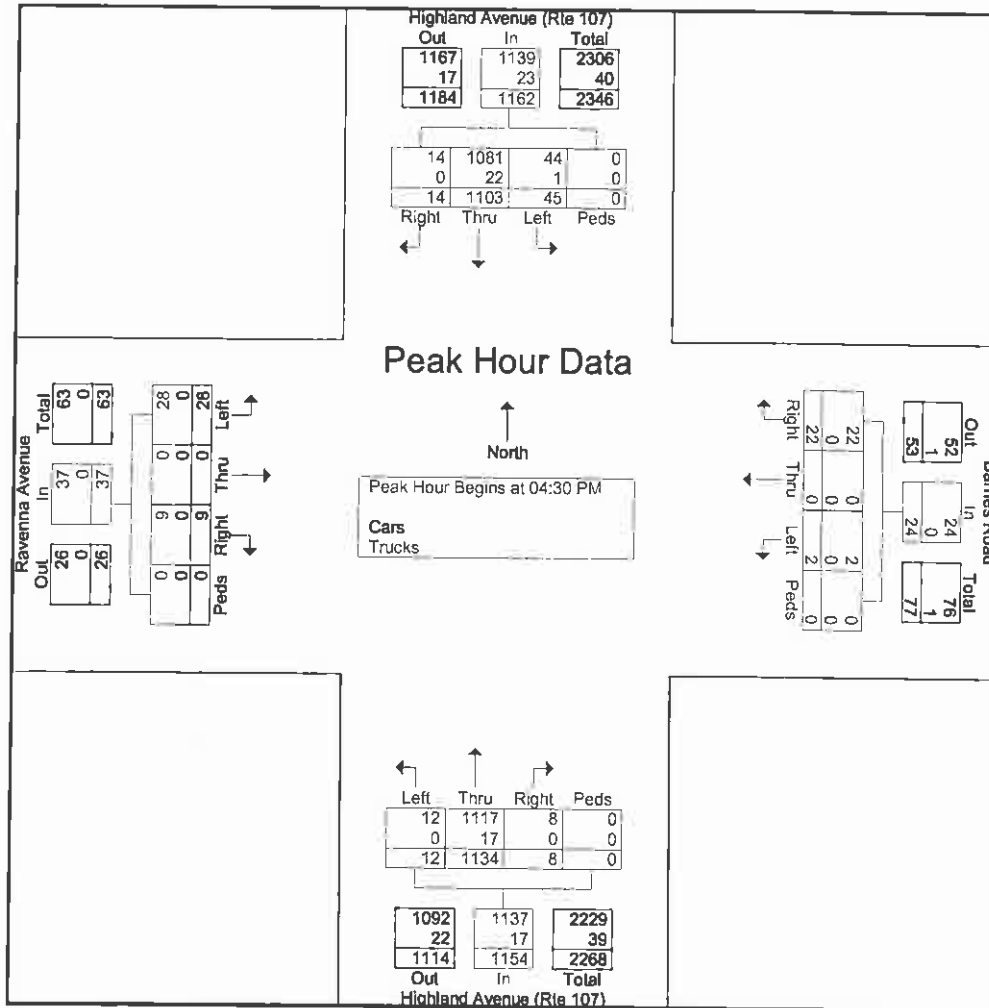
File Name : Highland Ave @ Ravenna_Barnes - PM

Site Code : 08571

Start Date : 5/27/2008

Page No : 2

Start Time	Highland Avenue (Rte 107) Southbound					Barnes Road Westbound					Highland Avenue (Rte 107) Northbound					Ravenna Avenue Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	11	272	1	0	284	1	0	5	0	6	1	270	2	0	273	9	0	6	0	15	578
04:45 PM	12	266	3	0	281	0	0	4	0	4	6	265	2	0	273	6	0	1	0	7	565
05:00 PM	11	303	7	0	321	0	0	4	0	4	3	300	4	0	307	5	0	1	0	6	638
05:15 PM	11	262	3	0	276	1	0	9	0	10	2	299	0	0	301	8	0	1	0	9	596
Total Volume	45	1103	14	0	1162	2	0	22	0	24	12	1134	8	0	1154	28	0	9	0	37	2377
% App. Total	3.9	94.9	1.2	0		8.3	0	91.7	0		1	98.3	0.7	0		75.7	0	24.3	0		
PHF	.938	.910	.500	.000	.905	.500	.000	.611	.000	.600	.500	.945	.500	.000	.940	.778	.000	.375	.000	.617	.931
Cars	44	1081	14	0	1139	2	0	22	0	24	12	1117	8	0	1137	28	0	9	0	37	2337
% Cars	97.8	98.0	100	0	98.0	100	0	100	0	100	100	98.5	100	0	98.5	100	0	100	0	100	98.3
Trucks	1	22	0	0	23	0	0	0	0	0	0	17	0	0	17	0	0	0	0	0	40
% Trucks	2.2	2.0	0	0	2.0	0	0	0	0	0	0	1.5	0	0	1.5	0	0	0	0	0	1.7





61 Spit Brook Road Suite 110
Nashua, NH. 03060

File Name : Highland Ave @ Ravenna_Barnes - PM

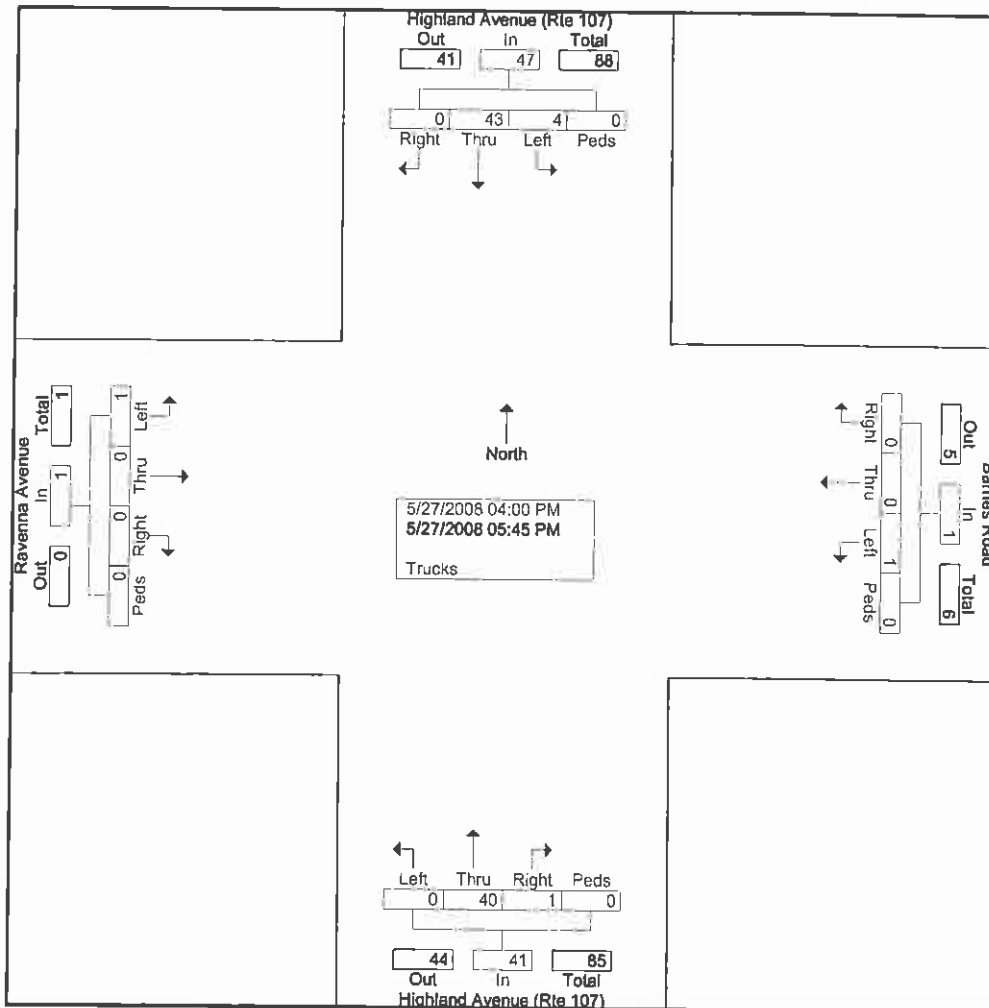
Site Code : 08571

Start Date : 5/27/2008

Page No : 1

Groups Printed- Trucks

Start Time	Highland Avenue (Rte 107) Southbound					Barnes Road Westbound					Highland Avenue (Rte 107) Northbound					Ravenna Avenue Eastbound					Int. Total	
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total		
04:00 PM	0	6	0	0	6	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	0	12
04:15 PM	1	4	0	0	5	0	0	0	0	0	0	8	0	0	8	1	0	0	0	0	1	14
04:30 PM	0	7	0	0	7	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	12
04:45 PM	0	5	0	0	5	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	7
Total	1	22	0	0	23	0	0	0	0	0	0	21	0	0	21	1	0	0	0	0	1	45
05:00 PM	1	4	0	0	5	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	9
05:15 PM	0	6	0	0	6	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	0	12
05:30 PM	1	7	0	0	8	0	0	0	0	0	0	3	1	0	4	0	0	0	0	0	0	12
05:45 PM	1	4	0	0	5	1	0	0	0	1	0	6	0	0	6	0	0	0	0	0	0	12
Total	3	21	0	0	24	1	0	0	0	1	0	19	1	0	20	0	0	0	0	0	0	45
Grand Total	4	43	0	0	47	1	0	0	0	1	0	40	1	0	41	1	0	0	0	0	1	90
Apprch %	8.5	91.5	0	0		100	0	0	0		0	97.6	2.4	0		100	0	0	0	0		
Total %	4.4	47.8	0	0	52.2	1.1	0	0	0	1.1	0	44.4	1.1	0	45.6	1.1	0	0	0	0	1.1	



GPI

61 Spit Brook Road Suite 110
Nashua, NH. 03060

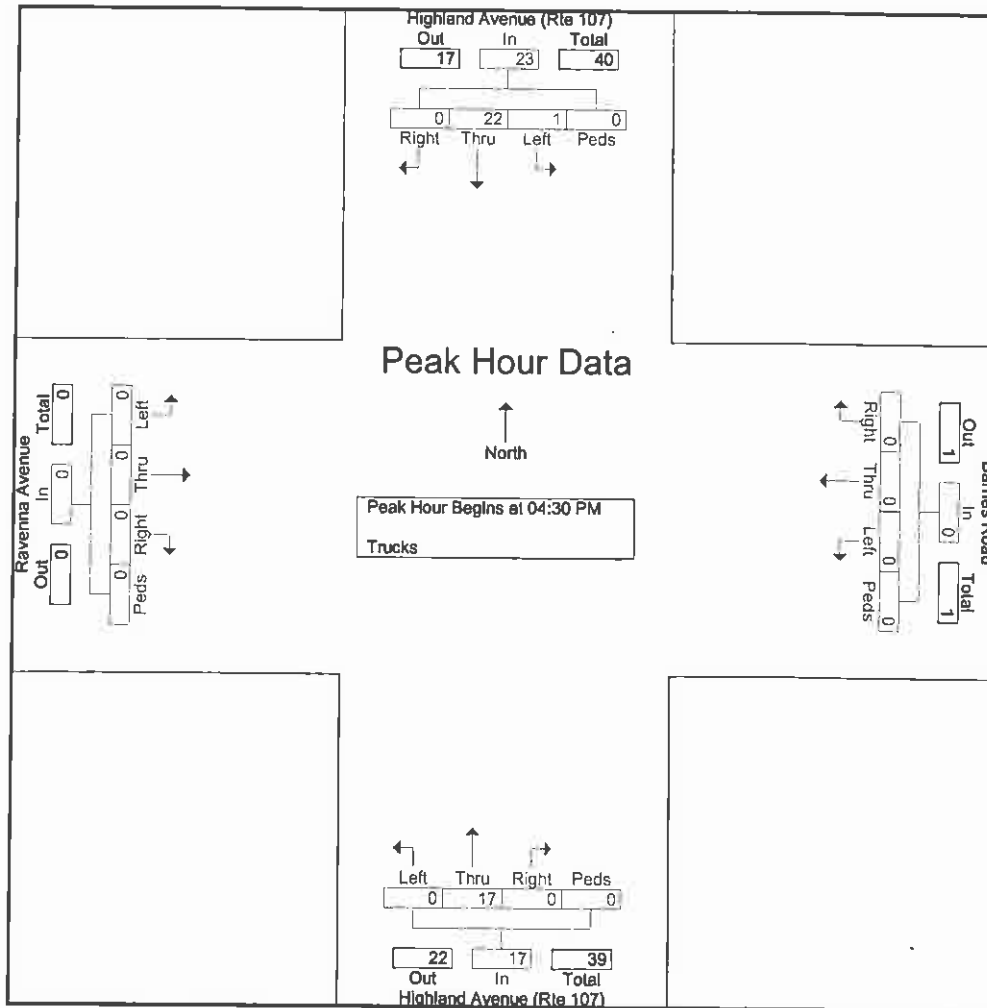
File Name : Highland Ave @ Ravenna_Barnes - PM

Site Code : 08571

Start Date : 5/27/2008

Page No : 2

Start Time	Highland Avenue (Rte 107) Southbound					Barnes Road Westbound					Highland Avenue (Rte 107) Northbound					Ravenna Avenue Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	0	7	0	0	7	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	12
04:45 PM	0	5	0	0	5	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	7
05:00 PM	1	4	0	0	5	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	9
05:15 PM	0	6	0	0	6	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	12
Total Volume	1	22	0	0	23	0	0	0	0	0	0	17	0	0	17	0	0	0	0	0	40
% App. Total	4.3	95.7	0	0		0	0	0	0	0	0	100	0	0		0	0	0	0		
PHF	.250	.786	.000	.000	.821	.000	.000	.000	.000	.000	.000	.708	.000	.000	.708	.000	.000	.000	.000	.000	833



GPI

61 Spit Brook Road Suite 110
Nashua, NH. 03060

File Name : Highland Ave @ Ravenna_Barnes - PM

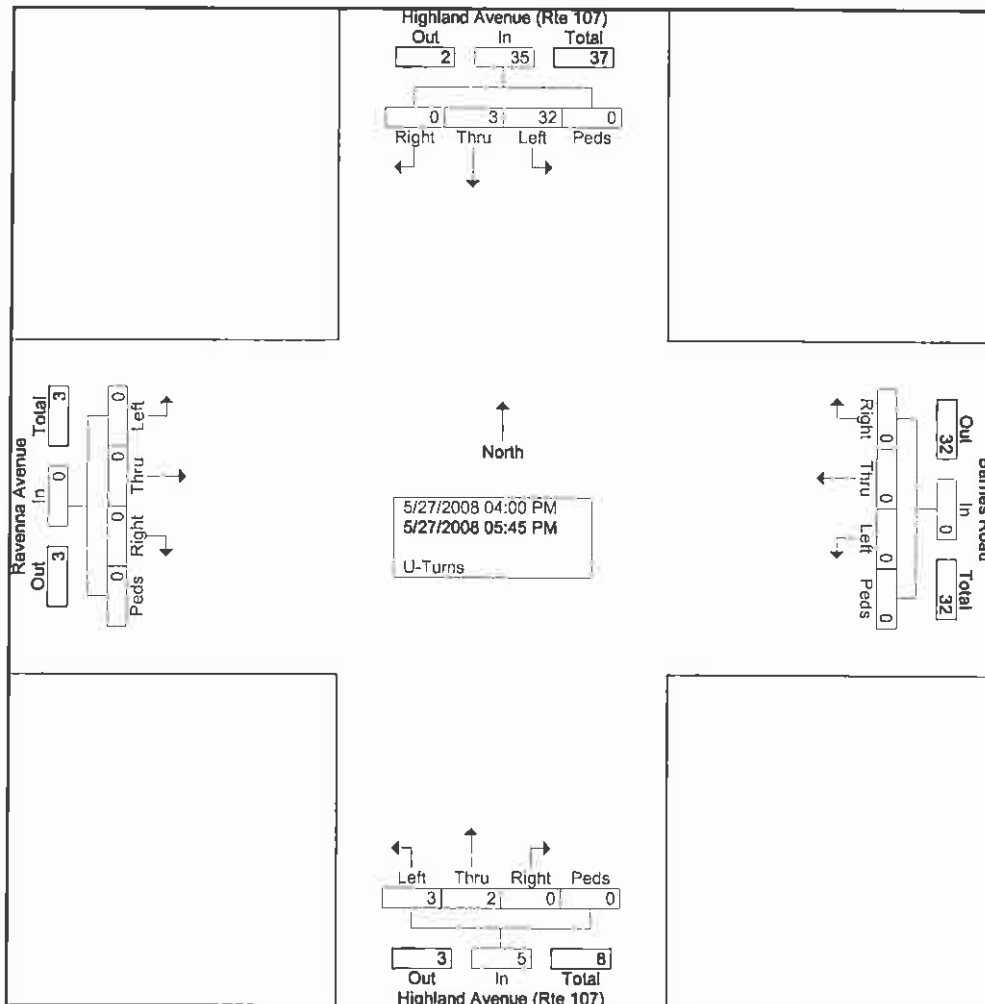
Site Code : 08571

Start Date : 5/27/2008

Page No : 1

Groups Printed- Turns

Start Time	Highland Avenue (Rte 107) Southbound					Barnes Road Westbound					Highland Avenue (Rte 107) Northbound					Ravenna Avenue Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	11	0	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11
04:45 PM	8	2	0	0	10	0	0	0	0	0	1	2	0	0	3	0	0	0	0	0	13
Total	19	2	0	0	21	0	0	0	0	0	1	2	0	0	3	0	0	0	0	0	24
05:00 PM	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
05:15 PM	5	1	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
05:30 PM	2	0	0	0	2	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	3
05:45 PM	3	0	0	0	3	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	4
Total	13	1	0	0	14	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	16
Grand Total	32	3	0	0	35	0	0	0	0	0	3	2	0	0	5	0	0	0	0	0	40
Apprch %	91.4	8.6	0	0		0	0	0	0		60	40	0	0		0	0	0	0		
Total %	80	7.5	0	0	87.5	0	0	0	0	0	7.5	5	0	0	12.5	0	0	0	0	0	



GPI

61 Spit Brook Road Suite 110
Nashua, NH. 03060

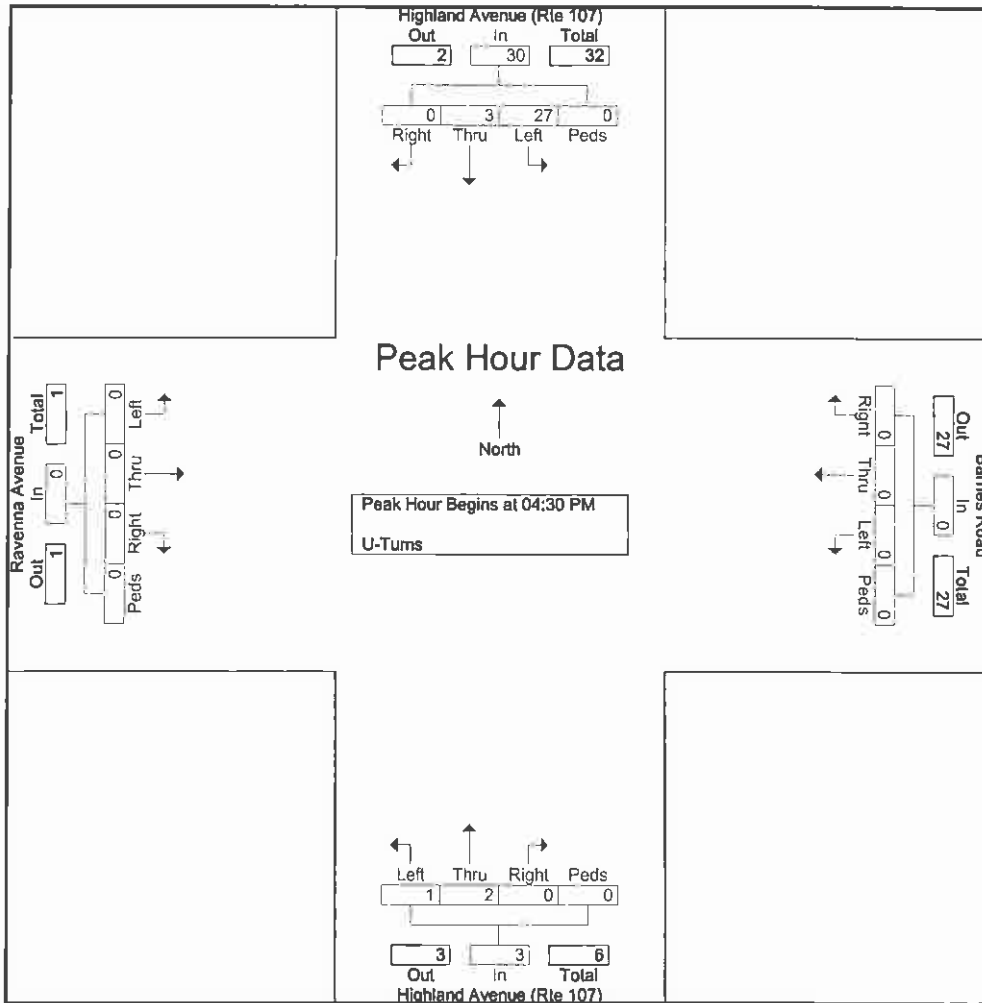
File Name : Highland Ave @ Ravenna_Barnes - PM

Site Code : 08571

Start Date : 5/27/2008

Page No : 2

Start Time	Highland Avenue (Rte 107) Southbound					Barnes Road Westbound					Highland Avenue (Rte 107) Northbound					Ravenna Avenue Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	11	0	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11
04:45 PM	8	2	0	0	10	0	0	0	0	0	1	2	0	0	3	0	0	0	0	0	13
05:00 PM	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
05:15 PM	5	1	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
Total Volume	27	3	0	0	30	0	0	0	0	0	1	2	0	0	3	0	0	0	0	0	33
% App. Total	90	10	0	0		0	0	0	0		33.3	66.7	0	0		0	0	0	0		
PHF	.614	.375	.000	.000	.682	.000	.000	.000	.000	.000	.250	.250	.000	.000	.250	.000	.000	.000	.000	.000	.635



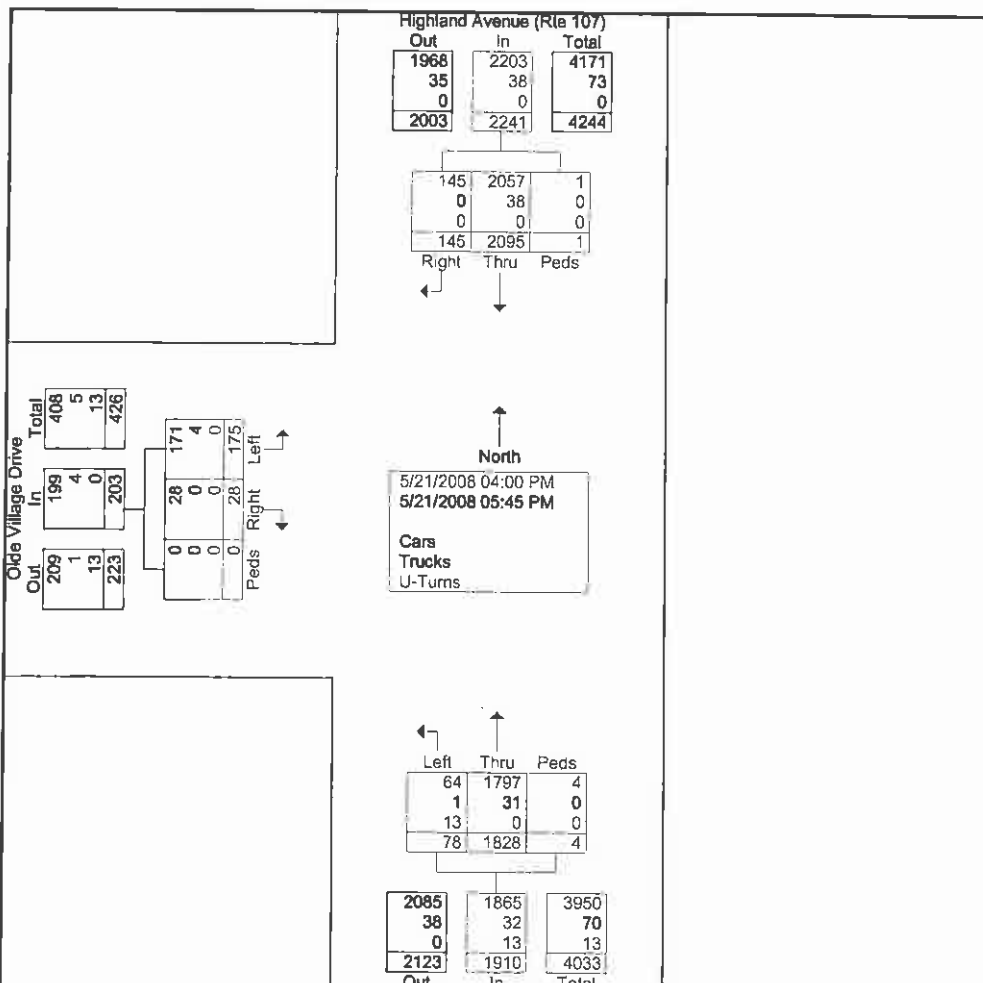


61 Spit Brook Road Suite 110
Nashua, NH. 03060

File Name : Highland Ave @ Olde Village Dr - PM
Site Code : 08571
Start Date : 5/21/2008
Page No : 1

Groups Printed- Cars - Trucks - Turns

Start Time	Highland Avenue (Rte 107) Southbound				Highland Avenue (Rte 107) Northbound				Olde Village Drive Eastbound				Int. Total
	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	
04:00 PM	260	17	1	278	9	222	0	231	23	2	0	25	534
04:15 PM	270	14	0	284	11	229	0	240	21	5	0	26	550
04:30 PM	205	21	0	226	12	248	1	261	18	2	0	20	507
04:45 PM	287	20	0	307	9	223	0	232	19	5	0	24	563
Total	1022	72	1	1095	41	922	1	964	81	14	0	95	2154
05:00 PM	277	15	0	292	11	202	1	214	28	4	0	32	538
05:15 PM	255	15	0	270	8	236	0	244	20	3	0	23	537
05:30 PM	261	19	0	280	10	233	1	244	21	4	0	25	549
05:45 PM	280	24	0	304	8	235	1	244	25	3	0	28	576
Total	1073	73	0	1146	37	906	3	946	94	14	0	108	2200
Grand Total	2095	145	1	2241	78	1828	4	1910	175	28	0	203	4354
Apprch %	93.5	6.5	0		4.1	95.7	0.2		86.2	13.8	0		
Total %	48.1	3.3	0	51.5	1.8	42	0.1	43.9	4	0.6	0	4.7	
Cars	2057	145	1	2203	64	1797	4	1865	171	28	0	199	4267
% Cars	98.2	100	100	98.3	82.1	98.3	100	97.6	97.7	100	0	98	98
Trucks	38	0	0	38	1	31	0	32	4	0	0	4	74
% Trucks	1.8	0	0	1.7	1.3	1.7	0	1.7	2.3	0	0	2	1.7
U-Turns	0	0	0	0	13	0	0	13	0	0	0	0	13
% U-Turns	0	0	0	0	16.7	0	0	0.7	0	0	0	0	0.3

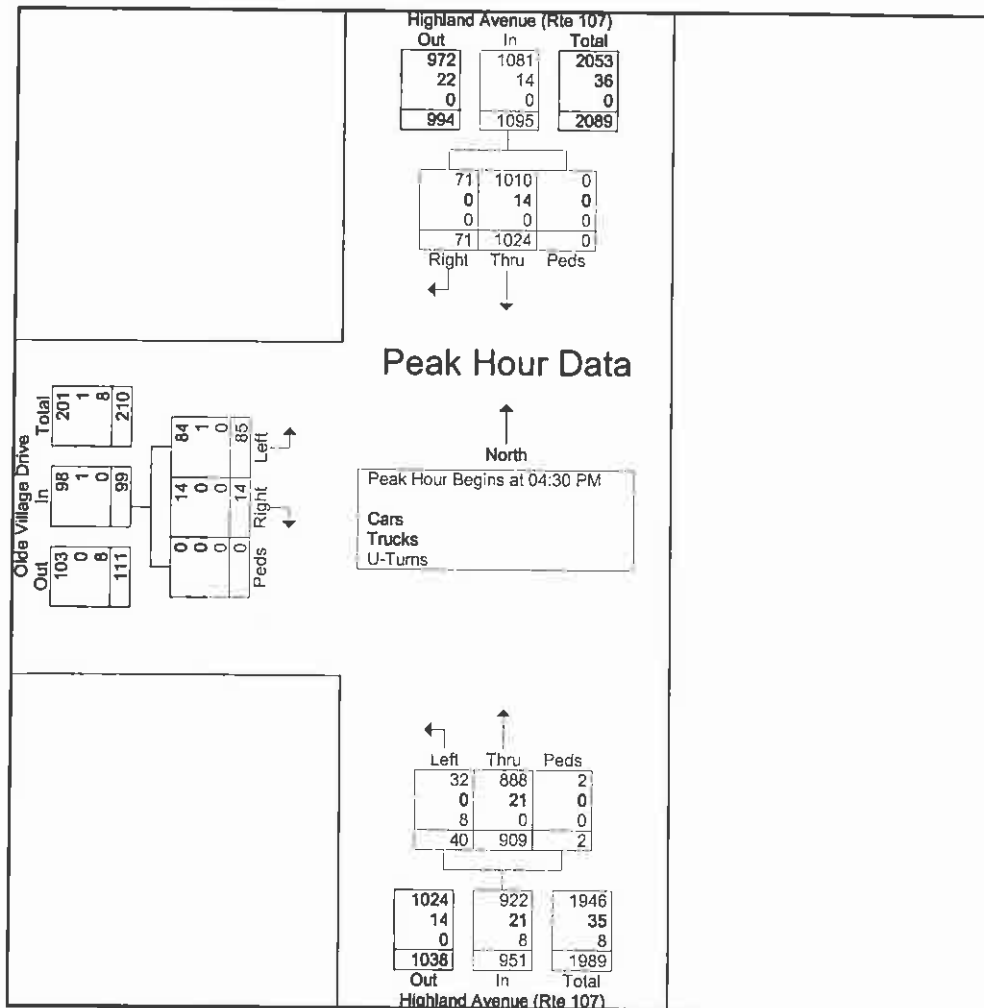


GPI

61 Spit Brook Road Suite 110
Nashua, NH. 03060

File Name : Highland Ave @ Olde Village Dr - PM
Site Code : 08571
Start Date : 5/21/2008
Page No : 2

Start Time	Highland Avenue (Rte 107) Southbound				Highland Avenue (Rte 107) Northbound				Olde Village Drive Eastbound				Int. Total
	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 04:30 PM													
04:30 PM	205	21	0	226	12	248	1	261	18	2	0	20	507
04:45 PM	287	20	0	307	9	223	0	232	19	5	0	24	563
05:00 PM	277	15	0	292	11	202	1	214	28	4	0	32	538
05:15 PM	255	15	0	270	8	236	0	244	20	3	0	23	537
Total Volume	1024	71	0	1095	40	909	2	951	85	14	0	99	2145
% App. Total	93.5	6.5	0		4.2	95.6	0.2		85.9	14.1	0		
PHF	892	845	.000	.892	.833	.916	.500	.911	.759	.700	.000	.773	.952
Cars	1010	71	0	1081	32	888	2	922	84	14	0	98	2101
% Cars	98.6	100	0	98.7	80.0	97.7	100	97.0	98.8	100	0	99.0	97.9
Trucks	14	0	0	14	0	21	0	21	1	0	0	1	36
% Trucks	1.4	0	0	1.3	0	2.3	0	2.2	1.2	0	0	1.0	1.7
U-Turns	0	0	0	0	8	0	0	8	0	0	0	0	8
% U-Turns	0	0	0	0	20.0	0	0	0.8	0	0	0	0	0.4



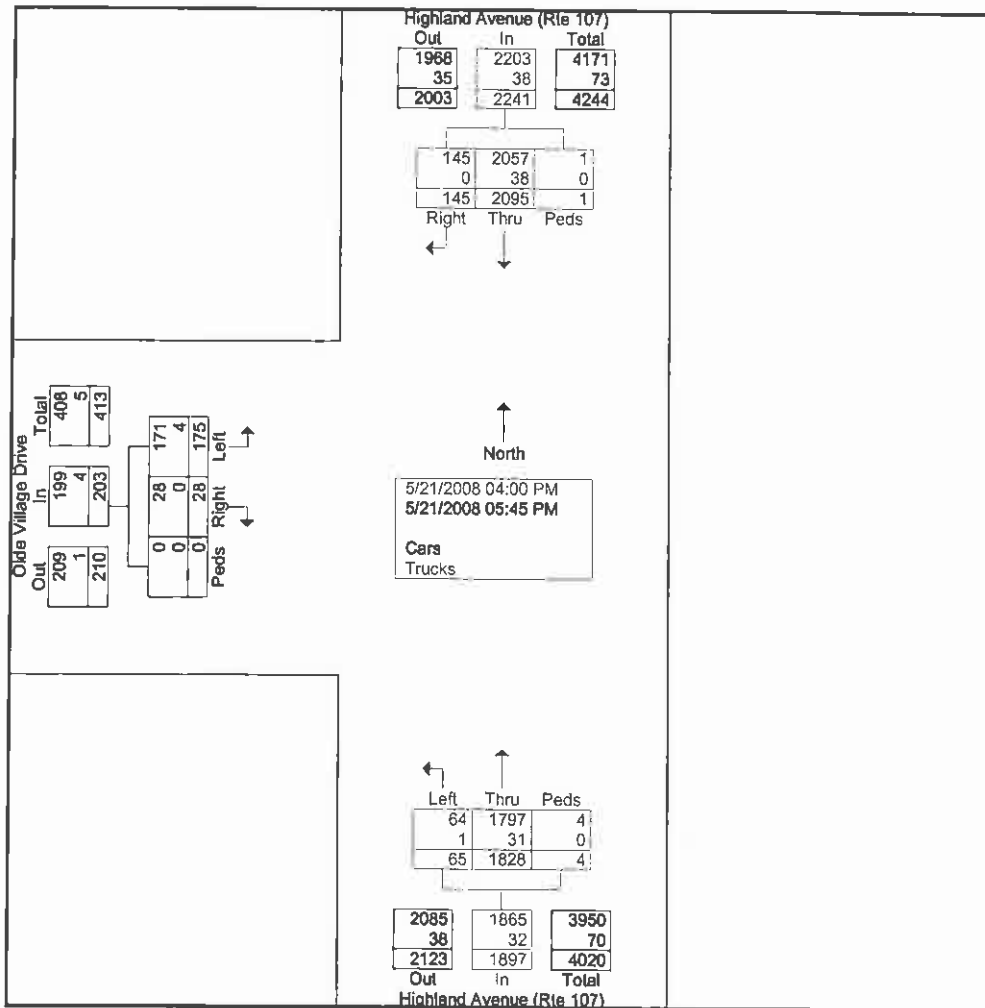
GPI

61 Spit Brook Road Suite 110
Nashua, NH. 03060

File Name : Highland Ave @ Olde Village Dr - PM
Site Code : 08571
Start Date : 5/21/2008
Page No : 1

Groups Printed- Cars - Trucks

Start Time	Highland Avenue (Rte 107) Southbound				Highland Avenue (Rte 107) Northbound				Olde Village Drive Eastbound				Int. Total
	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	
04:00 PM	260	17	1	278	7	222	0	229	23	2	0	25	532
04:15 PM	270	14	0	284	9	229	0	238	21	5	0	26	548
04:30 PM	205	21	0	226	10	248	1	259	18	2	0	20	505
04:45 PM	287	20	0	307	6	223	0	229	19	5	0	24	560
Total	1022	72	1	1095	32	922	1	955	81	14	0	95	2145
05:00 PM	277	15	0	292	10	202	1	213	28	4	0	32	537
05:15 PM	255	15	0	270	6	236	0	242	20	3	0	23	535
05:30 PM	261	19	0	280	10	233	1	244	21	4	0	25	549
05:45 PM	280	24	0	304	7	235	1	243	25	3	0	28	575
Total	1073	73	0	1146	33	906	3	942	94	14	0	108	2196
Grand Total	2095	145	1	2241	65	1828	4	1897	175	28	0	203	4341
Apprch %	93.5	6.5	0		3.4	96.4	0.2		86.2	13.8	0		
Total %	48.3	3.3	0	51.6	1.5	42.1	0.1	43.7	4	0.6	0	4.7	
Cars	2057	145	1	2203	64	1797	4	1865	171	28	0	199	4267
% Cars	98.2	100	100	98.3	98.5	98.3	100	98.3	97.7	100	0	98	98.3
Trucks	38	0	0	38	1	31	0	32	4	0	0	4	74
% Trucks	1.8	0	0	1.7	1.5	1.7	0	1.7	2.3	0	0	2	1.7

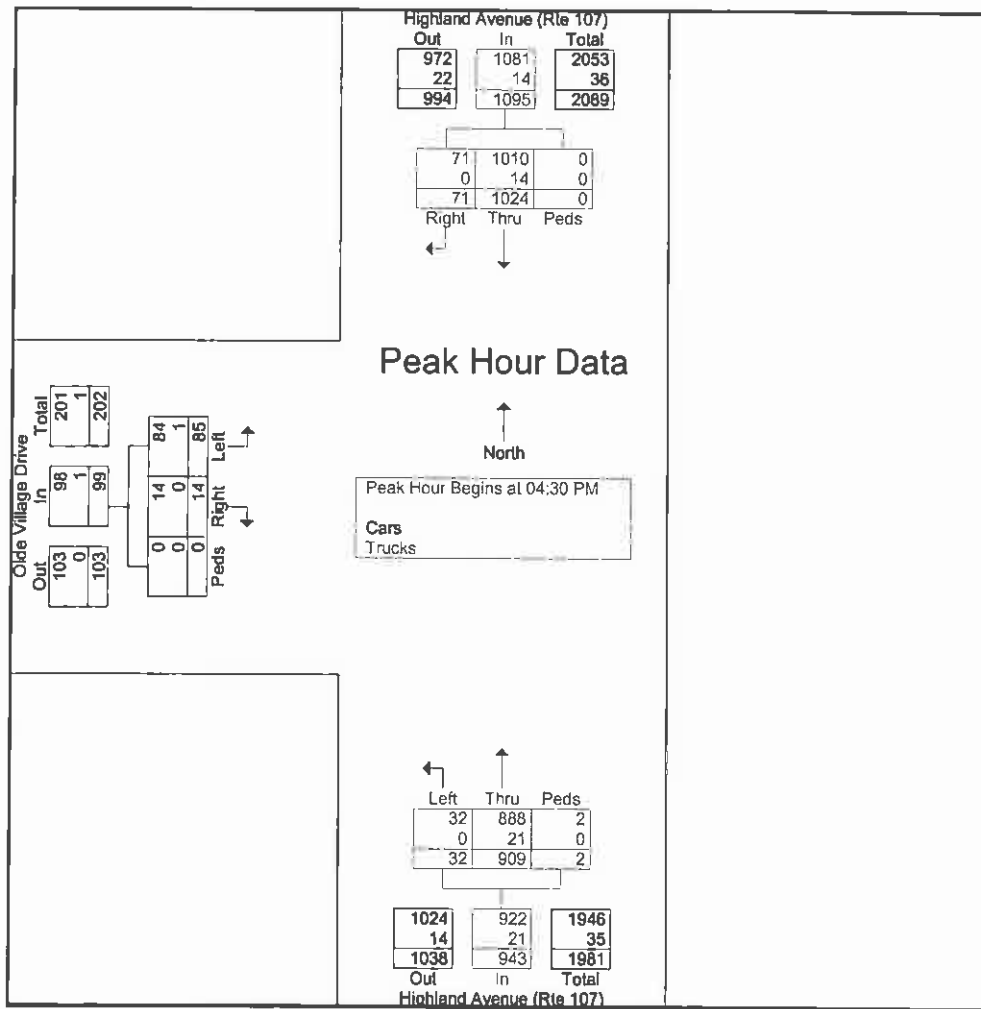


GPI

61 Spit Brook Road Suite 110
Nashua, NH. 03060

File Name : Highland Ave @ Olde Village Dr - PM
Site Code : 08571
Start Date : 5/21/2008
Page No : 2

Start Time	Highland Avenue (Rte 107) Southbound				Highland Avenue (Rte 107) Northbound				Olde Village Drive Eastbound				Int. Total
	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 04:30 PM													
04:30 PM	205	21	0	226	10	248	1	259	18	2	0	20	505
04:45 PM	287	20	0	307	6	223	0	229	19	5	0	24	560
05:00 PM	277	15	0	292	10	202	1	213	28	4	0	32	537
05:15 PM	255	15	0	270	6	236	0	242	20	3	0	23	535
Total Volume	1024	71	0	1095	32	909	2	943	85	14	0	99	2137
% App. Total	93.5	6.5	0		3.4	96.4	0.2		85.9	14.1	0		
PHF	.892	.845	.000	.892	.800	.916	.500	.910	.759	.700	.000	.773	.954
Cars	1010	71	0	1081	32	888	2	922	84	14	0	98	2101
% Cars	98.6	100	0	98.7	100	97.7	100	97.8	98.8	100	0	99.0	98.3
Trucks	14	0	0	14	0	21	0	21	1	0	0	1	36
% Trucks	1.4	0	0	1.3	0	2.3	0	2.2	1.2	0	0	1.0	1.7



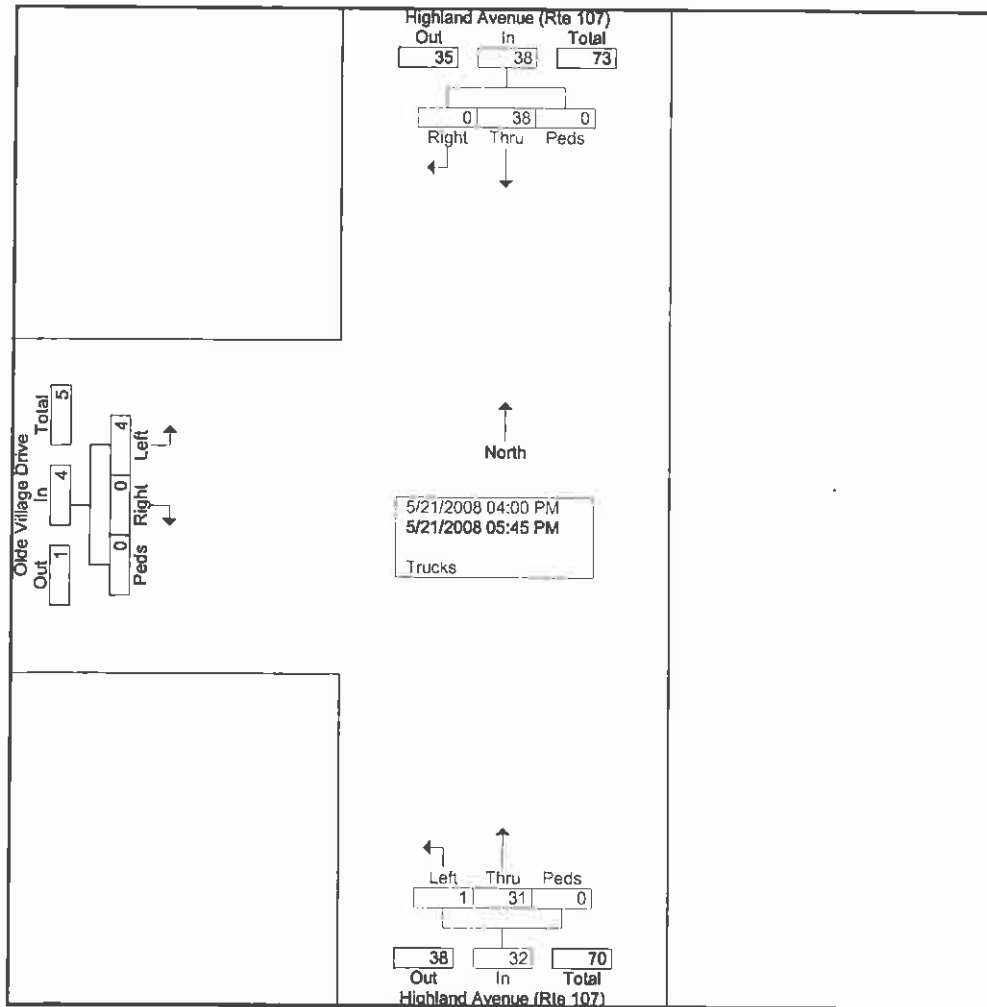
GPI

61 Spit Brook Road Suite 110
Nashua, NH. 03060

File Name : Highland Ave @ Olde Village Dr - PM
Site Code : 08571
Start Date : 5/21/2008
Page No : 1

Groups Printed- Trucks

Start Time	Highland Avenue (Rte 107) Southbound				Highland Avenue (Rte 107) Northbound				Olde Village Drive Eastbound				Int. Total
	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	
04:00 PM	7	0	0	7	0	4	0	4	1	0	0	1	12
04:15 PM	5	0	0	5	0	3	0	3	2	0	0	2	10
04:30 PM	6	0	0	6	0	5	0	5	1	0	0	1	12
04:45 PM	3	0	0	3	0	7	0	7	0	0	0	0	10
Total	21	0	0	21	0	19	0	19	4	0	0	4	44
05:00 PM	3	0	0	3	0	5	0	5	0	0	0	0	8
05:15 PM	2	0	0	2	0	4	0	4	0	0	0	0	6
05:30 PM	3	0	0	3	0	1	0	1	0	0	0	0	4
05:45 PM	9	0	0	9	1	2	0	3	0	0	0	0	12
Total	17	0	0	17	1	12	0	13	0	0	0	0	30
Grand Total	38	0	0	38	1	31	0	32	4	0	0	4	74
Apprch %	100	0	0		3.1	96.9	0		100	0	0		
Total %	51.4	0	0	51.4	1.4	41.9	0	43.2	5.4	0	0	5.4	

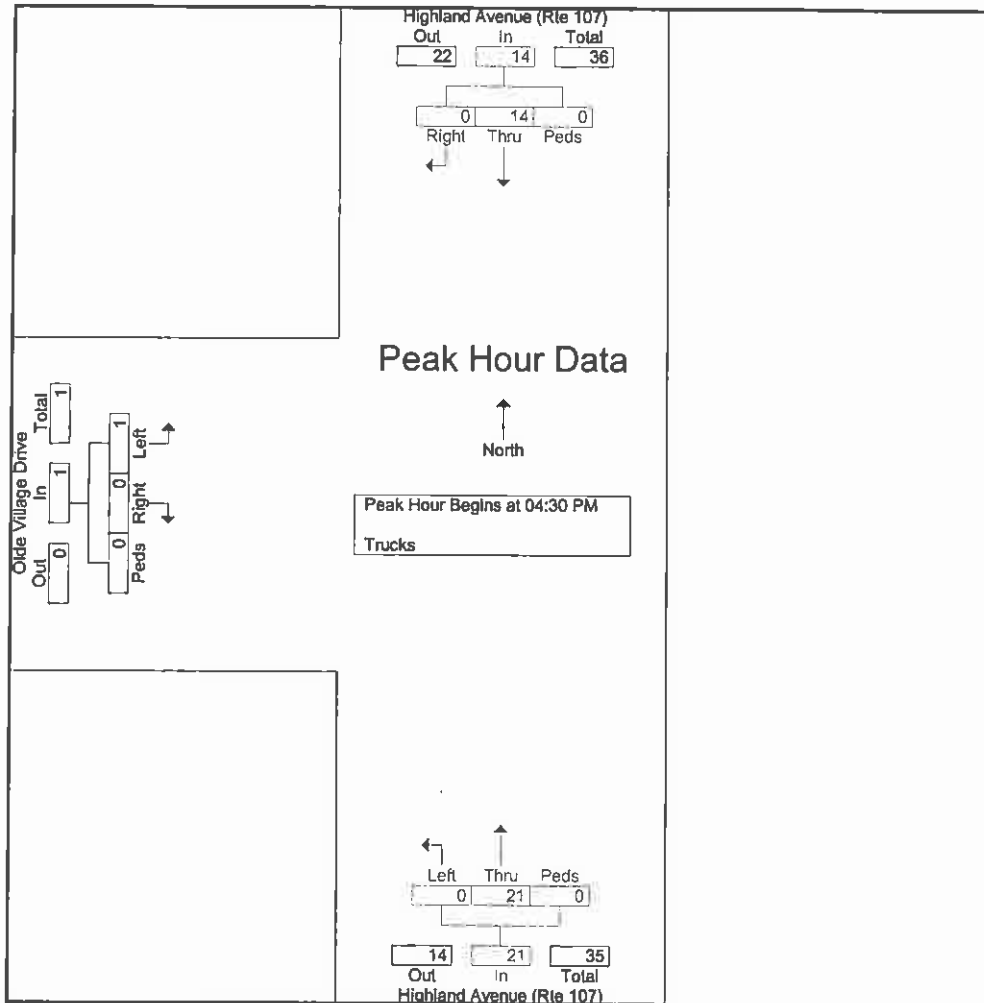


GPI

61 Spit Brook Road Suite 110
Nashua, NH. 03060

File Name : Highland Ave @ Olde Village Dr - PM
Site Code : 08571
Start Date : 5/21/2008
Page No : 2

Start Time	Highland Avenue (Rte 107) Southbound				Highland Avenue (Rte 107) Northbound				Olde Village Drive Eastbound				Int. Total
	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 04:30 PM													
04:30 PM	6	0	0	6	0	5	0	5	1	0	0	1	12
04:45 PM	3	0	0	3	0	7	0	7	0	0	0	0	10
05:00 PM	3	0	0	3	0	5	0	5	0	0	0	0	8
05:15 PM	2	0	0	2	0	4	0	4	0	0	0	0	6
Total Volume	14	0	0	14	0	21	0	21	1	0	0	1	36
% App. Total	100	0	0		0	100	0		100	0	0		
PHF	.583	.000	.000	.583	.000	.750	.000	.750	.250	.000	.000	.250	.750



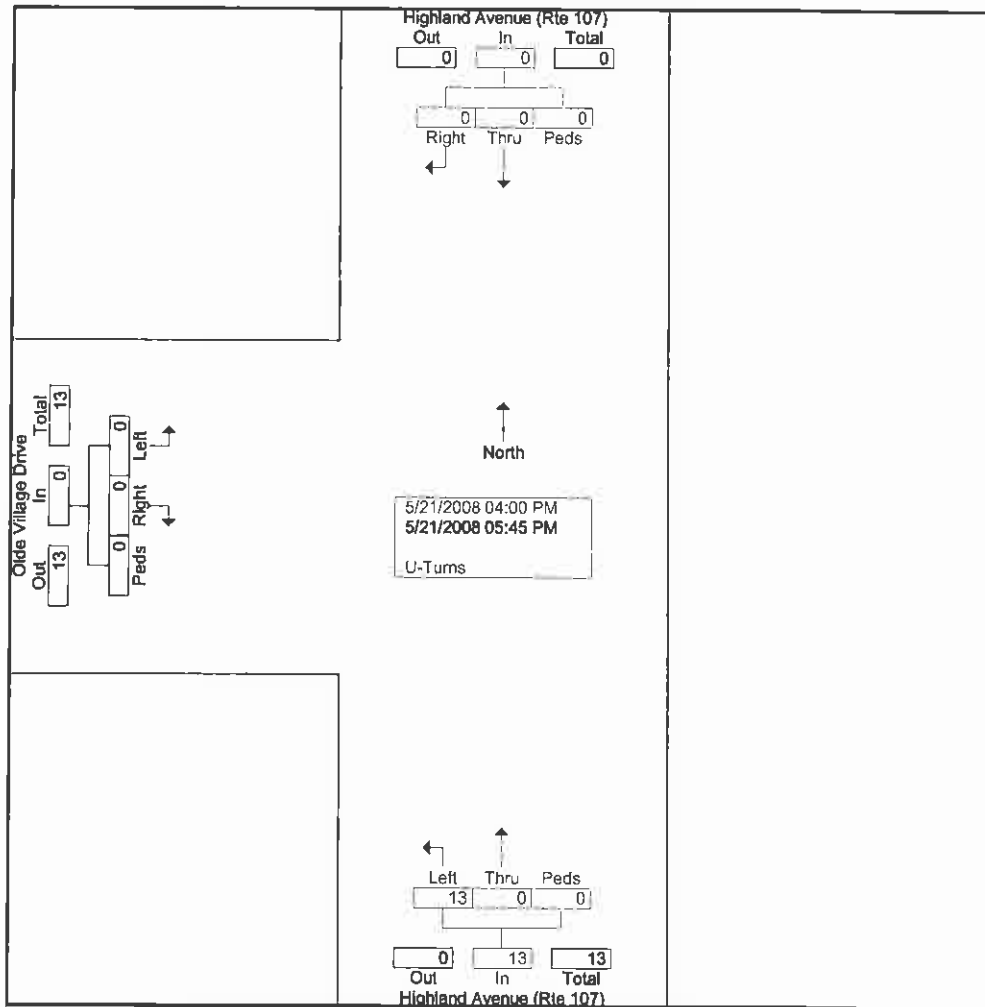
GPI

61 Spit Brook Road Suite 110
Nashua, NH. 03060

File Name : Highland Ave @ Olde Village Dr - PM
Site Code : 08571
Start Date : 5/21/2008
Page No : 1

Groups Printed- Turns

Start Time	Highland Avenue (Rte 107) Southbound				Highland Avenue (Rte 107) Northbound				Olde Village Drive Eastbound				Int. Total
	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	
04:00 PM	0	0	0	0	2	0	0	2	0	0	0	0	2
04:15 PM	0	0	0	0	2	0	0	2	0	0	0	0	2
04:30 PM	0	0	0	0	2	0	0	2	0	0	0	0	2
04:45 PM	0	0	0	0	3	0	0	3	0	0	0	0	3
Total	0	0	0	0	9	0	0	9	0	0	0	0	9
05:00 PM	0	0	0	0	1	0	0	1	0	0	0	0	1
05:15 PM	0	0	0	0	2	0	0	2	0	0	0	0	2
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	1	0	0	1	0	0	0	0	1
Total	0	0	0	0	4	0	0	4	0	0	0	0	4
Grand Total	0	0	0	0	13	0	0	13	0	0	0	0	13
Apprch %	0	0	0	0	100	0	0	100	0	0	0	0	100
Total %	0	0	0	0	100	0	0	100	0	0	0	0	100

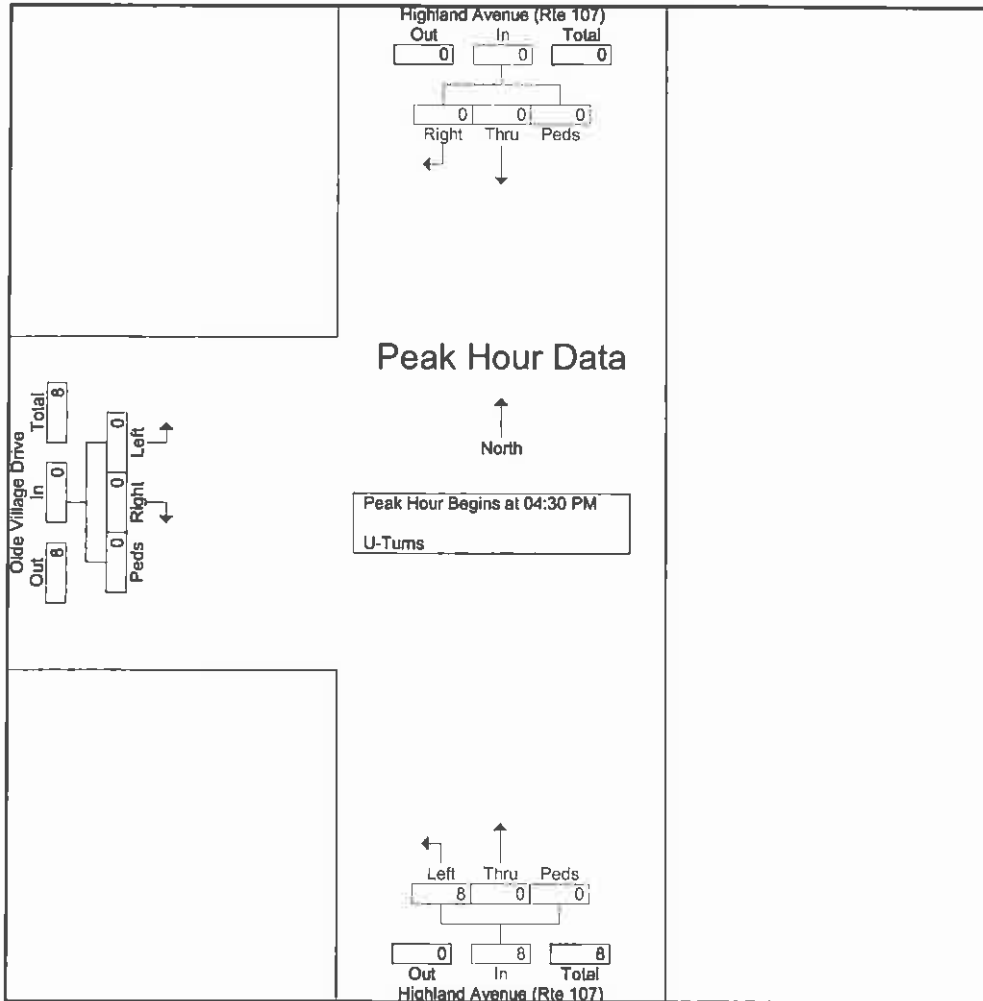


GPI

61 Spit Brook Road Suite 110
Nashua, NH. 03060

File Name : Highland Ave @ Olde Village Dr - PM
Site Code : 08571
Start Date : 5/21/2008
Page No : 2

Start Time	Highland Avenue (Rte 107) Southbound				Highland Avenue (Rte 107) Northbound				Olde Village Drive Eastbound				Int. Total
	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 04:30 PM													
04:30 PM	0	0	0	0	2	0	0	2	0	0	0	0	2
04:45 PM	0	0	0	0	3	0	0	3	0	0	0	0	3
05:00 PM	0	0	0	0	1	0	0	1	0	0	0	0	1
05:15 PM	0	0	0	0	2	0	0	2	0	0	0	0	2
Total Volume	0	0	0	0	8	0	0	8	0	0	0	0	8
% App. Total	0	0	0	0	100	0	0	100	0	0	0	0	100
PHF	.000	.000	.000	.000	.667	.000	.000	.667	.000	.000	.000	.000	.667



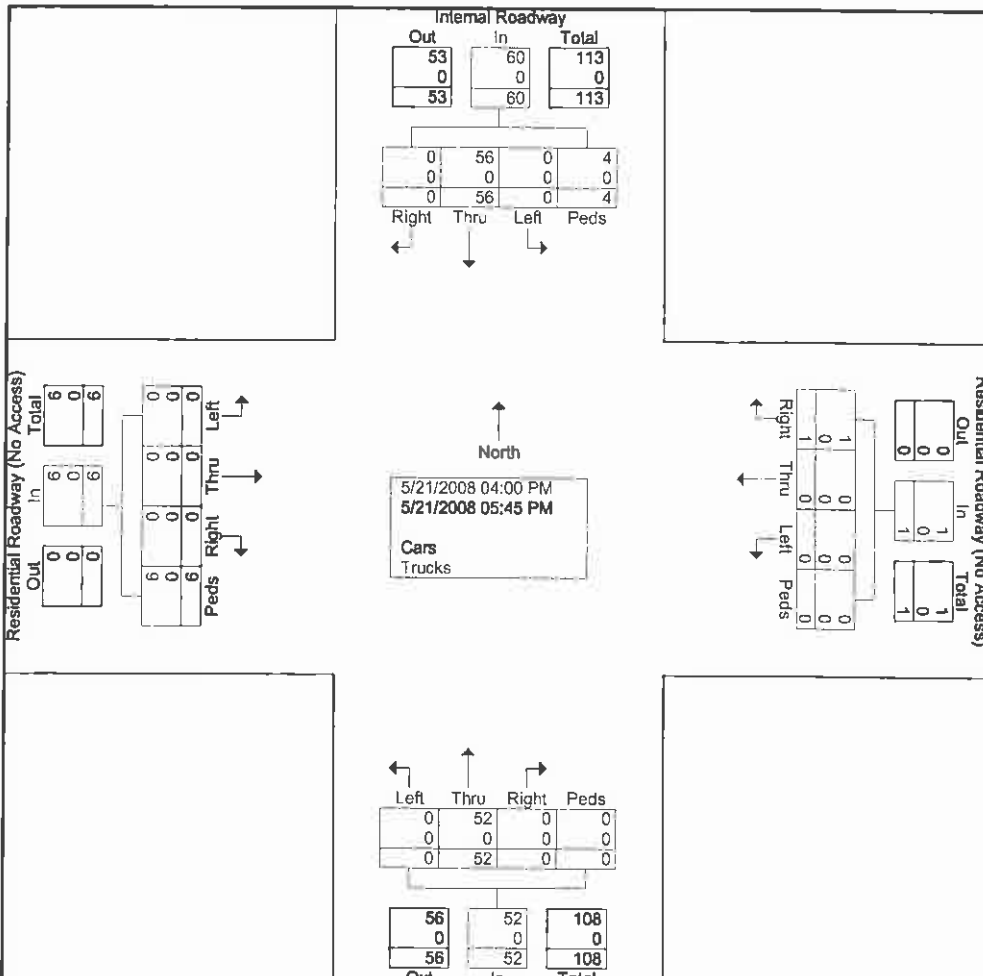


61 Spit Brook Road Suite 110
Nashua, NH. 03060

File Name : WalMart Internal Roadway - PM
Site Code : 08571
Start Date : 5/21/2008
Page No : 1

Groups Printed- Cars - Trucks

Start Time	Internal Roadway Southbound					Residential Roadway (No Access) Westbound					Internal Roadway Northbound					Residential Roadway (No Access) Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
04:00 PM	0	12	0	0	12	0	0	0	0	0	0	12	0	0	12	0	0	0	2	2	26
04:15 PM	0	3	0	1	4	0	0	0	0	0	0	5	0	0	5	0	0	0	1	1	10
04:30 PM	0	5	0	0	5	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	10
04:45 PM	0	9	0	0	9	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	10
Total	0	29	0	1	30	0	0	0	0	0	0	23	0	0	23	0	0	0	3	3	56
05:00 PM	0	11	0	2	13	0	0	0	0	0	0	6	0	0	6	0	0	0	1	1	20
05:15 PM	0	4	0	0	4	0	0	1	0	1	0	6	0	0	6	0	0	0	0	0	11
05:30 PM	0	7	0	0	7	0	0	0	0	0	0	9	0	0	9	0	0	0	2	2	18
05:45 PM	0	5	0	1	6	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	14
Total	0	27	0	3	30	0	0	1	0	1	0	29	0	0	29	0	0	0	3	3	63
Grand Total	0	56	0	4	60	0	0	1	0	1	0	52	0	0	52	0	0	0	6	6	119
Apprch %	0	93.3	0	6.7		0	0	100	0		0	100	0	0		0	0	0	100		
Total %	0	47.1	0	3.4	50.4	0	0	0.8	0	0.8	0	43.7	0	0	43.7	0	0	0	5	5	
Cars	0	56	0	4	60	0	0	1	0	1	0	52	0	0	52	0	0	0	6	6	119
% Cars	0	100	0	100	100	0	0	100	0	100	0	100	0	0	100	0	0	0	100	100	100
Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

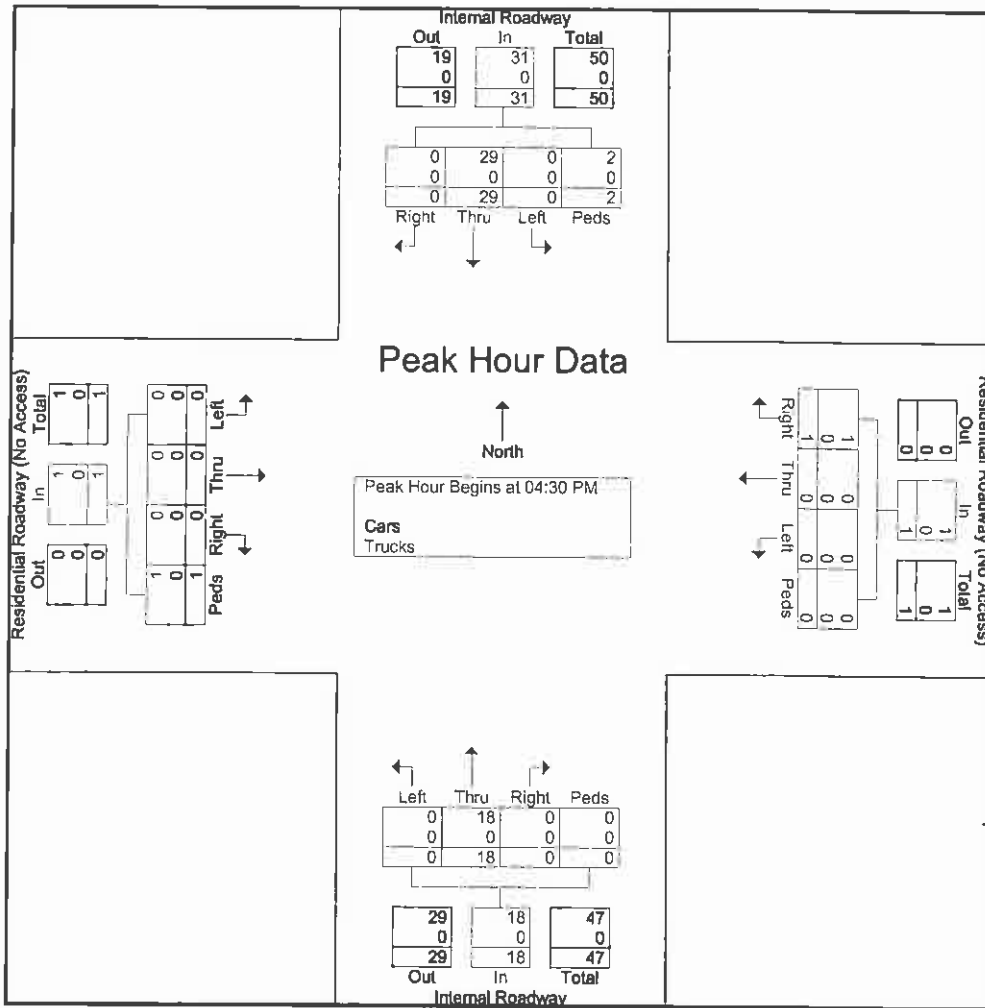




61 Spit Brook Road Suite 110
Nashua, NH. 03060

File Name : WalMart Internal Roadway - PM
Site Code : 08571
Start Date : 5/21/2008
Page No : 2

Start Time	Internal Roadway Southbound					Residential Roadway (No Access) Westbound					Internal Roadway Northbound					Residential Roadway (No Access) Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	0	5	0	0	5	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	10
04:45 PM	0	9	0	0	9	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	10
05:00 PM	0	11	0	2	13	0	0	0	0	0	0	6	0	0	6	0	0	0	1	1	20
05:15 PM	0	4	0	0	4	0	0	1	0	1	0	6	0	0	6	0	0	0	0	0	11
Total Volume	0	29	0	2	31	0	0	1	0	1	0	18	0	0	18	0	0	0	1	1	51
% App. Total	0	93.5	0	6.5		0	0	100	0		0	100	0	0		0	0	0	100		
PHF	.000	.659	.000	.250	.596	.000	.000	.250	.000	.250	.000	.750	.000	.000	.750	.000	.000	.000	.250	.250	.638
Cars	0	29	0	2	31	0	0	1	0	1	0	18	0	0	18	0	0	0	1	1	51
% Cars	0	100	0	100	100	0	0	100	0	100	0	100	0	0	100	0	0	0	100	100	100
Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



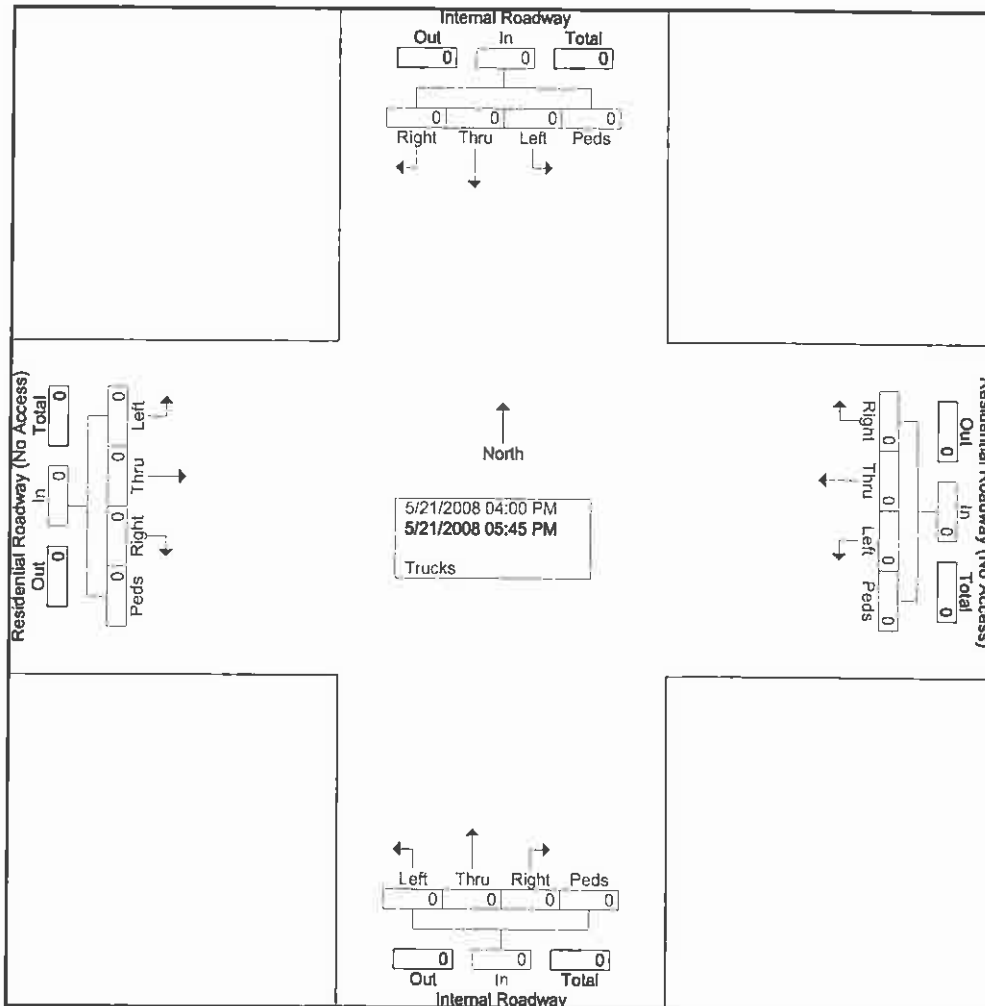
GPI

61 Spit Brook Road Suite 110
Nashua, NH. 03060

File Name : WalMart Internal Roadway - PM
Site Code : 08571
Start Date : 5/21/2008
Page No : 1

Groups Printed- Trucks

Start Time	Internal Roadway Southbound					Residential Roadway (No Access) Westbound					Internal Roadway Northbound					Residential Roadway (No Access) Eastbound					Int. Total					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total						
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		
Total %																										

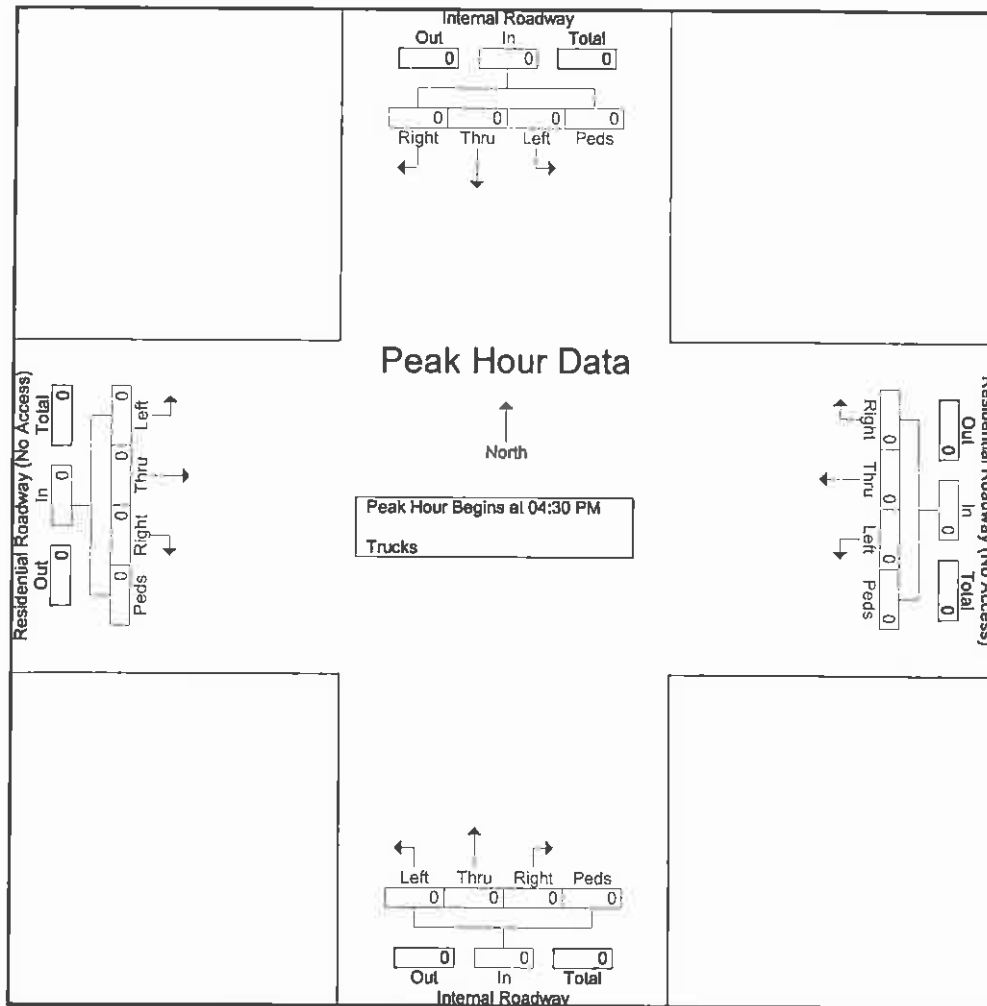


GPI

61 Spit Brook Road Suite 110
Nashua, NH. 03060

File Name : WalMart Internal Roadway - PM
Site Code : 08571
Start Date : 5/21/2008
Page No : 2

Start Time	Internal Roadway Southbound					Residential Roadway (No Access) Westbound					Internal Roadway Northbound					Residential Roadway (No Access) Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PIIF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000



GPI

61 Spit Brook Road Suite 110
Nashua, NH. 03060

File Name : Highland Ave @ North Wal-Mart Driveway_Clark St - PM

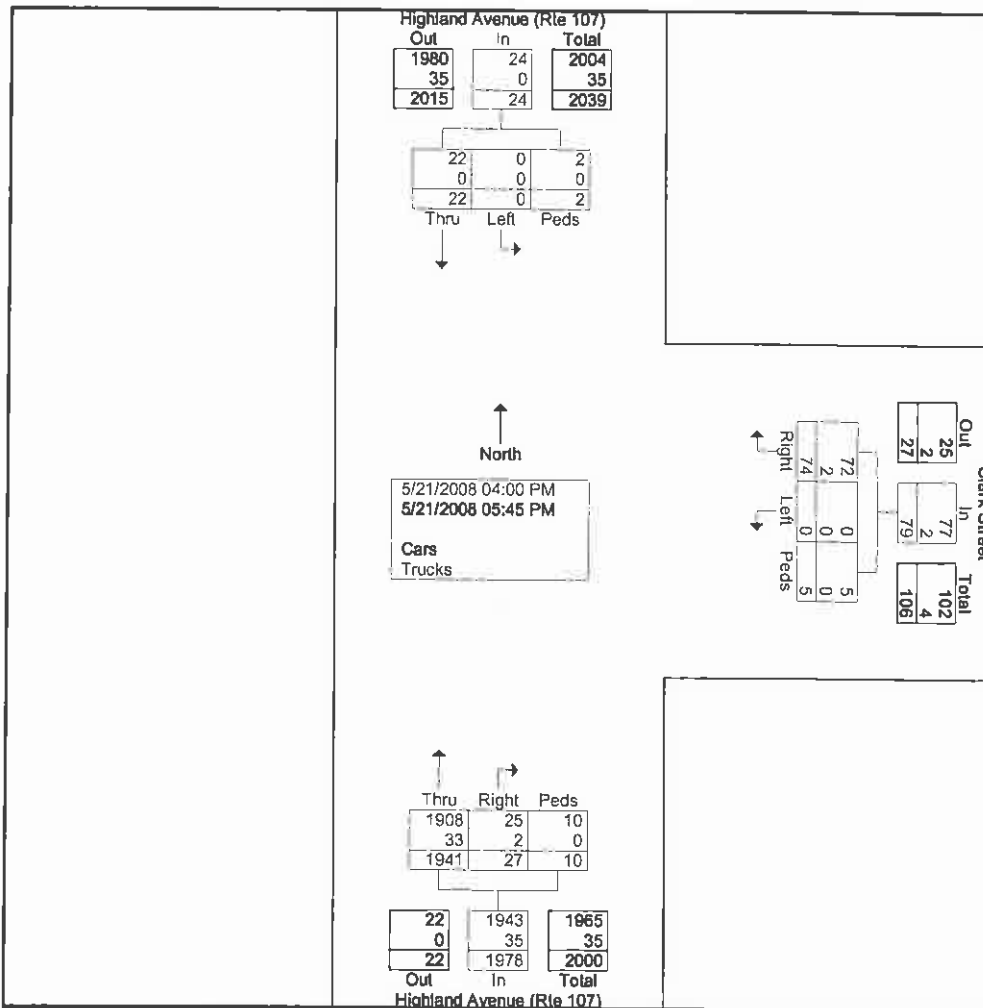
Site Code : 08571

Start Date : 5/21/2008

Page No : 1

Groups Printed- Cars - Trucks

Start Time	Highland Avenue (Rte 107) Southbound				Clark Street Westbound				Highland Avenue (Rte 107) Northbound				Int. Total
	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	
04:00 PM	0	22	0	22	0	10	0	10	234	2	0	236	268
04:15 PM	0	0	0	0	0	17	0	17	223	3	0	226	243
04:30 PM	0	0	0	0	0	7	0	7	260	1	2	263	270
04:45 PM	0	0	0	0	0	12	2	14	244	6	4	254	268
Total	0	22	0	22	0	46	2	48	961	12	6	979	1049
05:00 PM	0	0	2	2	0	2	1	3	241	5	1	247	252
05:15 PM	0	0	0	0	0	12	0	12	243	6	0	249	261
05:30 PM	0	0	0	0	0	5	1	6	247	1	2	250	256
05:45 PM	0	0	0	0	0	9	1	10	249	3	1	253	263
Total	0	0	2	2	0	28	3	31	980	15	4	999	1032
Grand Total	0	22	2	24	0	74	5	79	1941	27	10	1978	2081
Apprch %	0	91.7	8.3		0	93.7	6.3		98.1	1.4	0.5		
Total %	0	1.1	0.1	1.2	0	3.6	0.2	3.8	93.3	1.3	0.5	95.1	
Cars	0	22	2	24	0	72	5	77	1908	25	10	1943	2044
% Cars	0	100	100	100	0	97.3	100	97.5	98.3	92.6	100	98.2	98.2
Trucks	0	0	0	0	0	2	0	2	33	2	0	35	37
% Trucks	0	0	0	0	0	2.7	0	2.5	1.7	7.4	0	1.8	1.8



GPI

61 Spit Brook Road Suite 110

Nashua, NH. 03060

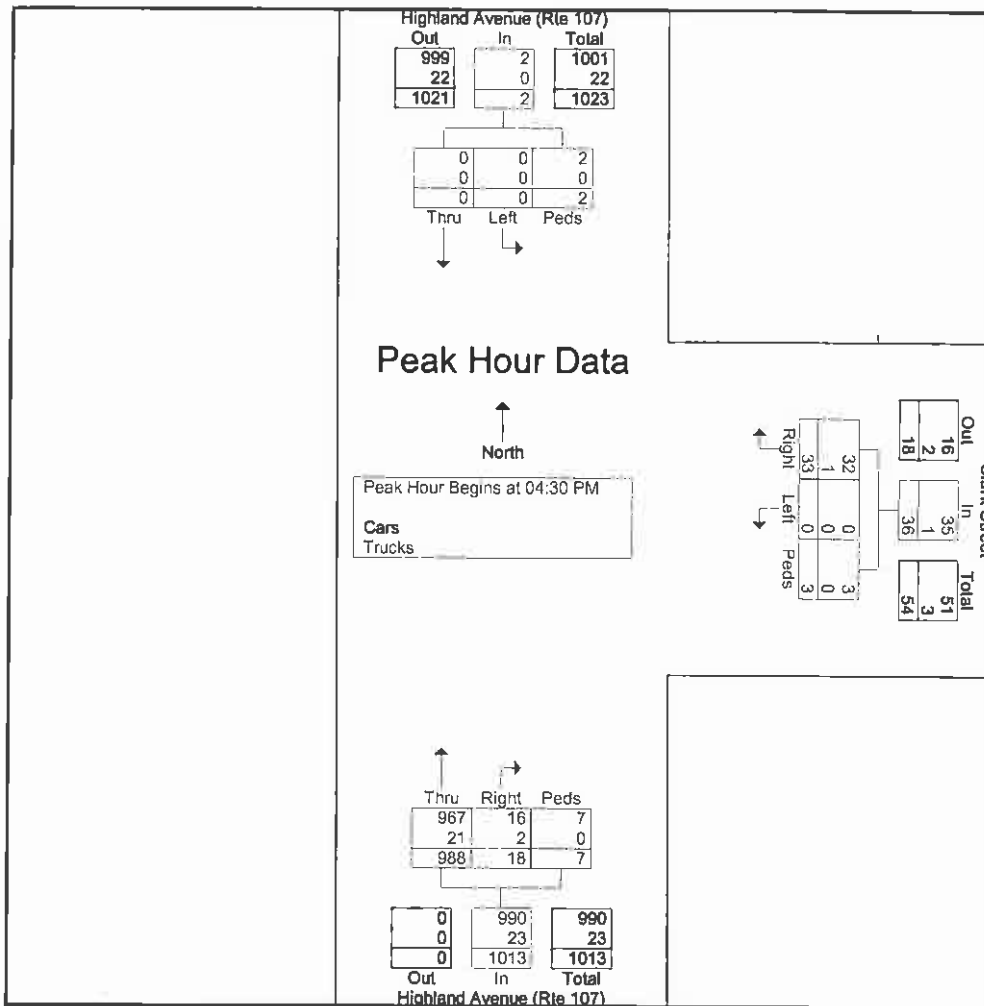
File Name : Highland Ave @ North Wal-Mart Driveway_Clark St - PM

Site Code : 08571

Start Date : 5/21/2008

Page No : 2

Start Time	Highland Avenue (Rte 107) Southbound				Clark Street Westbound				Highland Avenue (Rte 107) Northbound				Int. Total
	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 04:30 PM													
04:30 PM	0	0	0	0	0	7	0	7	260	1	2	263	270
04:45 PM	0	0	0	0	0	12	2	14	244	6	4	254	268
05:00 PM	0	0	2	2	0	2	1	3	241	5	1	247	252
05:15 PM	0	0	0	0	0	12	0	12	243	6	0	249	261
Total Volume	0	0	2	2	0	33	3	36	988	18	7	1013	1051
% App. Total	0	0	100	100	0	91.7	8.3	97.5	97.5	1.8	0.7	97.7	97.7
PHF	.000	.000	.250	.250	.000	.688	.375	.643	.950	.750	.438	.963	.973
Cars	0	0	2	2	0	32	3	35	967	16	7	990	1027
% Cars	0	0	100	100	0	97.0	100	97.2	97.9	88.9	100	97.7	97.7
Trucks	0	0	0	0	0	1	0	1	21	2	0	23	24
% Trucks	0	0	0	0	0	3.0	0	2.8	2.1	11.1	0	2.3	2.3



GPI

61 Spit Brook Road Suite 110
Nashua, NH. 03060

File Name : Highland Ave @ North Wal-Mart Driveway_Clark St - PM

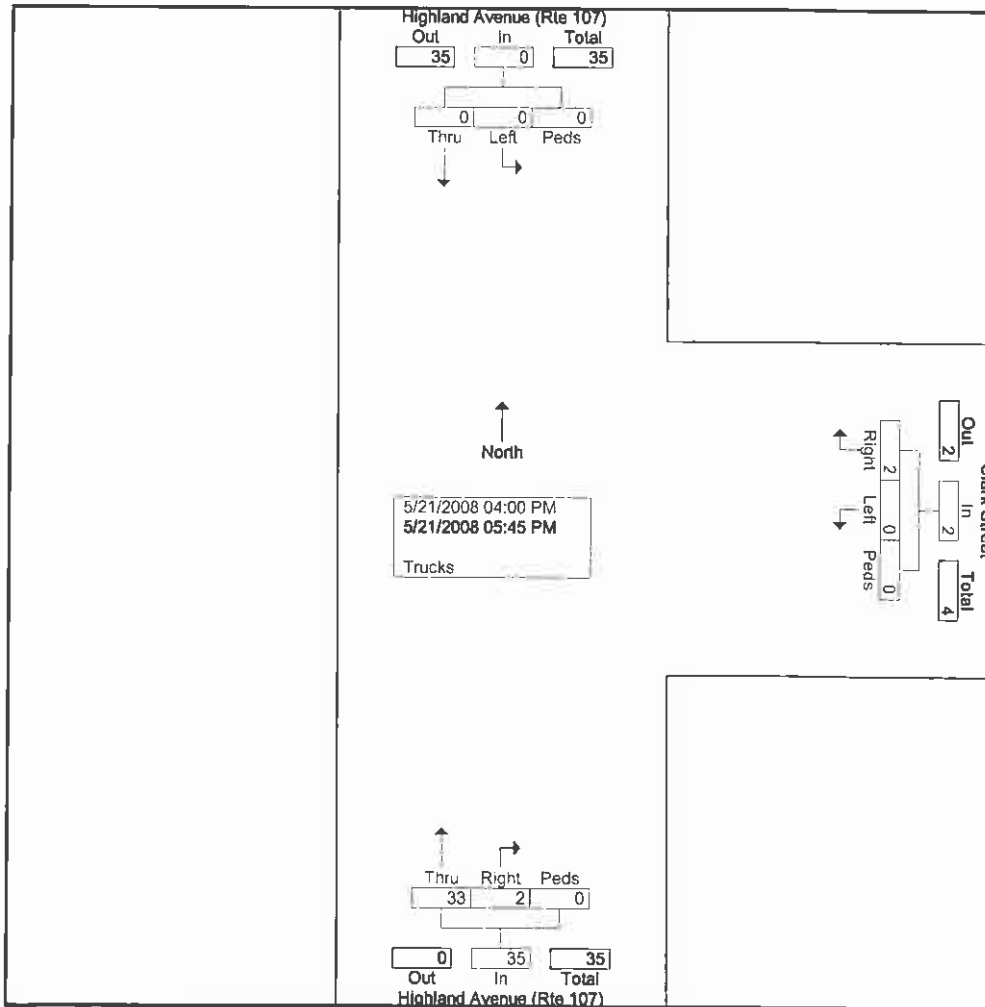
Site Code : 08571

Start Date : 5/21/2008

Page No : 1

Groups Printed- Trucks

Start Time	Highland Avenue (Rte 107) Southbound				Clark Street Westbound				Highland Avenue (Rte 107) Northbound				Int. Total
	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	6	0	0	6	6
04:15 PM	0	0	0	0	0	1	0	1	2	0	0	2	3
04:30 PM	0	0	0	0	0	0	0	0	6	1	0	7	7
04:45 PM	0	0	0	0	0	1	0	1	7	0	0	7	8
Total	0	0	0	0	0	2	0	2	21	1	0	22	24
05:00 PM	0	0	0	0	0	0	0	0	5	0	0	5	5
05:15 PM	0	0	0	0	0	0	0	0	3	1	0	4	4
05:30 PM	0	0	0	0	0	0	0	0	2	0	0	2	2
05:45 PM	0	0	0	0	0	0	0	0	2	0	0	2	2
Total	0	0	0	0	0	0	0	0	12	1	0	13	13
Grand Total	0	0	0	0	0	2	0	2	33	2	0	35	37
Apprch %	0	0	0	0	0	100	0	0	94.3	5.7	0		
Total %	0	0	0	0	0	5.4	0	5.4	89.2	5.4	0	94.6	



GPI

61 Spit Brook Road Suite 110
Nashua, NH. 03060

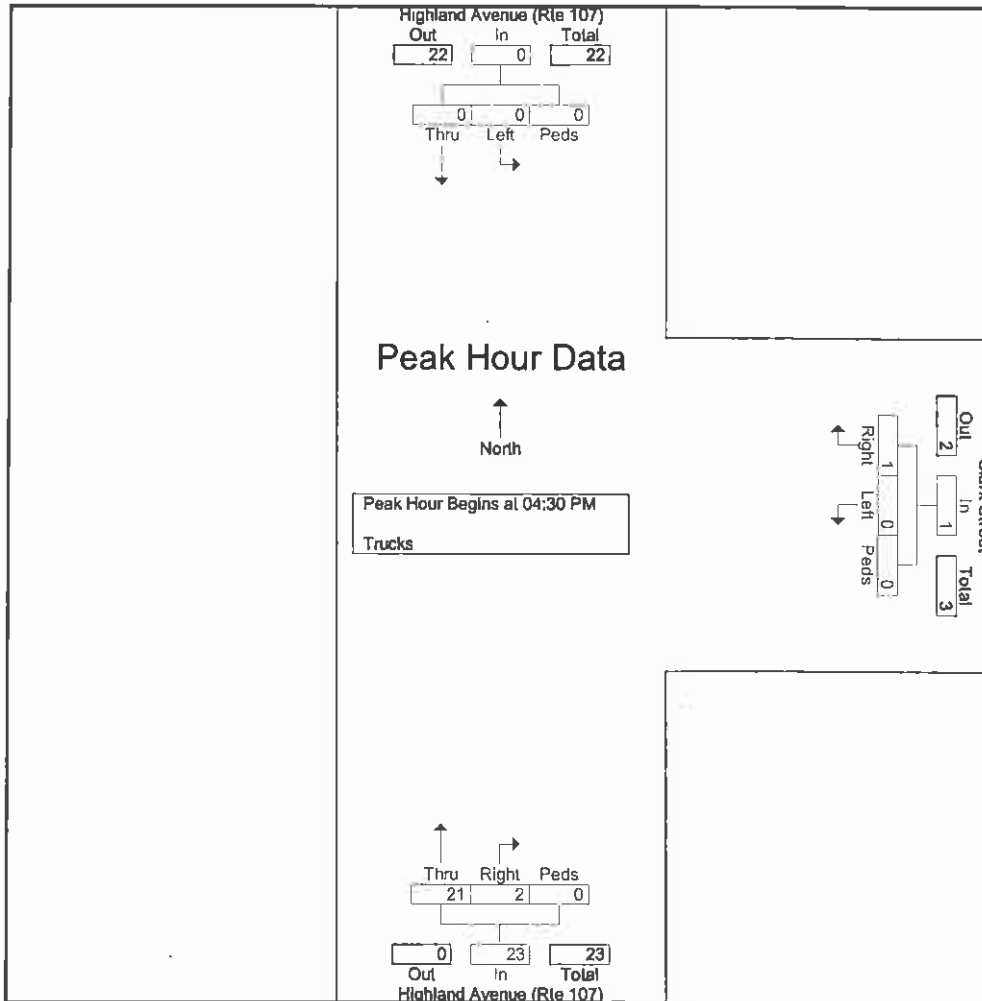
File Name : Highland Ave @ North Wal-Mart Driveway_Clark St - PM

Site Code : 08571

Start Date : 5/21/2008

Page No : 2

Start Time	Highland Avenue (Rte 107) Southbound				Clark Street Westbound				Highland Avenue (Rte 107) Northbound				Int. Total
	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 04:30 PM													
04:30 PM	0	0	0	0	0	0	0	0	6	1	0	7	7
04:45 PM	0	0	0	0	0	1	0	1	7	0	0	7	8
05:00 PM	0	0	0	0	0	0	0	0	5	0	0	5	5
05:15 PM	0	0	0	0	0	0	0	0	3	1	0	4	4
Total Volume	0	0	0	0	0	1	0	1	21	2	0	23	24
% App. Total	0	0	0	0	0	100	0	0	91.3	8.7	0	0	0
PHF	.000	.000	.000	.000	.000	.250	.000	.250	.750	.500	.000	.821	.750



GPI

61 Spit Brook Road Suite 110
Nashua, NH. 03060

File Name : Highland Ave @ Main Wal-Mart Driveway - PM

Site Code : 08571

Start Date : 5/21/2008

Page No : 1

Groups Printed- Cars - Trucks - Turns

Start Time	Highland Avenue (Rte 107) Southbound					Self-Storage Driveway Westbound					Highland Avenue (Rte 107) Northbound					Main Wal-Mart Driveway Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
04:00 PM	0	232	20	0	252	0	0	0	0	0	21	217	0	0	238	21	0	14	0	35	525
04:15 PM	0	232	30	0	262	0	0	0	0	0	27	220	0	0	247	22	0	7	0	29	538
04:30 PM	0	212	21	0	233	0	0	0	0	0	28	240	0	0	268	24	0	10	0	34	535
04:45 PM	1	238	19	0	258	0	0	0	0	0	25	219	0	1	245	20	0	14	0	34	537
Total	1	914	90	0	1005	0	0	0	0	0	101	896	0	1	998	87	0	45	0	132	2135
05:00 PM	0	277	20	0	297	0	0	0	1	1	21	225	0	0	246	20	0	10	0	30	574
05:15 PM	0	268	26	0	294	0	0	0	0	0	25	233	0	0	258	18	0	4	0	22	574
05:30 PM	0	230	29	0	259	0	0	0	0	0	21	238	0	0	259	23	0	7	0	30	548
05:45 PM	0	258	34	0	292	0	0	0	0	0	25	233	0	1	259	21	0	6	0	27	578
Total	0	1033	109	0	1142	0	0	0	1	1	92	929	0	1	1022	82	0	27	0	109	2274
Grand Total	1	1947	199	0	2147	0	0	0	1	1	193	1825	0	2	2020	169	0	72	0	241	4409
Apprch %	0	90.7	9.3	0		0	0	0	100		9.6	90.3	0	0.1		70.1	0	29.9	0		
Total %	0	44.2	4.5	0	48.7	0	0	0	0	0	4.4	41.4	0	0	45.8	3.8	0	1.6	0	5.5	
Cars	0	1903	196	0	2099	0	0	0	1	1	173	1791	0	2	1966	169	0	71	0	240	4306
% Cars	0	97.7	98.5	0	97.8	0	0	0	100	100	89.6	98.1	0	100	97.3	100	0	98.6	0	99.6	97.7
Trucks	0	44	3	0	47	0	0	0	0	0	3	34	0	0	37	0	0	1	0	1	85
% Trucks	0	2.3	1.5	0	2.2	0	0	0	0	0	1.6	1.9	0	0	1.8	0	0	1.4	0	0.4	1.9
U-Turns	1	0	0	0	1	0	0	0	0	0	17	0	0	0	17	0	0	0	0	0	18
% U-Turns	100	0	0	0	0	0	0	0	0	0	8.8	0	0	0	0.8	0	0	0	0	0	0.4

GPI

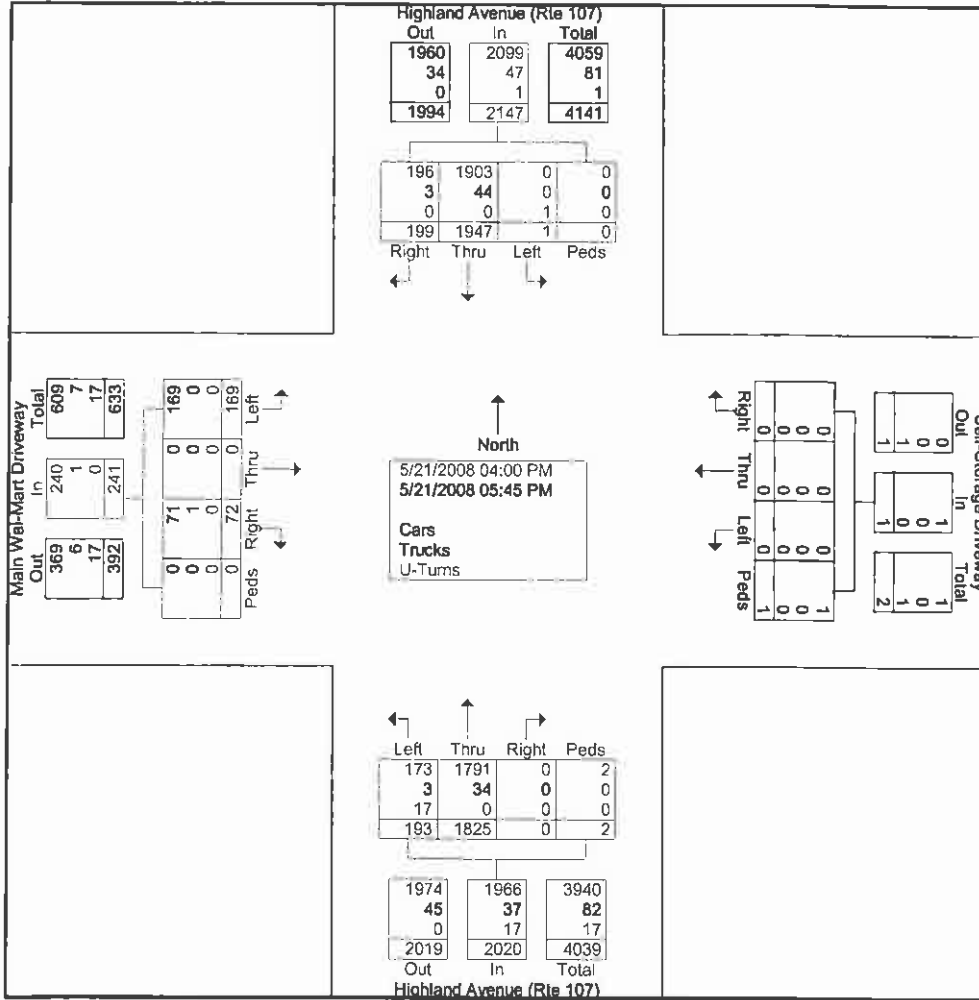
61 Spit Brook Road Suite 110
Nashua, NH. 03060

File Name : Highland Ave @ Main Wal-Mart Driveway - PM

Site Code : 08571

Start Date : 5/21/2008

Page No : 2



GPI

61 Spit Brook Road Suite 110
Nashua, NH. 03060

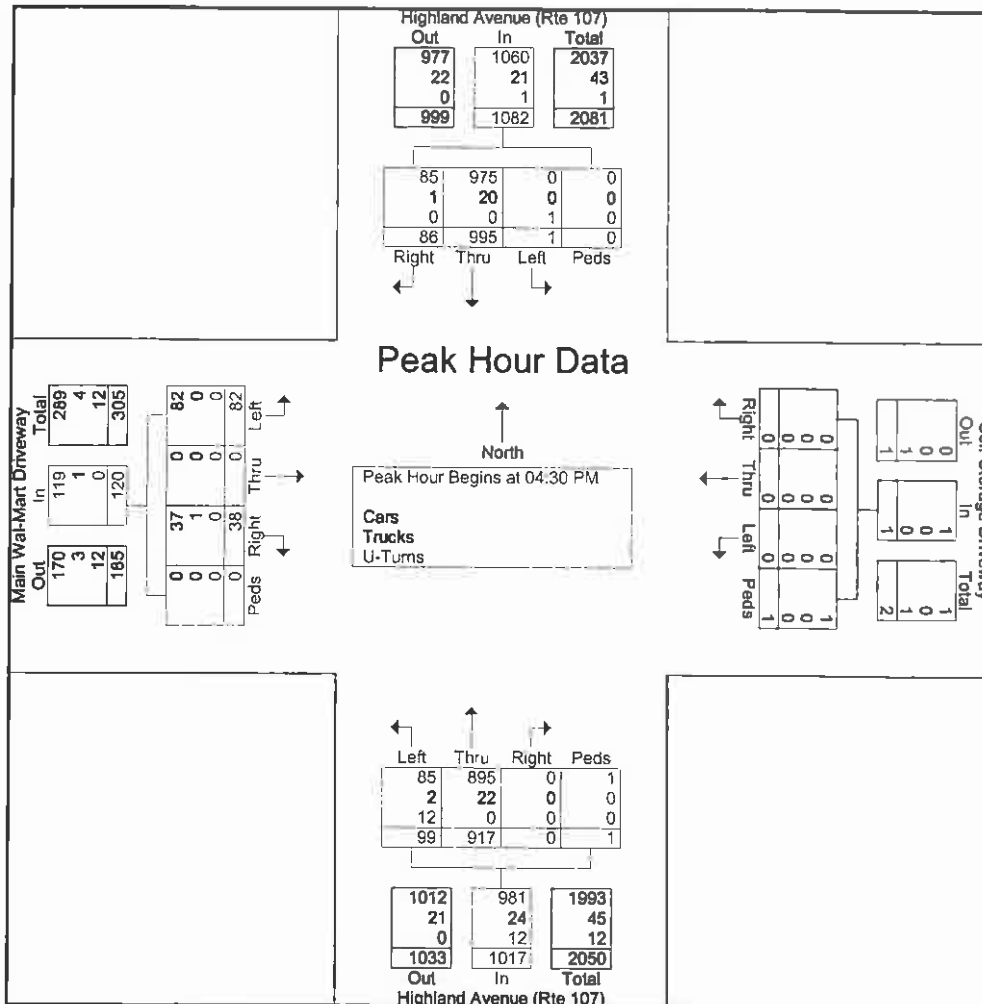
File Name : Highland Ave @ Main Wal-Mart Driveway - PM

Site Code : 08571

Start Date : 5/21/2008

Page No : 3

Start Time	Highland Avenue (Rte 107) Southbound					Self-Storage Driveway Westbound					Highland Avenue (Rte 107) Northbound					Main Wal-Mart Driveway Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	0	212	21	0	233	0	0	0	0	0	28	240	0	0	268	24	0	10	0	34	535
04:45 PM	1	238	19	0	258	0	0	0	0	0	25	219	0	1	245	20	0	14	0	34	537
05:00 PM	0	277	20	0	297	0	0	0	1	1	21	225	0	0	246	20	0	10	0	30	574
05:15 PM	0	268	26	0	294	0	0	0	0	0	25	233	0	0	258	18	0	4	0	22	574
Total Volume	1	995	86	0	1082	0	0	0	1	1	99	917	0	1	1017	82	0	38	0	120	2220
% App. Total	0.1	92	7.9	0		0	0	0	100		9.7	90.2	0	0.1		68.3	0	31.7	0		
PHF	.250	.898	.827	.000	.911	.000	.000	.000	.250	.250	.884	.955	.000	.250	.949	.854	.000	.679	.000	.882	.967
Cars	0	975	85	0	1060	0	0	0	1	1	85	895	0	1	981	82	0	37	0	119	2161
% Cars	0	98.0	98.8	0	98.0	0	0	0	100	100	85.9	97.6	0	100	96.5	100	0	97.4	0	99.2	97.3
Trucks	0	20	1	0	21	0	0	0	0	0	2	22	0	0	24	0	0	1	0	1	46
% Trucks	0	2.0	1.2	0	1.9	0	0	0	0	0	2.0	2.4	0	0	2.4	0	0	2.6	0	0.8	2.1
U-Turns	1	0	0	0	1	0	0	0	0	0	12	0	0	0	12	0	0	0	0	0	13
% U-Turns	100	0	0	0	0.1	0	0	0	0	0	12.1	0	0	0	1.2	0	0	0	0	0	0.6



GPI

61 Spit Brook Road Suite 110
Nashua, NH. 03060

File Name : Highland Ave @ Main Wal-Mart Driveway - PM

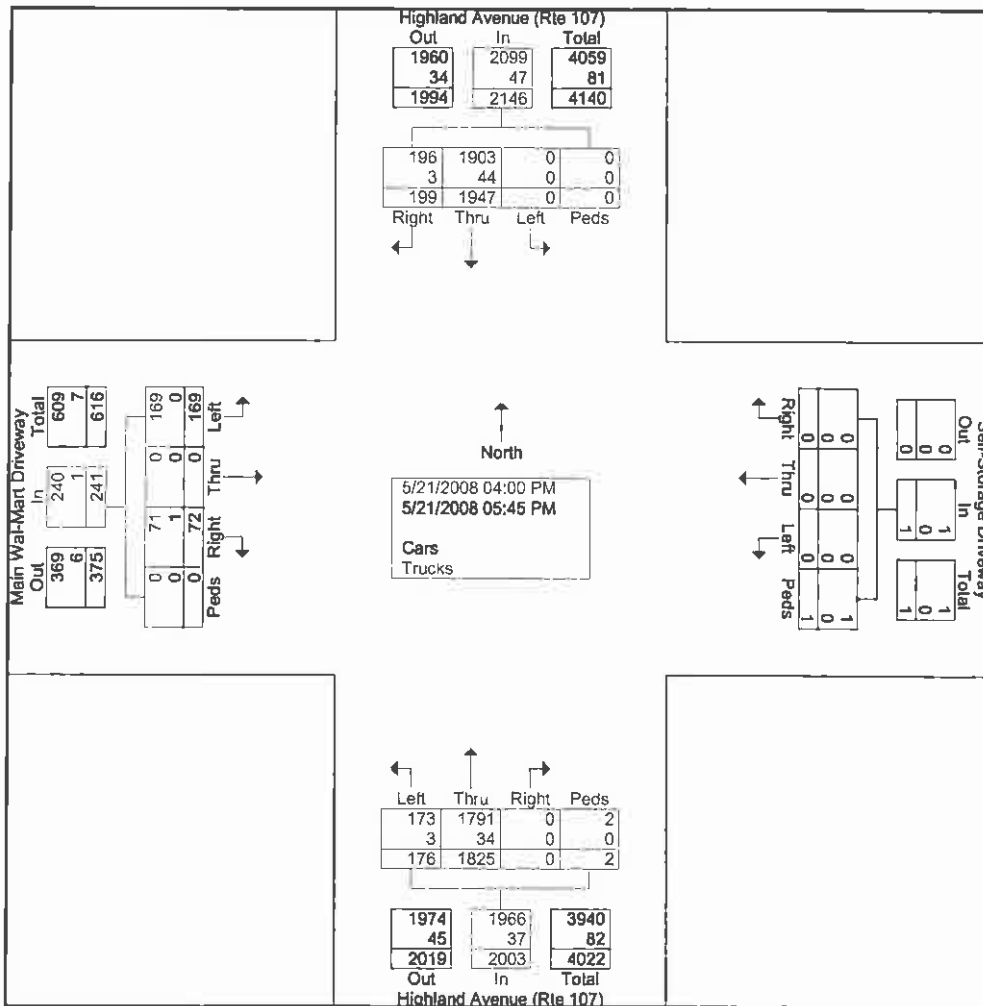
Site Code : 08571

Start Date : 5/21/2008

Page No : 1

Groups Printed- Cars - Trucks

Start Time	Highland Avenue (Rte 107) Southbound					Self-Storage Driveway Westbound					Highland Avenue (Rte 107) Northbound					Main Wal-Mart Driveway Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
04:00 PM	0	232	20	0	252	0	0	0	0	0	20	217	0	0	237	21	0	14	0	35	524
04:15 PM	0	232	30	0	262	0	0	0	0	0	25	220	0	0	245	22	0	7	0	29	536
04:30 PM	0	212	21	0	233	0	0	0	0	0	27	240	0	0	267	24	0	10	0	34	534
04:45 PM	0	238	19	0	257	0	0	0	0	0	21	219	0	1	241	20	0	14	0	34	532
Total	0	914	90	0	1004	0	0	0	0	0	93	896	0	1	990	87	0	45	0	132	2126
05:00 PM	0	277	20	0	297	0	0	0	1	1	16	225	0	0	241	20	0	10	0	30	569
05:15 PM	0	268	26	0	294	0	0	0	0	0	23	233	0	0	256	18	0	4	0	22	572
05:30 PM	0	230	29	0	259	0	0	0	0	0	20	238	0	0	258	23	0	7	0	30	547
05:45 PM	0	258	34	0	292	0	0	0	0	0	24	233	0	1	258	21	0	6	0	27	577
Total	0	1033	109	0	1142	0	0	0	1	1	83	929	0	1	1013	82	0	27	0	109	2265
Grand Total	0	1947	199	0	2146	0	0	0	1	1	176	1825	0	2	2003	169	0	72	0	241	4391
Apprch %	0	90.7	9.3	0		0	0	0	100		8.8	91.1	0	0.1		70.1	0	29.9	0		
Total %	0	44.3	4.5	0	48.9	0	0	0	0	0	4	41.6	0	0	45.6	3.8	0	1.6	0	5.5	
Cars	0	1903	196	0	2099	0	0	0	1	1	173	1791	0	2	1966	169	0	71	0	240	4306
% Cars	0	97.7	98.5	0	97.8	0	0	0	100	100	98.3	98.1	0	100	98.2	100	0	98.6	0	99.6	98.1
Trucks	0	44	3	0	47	0	0	0	0	0	3	34	0	0	37	0	0	1	0	1	85
% Trucks	0	2.3	1.5	0	2.2	0	0	0	0	0	1.7	1.9	0	0	1.8	0	0	1.4	0	0.4	1.9



GPI

61 Spit Brook Road Suite 110
Nashua, NH. 03060

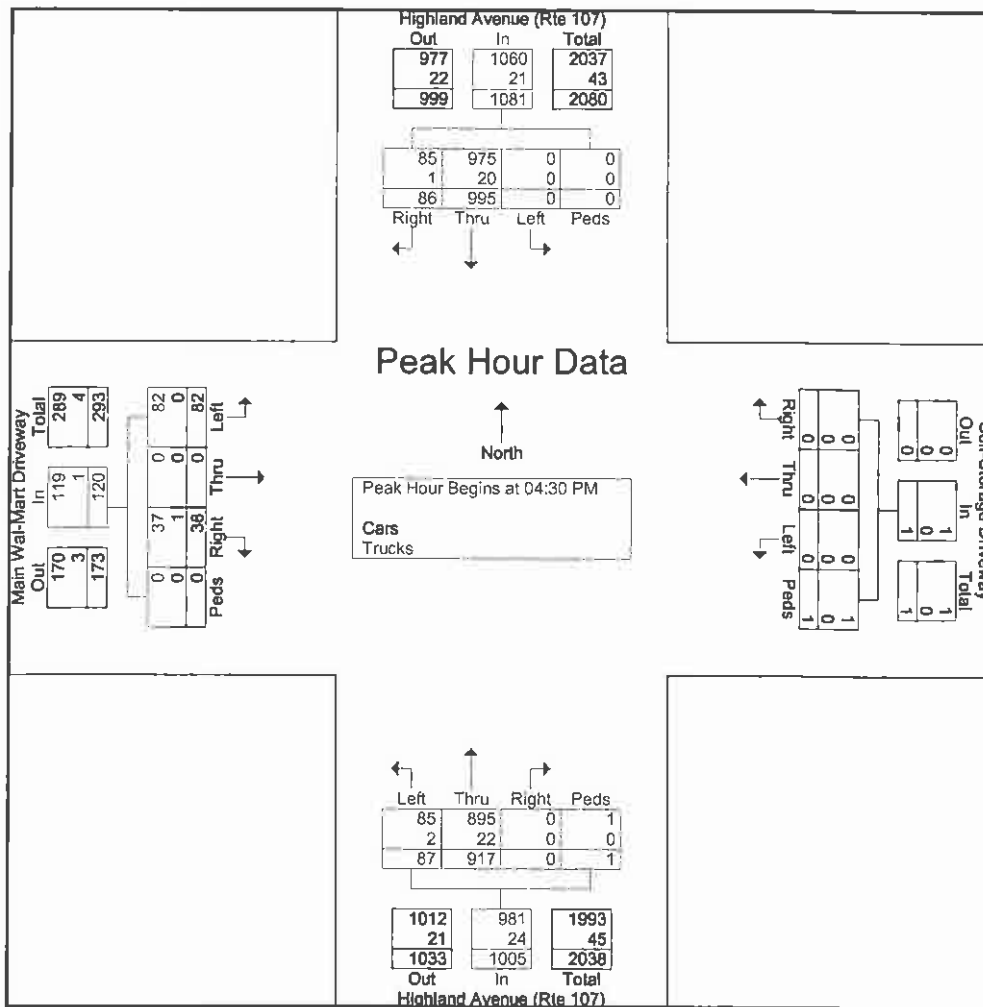
File Name : Highland Ave @ Main Wal-Mart Driveway - PM

Site Code : 08571

Start Date : 5/21/2008

Page No : 2

Start Time	Highland Avenue (Rte 107) Southbound					Self-Storage Driveway Westbound					Highland Avenue (Rte 107) Northbound					Main Wal-Mart Driveway Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	0	212	21	0	233	0	0	0	0	0	27	240	0	0	267	24	0	10	0	34	534
04:45 PM	0	238	19	0	257	0	0	0	0	0	21	219	0	1	241	20	0	14	0	34	532
05:00 PM	0	277	20	0	297	0	0	0	1	1	16	225	0	0	241	20	0	10	0	30	569
05:15 PM	0	268	26	0	294	0	0	0	0	0	23	233	0	0	256	18	0	4	0	22	572
Total Volume	0	995	86	0	1081	0	0	0	1	1	87	917	0	1	1005	82	0	38	0	120	2207
% App. Total	0	92	8	0		0	0	0	100		8.7	91.2	0	0.1		68.3	0	31.7	0		
PHF	.000	.898	.827	.000	.910	.000	.000	.000	.250	.250	.806	.955	.000	.250	.941	.854	.000	.679	.000	.882	.965
Cars	0	975	85	0	1060	0	0	0	1	1	85	895	0	1	981	82	0	37	0	119	2161
% Cars	0	98.0	98.8	0	98.1	0	0	0	100	100	97.7	97.6	0	100	97.6	100	0	97.4	0	99.2	97.9
Trucks	0	20	1	0	21	0	0	0	0	0	2	22	0	0	24	0	0	1	0	1	46
% Trucks	0	2.0	1.2	0	1.9	0	0	0	0	0	2.3	2.4	0	0	2.4	0	0	2.6	0	0.8	2.1



GPI

61 Spit Brook Road Suite 110
Nashua, NH. 03060

File Name : Highland Ave @ Main Wal-Mart Driveway - PM

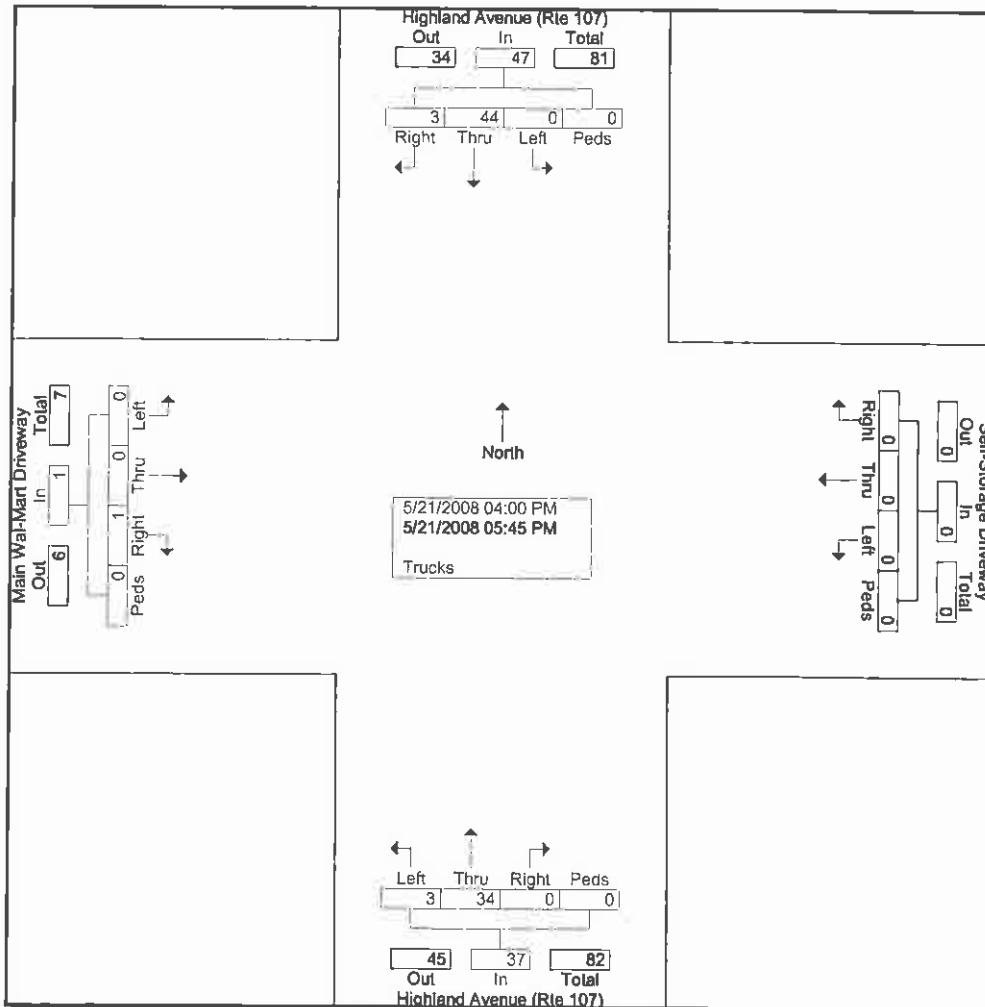
Site Code : 08571

Start Date : 5/21/2008

Page No : 1

Groups Printed- Trucks

Start Time	Highland Avenue (Rte 107) Southbound					Self-Storage Driveway Westbound					Highland Avenue (Rte 107) Northbound					Main Wal-Mart Driveway Eastbound					Int. Total	
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total		
04:00 PM	0	7	0	0	7	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	12
04:15 PM	0	5	1	0	6	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	8
04:30 PM	0	8	1	0	9	0	0	0	0	0	1	6	0	0	7	0	0	0	0	0	0	16
04:45 PM	0	5	0	0	5	0	0	0	0	0	1	7	0	0	8	0	0	1	0	1	1	14
Total	0	25	2	0	27	0	0	0	0	0	2	20	0	0	22	0	0	1	0	1	1	50
05:00 PM	0	4	0	0	4	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	0	10
05:15 PM	0	3	0	0	3	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	6
05:30 PM	0	3	0	0	3	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	5
05:45 PM	0	9	1	0	10	0	0	0	0	0	1	3	0	0	4	0	0	0	0	0	0	14
Total	0	19	1	0	20	0	0	0	0	0	1	14	0	0	15	0	0	0	0	0	0	35
Grand Total	0	44	3	0	47	0	0	0	0	0	3	34	0	0	37	0	0	1	0	1	1	85
Apprch %	0	93.6	6.4	0		0	0	0	0	0	8.1	91.9	0	0		0	0	100	0	0	0	
Total %	0	51.8	3.5	0	55.3	0	0	0	0	0	3.5	40	0	0	43.5	0	0	1.2	0	1.2	1.2	



GPI

61 Spit Brook Road Suite 110
Nashua, NH. 03060

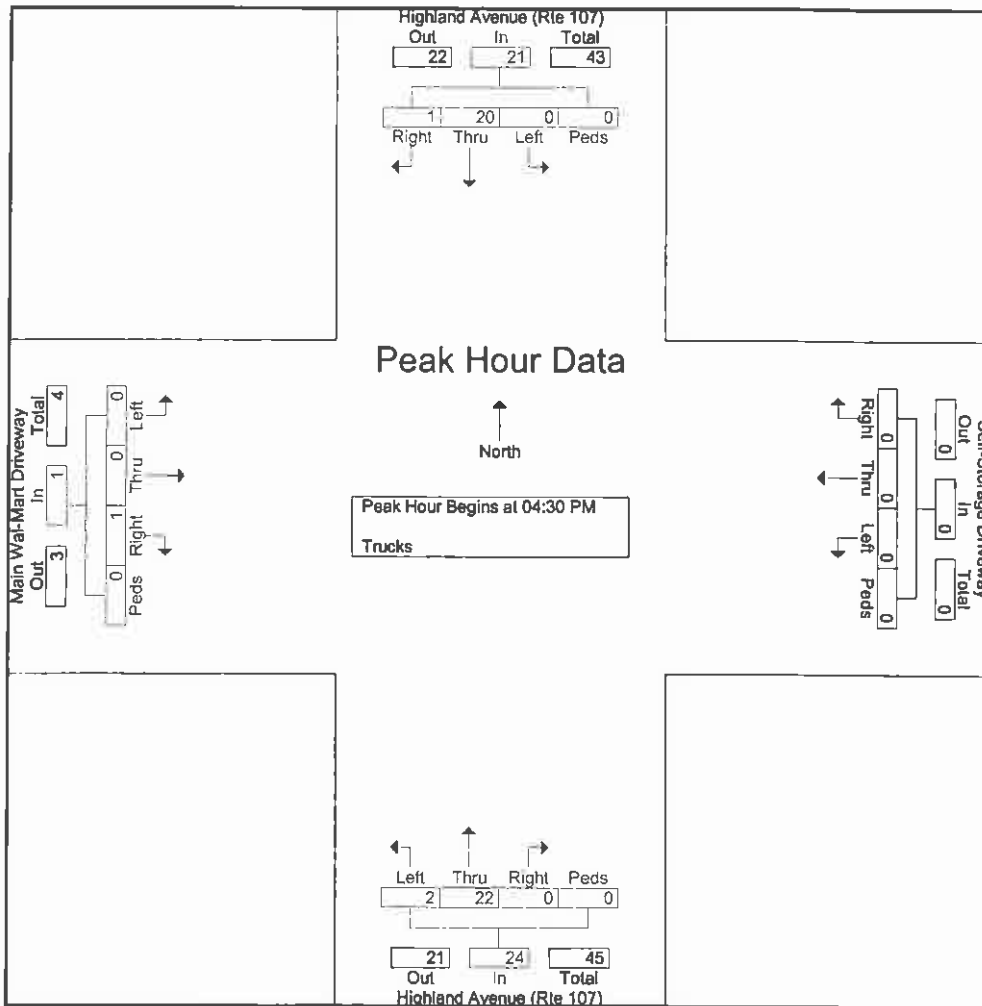
File Name : Highland Ave @ Main Wal-Mart Driveway - PM

Site Code : 08571

Start Date : 5/21/2008

Page No : 2

Start Time	Highland Avenue (Rte 107) Southbound					Self-Storage Driveway Westbound					Highland Avenue (Rte 107) Northbound					Main Wal-Mart Driveway Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	0	8	1	0	9	0	0	0	0	0	1	6	0	0	7	0	0	0	0	0	16
04:45 PM	0	5	0	0	5	0	0	0	0	0	1	7	0	0	8	0	0	1	0	1	14
05:00 PM	0	4	0	0	4	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	10
05:15 PM	0	3	0	0	3	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	6
Total Volume	0	20	1	0	21	0	0	0	0	0	2	22	0	0	24	0	0	1	0	1	46
% App. Total	0	95.2	4.8	0		0	0	0	0		8.3	91.7	0	0		0	0	100	0		
PHF	.000	.625	.250	.000	.583	.000	.000	.000	.000	.000	.500	.786	.000	.000	.750	.000	.000	.250	.000	.250	.719



GPI

61 Spit Brook Road Suite 110
Nashua, NH. 03060

File Name : Highland Ave @ Main Wal-Mart Driveway - PM

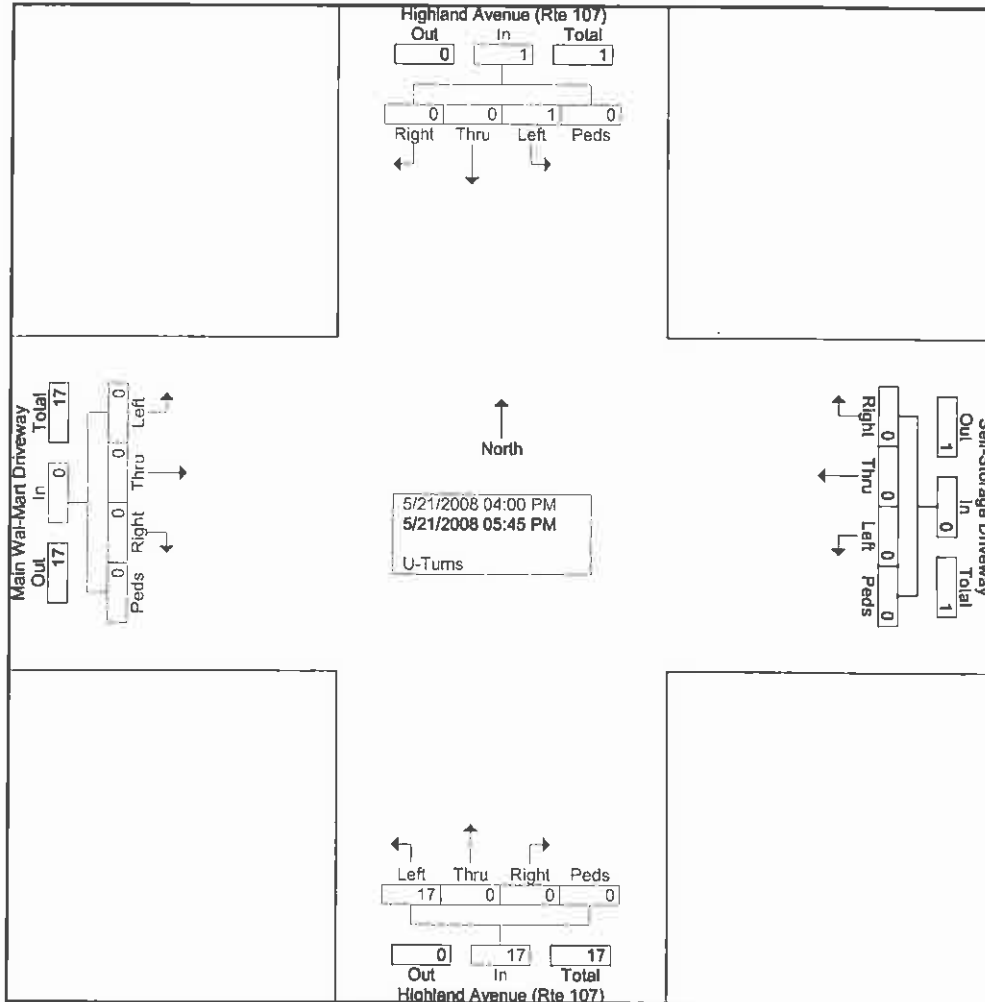
Site Code : 08571

Start Date : 5/21/2008

Page No : 1

Groups Printed- Turns

Start Time	Highland Avenue (Rte 107) Southbound					Self-Storage Driveway Westbound					Highland Avenue (Rte 107) Northbound					Main Wal-Mart Driveway Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1
04:15 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	2
04:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1
04:45 PM	1	0	0	0	1	0	0	0	0	0	4	0	0	0	4	0	0	0	0	0	5
Total	1	0	0	0	1	0	0	0	0	0	8	0	0	0	8	0	0	0	0	0	9
05:00 PM	0	0	0	0	0	0	0	0	0	0	5	0	0	0	5	0	0	0	0	0	5
05:15 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	2
05:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1
05:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1
Total	0	0	0	0	0	0	0	0	0	0	9	0	0	0	9	0	0	0	0	0	9
Grand Total	1	0	0	0	1	0	0	0	0	0	17	0	0	0	17	0	0	0	0	0	18
Apprch %	100	0	0	0		0	0	0	0		100	0	0	0		0	0	0	0		
Total %	5.6	0	0	0	5.6	0	0	0	0	0	94.4	0	0	0	94.4	0	0	0	0	0	



GPI

61 Spit Brook Road Suite 110
Nashua, NH. 03060

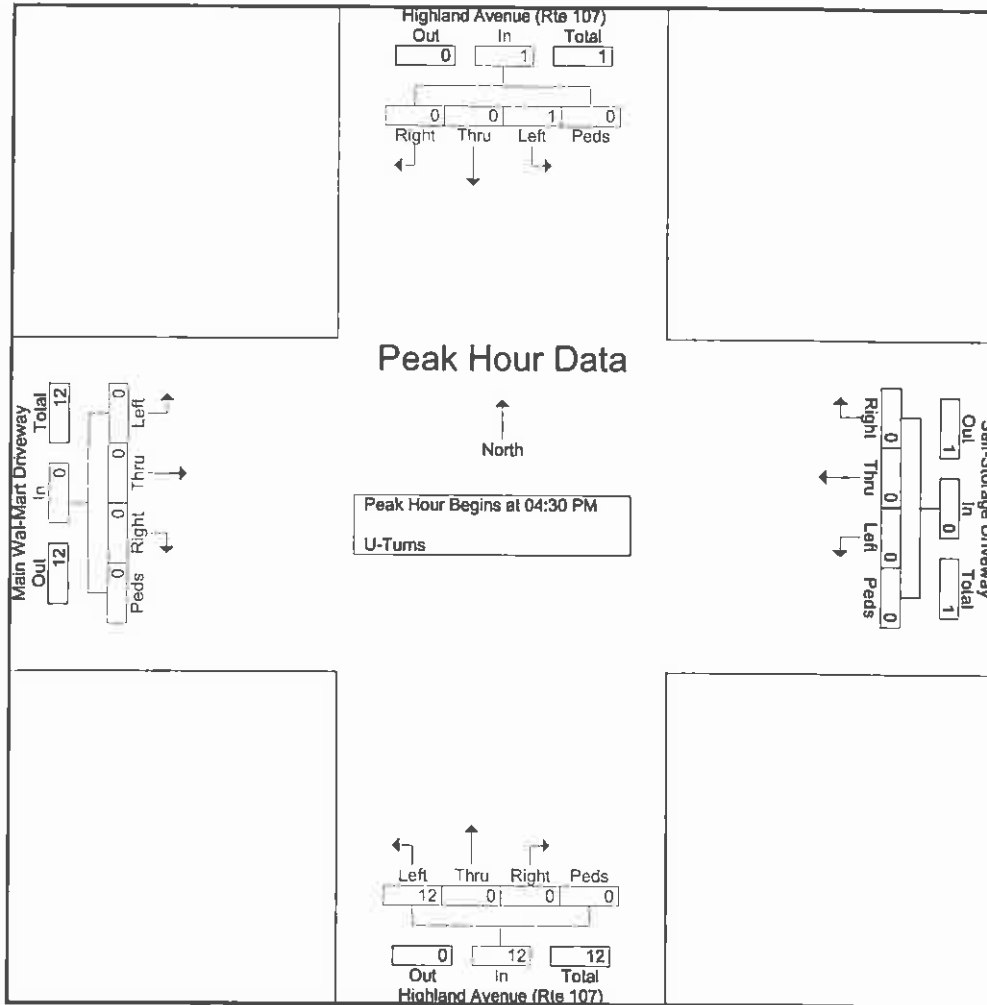
File Name : Highland Ave @ Main Wal-Mart Driveway - PM

Site Code : 08571

Start Date : 5/21/2008

Page No : 2

Start Time	Highland Avenue (Rte 107) Southbound					Self-Storage Driveway Westbound					Highland Avenue (Rte 107) Northbound					Main Wal-Mart Driveway Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0
04:45 PM	1	0	0	0	1	0	0	0	0	0	4	0	0	0	4	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	5	0	0	0	5	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0
Total Volume	1	0	0	0	1	0	0	0	0	0	12	0	0	0	12	0	0	0	0	0	0
% App. Total	100	0	0	0		0	0	0	0		100	0	0	0		0	0	0	0		
PHF	.250	.000	.000	.000	.250	.000	.000	.000	.000	.000	.600	.000	.000	.000	.600	.000	.000	.000	.000	.000	.650



GPI

61 Spit Brook Road Suite 110
Nashua, NH, 03060

File Name : Highland Ave @ S Wal-Mart Driveway - PM

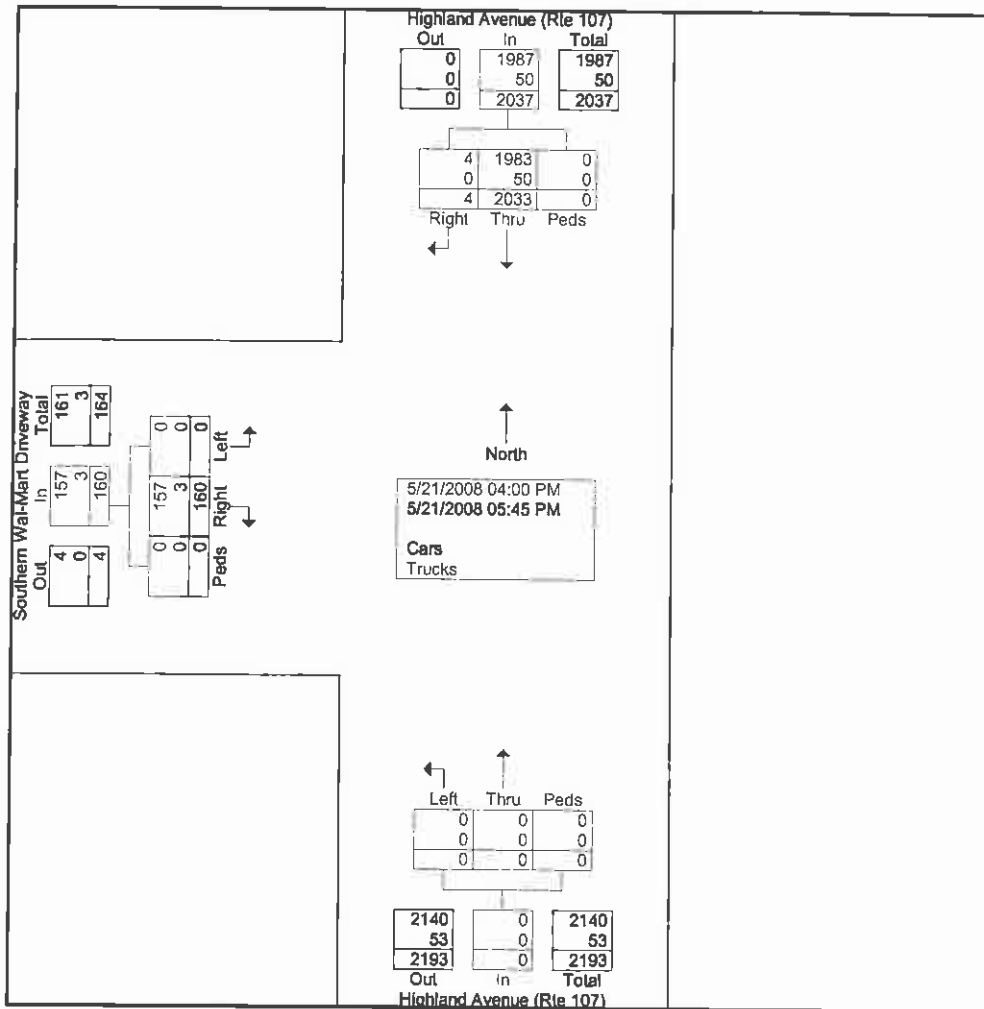
Site Code : 08571

Start Date : 5/21/2008

Page No : 1

Groups Printed- Cars - Trucks

Start Time	Highland Avenue (Rte 107) Southbound				Highland Avenue (Rte 107) Northbound				Southern Wal-Mart Driveway Eastbound				Int. Total
	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	
04:00 PM	241	0	0	241	0	0	0	0	0	20	0	20	261
04:15 PM	236	0	0	236	0	0	0	0	0	15	0	15	251
04:30 PM	232	0	0	232	0	0	0	0	0	19	0	19	251
04:45 PM	267	0	0	267	0	0	0	0	0	16	0	16	283
Total	976	0	0	976	0	0	0	0	0	70	0	70	1046
05:00 PM	276	1	0	277	0	0	0	0	0	21	0	21	298
05:15 PM	281	1	0	282	0	0	0	0	0	23	0	23	305
05:30 PM	243	2	0	245	0	0	0	0	0	23	0	23	268
05:45 PM	257	0	0	257	0	0	0	0	0	23	0	23	280
Total	1057	4	0	1061	0	0	0	0	0	90	0	90	1151
Grand Total	2033	4	0	2037	0	0	0	0	0	160	0	160	2197
Apprch %	99.8	0.2	0		0	0	0		0	100	0		
Total %	92.5	0.2	0	92.7	0	0	0	0	0	7.3	0	7.3	
Cars	1983	4	0	1987	0	0	0	0	0	157	0	157	2144
% Cars	97.5	100	0	97.5	0	0	0	0	0	98.1	0	98.1	97.6
Trucks	50	0	0	50	0	0	0	0	0	3	0	3	53
% Trucks	2.5	0	0	2.5	0	0	0	0	0	1.9	0	1.9	2.4



GPI

61 Spit Brook Road Suite 110
Nashua, NH. 03060

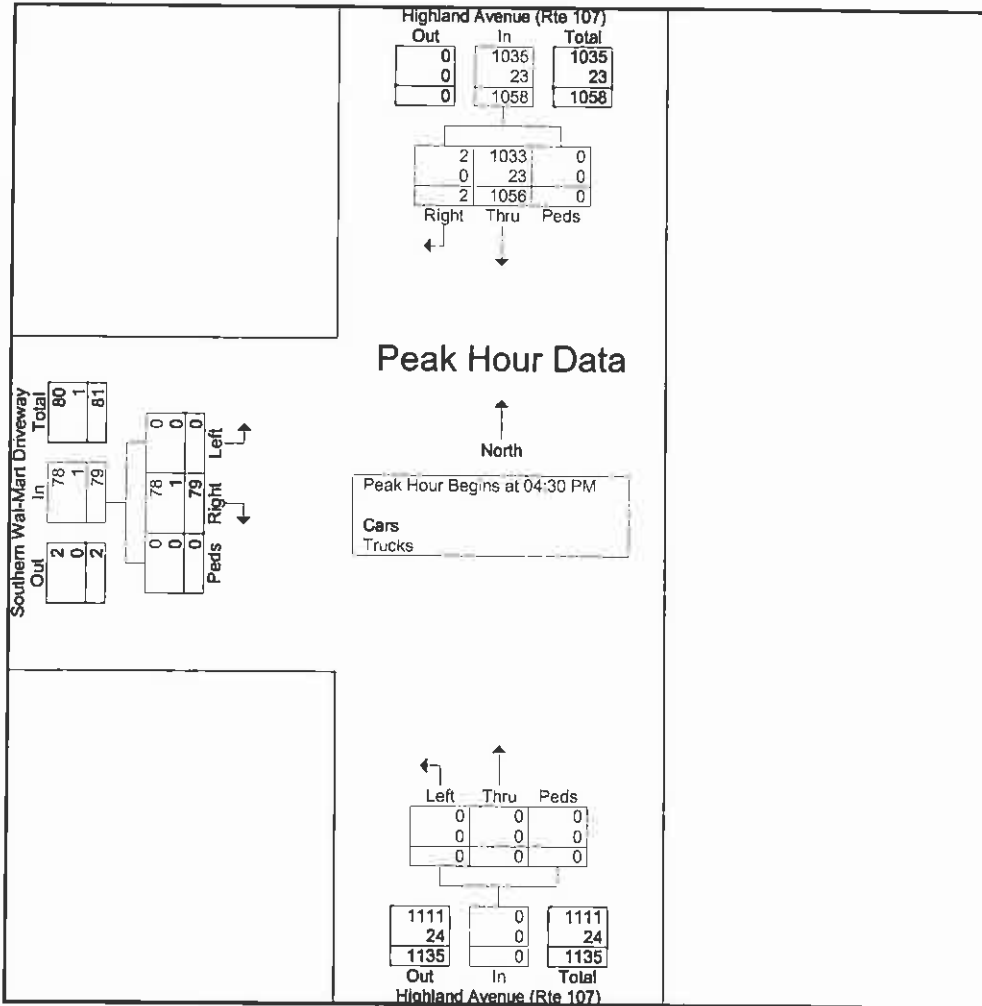
File Name : Highland Ave @ S Wal-Mart Driveway - PM

Site Code : 08571

Start Date : 5/21/2008

Page No : 2

Start Time	Highland Avenue (Rte 107) Southbound				Highland Avenue (Rte 107) Northbound				Southern Wal-Mart Driveway Eastbound				Int. Total
	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 04:30 PM													
04:30 PM	232	0	0	232	0	0	0	0	0	19	0	19	251
04:45 PM	267	0	0	267	0	0	0	0	0	16	0	16	283
05:00 PM	276	1	0	277	0	0	0	0	0	21	0	21	298
05:15 PM	281	1	0	282	0	0	0	0	0	23	0	23	305
Total Volume	1056	2	0	1058	0	0	0	0	0	79	0	79	1137
% App. Total	99.8	0.2	0		0	0	0		0	100	0		
PHF	.940	.500	.000	.938	.000	.000	.000	.000	.000	.859	.000	.859	.932
Cars	1033	2	0	1035	0	0	0	0	0	78	0	78	1113
% Cars	97.8	100	0	97.8	0	0	0	0	0	98.7	0	98.7	97.9
Trucks	23	0	0	23	0	0	0	0	0	1	0	1	24
% Trucks	2.2	0	0	2.2	0	0	0	0	0	1.3	0	1.3	2.1



GPI

61 Spit Brook Road Suite 110
Nashua, NH, 03060

File Name : Highland Ave @ S Wal-Mart Driveway - PM

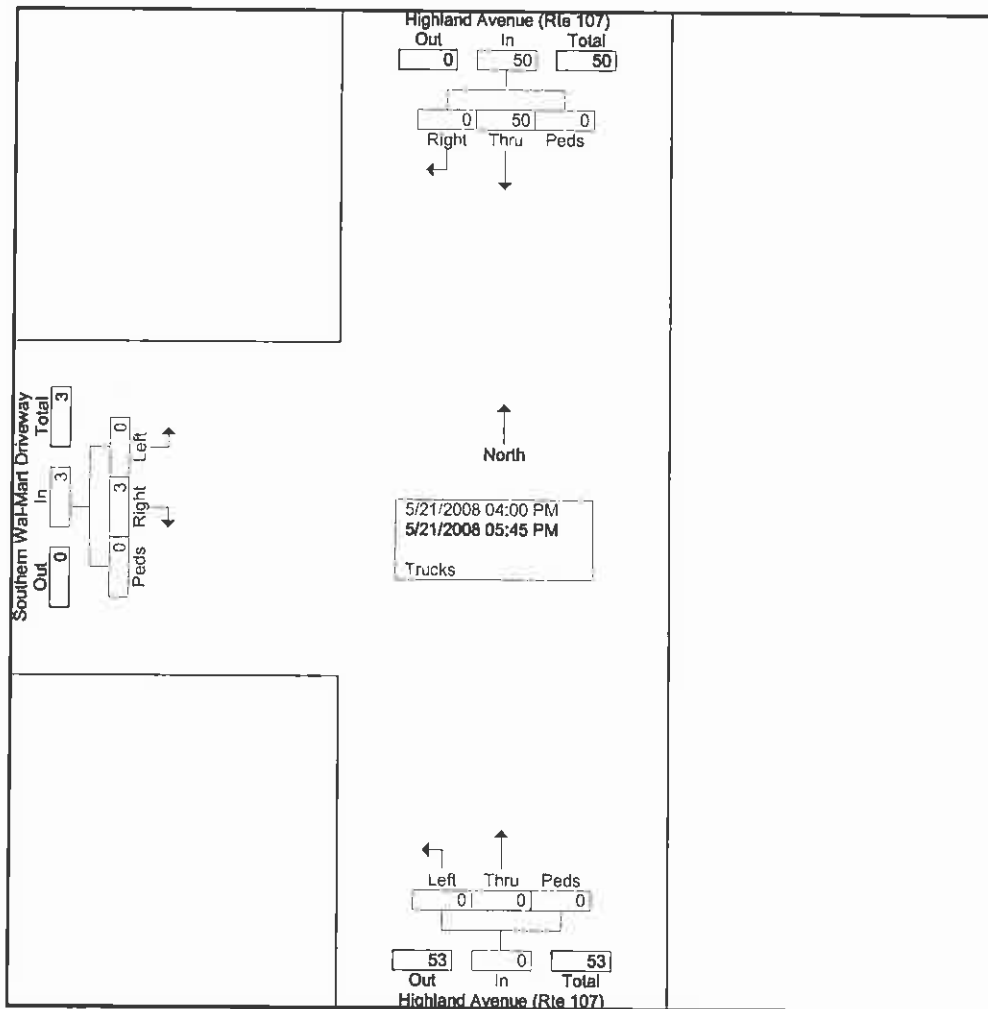
Site Code : 08571

Start Date : 5/21/2008

Page No : 1

Groups Printed- Trucks

Start Time	Highland Avenue (Rte 107) Southbound				Highland Avenue (Rte 107) Northbound				Southern Wal-Mart Driveway Eastbound				Int. Total
	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	
04:00 PM	11	0	0	11	0	0	0	0	0	1	0	1	12
04:15 PM	4	0	0	4	0	0	0	0	0	0	0	0	4
04:30 PM	8	0	0	8	0	0	0	0	0	0	0	0	8
04:45 PM	4	0	0	4	0	0	0	0	0	1	0	1	5
Total	27	0	0	27	0	0	0	0	0	2	0	2	29
05:00 PM	7	0	0	7	0	0	0	0	0	0	0	0	7
05:15 PM	4	0	0	4	0	0	0	0	0	0	0	0	4
05:30 PM	3	0	0	3	0	0	0	0	0	0	0	0	3
05:45 PM	9	0	0	9	0	0	0	0	0	1	0	1	10
Total	23	0	0	23	0	0	0	0	0	1	0	1	24
Grand Total	50	0	0	50	0	0	0	0	0	3	0	3	53
Apprch %	100	0	0		0	0	0		0	100	0		
Total %	94.3	0	0	94.3	0	0	0	0	0	5.7	0	5.7	



GPI

61 Spit Brook Road Suite 110
Nashua, NH. 03060

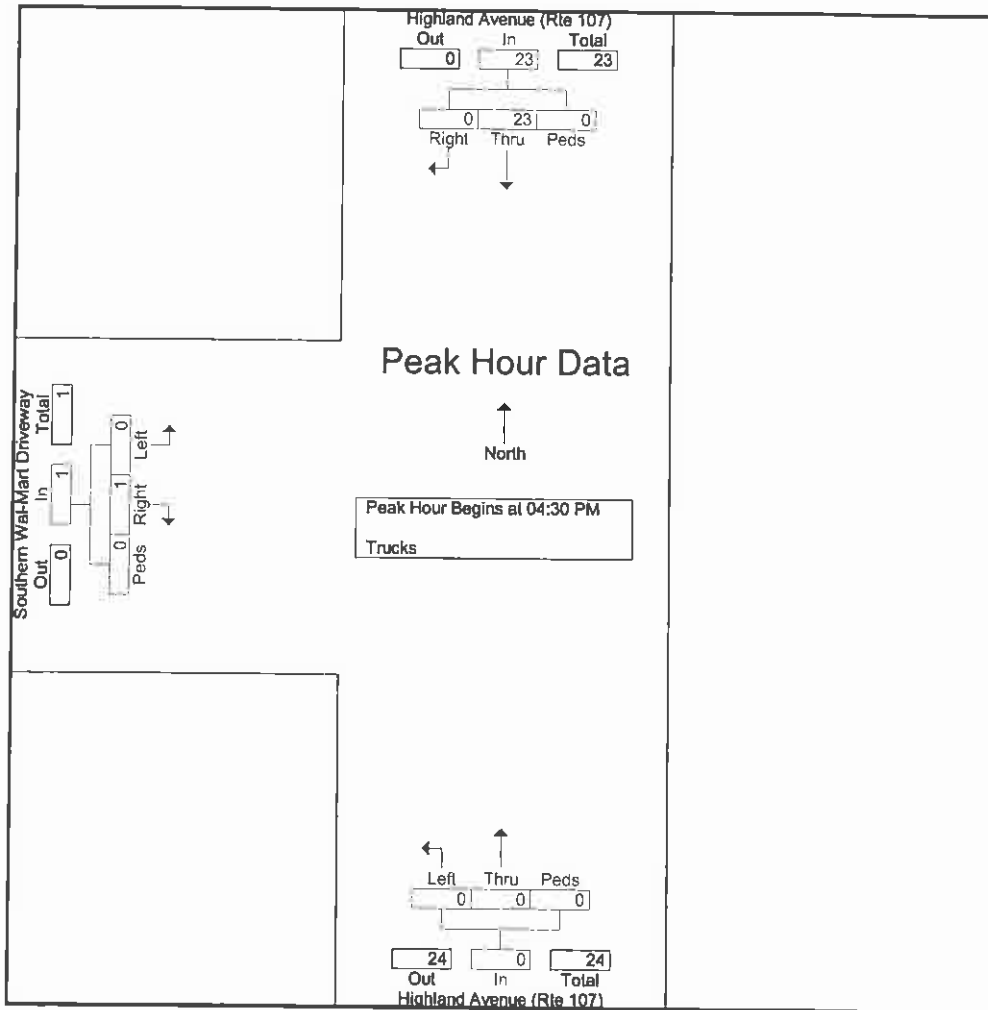
File Name : Highland Ave @ S Wal-Mart Driveway - PM

Site Code : 08571

Start Date : 5/21/2008

Page No : 2

Start Time	Highland Avenue (Rte 107) Southbound				Highland Avenue (Rte 107) Northbound				Southern Wal-Mart Driveway Eastbound				Int. Total
	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 04:30 PM													
04:30 PM	8	0	0	8	0	0	0	0	0	0	0	0	8
04:45 PM	4	0	0	4	0	0	0	0	0	1	0	1	5
05:00 PM	7	0	0	7	0	0	0	0	0	0	0	0	7
05:15 PM	4	0	0	4	0	0	0	0	0	0	0	0	4
Total Volume	23	0	0	23	0	0	0	0	0	1	0	1	24
% App. Total	100	0	0		0	0	0		0	100	0		
PHF	.719	.000	.000	.719	.000	.000	.000	.000	.000	.250	.000	.250	.750



GPI

61 Spit Brook Road Suite 110
Nashua, NH. 03060

File Name : Highland Ave @ Meineke Driveway - PM

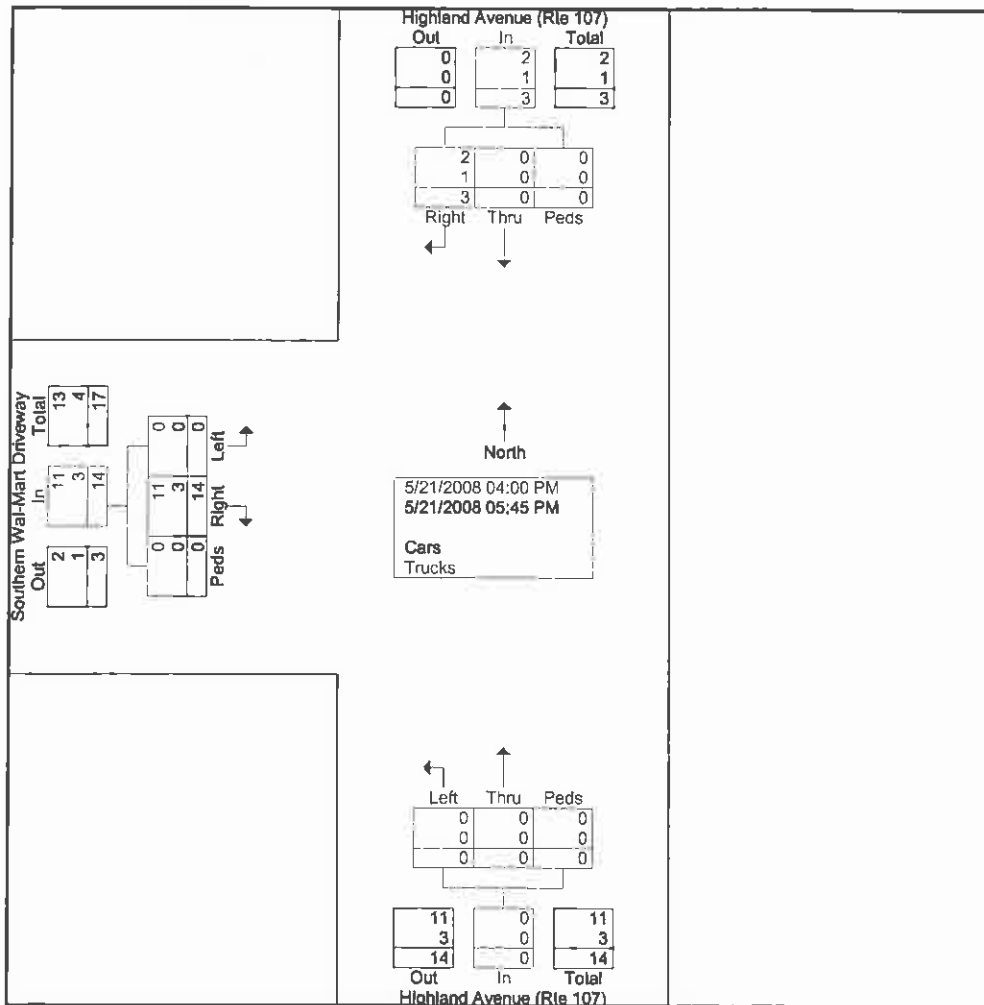
Site Code : 08571

Start Date : 5/21/2008

Page No : 1

Groups Printed- Cars - Trucks

Start Time	Highland Avenue (Rte 107) Southbound				Highland Avenue (Rte 107) Northbound				Southern Wal-Mart Driveway Eastbound				Int. Total
	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	
04:00 PM	0	1	0	1	0	0	0	0	0	2	0	2	3
04:15 PM	0	1	0	1	0	0	0	0	0	2	0	2	3
04:30 PM	0	1	0	1	0	0	0	0	0	2	0	2	3
04:45 PM	0	0	0	0	0	0	0	0	0	2	0	2	2
Total	0	3	0	3	0	0	0	0	0	8	0	8	11
05:00 PM	0	0	0	0	0	0	0	0	0	2	0	2	2
05:15 PM	0	0	0	0	0	0	0	0	0	2	0	2	2
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	2	0	2	2
Total	0	0	0	0	0	0	0	0	0	6	0	6	6
Grand Total	0	3	0	3	0	0	0	0	0	14	0	14	17
Apprch %	0	100	0		0	0	0		0	100	0		
Total %	0	17.6	0	17.6	0	0	0	0	0	82.4	0	82.4	
Cars	0	2	0	2	0	0	0	0	0	11	0	11	13
% Cars	0	66.7	0	66.7	0	0	0	0	0	78.6	0	78.6	76.5
Trucks	0	1	0	1	0	0	0	0	0	3	0	3	4
% Trucks	0	33.3	0	33.3	0	0	0	0	0	21.4	0	21.4	23.5



GPI

61 Spit Brook Road Suite 110
Nashua, NH. 03060

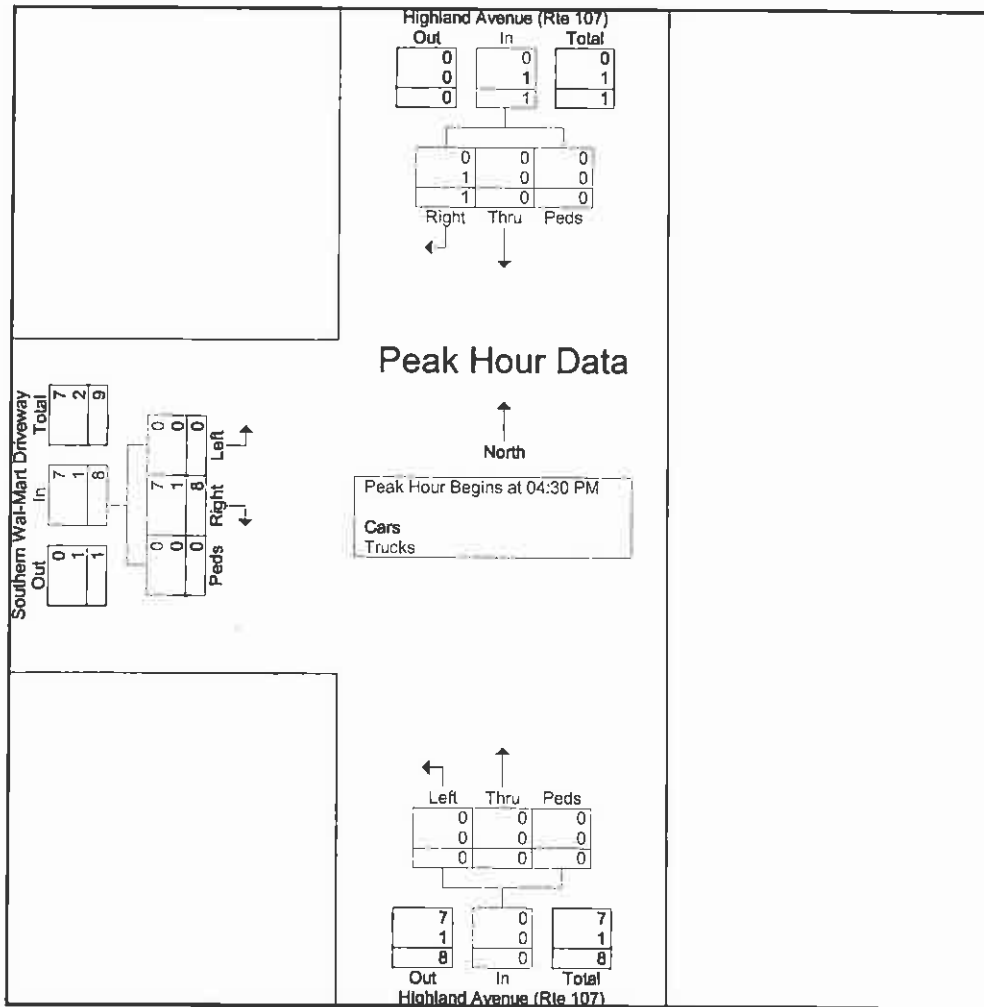
File Name : Highland Ave @ Meineke Driveway - PM

Site Code : 08571

Start Date : 5/21/2008

Page No : 2

Start Time	Highland Avenue (Rte 107) Southbound				Highland Avenue (Rte 107) Northbound				Southern Wal-Mart Driveway Eastbound				Int. Total
	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 04:30 PM													
04:30 PM	0	1	0	1	0	0	0	0	0	2	0	2	3
04:45 PM	0	0	0	0	0	0	0	0	0	2	0	2	2
05:00 PM	0	0	0	0	0	0	0	0	0	2	0	2	2
05:15 PM	0	0	0	0	0	0	0	0	0	2	0	2	2
Total Volume	0	1	0	1	0	0	0	0	0	8	0	8	9
% App. Total	0	100	0	100	0	0	0	0	0	100	0	100	100
PHF	.000	.250	.000	.250	.000	.000	.000	.000	.000	1.000	.000	1.000	.750
Cars	0	0	0	0	0	0	0	0	0	7	0	7	7
% Cars	0	0	0	0	0	0	0	0	0	87.5	0	87.5	77.8
Trucks	0	1	0	1	0	0	0	0	0	1	0	1	2
% Trucks	0	100	0	100	0	0	0	0	0	12.5	0	12.5	22.2



GPI

61 Spit Brook Road Suite 110
Nashua, NH. 03060

File Name : Highland Ave @ Meineke Driveway - PM

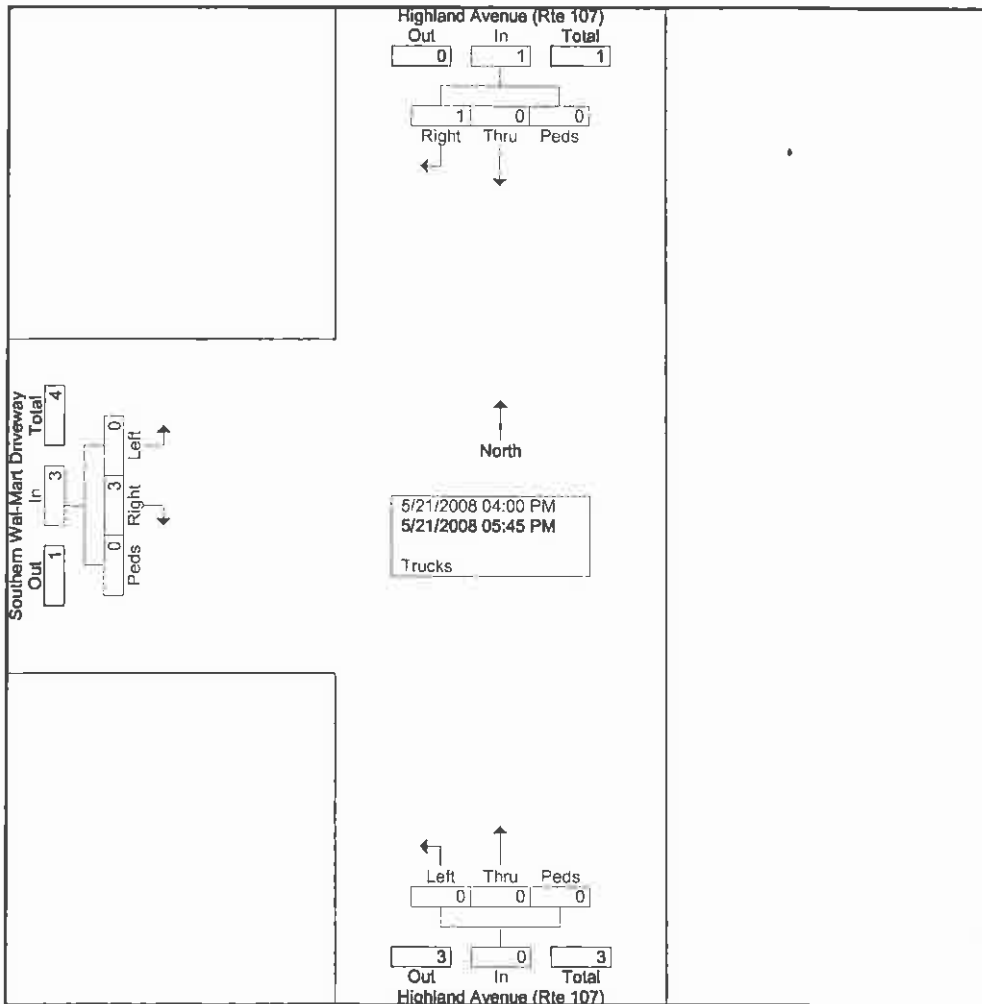
Site Code : 08571

Start Date : 5/21/2008

Page No : 1

Groups Printed- Trucks

Start Time	Highland Avenue (Rte 107) Southbound				Highland Avenue (Rte 107) Northbound				Southern Wal-Mart Driveway Eastbound				Int. Total
	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	0	1	0	1	1
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	1	0	1	0	0	0	0	0	0	0	0	1
04:45 PM	0	0	0	0	0	0	0	0	0	1	0	1	1
Total	0	1	0	1	0	0	0	0	0	2	0	2	3
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	1	0	1	1
Total	0	0	0	0	0	0	0	0	0	1	0	1	1
Grand Total	0	1	0	1	0	0	0	0	0	3	0	3	4
Apprch %	0	100	0		0	0	0		0	100	0		
Total %	0	25	0	25	0	0	0	0	0	75	0	75	



GPI

61 Spit Brook Road Suite 110
Nashua, NH. 03060

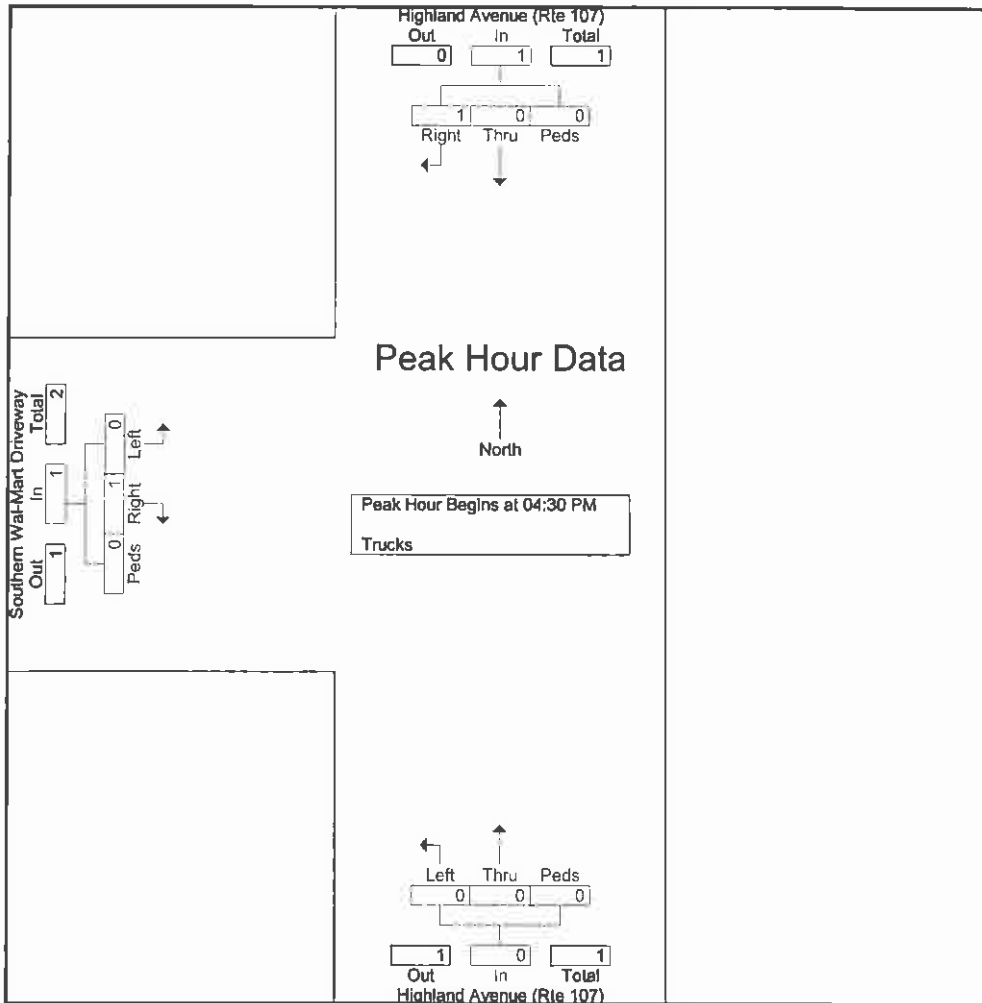
File Name : Highland Ave @ Meineke Driveway - PM

Site Code : 08571

Start Date : 5/21/2008

Page No : 2

Start Time	Highland Avenue (Rte 107) Southbound				Highland Avenue (Rte 107) Northbound				Southern Wal-Mart Driveway Eastbound				Int. Total
	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 04:30 PM													
04:30 PM	0	1	0	1	0	0	0	0	0	0	0	0	1
04:45 PM	0	0	0	0	0	0	0	0	0	1	0	1	1
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	1	0	1	0	0	0	0	0	1	0	1	2
% App. Total	0	100	0		0	0	0		0	100	0		
PHF	.000	.250	.000	.250	.000	.000	.000	.000	.000	.250	.000	.250	.500





61 Spit Brook Road Suite 110
Nashua, NH. 03060

File Name : Highland Ave @ Fays Ave - PM

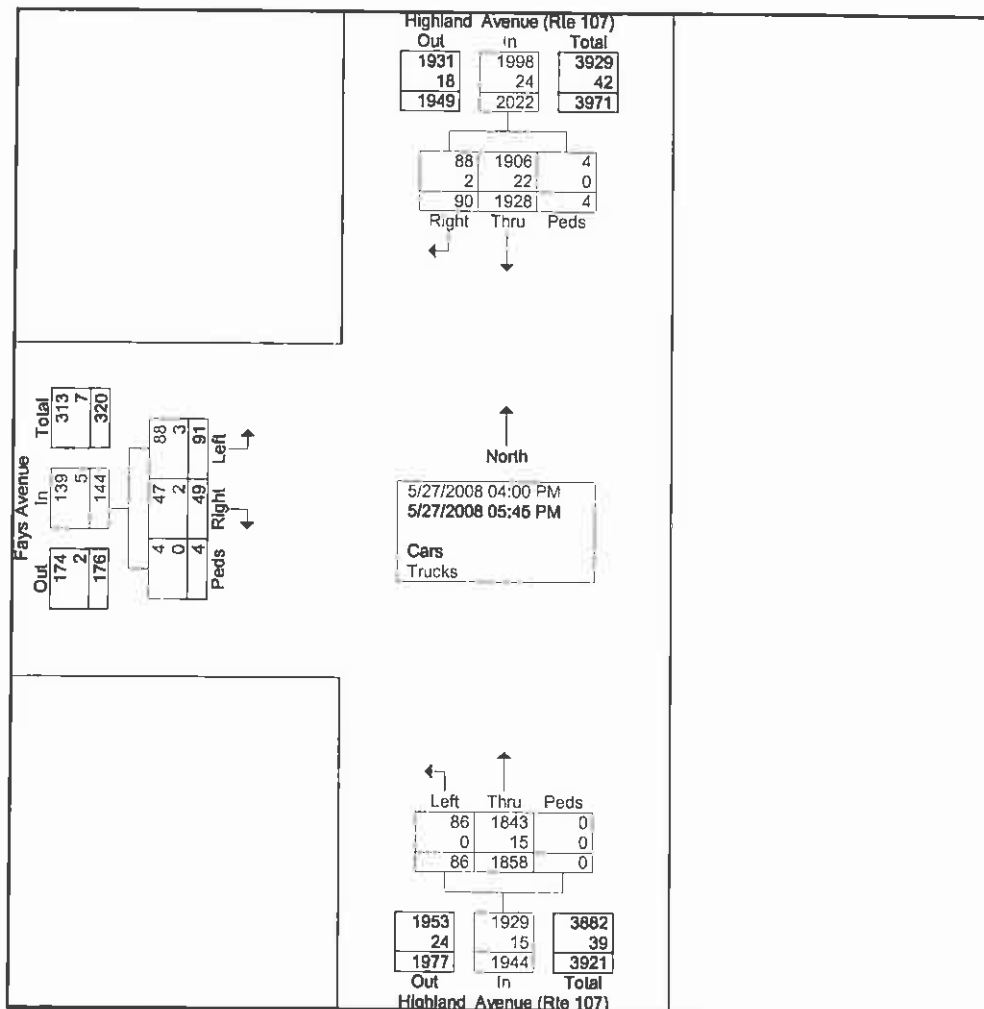
Site Code : 08571

Start Date : 5/27/2008

Page No : 1

Groups Printed- Cars - Trucks

Start Time	Highland Avenue (Rte 107) Southbound				Highland Avenue (Rte 107) Northbound				Fays Avenue Eastbound				Int. Total
	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	
04:00 PM	250	9	0	259	9	234	0	243	6	4	0	10	512
04:15 PM	252	10	1	263	8	231	0	239	7	9	1	17	519
04:30 PM	241	8	0	249	6	251	0	257	14	6	0	20	526
04:45 PM	229	18	0	247	14	226	0	240	8	6	0	14	501
Total	972	45	1	1018	37	942	0	979	35	25	1	61	2058
05:00 PM	279	11	0	290	19	248	0	267	12	4	1	17	574
05:15 PM	241	13	0	254	12	238	0	250	13	10	2	25	529
05:30 PM	216	14	2	232	9	213	0	222	17	5	0	22	476
05:45 PM	220	7	1	228	9	217	0	226	14	5	0	19	473
Total	956	45	3	1004	49	916	0	965	56	24	3	83	2052
Grand Total	1928	90	4	2022	86	1858	0	1944	91	49	4	144	4110
Apprch %	95.4	4.5	0.2		4.4	95.6	0		63.2	34	2.8		
Total %	46.9	2.2	0.1	49.2	2.1	45.2	0	47.3	2.2	1.2	0.1	3.5	
Cars	1906	88	4	1998	86	1843	0	1929	88	47	4	139	4066
% Cars	98.9	97.8	100	98.8	100	99.2	0	99.2	96.7	95.9	100	96.5	98.9
Trucks	22	2	0	24	0	15	0	15	3	2	0	5	44
% Trucks	1.1	2.2	0	1.2	0	0.8	0	0.8	3.3	4.1	0	3.5	1.1

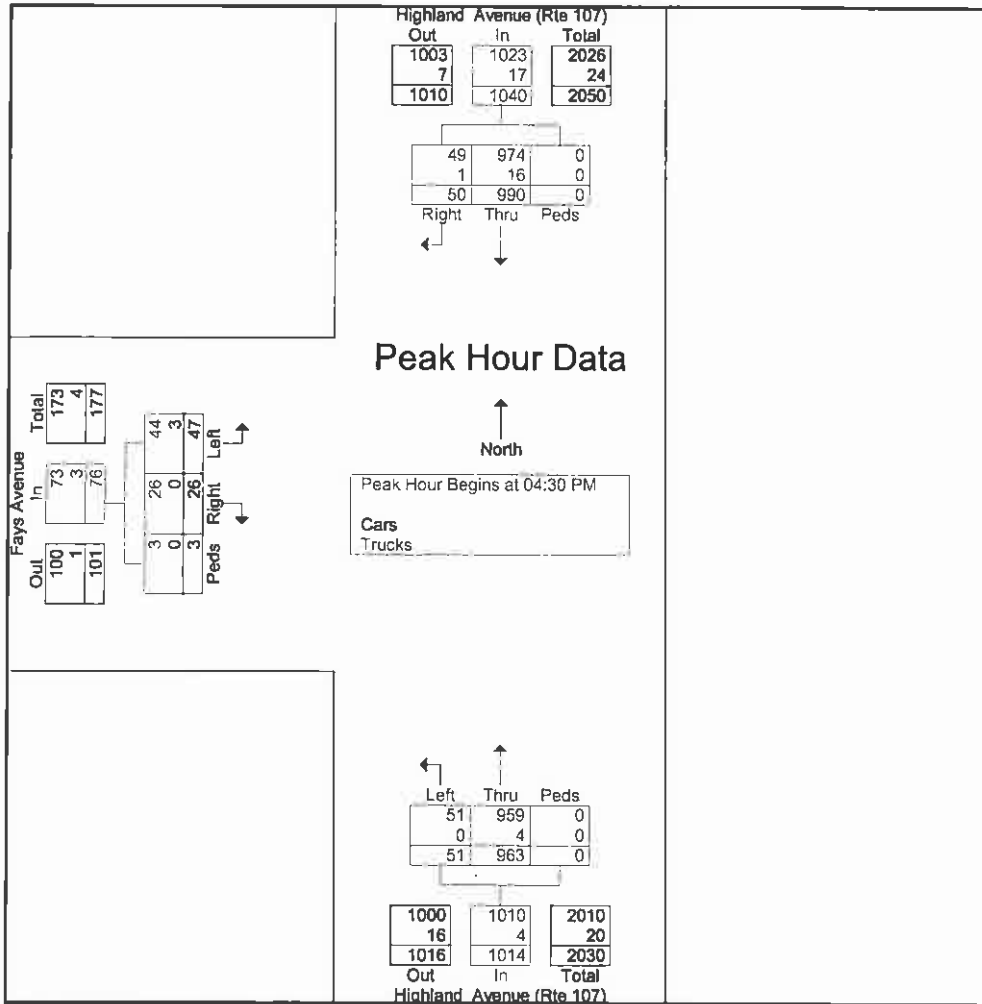




61 Spit Brook Road Suite 110
Nashua, NH. 03060

File Name : Highland Ave @ Fays Ave - PM
Site Code : 08571
Start Date : 5/27/2008
Page No : 2

Start Time	Highland Avenue (Rte 107) Southbound				Highland Avenue (Rte 107) Northbound				Fays Avenue Eastbound				Int. Total
	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak I of J													
Peak Hour for Entire Intersection Begins at 04:30 PM													
04:30 PM	241	8	0	249	6	251	0	257	14	6	0	20	526
04:45 PM	229	18	0	247	14	226	0	240	8	6	0	14	501
05:00 PM	279	11	0	290	19	248	0	267	12	4	1	17	574
05:15 PM	241	13	0	254	12	238	0	250	13	10	2	25	529
Total Volume	990	50	0	1040	51	963	0	1014	47	26	3	76	2130
% App. Total	95.2	4.8	0		5	95	0		61.8	34.2	3.9		
PHF	.887	.694	.000	.897	.671	.959	.000	.949	.839	.650	.375	.760	.928
Cars	974	49	0	1023	51	959	0	1010	44	26	3	73	2106
% Cars	98.4	98.0	0	98.4	100	99.6	0	99.6	93.6	100	100	96.1	98.9
Trucks	16	1	0	17	0	4	0	4	3	0	0	3	24
% Trucks	1.6	2.0	0	1.6	0	0.4	0	0.4	6.4	0	0	3.9	1.1



GPI

61 Spit Brook Road Suite 110
Nashua, NH. 03060

File Name : Highland Ave @ Fays Ave - PM

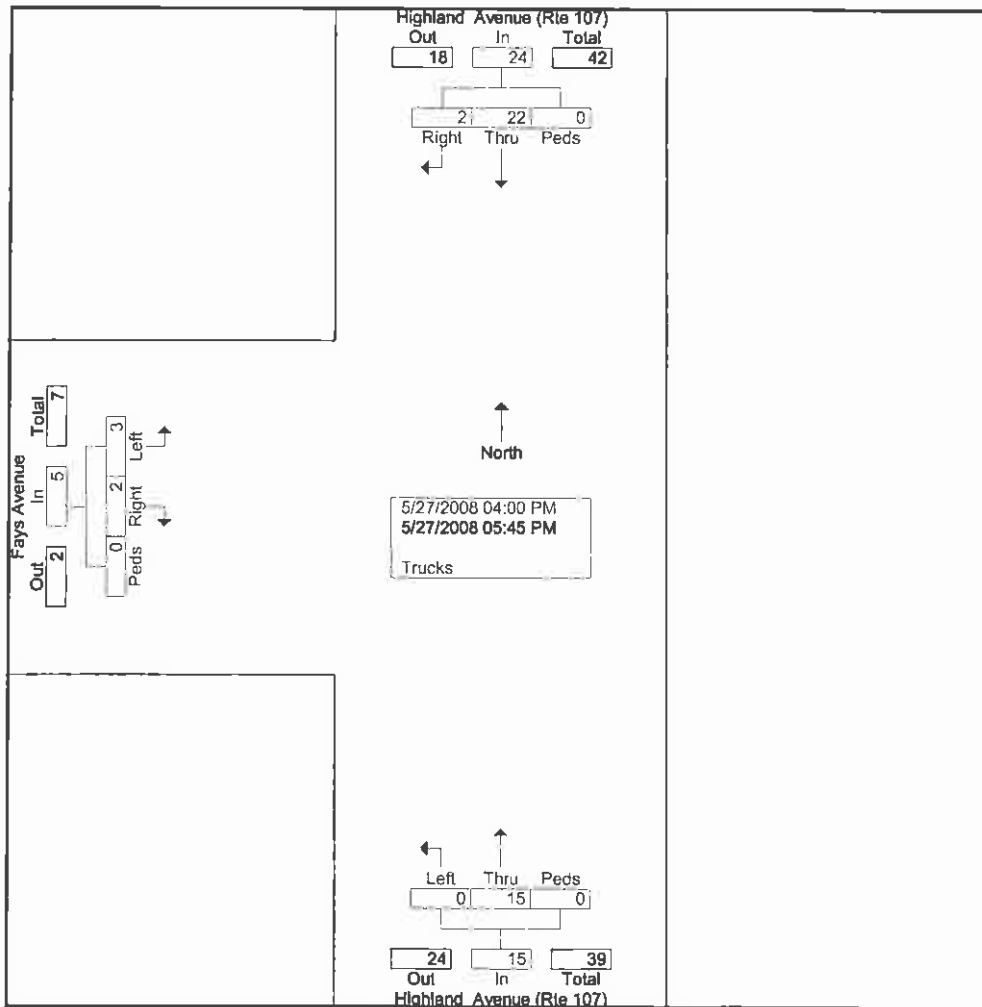
Site Code : 08571

Start Date : 5/27/2008

Page No : 1

Groups Printed- Trucks

Start Time	Highland Avenue (Rte 107) Southbound				Highland Avenue (Rte 107) Northbound				Fays Avenue Eastbound				Int. Total
	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	
04:00 PM	2	0	0	2	0	3	0	3	0	0	0	0	5
04:15 PM	2	0	0	2	0	4	0	4	0	1	0	1	7
04:30 PM	7	0	0	7	0	2	0	2	2	0	0	2	11
04:45 PM	4	0	0	4	0	1	0	1	0	0	0	0	5
Total	15	0	0	15	0	10	0	10	2	1	0	3	28
05:00 PM	1	1	0	2	0	0	0	0	0	0	0	0	2
05:15 PM	4	0	0	4	0	1	0	1	1	0	0	1	6
05:30 PM	2	1	0	3	0	3	0	3	0	1	0	1	7
05:45 PM	0	0	0	0	0	1	0	1	0	0	0	0	1
Total	7	2	0	9	0	5	0	5	1	1	0	2	16
Grand Total	22	2	0	24	0	15	0	15	3	2	0	5	44
Apprch %	91.7	8.3	0		0	100	0		60	40	0		
Total %	50	4.5	0	54.5	0	34.1	0	34.1	6.8	4.5	0	11.4	



GPI

61 Spit Brook Road Suite 110
Nashua, NH. 03060

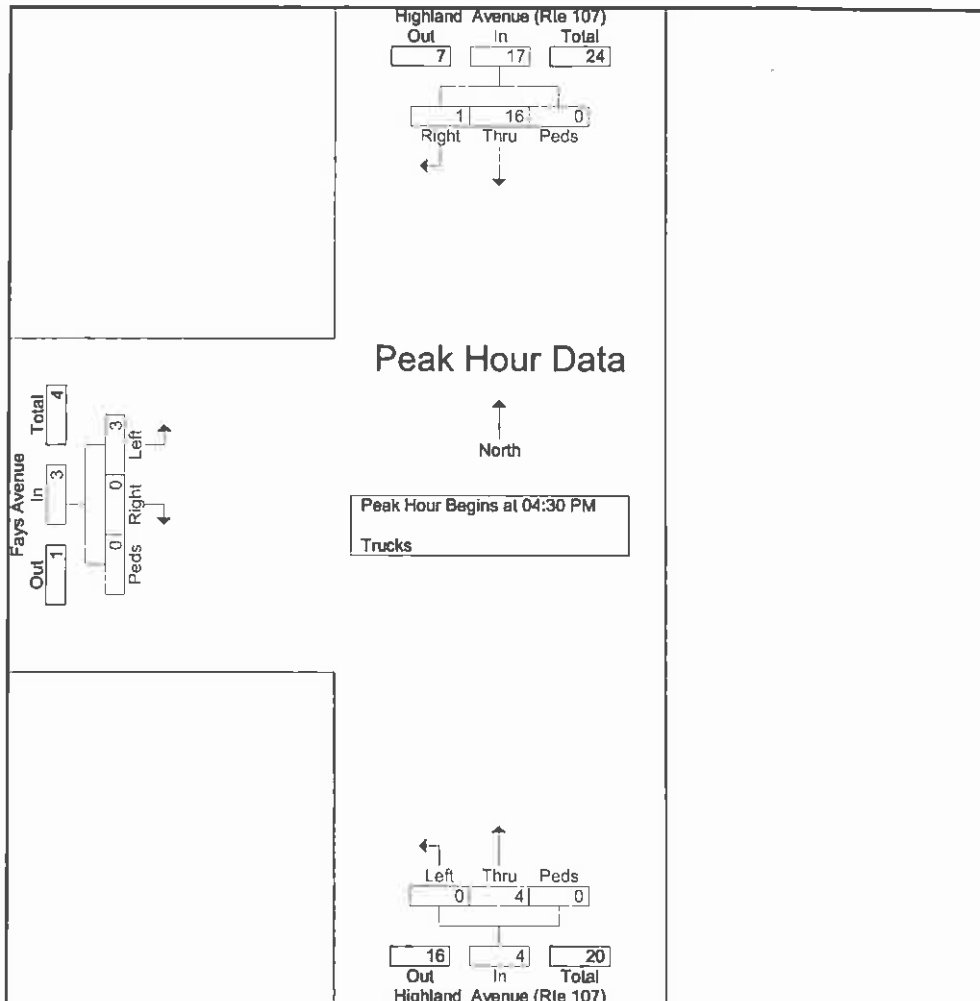
File Name : Highland Ave @ Fays Ave - PM

Site Code : 08571

Start Date : 5/27/2008

Page No : 2

Start Time	Highland Avenue (Rte 107) Southbound				Highland Avenue (Rte 107) Northbound				Fays Avenue Eastbound				Int. Total
	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 04:30 PM													
04:30 PM	7	0	0	7	0	2	0	2	2	0	0	2	11
04:45 PM	4	0	0	4	0	1	0	1	0	0	0	0	5
05:00 PM	1	1	0	2	0	0	0	0	0	0	0	0	2
05:15 PM	4	0	0	4	0	1	0	1	1	0	0	1	6
Total Volume	16	1	0	17	0	4	0	4	3	0	0	3	24
% App. Total	94.1	5.9	0		0	100	0		100	0	0		
PHF	.571	.250	.000	.607	.000	.500	.000	.500	.375	.000	.000	.375	.545





61 Spit Brook Road Suite 110
Nashua, NH. 03060

File Name : Highland Ave @ Ravenna_Barnes - SAT

Site Code : 08571

Start Date : 6/7/2008

Page No : 1

Groups Printed- Cars - Trucks - Turn

Start Time	Highland Avenue (Rte107) Southbound					Barnes Road Westbound					Highland Avenue (Rte107) Northbound					Ravenna Avenue Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
11:00 AM	17	255	4	0	276	0	0	6	2	8	6	244	2	1	253	8	0	1	0	9	546
11:15 AM	36	246	1	0	283	1	0	3	0	4	9	316	1	0	326	7	0	3	0	10	623
11:30 AM	14	249	3	0	266	2	0	7	0	9	4	286	0	0	290	3	0	0	0	3	568
11:45 AM	16	235	3	0	254	0	0	2	0	2	5	249	1	0	255	4	1	4	0	9	520
Total	83	985	11	0	1079	3	0	18	2	23	24	1095	4	1	1124	22	1	8	0	31	2257
12:00 PM	23	279	5	0	307	3	0	6	0	9	3	275	1	0	279	9	0	3	0	12	607
12:15 PM	16	277	2	0	295	1	0	6	0	7	4	290	3	0	297	6	0	4	2	12	611
12:30 PM	19	270	3	0	292	0	0	6	0	6	9	268	0	0	277	5	0	2	0	7	582
12:45 PM	19	260	2	0	281	1	0	5	0	6	5	294	2	0	301	3	0	3	0	6	594
Total	77	1086	12	0	1175	5	0	23	0	28	21	1127	6	0	1154	23	0	12	2	37	2394
01:00 PM	19	266	6	0	291	2	0	4	1	7	1	273	0	0	274	7	0	4	0	11	583
01:15 PM	26	288	8	0	322	2	0	1	0	3	9	271	2	0	282	11	0	4	0	15	622
01:30 PM	13	247	4	0	264	0	1	4	0	5	0	283	3	0	286	5	0	1	0	6	561
01:45 PM	12	287	4	0	303	1	0	5	0	6	1	289	1	0	291	2	0	5	0	7	607
Total	70	1088	22	0	1180	5	1	14	1	21	11	1116	6	0	1133	25	0	14	0	39	2373
Grand Total	230	3159	45	0	3434	13	1	55	3	72	56	3338	16	1	3411	70	1	34	2	107	7024
Approch %	6.7	92	1.3	0		18.1	1.4	76.4	4.2		1.6	97.9	0.5	0		65.4	0.9	31.8	1.9		
Total %	3.3	45	0.6	0	48.9	0.2	0	0.8	0	1	0.8	47.5	0.2	0	48.6	1	0	0.5	0	1.5	
Cars	131	3098	44	0	3273	13	1	52	3	69	33	3295	16	1	3345	69	1	32	2	104	6791
% Cars	57	98.1	97.8	0	95.3	100	100	94.5	100	95.8	58.9	98.7	100	100	98.1	98.6	100	94.1	100	97.2	96.7
Trucks	1	61	1	0	63	0	0	3	0	3	1	43	0	0	44	0	0	2	0	2	112
% Trucks	0.4	1.9	2.2	0	1.8	0	0	5.5	0	4.2	1.8	1.3	0	0	1.3	0	0	5.9	0	1.9	1.6
U-Turn	98	0	0	0	98	0	0	0	0	0	22	0	0	0	22	1	0	0	0	1	121
% U-Turn	42.6	0	0	0	2.9	0	0	0	0	0	39.3	0	0	0	0.6	1.4	0	0	0	0.9	1.7

GPI

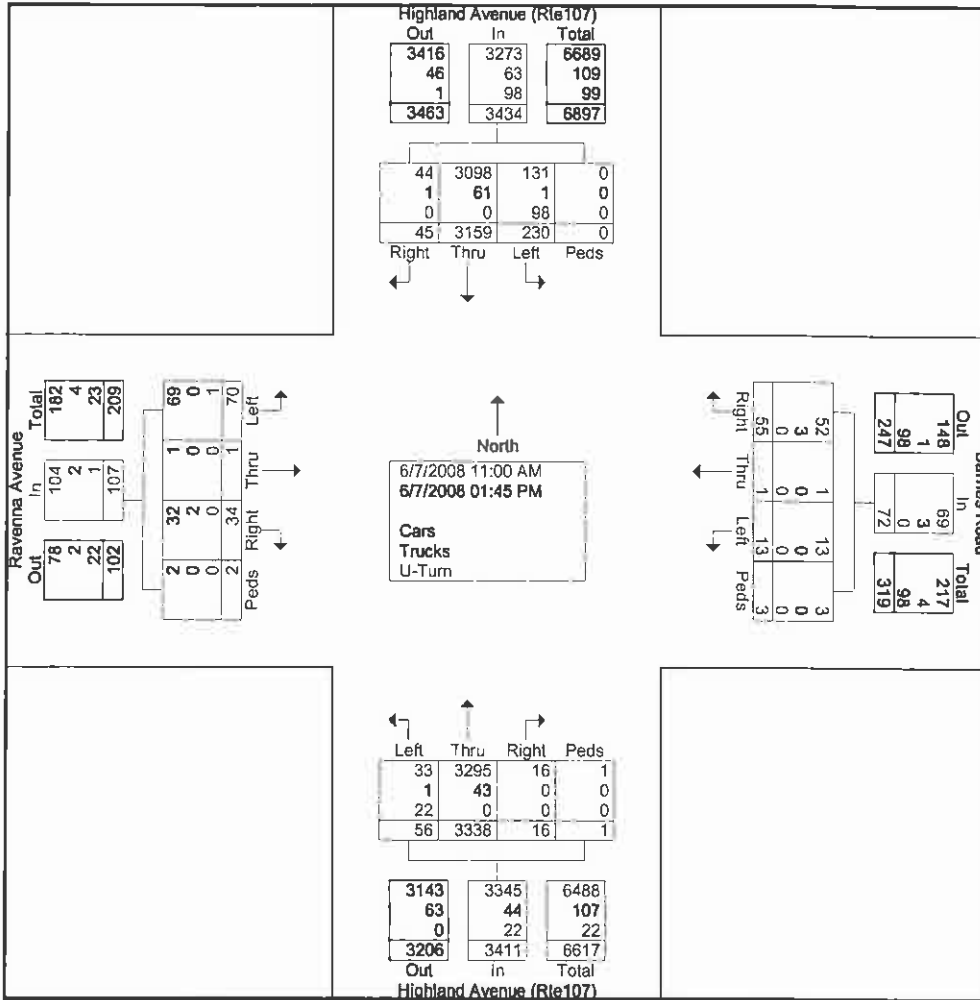
61 Spit Brook Road Suite 110
Nashua, NH. 03060

File Name : Highland Ave @ Ravenna_Barnes - SAT

Site Code : 08571

Start Date : 6/7/2008

Page No : 2





61 Spit Brook Road Suite 110
Nashua, NH. 03060

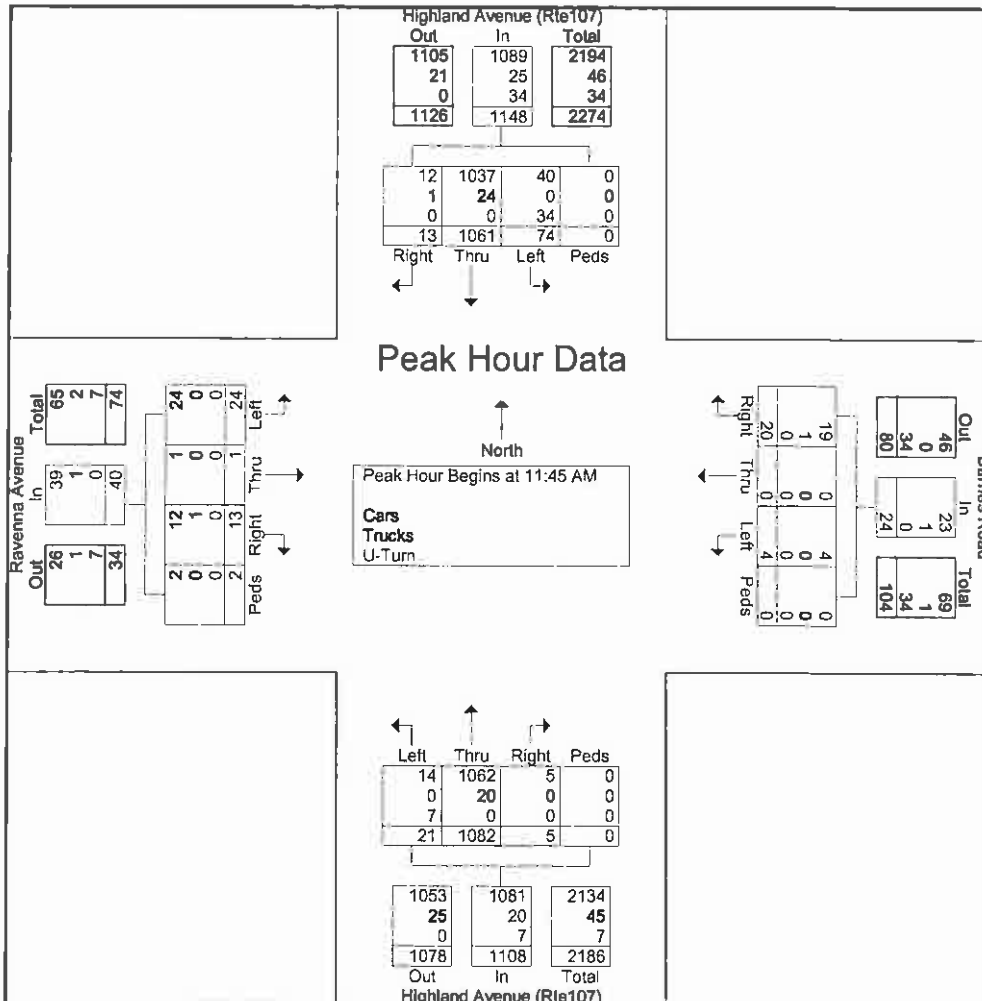
File Name : Highland Ave @ Ravenna_Barnes - SAT

Site Code : 08571

Start Date : 6/7/2008

Page No : 3

Start Time	Highland Avenue (Rte107) Southbound					Barnes Road Westbound					Highland Avenue (Rte107) Northbound					Ravenna Avenue Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 11:45 AM to 12:30 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 11:45 AM																					
11:45 AM	16	235	3	0	254	0	0	2	0	2	5	249	1	0	255	4	1	4	0	9	520
12:00 PM	23	279	5	0	307	3	0	6	0	9	3	275	1	0	279	9	0	3	0	12	607
12:15 PM	16	277	2	0	295	1	0	6	0	7	4	290	3	0	297	6	0	4	2	12	611
12:30 PM	19	270	3	0	292	0	0	6	0	6	9	268	0	0	277	5	0	2	0	7	582
Total Volume	74	1061	13	0	1148	4	0	20	0	24	21	1082	5	0	1108	24	1	13	2	40	2320
% App. Total	6.4	92.4	1.1	0		16.7	0	83.3	0		1.9	97.7	0.5	0		60	2.5	32.5	5		
PIIF	.804	.951	.650	.000	.935	.333	.000	.833	.000	.667	.583	.933	.417	.000	.933	.667	.250	.813	.250	.833	.949
Cars	40	1037	12	0	1089	4	0	19	0	23	14	1062	5	0	1081	24	1	12	2	39	2232
% Cars	54.1	97.7	92.3	0	94.9	100	0	95.0	0	95.8	66.7	98.2	100	0	97.6	100	100	92.3	100	97.5	96.2
Trucks	0	24	1	0	25	0	0	1	0	1	0	20	0	0	20	0	0	1	0	1	47
% Trucks	0	2.3	7.7	0	2.2	0	0	5.0	0	4.2	0	1.8	0	0	1.8	0	0	7.7	0	2.5	2.0
U-Turn	34	0	0	0	34	0	0	0	0	0	7	0	0	0	7	0	0	0	0	0	41
% U-Turn	45.9	0	0	0	3.0	0	0	0	0	0	33.3	0	0	0	0.6	0	0	0	0	0	1.8





61 Spit Brook Road Suite 110
Nashua, NH. 03060

File Name : Highland Ave @ Ravenna_Barnes - SAT

Site Code : 08571

Start Date : 6/7/2008

Page No : 1

Groups Printed- Cars - Trucks

Start Time	Highland Avenue (Rte107) Southbound					Barnes Road Westbound					Highland Avenue (Rte107) Northbound					Ravenna Avenue Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
11:00 AM	10	255	4	0	269	0	0	6	2	8	2	244	2	1	249	8	0	1	0	9	535
11:15 AM	26	246	1	0	273	1	0	3	0	4	3	316	1	0	320	7	0	3	0	10	607
11:30 AM	7	249	3	0	259	2	0	7	0	9	4	286	0	0	290	3	0	0	0	3	561
11:45 AM	10	235	3	0	248	0	0	2	0	2	5	249	1	0	255	4	1	4	0	9	514
Total	53	985	11	0	1049	3	0	18	2	23	14	1095	4	1	1114	22	1	8	0	31	2217
12:00 PM	11	279	5	0	295	3	0	6	0	9	1	275	1	0	277	9	0	3	0	12	593
12:15 PM	8	277	2	0	287	1	0	6	0	7	2	290	3	0	295	6	0	4	2	12	601
12:30 PM	11	270	3	0	284	0	0	6	0	6	6	268	0	0	274	5	0	2	0	7	571
12:45 PM	12	260	2	0	274	1	0	5	0	6	5	294	2	0	301	3	0	3	0	6	587
Total	42	1086	12	0	1140	5	0	23	0	28	14	1127	6	0	1147	23	0	12	2	37	2352
01:00 PM	12	266	6	0	284	2	0	4	1	7	0	273	0	0	273	6	0	4	0	10	574
01:15 PM	13	288	8	0	309	2	0	1	0	3	5	271	2	0	278	11	0	4	0	15	605
01:30 PM	6	247	4	0	257	0	1	4	0	5	0	283	3	0	286	5	0	1	0	6	554
01:45 PM	6	287	4	0	297	1	0	5	0	6	1	289	1	0	291	2	0	5	0	7	601
Total	37	1088	22	0	1147	5	1	14	1	21	6	1116	6	0	1128	24	0	14	0	38	2334
Grand Total	132	3159	45	0	3336	13	1	55	3	72	34	3338	16	1	3389	69	1	34	2	106	6903
Apprch %	4	94.7	1.3	0		18.1	1.4	76.4	4.2		1	98.5	0.5	0		65.1	0.9	32.1	1.9		
Total %	1.9	45.8	0.7	0	48.3	0.2	0	0.8	0	1	0.5	48.4	0.2	0	49.1	1	0	0.5	0	1.5	
Cars	131	3098	44	0	3273	13	1	52	3	69	33	3295	16	1	3345	69	1	32	2	104	6791
% Cars	99.2	98.1	97.8	0	98.1	100	100	94.5	100	95.8	97.1	98.7	100	100	98.7	100	100	94.1	100	98.1	98.4
Trucks	1	61	1	0	63	0	0	3	0	3	1	43	0	0	44	0	0	2	0	2	112
% Trucks	0.8	1.9	2.2	0	1.9	0	0	5.5	0	4.2	2.9	1.3	0	0	1.3	0	0	5.9	0	1.9	1.6

GPI

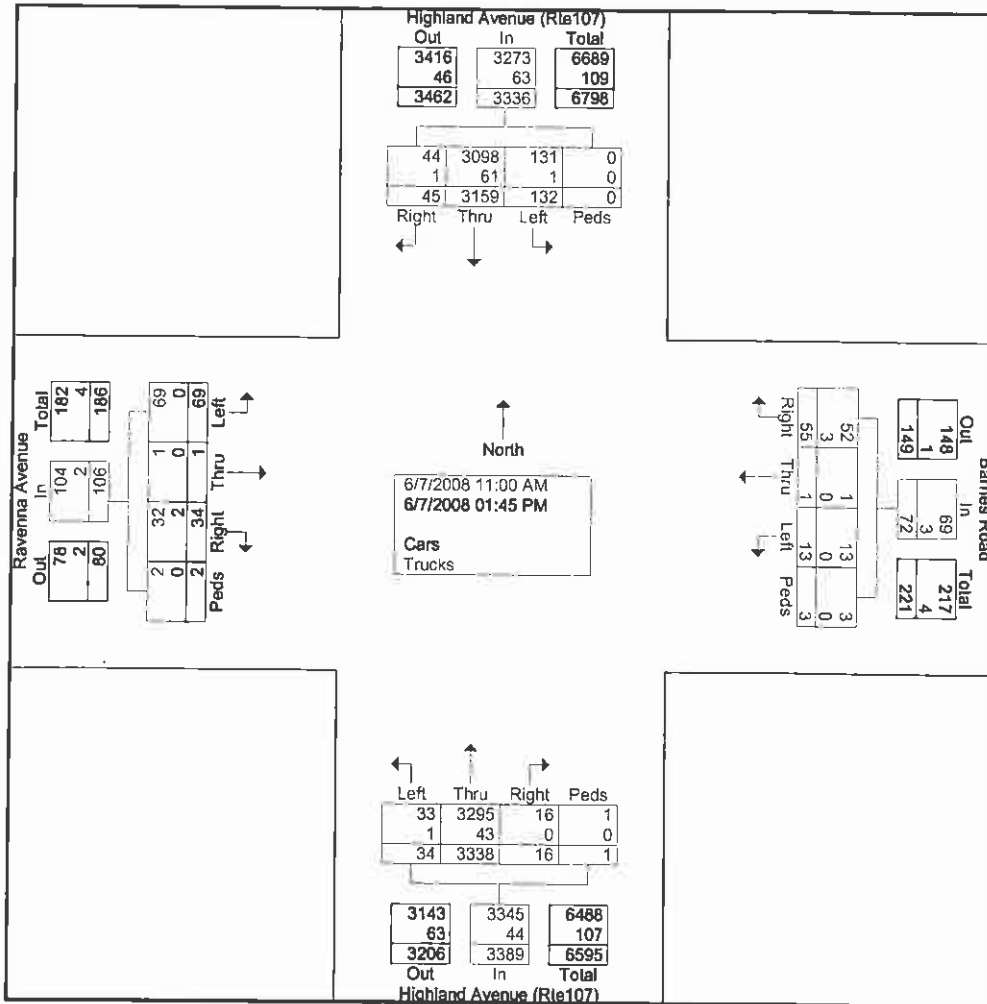
61 Spit Brook Road Suite 110
Nashua, NH. 03060

File Name : Highland Ave @ Ravenna_Barnes - SAT

Site Code : 08571

Start Date : 6/7/2008

Page No : 2





61 Spit Brook Road Suite 110
Nashua, NH. 03060

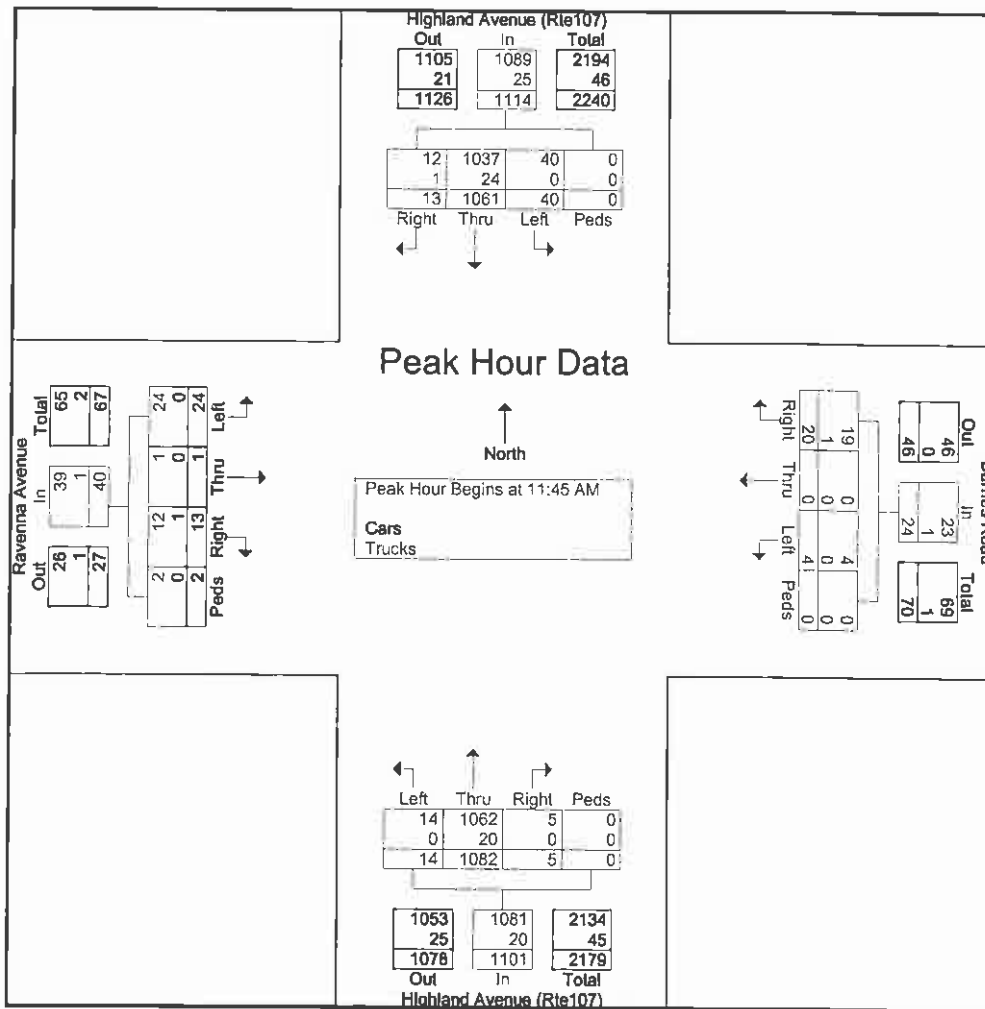
File Name : Highland Ave @ Ravenna_Barnes - SAT

Site Code : 08571

Start Date : 6/7/2008

Page No : 3

Start Time	Highland Avenue (Rte107) Southbound					Barnes Road Westbound					Highland Avenue (Rte107) Northbound					Ravenna Avenue Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 11:45 AM to 12:30 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 11:45 AM																					
11:45 AM	10	235	3	0	248	0	0	2	0	2	5	249	1	0	255	4	1	4	0	9	514
12:00 PM	11	279	5	0	295	3	0	6	0	9	1	275	1	0	277	9	0	3	0	12	593
12:15 PM	8	277	2	0	287	1	0	6	0	7	2	290	3	0	295	6	0	4	2	12	601
12:30 PM	11	270	3	0	284	0	0	6	0	6	6	268	0	0	274	5	0	2	0	7	571
Total Volume	40	1061	13	0	1114	4	0	20	0	24	14	1082	5	0	1101	24	1	13	2	40	2279
% App. Total	3.6	95.2	1.2	0		16.7	0	83.3	0		1.3	98.3	0.5	0		60	2.5	32.5	5		
PHF	.909	.951	.650	.000	.944	.333	.000	.833	.000	.667	.583	.933	.417	.000	.933	.667	.250	.813	.250	.833	.948
Cars	40	1037	12	0	1089	4	0	19	0	23	14	1062	5	0	1081	24	1	12	2	39	2232
% Cars	100	97.7	92.3	0	97.8	100	0	95.0	0	95.8	100	98.2	100	0	98.2	100	100	92.3	100	97.5	97.9
Trucks	0	24	1	0	25	0	0	1	0	1	0	20	0	0	20	0	0	1	0	1	47
% Trucks	0	2.3	7.7	0	2.2	0	0	5.0	0	4.2	0	1.8	0	0	1.8	0	0	7.7	0	2.5	2.1



GPI

61 Spit Brook Road Suite 110
Nashua, NH. 03060

File Name : Highland Ave @ Ravenna_Barnes - SAT

Site Code : 08571

Start Date : 6/7/2008

Page No : 1

Groups Printed- Trucks

Start Time	Highland Avenue (Rte107) Southbound					Barnes Road Westbound					Highland Avenue (Rte107) Northbound					Ravenna Avenue Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
11:00 AM	0	4	0	0	4	0	0	0	0	0	1	3	0	0	4	0	0	0	0	0	8
11:15 AM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
11:30 AM	0	5	0	0	5	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	10
11:45 AM	0	1	0	0	1	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	4
Total	0	11	0	0	11	0	0	0	0	0	1	12	0	0	13	0	0	0	0	0	24
12:00 PM	0	9	0	0	9	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	12
12:15 PM	0	6	1	0	7	0	0	0	0	0	0	6	0	0	6	0	0	1	0	1	14
12:30 PM	0	8	0	0	8	0	0	1	0	1	0	8	0	0	8	0	0	0	0	0	17
12:45 PM	0	9	0	0	9	0	0	1	0	1	0	1	0	0	1	0	0	0	0	0	11
Total	0	32	1	0	33	0	0	2	0	2	0	18	0	0	18	0	0	1	0	1	54
01:00 PM	0	4	0	0	4	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	7
01:15 PM	0	6	0	0	6	0	0	0	0	0	0	3	0	0	3	0	0	1	0	1	10
01:30 PM	1	3	0	0	4	0	0	1	0	1	0	5	0	0	5	0	0	0	0	0	10
01:45 PM	0	5	0	0	5	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	7
Total	1	18	0	0	19	0	0	1	0	1	0	13	0	0	13	0	0	1	0	1	34
Grand Total	1	61	1	0	63	0	0	3	0	3	1	43	0	0	44	0	0	2	0	2	112
Apprch %	1.6	96.8	1.6	0		0	0	100	0		2.3	97.7	0	0		0	0	100	0		
Total %	0.9	54.5	0.9	0	56.2	0	0	2.7	0	2.7	0.9	38.4	0	0	39.3	0	0	1.8	0	1.8	

GPI

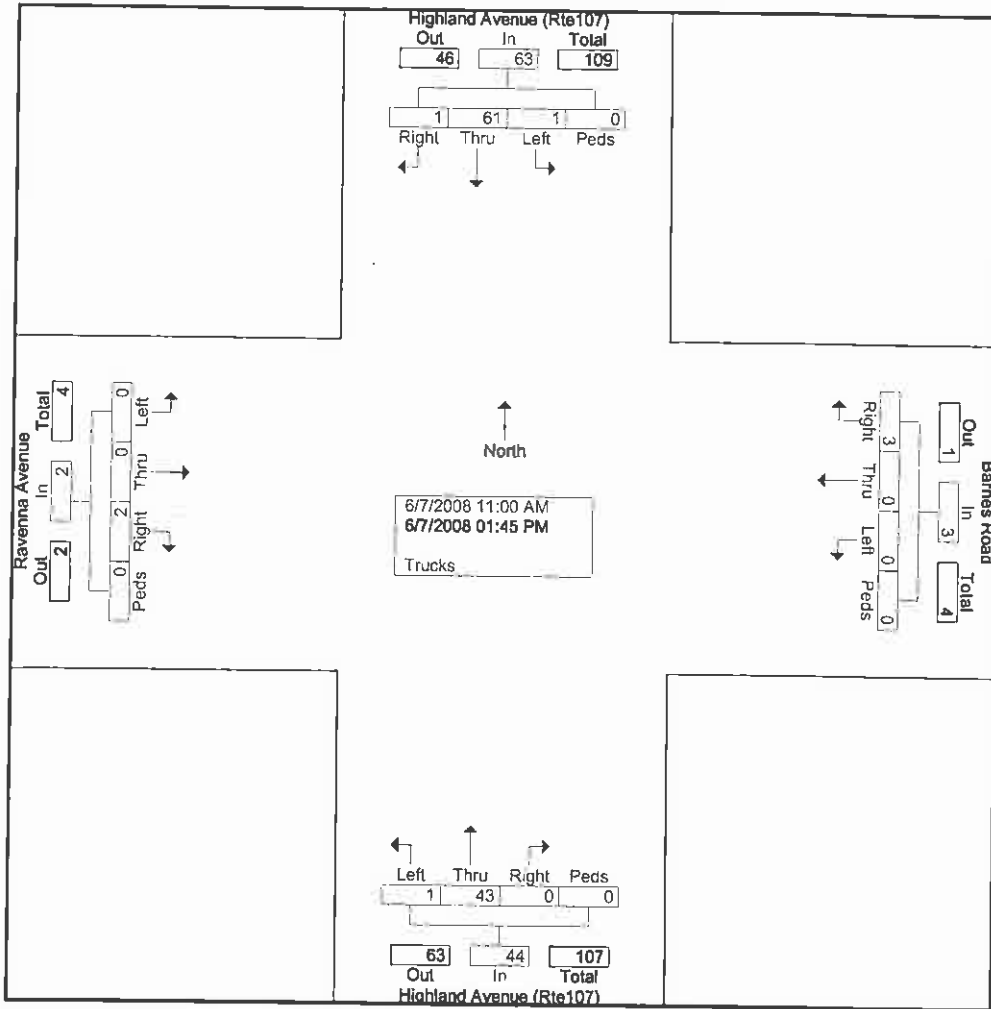
61 Spit Brook Road Suite 110
Nashua, NH. 03060

File Name : Highland Ave @ Ravenna_Barnes - SAT

Site Code : 08571

Start Date : 6/7/2008

Page No : 2

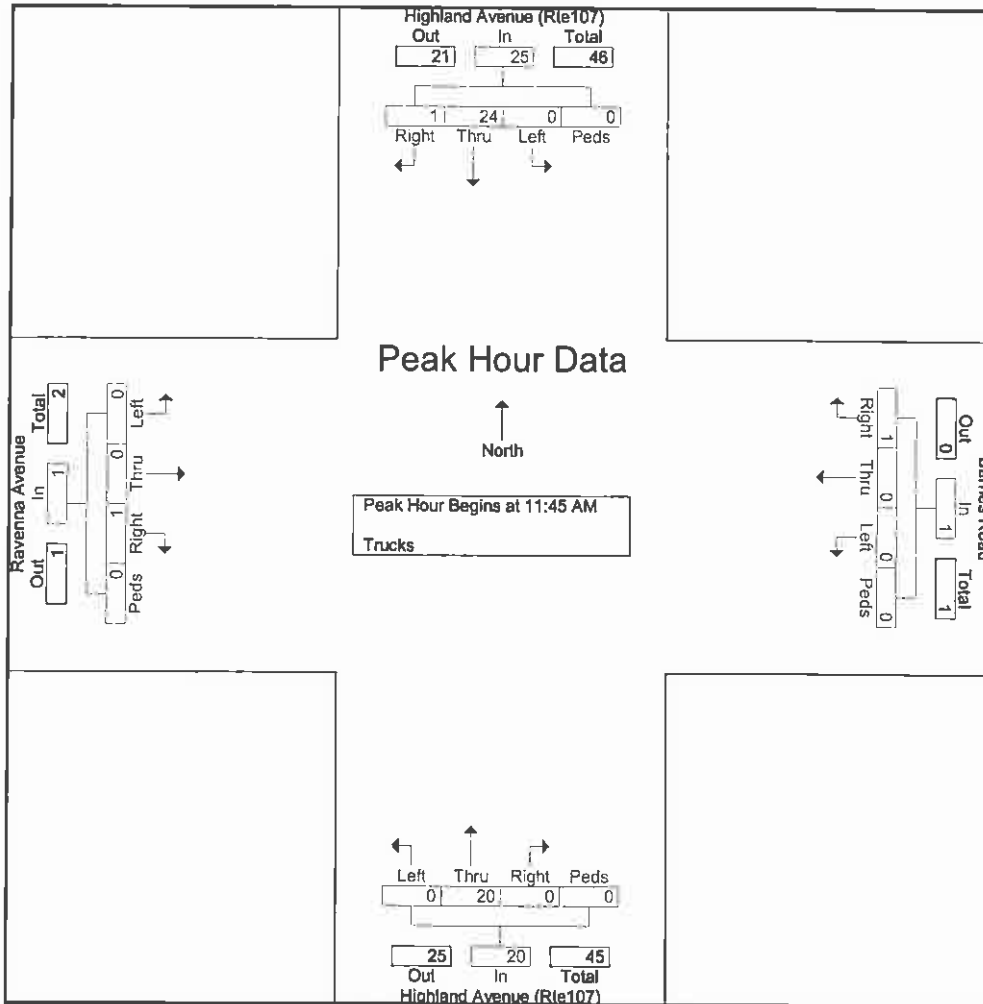


GPI

61 Spit Brook Road Suite 110
Nashua, NH. 03060

File Name : Highland Ave @ Ravenna_Barnes - SAT
Site Code : 08571
Start Date : 6/7/2008
Page No : 3

Start Time	Highland Avenue (Rte107) Southbound					Barnes Road Westbound					Highland Avenue (Rte107) Northbound					Ravenna Avenue Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 11:45 AM to 12:30 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 11:45 AM																					
11:45 AM	0	1	0	0	1	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	4
12:00 PM	0	9	0	0	9	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	12
12:15 PM	0	6	1	0	7	0	0	0	0	0	0	6	0	0	6	0	0	1	0	1	14
12:30 PM	0	8	0	0	8	0	0	1	0	1	0	8	0	0	8	0	0	0	0	0	17
Total Volume	0	24	1	0	25	0	0	1	0	1	0	20	0	0	20	0	0	1	0	1	47
% App. Total	0	96	4	0		0	0	100	0		0	100	0	0		0	0	100	0		
PHF	.000	.667	.250	.000	.694	.000	.000	.250	.000	.250	.000	.625	.000	.000	.625	.000	.000	.250	.000	.250	.691



GPI

61 Spit Brook Road Suite 110
Nashua, NH. 03060

File Name : Highland Ave @ Ravenna_Barnes - SAT

Site Code : 08571

Start Date : 6/7/2008

Page No : 1

Groups Printed- Turn

Start Time	Highland Avenue (Rte107) Southbound					Barnes Road Westbound					Highland Avenue (Rte107) Northbound					Ravenna Avenue Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
11:00 AM	7	0	0	0	7	0	0	0	0	0	4	0	0	0	4	0	0	0	0	0	11
11:15 AM	10	0	0	0	10	0	0	0	0	0	6	0	0	0	6	0	0	0	0	0	16
11:30 AM	7	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7
11:45 AM	6	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
Total	30	0	0	0	30	0	0	0	0	0	10	0	0	0	10	0	0	0	0	0	40
12:00 PM	12	0	0	0	12	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	14
12:15 PM	8	0	0	0	8	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	10
12:30 PM	8	0	0	0	8	0	0	0	0	0	3	0	0	0	3	0	0	0	0	0	11
12:45 PM	7	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7
Total	35	0	0	0	35	0	0	0	0	0	7	0	0	0	7	0	0	0	0	0	42
01:00 PM	7	0	0	0	7	0	0	0	0	0	1	0	0	0	1	1	0	0	0	1	9
01:15 PM	13	0	0	0	13	0	0	0	0	0	4	0	0	0	4	0	0	0	0	0	17
01:30 PM	7	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7
01:45 PM	6	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
Total	33	0	0	0	33	0	0	0	0	0	5	0	0	0	5	1	0	0	0	1	39
Grand Total	98	0	0	0	98	0	0	0	0	0	22	0	0	0	22	1	0	0	0	1	121
Apprch %	100	0	0	0		0	0	0	0		100	0	0	0		100	0	0	0		
Total %	81	0	0	0	81	0	0	0	0	0	18.2	0	0	0	18.2	0.8	0	0	0	0.8	

GPI

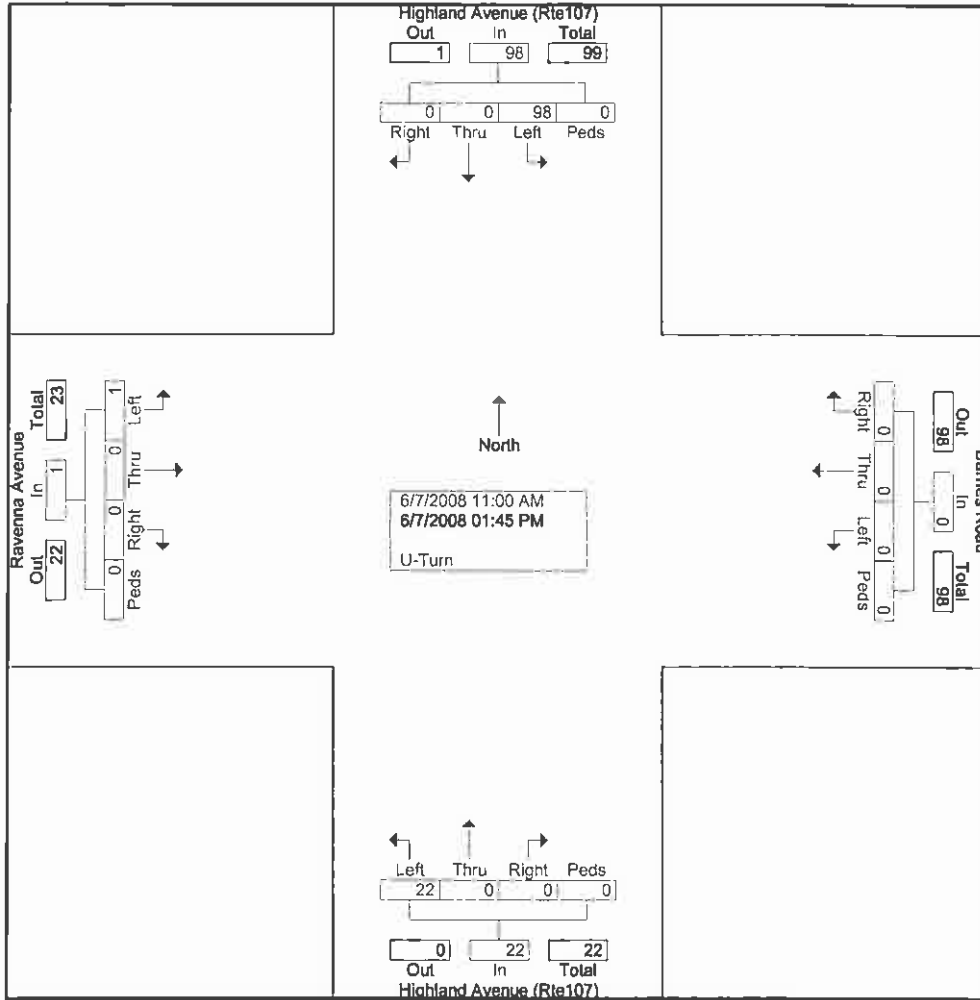
61 Spit Brook Road Suite 110
Nashua, NH. 03060

File Name : Highland Ave @ Ravenna_Barnes - SAT

Site Code : 08571

Start Date : 6/7/2008

Page No : 2



GPI

61 Spit Brook Road Suite 110
Nashua, NH. 03060

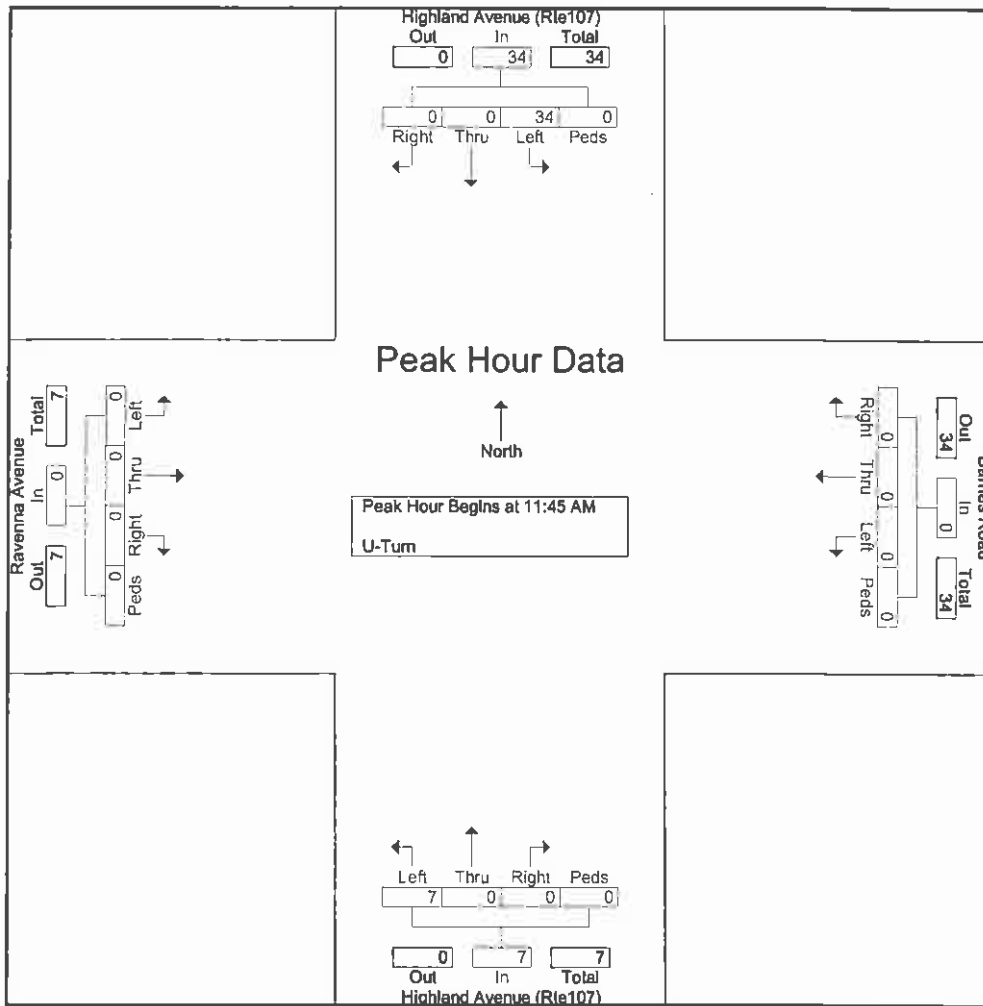
File Name : Highland Ave @ Ravenna_Barnes - SAT

Site Code : 08571

Start Date : 6/7/2008

Page No : 3

Start Time	Highland Avenue (Rte107) Southbound					Barnes Road Westbound					Highland Avenue (Rte107) Northbound					Ravenna Avenue Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 11:45 AM to 12:30 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 11:45 AM																					
11:45 AM	6	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
12:00 PM	12	0	0	0	12	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	14
12:15 PM	8	0	0	0	8	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	10
12:30 PM	8	0	0	0	8	0	0	0	0	0	3	0	0	0	3	0	0	0	0	0	11
Total Volume	34	0	0	0	34	0	0	0	0	0	7	0	0	0	7	0	0	0	0	0	41
% App. Total	100	0	0	0		0	0	0	0		100	0	0	0		0	0	0	0		
PHF	.708	.000	.000	.000	.708	.000	.000	.000	.000	.000	.583	.000	.000	.000	.583	.000	.000	.000	.000	.000	.732



GPI

61 Spit Brook Rd.
Nashua, NH. 03060

File Name : Highland Ave @ Olde Village Dr -
Site Code : 08571
Start Date : 5/31/2008
Page No : 1

Groups Printed- Cars - Trucks - Turn

Start Time	Highland Avenue (Rte107) Southbound				Highland Avenue (Rte107) Northbound				Olde Village Drive Eastbound				Int. Total
	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	
11:00 AM	215	23	1	239	10	255	0	265	24	2	1	27	531
11:15 AM	243	14	0	257	10	252	0	262	15	2	0	17	536
11:30 AM	279	16	0	295	9	276	0	285	24	7	0	31	611
11:45 AM	278	19	0	297	17	292	0	309	14	2	2	18	624
Total	1015	72	1	1088	46	1075	0	1121	77	13	3	93	2302
12:00 PM	281	17	0	298	7	270	0	277	21	4	0	25	600
12:15 PM	258	16	0	274	9	238	0	247	31	1	0	32	553
12:30 PM	236	17	0	253	7	258	0	265	14	0	3	17	535
12:45 PM	279	14	0	293	13	260	0	273	19	6	3	28	594
Total	1054	64	0	1118	36	1026	0	1062	85	11	6	102	2282
01:00 PM	255	18	0	273	7	258	0	265	27	2	0	29	567
01:15 PM	305	12	0	317	6	256	0	262	26	4	2	32	611
01:30 PM	280	14	0	294	8	269	0	277	21	2	1	24	595
Grand Total	2909	180	1	3090	103	2884	0	2987	236	32	12	280	6357
Apprch %	94.1	5.8	0		3.4	96.6	0		84.3	11.4	4.3		
Total %	45.8	2.8	0	48.6	1.6	45.4	0	47	3.7	0.5	0.2	4.4	
Cars	2855	178	1	3034	67	2849	0	2916	233	32	12	277	6227
% Cars	98.1	98.9	100	98.2	65	98.8	0	97.6	98.7	100	100	98.9	98
Trucks	54	2	0	56	2	35	0	37	3	0	0	3	96
% Trucks	1.9	1.1	0	1.8	1.9	1.2	0	1.2	1.3	0	0	1.1	1.5
U-Turn	0	0	0	0	34	0	0	34	0	0	0	0	34
% U-Turn	0	0	0	0	33	0	0	1.1	0	0	0	0	0.5

GPI

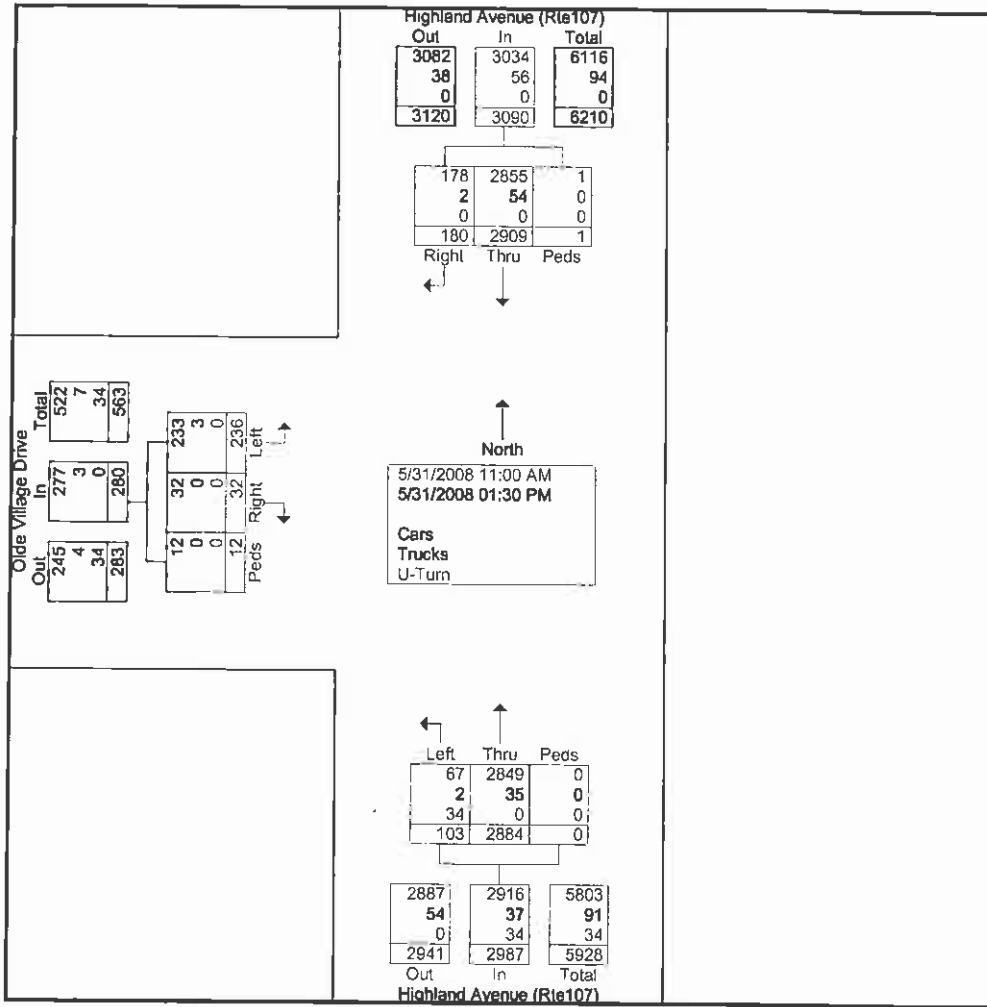
61 Spit Brook Rd.
Nashua, NH. 03060

File Name : Highland Ave @ Olde Village Dr - SAT

Site Code : 08571

Start Date : 5/31/2008

Page No : 2

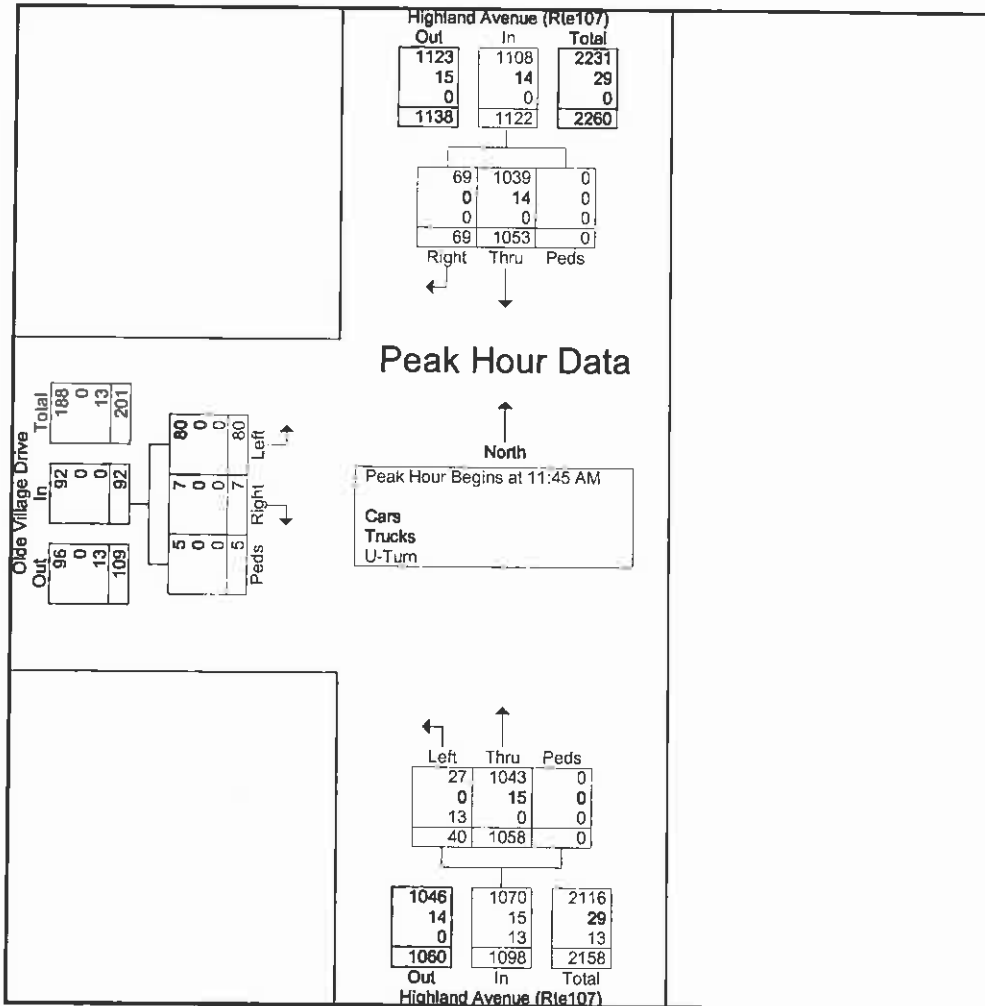


GPI

61 Spit Brook Rd.
Nashua, NH. 03060

File Name : Highland Ave @ Olde Village Dr - SAT
Site Code : 08571
Start Date : 5/31/2008
Page No : 3

Start Time	Highland Avenue (Rte107) Southbound				Highland Avenue (Rte107) Northbound				Olde Village Drive Eastbound				Int. Total
	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	
Peak Hour Analysis From 11:45 AM to 12:30 PM - Peak I of 1													
Peak Hour for Entire Intersection Begins at 11:45 AM													
11:45 AM	278	19	0	297	17	292	0	309	14	2	2	18	624
12:00 PM	281	17	0	298	7	270	0	277	21	4	0	25	600
12:15 PM	258	16	0	274	9	238	0	247	31	1	0	32	553
12:30 PM	236	17	0	253	7	258	0	265	14	0	3	17	535
Total Volume	1053	69	0	1122	40	1058	0	1098	80	7	5	92	2312
% App. Total	93.9	6.1	0		3.6	96.4	0		87	7.6	5.4		
PHF	.937	.908	.000	.941	.588	.906	.000	.888	.645	.438	.417	.719	.926
Cars	1039	69	0	1108	27	1043	0	1070	80	7	5	92	2270
% Cars	98.7	100	0	98.8	67.5	98.6	0	97.4	100	100	100	100	98.2
Trucks	14	0	0	14	0	15	0	15	0	0	0	0	29
% Trucks	1.3	0	0	1.2	0	1.4	0	1.4	0	0	0	0	1.3
U-Turn	0	0	0	0	13	0	0	13	0	0	0	0	13
% U-Turn	0	0	0	0	32.5	0	0	1.2	0	0	0	0	0.6



GPI

61 Spit Brook Rd.
Nashua, NH. 03060

File Name : Highland Ave @ Olde Village Dr - SAT
Site Code : 08571
Start Date : 5/31/2008
Page No : 1

Groups Printed- Cars - Trucks

Start Time	Highland Avenue (Rte107) Southbound				Highland Avenue (Rte107) Northbound				Olde Village Drive Eastbound				Int. Total
	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	
11:00 AM	215	23	1	239	10	255	0	265	24	2	1	27	531
11:15 AM	243	14	0	257	6	252	0	258	15	2	0	17	532
11:30 AM	279	16	0	295	2	276	0	278	24	7	0	31	604
11:45 AM	278	19	0	297	12	292	0	304	14	2	2	18	619
Total	1015	72	1	1088	30	1075	0	1105	77	13	3	93	2286
12:00 PM	281	17	0	298	5	270	0	275	21	4	0	25	598
12:15 PM	258	16	0	274	5	238	0	243	31	1	0	32	549
12:30 PM	236	17	0	253	5	258	0	263	14	0	3	17	533
12:45 PM	279	14	0	293	11	260	0	271	19	6	3	28	592
Total	1054	64	0	1118	26	1026	0	1052	85	11	6	102	2272
01:00 PM	255	18	0	273	5	258	0	263	27	2	0	29	565
01:15 PM	305	12	0	317	3	256	0	259	26	4	2	32	608
01:30 PM	280	14	0	294	5	269	0	274	21	2	1	24	592
Grand Total	2909	180	1	3090	69	2884	0	2953	236	32	12	280	6323
Apprch %	94.1	5.8	0		2.3	97.7	0		84.3	11.4	4.3		
Total %	46	2.8	0	48.9	1.1	45.6	0	46.7	3.7	0.5	0.2	4.4	
Cars	2855	178	1	3034	67	2849	0	2916	233	32	12	277	6227
% Cars	98.1	98.9	100	98.2	97.1	98.8	0	98.7	98.7	100	100	98.9	98.5
Trucks	54	2	0	56	2	35	0	37	3	0	0	3	96
% Trucks	1.9	1.1	0	1.8	2.9	1.2	0	1.3	1.3	0	0	1.1	1.5

GPI

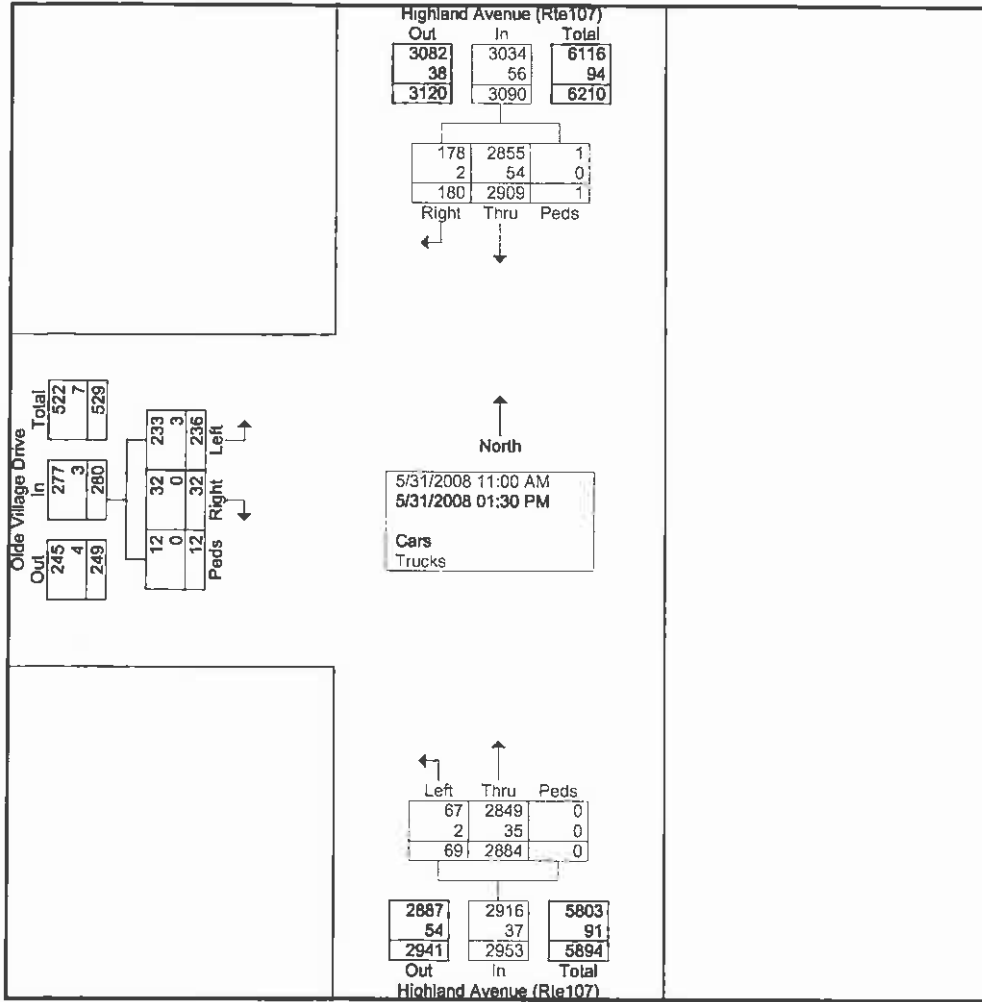
61 Spit Brook Rd.
Nashua, NH. 03060

File Name : Highland Ave @ Olde Village Dr - SAT

Site Code : 08571

Start Date : 5/31/2008

Page No : 2

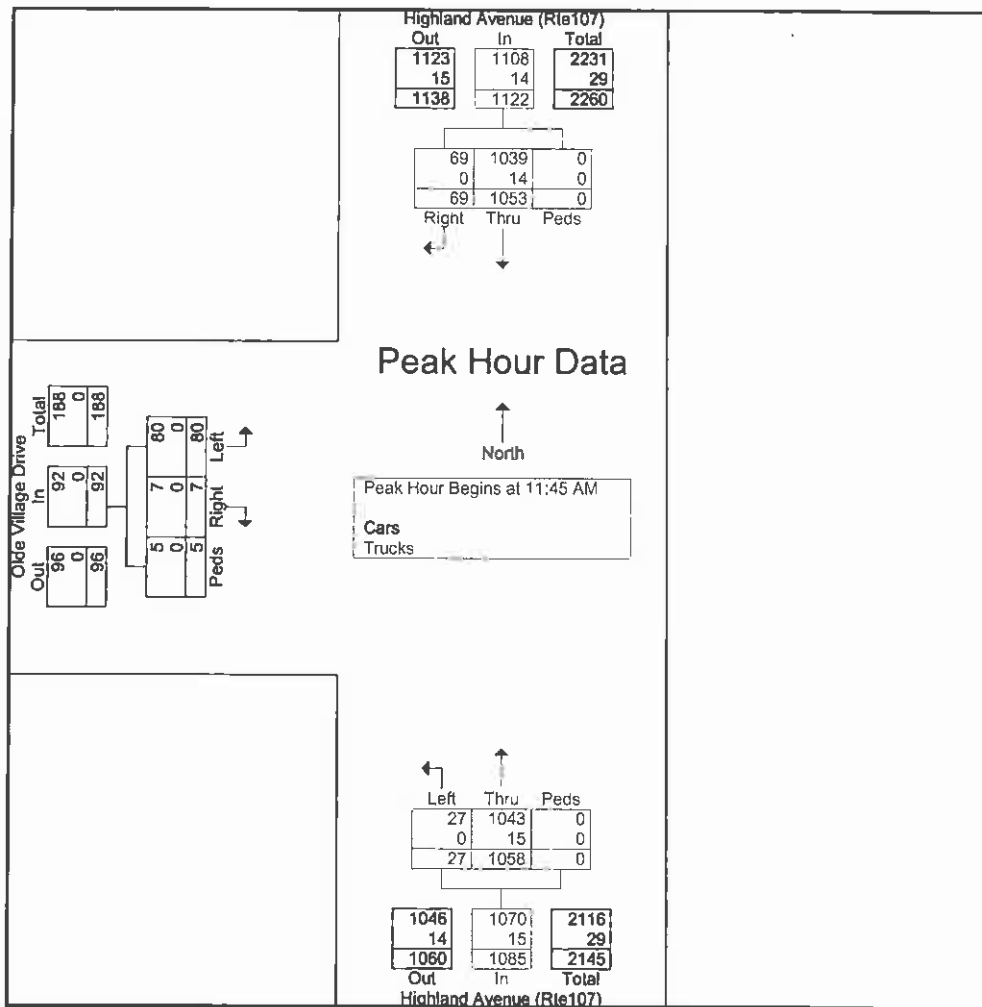


GPI

61 Spit Brook Rd.
Nashua, NH. 03060

File Name : Highland Ave @ Olde Village Dr - SAT
Site Code : 08571
Start Date : 5/31/2008
Page No : 3

Start Time	Highland Avenue (Rte107) Southbound				Highland Avenue (Rte107) Northbound				Olde Village Drive Eastbound				Int. Total
	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	
Peak Hour Analysis From 11:45 AM to 12:30 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 11:45 AM													
11:45 AM	278	19	0	297	12	292	0	304	14	2	2	18	619
12:00 PM	281	17	0	298	5	270	0	275	21	4	0	25	598
12:15 PM	258	16	0	274	5	238	0	243	31	1	0	32	549
12:30 PM	236	17	0	253	5	258	0	263	14	0	3	17	533
Total Volume	1053	69	0	1122	27	1058	0	1085	80	7	5	92	2299
% App. Total	93.9	6.1	0		2.5	97.5	0		87	7.6	5.4		
PHF	.937	.908	.000	.941	.563	.906	.000	.892	.645	.438	.417	.719	.929
Cars	1039	69	0	1108	27	1043	0	1070	80	7	5	92	2270
% Cars	98.7	100	0	98.8	100	98.6	0	98.6	100	100	100	100	98.7
Trucks	14	0	0	14	0	15	0	15	0	0	0	0	29
% Trucks	1.3	0	0	1.2	0	1.4	0	1.4	0	0	0	0	1.3



GPI

61 Spit Brook Rd.
Nashua, NH. 03060

File Name : Highland Ave @ Olde Village Dr - SAT

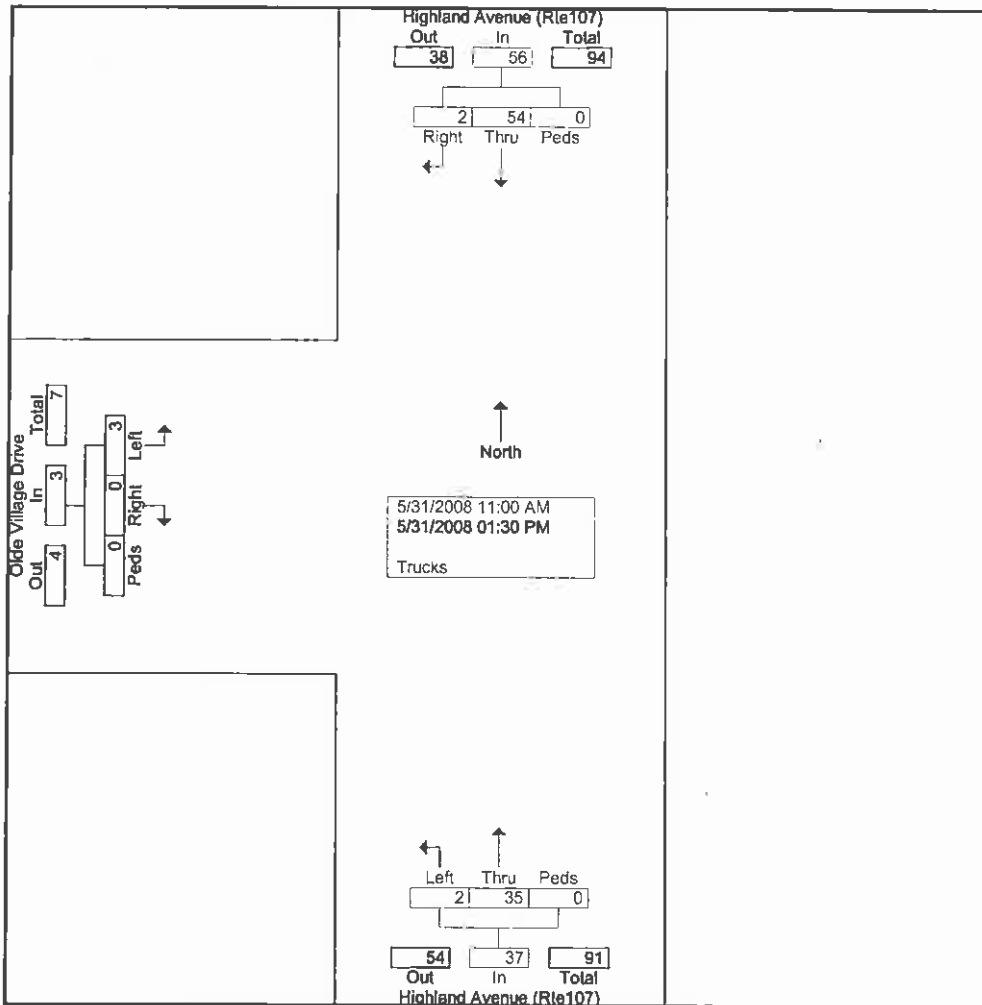
Site Code : 08571

Start Date : 5/31/2008

Page No : 1

Groups Printed- Trucks

Start Time	Highland Avenue (Rte107) Southbound				Highland Avenue (Rte107) Northbound				Olde Village Drive Eastbound				Int. Total
	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	
11:00 AM	5	0	0	5	0	2	0	2	0	0	0	0	7
11:15 AM	4	1	0	5	1	1	0	2	1	0	0	1	8
11:30 AM	6	0	0	6	0	3	0	3	1	0	0	1	10
11:45 AM	8	0	0	8	0	5	0	5	0	0	0	0	13
Total	23	1	0	24	1	11	0	12	2	0	0	2	38
12:00 PM	0	0	0	0	0	3	0	3	0	0	0	0	3
12:15 PM	2	0	0	2	0	3	0	3	0	0	0	0	5
12:30 PM	4	0	0	4	0	4	0	4	0	0	0	0	8
12:45 PM	8	0	0	8	0	2	0	2	0	0	0	0	10
Total	14	0	0	14	0	12	0	12	0	0	0	0	26
01:00 PM	5	1	0	6	0	6	0	6	0	0	0	0	12
01:15 PM	9	0	0	9	1	4	0	5	0	0	0	0	14
01:30 PM	3	0	0	3	0	2	0	2	1	0	0	1	6
Grand Total	54	2	0	56	2	35	0	37	3	0	0	3	96
Apprch %	96.4	3.6	0		5.4	94.6	0		100	0	0		
Total %	56.2	2.1	0	58.3	2.1	36.5	0	38.5	3.1	0	0	3.1	

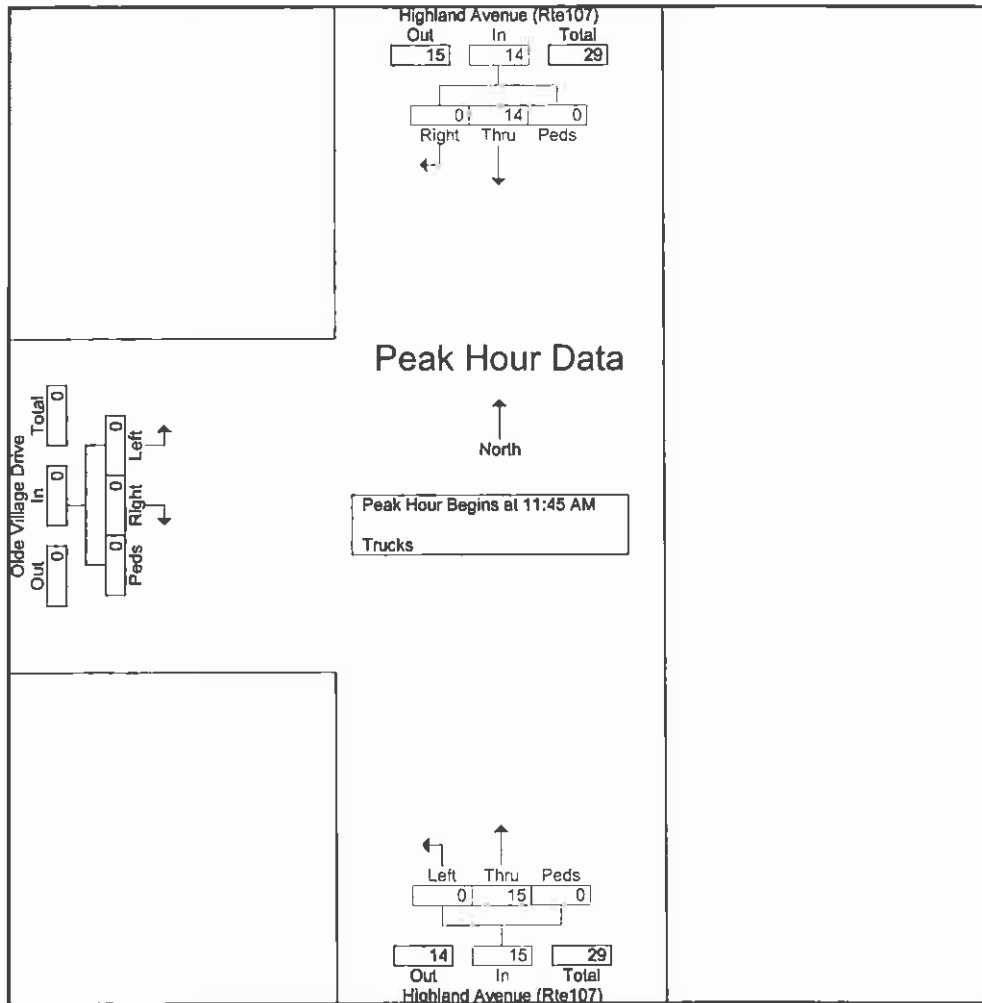


GPI

61 Spit Brook Rd.
Nashua, NH. 03060

File Name : Highland Ave @ Olde Village Dr - SAT
Site Code : 08571
Start Date : 5/31/2008
Page No : 2

Start Time	Highland Avenue (Rte107) Southbound				Highland Avenue (Rte107) Northbound				Olde Village Drive Eastbound				Int. Total
	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	
Peak Hour Analysis From 11:45 AM to 12:30 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 11:45 AM													
11:45 AM	8	0	0	8	0	5	0	5	0	0	0	0	13
12:00 PM	0	0	0	0	0	3	0	3	0	0	0	0	3
12:15 PM	2	0	0	2	0	3	0	3	0	0	0	0	5
12:30 PM	4	0	0	4	0	4	0	4	0	0	0	0	8
Total Volume	14	0	0	14	0	15	0	15	0	0	0	0	29
% App. Total	100	0	0		0	100	0		0	0	0		
PHF	.438	.000	.000	.438	.000	.750	.000	.750	.000	.000	.000	.000	.558



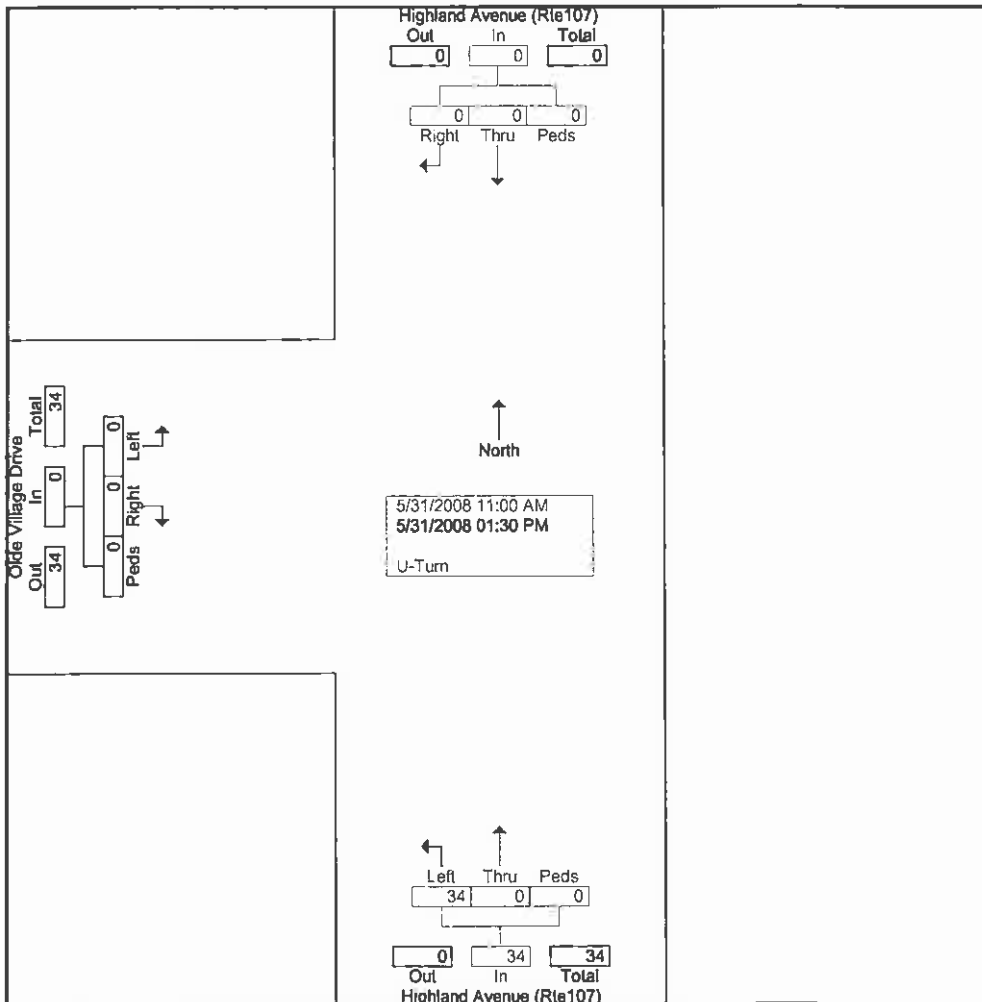
GPI

61 Spit Brook Rd.
Nashua, NH. 03060

File Name : Highland Ave @ Olde Village Dr - SAT
Site Code : 08571
Start Date : 5/31/2008
Page No : 1

Groups Printed- Turn

Start Time	Highland Avenue (Rte107) Southbound				Highland Avenue (Rte107) Northbound				Olde Village Drive Eastbound				Int. Total
	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	4	0	0	4	0	0	0	0	4
11:30 AM	0	0	0	0	7	0	0	7	0	0	0	0	7
11:45 AM	0	0	0	0	5	0	0	5	0	0	0	0	5
Total	0	0	0	0	16	0	0	16	0	0	0	0	16
12:00 PM	0	0	0	0	2	0	0	2	0	0	0	0	2
12:15 PM	0	0	0	0	4	0	0	4	0	0	0	0	4
12:30 PM	0	0	0	0	2	0	0	2	0	0	0	0	2
12:45 PM	0	0	0	0	2	0	0	2	0	0	0	0	2
Total	0	0	0	0	10	0	0	10	0	0	0	0	10
01:00 PM	0	0	0	0	2	0	0	2	0	0	0	0	2
01:15 PM	0	0	0	0	3	0	0	3	0	0	0	0	3
01:30 PM	0	0	0	0	3	0	0	3	0	0	0	0	3
Grand Total	0	0	0	0	34	0	0	34	0	0	0	0	34
Apprch %	0	0	0	0	100	0	0	100	0	0	0	0	100
Total %	0	0	0	0	100	0	0	100	0	0	0	0	100



GPI

61 Spit Brook Rd.
Nashua, NH. 03060

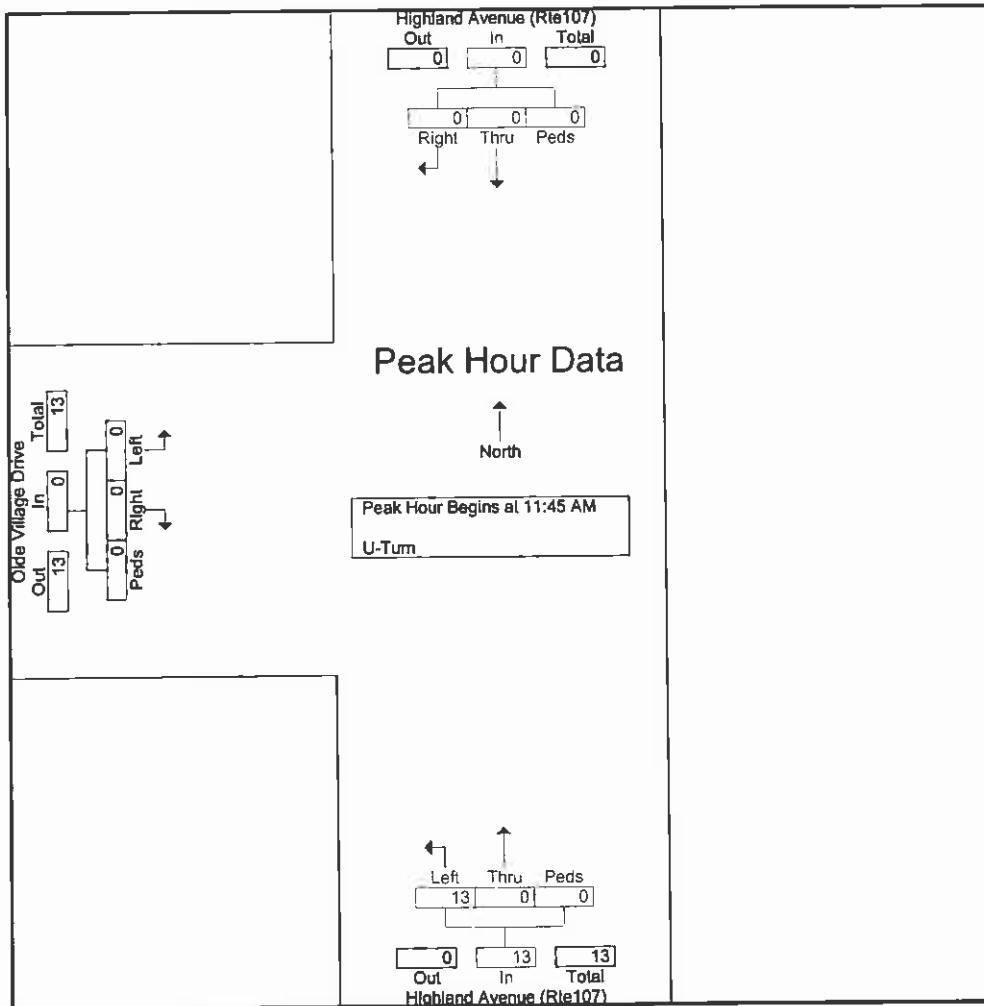
File Name : Highland Ave @ Olde Village Dr - SAT

Site Code : 08571

Start Date : 5/31/2008

Page No : 2

Start Time	Highland Avenue (Rte107) Southbound				Highland Avenue (Rte107) Northbound				Olde Village Drive Eastbound				Int. Total
	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	
Peak Hour Analysis From 11:45 AM to 12:30 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 11:45 AM													
11:45 AM	0	0	0	0	5	0	0	5	0	0	0	0	5
12:00 PM	0	0	0	0	2	0	0	2	0	0	0	0	2
12:15 PM	0	0	0	0	4	0	0	4	0	0	0	0	4
12:30 PM	0	0	0	0	2	0	0	2	0	0	0	0	2
Total Volume	0	0	0	0	13	0	0	13	0	0	0	0	13
% App. Total	0	0	0	0	100	0	0	100	0	0	0	0	100
PHF	.000	.000	.000	.000	.650	.000	.000	.650	.000	.000	.000	.000	.650





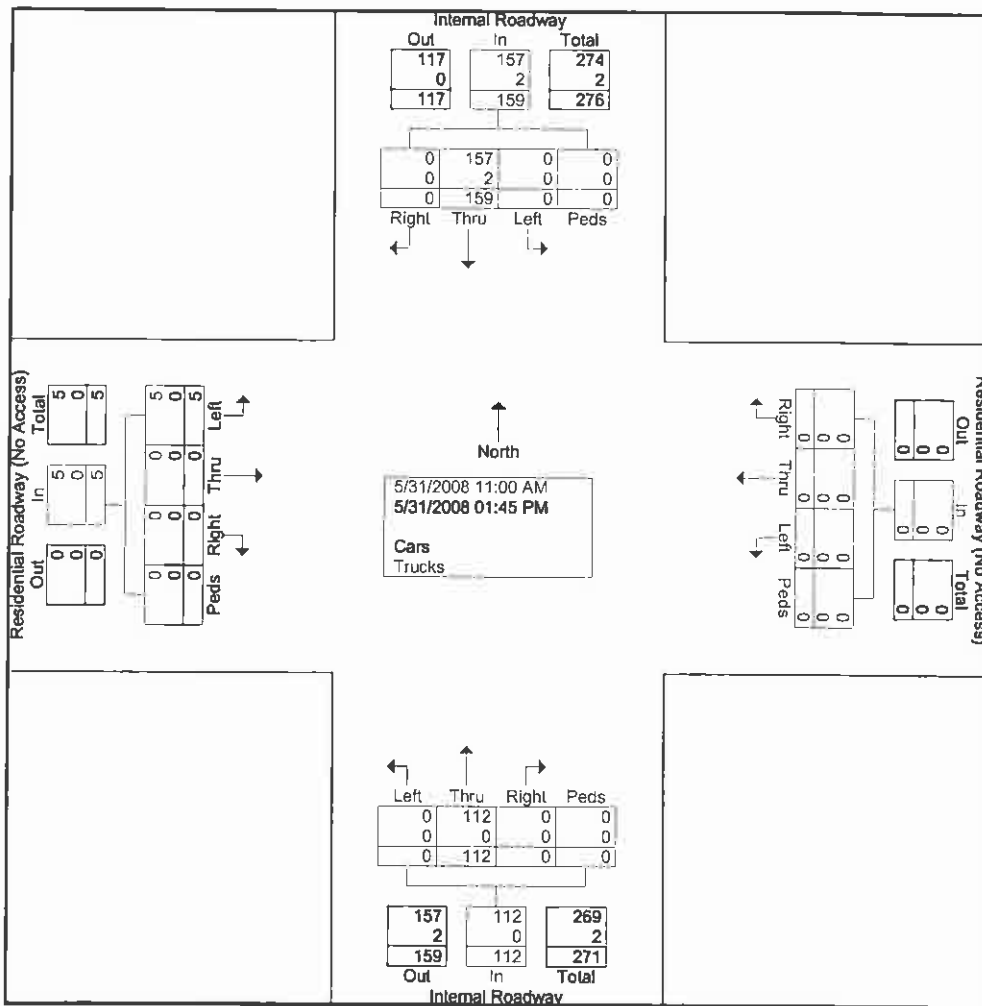
61 Spit Brook Road Suite 110
Nashua, NH. 03060

File Name : WalMart Internal Roadway - SAT

Site Code : 08571

Start Date : 5/31/2008

Page No : 2



GPI

61 Spit Brook Road Suite 110
Nashua, NH. 03060

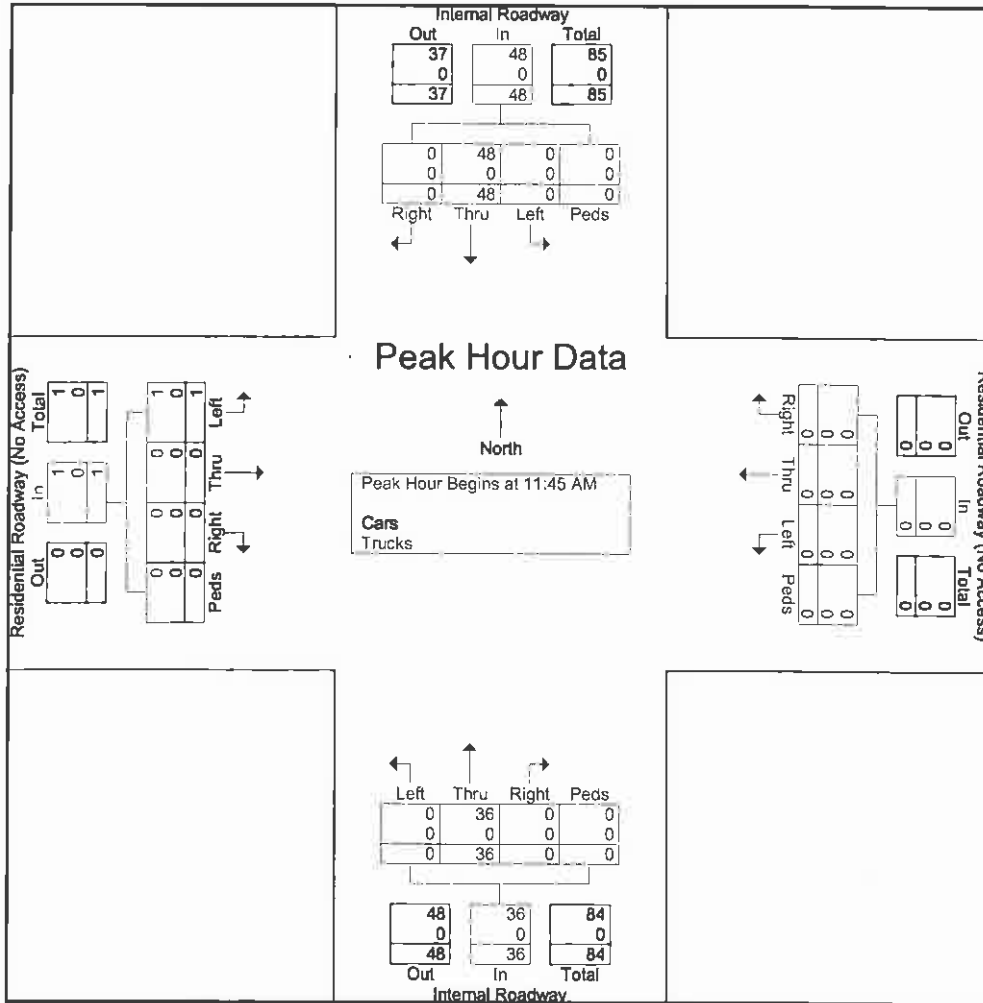
File Name : WalMart Internal Roadway - SAT

Site Code : 08571

Start Date : 5/31/2008

Page No : 3

Start Time	Internal Roadway Southbound					Residential Roadway (No Access) Westbound					Internal Roadway Northbound					Residential Roadway (No Access) Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 11:45 AM to 12:30 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 11:45 AM																					
11:45 AM	0	3	0	0	3	0	0	0	0	0	0	5	0	0	5	1	0	0	0	1	9
12:00 PM	0	23	0	0	23	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	31
12:15 PM	0	12	0	0	12	0	0	0	0	0	0	11	0	0	11	0	0	0	0	0	23
12:30 PM	0	10	0	0	10	0	0	0	0	0	0	12	0	0	12	0	0	0	0	0	22
Total Volume	0	48	0	0	48	0	0	0	0	0	0	36	0	0	36	1	0	0	0	1	85
% App. Total	0	100	0	0		0	0	0	0		0	100	0	0		100	0	0	0		
PHF	.000	.522	.000	.000	.522	.000	.000	.000	.000	.000	.000	.750	.000	.000	.750	.250	.000	.000	.000	.250	.685
Cars	0	48	0	0	48	0	0	0	0	0	0	36	0	0	36	1	0	0	0	1	85
% Cars	0	100	0	0	100	0	0	0	0	0	0	100	0	0	100	100	0	0	0	100	100
Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0





61 Spit Brook Road Suite 110
Nashua, NH. 03060

File Name : WalMart Internal Roadway - SAT

Site Code : 08571

Start Date : 5/31/2008

Page No : 1

Groups Printed- Trucks

Start Time	Internal Roadway Southbound					Residential Roadway (No Access) Westbound					Internal Roadway Northbound					Residential Roadway (No Access) Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Apprch %	0	100	0	0		0	0	0	0		0	0	0	0		0	0	0	0		
Total %	0	100	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

GPI

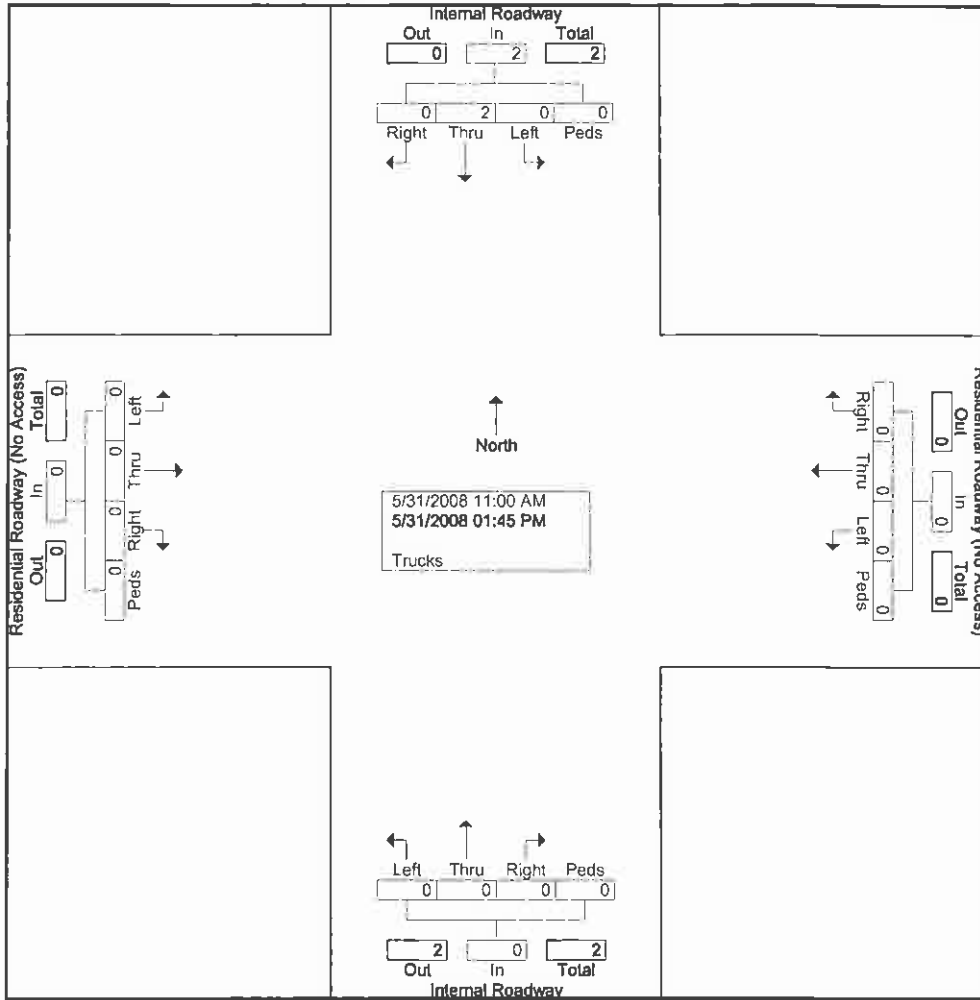
61 Spit Brook Road Suite 110
Nashua, NH. 03060

File Name : WalMart Internal Roadway - SAT

Site Code : 08571

Start Date : 5/31/2008

Page No : 2



GPI

61 Spit Brook Road Suite 110
Nashua, NH. 03060

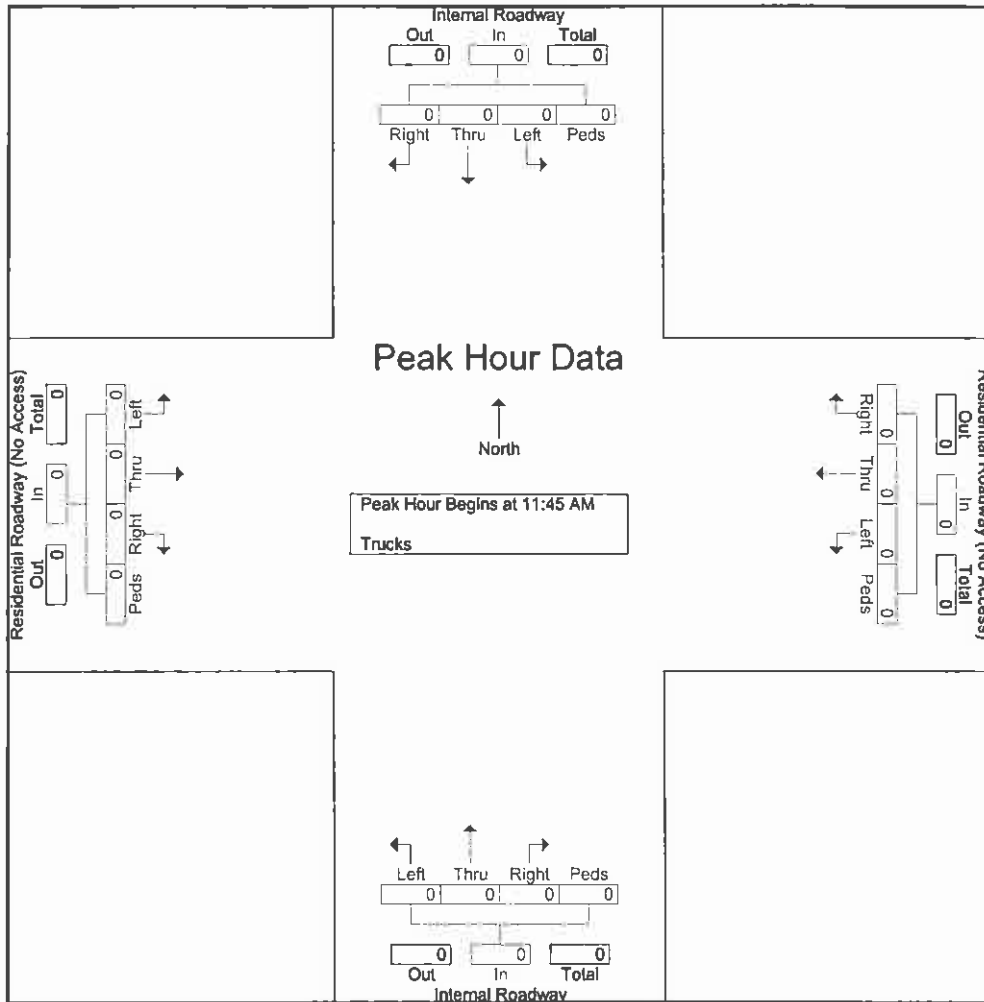
File Name : WalMart Internal Roadway - SAT

Site Code : 08571

Start Date : 5/31/2008

Page No : 3

Start Time	Internal Roadway Southbound					Residential Roadway (No Access) Westbound					Internal Roadway Northbound					Residential Roadway (No Access) Eastbound					Int. Total	
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total		
Peak Hour Analysis From 11:45 AM to 12:30 PM - Peak 1 of 1																						
Peak Hour for Entire Intersection Begins at 11:45 AM																						
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000



GPI

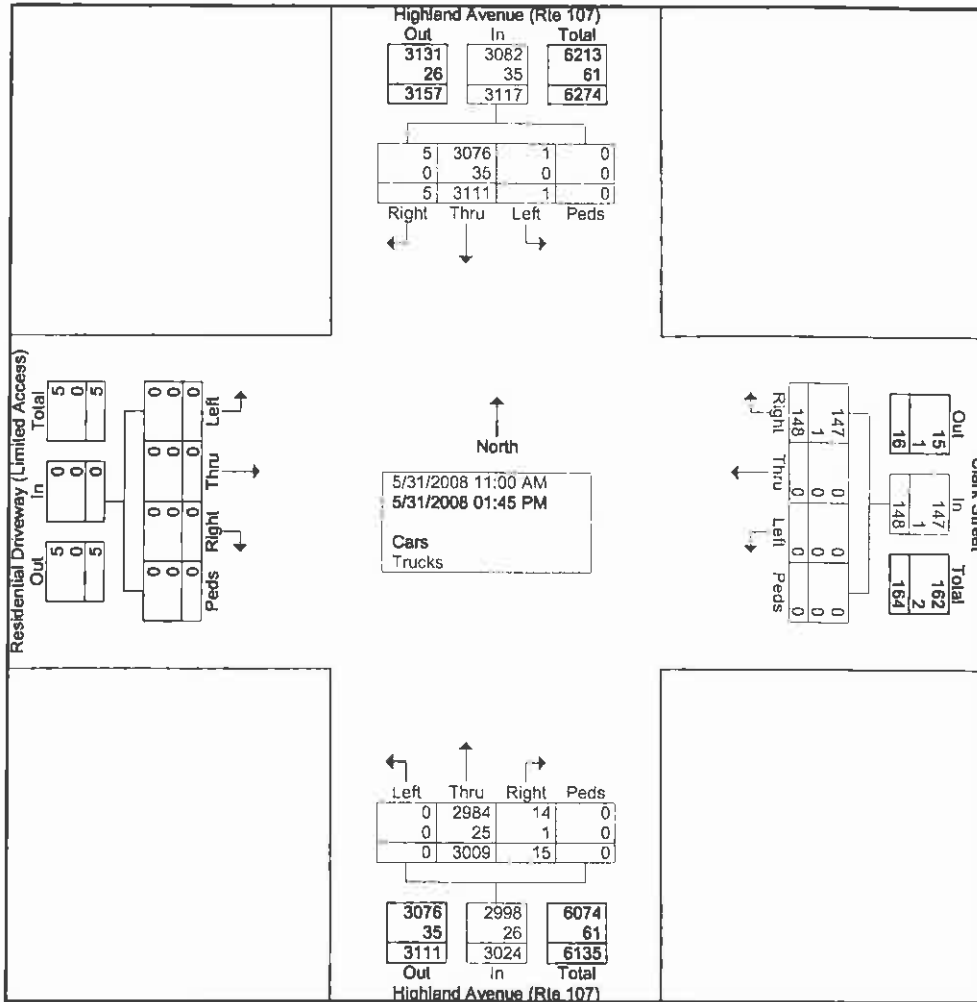
61 Spit Brook Road Suite 110
Nashua, NH. 03060

File Name : Highland Ave @ North Wal-Mart Driveway_Clark St - SAT

Site Code : 08571

Start Date : 5/31/2008

Page No : 2



GPI

61 Spit Brook Road Suite 110
Nashua, NH. 03060

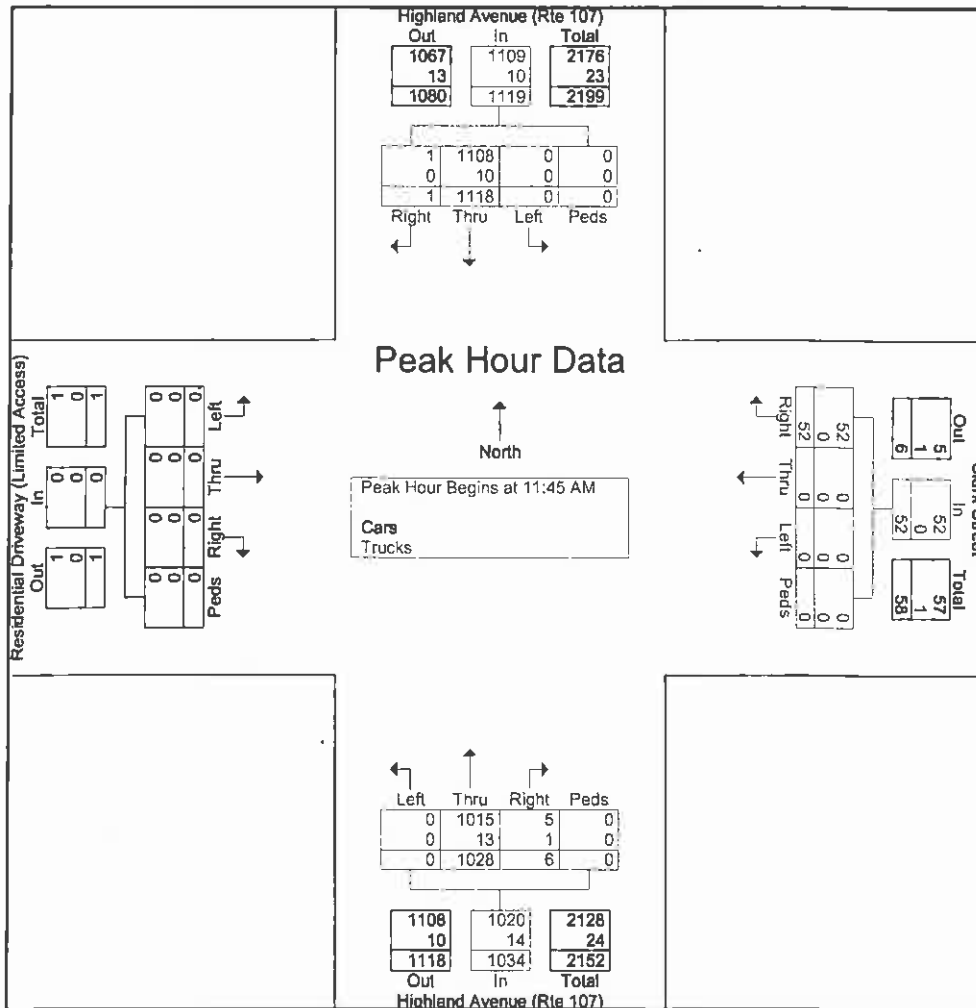
File Name : Highland Ave @ North Wal-Mart Driveway_ClarK St - SAT

Site Code : 08571

Start Date : 5/31/2008

Page No : 3

Start Time	Highland Avenue (Rte 107) Southbound					Clark Street Westbound					Highland Avenue (Rte 107) Northbound					Residential Driveway (Limited Access) Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 11:00 AM to 01:30 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 11:45 AM																					
11:45 AM	0	297	1	0	298	0	0	17	0	17	0	268	0	0	268	0	0	0	0	0	583
12:00 PM	0	266	0	0	266	0	0	11	0	11	0	271	3	0	274	0	0	0	0	0	551
12:15 PM	0	279	0	0	279	0	0	11	0	11	0	273	2	0	275	0	0	0	0	0	565
12:30 PM	0	276	0	0	276	0	0	13	0	13	0	216	1	0	217	0	0	0	0	0	506
Total Volume	0	1118	1	0	1119	0	0	52	0	52	0	1028	6	0	1034	0	0	0	0	0	2205
% App. Total	0	99.9	0.1	0		0	0	100	0		0	99.4	0.6	0		0	0	0	0		
PHF	.000	.941	.250	.000	.939	.000	.000	.765	.000	.765	.000	.941	.500	.000	.940	.000	.000	.000	.000	.000	.946
Cars	0	1108	1	0	1109	0	0	52	0	52	0	1015	5	0	1020	0	0	0	0	0	2181
% Cars	0	99.1	100	0	99.1	0	0	100	0	100	0	98.7	83.3	0	98.6	0	0	0	0	0	98.9
Trucks	0	10	0	0	10	0	0	0	0	0	0	13	1	0	14	0	0	0	0	0	24
% Trucks	0	0.9	0	0	0.9	0	0	0	0	0	0	1.3	16.7	0	1.4	0	0	0	0	0	1.1





61 Spit Brook Road Suite 110
Nashua, NH, 03060

File Name : Highland Ave @ Main Wal-Mart Driveway - SAT

Site Code : 08571

Start Date : 5/31/2008

Page No : 1

Groups Printed- Cars - Trucks - Turns

Start Time	Highland Avenue (Rte 107) Southbound					Self Storage Driveway Westbound					Highland Avenue (Rte 107) Northbound					Main Wal-Mart Driveway Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
11:15 AM	0	180	34	0	214	0	0	0	0	0	46	223	0	0	269	47	0	14	0	61	544
11:30 AM	0	210	75	0	285	0	0	0	0	0	42	197	1	0	240	36	0	7	0	43	568
11:45 AM	0	220	41	1	262	0	0	0	0	0	39	261	1	0	301	44	0	3	0	47	610
Total	0	610	150	1	761	0	0	0	0	0	127	681	2	0	810	127	0	24	0	151	1722
12:00 PM	0	255	50	0	305	0	0	0	0	0	42	222	1	0	265	48	0	5	0	53	623
12:15 PM	0	221	57	0	278	0	0	1	0	1	39	241	0	0	280	38	0	8	0	46	605
12:30 PM	0	229	44	0	273	0	0	0	0	0	37	197	0	0	234	34	0	9	0	43	550
12:45 PM	0	214	37	0	251	0	0	0	0	0	59	226	0	0	285	39	0	13	0	52	588
Total	0	919	188	0	1107	0	0	1	0	1	177	886	1	0	1064	159	0	35	0	194	2366
01:00 PM	0	221	49	0	270	0	0	0	1	1	48	237	0	0	285	41	0	17	0	58	614
01:15 PM	0	225	49	0	274	0	0	0	0	0	51	222	2	0	275	49	0	12	0	61	610
01:30 PM	0	240	51	0	291	0	0	0	0	0	57	250	1	0	308	34	0	10	0	44	643
01:45 PM	0	223	57	0	280	0	0	0	0	0	39	213	0	0	252	56	0	10	0	66	598
Total	0	909	206	0	1115	0	0	0	1	1	195	922	3	0	1120	180	0	49	0	229	2465
02:00 PM	0	226	43	0	269	0	0	0	0	0	35	254	1	0	290	50	0	10	0	60	619
Grand Total	0	2664	587	1	3252	0	0	1	1	2	534	2743	7	0	3284	516	0	118	0	634	7172
Apprch %	0	81.9	18.1	0		0	0	50	50		16.3	83.5	0.2	0		81.4	0	18.6	0		
Total %	0	37.1	8.2	0	45.3	0	0	0	0	0	7.4	38.2	0.1	0	45.8	7.2	0	1.6	0	8.8	
Cars	0	2609	583	1	3193	0	0	1	1	2	490	2704	6	0	3200	513	0	117	0	630	7025
% Cars	0	97.9	99.3	100	98.2	0	0	100	100	100	91.8	98.6	85.7	0	97.4	99.4	0	99.2	0	99.4	98
Trucks	0	55	4	0	59	0	0	0	0	0	4	37	1	0	42	3	0	1	0	4	105
% Trucks	0	2.1	0.7	0	1.8	0	0	0	0	0	0.7	1.3	14.3	0	1.3	0.6	0	0.8	0	0.6	1.5
U-Turns	0	0	0	0	0	0	0	0	0	0	40	2	0	0	42	0	0	0	0	0	42
% U-Turns	0	0	0	0	0	0	0	0	0	0	7.5	0.1	0	0	1.3	0	0	0	0	0	0.6

GPI

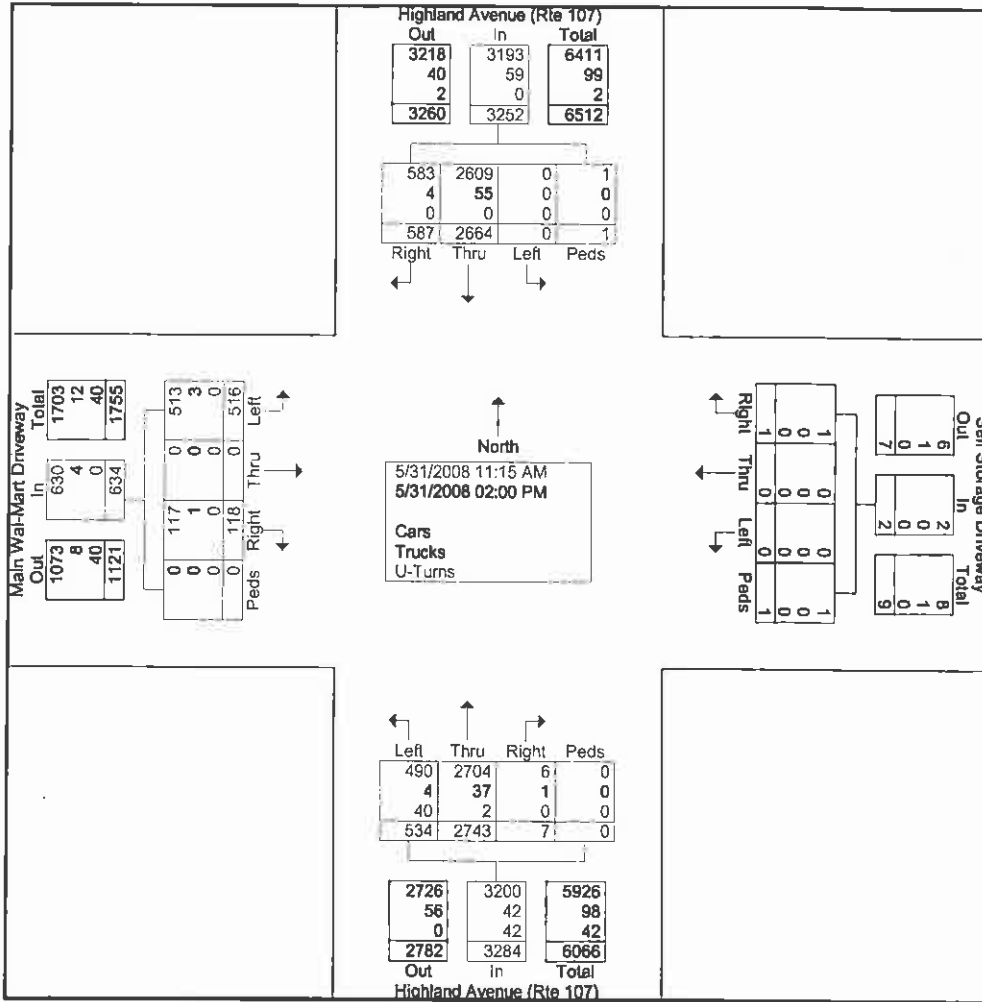
61 Spit Brook Road Suite 110
Nashua, NH. 03060

File Name : Highland Ave @ Main Wal-Mart Driveway - SAT

Site Code : 08571

Start Date : 5/31/2008

Page No : 2



GPI

61 Spit Brook Road Suite 110
Nashua, NH. 03060

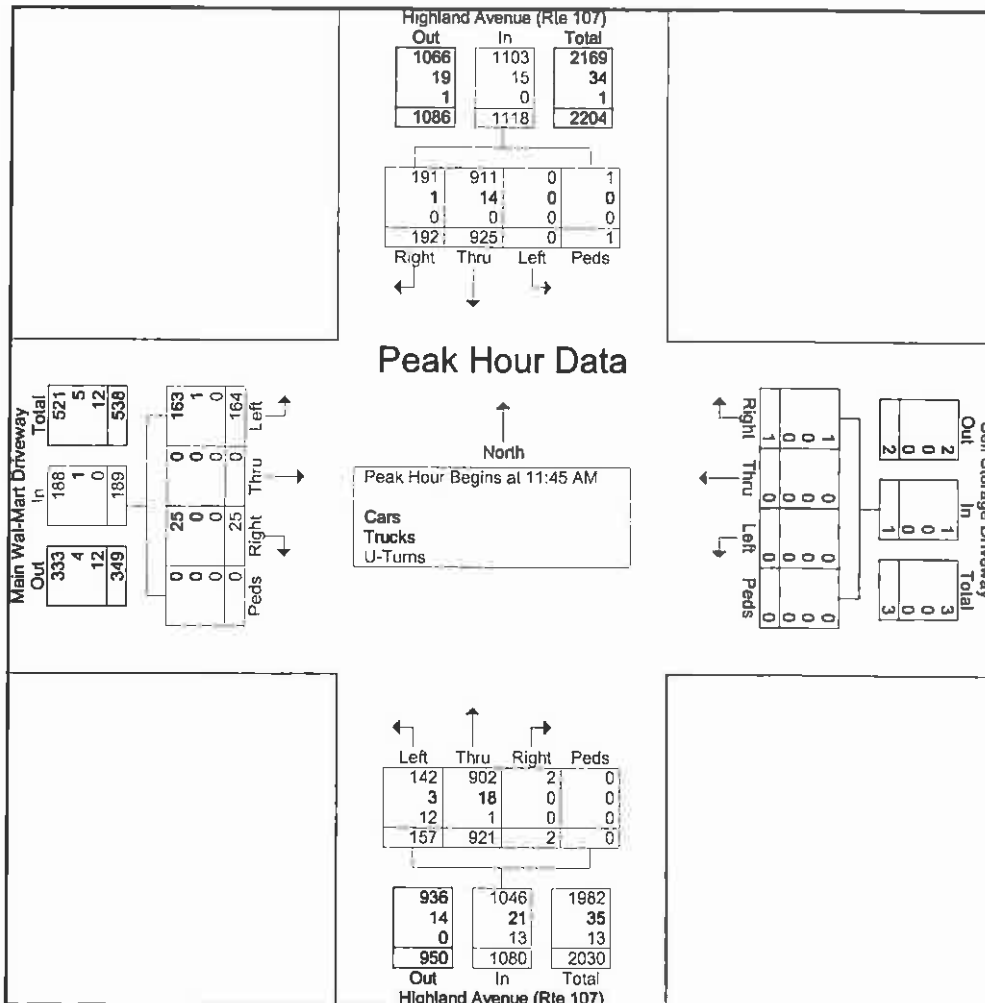
File Name : Highland Ave @ Main Wal-Mart Driveway - SAT

Site Code : 08571

Start Date : 5/31/2008

Page No : 3

Start Time	Highland Avenue (Rte 107) Southbound					Self Storage Driveway Westbound					Highland Avenue (Rte 107) Northbound					Main Wal-Mart Driveway Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 11:45 AM to 12:30 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 11:45 AM																					
11:45 AM	0	220	41	1	262	0	0	0	0	0	39	261	1	0	301	44	0	3	0	47	610
12:00 PM	0	255	50	0	305	0	0	0	0	0	42	222	1	0	265	48	0	5	0	53	623
12:15 PM	0	221	57	0	278	0	0	1	0	1	39	241	0	0	280	38	0	8	0	46	605
12:30 PM	0	229	44	0	273	0	0	0	0	0	37	197	0	0	234	34	0	9	0	43	550
Total Volume	0	925	192	1	1118	0	0	1	0	1	157	921	2	0	1080	164	0	25	0	189	2388
% App. Total	0	82.7	17.2	0.1		0	0	100	0		14.5	85.3	0.2	0		86.8	0	13.2	0		
PHF	.000	.907	.842	.250	.916	.000	.000	.250	.000	.250	.935	.882	.500	.000	.897	.854	.000	.694	.000	.892	.958
Cars	0	911	191	1	1103	0	0	1	0	1	142	902	2	0	1046	163	0	25	0	188	2338
% Cars	0	98.5	99.5	100	98.7	0	0	100	0	100	90.4	97.9	100	0	96.9	99.4	0	100	0	99.5	97.9
Trucks	0	14	1	0	15	0	0	0	0	0	3	18	0	0	21	1	0	0	0	1	37
% Trucks	0	1.5	0.5	0	1.3	0	0	0	0	0	1.9	2.0	0	0	1.9	0.6	0	0	0	0.5	1.5
U-Turns	0	0	0	0	0	0	0	0	0	0	12	1	0	0	13	0	0	0	0	0	13
% U-Turns	0	0	0	0	0	0	0	0	0	0	7.6	0.1	0	0	1.2	0	0	0	0	0	0.5



GPI

61 Spit Brook Road Suite 110
Nashua, NH. 03060

File Name : Highland Ave @ Main Wal-Mart Driveway - SAT

Site Code : 08571

Start Date : 5/31/2008

Page No : 1

Groups Printed- Cars - Trucks

Start Time	Highland Avenue (Rte 107) Southbound					Self Storage Driveway Westbound					Highland Avenue (Rte 107) Northbound					Main Wal-Mart Driveway Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
11:15 AM	0	180	34	0	214	0	0	0	0	0	44	223	0	0	267	47	0	14	0	61	542
11:30 AM	0	210	75	0	285	0	0	0	0	0	38	197	1	0	236	36	0	7	0	43	564
11:45 AM	0	220	41	1	262	0	0	0	0	0	36	261	1	0	298	44	0	3	0	47	607
Total	0	610	150	1	761	0	0	0	0	0	118	681	2	0	801	127	0	24	0	151	1713
12:00 PM	0	255	50	0	305	0	0	0	0	0	41	222	1	0	264	48	0	5	0	53	622
12:15 PM	0	221	57	0	278	0	0	1	0	1	35	241	0	0	276	38	0	8	0	46	601
12:30 PM	0	229	44	0	273	0	0	0	0	0	33	196	0	0	229	34	0	9	0	43	545
12:45 PM	0	214	37	0	251	0	0	0	0	0	54	226	0	0	280	39	0	13	0	52	583
Total	0	919	188	0	1107	0	0	1	0	1	163	885	1	0	1049	159	0	35	0	194	2351
01:00 PM	0	221	49	0	270	0	0	0	1	1	46	237	0	0	283	41	0	17	0	58	612
01:15 PM	0	225	49	0	274	0	0	0	0	0	48	222	2	0	272	49	0	12	0	61	607
01:30 PM	0	240	51	0	291	0	0	0	0	0	48	250	1	0	299	34	0	10	0	44	634
01:45 PM	0	223	57	0	280	0	0	0	0	0	37	212	0	0	249	56	0	10	0	66	595
Total	0	909	206	0	1115	0	0	0	1	1	179	921	3	0	1103	180	0	49	0	229	2448
02:00 PM	0	226	43	0	269	0	0	0	0	0	34	254	1	0	289	50	0	10	0	60	618
Grand Total	0	2664	587	1	3252	0	0	1	1	2	494	2741	7	0	3242	516	0	118	0	634	7130
Apprch %	0	81.9	18.1	0		0	0	50	50		15.2	84.5	0.2	0		81.4	0	18.6	0		
Total %	0	37.4	8.2	0	45.6	0	0	0	0	0	6.9	38.4	0.1	0	45.5	7.2	0	1.7	0	8.9	
Cars	0	2609	583	1	3193	0	0	1	1	2	490	2704	6	0	3200	513	0	117	0	630	7025
% Cars	0	97.9	99.3	100	98.2	0	0	100	100	100	99.2	98.7	85.7	0	98.7	99.4	0	99.2	0	99.4	98.5
Trucks	0	55	4	0	59	0	0	0	0	0	4	37	1	0	42	3	0	1	0	4	105
% Trucks	0	2.1	0.7	0	1.8	0	0	0	0	0	0.8	1.3	14.3	0	1.3	0.6	0	0.8	0	0.6	1.5

GPI

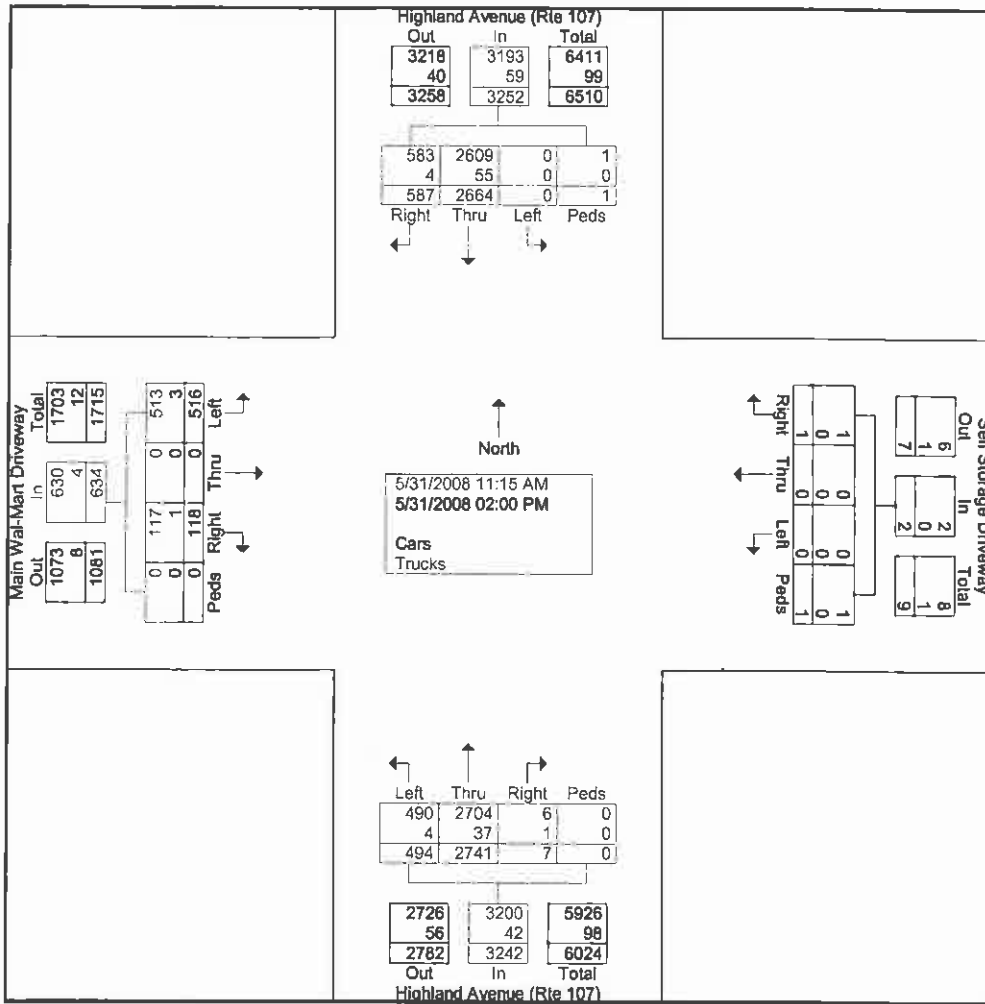
61 Spit Brook Road Suite 110
 Nashua, NH. 03060

File Name : Highland Ave @ Main Wal-Mart Driveway - SAT

Site Code : 08571

Start Date : 5/31/2008

Page No : 2



GPI

61 Spit Brook Road Suite 110
Nashua, NH. 03060

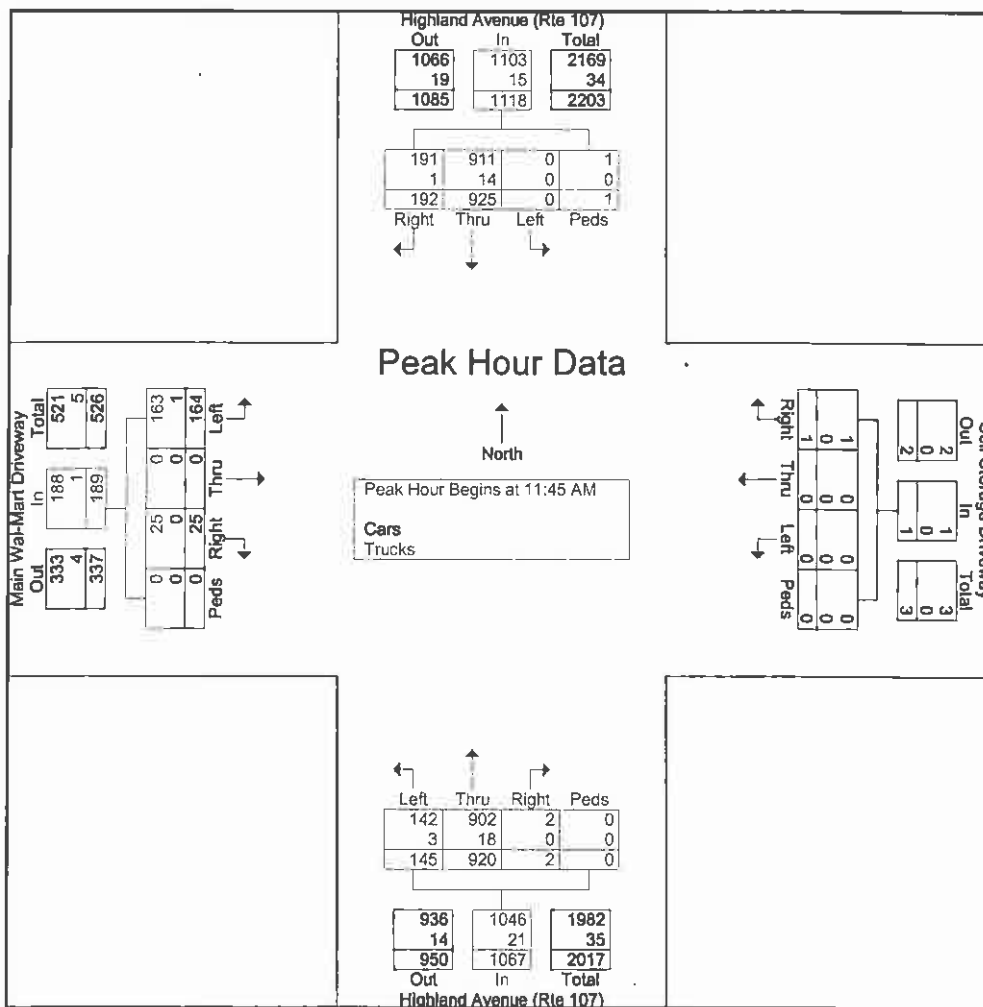
File Name : Highland Ave @ Main Wal-Mart Driveway - SAT

Site Code : 08571

Start Date : 5/31/2008

Page No : 3

Start Time	Highland Avenue (Rte 107) Southbound					Self Storage Driveway Westbound					Highland Avenue (Rte 107) Northbound					Main Wal-Mart Driveway Eastbound					Inst. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 11:45 AM to 12:30 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 11:45 AM																					
11:45 AM	0	220	41	1	262	0	0	0	0	0	36	261	1	0	298	44	0	3	0	47	607
12:00 PM	0	255	50	0	305	0	0	0	0	0	41	222	1	0	264	48	0	5	0	53	622
12:15 PM	0	221	57	0	278	0	0	1	0	1	35	241	0	0	276	38	0	8	0	46	601
12:30 PM	0	229	44	0	273	0	0	0	0	0	33	196	0	0	229	34	0	9	0	43	545
Total Volume	0	925	192	1	1118	0	0	1	0	1	145	920	2	0	1067	164	0	25	0	189	2375
% App. Total	0	82.7	17.2	0.1		0	0	100	0		13.6	86.2	0.2	0		86.8	0	13.2	0		
PHF	.000	.907	.842	.250	.916	.000	.000	.250	.000	.250	.884	.881	.500	.000	.895	.854	.000	.694	.000	.892	.955
Cars	0	911	191	1	1103	0	0	1	0	1	142	902	2	0	1046	163	0	25	0	188	2338
% Cars	0	98.5	99.5	100	98.7	0	0	100	0	100	97.9	98.0	100	0	98.0	99.4	0	100	0	99.5	98.4
Trucks	0	14	1	0	15	0	0	0	0	0	3	18	0	0	21	1	0	0	0	1	37
% Trucks	0	1.5	0.5	0	1.3	0	0	0	0	0	2.1	2.0	0	0	2.0	0.6	0	0	0	0.5	1.6



GPI

61 Spit Brook Road Suite 110
Nashua, NH. 03060

File Name : Highland Ave @ Main Wal-Mart Driveway - SAT

Site Code : 08571

Start Date : 5/31/2008

Page No : 1

Groups Printed- Trucks

Start Time	Highland Avenue (Rte 107) Southbound					Self Storage Driveway Westbound					Highland Avenue (Rte 107) Northbound					Main Wal-Mart Driveway Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
11:15 AM	0	5	0	0	5	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	8
11:30 AM	0	3	1	0	4	0	0	0	0	0	1	4	1	0	6	1	0	0	0	1	11
11:45 AM	0	8	0	0	8	0	0	0	0	0	1	4	0	5	0	0	0	0	0	1	13
Total	0	16	1	0	17	0	0	0	0	0	2	11	1	0	14	1	0	0	0	1	32
12:00 PM	0	4	1	0	5	0	0	0	0	0	1	3	0	4	1	0	0	0	0	1	10
12:15 PM	0	1	0	0	1	0	0	0	0	0	0	8	0	8	0	0	0	0	0	0	9
12:30 PM	0	1	0	0	1	0	0	0	0	0	1	3	0	4	0	0	0	0	0	0	5
12:45 PM	0	7	0	0	7	0	0	0	0	0	0	4	0	4	1	0	0	0	0	1	12
Total	0	13	1	0	14	0	0	0	0	0	2	18	0	20	2	0	0	0	0	2	36
01:00 PM	0	7	1	0	8	0	0	0	0	0	0	1	0	1	0	0	1	0	1	10	
01:15 PM	0	7	0	0	7	0	0	0	0	0	0	5	0	5	0	0	0	0	0	0	12
01:30 PM	0	7	1	0	8	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	9
01:45 PM	0	3	0	0	3	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	4
Total	0	24	2	0	26	0	0	0	0	0	0	8	0	8	0	0	1	0	1	35	
02:00 PM	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Grand Total	0	55	4	0	59	0	0	0	0	0	4	37	1	42	3	0	1	0	4	105	
Apprch %	0	93.2	6.8	0		0	0	0	0		9.5	88.1	2.4	0		75	0	25	0		
Total %	0	52.4	3.8	0	56.2	0	0	0	0	0	3.8	35.2	1	40	2.9	0	1	0	3.8		

GPI

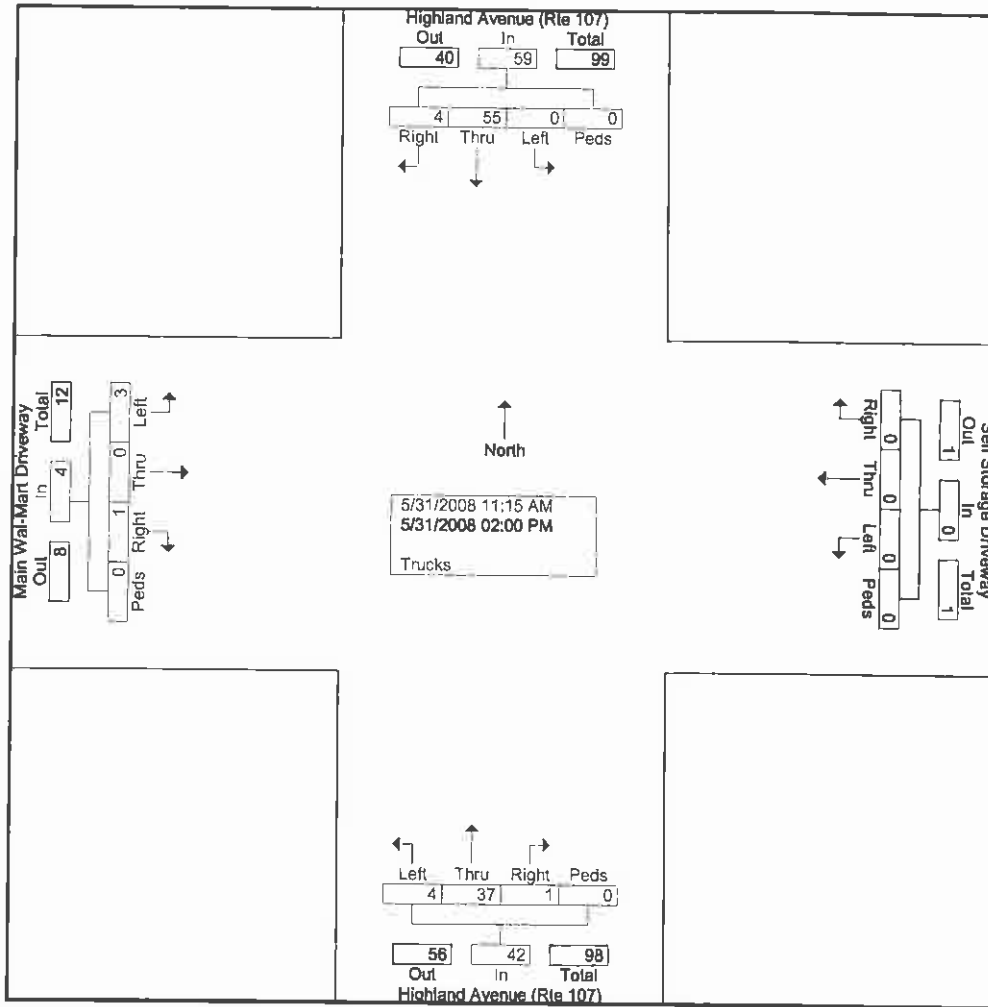
61 Spit Brook Road Suite 110
 Nashua, NH. 03060

File Name : Highland Ave @ Main Wal-Mart Driveway - SAT

Site Code : 08571

Start Date : 5/31/2008

Page No : 2



GPI

61 Spit Brook Road Suite 110
Nashua, NH. 03060

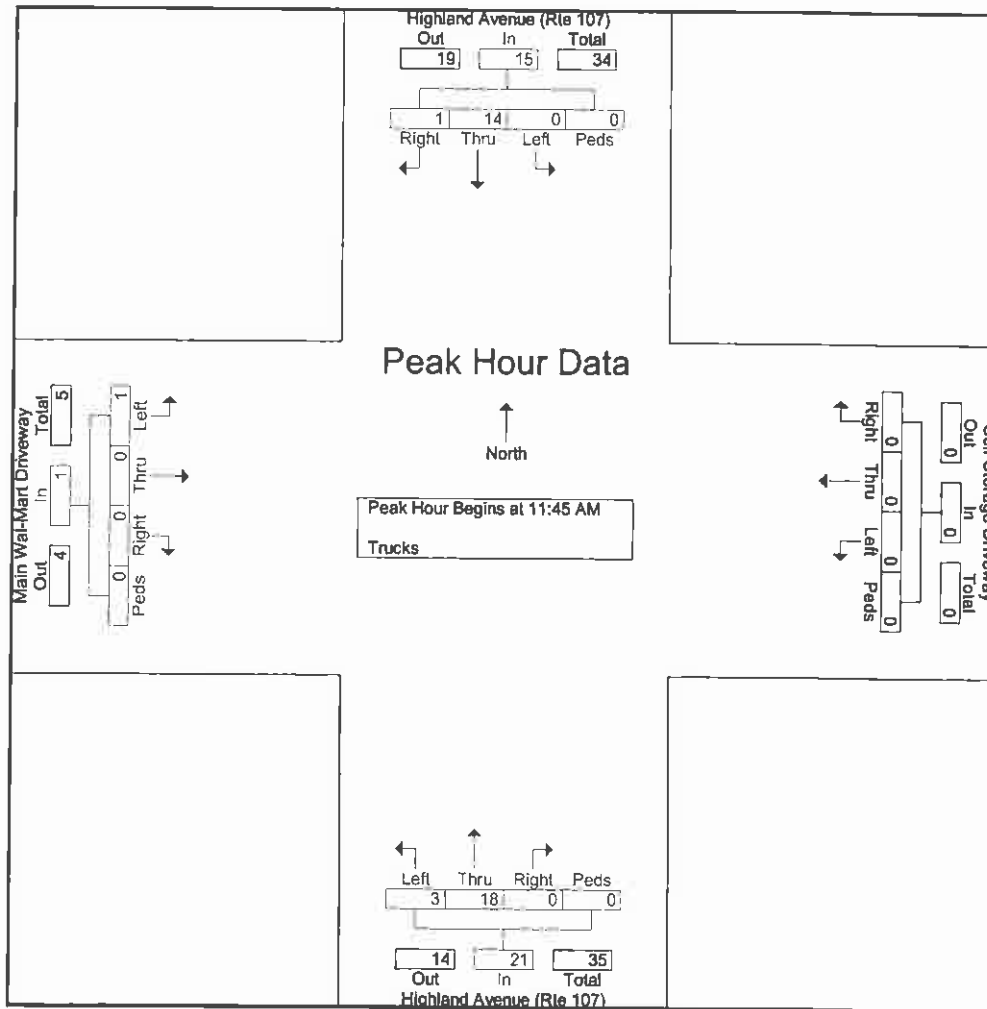
File Name : Highland Ave @ Main Wal-Mart Driveway - SAT

Site Code : 08571

Start Date : 5/31/2008

Page No : 3

Start Time	Highland Avenue (Rte 107) Southbound					Self Storage Driveway Westbound					Highland Avenue (Rte 107) Northbound					Main Wal-Mart Driveway Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 11:45 AM to 12:30 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 11:45 AM																					
11:45 AM	0	8	0	0	8	0	0	0	0	0	1	4	0	0	5	0	0	0	0	0	13
12:00 PM	0	4	1	0	5	0	0	0	0	0	1	3	0	0	4	1	0	0	0	1	10
12:15 PM	0	1	0	0	1	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	9
12:30 PM	0	1	0	0	1	0	0	0	0	0	1	3	0	0	4	0	0	0	0	0	5
Total Volume	0	14	1	0	15	0	0	0	0	0	3	18	0	0	21	1	0	0	0	1	37
% App. Total	0	93.3	6.7	0		0	0	0	0		14.3	85.7	0	0		100	0	0	0		
PHF	.000	.438	.250	.000	.469	.000	.000	.000	.000	.000	.750	.563	.000	.000	.656	.250	.000	.000	.000	.250	.712





61 Spit Brook Road Suite 110
 Nashua, NH. 03060

File Name : Highland Ave @ Main Wal-Mart Driveway - SAT

Site Code : 08571

Start Date : 5/31/2008

Page No : 1

Groups Printed- Turns

Start Time	Highland Avenue (Rte 107) Southbound					Self Storage Driveway Westbound					Highland Avenue (Rte 107) Northbound					Main Wal-Mart Driveway Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
11:15 AM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	9	0	0	0	9	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	4	1	0	0	5	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	5	0	0	0	5	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	14	1	0	0	15	0	0	0	0	0	0
01:00 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0
01:15 PM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	0	0	0	0	0	0
01:30 PM	0	0	0	0	0	0	0	0	0	0	9	0	0	0	9	0	0	0	0	0	0
01:45 PM	0	0	0	0	0	0	0	0	0	0	2	1	0	0	3	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	16	1	0	0	17	0	0	0	0	0	0
02:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	40	2	0	0	42	0	0	0	0	0	0
Apprch %	0	0	0	0		0	0	0	0		95.2	4.8	0	0		0	0	0	0		
Total %	0	0	0	0		0	0	0	0		95.2	4.8	0	0	100	0	0	0	0		

GPI

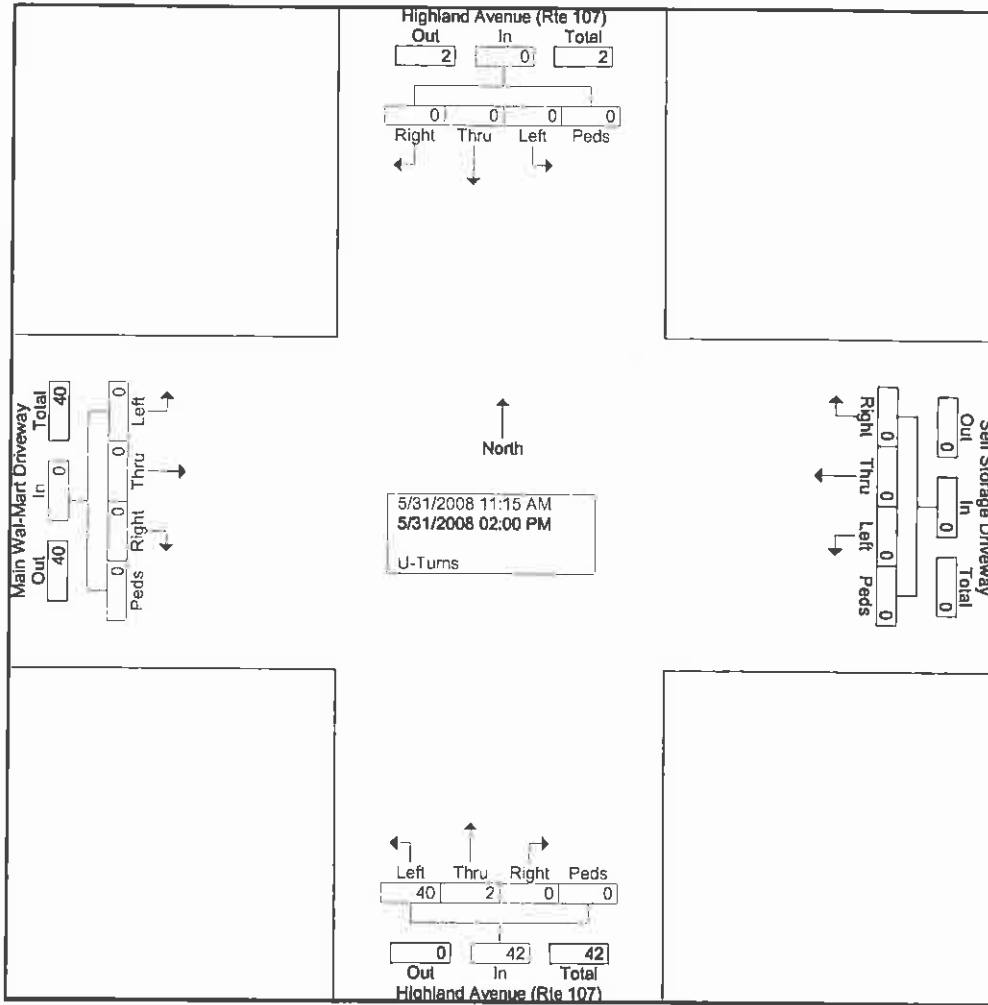
61 Spit Brook Road Suite 110
Nashua, NH. 03060

File Name : Highland Ave @ Main Wal-Mart Driveway - SAT

Site Code : 08571

Start Date : 5/31/2008

Page No : 2



GPI

61 Spit Brook Road Suite 110
Nashua, NH. 03060

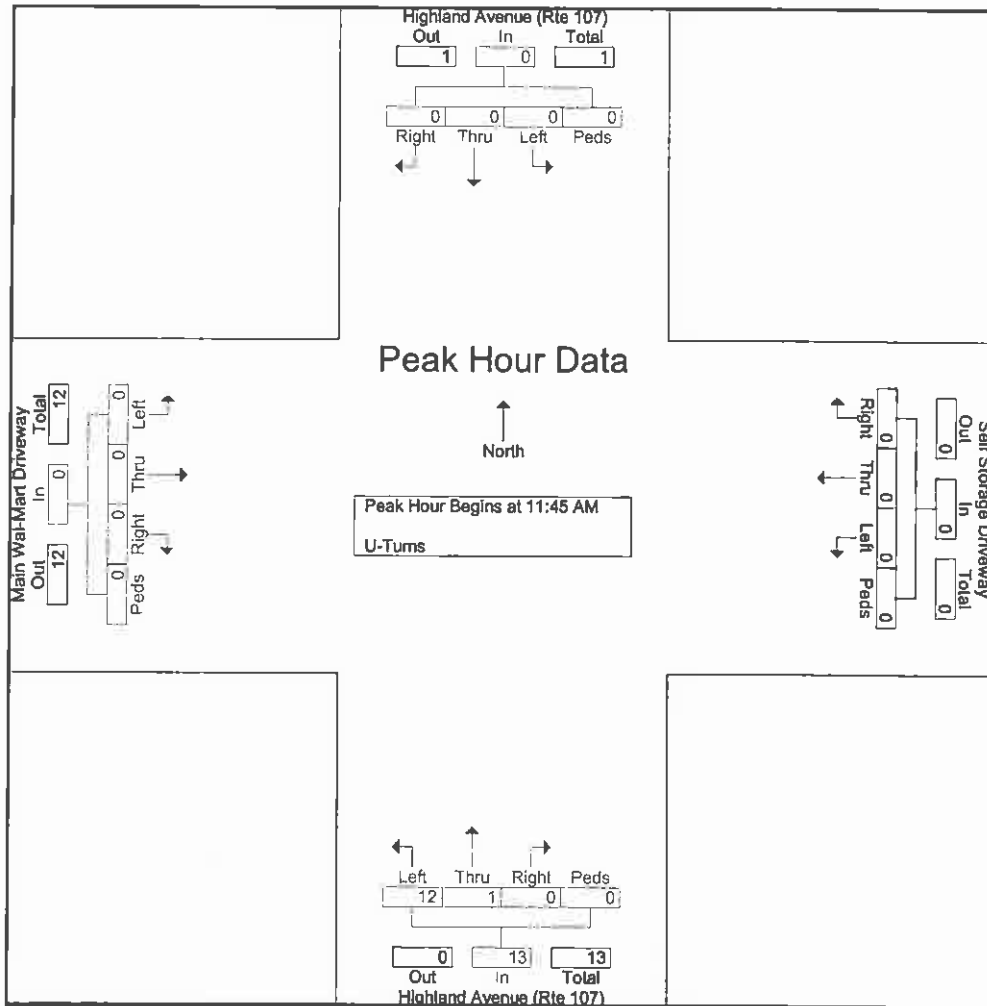
File Name : Highland Ave @ Main Wal-Mart Driveway - SAT

Site Code : 08571

Start Date : 5/31/2008

Page No : 3

Start Time	Highland Avenue (Rte 107) Southbound					Self Storage Driveway Westbound					Highland Avenue (Rte 107) Northbound					Main Wal-Mart Driveway Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 11:45 AM to 12:30 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 11:45 AM																					
11:45 AM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	0	0	0	0	0	3
12:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1
12:15 PM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4	0	0	0	0	0	4
12:30 PM	0	0	0	0	0	0	0	0	0	0	4	1	0	0	5	0	0	0	0	0	5
Total Volume	0	0	0	0	0	0	0	0	0	0	12	1	0	0	13	0	0	0	0	0	13
% App. Total	0	0	0	0	0	0	0	0	0	0	92.3	7.7	0	0		0	0	0	0	0	
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.750	.250	.000	.000	.650	.000	.000	.000	.000	.000	.650



GPI

61 Spit Brook Road Suite 110
Nashua, NH. 03060

File Name : Highland Ave @ S Wal-Mart Driveway - SAT

Site Code : 08577

Start Date : 5/31/2008

Page No : 1

Groups Printed- Cars - Trucks

Start Time	Highland Avenue (Rte107) Southbound				Highland Avenue (Rte107) Northbound				Southern Wal-Mart Driveway Eastbound				Int. Total
	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	
11:00 AM	0	0	0	0	0	241	0	241	0	28	0	28	269
11:15 AM	0	0	0	0	0	271	0	271	0	24	0	24	295
11:30 AM	0	0	0	0	0	245	0	245	0	26	0	26	271
11:45 AM	0	1	0	1	0	292	0	292	0	29	0	29	322
Total	0	1	0	1	0	1049	0	1049	0	107	0	107	1157
12:00 PM	0	0	0	0	0	264	0	264	0	26	0	26	290
12:15 PM	0	0	0	0	0	274	0	274	0	30	0	30	304
12:30 PM	0	0	0	0	0	224	0	224	0	31	0	31	255
12:45 PM	0	1	0	1	0	270	0	270	0	22	0	22	293
Total	0	1	0	1	0	1032	0	1032	0	109	0	109	1142
01:00 PM	0	0	0	0	0	263	0	263	0	25	0	25	288
01:15 PM	0	0	0	0	0	237	0	237	0	36	0	36	273
01:30 PM	0	0	0	0	0	283	0	283	0	35	0	35	318
01:45 PM	0	1	0	1	0	257	0	257	0	35	0	35	293
Total	0	1	0	1	0	1040	0	1040	0	131	0	131	1172
Grand Total	0	3	0	3	0	3121	0	3121	0	347	0	347	3471
Apprch %	0	100	0		0	100	0		0	100	0		
Total %	0	0.1	0	0.1	0	89.9	0	89.9	0	10	0	10	
Cars	0	3	0	3	0	3069	0	3069	0	346	0	346	3418
% Cars	0	100	0	100	0	98.3	0	98.3	0	99.7	0	99.7	98.5
Trucks	0	0	0	0	0	52	0	52	0	1	0	1	53
% Trucks	0	0	0	0	0	1.7	0	1.7	0	0.3	0	0.3	1.5

GPI

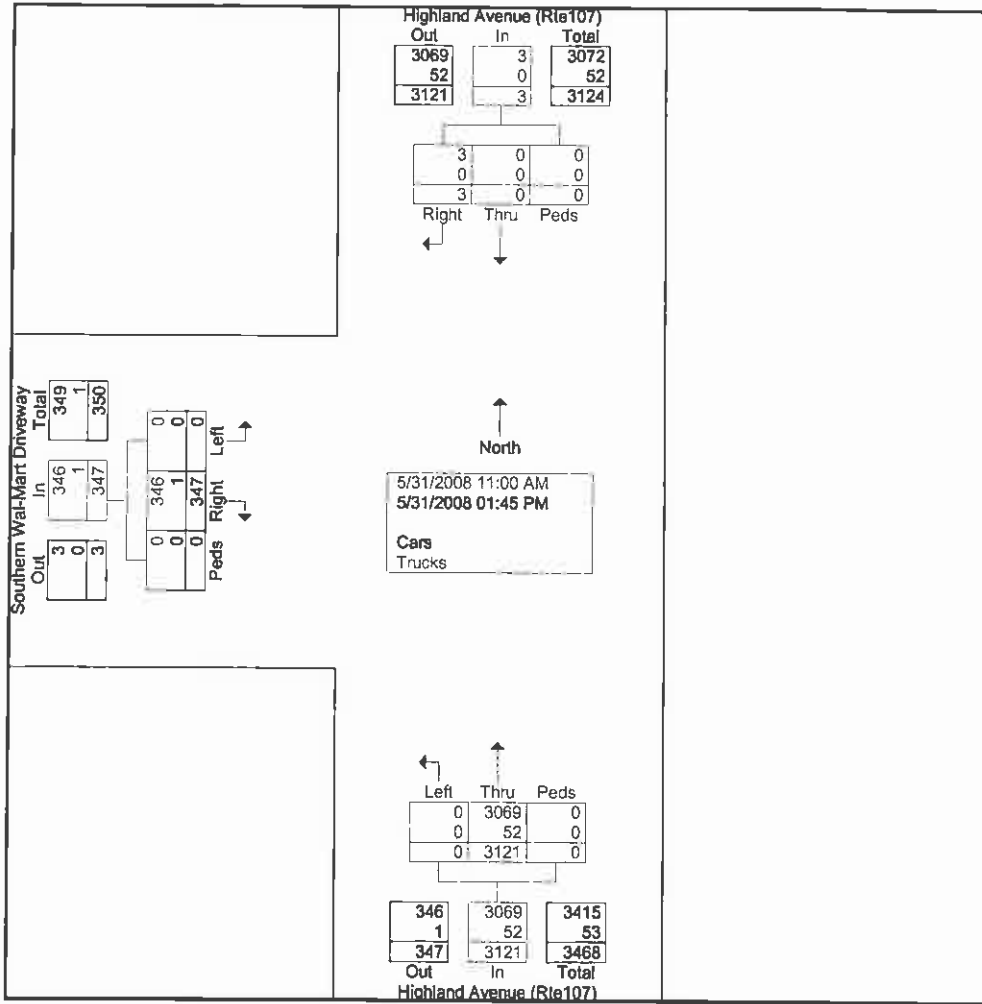
61 Spit Brook Road Suite 110
Nashua, NH. 03060

File Name : Highland Ave @ S Wal-Mart Driveway - SAT

Site Code : 08577

Start Date : 5/31/2008

Page No : 2



GPI

61 Spit Brook Road Suite 110
Nashua, NH. 03060

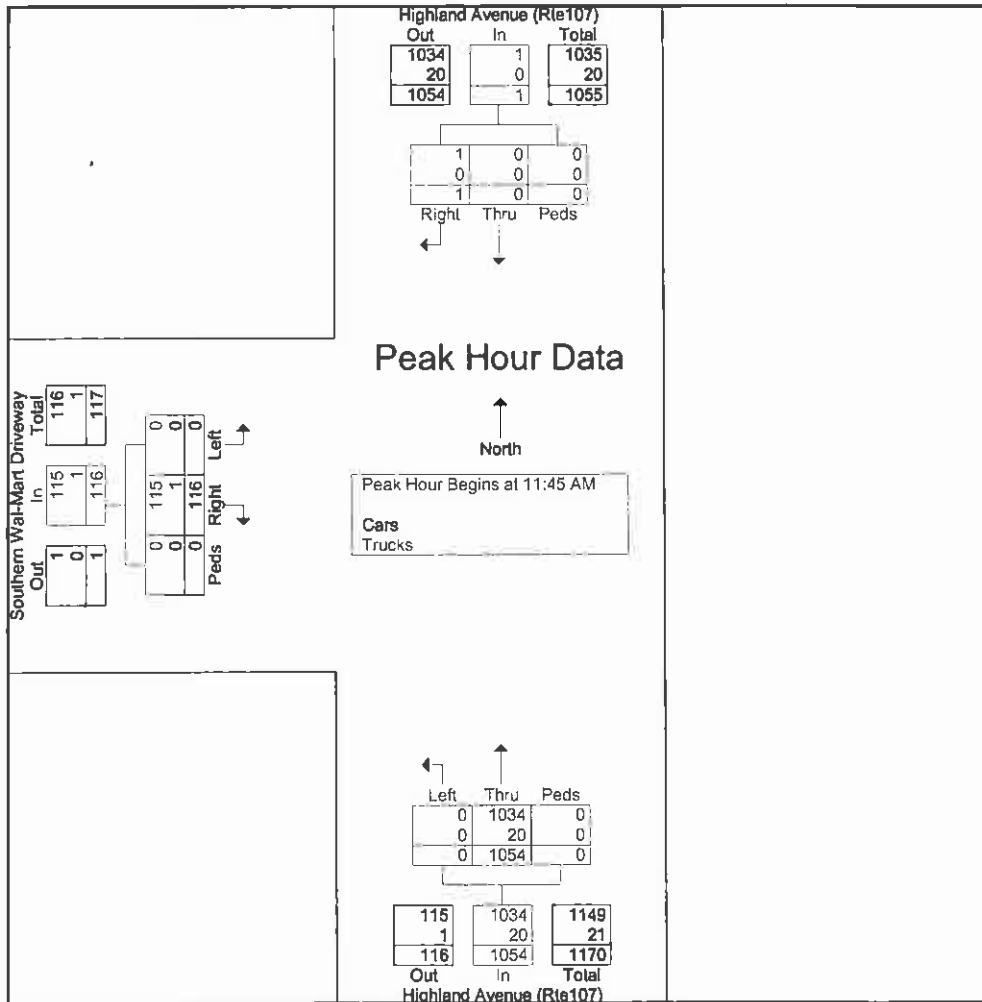
File Name : Highland Ave @ S Wal-Mart Driveway - SAT

Site Code : 08577

Start Date : 5/31/2008

Page No : 3

Start Time	Highland Avenue (Rte107) Southbound				Highland Avenue (Rte107) Northbound				Southern Wal-Mart Driveway Eastbound				Int. Total
	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	
Peak Hour Analysis From 11:45 AM to 12:30 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 11:45 AM													
11:45 AM	0	1	0	1	0	292	0	292	0	29	0	29	322
12:00 PM	0	0	0	0	0	264	0	264	0	26	0	26	290
12:15 PM	0	0	0	0	0	274	0	274	0	30	0	30	304
12:30 PM	0	0	0	0	0	224	0	224	0	31	0	31	255
Total Volume	0	1	0	1	0	1054	0	1054	0	116	0	116	1171
% App. Total	0	100	0	100	0	100	0	100	0	100	0	100	100
PHF	.000	.250	.000	.250	.000	.902	.000	.902	.000	.935	.000	.935	.909
Cars	0	1	0	1	0	1034	0	1034	0	115	0	115	1150
% Cars	0	100	0	100	0	98.1	0	98.1	0	99.1	0	99.1	98.2
Trucks	0	0	0	0	0	20	0	20	0	1	0	1	21
% Trucks	0	0	0	0	0	1.9	0	1.9	0	0.9	0	0.9	1.8



GPI

61 Spit Brook Road Suite 110
Nashua, NH. 03060

File Name : Highland Ave @ S Wal-Mart Driveway - SAT

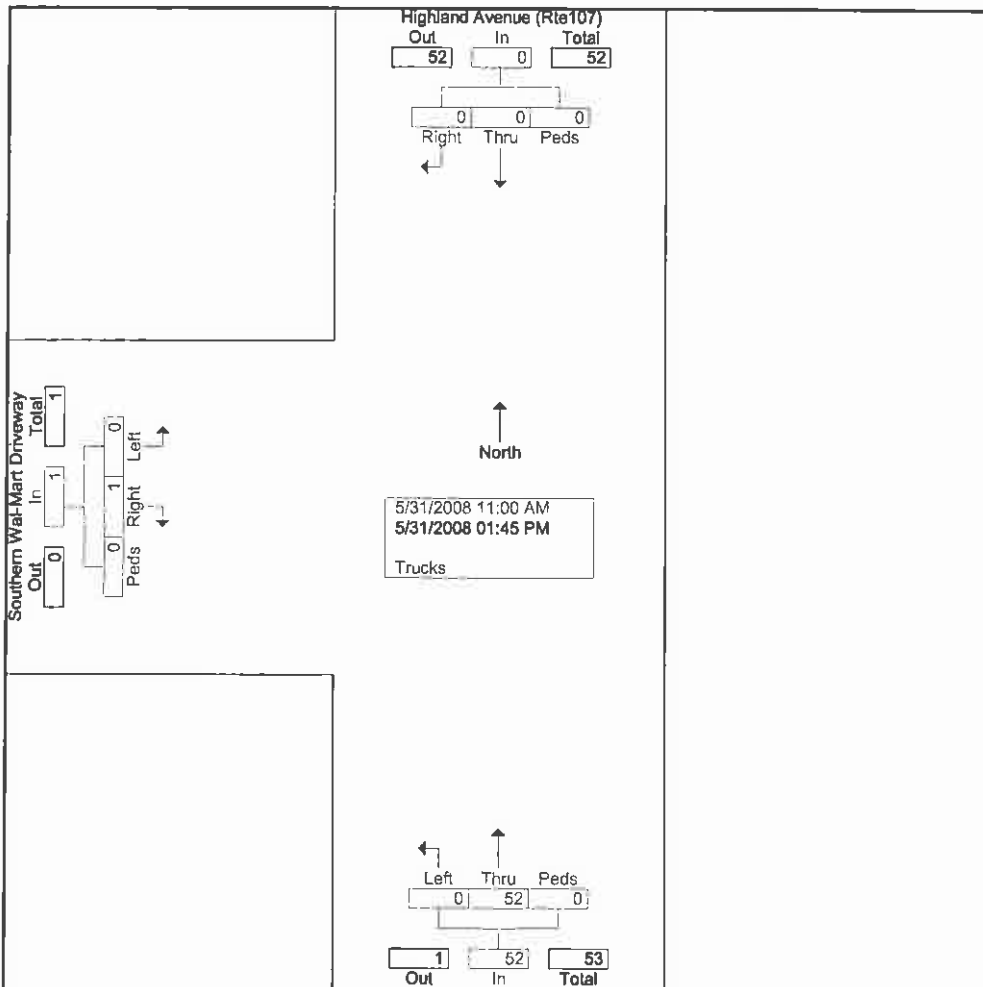
Site Code : 08577

Start Date : 5/31/2008

Page No : 1

Groups Printed- Trucks

Start Time	Highland Avenue (Rte107) Southbound				Highland Avenue (Rte107) Northbound				Southern Wal-Mart Driveway Eastbound				Int. Total
	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	
11:00 AM	0	0	0	0	0	7	0	7	0	0	0	0	7
11:15 AM	0	0	0	0	0	3	0	3	0	0	0	0	3
11:30 AM	0	0	0	0	0	4	0	4	0	0	0	0	4
11:45 AM	0	0	0	0	0	3	0	3	0	0	0	0	3
Total	0	0	0	0	0	17	0	17	0	0	0	0	17
12:00 PM	0	0	0	0	0	4	0	4	0	1	0	1	5
12:15 PM	0	0	0	0	0	5	0	5	0	0	0	0	5
12:30 PM	0	0	0	0	0	8	0	8	0	0	0	0	8
12:45 PM	0	0	0	0	0	5	0	5	0	0	0	0	5
Total	0	0	0	0	0	22	0	22	0	1	0	1	23
01:00 PM	0	0	0	0	0	3	0	3	0	0	0	0	3
01:15 PM	0	0	0	0	0	6	0	6	0	0	0	0	6
01:30 PM	0	0	0	0	0	3	0	3	0	0	0	0	3
01:45 PM	0	0	0	0	0	1	0	1	0	0	0	0	1
Total	0	0	0	0	0	13	0	13	0	0	0	0	13
Grand Total	0	0	0	0	0	52	0	52	0	1	0	1	53
Apprch %	0	0	0	0	0	100	0	100	0	100	0	100	
Total %	0	0	0	0	0	98.1	0	98.1	0	1.9	0	1.9	



GPI

61 Spit Brook Road Suite 110
Nashua, NH. 03060

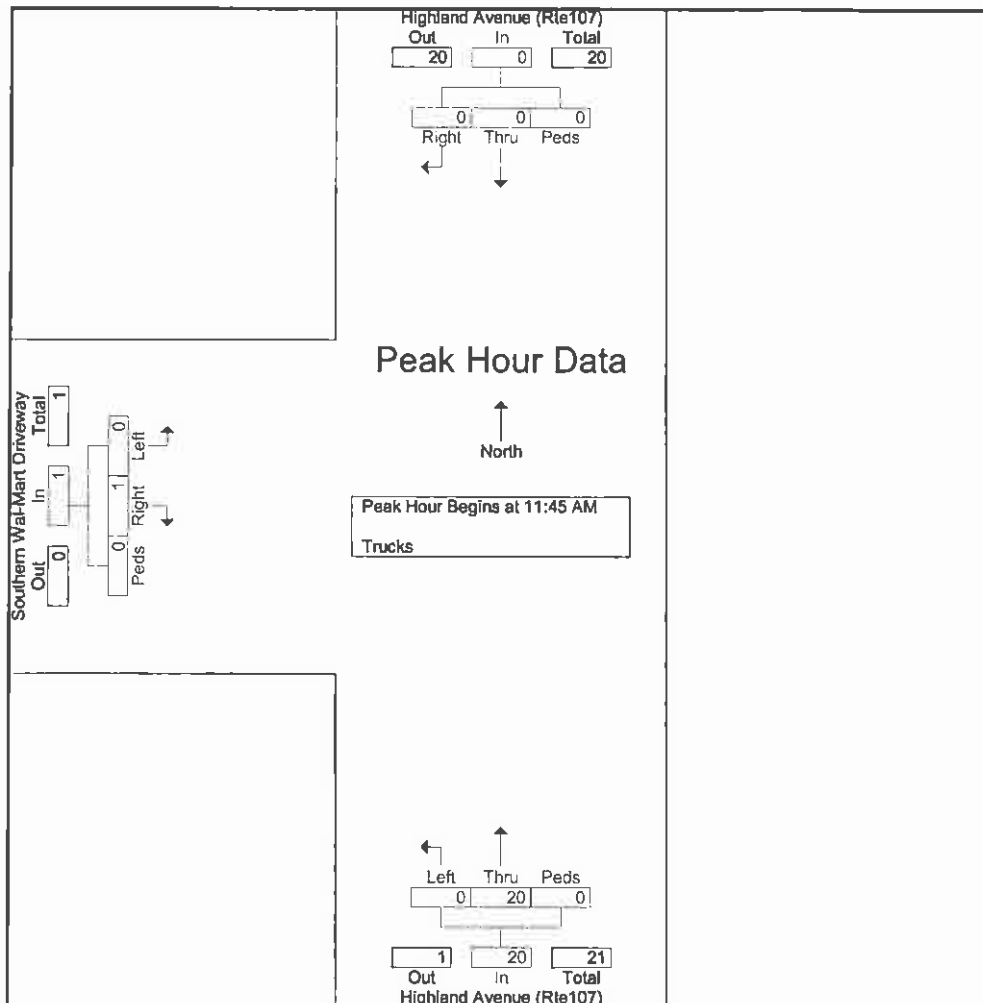
File Name : Highland Ave @ S Wal-Mart Driveway - SAT

Site Code : 08577

Start Date : 5/31/2008

Page No : 2

Start Time	Highland Avenue (Rte107) Southbound				Highland Avenue (Rte107) Northbound				Southern Wal-Mart Driveway Eastbound				Int. Total
	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	
Peak Hour Analysis From 11:45 AM to 12:30 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 11:45 AM													
11:45 AM	0	0	0	0	0	3	0	3	0	0	0	0	3
12:00 PM	0	0	0	0	0	4	0	4	0	1	0	1	5
12:15 PM	0	0	0	0	0	5	0	5	0	0	0	0	5
12:30 PM	0	0	0	0	0	8	0	8	0	0	0	0	8
Total Volume	0	0	0	0	0	20	0	20	0	1	0	1	21
% App. Total	0	0	0	0	0	100	0	100	0	100	0	100	
PHF	.000	.000	.000	.000	.000	.625	.000	.625	.000	.250	.000	.250	.656



GPI

61 Spit Brook Road Suite 110
Nashua, NH. 03060

File Name : Highland Ave @ Meineke Driveway - SAT

Site Code : 08577

Start Date : 5/31/2008

Page No : 1

Groups Printed- Cars - Trucks

Start Time	Highland Avenue (Rte 107) Southbound				Highland Avenue (Rte 107) Northbound				Meineke Driveway Eastbound				Int. Total
	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	
11:00 AM	0	1	0	1	0	0	0	0	0	1	0	1	2
11:15 AM	0	0	0	0	0	0	0	0	0	2	0	2	2
11:30 AM	0	1	0	1	0	0	0	0	0	2	0	2	3
11:45 AM	0	1	0	1	0	0	0	0	0	2	0	2	3
Total	0	3	0	3	0	0	0	0	0	7	0	7	10
12:00 PM	0	3	0	3	0	0	0	0	0	5	0	5	8
12:15 PM	0	1	0	1	0	0	0	0	0	4	0	4	5
12:30 PM	0	4	0	4	0	0	0	0	0	3	0	3	7
12:45 PM	0	3	0	3	0	0	0	0	0	3	0	3	6
Total	0	11	0	11	0	0	0	0	0	15	0	15	26
01:00 PM	0	1	0	1	0	0	0	0	0	2	0	2	3
01:15 PM	0	5	0	5	0	0	0	0	0	3	0	3	8
01:30 PM	0	2	0	2	0	0	0	0	0	4	0	4	6
01:45 PM	0	3	0	3	0	0	0	0	0	3	0	3	6
Total	0	11	0	11	0	0	0	0	0	12	0	12	23
Grand Total	0	25	0	25	0	0	0	0	0	34	0	34	59
Apprch %	0	100	0		0	0	0		0	100	0		
Total %	0	42.4	0	42.4	0	0	0	0	0	57.6	0	57.6	
Cars	0	25	0	25	0	0	0	0	0	33	0	33	58
% Cars	0	100	0	100	0	0	0	0	0	97.1	0	97.1	98.3
Trucks	0	0	0	0	0	0	0	0	0	1	0	1	1
% Trucks	0	0	0	0	0	0	0	0	0	2.9	0	2.9	1.7

GPI

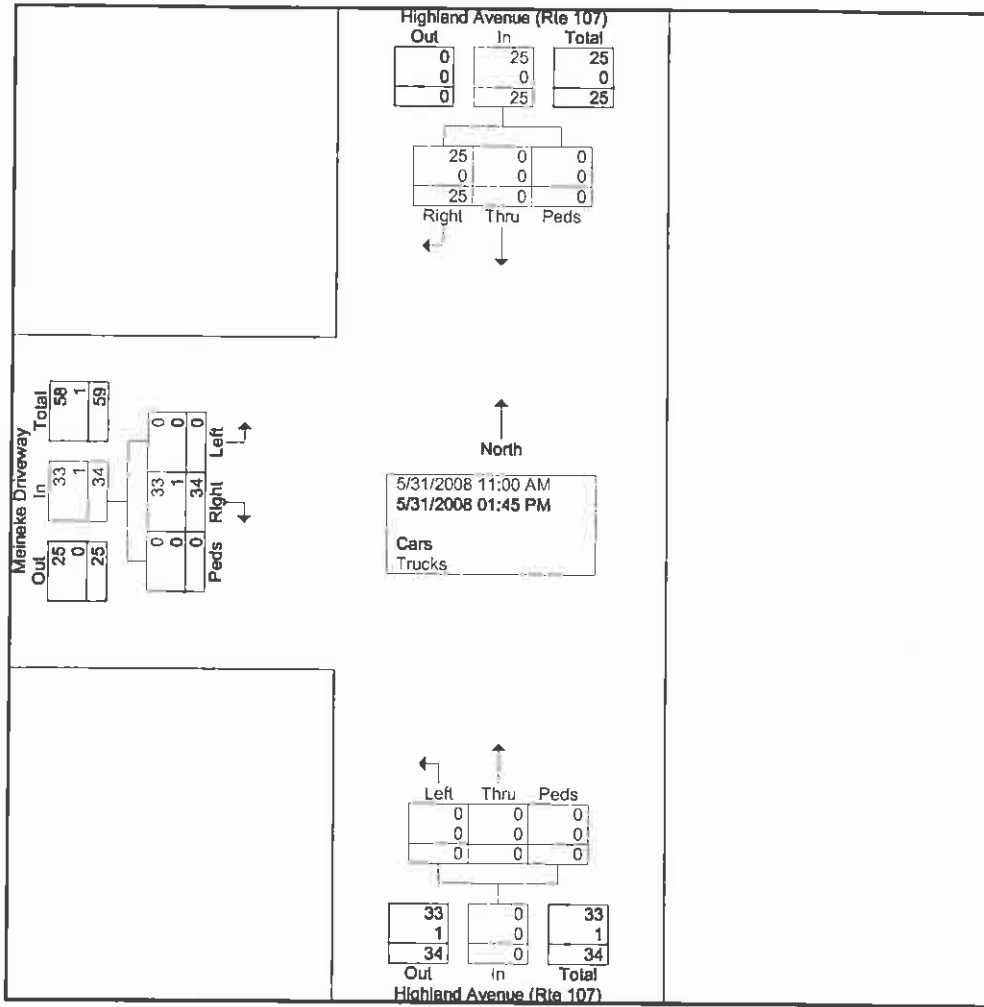
61 Spit Brook Road Suite 110
Nashua, NH. 03060

File Name : Highland Ave @ Meineke Driveway - SAT

Site Code : 08577

Start Date : 5/31/2008

Page No : 2



GPI

61 Spit Brook Road Suite 110
Nashua, NH. 03060

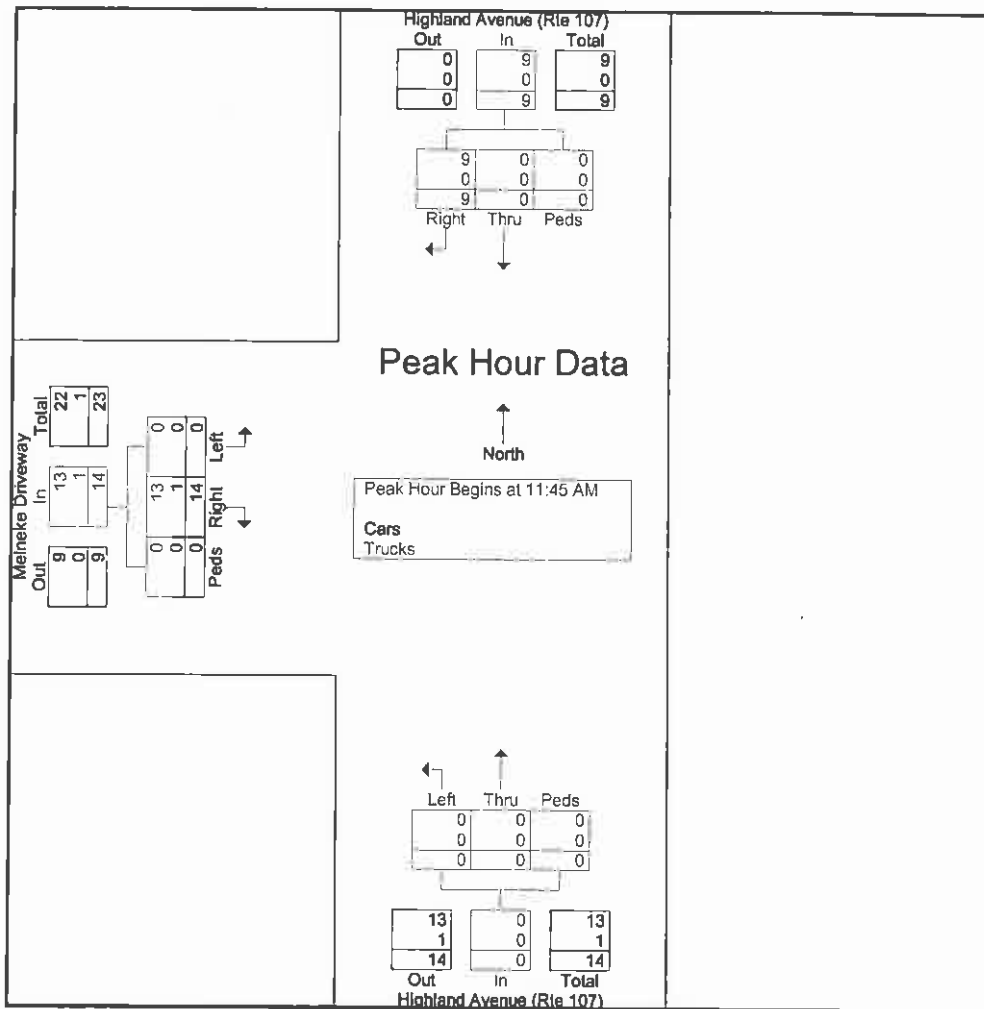
File Name : Highland Ave @ Meineke Driveway - SAT

Site Code : 08577

Start Date : 5/31/2008

Page No : 3

Start Time	Highland Avenue (Rte 107) Southbound				Highland Avenue (Rte 107) Northbound				Meineke Driveway Eastbound				Int. Total
	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	
Peak Hour Analysis From 11:45 AM to 12:30 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 11:45 AM													
11:45 AM	0	1	0	1	0	0	0	0	0	2	0	2	3
12:00 PM	0	3	0	3	0	0	0	0	0	5	0	5	8
12:15 PM	0	1	0	1	0	0	0	0	0	4	0	4	5
12:30 PM	0	4	0	4	0	0	0	0	0	3	0	3	7
Total Volume	0	9	0	9	0	0	0	0	0	14	0	14	23
% App. Total	0	100	0	100	0	0	0	0	0	100	0	100	95.7
PHF	.000	.563	.000	.563	.000	.000	.000	.000	.000	.700	.000	.700	.719
Cars	0	9	0	9	0	0	0	0	0	13	0	13	22
% Cars	0	100	0	100	0	0	0	0	0	92.9	0	92.9	95.7
Trucks	0	0	0	0	0	0	0	0	0	1	0	1	1
% Trucks	0	0	0	0	0	0	0	0	0	7.1	0	7.1	4.3



GPI

61 Spit Brook Road Suite 110
Nashua, NH. 03060

File Name : Highland Ave @ Meineke Driveway - SAT

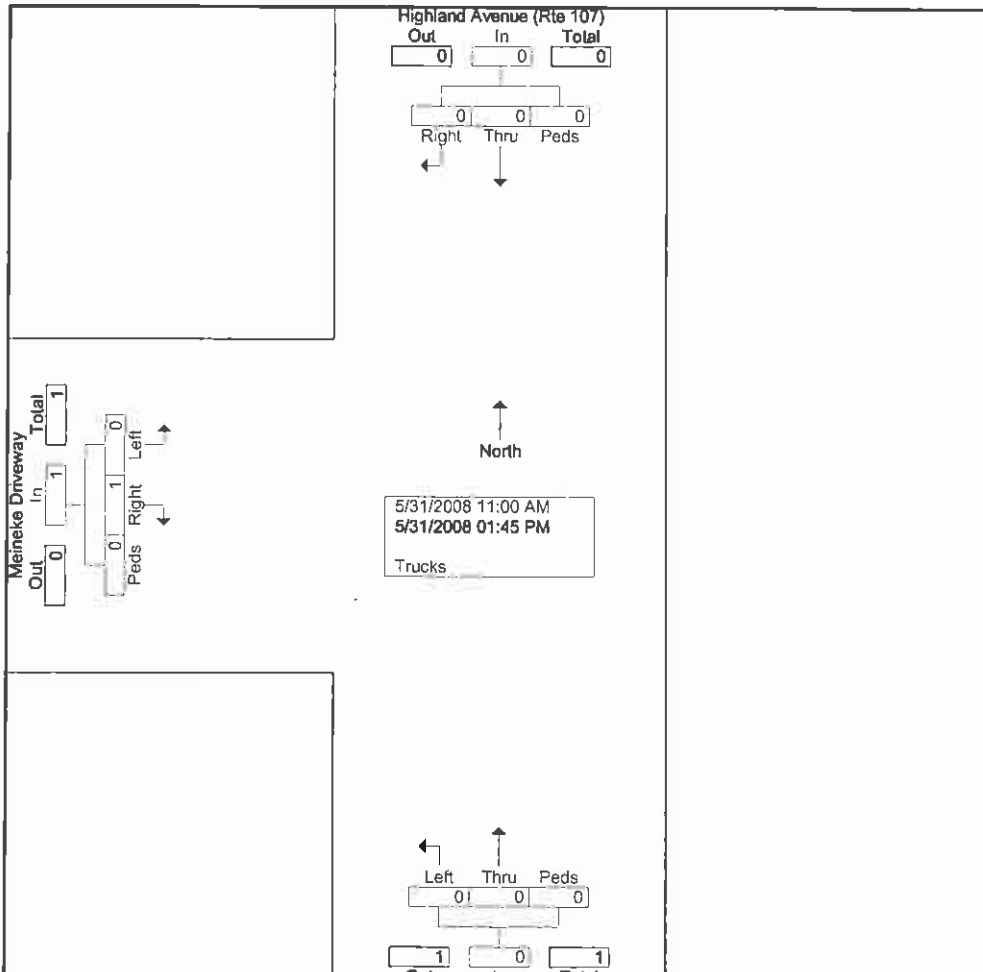
Site Code : 08577

Start Date : 5/31/2008

Page No : 1

Groups Printed- Trucks

Start Time	Highland Avenue (Rte 107) Southbound				Highland Avenue (Rte 107) Northbound				Meineke Driveway Eastbound				Int. Total
	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	0	0	1	0	1	1
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	1	0	1	1
01:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
01:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
01:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
01:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	1	0	1	1
Apprch %	0	0	0	0	0	0	0	0	0	100	0	100	
Total %	0	0	0	0	0	0	0	0	0	100	0	100	

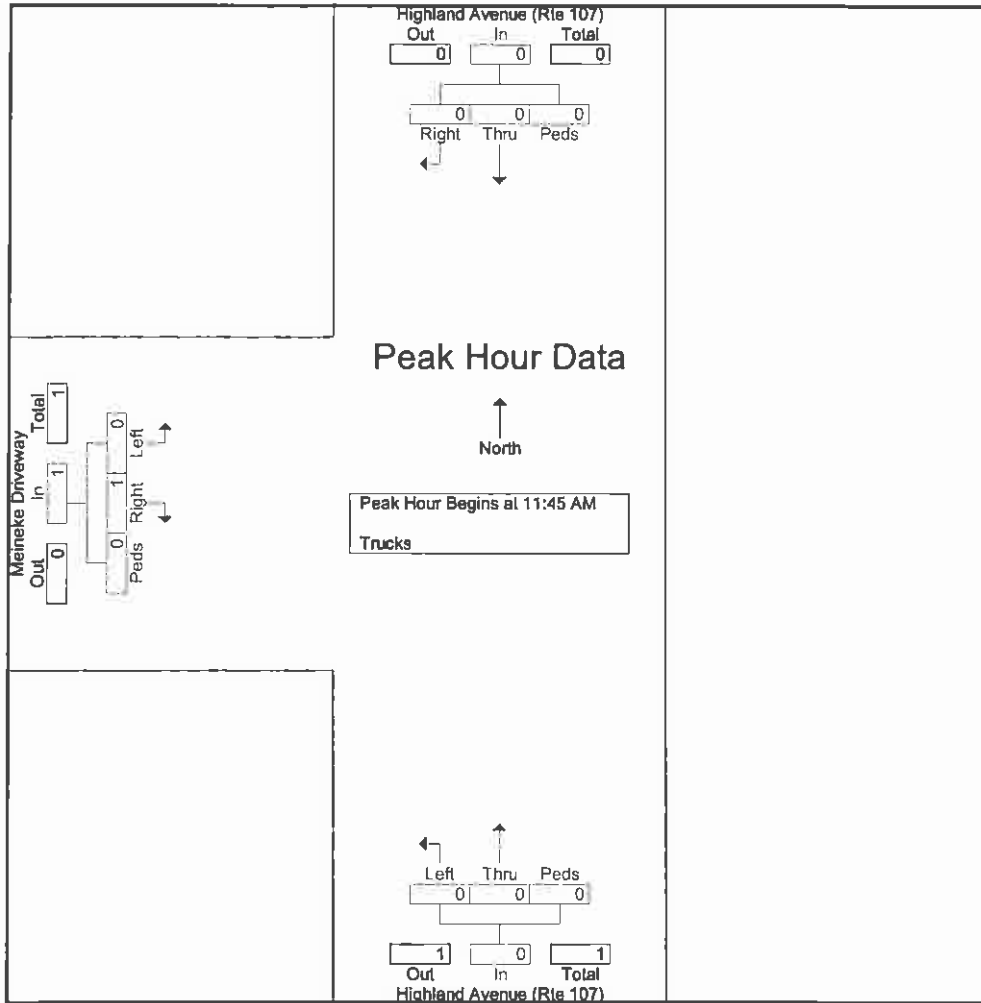


GPI

61 Spit Brook Road Suite 110
Nashua, NH. 03060

File Name : Highland Ave @ Meineke Driveway - SAT
Site Code : 08577
Start Date : 5/31/2008
Page No : 2

Start Time	Highland Avenue (Rte 107) Southbound				Highland Avenue (Rte 107) Northbound				Meineke Driveway Eastbound				Int. Total
	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	
Peak Hour Analysis From 11:45 AM to 12:30 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 11:45 AM													
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	0	0	1	0	1	1
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	1	0	1	1
% App Total	0	0	0	0	0	0	0	0	0	100	0	100	100
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250	.000	.250	.250





61 Spit Brook Road Suite 110
Nashua, NH. 03060

File Name : Highland Ave @ Fays Ave - SAT
Site Code : 08571
Start Date : 6/7/2008
Page No : 1

Groups Printed- Cars - Trucks

Start Time	Highland Avenue (Rte 107) Southbound				Highland Avenue (Rte 107) Northbound				Fays Avenue Eastbound				Int. Total
	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	
11:00 AM	204	16	0	220	11	237	0	248	13	7	1	21	489
11:15 AM	191	10	0	201	12	251	0	263	14	10	1	25	489
11:30 AM	215	11	0	226	9	228	0	237	9	9	0	18	481
11:45 AM	248	16	0	264	11	222	0	233	13	7	0	20	517
Total	858	53	0	911	43	938	0	981	49	33	2	84	1976
12:00 PM	224	19	1	244	11	251	0	262	18	5	0	23	529
12:15 PM	240	20	0	260	16	261	0	277	14	11	0	25	562
12:30 PM	229	7	1	237	14	246	0	260	14	13	0	27	524
12:45 PM	251	11	0	262	21	264	1	286	13	9	0	22	570
Total	944	57	2	1003	62	1022	1	1085	59	38	0	97	2185
01:00 PM	242	11	0	253	9	236	0	245	12	3	0	15	513
01:15 PM	227	12	2	241	11	230	0	241	25	6	0	31	513
01:30 PM	235	10	0	245	11	237	0	248	12	5	0	17	510
01:45 PM	215	11	0	226	9	233	0	242	11	7	0	18	486
Total	919	44	2	965	40	936	0	976	60	21	0	81	2022
Grand Total	2721	154	4	2879	145	2896	1	3042	168	92	2	262	6183
Apprch %	94.5	5.3	0.1		4.8	95.2	0		64.1	35.1	0.8		
Total %	44	2.5	0.1	46.6	2.3	46.8	0	49.2	2.7	1.5	0	4.2	
Cars	2667	154	4	2825	142	2847	1	2990	165	89	2	256	6071
% Cars	98	100	100	98.1	97.9	98.3	100	98.3	98.2	96.7	100	97.7	98.2
Trucks	54	0	0	54	3	49	0	52	3	3	0	6	112
% Trucks	2	0	0	1.9	2.1	1.7	0	1.7	1.8	3.3	0	2.3	1.8



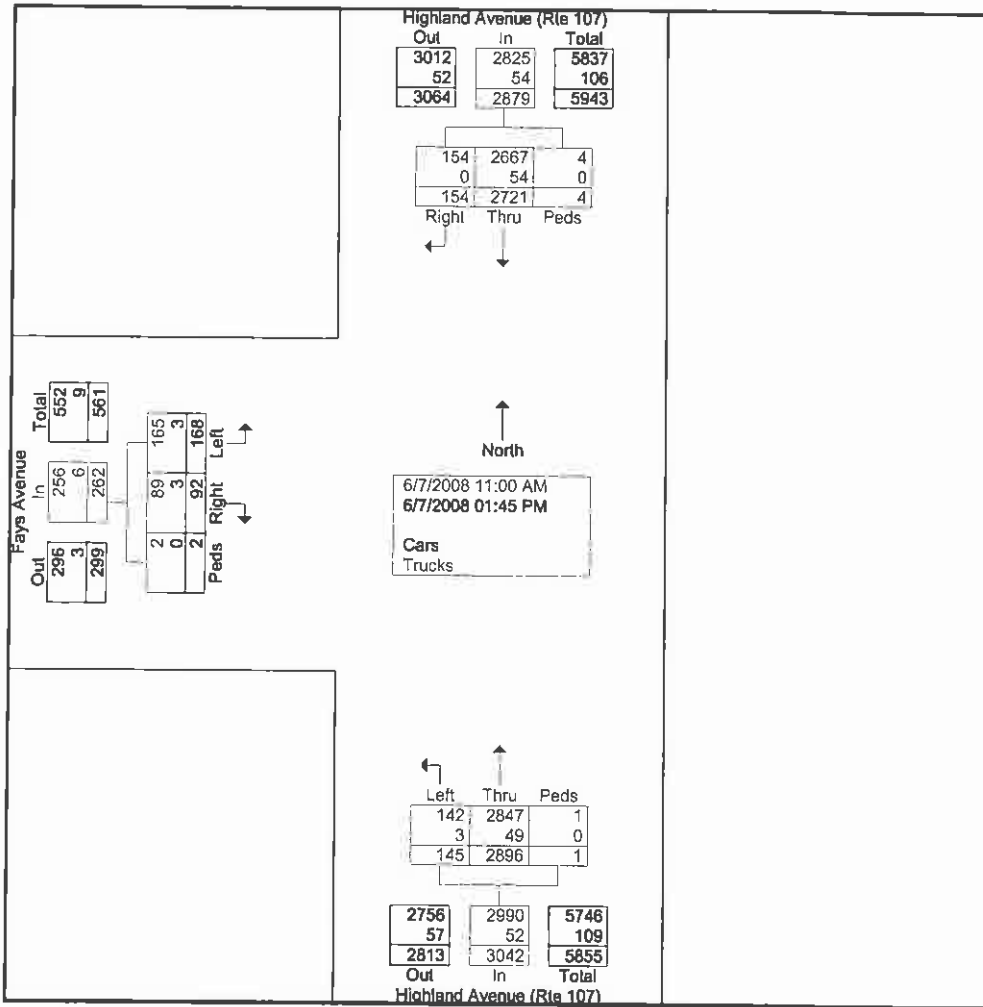
61 Spit Brook Road Suite 110
 Nashua, NH. 03060

File Name : Highland Ave @ Fays Ave - SAT

Site Code : 08571

Start Date : 6/7/2008

Page No : 2

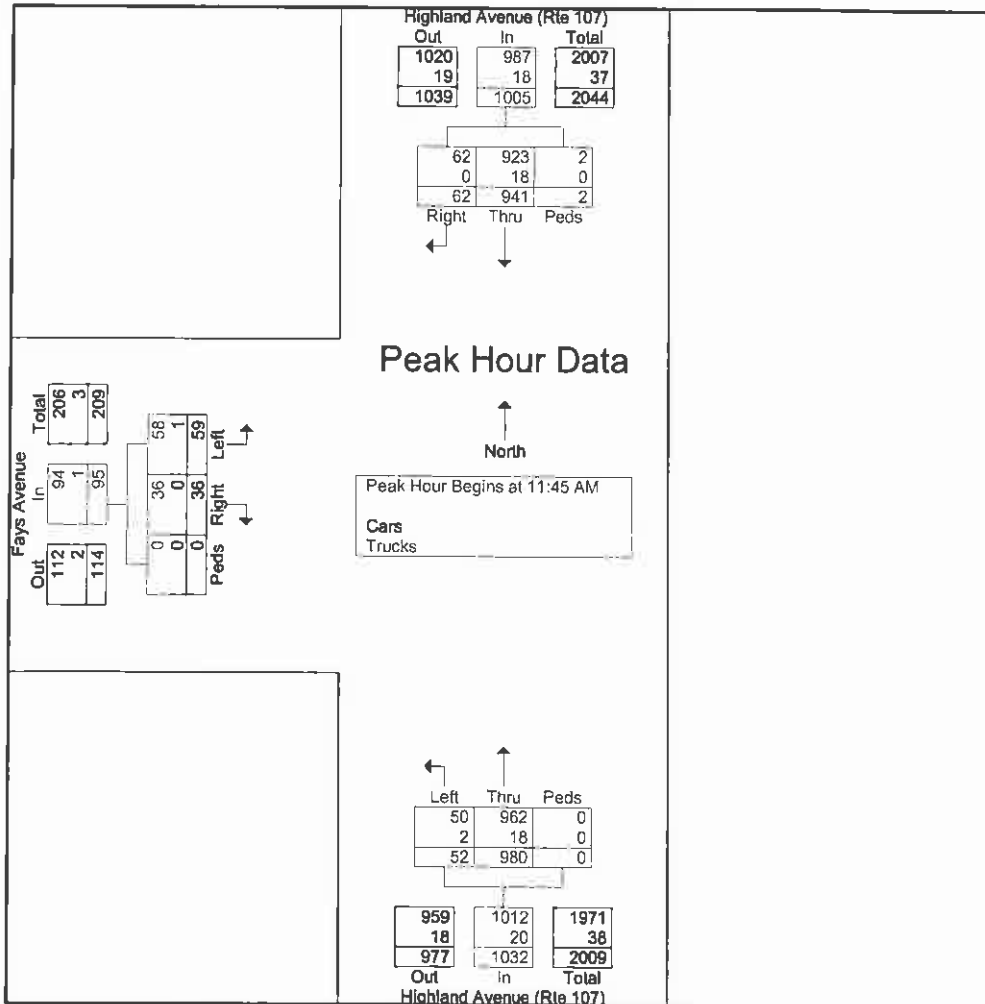




61 Spit Brook Road Suite 110
Nashua, NH. 03060

File Name : Highland Ave @ Fays Ave - SAT
Site Code : 08571
Start Date : 6/7/2008
Page No : 3

Start Time	Highland Avenue (Rte 107) Southbound				Highland Avenue (Rte 107) Northbound				Fays Avenue Eastbound				Int. Total
	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	
Peak Hour Analysis From 11:45 AM to 12:30 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 11:45 AM													
11:45 AM	248	16	0	264	11	222	0	233	13	7	0	20	517
12:00 PM	224	19	1	244	11	251	0	262	18	5	0	23	529
12:15 PM	240	20	0	260	16	261	0	277	14	11	0	25	562
12:30 PM	229	7	1	237	14	246	0	260	14	13	0	27	524
Total Volume	941	62	2	1005	52	980	0	1032	59	36	0	95	2132
% App. Total	93.6	6.2	0.2		5	95	0		62.1	37.9	0		
PHF	949	.775	.500	.952	.813	.939	.000	.931	.819	.692	.000	.880	.948
Cars	923	62	2	987	50	962	0	1012	58	36	0	94	2093
% Cars	98.1	100	100	98.2	96.2	98.2	0	98.1	98.3	100	0	98.9	98.2
Trucks	18	0	0	18	2	18	0	20	1	0	0	1	39
% Trucks	1.9	0	0	1.8	3.8	1.8	0	1.9	1.7	0	0	1.1	1.8



GPI

61 Spit Brook Road Suite 110
Nashua, NH. 03060

File Name : Highland Ave @ Fays Ave - SAT

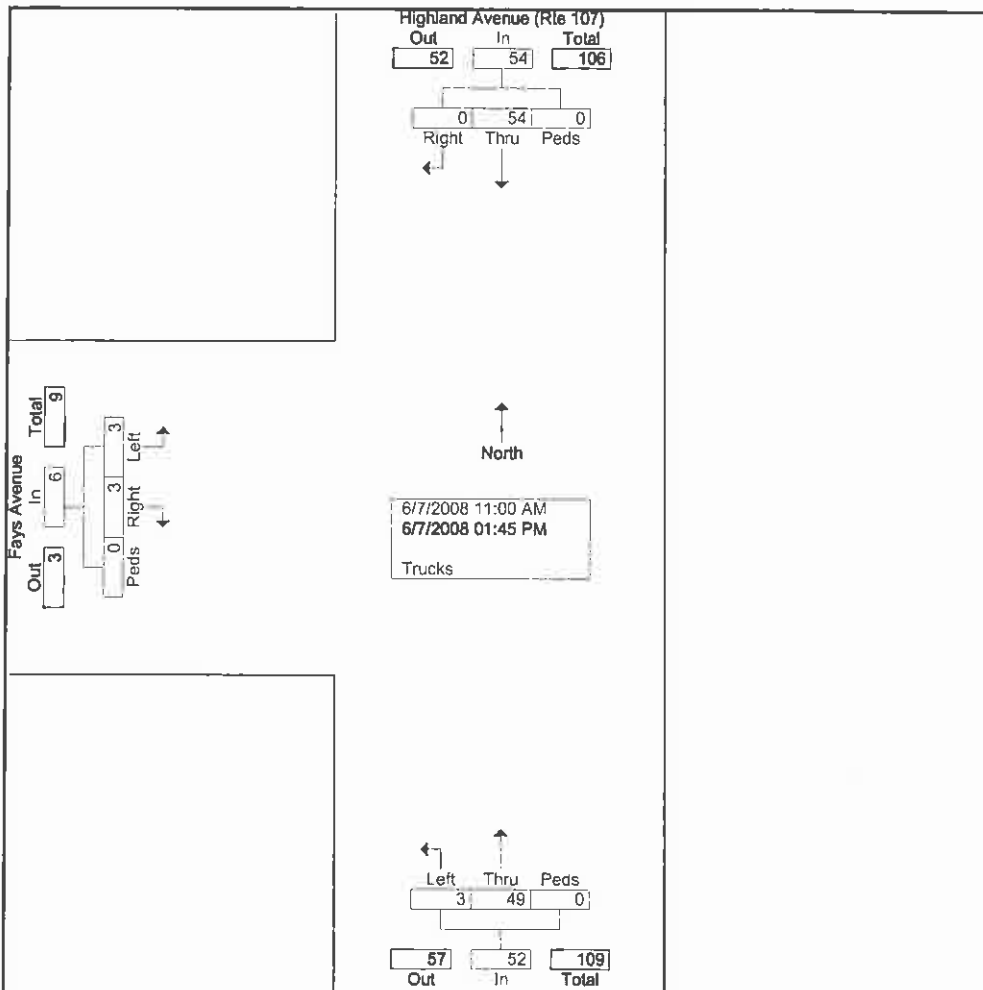
Site Code : 08571

Start Date : 6/7/2008

Page No : 1

Groups Printed- Trucks

Start Time	Highland Avenue (Rte 107) Southbound				Highland Avenue (Rte 107) Northbound				Fays Avenue Eastbound				Int. Total
	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	
11:00 AM	4	0	0	4	0	8	0	8	0	0	0	0	12
11:15 AM	8	0	0	8	0	6	0	6	0	0	0	0	14
11:30 AM	3	0	0	3	0	4	0	4	0	1	0	1	8
11:45 AM	2	0	0	2	1	2	0	3	0	0	0	0	5
Total	17	0	0	17	1	20	0	21	0	1	0	1	39
12:00 PM	9	0	0	9	0	5	0	5	0	0	0	0	14
12:15 PM	2	0	0	2	0	6	0	6	1	0	0	1	9
12:30 PM	5	0	0	5	1	5	0	6	0	0	0	0	11
12:45 PM	5	0	0	5	0	1	0	1	0	0	0	0	6
Total	21	0	0	21	1	17	0	18	1	0	0	1	40
01:00 PM	3	0	0	3	0	4	0	4	0	0	0	0	7
01:15 PM	5	0	0	5	0	1	0	1	2	1	0	3	9
01:30 PM	4	0	0	4	1	3	0	4	0	0	0	0	8
01:45 PM	4	0	0	4	0	4	0	4	0	1	0	1	9
Total	16	0	0	16	1	12	0	13	2	2	0	4	33
Grand Total	54	0	0	54	3	49	0	52	3	3	0	6	112
Apprch %	100	0	0		5.8	94.2	0		50	50	0		
Total %	48.2	0	0	48.2	2.7	43.8	0	46.4	2.7	2.7	0	5.4	

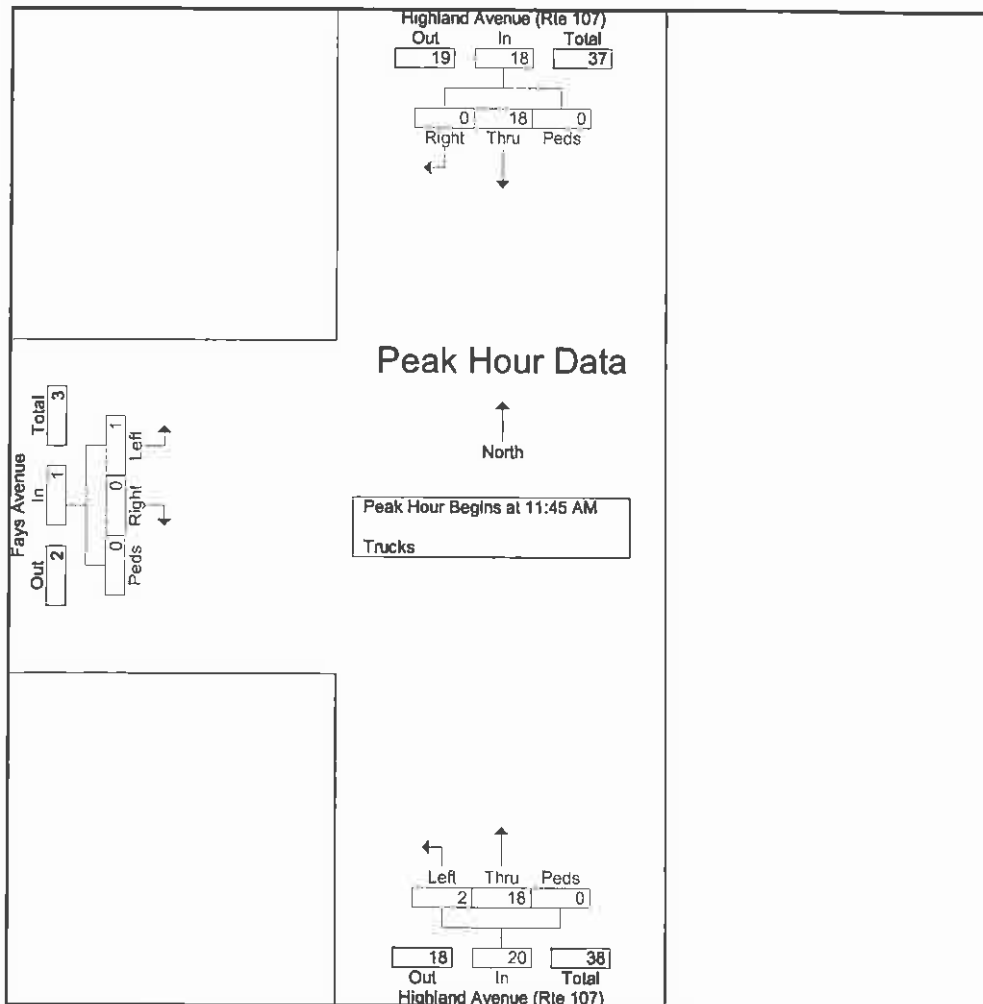


GPI

61 Spit Brook Road Suite 110
Nashua, NH. 03060

File Name : Highland Ave @ Fays Ave - SAT
Site Code : 08571
Start Date : 6/7/2008
Page No : 2

Start Time	Highland Avenue (Rte 107) Southbound				Highland Avenue (Rte 107) Northbound				Fays Avenue Eastbound				Int. Total
	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	
Peak Hour Analysis From 11:45 AM to 12:30 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 11:45 AM													
11:45 AM	2	0	0	2	1	2	0	3	0	0	0	0	5
12:00 PM	9	0	0	9	0	5	0	5	0	0	0	0	14
12:15 PM	2	0	0	2	0	6	0	6	1	0	0	1	9
12:30 PM	5	0	0	5	1	5	0	6	0	0	0	0	11
Total Volume	18	0	0	18	2	18	0	20	1	0	0	1	39
% App. Total	100	0	0		10	90	0		100	0	0		
PHF	.500	.000	.000	.500	.500	.750	.000	.833	.250	.000	.000	.250	.696



TRAFFIC IMPACT AND ACCESS STUDY

Walmart and Meineke Expansions and Lowe's Home Improvement Warehouse - Salem, Massachusetts

TRAFFIC-VOLUME ADJUSTMENT DATA

SECTION I - CONTINUOUS COUNTING STATION MONTHLY AVERAGE DAILY TRAFFIC

STATION 35 - BEVERLY - RTE.128 - NORTH OF BRIMBLE AVENUE

YR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
02	39,100 6%	40,809 -1%	45,914 -5%	49,007 -5%	50,686 -1%	53,387 -1%	55,526 2%	55,484 -2%	50,687 0%	48,997 1%	45,322 -1%	44,019 -1%	48,245 -1%
03	41,607 1%	40,597 8%	43,741 3%	46,590 2%	50,210 1%	52,860 5%	56,723 -2%	54,419 2%	50,842 3%	49,359 3%	45,075 2%	43,662 3%	47,974 2%
04	41,954 -5%	43,944 -3%	45,072 -4%	47,339 0%	50,787 -3%	55,470 -1%	55,392 -1%	55,715 -2%	52,351 -5%	51,000 -9%	45,992 0%	44,889 -2%	49,159 -3%
05	40,000 0%	42,720 -5%	43,414 4%	47,496 -3%	49,010 2%	55,111 -5%	54,830 -2%	54,453 -1%	49,541 1%	46,632 5%	46,086 0%	44,140 1%	47,786 0%
06	40,160	40,405	45,147	46,084	50,124	52,245	53,561	54,000	49,983	48,920	46,034	44,596	47,605
Avg					50,163	53,815							48,154
					1.042	1.118							

STATION 550 - PEABODY - RTE.1 - NORTH OF LOWELL ST.

YR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
05	42,000 -3%	41,328 -1%	41,928 5%	46,353 -3%	47,000 -7%	45,000 2%	43,207 -1%	43,133 2%	44,632 -1%	44,742 -2%	43,480 -2%	43,557 1%	43,863 -1%
06	40,910	40,968	43,840	44,805	43,655	45,703	42,838	44,074	44,277	44,022	42,524	43,890	43,459
					45,328	45,352							43,661
					1.038	1.039							

Traffic Growth Rate^a

Salem, Massachusetts

Location	Average Weekday Daily										Average Annual Rate		
	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005		2006	
Broad Street, west of Summer Street		7,700			7,800			7,300					-0.88%
Kernwood Road, at Beverly City Line			7,800			10,700	10,300		7,100				-3.20%
Route 1A, north of Webb Street				28,300			31,400						3.53%
Route 114, at Marblehead Town Line			23,300			18,900			17,400				-4.73%

-1.32%

^a Source: Based upon historical data; MassHighway

TRAFFIC IMPACT AND ACCESS STUDY

Walmart and Meineke Expansions and Lowe's Home Improvement Warehouse - Salem, Massachusetts

MASSDOT CRASH RATE WORKSHEETS

MassHighway

CRASH RATE WORKSHEET

CITY/TOWN : Salem COUNT DATE : 5/21/08

MHD USE ONLY

DISTRICT : 4 UNSIGNALIZED : SIGNALIZED :

Source #

~ INTERSECTION DATA ~

MAJOR STREET : Highland Avenue (Route 107)

RIN #

MINOR STREET(S) : Ravenna Avenue

RIN #

Barnes Road

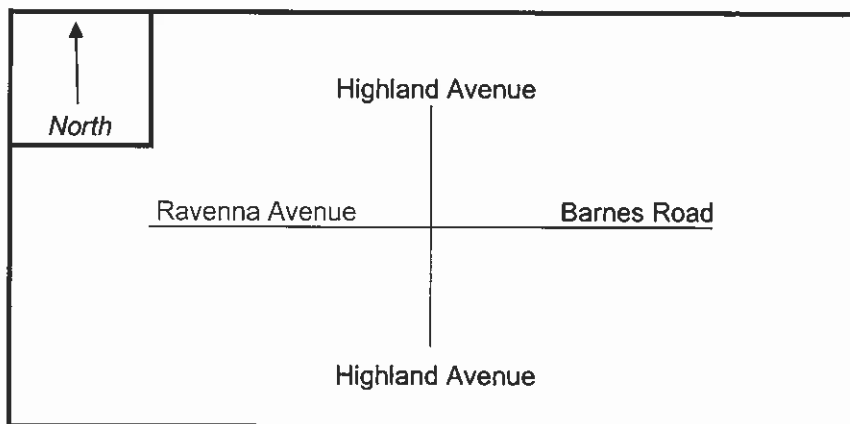
RIN #

RIN #

RIN #

RIN #

**INTERSECTION
DIAGRAM**
(Label Approaches)



INTERSECTION
REF #

Peak Hour Volumes

APPROACH :	1	2	3	4	5	6
DIRECTION :	NB	SB	EB	WB		
VOLUMES (AM/PM) :	1157	1192	37	24		

"K" FACTOR : APPROACH ADT : ADT = TOTAL VOL/"K" FACT.

TOTAL # OF ACCIDENTS : # OF YEARS : AVERAGE # OF ACCIDENTS (A) :

CRASH RATE CALCULATION : RATE = $\frac{(A * 1,000,000)}{(ADT * 365)}$

Comments : _____

MassHighway

CRASH RATE WORKSHEET

CITY/TOWN : Salem COUNT DATE : 5/21/08

MHD USE ONLY

DISTRICT : 4 UNSIGNALIZED : SIGNALIZED :

Source #

~ INTERSECTION DATA ~

MAJOR STREET : Highland Avenue (Route 107)

RIN #

MINOR STREET(S) : Olde Village Drive

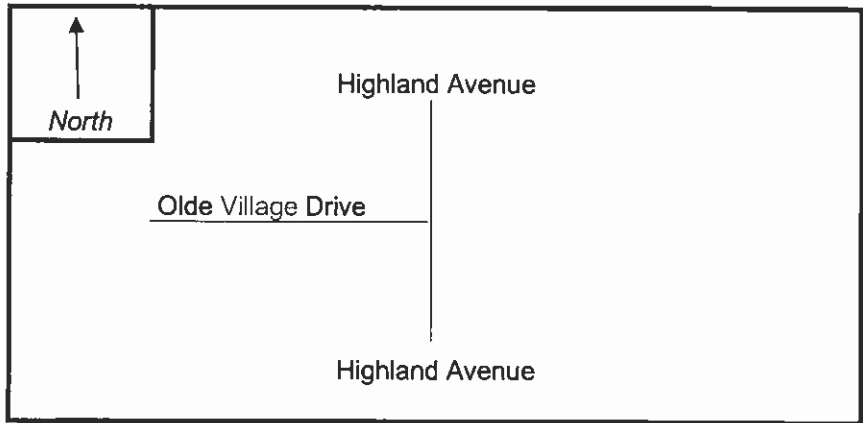
RIN #

RIN #

RIN #

RIN #

**INTERSECTION
DIAGRAM**
(Label Approaches)



INTERSECTION
REF #

Peak Hour Volumes

APPROACH :	1	2	3	4	5	6
DIRECTION :	NB	SB	EB	WB		
VOLUMES (AM/PM) :	1112	1118	99			

"K" FACTOR : APPROACH ADT : ADT = TOTAL VOL/"K" FACT.

TOTAL # OF ACCIDENTS : # OF YEARS : AVERAGE # OF ACCIDENTS (A) :

CRASH RATE CALCULATION : RATE = $\frac{(A * 1,000,000)}{(ADT * 365)}$

Comments : _____

MassHighway

CRASH RATE WORKSHEET

CITY/TOWN : Salem COUNT DATE : 5/21/08

MHD USE ONLY

DISTRICT : 4 UNSIGNALIZED : SIGNALIZED :

Source #

~ INTERSECTION DATA ~

MAJOR STREET : Highland Avenue (Route 107)

RIN #

MINOR STREET(S) : Clark Street

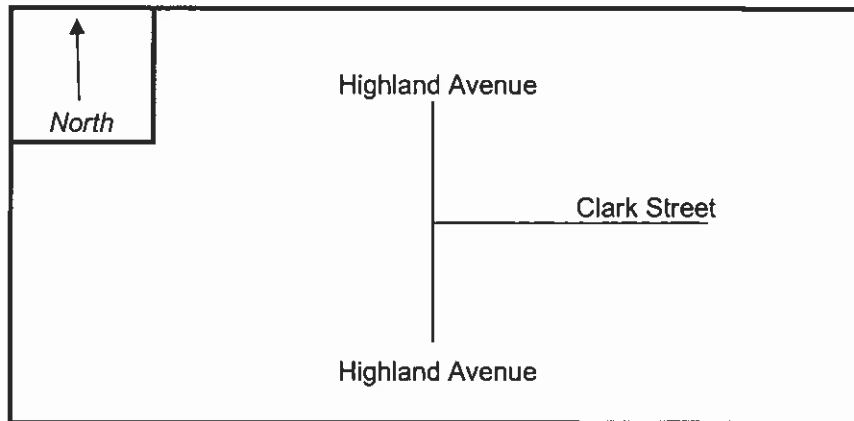
RIN #

RIN #

RIN #

RIN #

**INTERSECTION
DIAGRAM**
(Label Approaches)



INTERSECTION
REF #

Peak Hour Volumes

APPROACH :	1	2	3	4	5	6
DIRECTION :	NB	SB	EB	WB		
VOLUMES (AM/PM) :	1097	1096	0	33		

"K" FACTOR : APPROACH ADT : ADT = TOTAL VOL/"K" FACT.

TOTAL # OF ACCIDENTS : # OF YEARS : AVERAGE # OF ACCIDENTS (A) :

CRASH RATE CALCULATION : RATE = $\frac{(A * 1,000,000)}{(ADT * 365)}$

Comments : _____

MassHighway

CRASH RATE WORKSHEET

CITY/TOWN : Salem COUNT DATE : 5/21/08

DISTRICT : 4 UNSIGNALIZED : _____ SIGNALIZED :

MHD USE ONLY

Source #

 ~ INTERSECTION DATA ~

MAJOR STREET : Highland Avenue (Route 107)

MINOR STREET(S) : Wal-Mart main driveway

RIN #

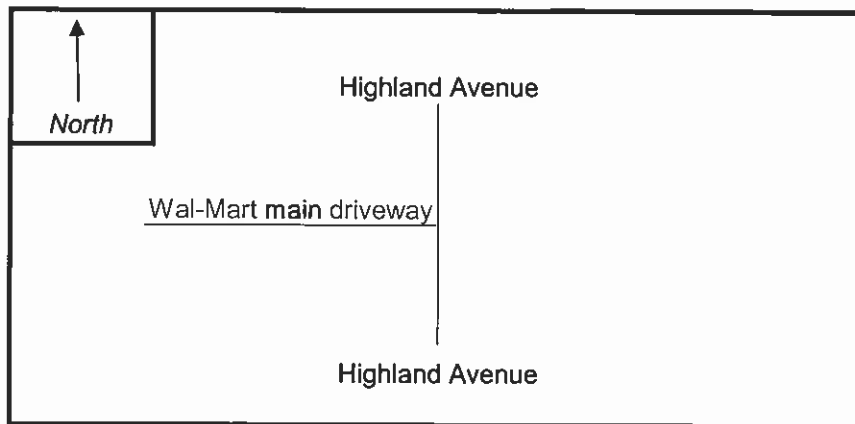
RIN #

RIN #

RIN #

RIN #

**INTERSECTION
 DIAGRAM**
 (Label Approaches)



**INTERSECTION
 REF #**

Peak Hour Volumes

APPROACH :	1	2	3	4	5	6
DIRECTION :	NB	SB	EB	WB		
VOLUMES (AM/PM) :	1016	1095	0	120		

"K" FACTOR : APPROACH ADT : ADT = TOTAL VOL/"K" FACT.

TOTAL # OF ACCIDENTS : # OF YEARS : AVERAGE # OF ACCIDENTS (A) :

CRASH RATE CALCULATION : RATE = $\frac{(A * 1,000,000)}{(ADT * 365)}$

Comments : _____

MassHighway

CRASH RATE WORKSHEET

CITY/TOWN : Lynn COUNT DATE : 5/21/08

DISTRICT : 4 UNSIGNALIZED : SIGNALIZED :

MHD USE ONLY

Source #

- INTERSECTION DATA -

MAJOR STREET : Western Avenue (Route 107)

MINOR STREET(S) : Fays Avenue

RIN #

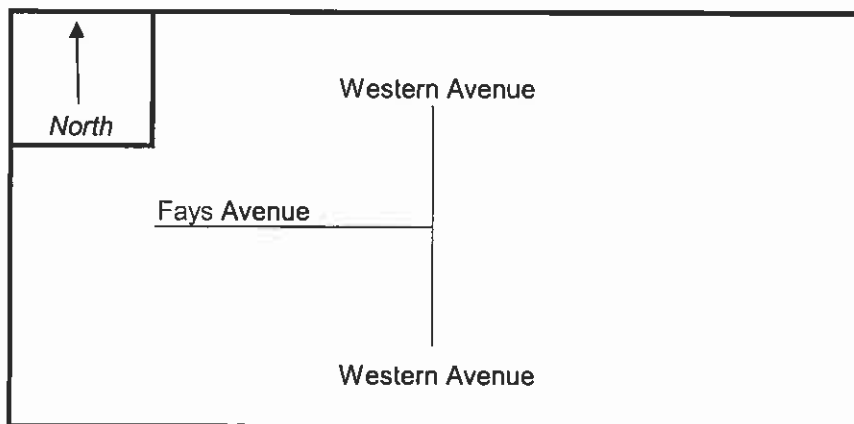
RIN #

RIN #

RIN #

RIN #

INTERSECTION
DIAGRAM
(Label Approaches)



INTERSECTION

REF #

Peak Hour Volumes

APPROACH :	1	2	3	4	5	6
DIRECTION :	NB	SB	EB	WB		
VOLUMES (AM/PM) :	1014	1040	73	0		

"K" FACTOR : APPROACH ADT : ADT = TOTAL VOL/"K" FACT.

TOTAL # OF ACCIDENTS : # OF YEARS : AVERAGE # OF ACCIDENTS (A) :

CRASH RATE CALCULATION : RATE = $\frac{(A * 1,000,000)}{(ADT * 365)}$

Comments : _____

TRAFFIC IMPACT AND ACCESS STUDY

Walmart and Meineke Expansions and Lowe's Home Improvement Warehouse - Salem, Massachusetts

PUBLIC TRANSPORTATION INFORMATION

424/424W/450/450W/456 WEEKDAY

450W

SATURDAY

ALL BUSES ON THESE ROUTES ARE WHEELCHAIR ACCESSIBLE

Route 424/424W
Eastern Ave. & Essex St. - Haymarket or Wonderland Sta.

Route 450/450W
Salem Depot - Haymarket or Wonderland Sta.

Route 456
Salem Depot - Central Sq., Lynn via Highland Avenue

ROUTE 424/424W/450/450W FARES

FARE WITH:	LOCAL	LOCAL BUSWAY	LOCAL BUSWAY + LOCAL BUSWAY	LOCAL BUSWAY + LOCAL BUSWAY + LOCAL BUSWAY
CharlieCard	\$1.25	\$2.80	\$2.80	\$2.80
CharlieTicket	\$1.50	\$3.50	\$3.50	\$3.50
Cash onboard	\$1.50	\$3.50	\$3.50	\$3.50
T Pupil Badge*	\$0.60	\$1.40	\$1.40	\$1.40
Senior/TAP card**	\$0.40	\$1.40	\$1.40	\$1.40

Children 11 and under ride free when accompanied by an adult.
 Blind persons ride free with MBTA Blind Access card or Mass. Comm. for the Blind ID card.

VALID PASSES: Inner Express Bus (\$59/mo.), Outer Express Bus (\$129/mo.), Commuter Boat Pass (\$180/mo.), and Commuter Rail Zone 1-8 passes

* Available to students through participating middle schools and high schools.
 ** Available to Medicare cardholders, seniors 65+ and persons with disabilities.

Local bus fare applies if your trip does not cross the Town Bridge or Boston Harbor

ROUTE 456 FARES

FARE WITH:	1-BUS TRIP	2-BUS TRIP	Bus + SUBWAY TRIP
CharlieCard	\$1.25	\$1.25	\$1.70
Cash onboard	\$1.50	\$1.50	\$3.50
T Pupil Badge*	60¢	60¢	85¢
Senior/TAP card**	40¢	40¢	60¢

Children 11 and under ride free when accompanied by an adult.
 Blind persons ride free with MBTA Blind Access card or Mass. Comm. for the Blind ID card.

VALID PASSES: Local Bus Pass (\$40/mo.), LinkPass (\$59/mo.), Student Pass* (\$20/mo.), Senior/TAP Pass** (\$20/mo.), and express bus, zoned, ezrized and boat passes

* Available to students through participating middle schools and high schools.
 ** Available to Medicare cardholders, seniors 65+ and persons with disabilities.

April 21: See Sat. May 26: See Sun. June 17: See Wkday
Spring 2008 Holidays

450W

SUNDAY

450W

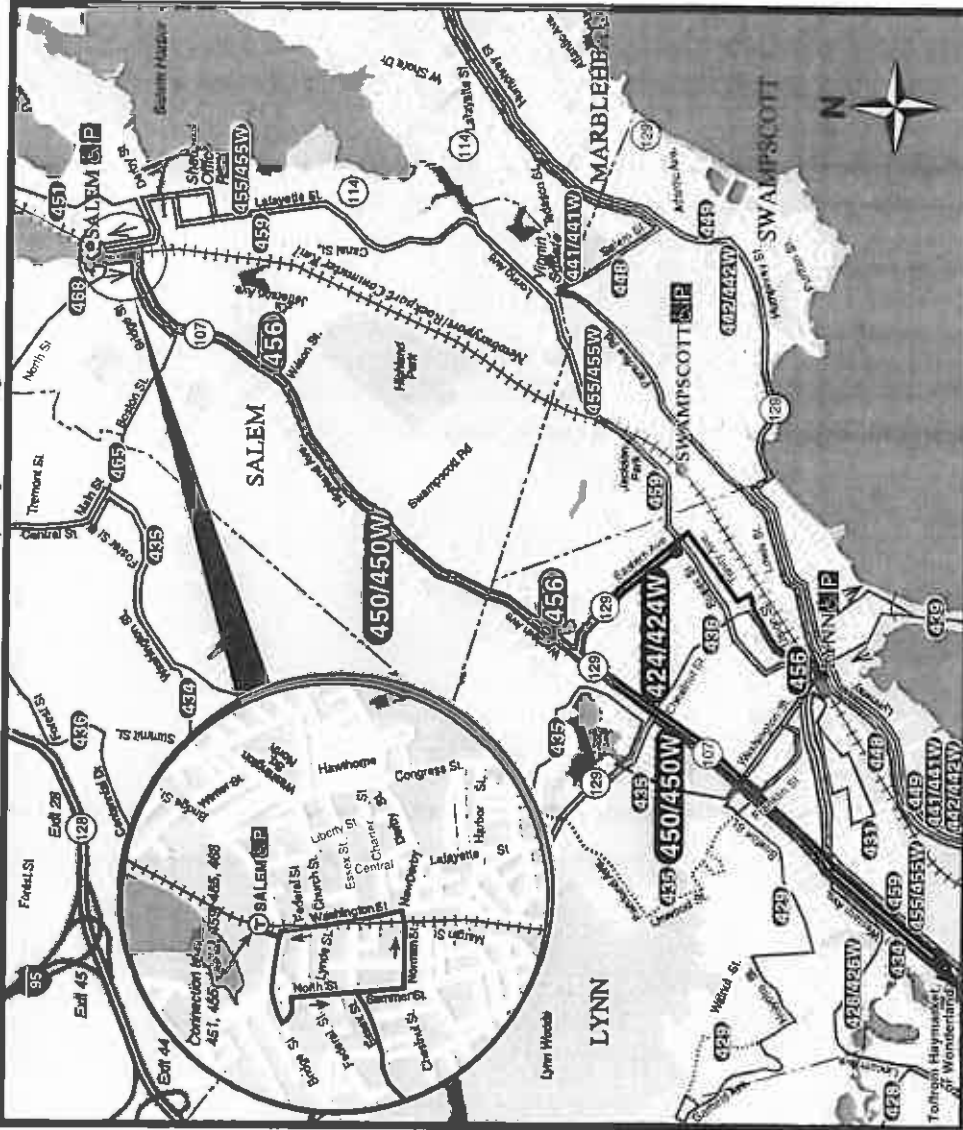
Route	Leave Salem Depot	Leave Eastern & Essex	Leave Central Square	Arrive Haymarket Station	Arrive W Lynn Garage	Arrive Central Square	Arrive Salem Depot	Leave Salem Depot	Leave W Lynn Garage	Arrive W Lynn Garage	Arrive Wonderland Station	Leave Wonderland Station	Arrive W Lynn Garage	Arrive Salem Depot
450	5:40A	6:01A	6:15A	6:57A	7:30A	7:55A	8:08A	6:30A	6:55A	7:08A	7:08A	7:08A	6:55A	6:22A
450	6:10	6:31	6:57	7:37	8:00	8:15	8:28	7:30	7:55	8:08	8:08	8:08	7:55	7:23
450	6:40	7:01	7:29	8:09	8:32	8:47	8:60	9:30	9:55	10:08	10:08	10:08	9:55	7:52
450	7:10	7:31	7:59	8:39	9:02	9:17	9:30	10:30	10:55	11:08	11:08	11:08	10:55	8:22
450	7:40	8:01	8:29	9:09	9:32	9:47	9:60	11:30	11:55	12:08	12:08P	12:08P	11:55	8:52
450	8:10	8:31	8:59	9:39	10:02	10:17	10:30	12:30P	12:55P	1:08P	1:08P	1:08P	12:55P	9:22
450	8:40	9:01	9:29	10:09	10:32	10:47	10:60	1:30	1:55	2:08	2:08	2:08	1:55	9:52
450	9:10	9:31	9:59	10:39	11:02	11:17	11:30	2:30	2:55	3:08	3:08	3:08	2:55	10:22
450	10:10	10:31	11:09	11:49	12:12	12:27	12:40	3:30	3:55	4:08	4:08	4:08	3:55	10:52
450	11:10	11:31	12:09	12:49	13:12	13:27	13:40	4:30	4:55	5:08	5:08	5:08	4:55	11:22
450	12:10P	12:31P	13:09P	13:49P	14:12P	14:27P	14:40P	5:30	5:55	6:08	6:08	6:08	5:55	11:52
450	1:10	1:31	1:59	2:39	3:02	3:17	3:30	6:30	6:55	7:08	7:08	7:08	6:55	12:22
450	2:10	2:31	2:59	3:39	4:02	4:17	4:30	7:30	7:55	8:08	8:08	8:08	7:55	12:52
450	3:10	3:31	3:59	4:39	5:02	5:17	5:30	8:30	8:55	9:08	9:08	9:08	8:55	1:22
450	4:10	4:31	4:59	5:39	6:02	6:17	6:30	9:30	9:55	10:08	10:08	10:08	9:55	1:52
450	5:10	5:31	5:59	6:39	7:02	7:17	7:30	10:30	10:55	11:08	11:08	11:08	10:55	2:22
450	6:10	6:31	6:59	7:39	8:02	8:17	8:30	11:30	11:55	12:08	12:08	12:08	11:55	2:52
450	7:10	7:31	7:59	8:39	9:02	9:17	9:30	12:30A	12:55A	1:08A	1:08A	1:08A	12:55A	3:22
450	8:10	8:31	8:59	9:39	10:02	10:17	10:30	12:32A	12:57A	1:10A	1:10A	1:10A	12:57A	3:52
450	9:10	9:31	9:59	10:39	11:02	11:17	11:30							4:22
450	10:10	10:31	11:09	11:49	12:12	12:27	12:40							4:52
450	11:10	11:31	12:09	12:49	13:12	13:27	13:40							5:22
450	12:10A	12:31A	13:09A	13:49A	14:12A	14:27A	14:40A							5:52
450	1:10	1:31	1:59	2:39	3:02	3:17	3:30							6:22
450	2:10	2:31	2:59	3:39	4:02	4:17	4:30							6:52
450	3:10	3:31	3:59	4:39	5:02	5:17	5:30							7:22
450	4:10	4:31	4:59	5:39	6:02	6:17	6:30							7:52
450	5:10	5:31	5:59	6:39	7:02	7:17	7:30							8:22
450	6:10	6:31	6:59	7:39	8:02	8:17	8:30							8:52
450	7:10	7:31	7:59	8:39	9:02	9:17	9:30							9:22
450	8:10	8:31	8:59	9:39	10:02	10:17	10:30							9:52
450	9:10	9:31	9:59	10:39	11:02	11:17	11:30							10:22
450	10:10	10:31	11:09	11:49	12:12	12:27	12:40							10:52
450	11:10	11:31	12:09	12:49	13:12	13:27	13:40							11:22
450	12:10A	12:31A	13:09A	13:49A	14:12A	14:27A	14:40A							11:52
450	1:10	1:31	1:59	2:39	3:02	3:17	3:30							12:22

Route 456 indicated by shaded areas

b- To Eastern Ave. & Essex St.

After 8:00PM all Route 450 trips travel via the Callahan/Summer Tunnel!

- T** Route 424/424W Eastern Ave. & Essex St. - Haymarket Sta. or Wonderland
- T** Route 450/450W Salem Depot - Haymarket Sta. or Wonderland
- T** Route 456 Salem Depot - Central Sq., Lynn via Highland Ave.



424 424W

450 450W

456

SPRING March 22, 2008 - June 20, 2008

Salem Depot - Haymarket Sta. or Wonderland Sta.

Serving: Central Sq., Lynn, Salem & N.S. Children's Hospitals, Bell Circle, Eastern Ave. & Essex St. and connections to the Green & Orange Lines



Massachusetts Bay Transportation Authority

Visit mbta.com or call us to find a retail location where you can obtain ChargeCards and purchase MBTA passes and stored value.

Customer Service/Travel Info 617-222-3200

Toll Free 1-800-392-6100

Hearing Impaired (TTY) 617-222-5146

Web Site www.mbta.com

Schedules subject to change, please visit our site.

Arrival times are approximate, subject to traffic.

NO SMOKING on MBTA property.

Driven by Customer Service

TRAFFIC IMPACT AND ACCESS STUDY

Walmart and Meineke Expansions and Lowe's Home Improvement Warehouse - Salem, Massachusetts

TRIP-GENERATION DATA

Institute of Transportation Engineers (ITE)
Land Use Code (LUC) 820 - Shopping Center

Average Vehicle Trips Ends vs: 1,000 Sq. Feet Gross Leasable Area
Independent Variable (X): 112.522

AVERAGE WEEKDAY DAILY

$\text{Ln } T = 0.65 \text{ Ln } (X) + 5.83$
 $\text{Ln } T = 0.65 \text{ Ln } 112.522 + (5.83)$
 $\text{Ln } T = 8.90$
 $T = 7332.32$
 $T = 7,332$ vehicle trips
with 50% (3,666 vpd) entering and 50% (3,666 vpd) exiting.

WEEKDAY MORNING PEAK HOUR OF ADJACENT STREET TRAFFIC

$\text{Ln } T = 0.59 \text{ Ln } (X) + 2.32$
 $\text{Ln } T = 0.59 \text{ Ln } 112.522 + (2.32)$
 $\text{Ln } T = 5.11$
 $T = 165.12$
 $T = 165$ vehicle trips
with 61% (101 vph) entering and 39% (64 vph) exiting.

WEEKDAY EVENING PEAK HOUR OF ADJACENT STREET TRAFFIC

$\text{Ln } T = 0.67 \text{ Ln } (X) + 3.37$
 $\text{Ln } T = 0.67 \text{ Ln } 112.522 + (3.37)$
 $\text{Ln } T = 6.53$
 $T = 688.50$
 $T = 688$ vehicle trips
with 49% (337 vph) entering and 51% (351 vph) exiting.

SATURDAY DAILY

$\text{Ln } T = 0.63 \text{ Ln } (X) + 6.23$
 $\text{Ln } T = 0.63 \text{ Ln } 112.522 + (6.23)$
 $\text{Ln } T = 9.21$
 $T = 9952.55$
 $T = 9,954$ vehicle trips
with 50% (4,977 vpd) entering and 50% (4,977 vpd) exiting.

SATURDAY MIDDAY PEAK HOUR OF GENERATOR

$\text{Ln } T = 0.65 \text{ Ln } (X) + 3.76$
 $\text{Ln } T = 0.65 \text{ Ln } 112.522 + (3.76)$
 $\text{Ln } T = 6.83$
 $T = 925.23$
 $T = 925$ vehicle trips
with 52% (481 vph) entering and 48% (444 vph) exiting.

SUNDAY DAILY

$T = 25.24 * (X)$
 $T = 25.24 * 112.522$
 $T = 2840.06$
 $T = 2,840$ vehicle trips
with 50% (1,420 vpd) entering and 50% (1,420 vpd) exiting.

SUNDAY MIDDAY PEAK HOUR OF GENERATOR

$T = 3.12 * (X)$
 $T = 3.12 * 112.522$
 $T = 351.07$
 $T = 351$ vehicle trips
with 49% (172 vpd) entering and 51% (179 vpd) exiting.

Institute of Transportation Engineers (ITE)
Land Use Code (LUC) 820 - Shopping Center

Average Vehicle Trips Ends vs: 1,000 Sq. Feet Gross Leasable Area
 Independent Variable (X): 281.000

AVERAGE WEEKDAY DAILY

Ln T = 0.65 Ln (X) + 5.83
 Ln T = 0.65 Ln 281.000 + (5.83)
 Ln T = 9.49
 T = 13292.17
 T = 13,292 vehicle trips
 with 50% (6,646 vpd) entering and 50% (6,646 vpd) exiting.

$$\begin{array}{r} -3,666 \\ \hline 2980 \end{array}$$

$$\begin{array}{r} -3,666 \\ \hline 2980 \end{array}$$
+5960

WEEKDAY MORNING PEAK HOUR OF ADJACENT STREET TRAFFIC

Ln T = 0.59 Ln (X) + 2.32
 Ln T = 0.59 Ln 281.000 + (2.32)
 Ln T = 5.65
 T = 283.33
 T = 283 vehicle trips
 with 61% (173 vph) entering and 39% (110 vph) exiting.

$$\begin{array}{r} LUC\ 820\ (112,522\ sq\ ft) \\ \hline -101 \\ \hline 173 \end{array}$$

$$\begin{array}{r} -64 \\ \hline 110 \end{array}$$
+118

WEEKDAY EVENING PEAK HOUR OF ADJACENT STREET TRAFFIC

Ln T = 0.67 Ln (X) + 3.37
 Ln T = 0.67 Ln 281.000 + (3.37)
 Ln T = 7.15
 T = 1271.18
 T = 1,271 vehicle trips
 with 49% (623 vph) entering and 51% (648 vph) exiting.

$$\begin{array}{r} LUC\ 820\ (112,522\ sq\ ft) \\ \hline -337 \\ \hline 623 \end{array}$$

$$\begin{array}{r} -351 \\ \hline 648 \end{array}$$
+583

SATURDAY DAILY

Ln T = 0.63 Ln (X) + 6.23
 Ln T = 0.63 Ln 281.000 + (6.23)
 Ln T = 9.78
 T = 17714.94
 T = 17,716 vehicle trips
 with 50% (8,858 vpd) entering and 50% (8,858 vpd) exiting.

$$\begin{array}{r} -4977 \\ \hline 3881 \end{array}$$

$$\begin{array}{r} -4977 \\ \hline 3881 \end{array}$$
+7,762

SATURDAY MIDDAY PEAK HOUR OF GENERATOR

Ln T = 0.65 Ln (X) + 3.76
 Ln T = 0.65 Ln 281.000 + (3.76)
 Ln T = 7.42
 T = 1677.28
 T = 1,677 vehicle trips
 with 52% (872 vph) entering and 48% (805 vph) exiting.

$$\begin{array}{r} LUC\ 820\ (112,522\ sq\ ft) \\ \hline -481 \\ \hline 872 \end{array}$$

$$\begin{array}{r} -444 \\ \hline 805 \end{array}$$
+752

SUNDAY DAILY

T = 25.24 * (X)
 T = 25.24 * 281.000
 T = 7092.44
 T = 7,092 vehicle trips
 with 50% (3,546 vpd) entering and 50% (3,546 vpd) exiting.

SUNDAY MIDDAY PEAK HOUR OF GENERATOR

T = 3.12 * (X)
 T = 3.12 * 281.000
 T = 876.72
 T = 877 vehicle trips
 with 49% (430 vpd) entering and 51% (447 vpd) exiting.

Shopping Center
 72 in
 46 out
 118
 AM Peak Hour

286 in
 297 out
 583
 PM Peak Hour

391 in
 361 out
 752
 Sat. Midday

Institute of Transportation Engineers (ITE)
Land Use Code (LUC) 813 - Free-Standing Discount Superstore

Average Vehicle Trips Ends vs: 1,000 Sq. Feet Gross Floor Area
 Independent Variable (X): 152.192

AVERAGE WEEKDAY DAILY

T = 53.130 * (X)
 T = 53.130 * 152.19
 T = 8085.96
 T = 8,086 vehicle trips
 with 50% (4,043 vpd) entering and 50% (4,043 vpd) exiting.

WEEKDAY MORNING PEAK HOUR OF ADJACENT STREET TRAFFIC

T = 1.670 * (X)
 T = 1.670 * 152.19
 T = 254.16
 T = 254 vehicle trips
 with 56% (142 vph) entering and 44% (112 vph) exiting.
Existing $\frac{-87}{+55}$ $\frac{-60}{+52}$

WEEKDAY EVENING PEAK HOUR OF ADJACENT STREET TRAFFIC

T = 4.610 * (X)
 T = 4.610 * 152.19
 T = 701.61
 T = 702 vehicle trips
 with 49% (344 vph) entering and 51% (358 vph) exiting.
Existing $\frac{-176}{+168}$ $\frac{-199}{+159}$

SATURDAY DAILY

T = 64.070 * (X)
 T = 64.070 * 152.19
 T = 9750.94
 T = 9,752 vehicle trips
 with 50% (4,876 vpd) entering and 50% (4,876 vpd) exiting.

SATURDAY MIDDAY PEAK HOUR

T = 5.640 * (X)
 T = 5.640 * 152.19
 T = 858.36
 T = 858 vehicle trips
 with 50% (429 vph) entering and 50% (429 vph) exiting.
Existing $\frac{-338}{+91}$ $\frac{-306}{+131}$

Institute of Transportation Engineers (ITE)

Land Use Code (LUC) 942 - Automobile Care Center

Average Vehicle Trips Ends vs: 1,000 Sq. Feet Gross Floor Area
Independent Variable (X): 3.000

WEEKDAY MORNING PEAK HOUR OF ADJACENT STREET TRAFFIC

$$T = 2.94 * (X)$$

$$T = 2.94 * 3.000$$

$$T = 8.82$$

$$T = 9 \text{ vehicle trips}$$

with 51% (5 vph) entering and 49% (4 vph) exiting.

WEEKDAY EVENING PEAK HOUR OF ADJACENT STREET TRAFFIC

$$T = 3.38 * (X)$$

$$T = 3.38 * 3.000$$

$$T = 10.14$$

$$T = 10 \text{ vehicle trips}$$

with 52% (5 vph) entering and 48% (5 vph) exiting.

SATURDAY DAILY

$$T = 15.86 * (X)$$

$$T = 15.86 * 3.000$$

$$T = 47.58$$

$$T = 48 \text{ vehicle trips}$$

with 50% (24 vpd) entering and 50% (24 vpd) exiting.

Institute of Transportation Engineers (ITE)
Land Use Code (LUC) 862 - Home Improvement Superstore

Average Vehicle Trips Ends vs: 1,000 Sq. Feet Gross Floor Area
 Independent Variable (X): 121.859

AVERAGE WEEKDAY DAILY

$T = 29.80 * (X)$
 $T = 29.80 * 121.9$
 $T = 3631.40$
 $T = 3,632$ vehicle trips
 with 50% (1,816 vpd) entering and 50% (1,816 vpd) exiting.

WEEKDAY MORNING PEAK HOUR OF ADJACENT STREET TRAFFIC

$T = 1.26 * (X)$
 $T = 1.26 * 121.9$
 $T = 153.54$
 $T = 154$ vehicle trips
 with 57% (88 vph) entering and 43% (66 vph) exiting.

Meinke +5
Walmart +55

 +118

+4
+52

 +122

20% Multi-Purpose Trips
 -27
 -27
 -54

Separate Uses
 121 in
 95 out

 216
AM Peak Hour

WEEKDAY EVENING PEAK HOUR OF ADJACENT STREET TRAFFIC

$T = 2.37 * (X)$
 $T = 2.37 * 121.9$
 $T = 288.81$
 $T = 289$ vehicle trips
 with 48% (139 vph) entering and 52% (150 vph) exiting.

Meinke +5
Walmart +168

 +312

15
+159

 +312

-62
 -62
 -124

250 in
 252 out

 502
PM Peak Hour

SATURDAY DAILY

$T = 56.72 * (X)$
 $T = 56.72 * 121.9$
 $T = 6911.84$
 $T = 6,912$ vehicle trips
 with 50% (3,456 vpd) entering and 50% (3,456 vpd) exiting.

SATURDAY MIDDAY PEAK HOUR OF GENERATOR

$T = 4.51 * (X)$
 $T = 4.51 * 121.9$
 $T = 549.58$
 $T = 550$ vehicle trips
 with 51% (281 vph) entering and 49% (269 vph) exiting.

Meinke +5
Walmart +91

 +377

+5
+121

 +298

-77
 -77
 -154

300 in
 321 out

 621
Sat Midday







TRAFFIC IMPACT AND ACCESS STUDY

Walmart and Meineke Expansions and Lowe's Home Improvement Warehouse - Salem, Massachusetts

CAPACITY AND QUEUE ANALYSIS WORKSHEETS



















1: Ravenna Avenue & Route 107
Queues

2009 Existing
Weekday AM

						
Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	52	39	29	1510	55	947
v/c Ratio	0.35	0.21	0.23	0.58	0.43	0.37
Control Delay	24.1	16.2	28.4	7.6	34.5	5.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.1	16.2	28.4	7.6	34.5	5.5
Queue Length 50th (ft)	11	5	9	176	18	86
Queue Length 95th (ft)	28	25	25	185	46	120
Internal Link Dist (ft)	465	710		433		897
Turn Bay Length (ft)			125		80	
Base Capacity (vph)	149	189	128	2595	129	2545
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.35	0.21	0.23	0.58	0.43	0.37
Intersection Summary						

1: Ravenna Avenue & Route 107
 HCM Signalized Intersection Capacity Analysis

2009 Existing
 Weekday AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frt		0.96			0.92		1.00	1.00		1.00	1.00	
Flt Protected		0.97			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1587			1727		1719	3470		1736	3403	
Flt Permitted		0.80			0.95		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1306			1653		1719	3470		1736	3403	
Volume (vph)	21	4	11	6	7	20	22	1159	4	48	826	7
Peak-hour factor, PHF	0.69	0.69	0.69	0.85	0.85	0.85	0.77	0.77	0.77	0.88	0.88	0.88
Adj. Flow (vph)	30	6	16	7	8	24	29	1505	5	55	939	8
RTOR Reduction (vph)	0	15	0	0	22	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	37	0	0	17	0	29	1510	0	55	946	0
Heavy Vehicles (%)	10%	50%	0%	0%	0%	0%	5%	4%	0%	4%	6%	0%
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		1			1		5	6		5	6	
Permitted Phases	1			1								
Actuated Green, G (s)		4.5			4.5		3.0	50.6		3.0	50.6	
Effective Green, g (s)		5.5			5.5		4.0	51.6		4.0	51.6	
Actuated g/C Ratio		0.08			0.08		0.05	0.71		0.05	0.71	
Clearance Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		98			124		94	2449		95	2402	
v/s Ratio Prot							0.02	c0.44		c0.03	0.28	
v/s Ratio Perm		c0.03			0.01							
v/c Ratio		0.38			0.14		0.31	0.62		0.58	0.39	
Uniform Delay, d1		32.2			31.6		33.2	5.6		33.7	4.4	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		2.5			0.5		1.9	0.5		8.3	0.1	
Delay (s)		34.6			32.1		35.1	6.1		42.0	4.5	
Level of Service		C			C		D	A		D	A	
Approach Delay (s)		34.6			32.1			6.6			6.5	
Approach LOS		C			C			A			A	

Intersection Summary

HCM Average Control Delay	7.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	73.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	50.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

1: Ravenna Avenue & Route 107
 Timing Report, Sorted By Phase

2009 Existing
 Weekday AM



Phase Number	1	5	6
Movement	EBWB	NBSBL	NBSB
Lead/Lag		Lead	Lag
Lead-Lag Optimize			
Recall Mode	None	None	Min
Maximum Split (s)	11	9	37
Maximum Split (%)	19.3%	15.8%	64.9%
Minimum Split (s)	11	9	37
Yellow Time (s)	4	4	4
All-Red Time (s)	1	1	1
Minimum Initial (s)	6	4	10
Vehicle Extension (s)	3	3	3
Minimum Gap (s)	3	3	3
Time Before Reduce (s)	0	0	0
Time To Reduce (s)	0	0	0
Walk Time (s)			
Flash Dont Walk (s)			
Dual Entry	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes
Start Time (s)	0	11	20
End Time (s)	11	20	0
Yield/Force Off (s)	6	15	52
Yield/Force Off 170(s)	6	15	52
Local Start Time (s)	5	16	25
Local Yield (s)	11	20	0
Local Yield 170(s)	11	20	0

Intersection Summary

Cycle Length	57
Control Type	Actuated-Uncoordinated
Natural Cycle	60

Splits and Phases: 1: Ravenna Avenue & Route 107

 ø1	 ø5	 ø6
11 s	9 s	37 s

Queues

Weekday PM

	→	←	↙	↑	↘	↓
Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	60	40	14	1218	78	1217
v/c Ratio	0.38	0.20	0.07	0.47	0.41	0.47
Control Delay	25.6	12.6	24.2	7.0	29.5	7.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.6	12.6	24.2	7.0	29.5	7.0
Queue Length 50th (ft)	15	1	5	135	26	135
Queue Length 95th (ft)	29	12	18	190	61	190
Internal Link Dist (ft)	465	710		433		897
Turn Bay Length (ft)			125		80	
Base Capacity (vph)	159	203	190	2602	188	2599
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.38	0.20	0.07	0.47	0.41	0.47
Intersection Summary						

1: Ravenna Avenue & Route 107
 HCM Signalized Intersection Capacity Analysis

2009 Existing
 Weekday PM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↕		↗	↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frt		0.97			0.88		1.00	1.00		1.00	1.00	
Flt Protected		0.96			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1770			1657		1805	3536		1787	3534	
Flt Permitted		0.75			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1384			1627		1805	3536		1787	3534	
Volume (vph)	28	0	9	2	0	22	13	1136	8	72	1106	14
Peak-hour factor, PHF	0.62	0.62	0.62	0.60	0.60	0.60	0.94	0.94	0.94	0.92	0.92	0.92
Adj. Flow (vph)	45	0	15	3	0	37	14	1209	9	78	1202	15
RTOR Reduction (vph)	0	14	0	0	34	0	0	1	0	0	1	0
Lane Group Flow (vph)	0	46	0	0	6	0	14	1217	0	78	1216	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	2%	0%	1%	2%	0%
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		1			1		5	6		5	6	
Permitted Phases	1			1								
Actuated Green, G (s)		4.2			4.2		4.2	48.1		4.2	48.1	
Effective Green, g (s)		5.2			5.2		5.2	49.1		5.2	49.1	
Actuated g/C Ratio		0.07			0.07		0.07	0.69		0.07	0.69	
Clearance Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		101			118		131	2428		130	2427	
v/s Ratio Prot							0.01	c0.34		c0.04	0.34	
v/s Ratio Perm		c0.03			0.00							
v/c Ratio		0.46			0.05		0.11	0.50		0.60	0.50	
Uniform Delay, d1		31.8			30.8		31.0	5.4		32.1	5.3	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		3.2			0.2		0.4	0.2		7.3	0.2	
Delay (s)		35.0			31.0		31.3	5.5		39.4	5.5	
Level of Service		D			C		C	A		D	A	
Approach Delay (s)		35.0			31.0			5.8			7.6	
Approach LOS		D			C			A			A	

Intersection Summary

HCM Average Control Delay	7.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	71.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	55.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

1: Ravenna Avenue & Route 107
 Timing Report, Sorted By Phase

2009 Existing
 Weekday PM



Phase Number	1	5	6
Movement	EBWBNBSBL	NBSBL	NBSB
Lead/Lag		Lead	Lag
Lead-Lag Optimize			
Recall Mode	None	None	Min
Maximum Split (s)	11	11	37
Maximum Split (%)	18.6%	18.6%	62.7%
Minimum Split (s)	11	11	37
Yellow Time (s)	4	4	4
All-Red Time (s)	1	1	1
Minimum Initial (s)	6	6	10
Vehicle Extension (s)	3	3	3
Minimum Gap (s)	3	3	3
Time Before Reduce (s)	0	0	0
Time To Reduce (s)	0	0	0
Walk Time (s)			
Flash Dont Walk (s)			
Dual Entry	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes
Start Time (s)	0	11	22
End Time (s)	11	22	0
Yield/Force Off (s)	6	17	54
Yield/Force Off 170(s)	6	17	54
Local Start Time (s)	5	16	27
Local Yield (s)	11	22	0
Local Yield 170(s)	11	22	0

Intersection Summary







Cycle Length	59
Control Type	Actuated-Uncoordinated
Natural Cycle	60

Splits and Phases: 1: Ravenna Avenue & Route 107

ø1	ø5	ø6
11 s	11 s	37 s

1: Ravenna Avenue & Route 107
Queues

2009 Existing
Saturday Midday



















						
Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	46	36	23	1201	79	1182
v/c Ratio	0.29	0.19	0.16	0.48	0.56	0.48
Control Delay	21.8	13.7	26.8	6.6	40.5	6.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.8	13.7	26.8	6.6	40.5	6.5
Queue Length 50th (ft)	9	2	7	120	26	116
Queue Length 95th (ft)	32	15	26	169	#71	165
Internal Link Dist (ft)	465	710		433		897
Turn Bay Length (ft)			125		80	
Base Capacity (vph)	159	186	140	2485	140	2481
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.19	0.16	0.48	0.56	0.48

Intersection Summary

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

1: Ravenna Avenue & Route 107
 HCM Signalized Intersection Capacity Analysis

2009 Existing
 Saturday Midday

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frt		0.95			0.89		1.00	1.00		1.00	1.00	
Flt Protected		0.97			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1708			1605		1805	3537		1805	3530	
Flt Permitted		0.79			0.94		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1387			1522		1805	3537		1805	3530	
Volume (vph)	24	1	13	4	0	20	21	1112	5	74	1098	13
Peak-hour factor, PHF	0.83	0.83	0.83	0.67	0.67	0.67	0.93	0.93	0.93	0.94	0.94	0.94
Adj. Flow (vph)	29	1	16	6	0	30	23	1196	5	79	1168	14
RTOR Reduction (vph)	0	15	0	0	28	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	31	0	0	8	0	23	1201	0	79	1181	0
Heavy Vehicles (%)	0%	0%	8%	0%	0%	5%	0%	2%	0%	0%	2%	8%
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		1			1		5	6		5	6	
Permitted Phases	1			1								
Actuated Green, G (s)		4.4			4.4		3.9	47.5		3.9	47.5	
Effective Green, g (s)		5.4			5.4		4.9	48.5		4.9	48.5	
Actuated g/C Ratio		0.08			0.08		0.07	0.69		0.07	0.69	
Clearance Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		106			116		125	2423		125	2418	
v/s Ratio Prot							0.01	c0.34		c0.04	0.33	
v/s Ratio Perm		c0.02			0.01							
v/c Ratio		0.29			0.07		0.18	0.50		0.63	0.49	
Uniform Delay, d1		30.9			30.4		31.1	5.3		32.1	5.3	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		1.6			0.3		0.7	0.2		10.0	0.2	
Delay (s)		32.5			30.6		31.8	5.5		42.1	5.4	
Level of Service		C			C		C	A		D	A	
Approach Delay (s)		32.5			30.6			6.0			7.7	
Approach LOS		C			C			A			A	

Intersection Summary

HCM Average Control Delay	7.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	70.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	51.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

1: Ravenna Avenue & Route 107
 Timing Report, Sorted By Phase

2009 Existing
 Saturday Midday



Phase Number	1	5	6
Movement	EBWBNBSBL	NBSB	NBSB
Lead/Lag		Lead	Lag
Lead-Lag Optimize			
Recall Mode	None	None	Min
Maximum Split (s)	11	9	37
Maximum Split (%)	19.3%	15.8%	64.9%
Minimum Split (s)	11	9	37
Yellow Time (s)	4	4	4
All-Red Time (s)	1	1	1
Minimum Initial (s)	6	4	10
Vehicle Extension (s)	3	3	3
Minimum Gap (s)	3	3	3
Time Before Reduce (s)	0	0	0
Time To Reduce (s)	0	0	0
Walk Time (s)			
Flash Dont Walk (s)			
Dual Entry	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes
Start Time (s)	0	11	20
End Time (s)	11	20	0
Yield/Force Off (s)	6	15	52
Yield/Force Off 170(s)	6	15	52
Local Start Time (s)	5	16	25
Local Yield (s)	11	20	0
Local Yield 170(s)	11	20	0

Intersection Summary







Cycle Length	57
Control Type	Actuated-Uncoordinated
Natural Cycle	60

Splits and Phases: 1: Ravenna Avenue & Route 107

ø1	ø5	ø6
11 s	9 s	37 s



















Queues

Weekday AM

						
Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	60	44	49	1609	59	1027
v/c Ratio	0.38	0.22	0.17	0.60	0.32	0.43
Control Delay	32.4	20.0	28.8	10.2	37.5	10.5
Queue Delay	0.0	0.0	0.0	0.2	0.0	0.0
Total Delay	32.4	20.0	28.8	10.5	37.5	10.5
Queue Length 50th (ft)	21	8	22	342	28	192
Queue Length 95th (ft)	39	33	47	361	60	214
Internal Link Dist (ft)	465	710		433		897
Turn Bay Length (ft)			125		80	
Base Capacity (vph)	247	311	341	2663	282	2426
Starvation Cap Reductn	0	0	0	348	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.24	0.14	0.14	0.70	0.21	0.42
Intersection Summary						

1: Ravenna Avenue & Route 107
 HCM Signalized Intersection Capacity Analysis

2014 No-Build
 Weekday AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frt		0.96			0.92		1.00	1.00		1.00	1.00	
Flt Protected		0.97			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1595			1725		1719	3470		1736	3403	
Flt Permitted		0.86			0.94		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1423			1642		1719	3470		1736	3403	
Volume (vph)	26	4	11	8	7	23	38	1235	4	52	897	7
Peak-hour factor, PHF	0.69	0.69	0.69	0.85	0.85	0.85	0.77	0.77	0.77	0.88	0.88	0.88
Adj. Flow (vph)	38	6	16	9	8	27	49	1604	5	59	1019	8
RTOR Reduction (vph)	0	15	0	0	25	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	45	0	0	19	0	49	1609	0	59	1027	0
Heavy Vehicles (%)	10%	50%	0%	0%	0%	0%	5%	4%	0%	4%	6%	0%
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		1	6		5	2	
Permitted Phases	4			8								
Actuated Green, G (s)		5.2			5.2		10.1	54.8		5.0	49.7	
Effective Green, g (s)		6.2			6.2		11.1	55.8		6.0	50.7	
Actuated g/C Ratio		0.08			0.08		0.14	0.70		0.08	0.63	
Clearance Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)		2.0			2.0		2.0	4.0		2.0	4.0	
Lane Grp Cap (vph)		110			127		239	2420		130	2157	
v/s Ratio Prot							0.03	c0.46		0.03	c0.30	
v/s Ratio Perm		c0.03			0.01							
v/c Ratio		0.41			0.15		0.21	0.66		0.45	0.48	
Uniform Delay, d1		35.2			34.4		30.5	6.8		35.4	7.7	
Progression Factor		1.00			1.00		1.02	1.09		1.00	1.00	
Incremental Delay, d2		0.9			0.2		0.1	1.4		0.9	0.8	
Delay (s)		36.1			34.6		31.2	8.8		36.3	8.4	
Level of Service		D			C		C	A		D	A	
Approach Delay (s)		36.1			34.6			9.4			10.0	
Approach LOS		D			C			A			A	

Intersection Summary

HCM Average Control Delay	10.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	55.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

1: Ravenna Avenue & Route 107
 Timing Report, Sorted By Phase

2014 No-Build
 Weekday AM



Phase Number	1	2	4	5	6	8
Movement	NBL	SBT	EBTL	SBL	NBT	WBTL
Lead/Lag	Lag	Lead		Lead	Lag	
Lead-Lag Optimize						
Recall Mode	None	C-Min	None	None	C-Min	None
Maximum Split (s)	17	45	18	17	45	18
Maximum Split (%)	21.3%	56.3%	22.5%	21.3%	56.3%	22.5%
Minimum Split (s)	11	11	11	11	11	11
Yellow Time (s)	4	4	4	4	4	4
All-Red Time (s)	1	1	1	1	1	1
Minimum Initial (s)	6	6	6	6	6	6
Vehicle Extension (s)	2	4	2	2	4	2
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)						
Flash Dont Walk (s)						
Dual Entry	No	Yes	Yes	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	2	37	19	37	54	19
End Time (s)	19	2	37	54	19	37
Yield/Force Off (s)	14	77	32	49	14	32
Yield/Force Off 170(s)	14	77	32	49	14	32
Local Start Time (s)	5	40	22	40	57	22
Local Yield (s)	17	0	35	52	17	35
Local Yield 170(s)	17	0	35	52	17	35

Intersection Summary







Cycle Length 80
 Control Type Actuated-Coordinated
 Natural Cycle 60
 Offset: 77 (96%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow

Splits and Phases: 1: Ravenna Avenue & Route 107



Queues

Weekday PM



















						
Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	60	47	49	1320	112	1343
v/c Ratio	0.39	0.24	0.24	0.53	0.51	0.51
Control Delay	37.5	16.5	37.3	8.8	44.7	8.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.5	16.5	37.3	8.8	44.7	8.7
Queue Length 50th (ft)	25	3	26	60	61	195
Queue Length 95th (ft)	38	15	m59	391	107	325
Internal Link Dist (ft)	465	710		433		897
Turn Bay Length (ft)			125		80	
Base Capacity (vph)	232	289	281	2491	284	2614
Starvation Cap Reductn	0	0	0	138	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.26	0.16	0.17	0.56	0.39	0.51

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

1: Ravenna Avenue & Route 107
 HCM Signalized Intersection Capacity Analysis

2014 No-Build
 Weekday PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Fr _t		0.97			0.88		1.00	1.00		1.00	1.00	
Fl _t Protected		0.96			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1770			1662		1805	3536		1787	3534	
Fl _t Permitted		0.86			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1572			1622		1805	3536		1787	3534	
Volume (vph)	28	0	9	3	0	25	46	1232	8	103	1222	14
Peak-hour factor, PHF	0.62	0.62	0.62	0.60	0.60	0.60	0.94	0.94	0.94	0.92	0.92	0.92
Adj. Flow (vph)	45	0	15	5	0	42	49	1311	9	112	1328	15
RTOR Reduction (vph)	0	14	0	0	38	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	46	0	0	9	0	49	1320	0	112	1342	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	2%	0%	1%	2%	0%
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		1	6		5	2	
Permitted Phases	4			8								
Actuated Green, G (s)		6.6			6.6		6.6	59.6		8.8	61.8	
Effective Green, g (s)		7.6			7.6		7.6	60.6		9.8	62.8	
Actuated g/C Ratio		0.08			0.08		0.08	0.67		0.11	0.70	
Clearance Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)		2.0			2.0		2.0	4.0		2.0	4.0	
Lane Grp Cap (vph)		133			137		152	2381		195	2466	
v/s Ratio Prot							0.03	c0.37		0.06	c0.38	
v/s Ratio Perm		c0.03			0.01							
v/c Ratio		0.35			0.06		0.32	0.55		0.57	0.54	
Uniform Delay, d ₁		38.9			37.9		38.8	7.7		38.1	6.6	
Progression Factor		1.00			1.00		0.98	0.87		1.00	1.00	
Incremental Delay, d ₂		0.6			0.1		0.4	0.8		2.5	0.9	
Delay (s)		39.4			38.0		38.5	7.5		40.6	7.5	
Level of Service		D			D		D	A		D	A	
Approach Delay (s)		39.4			38.0			8.6			10.0	
Approach LOS		D			D			A			B	
Intersection Summary												
HCM Average Control Delay			10.4				HCM Level of Service				B	
HCM Volume to Capacity ratio			0.52									
Actuated Cycle Length (s)			90.0				Sum of lost time (s)			8.0		
Intersection Capacity Utilization			58.8%				ICU Level of Service			B		
Analysis Period (min)			15									
c Critical Lane Group												

1: Ravenna Avenue & Route 107
 Timing Report, Sorted By Phase

2014 No-Build
 Weekday PM

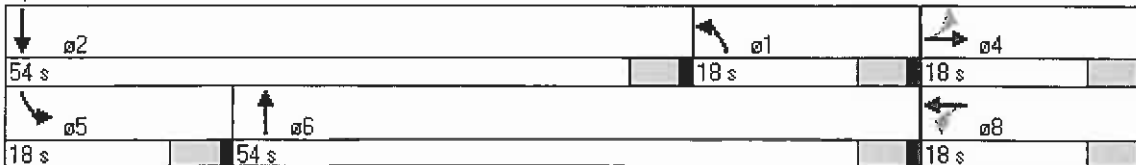


Phase Number	1	2	4	5	6	8
Movement	NBL	SBT	EBTL	SBL	NBT	WBTL
Lead/Lag	Lag	Lead		Lead	Lag	
Lead-Lag Optimize						
Recall Mode	None	C-Min	None	None	C-Min	None
Maximum Split (s)	18	54	18	18	54	18
Maximum Split (%)	20.0%	60.0%	20.0%	20.0%	60.0%	20.0%
Minimum Split (s)	11	11	11	11	11	11
Yellow Time (s)	4	4	4	4	4	4
All-Red Time (s)	1	1	1	1	1	1
Minimum Initial (s)	6	6	6	6	6	6
Vehicle Extension (s)	2	4	2	2	4	2
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)						
Flash Dont Walk (s)						
Dual Entry	No	Yes	Yes	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	88	34	16	34	52	16
End Time (s)	16	88	34	52	16	34
Yield/Force Off (s)	11	83	29	47	11	29
Yield/Force Off 170(s)	11	83	29	47	11	29
Local Start Time (s)	5	41	23	41	59	23
Local Yield (s)	18	0	36	54	18	36
Local Yield 170(s)	18	0	36	54	18	36

Intersection Summary

Cycle Length 90
 Control Type Actuated-Coordinated
 Natural Cycle 55
 Offset: 83 (92%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow

Splits and Phases: 1: Ravenna Avenue & Route 107



Queues



















	→	←	↙	↑	↘	↓
Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	46	40	24	1317	87	1273
v/c Ratio	0.29	0.22	0.11	0.51	0.41	0.46
Control Delay	29.0	17.4	30.2	7.8	38.1	6.9
Queue Delay	0.0	0.0	0.0	0.1	0.0	0.0
Total Delay	29.0	17.4	30.2	7.9	38.1	6.9
Queue Length 50th (ft)	14	3	12	155	41	65
Queue Length 95th (ft)	40	19	m26	264	81	276
Internal Link Dist (ft)	465	710		433		897
Turn Bay Length (ft)			125		80	
Base Capacity (vph)	268	300	293	2572	293	2795
Starvation Cap Reductn	0	0	0	255	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.17	0.13	0.08	0.57	0.30	0.46

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

1: Ravenna Avenue & Route 107
 HCM Signalized Intersection Capacity Analysis

2014 No-Build
 Saturday MIDDAY

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frt		0.95			0.89		1.00	1.00		1.00	1.00	
Flt Protected		0.97			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1708			1607		1805	3537		1805	3531	
Flt Permitted		0.84			0.95		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1474			1539		1805	3537		1805	3531	
Volume (vph)	24	1	13	5	0	22	22	1220	5	82	1183	13
Peak-hour factor, PHF	0.83	0.83	0.83	0.67	0.67	0.67	0.93	0.93	0.93	0.94	0.94	0.94
Adj. Flow (vph)	29	1	16	7	0	33	24	1312	5	87	1259	14
RTOR Reduction (vph)	0	15	0	0	31	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	31	0	0	9	0	24	1317	0	87	1272	0
Heavy Vehicles (%)	0%	0%	8%	0%	0%	5%	0%	2%	0%	0%	2%	8%
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		1	6		5	2	
Permitted Phases	4			8								
Actuated Green, G (s)		4.5			4.5		4.8	53.3		7.2	55.7	
Effective Green, g (s)		5.5			5.5		5.8	54.3		8.2	56.7	
Actuated g/C Ratio		0.07			0.07		0.07	0.68		0.10	0.71	
Clearance Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)		2.0			2.0		2.0	4.0		2.0	4.0	
Lane Grp Cap (vph)		101			106		131	2401		185	2503	
v/s Ratio Prot							0.01	c0.37		0.05	c0.36	
v/s Ratio Perm		c0.02			0.01							
v/c Ratio		0.31			0.09		0.18	0.55		0.47	0.51	
Uniform Delay, d1		35.4			34.9		34.9	6.6		33.9	5.3	
Progression Factor		1.00			1.00		0.97	0.94		1.00	1.00	
Incremental Delay, d2		0.6			0.1		0.2	0.8		0.7	0.7	
Delay (s)		36.1			35.0		34.2	7.0		34.5	6.0	
Level of Service		D			D		C	A		C	A	
Approach Delay (s)		36.1			35.0			7.5			7.9	
Approach LOS		D			D			A			A	
Intersection Summary												
HCM Average Control Delay			8.5				HCM Level of Service			A		
HCM Volume to Capacity ratio			0.54									
Actuated Cycle Length (s)			80.0				Sum of lost time (s)			12.0		
Intersection Capacity Utilization			54.8%				ICU Level of Service			A		
Analysis Period (min)			15									
c Critical Lane Group												

1: Ravenna Avenue & Route 107
 Timing Report, Sorted By Phase

2014 No-Build
 Saturday Midday



Phase Number	1	2	4	5	6	8
Movement	NBL	SBT	EBTL	SBL	NBT	WBTL
Lead/Lag	Lag	Lead		Lead	Lag	
Lead-Lag Optimize						
Recall Mode	None	C-Min	None	None	C-Min	None
Maximum Split (s)	17	45	18	17	45	18
Maximum Split (%)	21.3%	56.3%	22.5%	21.3%	56.3%	22.5%
Minimum Split (s)	11	11	11	11	11	11
Yellow Time (s)	4	4	4	4	4	4
All-Red Time (s)	1	1	1	1	1	1
Minimum Initial (s)	6	6	6	6	6	6
Vehicle Extension (s)	2	4	2	2	4	2
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)						
Flash Dont Walk (s)						
Dual Entry	No	Yes	Yes	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	2	37	19	37	54	19
End Time (s)	19	2	37	54	19	37
Yield/Force Off (s)	14	77	32	49	14	32
Yield/Force Off 170(s)	14	77	32	49	14	32
Local Start Time (s)	5	40	22	40	57	22
Local Yield (s)	17	0	35	52	17	35
Local Yield 170(s)	17	0	35	52	17	35

Intersection Summary

Cycle Length 80
 Control Type Actuated-Coordinated
 Natural Cycle 50
 Offset: 77 (96%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow

Splits and Phases: 1: Ravenna Avenue & Route 107















Queues

	→	←	↖	↑	↘	↓
Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	60	44	49	1630	59	1060
v/c Ratio	0.38	0.22	0.17	0.61	0.32	0.44
Control Delay	32.4	20.0	28.8	10.0	37.5	10.3
Queue Delay	0.0	0.0	0.0	0.2	0.0	0.0
Total Delay	32.4	20.0	28.8	10.3	37.5	10.3
Queue Length 50th (ft)	21	8	22	348	28	196
Queue Length 95th (ft)	39	33	47	331	60	222
Internal Link Dist (ft)	465	710		433		897
Turn Bay Length (ft)			125		80	
Base Capacity (vph)	247	311	333	2663	282	2427
Starvation Cap Reductn	0	0	0	328	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.24	0.14	0.15	0.70	0.21	0.44

Intersection Summary

1: Ravenna Avenue & Route 107
 HCM Signalized Intersection Capacity Analysis

2014 Build
 Weekday AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↗		↗	↗	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Flt		0.96			0.92		1.00	1.00		1.00	1.00	
Flt Protected		0.97			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1595			1725		1719	3470		1736	3403	
Flt Permitted		0.86			0.94		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1423			1642		1719	3470		1736	3403	
Volume (vph)	26	4	11	8	7	23	38	1251	4	52	926	7
Peak-hour factor, PHF	0.69	0.69	0.69	0.85	0.85	0.85	0.77	0.77	0.77	0.88	0.88	0.88
Adj. Flow (vph)	38	6	16	9	8	27	49	1625	5	59	1052	8
RTOR Reduction (vph)	0	15	0	0	25	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	45	0	0	19	0	49	1630	0	59	1060	0
Heavy Vehicles (%)	10%	50%	0%	0%	0%	0%	5%	4%	0%	4%	6%	0%
Turn Type	Perm		Perm				Prot		Prot			
Protected Phases		4			8		1	6		5	2	
Permitted Phases	4			8								
Actuated Green, G (s)		5.2			5.2		9.7	54.8		5.0	50.1	
Effective Green, g (s)		6.2			6.2		10.7	55.8		6.0	51.1	
Actuated g/C Ratio		0.08			0.08		0.13	0.70		0.08	0.64	
Clearance Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)		2.0			2.0		2.0	4.0		2.0	4.0	
Lane Grp Cap (vph)		110			127		230	2420		130	2174	
v/s Ratio Prot							0.03	c0.47		0.03	c0.31	
v/s Ratio Perm		c0.03			0.01							
v/c Ratio		0.41			0.15		0.21	0.67		0.45	0.49	
Uniform Delay, d1		35.2			34.4		30.9	6.9		35.4	7.6	
Progression Factor		1.00			1.00		1.00	1.04		1.00	1.00	
Incremental Delay, d2		0.9			0.2		0.2	1.4		0.9	0.8	
Delay (s)		36.1			34.6		31.0	8.6		36.3	8.4	
Level of Service		D			C		C	A		D	A	
Approach Delay (s)		36.1			34.6			9.3			9.8	
Approach LOS		D			C			A			A	
Intersection Summary												
HCM Average Control Delay			10.4				HCM Level of Service				B	
HCM Volume to Capacity ratio			0.64									
Actuated Cycle Length (s)			80.0				Sum of lost time (s)			12.0		
Intersection Capacity Utilization			55.5%				ICU Level of Service			B		
Analysis Period (min)			15									
c Critical Lane Group												

1: Ravenna Avenue & Route 107
Timing Report, Sorted By Phase

2014 Build
Weekday AM



Phase Number	1	2	4	5	6	8
Movement	NBL	SBT	EBTL	SBL	NBT	WBTL
Lead/Lag	Lag	Lead		Lead	Lag	
Lead-Lag Optimize						
Recall Mode	None	C-Min	None	None	C-Min	None
Maximum Split (s)	17	45	18	17	45	18
Maximum Split (%)	21.3%	56.3%	22.5%	21.3%	56.3%	22.5%
Minimum Split (s)	11	11	11	11	11	11
Yellow Time (s)	4	4	4	4	4	4
All-Red Time (s)	1	1	1	1	1	1
Minimum Initial (s)	6	6	6	6	6	6
Vehicle Extension (s)	2	4	2	2	4	2
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)						
Flash Dont Walk (s)						
Dual Entry	No	Yes	Yes	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	2	37	19	37	54	19
End Time (s)	19	2	37	54	19	37
Yield/Force Off (s)	14	77	32	49	14	32
Yield/Force Off 170(s)	14	77	32	49	14	32
Local Start Time (s)	5	40	22	40	57	22
Local Yield (s)	17	0	35	52	17	35
Local Yield 170(s)	17	0	35	52	17	35

Intersection Summary







Cycle Length 80
Control Type Actuated-Coordinated
Natural Cycle 60
Offset: 77 (96%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow

Splits and Phases: 1: Ravenna Avenue & Route 107

ø2	ø1	ø4
45 s	17 s	18 s
ø5	ø6	ø8
17 s	45 s	18 s

Queues

Weekday PM













						
Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	90	47	49	1439	112	1458
v/c Ratio	0.51	0.21	0.24	0.59	0.53	0.57
Control Delay	43.0	15.2	36.6	10.3	45.8	10.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.0	15.2	36.6	10.3	45.8	10.7
Queue Length 50th (ft)	44	3	27	201	61	242
Queue Length 95th (ft)	57	14	m55	465	110	393
Internal Link Dist (ft)	465	710		433		897
Turn Bay Length (ft)			125		80	
Base Capacity (vph)	239	288	281	2445	278	2546
Starvation Cap Reductn	0	0	0	96	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.38	0.16	0.17	0.61	0.40	0.57

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

1: Ravenna Avenue & Route 107
 HCM Signalized Intersection Capacity Analysis

2014 Build
 Weekday PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↕		↗	↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frt		0.98			0.88		1.00	1.00		1.00	1.00	
Flt Protected		0.96			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1785			1662		1805	3536		1787	3534	
Flt Permitted		0.84			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1551			1626		1805	3536		1787	3534	
Volume (vph)	45	1	9	3	0	25	46	1344	8	103	1328	14
Peak-hour factor, PHF	0.62	0.62	0.62	0.60	0.60	0.60	0.94	0.94	0.94	0.92	0.92	0.92
Adj. Flow (vph)	73	2	15	5	0	42	49	1430	9	112	1443	15
RTOR Reduction (vph)	0	8	0	0	38	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	82	0	0	9	0	49	1439	0	112	1457	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	2%	0%	1%	2%	0%
Turn Type	Perm		Perm				Prot		Prot			
Protected Phases		4			8		1	6		5	2	
Permitted Phases	4			8								
Actuated Green, G (s)		8.1			8.1		6.9	58.4		8.5	60.0	
Effective Green, g (s)		9.1			9.1		7.9	59.4		9.5	61.0	
Actuated g/C Ratio		0.10			0.10		0.09	0.66		0.11	0.68	
Clearance Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)		2.0			2.0		2.0	4.0		2.0	4.0	
Lane Grp Cap (vph)		157			164		158	2334		189	2395	
v/s Ratio Prot							0.03	c0.41		0.06	c0.41	
v/s Ratio Perm		c0.05			0.01							
v/c Ratio		0.52			0.06		0.31	0.62		0.59	0.61	
Uniform Delay, d1		38.4			36.6		38.5	8.8		38.4	8.0	
Progression Factor		1.00			1.00		0.98	0.88		1.00	1.00	
Incremental Delay, d2		1.4			0.1		0.4	1.1		3.3	1.2	
Delay (s)		39.8			36.6		37.9	8.8		41.7	9.1	
Level of Service		D			D		D	A		D	A	
Approach Delay (s)		39.8			36.6			9.8			11.4	
Approach LOS		D			D			A			B	

Intersection Summary

HCM Average Control Delay	11.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	62.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

1: Ravenna Avenue & Route 107
 Timing Report, Sorted By Phase

2014 Build
 Weekday PM

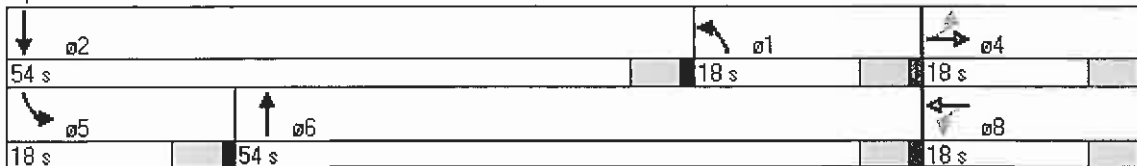


Phase Number	1	2	4	5	6	8
Movement	NBL	SBT	EBTL	SBL	NBT	WBTL
Lead/Lag	Lag	Lead		Lead	Lag	
Lead-Lag Optimize						
Recall Mode	None	C-Min	None	None	C-Min	None
Maximum Split (s)	18	54	18	18	54	18
Maximum Split (%)	20.0%	60.0%	20.0%	20.0%	60.0%	20.0%
Minimum Split (s)	11	11	11	11	11	11
Yellow Time (s)	4	4	4	4	4	4
All-Red Time (s)	1	1	1	1	1	1
Minimum Initial (s)	6	6	6	6	6	6
Vehicle Extension (s)	2	4	2	2	4	2
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)						
Flash Dont Walk (s)						
Dual Entry	No	Yes	Yes	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	88	34	16	34	52	16
End Time (s)	16	88	34	52	16	34
Yield/Force Off (s)	11	83	29	47	11	29
Yield/Force Off 170(s)	11	83	29	47	11	29
Local Start Time (s)	5	41	23	41	59	23
Local Yield (s)	18	0	36	54	18	36
Local Yield 170(s)	18	0	36	54	18	36

Intersection Summary

Cycle Length 90
 Control Type Actuated-Coordinated
 Natural Cycle 60
 Offset: 83 (92%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow

Splits and Phases: 1: Ravenna Avenue & Route 107



Queues













	→	←	↙	↑	↘	↓
Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	47	40	24	1460	87	1431
v/c Ratio	0.30	0.22	0.11	0.57	0.41	0.51
Control Delay	29.2	17.3	30.5	8.8	38.1	7.6
Queue Delay	0.0	0.0	0.0	0.1	0.0	0.0
Total Delay	29.2	17.3	30.5	8.9	38.1	7.6
Queue Length 50th (ft)	15	3	12	196	41	78
Queue Length 95th (ft)	41	19	m24	437	81	333
Internal Link Dist (ft)	465	710		433		897
Turn Bay Length (ft)			125		80	
Base Capacity (vph)	270	299	293	2571	293	2798
Starvation Cap Reductn	0	0	0	260	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.17	0.13	0.08	0.63	0.30	0.51

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

1: Ravenna Avenue & Route 107
 HCM Signalized Intersection Capacity Analysis

2014 Build
 Saturday Midday

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↕		↗	↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frt		0.95			0.89		1.00	1.00		1.00	1.00	
Flt Protected		0.97			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1712			1607		1805	3538		1805	3532	
Flt Permitted		0.84			0.95		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1479			1541		1805	3538		1805	3532	
Volume (vph)	24	2	13	5	0	22	22	1353	5	82	1332	13
Peak-hour factor, PHF	0.83	0.83	0.83	0.67	0.67	0.67	0.93	0.93	0.93	0.94	0.94	0.94
Adj. Flow (vph)	29	2	16	7	0	33	24	1455	5	87	1417	14
RTOR Reduction (vph)	0	15	0	0	31	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	32	0	0	9	0	24	1460	0	87	1430	0
Heavy Vehicles (%)	0%	0%	8%	0%	0%	5%	0%	2%	0%	0%	2%	8%
Turn Type	Perm		Perm				Prot		Prot			
Protected Phases		4			8		1	6		5	2	
Permitted Phases	4			8								
Actuated Green, G (s)		4.5			4.5		4.8	53.3		7.2	55.7	
Effective Green, g (s)		5.5			5.5		5.8	54.3		8.2	56.7	
Actuated g/C Ratio		0.07			0.07		0.07	0.68		0.10	0.71	
Clearance Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)		2.0			2.0		2.0	4.0		2.0	4.0	
Lane Grp Cap (vph)		102			106		131	2401		185	2503	
v/s Ratio Prot							0.01	c0.41		0.05	c0.40	
v/s Ratio Perm		c0.02			0.01							
v/c Ratio		0.31			0.09		0.18	0.61		0.47	0.57	
Uniform Delay, d1		35.5			34.9		34.9	7.0		33.9	5.7	
Progression Factor		1.00			1.00		0.99	0.97		1.00	1.00	
Incremental Delay, d2		0.6			0.1		0.2	1.0		0.7	1.0	
Delay (s)		36.1			35.0		34.6	7.9		34.5	6.7	
Level of Service		D			D		C	A		C	A	
Approach Delay (s)		36.1			35.0			8.3			8.3	
Approach LOS		D			D			A			A	
Intersection Summary												
HCM Average Control Delay			9.0								A	
HCM Volume to Capacity ratio			0.59									
Actuated Cycle Length (s)			80.0						12.0			
Intersection Capacity Utilization			58.5%								B	
Analysis Period (min)			15									
c Critical Lane Group												

1: Ravenna Avenue & Route 107
 Timing Report, Sorted By Phase

2014 Build
 Saturday MIDDAY








Phase Number	1	2	4	5	6	8
Movement	NBL	SBT	EBTL	SBL	NBT	WBTL
Lead/Lag	Lag	Lead		Lead	Lag	
Lead-Lag Optimize						
Recall Mode	None	C-Min	None	None	C-Min	None
Maximum Split (s)	17	45	18	17	45	18
Maximum Split (%)	21.3%	56.3%	22.5%	21.3%	56.3%	22.5%
Minimum Split (s)	11	11	11	11	11	11
Yellow Time (s)	4	4	4	4	4	4
All-Red Time (s)	1	1	1	1	1	1
Minimum Initial (s)	6	6	6	6	6	6
Vehicle Extension (s)	2	4	2	2	4	2
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)						
Flash Dont Walk (s)						
Dual Entry	No	Yes	Yes	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	2	37	19	37	54	19
End Time (s)	19	2	37	54	19	37
Yield/Force Off (s)	14	77	32	49	14	32
Yield/Force Off 170(s)	14	77	32	49	14	32
Local Start Time (s)	5	40	22	40	57	22
Local Yield (s)	17	0	35	52	17	35
Local Yield 170(s)	17	0	35	52	17	35

Intersection Summary

Cycle Length 80
 Control Type Actuated-Coordinated
 Natural Cycle 55
 Offset: 77 (96%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow














Splits and Phases: 1: Ravenna Avenue & Route 107

Ø2	Ø1	Ø4
45 s	17 s	18 s
Ø5	Ø6	Ø8
17 s	45 s	18 s

					
Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Group Flow (vph)	68	26	43	1262	900
v/c Ratio	0.27	0.10	0.24	0.46	0.47
Control Delay	23.0	10.6	26.1	3.2	6.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	23.0	10.6	26.1	3.2	6.9
Queue Length 50th (ft)	19	0	13	66	75
Queue Length 95th (ft)	38	12	38	97	112
Internal Link Dist (ft)	541			496	433
Turn Bay Length (ft)			130		
Base Capacity (vph)	256	254	177	2765	2077
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.27	0.10	0.24	0.46	0.43
Intersection Summary					

2: Olde Village Drive & Route 107
 HCM Signalized Intersection Capacity Analysis

2009 Existing
 Weekday AM

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations				 	 	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	
Frt	1.00	0.85	1.00	1.00	0.99	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1703	1538	1752	3343	3356	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1703	1538	1752	3343	3356	
Volume (vph)	49	19	39	1136	816	30
Peak-hour factor, PHF	0.72	0.72	0.90	0.90	0.94	0.94
Adj. Flow (vph)	68	26	43	1262	868	32
RTOR Reduction (vph)	0	24	0	0	5	0
Lane Group Flow (vph)	68	2	43	1262	895	0
Heavy Vehicles (%)	6%	5%	3%	8%	7%	7%
Turn Type	custom		Prot			
Protected Phases	1	1	5	5	6	
Permitted Phases		1				
Actuated Green, G (s)	3.0	3.0	4.3	30.6	22.3	
Effective Green, g (s)	4.0	4.0	4.3	32.6	24.3	
Actuated g/C Ratio	0.09	0.09	0.10	0.73	0.54	
Clearance Time (s)	5.0	5.0	4.0		6.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	153	138	169	2444	1828	
v/s Ratio Prot	c0.04	0.00	0.02	c0.38	0.27	
v/s Ratio Perm						
v/c Ratio	0.44	0.02	0.25	0.52	0.49	
Uniform Delay, d1	19.2	18.5	18.7	2.6	6.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.1	0.0	0.8	0.2	0.2	
Delay (s)	21.3	18.6	19.5	2.8	6.5	
Level of Service	C	B	B	A	A	
Approach Delay (s)	20.5			3.3	6.5	
Approach LOS	C			A	A	




Intersection Summary

HCM Average Control Delay	5.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	44.6	Sum of lost time (s)	8.0
Intersection Capacity Utilization	43.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

2: Olde Village Drive & Route 107
 Timing Report, Sorted By Phase

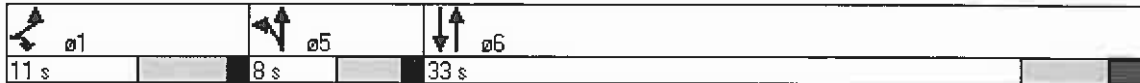
2009 Existing
 Weekday AM

			
Phase Number	1	5	6
Movement	EBL	NBTL	NBSB
Lead/Lag		Lead	Lag
Lead-Lag Optimize			
Recall Mode	None	Min	Min
Maximum Split (s)	11	8	33
Maximum Split (%)	21.2%	15.4%	63.5%
Minimum Split (s)	11	8	33
Yellow Time (s)	4	3	4
All-Red Time (s)	1	1	2
Minimum Initial (s)	6	4	10
Vehicle Extension (s)	3	3	3
Minimum Gap (s)	3	3	3
Time Before Reduce (s)	0	0	0
Time To Reduce (s)	0	0	0
Walk Time (s)			
Flash Dont Walk (s)			
Dual Entry	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes
Start Time (s)	0	11	19
End Time (s)	11	19	0
Yield/Force Off (s)	6	15	46
Yield/Force Off 170(s)	6	15	46
Local Start Time (s)	6	17	25
Local Yield (s)	12	21	0
Local Yield 170(s)	12	21	0

Intersection Summary






Cycle Length	52
Control Type	Actuated-Uncoordinated
Natural Cycle	55

Splits and Phases: 2: Olde Village Drive & Route 107















Queues

Weekday PM

					
Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Group Flow (vph)	110	18	44	1178	1256
v/c Ratio	0.47	0.08	0.15	0.42	0.67
Control Delay	30.3	12.4	22.6	3.2	11.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	30.3	12.4	22.6	3.2	11.7
Queue Length 50th (ft)	35	0	13	58	146
Queue Length 95th (ft)	64	12	37	83	204
Internal Link Dist (ft)	541			496	433
Turn Bay Length (ft)			130		
Base Capacity (vph)	232	226	288	2781	1931
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.47	0.08	0.15	0.42	0.65
Intersection Summary					

2: Olde Village Drive & Route 107
 HCM Signalized Intersection Capacity Analysis

2009 Existing
 Weekday PM

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	
Frt	1.00	0.85	1.00	1.00	0.99	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1787	1615	1805	3539	3542	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1787	1615	1805	3539	3542	
Volume (vph)	85	14	40	1072	1047	71
Peak-hour factor, PHF	0.77	0.77	0.91	0.91	0.89	0.89
Adj. Flow (vph)	110	18	44	1178	1176	80
RTOR Reduction (vph)	0	16	0	0	9	0
Lane Group Flow (vph)	110	2	44	1178	1247	0
Heavy Vehicles (%)	1%	0%	0%	2%	1%	0%
Turn Type	custom		Prot			
Protected Phases	1	1	5	5	6	
Permitted Phases		1				
Actuated Green, G (s)	4.4	4.4	8.3	37.4	25.1	
Effective Green, g (s)	5.4	5.4	8.3	39.4	27.1	
Actuated g/C Ratio	0.10	0.10	0.16	0.75	0.51	
Clearance Time (s)	5.0	5.0	4.0		6.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	183	165	284	2641	1818	
v/s Ratio Prot	c0.06	0.00	0.02	c0.33	c0.35	
v/s Ratio Perm						
v/c Ratio	0.60	0.01	0.15	0.45	0.69	
Uniform Delay, d1	22.7	21.3	19.2	2.5	9.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	5.5	0.0	0.3	0.1	1.1	
Delay (s)	28.1	21.3	19.5	2.7	10.7	
Level of Service	C	C	B	A	B	
Approach Delay (s)	27.2			3.3	10.7	
Approach LOS	C			A	B	

Intersection Summary

HCM Average Control Delay	8.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	52.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	44.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

2: Olde Village Drive & Route 107
 Timing Report, Sorted By Phase

2009 Existing
 Weekday PM



Phase Number	1	5	6
Movement	EBL	NBTL	NBSB
Lead/Lag		Lead	Lag
Lead-Lag Optimize			
Recall Mode	None	Min	Min
Maximum Split (s)	11	12	33
Maximum Split (%)	19.6%	21.4%	58.9%
Minimum Split (s)	11	12	33
Yellow Time (s)	4	3	4
All-Red Time (s)	1	1	2
Minimum Initial (s)	6	8	10
Vehicle Extension (s)	3	3	3
Minimum Gap (s)	3	3	3
Time Before Reduce (s)	0	0	0
Time To Reduce (s)	0	0	0
Walk Time (s)			
Flash Dont Walk (s)			
Dual Entry	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes
Start Time (s)	0	11	23
End Time (s)	11	23	0
Yield/Force Off (s)	6	19	50
Yield/Force Off 170(s)	6	19	50
Local Start Time (s)	6	17	29
Local Yield (s)	12	25	0
Local Yield 170(s)	12	25	0

Intersection Summary






Cycle Length	56
Control Type	Actuated-Uncoordinated
Natural Cycle	60

Splits and Phases: 2: Olde Village Drive & Route 107

ø1	ø5	ø6
11 s	12 s	33 s












2: Olde Village Drive & Route 107
Queues

2009 Existing
Saturday Midday

					
Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Group Flow (vph)	111	10	45	1189	1193
v/c Ratio	0.44	0.04	0.31	0.47	0.62
Control Delay	26.9	12.6	28.9	4.1	9.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	26.9	12.6	28.9	4.1	9.4
Queue Length 50th (ft)	32	0	14	58	109
Queue Length 95th (ft)	56	8	38	83	158
Internal Link Dist (ft)	541			496	433
Turn Bay Length (ft)			130		
Base Capacity (vph)	252	234	144	2543	1986
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.44	0.04	0.31	0.47	0.60
Intersection Summary					

2: Olde Village Drive & Route 107
 HCM Signalized Intersection Capacity Analysis

2009 Existing
 Saturday MIDDAY

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	
Frt	1.00	0.85	1.00	1.00	0.99	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1805	1615	1805	3574	3544	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1805	1615	1805	3574	3544	
Volume (vph)	80	7	40	1058	1053	69
Peak-hour factor, PHF	0.72	0.72	0.89	0.89	0.94	0.94
Adj. Flow (vph)	111	10	45	1189	1120	73
RTOR Reduction (vph)	0	9	0	0	10	0
Lane Group Flow (vph)	111	1	45	1189	1183	0
Heavy Vehicles (%)	0%	0%	0%	1%	1%	0%
Turn Type	custom		Prot			
Protected Phases	1	1	5	5	6	
Permitted Phases		1				
Actuated Green, G (s)	6.0	6.0	4.0	33.3	25.3	
Effective Green, g (s)	7.0	7.0	4.0	35.3	27.3	
Actuated g/C Ratio	0.14	0.14	0.08	0.70	0.54	
Clearance Time (s)	5.0	5.0	4.0		6.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	251	225	144	2508	1923	
v/s Ratio Prot	c0.06	0.00	0.02	c0.33	c0.33	
v/s Ratio Perm						
v/c Ratio	0.44	0.01	0.31	0.47	0.62	
Uniform Delay, d1	19.9	18.7	21.9	3.4	7.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.2	0.0	1.2	0.1	0.6	
Delay (s)	21.1	18.7	23.1	3.5	8.5	
Level of Service	C	B	C	A	A	
Approach Delay (s)	20.9			4.2	8.5	
Approach LOS	C			A	A	




Intersection Summary

HCM Average Control Delay	7.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	50.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	44.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

2: Olde Village Drive & Route 107
 Timing Report, Sorted By Phase

2009 Existing
 Saturday Midday

			
Phase Number	1	5	6
Movement	EBL	NBTL	NBSB
Lead/Lag		Lead	Lag
Lead-Lag Optimize			
Recall Mode	Min	Min	Min
Maximum Split (s)	11	8	33
Maximum Split (%)	21.2%	15.4%	63.5%
Minimum Split (s)	11	8	33
Yellow Time (s)	4	3	4
All-Red Time (s)	1	1	2
Minimum Initial (s)	6	4	10
Vehicle Extension (s)	3	3	3
Minimum Gap (s)	3	3	3
Time Before Reduce (s)	0	0	0
Time To Reduce (s)	0	0	0
Walk Time (s)			
Flash Dont Walk (s)			
Dual Entry	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes
Start Time (s)	0	11	19
End Time (s)	11	19	0
Yield/Force Off (s)	6	15	46
Yield/Force Off 170(s)	6	15	46
Local Start Time (s)	6	17	25
Local Yield (s)	12	21	0
Local Yield 170(s)	12	21	0

Intersection Summary






Cycle Length	52
Control Type	Actuated-Uncoordinated
Natural Cycle	55

Splits and Phases: 2: Olde Village Drive & Route 107



Queues

Weekday AM













					
Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Group Flow (vph)	68	26	43	1364	979
v/c Ratio	0.37	0.07	0.25	0.49	0.43
Control Delay	38.1	8.7	37.3	3.1	2.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	38.1	8.7	37.3	3.2	2.5
Queue Length 50th (ft)	32	0	20	83	11
Queue Length 95th (ft)	53	11	m48	136	24
Internal Link Dist (ft)	541			496	433
Turn Bay Length (ft)			130		
Base Capacity (vph)	362	547	372	2768	2251
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	175	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.19	0.05	0.12	0.53	0.43

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

2: Olde Village Drive & Route 107
 HCM Signalized Intersection Capacity Analysis

2014 No-Build
 Weekday AM

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	
Frt	1.00	0.85	1.00	1.00	1.00	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1703	1538	1752	3343	3357	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1703	1538	1752	3343	3357	
Volume (vph)	49	19	39	1228	890	30
Peak-hour factor, PHF	0.72	0.72	0.90	0.90	0.94	0.94
Adj. Flow (vph)	68	26	43	1364	947	32
RTOR Reduction (vph)	0	21	0	0	2	0
Lane Group Flow (vph)	68	5	43	1364	977	0
Heavy Vehicles (%)	6%	5%	3%	8%	7%	7%
Turn Type	pm+ov		Prot			
Protected Phases	4	1	1	6	2	
Permitted Phases		4				
Actuated Green, G (s)	6.6	13.4	6.8	63.4	51.6	
Effective Green, g (s)	7.6	15.4	7.8	64.4	52.6	
Actuated g/C Ratio	0.09	0.19	0.10	0.81	0.66	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	162	373	171	2691	2207	
v/s Ratio Prot	c0.04	0.00	0.02	c0.41	0.29	
v/s Ratio Perm		0.00				
v/c Ratio	0.42	0.01	0.25	0.51	0.44	
Uniform Delay, d1	34.1	26.1	33.4	2.6	6.6	
Progression Factor	1.00	1.00	1.03	0.87	0.27	
Incremental Delay, d2	0.6	0.0	0.3	0.6	0.6	
Delay (s)	34.8	26.2	34.5	2.9	2.4	
Level of Service	C	C	C	A	A	
Approach Delay (s)	32.4			3.8	2.4	
Approach LOS	C			A	A	





Intersection Summary

HCM Average Control Delay	4.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	45.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

2: Olde Village Drive & Route 107
 Timing Report, Sorted By Phase

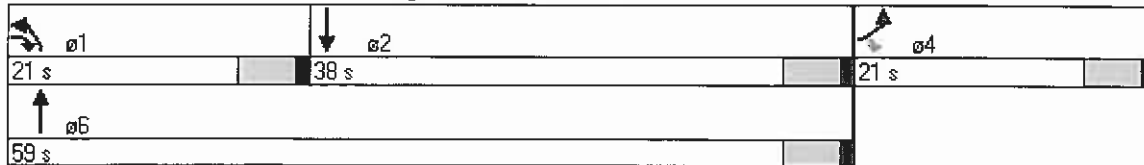
2014 No-Build
 Weekday AM

				
Phase Number	1	2	4	6
Movement	NBL	SBT	EBL	NBT
Lead/Lag	Lead	Lag		
Lead-Lag Optimize				
Recall Mode	Min	C-Min	None	C-Min
Maximum Split (s)	21	38	21	59
Maximum Split (%)	26.3%	47.5%	26.3%	73.8%
Minimum Split (s)	11	11	11	11
Yellow Time (s)	4	4	4	4
All-Red Time (s)	1	1	1	1
Minimum Initial (s)	6	6	6	6
Vehicle Extension (s)	2	2	2	2
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)				
Flash Dont Walk (s)				
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	26	47	5	26
End Time (s)	47	5	26	5
Yield/Force Off (s)	42	0	21	0
Yield/Force Off 170(s)	42	0	21	0
Local Start Time (s)	26	47	5	26
Local Yield (s)	42	0	21	0
Local Yield 170(s)	42	0	21	0

Intersection Summary






Cycle Length 80
 Control Type Actuated-Coordinated
 Natural Cycle 45
 Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow, Master Intersection

Splits and Phases: 2: Olde Village Drive & Route 107



Queues

Weekday PM












					
Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Group Flow (vph)	110	18	44	1320	1389
v/c Ratio	0.52	0.05	0.28	0.45	0.53
Control Delay	45.2	10.2	45.5	3.1	2.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	45.2	10.2	45.5	3.1	2.2
Queue Length 50th (ft)	60	0	24	81	7
Queue Length 95th (ft)	90	12	m58	117	15
Internal Link Dist (ft)	541			496	433
Turn Bay Length (ft)			130		
Base Capacity (vph)	397	524	321	2921	2628
Starvation Cap Reductn	0	0	0	0	140
Spillback Cap Reductn	0	0	0	48	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.28	0.03	0.14	0.46	0.56

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

2: Olde Village Drive & Route 107
 HCM Signalized Intersection Capacity Analysis

2014 No-Build
 Weekday PM

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	
Frt	1.00	0.85	1.00	1.00	0.99	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1787	1615	1805	3539	3545	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1787	1615	1805	3539	3545	
Volume (vph)	85	14	40	1201	1165	71
Peak-hour factor, PHF	0.77	0.77	0.91	0.91	0.89	0.89
Adj. Flow (vph)	110	18	44	1320	1309	80
RTOR Reduction (vph)	0	15	0	0	3	0
Lane Group Flow (vph)	110	3	44	1320	1386	0
Heavy Vehicles (%)	1%	0%	0%	2%	1%	0%
Turn Type		pm+ov	Prot			
Protected Phases	4	1	1	6	2	
Permitted Phases		4				
Actuated Green, G (s)	8.5	13.1	4.6	71.5	61.9	
Effective Green, g (s)	9.5	15.1	5.6	72.5	62.9	
Actuated g/C Ratio	0.11	0.17	0.06	0.81	0.70	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	189	343	112	2851	2478	
v/s Ratio Prot	c0.06	0.00	0.02	c0.37	c0.39	
v/s Ratio Perm		0.00				
v/c Ratio	0.58	0.01	0.39	0.46	0.56	
Uniform Delay, d1	38.4	31.2	40.6	2.7	6.7	
Progression Factor	1.00	1.00	1.09	0.81	0.20	
Incremental Delay, d2	2.9	0.0	0.8	0.5	0.8	
Delay (s)	41.3	31.2	45.0	2.7	2.1	
Level of Service	D	C	D	A	A	
Approach Delay (s)	39.9			4.1	2.1	
Approach LOS	D			A	A	





Intersection Summary

HCM Average Control Delay	4.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	46.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

2: Olde Village Drive & Route 107
 Timing Report, Sorted By Phase

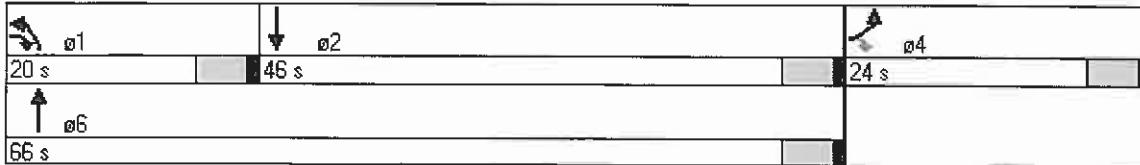
2014 No-Build
 Weekday PM

				
Phase Number	1	2	4	6
Movement	NBL	SBT	EBL	NBT
Lead/Lag	Lead	Lag		
Lead-Lag Optimize				
Recall Mode	None	C-Min	None	C-Min
Maximum Split (s)	20	46	24	66
Maximum Split (%)	22.2%	51.1%	26.7%	73.3%
Minimum Split (s)	11	11	11	11
Yellow Time (s)	4	4	4	4
All-Red Time (s)	1	1	1	1
Minimum Initial (s)	6	6	6	6
Vehicle Extension (s)	2	2	2	2
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)				
Flash Dont Walk (s)				
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	29	49	5	29
End Time (s)	49	5	29	5
Yield/Force Off (s)	44	0	24	0
Yield/Force Off 170(s)	44	0	24	0
Local Start Time (s)	29	49	5	29
Local Yield (s)	44	0	24	0
Local Yield 170(s)	44	0	24	0

Intersection Summary






Cycle Length 90
 Control Type Actuated-Coordinated
 Natural Cycle 55
 Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow, Master Intersection

Splits and Phases: 2: Olde Village Drive & Route 107



Queues

Saturday Midday













					
Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Group Flow (vph)	111	10	45	1311	1286
v/c Ratio	0.48	0.02	0.26	0.45	0.51
Control Delay	39.0	10.3	39.4	3.0	3.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	39.0	10.3	39.4	3.0	3.3
Queue Length 50th (ft)	53	0	23	74	95
Queue Length 95th (ft)	75	7	m51	119	32
Internal Link Dist (ft)	541			496	433
Turn Bay Length (ft)			130		
Base Capacity (vph)	384	591	384	2896	2545
Starvation Cap Reductn	0	0	0	0	60
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.29	0.02	0.12	0.45	0.52

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

2: Olde Village Drive & Route 107
 HCM Signalized Intersection Capacity Analysis

2014 No-Build
 Saturday Midday





						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	
Frt	1.00	0.85	1.00	1.00	0.99	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1805	1615	1805	3574	3546	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1805	1615	1805	3574	3546	
Volume (vph)	80	7	40	1167	1140	69
Peak-hour factor, PHF	0.72	0.72	0.89	0.89	0.94	0.94
Adj. Flow (vph)	111	10	45	1311	1213	73
RTOR Reduction (vph)	0	8	0	0	3	0
Lane Group Flow (vph)	111	2	45	1311	1283	0
Heavy Vehicles (%)	0%	0%	0%	1%	1%	0%
Turn Type	pm+ov		Prot			
Protected Phases	4	1	1	6	2	
Permitted Phases		4				
Actuated Green, G (s)	8.0	12.4	4.4	62.0	52.6	
Effective Green, g (s)	9.0	14.4	5.4	63.0	53.6	
Actuated g/C Ratio	0.11	0.18	0.07	0.79	0.67	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	203	371	122	2815	2376	
v/s Ratio Prot	c0.06	0.00	0.02	c0.37	c0.36	
v/s Ratio Perm		0.00				
v/c Ratio	0.55	0.00	0.37	0.47	0.54	
Uniform Delay, d1	33.6	26.9	35.7	2.9	6.8	
Progression Factor	1.00	1.00	1.09	0.76	0.33	
Incremental Delay, d2	1.6	0.0	0.6	0.5	0.8	
Delay (s)	35.2	26.9	39.4	2.7	3.1	
Level of Service	D	C	D	A	A	
Approach Delay (s)	34.5			3.9	3.1	
Approach LOS	C			A	A	

Intersection Summary

HCM Average Control Delay	4.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	45.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

2: Olde Village Drive & Route 107
 Timing Report, Sorted By Phase





2014 No-Build
 Saturday Midday

				
Phase Number	1	2	4	6
Movement	NBL	SBT	EBL	NBT
Lead/Lag	Lead	Lag		
Lead-Lag Optimize				
Recall Mode	None	C-Min	None	C-Min
Maximum Split (s)	21	38	21	59
Maximum Split (%)	26.3%	47.5%	26.3%	73.8%
Minimum Split (s)	11	11	11	11
Yellow Time (s)	4	4	4	4
All-Red Time (s)	1	1	1	1
Minimum Initial (s)	6	6	6	6
Vehicle Extension (s)	2	2	2	2
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)				
Flash Dont Walk (s)				
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	26	47	5	26
End Time (s)	47	5	26	5
Yield/Force Off (s)	42	0	21	0
Yield/Force Off 170(s)	42	0	21	0
Local Start Time (s)	26	47	5	26
Local Yield (s)	42	0	21	0
Local Yield 170(s)	42	0	21	0

Intersection Summary






Cycle Length 80
 Control Type Actuated-Coordinated
 Natural Cycle 50
 Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow, Master Intersection

Splits and Phases: 2: Olde Village Drive & Route 107

 ø1	 ø2	 ø4
21 s	38 s	21 s
 ø6		
59 s		

Queues

Weekday AM













					
Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Group Flow (vph)	68	26	43	1382	1010
v/c Ratio	0.37	0.07	0.25	0.50	0.45
Control Delay	38.1	8.7	37.6	3.1	2.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	38.1	8.7	37.6	3.1	2.6
Queue Length 50th (ft)	32	0	21	81	11
Queue Length 95th (ft)	53	11	m47	134	25
Internal Link Dist (ft)	541			496	433
Turn Bay Length (ft)			130		
Base Capacity (vph)	362	547	372	2768	2252
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	167	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.19	0.05	0.12	0.53	0.45

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

2: Olde Village Drive & Route 107
 HCM Signalized Intersection Capacity Analysis

2014 Build
 Weekday AM

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	
Frt	1.00	0.85	1.00	1.00	1.00	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1703	1538	1752	3343	3358	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1703	1538	1752	3343	3358	
Volume (vph)	49	19	39	1244	919	30
Peak-hour factor, PHF	0.72	0.72	0.90	0.90	0.94	0.94
Adj. Flow (vph)	68	26	43	1382	978	32
RTOR Reduction (vph)	0	21	0	0	2	0
Lane Group Flow (vph)	68	5	43	1382	1008	0
Heavy Vehicles (%)	6%	5%	3%	8%	7%	7%
Turn Type	pm+ov		Prot			
Protected Phases	4	1	1	6	2	
Permitted Phases	4					
Actuated Green, G (s)	6.6	13.4	6.8	63.4	51.6	
Effective Green, g (s)	7.6	15.4	7.8	64.4	52.6	
Actuated g/C Ratio	0.09	0.19	0.10	0.81	0.66	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	162	373	171	2691	2208	
v/s Ratio Prot	c0.04	0.00	0.02	c0.41	0.30	
v/s Ratio Perm	0.00					
v/c Ratio	0.42	0.01	0.25	0.51	0.46	
Uniform Delay, d1	34.1	26.1	33.4	2.6	6.7	
Progression Factor	1.00	1.00	1.03	0.83	0.28	
Incremental Delay, d2	0.6	0.0	0.3	0.7	0.6	
Delay (s)	34.8	26.2	34.8	2.8	2.5	
Level of Service	C	C	C	A	A	
Approach Delay (s)	32.4			3.8	2.5	
Approach LOS	C			A	A	
Intersection Summary						
HCM Average Control Delay			4.3	HCM Level of Service		A
HCM Volume to Capacity ratio			0.50			
Actuated Cycle Length (s)			80.0	Sum of lost time (s)	8.0	
Intersection Capacity Utilization			46.1%	ICU Level of Service	A	
Analysis Period (min)	15					
c Critical Lane Group						

2: Olde Village Drive & Route 107
 Timing Report, Sorted By Phase

2014 Build
 Weekday AM

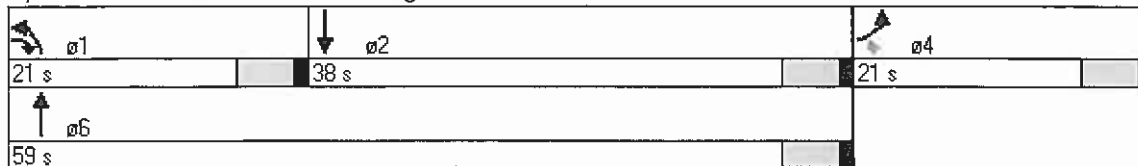


Phase Number	1	2	4	6
Movement	NBL	SBT	EBL	NBT
Lead/Lag	Lead	Lag		
Lead-Lag Optimize				
Recall Mode	Min	C-Min	None	C-Min
Maximum Split (s)	21	38	21	59
Maximum Split (%)	26.3%	47.5%	26.3%	73.8%
Minimum Split (s)	11	11	11	11
Yellow Time (s)	4	4	4	4
All-Red Time (s)	1	1	1	1
Minimum Initial (s)	6	6	6	6
Vehicle Extension (s)	2	2	2	2
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)				
Flash Dont Walk (s)				
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	26	47	5	26
End Time (s)	47	5	26	5
Yield/Force Off (s)	42	0	21	0
Yield/Force Off 170(s)	42	0	21	0
Local Start Time (s)	26	47	5	26
Local Yield (s)	42	0	21	0
Local Yield 170(s)	42	0	21	0






Intersection Summary

Cycle Length 80
 Control Type Actuated-Coordinated
 Natural Cycle 45
 Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow, Master Intersection

Splits and Phases: 2: Olde Village Drive & Route 107



Queues














					
Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Group Flow (vph)	110	18	44	1443	1508
v/c Ratio	0.52	0.05	0.28	0.49	0.57
Control Delay	45.2	10.9	46.3	2.8	1.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	45.2	10.9	46.3	2.9	1.4
Queue Length 50th (ft)	60	0	25	71	8
Queue Length 95th (ft)	90	12	m54	110	16
Internal Link Dist (ft)	541			496	433
Turn Bay Length (ft)			130		
Base Capacity (vph)	397	523	321	2921	2633
Starvation Cap Reductn	0	0	0	0	57
Spillback Cap Reductn	0	0	0	165	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.28	0.03	0.14	0.52	0.59

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

2: Olde Village Drive & Route 107
 HCM Signalized Intersection Capacity Analysis

2014 Build
 Weekday PM

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations				 	 	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	
Frt	1.00	0.85	1.00	1.00	0.99	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1787	1615	1805	3539	3548	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1787	1615	1805	3539	3548	
Volume (vph)	85	14	40	1313	1271	71
Peak-hour factor, PHF	0.77	0.77	0.91	0.91	0.89	0.89
Adj. Flow (vph)	110	18	44	1443	1428	80
RTOR Reduction (vph)	0	14	0	0	2	0
Lane Group Flow (vph)	110	4	44	1443	1506	0
Heavy Vehicles (%)	1%	0%	0%	2%	1%	0%
Turn Type	pm+ov		Prot			
Protected Phases	4	1	1	6	2	
Permitted Phases	4					
Actuated Green, G (s)	8.5	13.0	4.5	71.5	62.0	
Effective Green, g (s)	9.5	15.0	5.5	72.5	63.0	
Actuated g/C Ratio	0.11	0.17	0.06	0.81	0.70	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	189	341	110	2851	2484	
v/s Ratio Prot	c0.06	0.00	0.02	c0.41	c0.42	
v/s Ratio Perm	0.00					
v/c Ratio	0.58	0.01	0.40	0.51	0.61	
Uniform Delay, d1	38.4	31.3	40.7	2.9	7.0	
Progression Factor	1.00	1.00	1.11	0.68	0.07	
Incremental Delay, d2	2.9	0.0	0.8	0.6	0.9	
Delay (s)	41.3	31.3	45.9	2.5	1.5	
Level of Service	D	C	D	A	A	
Approach Delay (s)	39.9			3.8	1.5	
Approach LOS	D			A	A	





Intersection Summary

HCM Average Control Delay	4.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	49.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

2: Olde Village Drive & Route 107
 Timing Report, Sorted By Phase





2014 Build
 Weekday PM

				
Phase Number	1	2	4	6
Movement	NBL	SBT	EBL	NBT
Lead/Lag	Lead	Lag		
Lead-Lag Optimize				
Recall Mode	None	C-Min	None	C-Min
Maximum Split (s)	20	46	24	66
Maximum Split (%)	22.2%	51.1%	26.7%	73.3%
Minimum Split (s)	11	11	11	11
Yellow Time (s)	4	4	4	4
All-Red Time (s)	1	1	1	1
Minimum Initial (s)	6	6	6	6
Vehicle Extension (s)	2	2	2	2
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)				
Flash Dont Walk (s)				
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	29	49	5	29
End Time (s)	49	5	29	5
Yield/Force Off (s)	44	0	24	0
Yield/Force Off 170(s)	44	0	24	0
Local Start Time (s)	29	49	5	29
Local Yield (s)	44	0	24	0
Local Yield 170(s)	44	0	24	0






Intersection Summary

Cycle Length 90
 Control Type Actuated-Coordinated
 Natural Cycle 60
 Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow, Master Intersection

Splits and Phases: 2: Olde Village Drive & Route 107

 ø1	 ø2	 ø4
20 s	46 s	24 s
 ø6		
66 s		

Queues













					
Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Group Flow (vph)	111	10	45	1461	1444
v/c Ratio	0.48	0.02	0.26	0.50	0.57
Control Delay	39.0	10.3	41.5	2.7	3.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	39.0	10.3	41.5	2.8	3.6
Queue Length 50th (ft)	53	0	23	71	117
Queue Length 95th (ft)	75	7	m43	114	35
Internal Link Dist (ft)	541			496	433
Turn Bay Length (ft)			130		
Base Capacity (vph)	384	591	384	2896	2549
Starvation Cap Reductn	0	0	0	0	8
Spillback Cap Reductn	0	0	0	146	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.29	0.02	0.12	0.53	0.57

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

2: Olde Village Drive & Route 107
 HCM Signalized Intersection Capacity Analysis

2014 Build
 Saturday MIDDAY

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	
Flt	1.00	0.85	1.00	1.00	0.99	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1805	1615	1805	3574	3549	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1805	1615	1805	3574	3549	
Volume (vph)	80	7	40	1300	1289	69
Peak-hour factor, PHF	0.72	0.72	0.89	0.89	0.94	0.94
Adj. Flow (vph)	111	10	45	1461	1371	73
RTOR Reduction (vph)	0	8	0	0	3	0
Lane Group Flow (vph)	111	2	45	1461	1441	0
Heavy Vehicles (%)	0%	0%	0%	1%	1%	0%
Turn Type	pm+ov		Prot			
Protected Phases	4	1	1	6	2	
Permitted Phases		4				
Actuated Green, G (s)	8.0	12.4	4.4	62.0	52.6	
Effective Green, g (s)	9.0	14.4	5.4	63.0	53.6	
Actuated g/C Ratio	0.11	0.18	0.07	0.79	0.67	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	203	371	122	2815	2378	
v/s Ratio Prot	c0.06	0.00	0.02	c0.41	c0.41	
v/s Ratio Perm		0.00				
v/c Ratio	0.55	0.00	0.37	0.52	0.61	
Uniform Delay, d1	33.6	26.9	35.7	3.1	7.3	
Progression Factor	1.00	1.00	1.15	0.61	0.32	
Incremental Delay, d2	1.6	0.0	0.6	0.6	1.0	
Delay (s)	35.2	26.9	41.7	2.5	3.4	
Level of Service	D	C	D	A	A	
Approach Delay (s)	34.5			3.6	3.4	
Approach LOS	C			A	A	

Intersection Summary

HCM Average Control Delay	4.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	49.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

2: Olde Village Drive & Route 107
 Timing Report, Sorted By Phase

2014 Build
 Saturday MIDDAY

	↖	↓	↗	↑
Phase Number	1	2	4	6
Movement	NBL	SBT	EBL	NBT
Lead/Lag	Lead	Lag		
Lead-Lag Optimize				
Recall Mode	None	C-Min	None	C-Min
Maximum Split (s)	21	38	21	59
Maximum Split (%)	26.3%	47.5%	26.3%	73.8%
Minimum Split (s)	11	11	11	11
Yellow Time (s)	4	4	4	4
All-Red Time (s)	1	1	1	1
Minimum Initial (s)	6	6	6	6
Vehicle Extension (s)	2	2	2	2
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)				
Flash Dont Walk (s)				
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	26	47	5	26
End Time (s)	47	5	26	5
Yield/Force Off (s)	42	0	21	0
Yield/Force Off 170(s)	42	0	21	0
Local Start Time (s)	26	47	5	26
Local Yield (s)	42	0	21	0
Local Yield 170(s)	42	0	21	0

Intersection Summary

















Cycle Length 80
 Control Type Actuated-Coordinated
 Natural Cycle 60
 Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow, Master Intersection

Splits and Phases: 2: Olde Village Drive & Route 107

↖ ø1	↓ ø2	↗ ø4
21 s	38 s	21 s
↑ ø6		
59 s		


















3: Wal-Mart North Driveway & Route 107
 HCM Unsignalized Intersection Capacity Analysis

2009 Existing
 Weekday AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	0	0	27	0	1148	5	0	839	0
Peak Hour Factor	0.90	0.90	0.90	0.60	0.60	0.60	0.83	0.83	0.83	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	0	0	0	45	0	1383	6	0	932	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		Raised			Raised							
Median storage (veh)		0			0							
Upstream signal (ft)								295			576	
pX, platoon unblocked	0.92	0.92	0.86	0.92	0.92	0.87	0.86			0.87		
vC, conflicting volume	1669	2321	466	1852	2318	695	932			1389		
vC1, stage 1 conf vol	932	932		1386	1386							
vC2, stage 2 conf vol	737	1389		466	932							
vCu, unblocked vol	1219	1928	208	1418	1925	501	752			1298		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	7.0	4.1			4.1		
tC, 2 stage (s)	6.5	5.5		6.5	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.4	2.2			2.2		
p0 queue free %	100	100	100	100	100	90	100			100		
cM capacity (veh/h)	155	106	683	99	106	438	730			470		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2						
Volume Total	0	45	922	467	621	311						
Volume Left	0	0	0	0	0	0						
Volume Right	0	45	0	6	0	0						
cSH	1700	438	1700	1700	1700	1700						
Volume to Capacity	0.00	0.10	0.54	0.27	0.37	0.18						
Queue Length 95th (ft)	0	9	0	0	0	0						
Control Delay (s)	0.0	14.2	0.0	0.0	0.0	0.0						
Lane LOS	A	B										
Approach Delay (s)	0.0	14.2	0.0		0.0							
Approach LOS	A	B										
Intersection Summary												
Average Delay			0.3									
Intersection Capacity Utilization			41.9%		ICU Level of Service					A		
Analysis Period (min)			15									

















3: Wal-Mart North Driveway & Route 107
 HCM Unsignalized Intersection Capacity Analysis

2009 Existing
 Weekday PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	0	0	33	0	1079	18	0	1095	1
Peak Hour Factor	0.90	0.90	0.90	0.64	0.64	0.64	0.96	0.96	0.96	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	0	0	0	52	0	1124	19	0	1217	1
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		Raised			Raised							
Median storage (veh)		0			0							
Upstream signal (ft)								295			576	
pX, platoon unblocked	0.78	0.78	0.73	0.78	0.78	0.90	0.73			0.90		
vC, conflicting volume	1831	2360	609	1742	2351	571	1218			1143		
vC1, stage 1 conf vol	1217	1217		1133	1133							
vC2, stage 2 conf vol	614	1143		608	1218							
vCu, unblocked vol	1387	2063	98	1274	2052	406	931			1044		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	7.0	4.1			4.1		
tC, 2 stage (s)	6.5	5.5		6.5	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	100	90	100			100		
cM capacity (veh/h)	118	103	686	138	104	530	535			604		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2						
Volume Total	0	52	749	393	811	407						
Volume Left	0	0	0	0	0	0						
Volume Right	0	52	0	19	0	1						
cSH	1700	530	1700	1700	1700	1700						
Volume to Capacity	0.00	0.10	0.44	0.23	0.48	0.24						
Queue Length 95th (ft)	0	8	0	0	0	0						
Control Delay (s)	0.0	12.5	0.0	0.0	0.0	0.0						
Lane LOS	A	B										
Approach Delay (s)	0.0	12.5	0.0		0.0							
Approach LOS	A	B										
Intersection Summary												
Average Delay			0.3									
Intersection Capacity Utilization			40.4%		ICU Level of Service				A			
Analysis Period (min)			15									

















3: Wal-Mart North Driveway & Route 107
 HCM Unsignalized Intersection Capacity Analysis

2009 Existing
 Saturday Midday

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	0	0	52	0	1046	6	0	1118	0
Peak Hour Factor	0.90	0.90	0.90	0.77	0.77	0.77	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	0	0	0	0	0	68	0	1113	6	0	1189	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		Raised			Raised							
Median storage (veh)		0			0							
Upstream signal (ft)								295			576	
pX, platoon unblocked	0.82	0.82	0.77	0.82	0.82	0.90	0.77			0.90		
vC, conflicting volume	1813	2309	595	1711	2305	560	1189			1119		
vC1, stage 1 conf vol	1189	1189		1116	1116							
vC2, stage 2 conf vol	624	1119		595	1189							
vCu, unblocked vol	1390	1993	174	1266	1989	391	947			1016		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)	6.5	5.5		6.5	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	100	88	100			100		
cM capacity (veh/h)	119	108	646	141	109	549	555			618		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2						
Volume Total	0	68	742	377	793	396						
Volume Left	0	0	0	0	0	0						
Volume Right	0	68	0	6	0	0						
cSH	1700	549	1700	1700	1700	1700						
Volume to Capacity	0.00	0.12	0.44	0.22	0.47	0.23						
Queue Length 95th (ft)	0	10	0	0	0	0						
Control Delay (s)	0.0	12.5	0.0	0.0	0.0	0.0						
Lane LOS	A	B										
Approach Delay (s)	0.0	12.5	0.0		0.0							
Approach LOS	A	B										
Intersection Summary												
Average Delay			0.4									
Intersection Capacity Utilization			39.1%		ICU Level of Service					A		
Analysis Period (min)			15									


















3: Wal-Mart North Driveway & Route 107
 HCM Unsignalized Intersection Capacity Analysis

2014 No-Build
 Weekday AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	0	0	40	0	1227	7	0	914	0
Peak Hour Factor	0.90	0.90	0.90	0.60	0.60	0.60	0.83	0.83	0.83	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	0	0	0	67	0	1478	8	0	1016	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		Raised			Raised							
Median storage (veh)		0			0							
Upstream signal (ft)								295			576	
pX, platoon unblocked	0.93	0.93	0.87	0.93	0.93	0.88	0.87			0.88		
vC, conflicting volume	1821	2502	508	1990	2498	743	1016			1487		
vC1, stage 1 conf vol	1016	1016		1483	1483							
vC2, stage 2 conf vol	806	1487		508	1016							
vCu, unblocked vol	1406	2139	278	1588	2134	565	864			1414		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	7.0	4.1			4.1		
tC, 2 stage (s)	6.5	5.5		6.5	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.4	2.2			2.2		
p0 queue free %	100	100	100	100	100	83	100			100		
cM capacity (veh/h)	125	91	623	84	92	399	671			428		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2						
Volume Total	0	67	986	501	677	339						
Volume Left	0	0	0	0	0	0						
Volume Right	0	67	0	8	0	0						
cSH	1700	399	1700	1700	1700	1700						
Volume to Capacity	0.00	0.17	0.58	0.29	0.40	0.20						
Queue Length 95th (ft)	0	15	0	0	0	0						
Control Delay (s)	0.0	15.8	0.0	0.0	0.0	0.0						
Lane LOS	A	C										
Approach Delay (s)	0.0	15.8	0.0		0.0							
Approach LOS	A	C										
Intersection Summary												
Average Delay			0.4									
Intersection Capacity Utilization			44.1%		ICU Level of Service					A		
Analysis Period (min)			15									

















3: Wal-Mart North Driveway & Route 107
 HCM Unsignalized Intersection Capacity Analysis

2014 No-Build
 Weekday PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	0	0	41	0	1200	24	0	1215	1
Peak Hour Factor	0.90	0.90	0.90	0.64	0.64	0.64	0.96	0.96	0.96	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	0	0	0	64	0	1250	25	0	1350	1
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		Raised			Raised							
Median storage (veh)		0			0							
Upstream signal (ft)								295			576	
pX, platoon unblocked	0.84	0.84	0.80	0.84	0.84	0.92	0.80			0.92		
vC, conflicting volume	2040	2626	676	1938	2614	638	1351			1275		
vC1, stage 1 conf vol	1351	1351		1262	1262							
vC2, stage 2 conf vol	689	1275		675	1351							
vCu, unblocked vol	1746	2441	346	1625	2427	512	1190			1208		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	7.0	4.1			4.1		
tC, 2 stage (s)	6.5	5.5		6.5	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	100	86	100			100		
cM capacity (veh/h)	87	84	521	107	84	462	467			535		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2						
Volume Total	0	64	833	442	900	451						
Volume Left	0	0	0	0	0	0						
Volume Right	0	64	0	25	0	1						
cSH	1700	462	1700	1700	1700	1700						
Volume to Capacity	0.00	0.14	0.49	0.26	0.53	0.27						
Queue Length 95th (ft)	0	12	0	0	0	0						
Control Delay (s)	0.0	14.0	0.0	0.0	0.0	0.0						
Lane LOS	A	B										
Approach Delay (s)	0.0	14.0	0.0		0.0							
Approach LOS	A	B										
Intersection Summary												
Average Delay			0.3									
Intersection Capacity Utilization			43.9%		ICU Level of Service				A			
Analysis Period (min)			15									


















3: Wal-Mart North Driveway & Route 107
 HCM Unsignalized Intersection Capacity Analysis

2014 No-Build
 Saturday MIDDAY

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	0	0	60	0	1147	10	0	1207	0
Peak Hour Factor	0.90	0.90	0.90	0.77	0.77	0.77	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	0	0	0	0	0	78	0	1220	11	0	1284	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		Raised			Raised							
Median storage (veh)		0			0							
Upstream signal (ft)								295			576	
pX, platoon unblocked	0.87	0.87	0.81	0.87	0.87	0.88	0.81			0.88		
vC, conflicting volume	1972	2515	642	1868	2510	615	1284			1231		
vC1, stage 1 conf vol	1284	1284		1226	1226							
vC2, stage 2 conf vol	688	1231		642	1284							
vCu, unblocked vol	1547	2171	322	1427	2165	423	1115			1124		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)	6.5	5.5		6.5	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	100	85	100			100		
cM capacity (veh/h)	99	94	545	119	94	514	503			552		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2						
Volume Total	0	78	813	417	856	428						
Volume Left	0	0	0	0	0	0						
Volume Right	0	78	0	11	0	0						
cSH	1700	514	1700	1700	1700	1700						
Volume to Capacity	0.00	0.15	0.48	0.25	0.50	0.25						
Queue Length 95th (ft)	0	13	0	0	0	0						
Control Delay (s)	0.0	13.3	0.0	0.0	0.0	0.0						
Lane LOS	A	B										
Approach Delay (s)	0.0	13.3	0.0		0.0							
Approach LOS	A	B										
Intersection Summary												
Average Delay			0.4									
Intersection Capacity Utilization			42.4%		ICU Level of Service				A			
Analysis Period (min)			15									

















3: Wal-Mart North Driveway & Route 107
 HCM Unsignalized Intersection Capacity Analysis

2014 Build
 Weekday AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	13	0	0	40	0	1243	7	0	897	46
Peak Hour Factor	0.90	0.90	0.90	0.60	0.60	0.60	0.83	0.83	0.83	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	14	0	0	67	0	1498	8	0	997	51
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		Raised			Raised							
Median storage (veh)		0			0							
Upstream signal (ft)								295				576
pX, platoon unblocked	0.93	0.93	0.86	0.93	0.93	0.86	0.86			0.86		
vC, conflicting volume	1838	2528	524	2015	2550	753	1048			1506		
vC1, stage 1 conf vol	1022	1022		1502	1502							
vC2, stage 2 conf vol	815	1506		513	1048							
vCu, unblocked vol	1382	2127	282	1573	2150	555	892			1428		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	7.0	4.1			4.1		
tC, 2 stage (s)	6.5	5.5		6.5	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.4	2.2			2.2		
p0 queue free %	100	100	98	100	100	83	100			100		
cM capacity (veh/h)	126	90	614	82	89	399	650			416		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2						
Volume Total	14	67	998	508	664	383						
Volume Left	0	0	0	0	0	0						
Volume Right	14	67	0	8	0	51						
cSH	614	399	1700	1700	1700	1700						
Volume to Capacity	0.02	0.17	0.59	0.30	0.39	0.23						
Queue Length 95th (ft)	2	15	0	0	0	0						
Control Delay (s)	11.0	15.8	0.0	0.0	0.0	0.0						
Lane LOS	B	C										
Approach Delay (s)	11.0	15.8	0.0		0.0							
Approach LOS	B	C										
Intersection Summary												
Average Delay			0.5									
Intersection Capacity Utilization			44.6%		ICU Level of Service				A			
Analysis Period (min)			15									


















3: Wal-Mart North Driveway & Route 107
 HCM Unsignalized Intersection Capacity Analysis

2014 Build
 Weekday PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	75	0	0	41	0	1312	24	0	1211	111
Peak Hour Factor	0.90	0.90	0.90	0.64	0.64	0.64	0.96	0.96	0.96	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	83	0	0	64	0	1367	25	0	1346	123
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		Raised			Raised							
Median storage (veh)		0			0							
Upstream signal (ft)								295			576	
pX, platoon unblocked	0.83	0.83	0.77	0.83	0.83	0.88	0.77			0.88		
vC, conflicting volume	2155	2799	734	2135	2848	696	1469			1392		
vC1, stage 1 conf vol	1407	1407		1379	1379							
vC2, stage 2 conf vol	747	1392		756	1469							
vCu, unblocked vol	1749	2527	352	1726	2586	517	1308			1308		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	7.0	4.1			4.1		
tC, 2 stage (s)	6.5	5.5		6.5	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	83	100	100	85	100			100		
cM capacity (veh/h)	80	74	495	86	71	440	403			471		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2						
Volume Total	83	64	911	481	897	572						
Volume Left	0	0	0	0	0	0						
Volume Right	83	64	0	25	0	123						
cSH	495	440	1700	1700	1700	1700						
Volume to Capacity	0.17	0.15	0.54	0.28	0.53	0.34						
Queue Length 95th (ft)	15	13	0	0	0	0						
Control Delay (s)	13.7	14.6	0.0	0.0	0.0	0.0						
Lane LOS	B	B										
Approach Delay (s)	13.7	14.6	0.0		0.0							
Approach LOS	B	B										
Intersection Summary												
Average Delay			0.7									
Intersection Capacity Utilization			48.3%		ICU Level of Service				A			
Analysis Period (min)			15									







3: Wal-Mart North Driveway & Route 107
 HCM Unsignalized Intersection Capacity Analysis

2014 Build
 Saturday Midday

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	89	0	0	60	0	1280	10	0	1153	203
Peak Hour Factor	0.90	0.90	0.90	0.77	0.77	0.77	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	0	0	99	0	0	78	0	1362	11	0	1227	216
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		Raised			Raised							
Median storage veh		0			0							
Upstream signal (ft)								295			576	
pX, platoon unblocked	0.84	0.84	0.76	0.84	0.84	0.84	0.76			0.84		
vC, conflicting volume	2093	2707	721	2079	2810	686	1443			1372		
vC1, stage 1 conf vol	1335	1335		1367	1367							
vC2, stage 2 conf vol	759	1372		712	1443							
vCu, unblocked vol	1551	2279	327	1534	2400	441	1271			1255		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)	6.5	5.5		6.5	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	81	100	100	84	100			100		
cM capacity (veh/h)	92	82	511	92	75	480	415			473		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2						
Volume Total	99	78	908	465	818	625						
Volume Left	0	0	0	0	0	0						
Volume Right	99	78	0	11	0	216						
cSH	511	480	1700	1700	1700	1700						
Volume to Capacity	0.19	0.16	0.53	0.27	0.48	0.37						
Queue Length 95th (ft)	18	14	0	0	0	0						
Control Delay (s)	13.7	13.9	0.0	0.0	0.0	0.0						
Lane LOS	B	B										
Approach Delay (s)	13.7	13.9	0.0		0.0							
Approach LOS	B	B										
Intersection Summary												
Average Delay			0.8									
Intersection Capacity Utilization			50.5%		ICU Level of Service				A			
Analysis Period (min)			15									















Queues

Weekday AM

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	56	8	62	1214	855	47
v/c Ratio	0.31	0.02	0.29	0.43	0.42	0.05
Control Delay	27.8	8.8	26.4	2.7	7.1	2.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.8	8.8	26.4	2.7	7.1	2.3
Queue Length 50th (ft)	18	0	20	60	80	0
Queue Length 95th (ft)	30	5	48	81	117	11
Internal Link Dist (ft)	791			249	215	
Turn Bay Length (ft)			215			130
Base Capacity (vph)	183	389	217	2852	2044	977
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.31	0.02	0.29	0.43	0.42	0.05
Intersection Summary						

4: Main Wal-Mart Driveway & Route 107
 HCM Signalized Intersection Capacity Analysis

2009 Existing
 Weekday AM

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations				 	 	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1570	1346	1703	3374	3374	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1570	1346	1703	3374	3374	1583
Volume (vph)	33	5	54	1056	795	44
Peak-hour factor, PHF	0.59	0.59	0.87	0.87	0.93	0.93
Adj. Flow (vph)	56	8	62	1214	855	47
RTOR Reduction (vph)	0	6	0	0	0	20
Lane Group Flow (vph)	56	2	62	1214	855	27
Heavy Vehicles (%)	15%	20%	6%	7%	7%	2%
Turn Type		pt+ov	Prot			custom
Protected Phases	1	1 5	5	5 6	6	6
Permitted Phases						6
Actuated Green, G (s)	2.8	13.5	5.1	41.0	30.3	30.3
Effective Green, g (s)	4.4	15.1	6.7	42.4	31.7	31.7
Actuated g/C Ratio	0.08	0.28	0.12	0.77	0.58	0.58
Clearance Time (s)	5.6		5.6		5.4	5.4
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Lane Grp Cap (vph)	126	371	208	2611	1952	916
v/s Ratio Prot	c0.04	0.00	0.04	c0.36	0.25	0.02
v/s Ratio Perm						
v/c Ratio	0.44	0.01	0.30	0.46	0.44	0.03
Uniform Delay, d1	24.0	14.4	21.9	2.2	6.5	5.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.5	0.0	0.8	0.1	0.2	0.0
Delay (s)	26.5	14.4	22.7	2.3	6.7	5.0
Level of Service	C	B	C	A	A	A
Approach Delay (s)	25.0			3.3	6.6	
Approach LOS	C			A	A	

Intersection Summary

HCM Average Control Delay	5.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	54.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	41.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

4: Main Wal-Mart Driveway & Route 107
 Timing Report, Sorted By Phase

2009 Existing
 Weekday AM






Phase Number	1	5	6
Movement	EBL	NBTL	NBSB
Lead/Lag		Lead	Lag
Lead-Lag Optimize			
Recall Mode	None	None	Min
Maximum Split (s)	10.6	10.6	35.4
Maximum Split (%)	18.7%	18.7%	62.5%
Minimum Split (s)	10.6	10.6	35.4
Yellow Time (s)	4	4	4
All-Red Time (s)	1.6	1.6	1.4
Minimum Initial (s)	4	4	30
Vehicle Extension (s)	3	3	3
Minimum Gap (s)	3	3	3
Time Before Reduce (s)	0	0	0
Time To Reduce (s)	0	0	0
Walk Time (s)			
Flash Dont Walk (s)			
Dual Entry	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes
Start Time (s)	0	10.6	21.2
End Time (s)	10.6	21.2	0
Yield/Force Off (s)	5	15.6	51.2
Yield/Force Off 170(s)	5	15.6	51.2
Local Start Time (s)	5.4	16	26.6
Local Yield (s)	10.4	21	0
Local Yield 170(s)	10.4	21	0

Intersection Summary

Cycle Length	56.6
Control Type	Actuated-Uncoordinated
Natural Cycle	60

Splits and Phases: 4: Main Wal-Mart Driveway & Route 107







 ø1	 ø5	 ø6
10.6 s	10.6 s	35.4 s

4: Main Wal-Mart Driveway & Route 107

2009 Existing















Queues

Weekday PM

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	93	43	104	965	1108	95
v/c Ratio	0.28	0.06	0.29	0.36	0.67	0.12
Control Delay	26.6	4.7	26.8	4.0	15.3	3.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.6	4.7	26.8	4.0	15.3	3.0
Queue Length 50th (ft)	33	0	38	66	172	0
Queue Length 95th (ft)	70	16	78	91	235	21
Internal Link Dist (ft)	791			249	215	
Turn Bay Length (ft)			215			130
Base Capacity (vph)	332	664	360	2705	1771	847
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.06	0.29	0.36	0.63	0.11
Intersection Summary						

4: Main Wal-Mart Driveway & Route 107
 HCM Signalized Intersection Capacity Analysis

2009 Existing
 Weekday PM

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations				 	 	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1805	1568	1770	3539	3539	1599
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1805	1568	1770	3539	3539	1599
Volume (vph)	82	38	99	917	1008	86
Peak-hour factor, PHF	0.88	0.88	0.95	0.95	0.91	0.91
Adj. Flow (vph)	93	43	104	965	1108	95
RTOR Reduction (vph)	0	25	0	0	0	51
Lane Group Flow (vph)	93	18	104	965	1108	44
Heavy Vehicles (%)	0%	3%	2%	2%	2%	1%
Turn Type		pt+ov	Prot			custom
Protected Phases	1	1 5	5	5 6	6	6
Permitted Phases						6
Actuated Green, G (s)	7.3	23.5	10.6	43.1	26.9	26.9
Effective Green, g (s)	8.9	25.1	12.2	44.5	28.3	28.3
Actuated g/C Ratio	0.14	0.41	0.20	0.72	0.46	0.46
Clearance Time (s)	5.6		5.6		5.4	5.4
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Lane Grp Cap (vph)	262	641	352	2565	1631	737
v/s Ratio Prot	c0.05	0.01	0.06	c0.27	c0.31	0.03
v/s Ratio Perm						
v/c Ratio	0.35	0.03	0.30	0.38	0.68	0.06
Uniform Delay, d1	23.7	10.9	20.9	3.2	13.0	9.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.8	0.0	0.5	0.1	1.1	0.0
Delay (s)	24.5	10.9	21.4	3.3	14.1	9.2
Level of Service	C	B	C	A	B	A
Approach Delay (s)	20.2			5.1	13.7	
Approach LOS	C			A	B	

Intersection Summary

HCM Average Control Delay	10.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	61.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	54.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

4: Main Wal-Mart Driveway & Route 107
 Timing Report, Sorted By Phase

2009 Existing
 Weekday PM

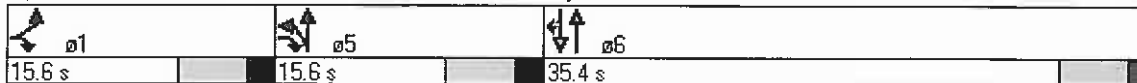


Phase Number	1	5	6
Movement	EBL	NBTL	NBSB
Lead/Lag		Lead	Lag
Lead-Lag Optimize			
Recall Mode	None	None	Min
Maximum Split (s)	15.6	15.6	35.4
Maximum Split (%)	23.4%	23.4%	53.2%
Minimum Split (s)	15.6	15.6	35.4
Yellow Time (s)	4	4	4
All-Red Time (s)	1.6	1.6	1.4
Minimum Initial (s)	10	10	10
Vehicle Extension (s)	3	3	3
Minimum Gap (s)	3	3	3
Time Before Reduce (s)	0	0	0
Time To Reduce (s)	0	0	0
Walk Time (s)			
Flash Dont Walk (s)			
Dual Entry	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes
Start Time (s)	0	15.6	31.2
End Time (s)	15.6	31.2	0
Yield/Force Off (s)	10	25.6	61.2
Yield/Force Off 170(s)	10	25.6	61.2
Local Start Time (s)	5.4	21	36.6
Local Yield (s)	15.4	31	0
Local Yield 170(s)	15.4	31	0

Intersection Summary







Cycle Length	66.6
Control Type	Actuated-Uncoordinated
Natural Cycle	70

Splits and Phases: 4: Main Wal-Mart Driveway & Route 107



4: Main Wal-Mart Driveway & Route 107
Queues

2009 Existing
Saturday Midday















						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	184	28	174	1026	1007	209
v/c Ratio	0.81	0.05	0.78	0.40	0.55	0.23
Control Delay	56.3	6.7	52.0	3.3	9.7	1.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.3	6.7	52.0	3.3	9.7	1.8
Queue Length 50th (ft)	63	0	59	45	98	0
Queue Length 95th (ft)	#159	14	#153	64	141	22
Internal Link Dist (ft)	791			249	215	
Turn Bay Length (ft)			215			130
Base Capacity (vph)	226	552	224	2626	1963	980
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.81	0.05	0.78	0.39	0.51	0.21

Intersection Summary

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

4: Main Wal-Mart Driveway & Route 107
 HCM Signalized Intersection Capacity Analysis

2009 Existing
 Saturday Midday

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations				 	 	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1787	1615	1770	3539	3539	1599
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1787	1615	1770	3539	3539	1599
Volume (vph)	164	25	157	923	926	192
Peak-hour factor, PHF	0.89	0.89	0.90	0.90	0.92	0.92
Adj. Flow (vph)	184	28	174	1026	1007	209
RTOR Reduction (vph)	0	19	0	0	0	101
Lane Group Flow (vph)	184	9	174	1026	1007	108
Heavy Vehicles (%)	1%	0%	2%	2%	2%	1%
Turn Type		pt+ov	Prot			custom
Protected Phases	1	1 5	5	5 6	6	6
Permitted Phases						6
Actuated Green, G (s)	4.1	14.8	4.1	36.5	25.8	25.8
Effective Green, g (s)	6.7	17.4	6.7	37.9	27.2	27.2
Actuated g/C Ratio	0.13	0.33	0.13	0.72	0.52	0.52
Clearance Time (s)	6.6		6.6		5.4	5.4
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Lane Grp Cap (vph)	228	534	225	2550	1830	827
v/s Ratio Prot	c0.10	0.01	c0.10	0.29	c0.28	0.07
v/s Ratio Perm						
v/c Ratio	0.81	0.02	0.77	0.40	0.55	0.13
Uniform Delay, d1	22.3	11.8	22.2	2.9	8.6	6.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	18.5	0.0	15.2	0.1	0.4	0.1
Delay (s)	40.8	11.9	37.4	3.0	8.9	6.6
Level of Service	D	B	D	A	A	A
Approach Delay (s)	37.0			8.0	8.5	
Approach LOS	D			A	A	

Intersection Summary

HCM Average Control Delay	10.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	52.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	53.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

4: Main Wal-Mart Driveway & Route 107
 Timing Report, Sorted By Phase

2009 Existing
 Saturday Midday






Phase Number	1	5	6
Movement	EBL	NBTL	NBSB
Lead/Lag		Lead	Lag
Lead-Lag Optimize			
Recall Mode	None	None	Min
Maximum Split (s)	10.6	10.6	35.4
Maximum Split (%)	18.7%	18.7%	62.5%
Minimum Split (s)	10.6	10.6	35.4
Yellow Time (s)	4	4	4
All-Red Time (s)	2.6	2.6	1.4
Minimum Initial (s)	4	4	10
Vehicle Extension (s)	3	3	3
Minimum Gap (s)	3	3	3
Time Before Reduce (s)	0	0	0
Time To Reduce (s)	0	0	0
Walk Time (s)			
Flash Dont Walk (s)			
Dual Entry	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes
Start Time (s)	0	10.6	21.2
End Time (s)	10.6	21.2	0
Yield/Force Off (s)	4	14.6	51.2
Yield/Force Off 170(s)	4	14.6	51.2
Local Start Time (s)	5.4	16	26.6
Local Yield (s)	9.4	20	0
Local Yield 170(s)	9.4	20	0

Intersection Summary







Cycle Length	56.6
Control Type	Actuated-Uncoordinated
Natural Cycle	60

Splits and Phases: 4: Main Wal-Mart Driveway & Route 107

 ø1	 ø5	 ø6
10.6 s	10.6 s	35.4 s

Queues

Weekday AM













						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	56	8	62	1305	935	47
v/c Ratio	0.34	0.02	0.34	0.46	0.38	0.03
Control Delay	38.5	11.4	37.8	3.2	2.0	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.5	11.4	37.8	3.2	2.0	0.0
Queue Length 50th (ft)	27	0	29	77	10	0
Queue Length 95th (ft)	38	5	61	125	25	m0
Internal Link Dist (ft)	791			249	215	
Turn Bay Length (ft)			215			130
Base Capacity (vph)	334	463	362	2809	2466	1469
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.17	0.02	0.17	0.46	0.38	0.03

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

4: Main Wal-Mart Driveway & Route 107
 HCM Signalized Intersection Capacity Analysis

2014 No-Build
 Weekday AM

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1570	1346	1703	3374	3374	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1570	1346	1703	3374	3374	1583
Volume (vph)	33	5	54	1135	870	44
Peak-hour factor, PHF	0.59	0.59	0.87	0.87	0.93	0.93
Adj. Flow (vph)	56	8	62	1305	935	47
RTOR Reduction (vph)	0	6	0	0	0	11
Lane Group Flow (vph)	56	2	62	1305	935	36
Heavy Vehicles (%)	15%	20%	6%	7%	7%	2%
Turn Type		pt+ov	Prot			pm+ov
Protected Phases	4	4 1	1	6	2	4
Permitted Phases						2
Actuated Green, G (s)	6.2	16.3	5.1	63.8	53.7	59.9
Effective Green, g (s)	7.2	17.3	6.1	64.8	54.7	61.9
Actuated g/C Ratio	0.09	0.22	0.08	0.81	0.68	0.77
Clearance Time (s)	5.0		5.0	5.0	5.0	5.0
Vehicle Extension (s)	2.0		2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	141	291	130	2733	2307	1304
v/s Ratio Prot	c0.04	0.00	0.04	c0.39	0.28	0.00
v/s Ratio Perm						0.02
v/c Ratio	0.40	0.01	0.48	0.48	0.41	0.03
Uniform Delay, d1	34.4	24.6	35.4	2.4	5.5	2.1
Progression Factor	1.00	1.00	1.00	1.00	0.24	0.00
Incremental Delay, d2	0.7	0.0	1.0	0.6	0.5	0.0
Delay (s)	35.0	24.6	36.4	3.0	1.8	0.0
Level of Service	D	C	D	A	A	A
Approach Delay (s)	33.7			4.5	1.7	
Approach LOS	C			A	A	





Intersection Summary

HCM Average Control Delay	4.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	44.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

4: Main Wal-Mart Driveway & Route 107
 Timing Report, Sorted By Phase

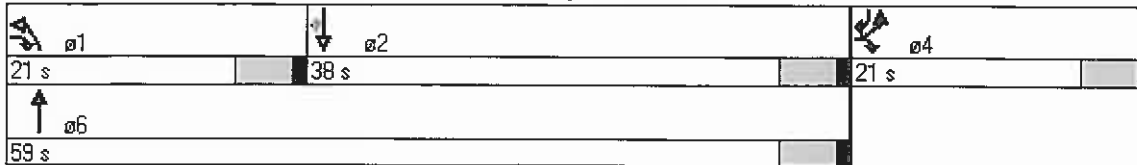
2014 No-Build
 Weekday AM

				
Phase Number	1	2	4	6
Movement	NBL	SBT	EBL	NBT
Lead/Lag	Lead	Lag		
Lead-Lag Optimize				
Recall Mode	None	C-Min	None	C-Min
Maximum Split (s)	21	38	21	59
Maximum Split (%)	26.3%	47.5%	26.3%	73.8%
Minimum Split (s)	11	11	11	11
Yellow Time (s)	4	4	4	4
All-Red Time (s)	1	1	1	1
Minimum Initial (s)	6	6	6	6
Vehicle Extension (s)	2	2	2	2
Minimum Gap (s)	2	2	2	2
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)				
Flash Dont Walk (s)				
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	36	57	15	36
End Time (s)	57	15	36	15
Yield/Force Off (s)	52	10	31	10
Yield/Force Off 170(s)	52	10	31	10
Local Start Time (s)	26	47	5	26
Local Yield (s)	42	0	21	0
Local Yield 170(s)	42	0	21	0

Intersection Summary







Cycle Length 80
 Control Type Actuated-Coordinated
 Natural Cycle 40
 Offset: 10 (13%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow

Splits and Phases: 4: Main Wal-Mart Driveway & Route 107

















Queues

Weekday PM

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	93	43	104	1093	1240	95
v/c Ratio	0.48	0.11	0.50	0.37	0.50	0.07
Control Delay	45.5	11.2	44.9	2.9	2.9	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.5	11.2	44.9	2.9	2.9	0.1
Queue Length 50th (ft)	51	5	56	66	24	0
Queue Length 95th (ft)	92	26	102	112	40	0
Internal Link Dist (ft)	791			249	215	
Turn Bay Length (ft)			215			130
Base Capacity (vph)	401	513	315	2962	2475	1468
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.08	0.33	0.37	0.50	0.06
Intersection Summary						

4: Main Wal-Mart Driveway & Route 107
 HCM Signalized Intersection Capacity Analysis

2014 No-Build
 Weekday PM





						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations				 	 	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1805	1568	1770	3539	3539	1599
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1805	1568	1770	3539	3539	1599
Volume (vph)	82	38	99	1038	1128	86
Peak-hour factor, PHF	0.88	0.88	0.95	0.95	0.91	0.91
Adj. Flow (vph)	93	43	104	1093	1240	95
RTOR Reduction (vph)	0	23	0	0	0	23
Lane Group Flow (vph)	93	20	104	1093	1240	72
Heavy Vehicles (%)	0%	3%	2%	2%	2%	1%
Turn Type		pt+ov	Prot			pm+ov
Protected Phases	4	4 1	1	6	2	4
Permitted Phases						2
Actuated Green, G (s)	7.5	20.9	8.4	72.5	59.1	66.6
Effective Green, g (s)	8.5	21.9	9.4	73.5	60.1	68.6
Actuated g/C Ratio	0.09	0.24	0.10	0.82	0.67	0.76
Clearance Time (s)	5.0		5.0	5.0	5.0	5.0
Vehicle Extension (s)	2.0		2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	170	382	185	2890	2363	1290
v/s Ratio Prot	c0.05	0.01	c0.06	0.31	c0.35	0.01
v/s Ratio Perm						0.04
v/c Ratio	0.55	0.05	0.56	0.38	0.52	0.06
Uniform Delay, d1	38.9	26.1	38.3	2.2	7.6	2.7
Progression Factor	1.00	1.00	1.00	1.00	0.25	0.04
Incremental Delay, d2	1.9	0.0	2.3	0.4	0.7	0.0
Delay (s)	40.8	26.1	40.7	2.6	2.6	0.1
Level of Service	D	C	D	A	A	A
Approach Delay (s)	36.2			5.9	2.5	
Approach LOS	D			A	A	

Intersection Summary

HCM Average Control Delay	5.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	51.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

4: Main Wal-Mart Driveway & Route 107
 Timing Report, Sorted By Phase

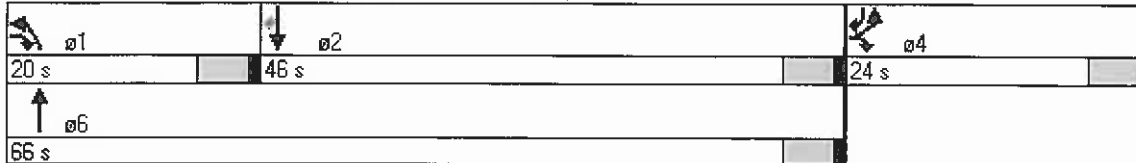
2014 No-Build
 Weekday PM

				
Phase Number	1	2	4	6
Movement	NBL	SBT	EBL	NBT
Lead/Lag	Lead	Lag		
Lead-Lag Optimize				
Recall Mode	None	C-Min	None	C-Min
Maximum Split (s)	20	46	24	66
Maximum Split (%)	22.2%	51.1%	26.7%	73.3%
Minimum Split (s)	11	11	11	11
Yellow Time (s)	4	4	4	4
All-Red Time (s)	1	1	1	1
Minimum Initial (s)	6	6	6	6
Vehicle Extension (s)	2	2	2	2
Minimum Gap (s)	2	2	2	2
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)				
Flash Dont Walk (s)				
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	36	56	12	36
End Time (s)	56	12	36	12
Yield/Force Off (s)	51	7	31	7
Yield/Force Off 170(s)	51	7	31	7
Local Start Time (s)	29	49	5	29
Local Yield (s)	44	0	24	0
Local Yield 170(s)	44	0	24	0

Intersection Summary







Cycle Length 90
 Control Type Actuated-Coordinated
 Natural Cycle 50
 Offset: 7 (8%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow

Splits and Phases: 4: Main Wal-Mart Driveway & Route 107















Queues

Saturday Midday

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	184	28	174	1141	1103	209
v/c Ratio	0.64	0.05	0.62	0.44	0.59	0.17
Control Delay	41.1	5.0	40.5	5.0	7.6	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.1	5.0	40.5	5.0	7.6	0.6
Queue Length 50th (ft)	87	0	82	93	42	0
Queue Length 95th (ft)	141	13	136	154	128	0
Internal Link Dist (ft)	791			249	215	
Turn Bay Length (ft)			215			130
Base Capacity (vph)	380	691	376	2614	1873	1310
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.48	0.04	0.46	0.44	0.59	0.16
Intersection Summary						

4: Main Wal-Mart Driveway & Route 107
 HCM Signalized Intersection Capacity Analysis

2014 No-Build
 Saturday MIDDAY





						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Fr _t	1.00	0.85	1.00	1.00	1.00	0.85
Fl _t Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1787	1615	1770	3539	3539	1599
Fl _t Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1787	1615	1770	3539	3539	1599
Volume (vph)	164	25	157	1027	1015	192
Peak-hour factor, PHF	0.89	0.89	0.90	0.90	0.92	0.92
Adj. Flow (vph)	184	28	174	1141	1103	209
RTOR Reduction (vph)	0	18	0	0	0	65
Lane Group Flow (vph)	184	10	174	1141	1103	144
Heavy Vehicles (%)	1%	0%	2%	2%	2%	1%
Turn Type		pt+ov	Prot			pm+ov
Protected Phases	4	4 1	1	6	2	4
Permitted Phases						2
Actuated Green, G (s)	11.9	28.6	11.7	58.1	41.4	53.3
Effective Green, g (s)	12.9	29.6	12.7	59.1	42.4	55.3
Actuated g/C Ratio	0.16	0.37	0.16	0.74	0.53	0.69
Clearance Time (s)	5.0		5.0	5.0	5.0	5.0
Vehicle Extension (s)	2.0		2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	288	598	281	2614	1876	1185
v/s Ratio Prot	c0.10	0.01	c0.10	0.32	c0.31	0.02
v/s Ratio Perm						0.07
v/c Ratio	0.64	0.02	0.62	0.44	0.59	0.12
Uniform Delay, d ₁	31.4	16.0	31.4	4.0	12.8	4.2
Progression Factor	1.00	1.00	1.00	1.00	0.44	0.56
Incremental Delay, d ₂	3.4	0.0	2.8	0.5	1.2	0.0
Delay (s)	34.8	16.0	34.2	4.6	6.9	2.4
Level of Service	C	B	C	A	A	A
Approach Delay (s)	32.3			8.5	6.1	
Approach LOS	C			A	A	

Intersection Summary

HCM Average Control Delay	9.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	55.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

4: Main Wal-Mart Driveway & Route 107
 Timing Report, Sorted By Phase

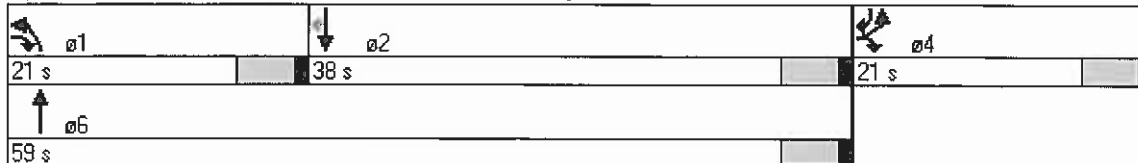
2014 No-Build
 Saturday Midday

				
Phase Number	1	2	4	6
Movement	NBL	SBT	EBL	NBT
Lead/Lag	Lead	Lag		
Lead-Lag Optimize				
Recall Mode	None	C-Min	None	C-Min
Maximum Split (s)	21	38	21	59
Maximum Split (%)	26.3%	47.5%	26.3%	73.8%
Minimum Split (s)	11	11	11	11
Yellow Time (s)	4	4	4	4
All-Red Time (s)	1	1	1	1
Minimum Initial (s)	6	6	6	6
Vehicle Extension (s)	2	2	2	2
Minimum Gap (s)	2	2	2	2
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)				
Flash Dont Walk (s)				
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	36	57	15	36
End Time (s)	57	15	36	15
Yield/Force Off (s)	52	10	31	10
Yield/Force Off 170(s)	52	10	31	10
Local Start Time (s)	26	47	5	26
Local Yield (s)	42	0	21	0
Local Yield 170(s)	42	0	21	0







Intersection Summary

Cycle Length 80
 Control Type Actuated-Coordinated
 Natural Cycle 45
 Offset: 10 (13%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow

Splits and Phases: 4: Main Wal-Mart Driveway & Route 107



Queues















						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	97	61	103	1295	938	41
v/c Ratio	0.49	0.15	0.48	0.47	0.42	0.03
Control Delay	40.1	6.3	39.2	4.0	2.9	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.1	6.3	39.2	4.0	2.9	0.1
Queue Length 50th (ft)	46	1	49	90	14	1
Queue Length 95th (ft)	55	9	88	154	28	m0
Internal Link Dist (ft)	791			249	215	
Turn Bay Length (ft)			215			130
Base Capacity (vph)	334	520	362	2735	2230	1384
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.12	0.28	0.47	0.42	0.03

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

4: Main Wal-Mart Driveway & Route 107
 HCM Signalized Intersection Capacity Analysis

2014 Build
 Weekday AM

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations				 	 	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Fr't	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1570	1346	1703	3374	3374	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1570	1346	1703	3374	3374	1583
Volume (vph)	57	36	90	1127	872	38
Peak-hour factor, PHF	0.59	0.59	0.87	0.87	0.93	0.93
Adj. Flow (vph)	97	61	103	1295	938	41
RTOR Reduction (vph)	0	41	0	0	0	11
Lane Group Flow (vph)	97	20	103	1295	938	30
Heavy Vehicles (%)	15%	20%	6%	7%	7%	2%
Turn Type		pt+ov	Prot			pm+ov
Protected Phases	4	4 1	1	6	2	4
Permitted Phases						2
Actuated Green, G (s)	8.0	21.0	8.0	62.0	49.0	57.0
Effective Green, g (s)	9.0	22.0	9.0	63.0	50.0	59.0
Actuated g/C Ratio	0.11	0.28	0.11	0.79	0.62	0.74
Clearance Time (s)	5.0		5.0	5.0	5.0	5.0
Vehicle Extension (s)	2.0		2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	177	370	192	2657	2109	1247
v/s Ratio Prot	c0.06	0.01	0.06	c0.38	0.28	0.00
v/s Ratio Perm						0.02
v/c Ratio	0.55	0.05	0.54	0.49	0.44	0.02
Uniform Delay, d1	33.6	21.3	33.5	2.9	7.8	2.8
Progression Factor	1.00	1.00	1.00	1.00	0.25	0.06
Incremental Delay, d2	1.9	0.0	1.4	0.6	0.6	0.0
Delay (s)	35.4	21.4	35.0	3.6	2.6	0.2
Level of Service	D	C	C	A	A	A
Approach Delay (s)	30.0			5.9	2.5	
Approach LOS	C			A	A	
Intersection Summary						
HCM Average Control Delay			6.1		HCM Level of Service	A
HCM Volume to Capacity ratio			0.50			
Actuated Cycle Length (s)			80.0		Sum of lost time (s)	8.0
Intersection Capacity Utilization			44.1%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						

4: Main Wal-Mart Driveway & Route 107
Timing Report, Sorted By Phase

2014 Build
Weekday AM



Phase Number	1	2	4	6
Movement	NBL	SBT	EBL	NBT
Lead/Lag	Lead	Lag		
Lead-Lag Optimize				
Recall Mode	None	C-Min	None	C-Min
Maximum Split (s)	21	38	21	59
Maximum Split (%)	26.3%	47.5%	26.3%	73.8%
Minimum Split (s)	11	11	11	11
Yellow Time (s)	4	4	4	4
All-Red Time (s)	1	1	1	1
Minimum Initial (s)	6	6	6	6
Vehicle Extension (s)	2	2	2	2
Minimum Gap (s)	2	2	2	2
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)				
Flash Dont Walk (s)				
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	36	57	15	36
End Time (s)	57	15	36	15
Yield/Force Off (s)	52	10	31	10
Yield/Force Off 170(s)	52	10	31	10
Local Start Time (s)	26	47	5	26
Local Yield (s)	42	0	21	0
Local Yield 170(s)	42	0	21	0







Intersection Summary

Cycle Length 80
Control Type Actuated-Coordinated
Natural Cycle 40
Offset: 10 (13%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow

Splits and Phases: 4: Main Wal-Mart Driveway & Route 107

ø1	ø2	ø4
21 s	38 s	21 s
ø6		
59 s		

Queues















						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	261	217	255	1055	1279	133
v/c Ratio	0.77	0.33	0.80	0.41	0.73	0.11
Control Delay	49.3	16.2	55.5	5.9	12.4	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.3	16.2	55.5	5.9	12.4	0.4
Queue Length 50th (ft)	140	64	133	109	321	3
Queue Length 95th (ft)	213	114	#265	156	85	0
Internal Link Dist (ft)	791			249	215	
Turn Bay Length (ft)			215			130
Base Capacity (vph)	405	669	332	2563	1783	1257
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.64	0.32	0.77	0.41	0.72	0.11

Intersection Summary

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

4: Main Wal-Mart Driveway & Route 107
 HCM Signalized Intersection Capacity Analysis

2014 Build
 Weekday PM

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations				 	 	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Fr _t	1.00	0.85	1.00	1.00	1.00	0.85
Fl _t Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1805	1568	1770	3539	3539	1599
Fl _t Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1805	1568	1770	3539	3539	1599
Volume (vph)	230	191	242	1002	1164	121
Peak-hour factor, PHF	0.88	0.88	0.95	0.95	0.91	0.91
Adj. Flow (vph)	261	217	255	1055	1279	133
RTOR Reduction (vph)	0	16	0	0	0	42
Lane Group Flow (vph)	261	201	255	1055	1279	91
Heavy Vehicles (%)	0%	3%	2%	2%	2%	1%
Turn Type		pt+ov	Prot			pm+ov
Protected Phases	4	4 1	1	6	2	4
Permitted Phases						2
Actuated Green, G (s)	16.0	36.2	15.2	64.0	43.8	59.8
Effective Green, g (s)	17.0	37.2	16.2	65.0	44.8	61.8
Actuated g/C Ratio	0.19	0.41	0.18	0.72	0.50	0.69
Clearance Time (s)	5.0		5.0	5.0	5.0	5.0
Vehicle Extension (s)	2.0		2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	341	648	319	2556	1762	1169
v/s Ratio Prot	c0.14	0.13	c0.14	0.30	c0.36	0.01
v/s Ratio Perm						0.04
v/c Ratio	0.77	0.31	0.80	0.41	0.73	0.08
Uniform Delay, d ₁	34.6	17.8	35.3	4.9	17.8	4.7
Progression Factor	1.00	1.00	1.00	1.00	0.53	0.35
Incremental Delay, d ₂	8.9	0.1	12.3	0.5	2.3	0.0
Delay (s)	43.5	17.9	47.6	5.4	11.7	1.6
Level of Service	D	B	D	A	B	A
Approach Delay (s)	31.9			13.7	10.8	
Approach LOS	C			B	B	
Intersection Summary						
HCM Average Control Delay			15.1		HCM Level of Service	B
HCM Volume to Capacity ratio			0.75			
Actuated Cycle Length (s)			90.0		Sum of lost time (s)	12.0
Intersection Capacity Utilization			68.3%		ICU Level of Service	C
Analysis Period (min)			15			
c Critical Lane Group						

4: Main Wal-Mart Driveway & Route 107
 Timing Report, Sorted By Phase

2014 Build
 Weekday PM



Phase Number	1	2	4	6
Movement	NBL	SBT	EBL	NBT
Lead/Lag	Lead	Lag		
Lead-Lag Optimize				
Recall Mode	None	C-Min	None	C-Min
Maximum Split (s)	20	46	24	66
Maximum Split (%)	22.2%	51.1%	26.7%	73.3%
Minimum Split (s)	11	11	11	11
Yellow Time (s)	4	4	4	4
All-Red Time (s)	1	1	1	1
Minimum Initial (s)	6	6	6	6
Vehicle Extension (s)	2	2	2	2
Minimum Gap (s)	2	2	2	2
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)				
Flash Dont Walk (s)				
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	36	56	12	36
End Time (s)	56	12	36	12
Yield/Force Off (s)	51	7	31	7
Yield/Force Off 170(s)	51	7	31	7
Local Start Time (s)	29	49	5	29
Local Yield (s)	44	0	24	0
Local Yield 170(s)	44	0	24	0







Intersection Summary

Cycle Length 90
 Control Type Actuated-Coordinated
 Natural Cycle 60
 Offset: 7 (8%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow

Splits and Phases: 4: Main Wal-Mart Driveway & Route 107

ø1	ø2	ø4
20 s	46 s	24 s
ø6		
66 s		

Queues













						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	387	262	391	1089	1148	202
v/c Ratio	0.83	0.30	1.01	0.48	0.88	0.18
Control Delay	48.1	11.5	81.3	8.0	22.4	2.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.1	11.5	81.3	8.0	22.4	2.0
Queue Length 50th (ft)	183	61	~214	131	272	25
Queue Length 95th (ft)	#368	119	#380	144	145	0
Internal Link Dist (ft)	791			249	215	
Turn Bay Length (ft)			215			130
Base Capacity (vph)	464	868	389	2433	1504	1118
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.83	0.30	1.01	0.45	0.76	0.18

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

4: Main Wal-Mart Driveway & Route 107
 HCM Signalized Intersection Capacity Analysis

2014 Build
 Saturday Midday

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Fr't	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1787	1615	1770	3539	3539	1599
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1787	1615	1770	3539	3539	1599
Volume (vph)	344	233	352	980	1056	186
Peak-hour factor, PHF	0.89	0.89	0.90	0.90	0.92	0.92
Adj. Flow (vph)	387	262	391	1089	1148	202
RTOR Reduction (vph)	0	13	0	0	0	35
Lane Group Flow (vph)	387	249	391	1089	1148	167
Heavy Vehicles (%)	1%	0%	2%	2%	2%	1%
Turn Type		pt+ov	Prot			pm+ov
Protected Phases	4	4 1	1	6	2	4
Permitted Phases						2
Actuated Green, G (s)	19.8	41.4	16.6	50.2	28.6	48.4
Effective Green, g (s)	20.8	42.4	17.6	51.2	29.6	50.4
Actuated g/C Ratio	0.26	0.53	0.22	0.64	0.37	0.63
Clearance Time (s)	5.0		5.0	5.0	5.0	5.0
Vehicle Extension (s)	2.0		2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	465	856	389	2265	1309	1087
v/s Ratio Prot	c0.22	0.15	c0.22	0.31	c0.32	0.04
v/s Ratio Perm						0.06
v/c Ratio	0.83	0.29	1.01	0.48	0.88	0.15
Uniform Delay, d1	28.0	10.4	31.2	7.5	23.5	6.1
Progression Factor	1.00	1.00	1.00	1.00	0.64	0.71
Incremental Delay, d2	11.6	0.1	46.9	0.7	7.6	0.0
Delay (s)	39.5	10.5	78.1	8.2	22.8	4.3
Level of Service	D	B	E	A	C	A
Approach Delay (s)	27.8			26.7	20.0	
Approach LOS	C			C	B	

Intersection Summary

HCM Average Control Delay	24.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	77.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

4: Main Wal-Mart Driveway & Route 107
 Timing Report, Sorted By Phase

2014 Build
 Saturday MIDDAY



Phase Number	1	2	4	6
Movement	NBL	SBT	EBL	NBT
Lead/Lag	Lead	Lag		
Lead-Lag Optimize				
Recall Mode	None	C-Min	None	C-Min
Maximum Split (s)	21	38	21	59
Maximum Split (%)	26.3%	47.5%	26.3%	73.8%
Minimum Split (s)	11	11	11	11
Yellow Time (s)	4	4	4	4
All-Red Time (s)	1	1	1	1
Minimum Initial (s)	6	6	6	6
Vehicle Extension (s)	2	2	2	2
Minimum Gap (s)	2	2	2	2
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)				
Flash Dont Walk (s)				
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	36	57	15	36
End Time (s)	57	15	36	15
Yield/Force Off (s)	52	10	31	10
Yield/Force Off 170(s)	52	10	31	10
Local Start Time (s)	26	47	5	26
Local Yield (s)	42	0	21	0
Local Yield 170(s)	42	0	21	0

Intersection Summary










Cycle Length 80
 Control Type Actuated-Coordinated
 Natural Cycle 80
 Offset: 10 (13%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow

Splits and Phases: 4: Main Wal-Mart Driveway & Route 107

ø1	ø2	ø4
21 s	38 s	21 s
ø6		
59 s		

4: Main Wal-Mart Driveway & Route 107
Queues

2014 Build Mitigated
Weekday AM






















									
Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	49	50	61	3	103	1295	11	927	41
v/c Ratio	0.31	0.31	0.31	0.02	0.32	0.49	0.07	0.40	0.03
Control Delay	37.9	37.9	13.7	31.3	36.4	6.7	21.4	2.9	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.9	37.9	13.7	31.3	36.4	6.7	21.4	2.9	0.1
Queue Length 50th (ft)	24	25	0	1	25	76	5	6	0
Queue Length 95th (ft)	35	36	12	9	46	315	m12	38	m0
Internal Link Dist (ft)		791		622		381		544	
Turn Bay Length (ft)	150		120		315		275		275
Base Capacity (vph)	224	226	254	141	337	2639	148	2321	1349
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.22	0.22	0.24	0.02	0.31	0.49	0.07	0.40	0.03

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

4: Main Wal-Mart Driveway & Route 107
 HCM Signalized Intersection Capacity Analysis

2014 Build Mitigated
 Weekday AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.95	0.95	1.00		1.00		0.97	0.95		1.00	0.95	1.00
Fr't	1.00	1.00	0.85		0.95		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	0.95	1.00		0.98		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1491	1504	1346		1750		3303	3373		1770	3374	1583
Flt Permitted	0.95	0.95	1.00		0.98		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1491	1504	1346		1750		3303	3373		1770	3374	1583
Volume (vph)	57	1	36	1	1	1	90	1125	2	10	862	38
Peak-hour factor, PHF	0.59	0.59	0.59	0.92	0.92	0.92	0.87	0.87	0.87	0.93	0.93	0.93
Adj. Flow (vph)	97	2	61	1	1	1	103	1293	2	11	927	41
RTOR Reduction (vph)	0	0	56	0	1	0	0	0	0	0	0	13
Lane Group Flow (vph)	49	50	5	0	2	0	103	1295	0	11	927	28
Heavy Vehicles (%)	15%	2%	20%	2%	2%	2%	6%	7%	2%	2%	7%	2%
Turn Type	Split		Perm	Split			Prot			Prot		pm+ov
Protected Phases	4	4		8	8		1	6		5	2	4
Permitted Phases			4									2
Actuated Green, G (s)	6.2	6.2	6.2		1.0		5.5	51.8		1.0	47.3	53.5
Effective Green, g (s)	7.2	7.2	7.2		2.0		6.5	52.8		2.0	48.3	55.5
Actuated g/C Ratio	0.09	0.09	0.09		0.02		0.08	0.66		0.02	0.60	0.69
Clearance Time (s)	5.0	5.0	5.0		5.0		5.0	5.0		5.0	5.0	5.0
Vehicle Extension (s)	2.0	2.0	2.0		3.0		2.0	2.0		3.0	2.0	2.0
Lane Grp Cap (vph)	134	135	121		44		268	2226		44	2037	1177
v/s Ratio Prot	0.03	c0.03			c0.00		0.03	c0.38		0.01	c0.27	0.00
v/s Ratio Perm			0.00									0.02
v/c Ratio	0.37	0.37	0.05		0.05		0.38	0.58		0.25	0.46	0.02
Uniform Delay, d1	34.3	34.3	33.3		38.1		34.9	7.5		38.3	8.7	3.8
Progression Factor	1.00	1.00	1.00		1.00		1.00	1.00		0.60	0.29	0.01
Incremental Delay, d2	0.6	0.6	0.1		0.4		0.3	1.1		2.8	0.7	0.0
Delay (s)	34.9	34.9	33.3		38.5		35.2	8.6		25.6	3.2	0.0
Level of Service	C	C	C		D		D	A		C	A	A
Approach Delay (s)		34.3			38.5			10.6			3.3	
Approach LOS		C			D			B			A	
Intersection Summary												
HCM Average Control Delay			9.3									A
HCM Volume to Capacity ratio			0.52									
Actuated Cycle Length (s)			80.0							12.0		
Intersection Capacity Utilization			49.5%									A
Analysis Period (min)			15									
c Critical Lane Group												

4: Main Wal-Mart Driveway & Route 107
 Timing Report, Sorted By Phase

2014 Build Mitigated
 Weekday AM



Phase Number	1	2	4	5	6	8
Movement	NBL	SBT	EBTL	SBL	NBT	WBTL
Lead/Lag	Lead	Lag		Lag	Lead	
Lead-Lag Optimize						
Recall Mode	None	C-Min	None	None	C-Min	None
Maximum Split (s)	12	43	16	10	45	9
Maximum Split (%)	15.0%	53.8%	20.0%	12.5%	56.3%	11.3%
Minimum Split (s)	11	11	11	9	11	9
Yellow Time (s)	4	4	4	4	4	4
All-Red Time (s)	1	1	1	1	1	1
Minimum Initial (s)	6	6	6	4	6	4
Vehicle Extension (s)	2	2	2	3	2	3
Minimum Gap (s)	2	2	2	3	2	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)						
Flash Dont Walk (s)						
Dual Entry	Yes	Yes	Yes	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	42	54	17	7	42	33
End Time (s)	54	17	33	17	7	42
Yield/Force Off (s)	49	12	28	12	2	37
Yield/Force Off 170(s)	49	12	28	12	2	37
Local Start Time (s)	40	52	15	5	40	31
Local Yield (s)	47	10	26	10	0	35
Local Yield 170(s)	47	10	26	10	0	35

Intersection Summary










Cycle Length 80
 Control Type Actuated-Coordinated
 Natural Cycle 60
 Offset: 2 (3%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow

Splits and Phases: 4: Main Wal-Mart Driveway & Route 107

ø1	ø2	ø4	ø8
12 s	43 s	16 s	9 s
ø6	ø5		
45 s	10 s		

Queues

Weekday PM






















									
Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	131	131	217	3	255	1056	11	1268	133
v/c Ratio	0.58	0.57	0.55	0.02	0.60	0.41	0.07	0.61	0.11
Control Delay	46.1	46.0	10.4	36.0	43.9	8.5	23.5	7.2	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.1	46.0	10.4	36.0	43.9	8.5	23.5	7.2	0.1
Queue Length 50th (ft)	74	74	0	1	70	76	6	72	0
Queue Length 95th (ft)	123	123	55	10	112	322	m8	93	0
Internal Link Dist (ft)		791		751		381		544	
Turn Bay Length (ft)	150		120		315		275		275
Base Capacity (vph)	324	325	472	122	432	2614	161	2093	1342
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.40	0.40	0.46	0.02	0.59	0.40	0.07	0.61	0.10

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

4: Main Wal-Mart Driveway & Route 107
 HCM Signalized Intersection Capacity Analysis

2014 Build Mitigated
 Weekday PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.95	0.95	1.00		1.00		0.97	0.95		1.00	0.95	1.00
Fr't	1.00	1.00	0.85		0.95		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	0.95	1.00		0.98		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1715	1719	1568		1750		3433	3539		1770	3539	1599
Flt Permitted	0.95	0.95	1.00		0.98		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1715	1719	1568		1750		3433	3539		1770	3539	1599
Volume (vph)	230	1	191	1	1	1	242	1002	1	10	1154	121
Peak-hour factor, PHF	0.88	0.88	0.88	0.92	0.92	0.92	0.95	0.95	0.95	0.91	0.91	0.91
Adj. Flow (vph)	261	1	217	1	1	1	255	1055	1	11	1268	133
RTOR Reduction (vph)	0	0	188	0	1	0	0	0	0	0	0	43
Lane Group Flow (vph)	131	131	29	0	2	0	255	1056	0	11	1268	90
Heavy Vehicles (%)	0%	2%	3%	2%	2%	2%	2%	2%	2%	2%	2%	1%
Turn Type	Split		Perm	Split			Prot			Prot		pm+ov
Protected Phases	4	4		8	8		1	6		5	2	4
Permitted Phases			4									2
Actuated Green, G (s)	10.9	10.9	10.9		0.8		10.1	55.8		2.5	48.2	59.1
Effective Green, g (s)	11.9	11.9	11.9		1.8		11.1	56.8		3.5	49.2	61.1
Actuated g/C Ratio	0.13	0.13	0.13		0.02		0.12	0.63		0.04	0.55	0.68
Clearance Time (s)	5.0	5.0	5.0		5.0		5.0	5.0		5.0	5.0	5.0
Vehicle Extension (s)	2.0	2.0	2.0		3.0		2.0	2.0		3.0	2.0	2.0
Lane Grp Cap (vph)	227	227	207		35		423	2234		69	1935	1157
v/s Ratio Prot	c0.08	0.08			c0.00		c0.07	0.30		0.01	c0.36	0.01
v/s Ratio Perm			0.02									0.05
v/c Ratio	0.58	0.58	0.14		0.06		0.60	0.47		0.16	0.66	0.08
Uniform Delay, d1	36.7	36.7	34.5		43.3		37.4	8.7		41.8	14.4	4.9
Progression Factor	1.00	1.00	1.00		1.00		1.00	1.00		0.64	0.45	0.00
Incremental Delay, d2	2.2	2.2	0.1		0.7		1.7	0.7		0.9	1.5	0.0
Delay (s)	38.9	38.9	34.6		44.0		39.0	9.4		27.7	8.0	0.0
Level of Service	D	D	C		D		D	A		C	A	A
Approach Delay (s)		37.0			44.0			15.2			7.4	
Approach LOS		D			D			B			A	
Intersection Summary												
HCM Average Control Delay			15.1									B
HCM Volume to Capacity ratio			0.62									
Actuated Cycle Length (s)			90.0							16.0		
Intersection Capacity Utilization			61.9%									B
Analysis Period (min)			15									
c Critical Lane Group												

4: Main Wal-Mart Driveway & Route 107
 Timing Report, Sorted By Phase

2014 Build Mitigated
 Weekday PM



Phase Number	1	2	4	5	6	8
Movement	NBL	SBT	EBTL	SBL	NBT	WBTL
Lead/Lag	Lead	Lag		Lag	Lead	
Lead-Lag Optimize						
Recall Mode	None	C-Min	None	None	C-Min	None
Maximum Split (s)	14	46	21	9	51	9
Maximum Split (%)	15.6%	51.1%	23.3%	10.0%	56.7%	10.0%
Minimum Split (s)	11	11	11	9	11	9
Yellow Time (s)	4	4	4	4	4	4
All-Red Time (s)	1	1	1	1	1	1
Minimum Initial (s)	6	6	6	4	6	4
Vehicle Extension (s)	2	2	2	3	2	3
Minimum Gap (s)	2	2	2	3	2	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)						
Flash Dont Walk (s)						
Dual Entry	Yes	Yes	Yes	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	43	57	13	4	43	34
End Time (s)	57	13	34	13	4	43
Yield/Force Off (s)	52	8	29	8	89	38
Yield/Force Off 170(s)	52	8	29	8	89	38
Local Start Time (s)	44	58	14	5	44	35
Local Yield (s)	53	9	30	9	0	39
Local Yield 170(s)	53	9	30	9	0	39










Intersection Summary

Cycle Length 90
 Control Type Actuated-Coordinated
 Natural Cycle 60
 Offset: 89 (99%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow

Splits and Phases: 4: Main Wal-Mart Driveway & Route 107

ø1	ø2	ø4	ø8
14 s	46 s	21 s	9 s
ø6	ø5		
51 s	9 s		

Queues






















									
Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	194	194	262	3	391	1089	11	1148	202
v/c Ratio	0.66	0.66	0.53	0.02	0.66	0.44	0.05	0.67	0.17
Control Delay	41.3	41.2	8.0	32.0	38.0	6.7	10.9	13.7	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.3	41.2	8.0	32.0	38.0	6.7	10.9	13.7	0.3
Queue Length 50th (ft)	94	94	0	1	92	97	1	77	0
Queue Length 95th (ft)	157	157	56	9	#170	212	m4	210	0
Internal Link Dist (ft)		791		760		381		544	
Turn Bay Length (ft)	150		120		315		275		275
Base Capacity (vph)	361	362	550	130	588	2492	236	1708	1243
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.54	0.54	0.48	0.02	0.66	0.44	0.05	0.67	0.16

Intersection Summary

- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

4: Main Wal-Mart Driveway & Route 107
 HCM Signalized Intersection Capacity Analysis

2014 Build Mitigated
 Saturday Midday

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.95	0.95	1.00		1.00		0.97	0.95		1.00	0.95	1.00
Flt	1.00	1.00	0.85		0.95		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	0.95	1.00		0.98		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1698	1702	1615		1750		3433	3538		1770	3539	1599
Flt Permitted	0.95	0.95	1.00		0.98		0.95	1.00		0.26	1.00	1.00
Satd. Flow (perm)	1698	1702	1615		1750		3433	3538		489	3539	1599
Volume (vph)	344	1	233	1	1	1	352	978	2	10	1056	186
Peak-hour factor, PHF	0.89	0.89	0.89	0.90	0.90	0.90	0.90	0.90	0.90	0.92	0.92	0.92
Adj. Flow (vph)	387	1	262	1	1	1	391	1087	2	11	1148	202
RTOR Reduction (vph)	0	0	216	0	1	0	0	0	0	0	0	80
Lane Group Flow (vph)	194	194	46	0	2	0	391	1089	0	11	1148	122
Heavy Vehicles (%)	1%	2%	0%	2%	2%	2%	2%	2%	2%	2%	2%	1%
Turn Type	Split		Perm	Split			Prot			Perm		pm+ov
Protected Phases	4	4		8	8		1	6			2	4
Permitted Phases			4							2		2
Actuated Green, G (s)	12.9	12.9	12.9		0.8		12.7	51.3		33.6	33.6	46.5
Effective Green, g (s)	13.9	13.9	13.9		1.8		13.7	52.3		34.6	34.6	48.5
Actuated g/C Ratio	0.17	0.17	0.17		0.02		0.17	0.65		0.43	0.43	0.61
Clearance Time (s)	5.0	5.0	5.0		5.0		5.0	5.0		5.0	5.0	5.0
Vehicle Extension (s)	2.0	2.0	2.0		3.0		2.0	2.0		2.0	2.0	2.0
Lane Grp Cap (vph)	295	296	281		39		588	2313		211	1531	1049
v/s Ratio Prot	c0.11	0.11			c0.00		c0.11	0.31			c0.32	0.02
v/s Ratio Perm			0.03							0.02		0.06
v/c Ratio	0.66	0.66	0.16		0.05		0.66	0.47		0.05	0.75	0.12
Uniform Delay, d1	30.8	30.8	28.1		38.3		31.0	6.9		13.2	19.1	6.7
Progression Factor	1.00	1.00	1.00		1.00		1.00	1.00		0.71	0.64	0.02
Incremental Delay, d2	4.0	3.9	0.1		0.6		2.2	0.7		0.4	3.1	0.0
Delay (s)	34.8	34.8	28.2		38.8		33.2	7.6		9.8	15.3	0.2
Level of Service	C	C	C		D		C	A		A	B	A
Approach Delay (s)		32.1			38.8			14.4			13.0	
Approach LOS		C			D			B			B	

Intersection Summary

HCM Average Control Delay	17.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	65.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

4: Main Wal-Mart Driveway & Route 107
 Timing Report, Sorted By Phase

2014 Build Mitigated
 Saturday Midday



Phase Number	1	2	4	6	8
Movement	NBL	SBTL	EBTL	NBT	WBTL
Lead/Lag	Lead	Lag			
Lead-Lag Optimize					
Recall Mode	None	C-Min	None	C-Min	None
Maximum Split (s)	15	35	21	50	9
Maximum Split (%)	18.8%	43.8%	26.3%	62.5%	11.3%
Minimum Split (s)	11	11	11	11	9
Yellow Time (s)	4	4	4	4	4
All-Red Time (s)	1	1	1	1	1
Minimum Initial (s)	6	6	6	6	4
Vehicle Extension (s)	2	2	2	2	3
Minimum Gap (s)	2	2	2	2	3
Time Before Reduce (s)	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0
Walk Time (s)					
Flash Dont Walk (s)					
Dual Entry	Yes	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes
Start Time (s)	39	54	9	39	30
End Time (s)	54	9	30	9	39
Yield/Force Off (s)	49	4	25	4	34
Yield/Force Off 170(s)	49	4	25	4	34
Local Start Time (s)	35	50	5	35	26
Local Yield (s)	45	0	21	0	30
Local Yield 170(s)	45	0	21	0	30

Intersection Summary










Cycle Length 80
 Control Type Actuated-Coordinated
 Natural Cycle 65
 Offset: 4 (5%), Referenced to phase 2:SBTL and 6:NBT, Start of Yellow

Splits and Phases: 4: Main Wal-Mart Driveway & Route 107

ø1	ø2	ø4	ø8
15 s	35 s	21 s	9 s
ø6			
50 s			












5: South Wal-Mart Driveway & Route 107
 HCM Unsignalized Intersection Capacity Analysis

2009 Existing
 Weekday AM

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	0	22	0	1110	811	4
Peak Hour Factor	0.69	0.69	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	32	0	1233	901	4
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)					329	
pX, platoon unblocked	0.86	0.86	0.86			
vC, conflicting volume	1520	453	906			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1443	206	731			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	95	100			
cM capacity (veh/h)	108	696	761			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	32	617	617	601	305	
Volume Left	0	0	0	0	0	
Volume Right	32	0	0	0	4	
cSH	696	1700	1700	1700	1700	
Volume to Capacity	0.05	0.36	0.36	0.35	0.18	
Queue Length 95th (ft)	4	0	0	0	0	
Control Delay (s)	10.4	0.0	0.0	0.0	0.0	
Lane LOS	B					
Approach Delay (s)	10.4	0.0		0.0		
Approach LOS	B					
Intersection Summary						
Average Delay			0.2			
Intersection Capacity Utilization		34.0%		ICU Level of Service		A
Analysis Period (min)			15			










5: South Wal-Mart Driveway & Route 107
 HCM Unsignalized Intersection Capacity Analysis

2009 Existing
 Weekday PM

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations				 	 	
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	0	79	0	1016	1056	2
Peak Hour Factor	0.86	0.86	0.90	0.90	0.94	0.94
Hourly flow rate (vph)	0	92	0	1129	1123	2
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)					329	
pX, platoon unblocked	0.75	0.75	0.75			
vC, conflicting volume	1689	563	1126			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1586	87	836			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	87	100			
cM capacity (veh/h)	76	719	606			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	92	564	564	749	377	
Volume Left	0	0	0	0	0	
Volume Right	92	0	0	0	2	
cSH	719	1700	1700	1700	1700	
Volume to Capacity	0.13	0.33	0.33	0.44	0.22	
Queue Length 95th (ft)	11	0	0	0	0	
Control Delay (s)	10.7	0.0	0.0	0.0	0.0	
Lane LOS	B					
Approach Delay (s)	10.7	0.0		0.0		
Approach LOS	B					
Intersection Summary						
Average Delay			0.4			
Intersection Capacity Utilization		40.8%		ICU Level of Service		A
Analysis Period (min)			15			












5: South Wal-Mart Driveway & Route 107
 HCM Unsignalized Intersection Capacity Analysis

2009 Existing
 Saturday MIDDAY

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	0	116	0	1080	962	1
Peak Hour Factor	0.94	0.94	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	123	0	1200	1069	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)					329	
pX, platoon unblocked	0.80	0.80	0.80			
vC, conflicting volume	1669	535	1070			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1589	178	844			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	82	100			
cM capacity (veh/h)	81	673	644			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	123	600	600	713	357	
Volume Left	0	0	0	0	0	
Volume Right	123	0	0	0	1	
cSH	673	1700	1700	1700	1700	
Volume to Capacity	0.18	0.35	0.35	0.42	0.21	
Queue Length 95th (ft)	17	0	0	0	0	
Control Delay (s)	11.5	0.0	0.0	0.0	0.0	
Lane LOS	B					
Approach Delay (s)	11.5	0.0		0.0		
Approach LOS	B					
Intersection Summary						
Average Delay			0.6			
Intersection Capacity Utilization		40.5%		ICU Level of Service		A
Analysis Period (min)			15			












5: South Wal-Mart Driveway & Route 107
 HCM Unsignalized Intersection Capacity Analysis

2014 No-Build
 Weekday AM

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations				 	 	
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	0	22	0	1189	886	4
Peak Hour Factor	0.69	0.69	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	32	0	1321	984	4
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)					329	
pX, platoon unblocked	0.88	0.88	0.88			
vC, conflicting volume	1647	494	989			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1600	291	852			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	95	100			
cM capacity (veh/h)	87	627	701			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	32	661	661	656	333	
Volume Left	0	0	0	0	0	
Volume Right	32	0	0	0	4	
cSH	627	1700	1700	1700	1700	
Volume to Capacity	0.05	0.39	0.39	0.39	0.20	
Queue Length 95th (ft)	4	0	0	0	0	
Control Delay (s)	11.1	0.0	0.0	0.0	0.0	
Lane LOS	B					
Approach Delay (s)	11.1	0.0		0.0		
Approach LOS	B					
Intersection Summary						
Average Delay			0.2			
Intersection Capacity Utilization		36.2%		ICU Level of Service	A	
Analysis Period (min)			15			












5: South Wal-Mart Driveway & Route 107
 HCM Unsignalized Intersection Capacity Analysis

2014 No-Build
 Weekday PM

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations				 	 	
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	0	79	0	1137	1176	2
Peak Hour Factor	0.86	0.86	0.90	0.90	0.94	0.94
Hourly flow rate (vph)	0	92	0	1263	1251	2
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)					329	
pX, platoon unblocked	0.82	0.82	0.82			
vC, conflicting volume	1884	627	1253			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1858	318	1085			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	83	100			
cM capacity (veh/h)	54	556	531			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	92	632	632	834	419	
Volume Left	0	0	0	0	0	
Volume Right	92	0	0	0	2	
cSH	556	1700	1700	1700	1700	
Volume to Capacity	0.17	0.37	0.37	0.49	0.25	
Queue Length 95th (ft)	15	0	0	0	0	
Control Delay (s)	12.8	0.0	0.0	0.0	0.0	
Lane LOS	B					
Approach Delay (s)	12.8	0.0		0.0		
Approach LOS	B					
Intersection Summary						
Average Delay			0.4			
Intersection Capacity Utilization		44.1%		ICU Level of Service		A
Analysis Period (min)		15				












5: South Wal-Mart Driveway & Route 107
 HCM Unsignalized Intersection Capacity Analysis

2014 No-Build
 Saturday Midday

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations				 	 	
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	0	116	0	1184	1051	1
Peak Hour Factor	0.94	0.94	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	123	0	1316	1168	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)					329	
pX, platoon unblocked	0.78	0.78	0.78			
vC, conflicting volume	1826	584	1169			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1778	192	938			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	81	100			
cM capacity (veh/h)	59	642	578			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	123	658	658	779	390	
Volume Left	0	0	0	0	0	
Volume Right	123	0	0	0	1	
cSH	642	1700	1700	1700	1700	
Volume to Capacity	0.19	0.39	0.39	0.46	0.23	
Queue Length 95th (ft)	18	0	0	0	0	
Control Delay (s)	11.9	0.0	0.0	0.0	0.0	
Lane LOS	B					
Approach Delay (s)	11.9	0.0		0.0		
Approach LOS	B					
Intersection Summary						
Average Delay			0.6			
Intersection Capacity Utilization		42.9%		ICU Level of Service		A
Analysis Period (min)			15			












5: South Wal-Mart Driveway & Route 107
 HCM Unsignalized Intersection Capacity Analysis

2014 Build
 Weekday AM

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations				 	 	
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	0	0	0	1218	924	0
Peak Hour Factor	0.69	0.69	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	0	1353	1027	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh						
Upstream signal (ft)					329	
pX, platoon unblocked	0.86	0.86	0.86			
vC, conflicting volume	1703	513	1027			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1654	266	865			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	78	633	675			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	0	677	677	684	342	
Volume Left	0	0	0	0	0	
Volume Right	0	0	0	0	0	
cSH	1700	1700	1700	1700	1700	
Volume to Capacity	0.00	0.40	0.40	0.40	0.20	
Queue Length 95th (ft)	0	0	0	0	0	
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	
Lane LOS	A					
Approach Delay (s)	0.0	0.0		0.0		
Approach LOS	A					
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization		37.0%		ICU Level of Service		A
Analysis Period (min)			15			










5: South Wal-Mart Driveway & Route 107
 HCM Unsignalized Intersection Capacity Analysis

2014 Build
 Weekday PM

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations				 	 	
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	0	0	0	1235	1364	0
Peak Hour Factor	0.86	0.86	0.90	0.90	0.94	0.94
Hourly flow rate (vph)	0	0	0	1372	1451	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh						
Upstream signal (ft)					329	
pX, platoon unblocked	0.72	0.72	0.72			
vC, conflicting volume	2137	726	1451			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2192	221	1234			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	28	563	409			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	0	686	686	967	484	
Volume Left	0	0	0	0	0	
Volume Right	0	0	0	0	0	
cSH	1700	1700	1700	1700	1700	
Volume to Capacity	0.00	0.40	0.40	0.57	0.28	
Queue Length 95th (ft)	0	0	0	0	0	
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	
Lane LOS	A					
Approach Delay (s)	0.0	0.0		0.0		
Approach LOS	A					
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization		41.0%		ICU Level of Service		A
Analysis Period (min)			15			












5: South Wal-Mart Driveway & Route 107
 HCM Unsignalized Intersection Capacity Analysis

2014 Build
 Saturday MIDDAY

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	0	0	0	1332	1299	0
Peak Hour Factor	0.94	0.94	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	0	1480	1443	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)					329	
pX, platoon unblocked	0.69	0.69	0.69			
vC, conflicting volume	2183	722	1443			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2265	153	1196			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	24	601	409			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	0	740	740	962	481	
Volume Left	0	0	0	0	0	
Volume Right	0	0	0	0	0	
cSH	1700	1700	1700	1700	1700	
Volume to Capacity	0.00	0.44	0.44	0.57	0.28	
Queue Length 95th (ft)	0	0	0	0	0	
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	
Lane LOS	A					
Approach Delay (s)	0.0	0.0		0.0		
Approach LOS	A					
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization		40.2%		ICU Level of Service		A
Analysis Period (min)			15			












6: Meineke Driveway & Route 107
 HCM Unsignalized Intersection Capacity Analysis

2009 Existing
 Weekday AM

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations				 	 	
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	0	4	0	1110	822	11
Peak Hour Factor	0.50	0.50	0.81	0.81	0.90	0.90
Hourly flow rate (vph)	0	8	0	1370	913	12
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)					479	
pX, platoon unblocked	0.87	0.87	0.87			
vC, conflicting volume	1605	463	926			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1546	233	765			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	99	100			
cM capacity (veh/h)	93	674	746			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	8	685	685	609	317	
Volume Left	0	0	0	0	0	
Volume Right	8	0	0	0	12	
cSH	674	1700	1700	1700	1700	
Volume to Capacity	0.01	0.40	0.40	0.36	0.19	
Queue Length 95th (ft)	1	0	0	0	0	
Control Delay (s)	10.4	0.0	0.0	0.0	0.0	
Lane LOS	B					
Approach Delay (s)	10.4	0.0		0.0		
Approach LOS	B					
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization		34.0%		ICU Level of Service		A
Analysis Period (min)			15			












6: Meineke Driveway & Route 107
 HCM Unsignalized Intersection Capacity Analysis

2009 Existing
 Weekday PM

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations				 	 	
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	0	8	0	1016	1134	1
Peak Hour Factor	1.00	1.00	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	8	0	1129	1260	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh						
Upstream signal (ft)					479	
pX, platoon unblocked	0.75	0.75	0.75			
vC, conflicting volume	1825	631	1261			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1767	176	1016			
tC, single (s)	6.8	7.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.2			
p0 queue free %	100	99	100			
cM capacity (veh/h)	57	603	519			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	8	564	564	840	421	
Volume Left	0	0	0	0	0	
Volume Right	8	0	0	0	1	
cSH	603	1700	1700	1700	1700	
Volume to Capacity	0.01	0.33	0.33	0.49	0.25	
Queue Length 95th (ft)	1	0	0	0	0	
Control Delay (s)	11.0	0.0	0.0	0.0	0.0	
Lane LOS	B					
Approach Delay (s)	11.0	0.0		0.0		
Approach LOS	B					
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization		41.4%		ICU Level of Service		A
Analysis Period (min)		15				










6: Meineke Driveway & Route 107
 HCM Unsignalized Intersection Capacity Analysis

2009 Existing
 Saturday Midday

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations				 	 	
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	0	14	0	1080	1069	9
Peak Hour Factor	0.70	0.70	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	20	0	1200	1188	10
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh						
Upstream signal (ft)					479	
pX, platoon unblocked	0.80	0.80	0.80			
vC, conflicting volume	1793	599	1198			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1743	259	1003			
tC, single (s)	6.8	7.0	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.2			
p0 queue free %	100	97	100			
cM capacity (veh/h)	64	583	562			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	20	600	600	792	406	
Volume Left	0	0	0	0	0	
Volume Right	20	0	0	0	10	
cSH	583	1700	1700	1700	1700	
Volume to Capacity	0.03	0.35	0.35	0.47	0.24	
Queue Length 95th (ft)	3	0	0	0	0	
Control Delay (s)	11.4	0.0	0.0	0.0	0.0	
Lane LOS	B					
Approach Delay (s)	11.4	0.0		0.0		
Approach LOS	B					
Intersection Summary						
Average Delay			0.1			
Intersection Capacity Utilization		39.8%		ICU Level of Service		A
Analysis Period (min)			15			












6: Meineke Driveway & Route 107
 HCM Unsignalized Intersection Capacity Analysis

2014 No-Build
 Weekday AM

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	0	4	0	1189	897	11
Peak Hour Factor	0.50	0.50	0.81	0.81	0.90	0.90
Hourly flow rate (vph)	0	8	0	1468	997	12
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh						
Upstream signal (ft)					479	
pX, platoon unblocked	0.88	0.88	0.88			
vC, conflicting volume	1737	504	1009			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1702	309	879			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	99	100			
cM capacity (veh/h)	75	613	687			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	8	734	734	664	344	
Volume Left	0	0	0	0	0	
Volume Right	8	0	0	0	12	
cSH	613	1700	1700	1700	1700	
Volume to Capacity	0.01	0.43	0.43	0.39	0.20	
Queue Length 95th (ft)	1	0	0	0	0	
Control Delay (s)	11.0	0.0	0.0	0.0	0.0	
Lane LOS	B					
Approach Delay (s)	11.0	0.0		0.0		
Approach LOS	B					
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization		36.2%		ICU Level of Service		A
Analysis Period (min)			15			










6: Meineke Driveway & Route 107
 HCM Unsignalized Intersection Capacity Analysis

2014 No-Build
 Weekday PM

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations				 	 	
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	0	8	0	1137	1254	1
Peak Hour Factor	1.00	1.00	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	8	0	1263	1393	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)					479	
pX, platoon unblocked	0.82	0.82	0.82			
vC, conflicting volume	2026	697	1394			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2031	402	1257			
tC, single (s)	6.8	7.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.2			
p0 queue free %	100	98	100			
cM capacity (veh/h)	41	463	457			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	8	632	632	929	466	
Volume Left	0	0	0	0	0	
Volume Right	8	0	0	0	1	
cSH	463	1700	1700	1700	1700	
Volume to Capacity	0.02	0.37	0.37	0.55	0.27	
Queue Length 95th (ft)	1	0	0	0	0	
Control Delay (s)	12.9	0.0	0.0	0.0	0.0	
Lane LOS	B					
Approach Delay (s)	12.9	0.0		0.0		
Approach LOS	B					
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization		44.7%		ICU Level of Service		A
Analysis Period (min)			15			







6: Meineke Driveway & Route 107
 HCM Unsignalized Intersection Capacity Analysis

2014 No-Build
 Saturday Midday

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	0	14	0	1184	1158	9
Peak Hour Factor	0.70	0.70	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	20	0	1316	1287	10
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh						
Upstream signal (ft)					479	
pX, platoon unblocked	0.78	0.78	0.78			
vC, conflicting volume	1949	648	1297			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1935	270	1100			
tC, single (s)	6.8	7.0	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.2			
p0 queue free %	100	96	100			
cM capacity (veh/h)	46	557	502			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	20	658	658	858	439	
Volume Left	0	0	0	0	0	
Volume Right	20	0	0	0	10	
cSH	557	1700	1700	1700	1700	
Volume to Capacity	0.04	0.39	0.39	0.50	0.26	
Queue Length 95th (ft)	3	0	0	0	0	
Control Delay (s)	11.7	0.0	0.0	0.0	0.0	
Lane LOS	B					
Approach Delay (s)	11.7	0.0		0.0		
Approach LOS	B					
Intersection Summary						
Average Delay			0.1			
Intersection Capacity Utilization			42.3%		ICU Level of Service	A
Analysis Period (min)			15			







6: Meineke Driveway & Route 107
 HCM Unsignalized Intersection Capacity Analysis

2014 Build
 Weekday AM

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↑↑	↑↓	
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	0	4	0	1217	912	11
Peak Hour Factor	0.50	0.50	0.81	0.81	0.90	0.90
Hourly flow rate (vph)	0	8	0	1502	1013	12
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)					479	
pX, platoon unblocked	0.86	0.86	0.86			
vC, conflicting volume	1771	513	1026			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1733	269	866			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	99	100			
cM capacity (veh/h)	69	632	675			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	8	751	751	676	350	
Volume Left	0	0	0	0	0	
Volume Right	8	0	0	0	12	
cSH	632	1700	1700	1700	1700	
Volume to Capacity	0.01	0.44	0.44	0.40	0.21	
Queue Length 95th (ft)	1	0	0	0	0	
Control Delay (s)	10.8	0.0	0.0	0.0	0.0	
Lane LOS	B					
Approach Delay (s)	10.8	0.0		0.0		
Approach LOS	B					
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			37.0%		ICU Level of Service	A
Analysis Period (min)			15			







6: Meineke Driveway & Route 107
 HCM Unsignalized Intersection Capacity Analysis

2014 Build
 Weekday PM

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↑↑	↑↔	
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	0	8	0	1244	1366	1
Peak Hour Factor	1.00	1.00	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	8	0	1382	1518	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)					479	
pX, platoon unblocked	0.71	0.71	0.71			
vC, conflicting volume	2209	759	1519			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2295	252	1322			
tC, single (s)	6.8	7.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.2			
p0 queue free %	100	98	100			
cM capacity (veh/h)	24	508	376			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	8	691	691	1012	507	
Volume Left	0	0	0	0	0	
Volume Right	8	0	0	0	1	
cSH	508	1700	1700	1700	1700	
Volume to Capacity	0.02	0.41	0.41	0.60	0.30	
Queue Length 95th (ft)	1	0	0	0	0	
Control Delay (s)	12.2	0.0	0.0	0.0	0.0	
Lane LOS	B					
Approach Delay (s)	12.2	0.0		0.0		
Approach LOS	B					
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			47.8%		ICU Level of Service	A
Analysis Period (min)			15			

6: Meineke Driveway & Route 107
 HCM Unsignalized Intersection Capacity Analysis

2014 Build
 Saturday Midday

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↑↑	↑↔	
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	0	14	0	1332	1292	9
Peak Hour Factor	0.70	0.70	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	20	0	1480	1436	10
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)					479	
pX, platoon unblocked	0.69	0.69	0.69			
vC, conflicting volume	2181	723	1446			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2262	150	1197			
tC, single (s)	6.8	7.0	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.2			
p0 queue free %	100	97	100			
cM capacity (veh/h)	25	590	408			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	20	740	740	957	489	
Volume Left	0	0	0	0	0	
Volume Right	20	0	0	0	10	
cSH	590	1700	1700	1700	1700	
Volume to Capacity	0.03	0.44	0.44	0.56	0.29	
Queue Length 95th (ft)	3	0	0	0	0	
Control Delay (s)	11.3	0.0	0.0	0.0	0.0	
Lane LOS	B					
Approach Delay (s)	11.3	0.0		0.0		
Approach LOS	B					
Intersection Summary						
Average Delay			0.1			
Intersection Capacity Utilization		46.0%		ICU Level of Service	A	
Analysis Period (min)			15			

Queuing and Blocking Report

2008 Existing
Weekday AM

Intersection: 7: Fays Avenue & Route 107











Movement	EB	NB	NB	SB
Directions Served	LR	L	T	TR
Maximum Queue (ft)	133	74	316	780
Average Queue (ft)	53	26	125	268
95th Queue (ft)	99	54	274	586
Link Distance (ft)	887		857	1677
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		100		
Storage Blk Time (%)			5	
Queuing Penalty (veh)			2	

Network Summary

Network wide Queuing Penalty: 5

7: Fays Avenue & Route 107
 HCM Signalized Intersection Capacity Analysis

2009 Existing
 Weekday AM

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	
Lane Util. Factor	1.00		1.00	1.00	1.00	
Frt	0.95		1.00	1.00	1.00	
Flt Protected	0.97		0.95	1.00	1.00	
Satd. Flow (prot)	1725		1752	1776	1770	
Flt Permitted	0.97		0.11	1.00	1.00	
Satd. Flow (perm)	1725		197	1776	1770	
Volume (vph)	52	34	29	1049	848	27
Peak-hour factor, PHF	0.85	0.85	0.88	0.88	0.97	0.97
Adj. Flow (vph)	61	40	33	1192	874	28
RTOR Reduction (vph)	34	0	0	0	2	0
Lane Group Flow (vph)	67	0	33	1192	900	0
Heavy Vehicles (%)	2%	0%	3%	7%	7%	4%
Turn Type			pm+pt			
Protected Phases	4		1	1 2	2	
Permitted Phases			1 2			
Actuated Green, G (s)	5.1		46.9	51.9	36.5	
Effective Green, g (s)	6.1		48.9	52.9	37.5	
Actuated g/C Ratio	0.09		0.73	0.79	0.56	
Clearance Time (s)	5.0		5.0		5.0	
Vehicle Extension (s)	3.0		3.0		3.0	
Lane Grp Cap (vph)	157		408	1402	991	
v/s Ratio Prot	c0.04		0.01	c0.67	c0.51	
v/s Ratio Perm			0.05			
v/c Ratio	0.43		0.08	0.85	0.91	
Uniform Delay, d1	28.8		7.7	4.5	13.2	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	1.9		0.1	5.1	11.8	
Delay (s)	30.7		7.8	9.7	25.0	
Level of Service	C		A	A	C	
Approach Delay (s)	30.7			9.6	25.0	
Approach LOS	C			A	C	

Intersection Summary

HCM Average Control Delay	16.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	67.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	67.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

7: Fays Avenue & Route 107
 Timing Report, Sorted By Phase

2009 Existing
 Weekday AM



Phase Number	1	2	4
Movement	NBTL	NBSB	EBL
Lead/Lag	Lead	Lag	
Lead-Lag Optimize			
Recall Mode	None	Min	None
Maximum Split (s)	15	45	12
Maximum Split (%)	20.8%	62.5%	16.7%
Minimum Split (s)	9	15	12
Yellow Time (s)	4	4	4
All-Red Time (s)	1	1	1
Minimum Initial (s)	4	10	7
Vehicle Extension (s)	3	3	3
Minimum Gap (s)	3	3	3
Time Before Reduce (s)	0	0	0
Time To Reduce (s)	0	0	0
Walk Time (s)			
Flash Dont Walk (s)			
Dual Entry	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes
Start Time (s)	0	15	60
End Time (s)	15	60	0
Yield/Force Off (s)	10	55	67
Yield/Force Off 170(s)	10	55	67
Local Start Time (s)	57	0	45
Local Yield (s)	67	40	52
Local Yield 170(s)	67	40	52

Intersection Summary

Cycle Length	72
Control Type	Actuated-Uncoordinated
Natural Cycle	90

Splits and Phases: 7: Fays Avenue & Route 107

 ø1	 ø2	 ø4
15 s	45 s	12 s

Queuing and Blocking Report

Intersection: 7: Fays Avenue & Route 107











Movement	EB	NB	NB	SB
Directions Served	LR	L	T	TR
Maximum Queue (ft)	110	54	339	1509
Average Queue (ft)	56	27	111	422
95th Queue (ft)	103	55	236	1026
Link Distance (ft)	887		857	1677
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		100		
Storage Blk Time (%)			4	
Queuing Penalty (veh)			2	

Network Summary

Network wide Queuing Penalty: 37

7: Fays Avenue & Route 107
 HCM Signalized Intersection Capacity Analysis

2009 Existing
 Weekday PM

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	
Lane Util. Factor	1.00		1.00	1.00	1.00	
Frt	0.95		1.00	1.00	0.99	
Flt Protected	0.97		0.95	1.00	1.00	
Satd. Flow (prot)	1687		1805	1881	1851	
Flt Permitted	0.97		0.10	1.00	1.00	
Satd. Flow (perm)	1687		184	1881	1851	
Volume (vph)	47	26	51	963	990	50
Peak-hour factor, PHF	0.76	0.76	0.95	0.95	0.90	0.90
Adj. Flow (vph)	62	34	54	1014	1100	56
RTOR Reduction (vph)	31	0	0	0	3	0
Lane Group Flow (vph)	65	0	54	1014	1153	0
Heavy Vehicles (%)	6%	0%	0%	1%	2%	2%
Turn Type			pm+pt			
Protected Phases	4		1	1 2	2	
Permitted Phases			1 2			
Actuated Green, G (s)	5.4		44.3	49.3	40.3	
Effective Green, g (s)	6.4		46.3	50.3	41.3	
Actuated g/C Ratio	0.10		0.72	0.78	0.64	
Clearance Time (s)	5.0		5.0		5.0	
Vehicle Extension (s)	3.0		3.0		3.0	
Lane Grp Cap (vph)	167		257	1462	1182	
v/s Ratio Prot	c0.04		0.02	c0.54	c0.62	
v/s Ratio Perm			0.13			
v/c Ratio	0.39		0.21	0.69	0.98	
Uniform Delay, d1	27.3		14.1	3.5	11.2	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	1.5		0.4	1.4	20.4	
Delay (s)	28.8		14.5	4.9	31.6	
Level of Service	C		B	A	C	
Approach Delay (s)	28.8			5.4	31.6	
Approach LOS	C			A	C	

Intersection Summary

HCM Average Control Delay	19.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	64.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	67.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

7: Fays Avenue & Route 107
 Timing Report, Sorted By Phase

2009 Existing
 Weekday PM

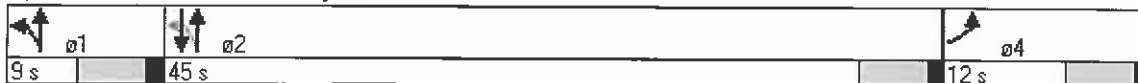


Phase Number	1	2	4
Movement	NBTL	NBSB	EBL
Lead/Lag	Lead	Lag	
Lead-Lag Optimize			
Recall Mode	None	Min	None
Maximum Split (s)	9	45	12
Maximum Split (%)	13.6%	68.2%	18.2%
Minimum Split (s)	9	15	12
Yellow Time (s)	4	4	4
All-Red Time (s)	1	1	1
Minimum Initial (s)	4	10	7
Vehicle Extension (s)	3	3	3
Minimum Gap (s)	3	3	3
Time Before Reduce (s)	0	0	0
Time To Reduce (s)	0	0	0
Walk Time (s)			
Flash Dont Walk (s)			
Dual Entry	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes
Start Time (s)	0	9	54
End Time (s)	9	54	0
Yield/Force Off (s)	4	49	61
Yield/Force Off 170(s)	4	49	61
Local Start Time (s)	57	0	45
Local Yield (s)	61	40	52
Local Yield 170(s)	61	40	52

Intersection Summary

Cycle Length	66
Control Type	Actuated-Uncoordinated
Natural Cycle	90

Splits and Phases: 7: Fays Avenue & Route 107



Queuing and Blocking Report

2008 Existing
Saturday MIDDAY

Intersection: 7: Fays Avenue & Route 107











Movement	EB	NB	NB	SB
Directions Served	LR	L	T	TR
Maximum Queue (ft)	113	125	438	1086
Average Queue (ft)	55	37	141	426
95th Queue (ft)	97	82	328	863
Link Distance (ft)	887		857	1677
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		100		
Storage Blk Time (%)		0	6	
Queuing Penalty (veh)		3	3	

Network Summary

Network wide Queuing Penalty: 201

7: Fays Avenue & Route 107
 HCM Signalized Intersection Capacity Analysis

2009 Existing
 Saturday Midday

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	
Lane Util. Factor	1.00		1.00	1.00	1.00	
Frt	0.95		1.00	1.00	0.99	
Flt Protected	0.97		0.95	1.00	1.00	
Satd. Flow (prot)	1727		1736	1863	1849	
Flt Permitted	0.97		0.10	1.00	1.00	
Satd. Flow (perm)	1727		188	1863	1849	
Volume (vph)	59	36	52	980	941	62
Peak-hour factor, PHF	0.88	0.88	0.93	0.93	0.95	0.95
Adj. Flow (vph)	67	41	56	1054	991	65
RTOR Reduction (vph)	33	0	0	0	4	0
Lane Group Flow (vph)	75	0	56	1054	1052	0
Heavy Vehicles (%)	2%	0%	4%	2%	2%	0%
Turn Type			pm+pt			
Protected Phases	4		1	1 2	2	
Permitted Phases			1 2			
Actuated Green, G (s)	5.2		44.0	49.0	37.8	
Effective Green, g (s)	6.2		46.0	50.0	38.8	
Actuated g/C Ratio	0.10		0.72	0.78	0.60	
Clearance Time (s)	5.0		5.0		5.0	
Vehicle Extension (s)	3.0		3.0		3.0	
Lane Grp Cap (vph)	167		308	1451	1117	
v/s Ratio Prot	c0.04		0.02	c0.57	c0.57	
v/s Ratio Perm			0.11			
v/c Ratio	0.45		0.18	0.73	0.94	
Uniform Delay, d1	27.4		11.1	3.6	11.7	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	1.9		0.3	1.8	15.0	
Delay (s)	29.3		11.4	5.5	26.7	
Level of Service	C		B	A	C	
Approach Delay (s)	29.3			5.8	26.7	
Approach LOS	C			A	C	

Intersection Summary

HCM Average Control Delay	16.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	64.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	65.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

7: Fays Avenue & Route 107
 Timing Report, Sorted By Phase

2009 Existing
 Saturday MIDDAY




Phase Number	1	2	4
Movement	NBTL	NBSB	EBL
Lead/Lag	Lead	Lag	
Lead-Lag Optimize			
Recall Mode	None	Min	None
Maximum Split (s)	11	45	12
Maximum Split (%)	16.2%	66.2%	17.6%
Minimum Split (s)	9	15	12
Yellow Time (s)	4	4	4
All-Red Time (s)	1	1	1
Minimum Initial (s)	4	10	7
Vehicle Extension (s)	3	3	3
Minimum Gap (s)	3	3	3
Time Before Reduce (s)	0	0	0
Time To Reduce (s)	0	0	0
Walk Time (s)			
Flash Dont Walk (s)			
Dual Entry	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes
Start Time (s)	0	11	56
End Time (s)	11	56	0
Yield/Force Off (s)	6	51	63
Yield/Force Off 170(s)	6	51	63
Local Start Time (s)	57	0	45
Local Yield (s)	63	40	52
Local Yield 170(s)	63	40	52

Intersection Summary

Cycle Length	68
Control Type	Actuated-Uncoordinated
Natural Cycle	80

Splits and Phases: 7: Fays Avenue & Route 107

 ø1	 ø2	 ø4
11 s	45 s	12 s

Queuing and Blocking Report

Intersection: 7: Fays Avenue & Route 107











Movement	EB	NB	NB	SB
Directions Served	LR	L	T	TR
Maximum Queue (ft)	129	73	531	688
Average Queue (ft)	50	31	170	404
95th Queue (ft)	93	62	394	661
Link Distance (ft)	887		857	1677
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		100		
Storage Blk Time (%)			6	
Queuing Penalty (veh)			2	

Network Summary

Network wide Queuing Penalty: 22

7: Fays Avenue & Route 107
 HCM Signalized Intersection Capacity Analysis

2014 No-Build
 Weekday AM

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	
Lane Util. Factor	1.00		1.00	1.00	1.00	
Frt	0.95		1.00	1.00	1.00	
Flt Protected	0.97		0.95	1.00	1.00	
Satd. Flow (prot)	1726		1752	1776	1770	
Flt Permitted	0.97		0.10	1.00	1.00	
Satd. Flow (perm)	1726		183	1776	1770	
Volume (vph)	56	36	31	1125	923	28
Peak-hour factor, PHF	0.85	0.85	0.88	0.88	0.97	0.97
Adj. Flow (vph)	66	42	35	1278	952	29
RTOR Reduction (vph)	33	0	0	0	2	0
Lane Group Flow (vph)	75	0	35	1278	979	0
Heavy Vehicles (%)	2%	0%	3%	7%	7%	4%
Turn Type			pm+pt			
Protected Phases	4		1	1 2	2	
Permitted Phases			1 2			
Actuated Green, G (s)	5.3		49.4	54.4	39.3	
Effective Green, g (s)	6.3		51.4	55.4	40.3	
Actuated g/C Ratio	0.09		0.74	0.79	0.58	
Clearance Time (s)	5.0		5.0		5.0	
Vehicle Extension (s)	3.0		3.0		3.0	
Lane Grp Cap (vph)	156		385	1412	1023	
v/s Ratio Prot	c0.04		0.01	c0.72	0.55	
v/s Ratio Perm			0.05			
v/c Ratio	0.48		0.09	0.91	0.96	
Uniform Delay, d1	30.1		9.8	5.2	13.9	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	2.3		0.1	8.5	18.5	
Delay (s)	32.5		9.9	13.7	32.4	
Level of Service	C		A	B	C	
Approach Delay (s)	32.5			13.6	32.4	
Approach LOS	C			B	C	

Intersection Summary

HCM Average Control Delay	22.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	69.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	71.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

7: Fays Avenue & Route 107
 Timing Report, Sorted By Phase

2014 No-Build
 Weekday AM



Phase Number	1	2	4
Movement	NBTL	NBSB	EBL
Lead/Lag	Lead	Lag	
Lead-Lag Optimize			
Recall Mode	None	Min	None
Maximum Split (s)	15	45	12
Maximum Split (%)	20.8%	62.5%	16.7%
Minimum Split (s)	9	15	12
Yellow Time (s)	4	4	4
All-Red Time (s)	1	1	1
Minimum Initial (s)	4	10	7
Vehicle Extension (s)	3	3	3
Minimum Gap (s)	3	3	3
Time Before Reduce (s)	0	0	0
Time To Reduce (s)	0	0	0
Walk Time (s)			
Flash Dont Walk (s)			
Dual Entry	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes
Start Time (s)	0	15	60
End Time (s)	15	60	0
Yield/Force Off (s)	10	55	67
Yield/Force Off 170(s)	10	55	67
Local Start Time (s)	57	0	45
Local Yield (s)	67	40	52
Local Yield 170(s)	67	40	52

Intersection Summary

Cycle Length	72
Control Type	Actuated-Uncoordinated
Natural Cycle	90

Splits and Phases: 7: Fays Avenue & Route 107

ø1	ø2	ø4
15 s	45 s	12 s

Queuing and Blocking Report

Intersection: 7: Fays Avenue & Route 107

Movement	EB	NB	NB	SB	B20	B20
Directions Served	LR	L	T	TR	T	
Maximum Queue (ft)	91	126	872	1749	592	582
Average Queue (ft)	43	45	202	1150	244	98
95th Queue (ft)	77	93	537	2180	712	446
Link Distance (ft)	887		857	1677	509	509
Upstream Blk Time (%)			0	9	11	1
Queuing Penalty (veh)			0	123	68	6
Storage Bay Dist (ft)		100				
Storage Blk Time (%)			7			
Queuing Penalty (veh)			4			

Network Summary

Network wide Queuing Penalty: 428

7: Fays Avenue & Route 107
 HCM Signalized Intersection Capacity Analysis

2014 No-Build
 Weekday PM

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	
Lane Util. Factor	1.00		1.00	1.00	1.00	
Frt	0.95		1.00	1.00	0.99	
Flt Protected	0.97		0.95	1.00	1.00	
Satd. Flow (prot)	1687		1805	1881	1851	
Flt Permitted	0.97		0.10	1.00	1.00	
Satd. Flow (perm)	1687		184	1881	1851	
Volume (vph)	49	27	54	1081	1103	53
Peak-hour factor, PHF	0.76	0.76	0.95	0.95	0.90	0.90
Adj. Flow (vph)	64	36	57	1138	1226	59
RTOR Reduction (vph)	32	0	0	0	3	0
Lane Group Flow (vph)	68	0	57	1138	1282	0
Heavy Vehicles (%)	6%	0%	0%	1%	2%	2%
Turn Type			pm+pt			
Protected Phases	4		1	1 2	2	
Permitted Phases			1 2			
Actuated Green, G (s)	5.4		44.3	49.3	40.3	
Effective Green, g (s)	6.4		46.3	50.3	41.3	
Actuated g/C Ratio	0.10		0.72	0.78	0.64	
Clearance Time (s)	5.0		5.0		5.0	
Vehicle Extension (s)	3.0		3.0		3.0	
Lane Grp Cap (vph)	167		257	1462	1182	
v/s Ratio Prot	c0.04		0.02	c0.60	c0.69	
v/s Ratio Perm			0.14			
v/c Ratio	0.41		0.22	0.78	1.08	
Uniform Delay, d1	27.4		28.4	4.1	11.7	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	1.6		0.4	2.7	52.4	
Delay (s)	29.0		28.9	6.7	64.1	
Level of Service	C		C	A	E	
Approach Delay (s)	29.0			7.8	64.1	
Approach LOS	C			A	E	

Intersection Summary

HCM Average Control Delay	36.7	HCM Level of Service	D
HCM Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	64.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	73.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

7: Fays Avenue & Route 107
 Timing Report, Sorted By Phase

2014 No-Build
 Weekday PM



Phase Number	1	2	4
Movement	NBTL	NBSB	EBL
Lead/Lag	Lead	Lag	
Lead-Lag Optimize			
Recall Mode	None	Min	None
Maximum Split (s)	9	45	12
Maximum Split (%)	13.6%	68.2%	18.2%
Minimum Split (s)	9	15	12
Yellow Time (s)	4	4	4
All-Red Time (s)	1	1	1
Minimum Initial (s)	4	10	7
Vehicle Extension (s)	3	3	3
Minimum Gap (s)	3	3	3
Time Before Reduce (s)	0	0	0
Time To Reduce (s)	0	0	0
Walk Time (s)			
Flash Dont Walk (s)			
Dual Entry	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes
Start Time (s)	0	9	54
End Time (s)	9	54	0
Yield/Force Off (s)	4	49	61
Yield/Force Off 170(s)	4	49	61
Local Start Time (s)	57	0	45
Local Yield (s)	61	40	52
Local Yield 170(s)	61	40	52

Intersection Summary

Cycle Length	66
Control Type	Actuated-Uncoordinated
Natural Cycle	90

Splits and Phases: 7: Fays Avenue & Route 107

 ø1	 ø2	 ø4
9 s	45 s	12 s

Queuing and Blocking Report

Intersection: 7: Fays Avenue & Route 107











Movement	EB	NB	NB	SB
Directions Served	LR	L	T	TR
Maximum Queue (ft)	153	126	525	863
Average Queue (ft)	62	34	184	492
95th Queue (ft)	114	72	375	841
Link Distance (ft)	887		857	1677
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		100		
Storage Blk Time (%)			7	
Queuing Penalty (veh)			4	

Network Summary

Network wide Queuing Penalty: 77

7: Fays Avenue & Route 107
 HCM Signalized Intersection Capacity Analysis

2014 No-Build
 Saturday MIDDAY

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	
Lane Util. Factor	1.00		1.00	1.00	1.00	
Frt	0.95		1.00	1.00	0.99	
Flt Protected	0.97		0.95	1.00	1.00	
Satd. Flow (prot)	1727		1736	1863	1850	
Flt Permitted	0.97		0.10	1.00	1.00	
Satd. Flow (perm)	1727		177	1863	1850	
Volume (vph)	62	38	55	1078	1020	66
Peak-hour factor, PHF	0.88	0.88	0.93	0.93	0.95	0.95
Adj. Flow (vph)	70	43	59	1159	1074	69
RTOR Reduction (vph)	33	0	0	0	3	0
Lane Group Flow (vph)	80	0	59	1159	1140	0
Heavy Vehicles (%)	2%	0%	4%	2%	2%	0%
Turn Type			pm+pt			
Protected Phases	4		1	1 2	2	
Permitted Phases			1 2			
Actuated Green, G (s)	5.4		46.2	51.2	40.2	
Effective Green, g (s)	6.4		48.2	52.2	41.2	
Actuated g/C Ratio	0.10		0.72	0.78	0.62	
Clearance Time (s)	5.0		5.0		5.0	
Vehicle Extension (s)	3.0		3.0		3.0	
Lane Grp Cap (vph)	166		292	1460	1144	
v/s Ratio Prot	c0.05		0.02	c0.62	c0.62	
v/s Ratio Perm			0.12			
v/c Ratio	0.48		0.20	0.79	1.00	
Uniform Delay, d1	28.5		14.9	4.1	12.6	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	2.2		0.3	3.1	25.5	
Delay (s)	30.7		15.2	7.2	38.1	
Level of Service	C		B	A	D	
Approach Delay (s)	30.7			7.6	38.1	
Approach LOS	C			A	D	
Intersection Summary						
HCM Average Control Delay			22.7		HCM Level of Service	C
HCM Volume to Capacity ratio			0.93			
Actuated Cycle Length (s)			66.6		Sum of lost time (s)	12.0
Intersection Capacity Utilization			70.2%		ICU Level of Service	C
Analysis Period (min)			15			
c Critical Lane Group						

7: Fays Avenue & Route 107
 Timing Report, Sorted By Phase

2014 No-Build
 Saturday MIDDAY



Phase Number	1	2	4
Movement	NBTL	NBSB	EBL
Lead/Lag	Lead	Lag	
Lead-Lag Optimize		Yes	
Recall Mode	None	Min	None
Maximum Split (s)	11	45	12
Maximum Split (%)	16.2%	66.2%	17.6%
Minimum Split (s)	9	15	12
Yellow Time (s)	4	4	4
All-Red Time (s)	1	1	1
Minimum Initial (s)	4	10	7
Vehicle Extension (s)	3	3	3
Minimum Gap (s)	3	3	3
Time Before Reduce (s)	0	0	0
Time To Reduce (s)	0	0	0
Walk Time (s)			
Flash Dont Walk (s)			
Dual Entry	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes
Start Time (s)	0	11	56
End Time (s)	11	56	0
Yield/Force Off (s)	6	51	63
Yield/Force Off 170(s)	6	51	63
Local Start Time (s)	57	0	45
Local Yield (s)	63	40	52
Local Yield 170(s)	63	40	52

Intersection Summary

Cycle Length	68
Control Type	Actuated-Uncoordinated
Natural Cycle	90

Splits and Phases: 7: Fays Avenue & Route 107

01	02	04
11 s	45 s	12 s

Queuing and Blocking Report

Intersection: 7: Fays Avenue & Route 107











Movement	EB	NB	NB	SB
Directions Served	LR	L	T	TR
Maximum Queue (ft)	91	126	525	806
Average Queue (ft)	48	17	144	370
95th Queue (ft)	80	64	349	694
Link Distance (ft)	887		857	1677
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		100		
Storage Blk Time (%)			6	
Queuing Penalty (veh)			2	

Network Summary

Network wide Queuing Penalty: 12

7: Fays Avenue & Route 107
 HCM Signalized Intersection Capacity Analysis

2014 Build
 Weekday AM

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	
Lane Util. Factor	1.00		1.00	1.00	1.00	
Frt	0.95		1.00	1.00	1.00	
Flt Protected	0.97		0.95	1.00	1.00	
Satd. Flow (prot)	1727		1752	1776	1770	
Flt Permitted	0.97		0.10	1.00	1.00	
Satd. Flow (perm)	1727		179	1776	1770	
Volume (vph)	58	36	31	1150	936	30
Peak-hour factor, PHF	0.85	0.85	0.88	0.88	0.97	0.97
Adj. Flow (vph)	68	42	35	1307	965	31
RTOR Reduction (vph)	32	0	0	0	2	0
Lane Group Flow (vph)	78	0	35	1307	994	0
Heavy Vehicles (%)	2%	0%	3%	7%	7%	4%
Turn Type			pm+pt			
Protected Phases	4		1	1 2	2	
Permitted Phases			1 2			
Actuated Green, G (s)	5.4		50.3	55.3	40.2	
Effective Green, g (s)	6.4		52.3	56.3	41.2	
Actuated g/C Ratio	0.09		0.74	0.80	0.58	
Clearance Time (s)	5.0		5.0		5.0	
Vehicle Extension (s)	3.0		3.0		3.0	
Lane Grp Cap (vph)	156		379	1414	1031	
v/s Ratio Prot	c0.05		0.01	c0.74	0.56	
v/s Ratio Perm			0.05			
v/c Ratio	0.50		0.09	0.92	0.96	
Uniform Delay, d1	30.6		10.3	5.6	14.1	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	2.5		0.1	10.4	19.8	
Delay (s)	33.2		10.4	15.9	33.9	
Level of Service	C		B	B	C	
Approach Delay (s)	33.2			15.8	33.9	
Approach LOS	C			B	C	
Intersection Summary						
HCM Average Control Delay			23.9		HCM Level of Service	C
HCM Volume to Capacity ratio			0.88			
Actuated Cycle Length (s)			70.7		Sum of lost time (s)	8.0
Intersection Capacity Utilization			73.0%		ICU Level of Service	D
Analysis Period (min)			15			
c Critical Lane Group						

7: Fays Avenue & Route 107
 Timing Report, Sorted By Phase

2014 Build
 Weekday AM



Phase Number	1	2	4
Movement	NBTL	NBSB	EBL
Lead/Lag	Lead	Lag	
Lead-Lag Optimize			
Recall Mode	None	Min	None
Maximum Split (s)	15	45	12
Maximum Split (%)	20.8%	62.5%	16.7%
Minimum Split (s)	9	15	12
Yellow Time (s)	4	4	4
All-Red Time (s)	1	1	1
Minimum Initial (s)	4	10	7
Vehicle Extension (s)	3	3	3
Minimum Gap (s)	3	3	3
Time Before Reduce (s)	0	0	0
Time To Reduce (s)	0	0	0
Walk Time (s)			
Flash Dont Walk (s)			
Dual Entry	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes
Start Time (s)	0	15	60
End Time (s)	15	60	0
Yield/Force Off (s)	10	55	67
Yield/Force Off 170(s)	10	55	67
Local Start Time (s)	57	0	45
Local Yield (s)	67	40	52
Local Yield 170(s)	67	40	52

Intersection Summary

Cycle Length		72
Control Type	Actuated-Uncoordinated	
Natural Cycle		90

Splits and Phases: 7: Fays Avenue & Route 107

ø1	ø2	ø4
15 s	45 s	12 s

Queuing and Blocking Report

Intersection: 7: Fays Avenue & Route 107











Movement	EB	NB	NB	SB	B20	B20
Directions Served	LR	L	T	TR	T	
Maximum Queue (ft)	195	126	872	1749	585	584
Average Queue (ft)	60	50	245	1241	295	183
95th Queue (ft)	130	101	618	2300	745	622
Link Distance (ft)	887		857	1677	509	509
Upstream Blk Time (%)			1	16	19	2
Queuing Penalty (veh)			0	221	128	11
Storage Bay Dist (ft)		100				
Storage Blk Time (%)		0	9			
Queuing Penalty (veh)		2	5			

Network Summary

Network wide Queuing Penalty: 1536

7: Fays Avenue & Route 107
 HCM Signalized Intersection Capacity Analysis

2014 Build
 Weekday PM

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	
Lane Util. Factor	1.00		1.00	1.00	1.00	
Fr _t	0.96		1.00	1.00	0.99	
Fl _t Protected	0.97		0.95	1.00	1.00	
Satd. Flow (prot)	1690		1805	1881	1850	
Fl _t Permitted	0.97		0.10	1.00	1.00	
Satd. Flow (perm)	1690		184	1881	1850	
Volume (vph)	60	27	54	1177	1204	64
Peak-hour factor, PHF	0.76	0.76	0.95	0.95	0.90	0.90
Adj. Flow (vph)	79	36	57	1239	1338	71
RTOR Reduction (vph)	25	0	0	0	3	0
Lane Group Flow (vph)	90	0	57	1239	1406	0
Heavy Vehicles (%)	6%	0%	0%	1%	2%	2%
Turn Type			pm+pt			
Protected Phases	4		1	1 2	2	
Permitted Phases			1 2			
Actuated Green, G (s)	5.4		44.3	49.3	40.3	
Effective Green, g (s)	6.4		46.3	50.3	41.3	
Actuated g/C Ratio	0.10		0.72	0.78	0.64	
Clearance Time (s)	5.0		5.0		5.0	
Vehicle Extension (s)	3.0		3.0		3.0	
Lane Grp Cap (vph)	167		257	1462	1181	
v/s Ratio Prot	c0.05		0.02	c0.66	c0.76	
v/s Ratio Perm			0.14			
v/c Ratio	0.54		0.22	0.85	1.19	
Uniform Delay, d ₁	27.7		28.4	4.7	11.7	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d ₂	3.3		0.4	4.8	94.4	
Delay (s)	31.0		28.9	9.5	106.1	
Level of Service	C		C	A	F	
Approach Delay (s)	31.0			10.3	106.1	
Approach LOS	C			B	F	
Intersection Summary						
HCM Average Control Delay			59.0		HCM Level of Service	E
HCM Volume to Capacity ratio			1.10			
Actuated Cycle Length (s)			64.7		Sum of lost time (s)	12.0
Intersection Capacity Utilization			79.7%		ICU Level of Service	D
Analysis Period (min)			15			
c Critical Lane Group						

7: Fays Avenue & Route 107
 Timing Report, Sorted By Phase

2014 Build
 Weekday PM

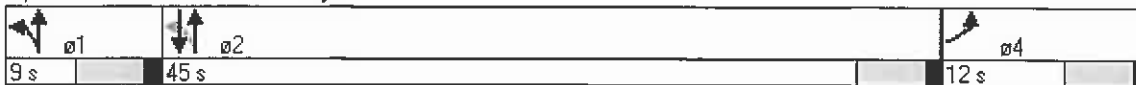


Phase Number	1	2	4
Movement	NBTL	NBSB	EBL
Lead/Lag	Lead	Lag	
Lead-Lag Optimize			
Recall Mode	None	Min	None
Maximum Split (s)	9	45	12
Maximum Split (%)	13.6%	68.2%	18.2%
Minimum Split (s)	9	15	12
Yellow Time (s)	4	4	4
All-Red Time (s)	1	1	1
Minimum Initial (s)	4	10	7
Vehicle Extension (s)	3	3	3
Minimum Gap (s)	3	3	3
Time Before Reduce (s)	0	0	0
Time To Reduce (s)	0	0	0
Walk Time (s)			
Flash Dont Walk (s)			
Dual Entry	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes
Start Time (s)	0	9	54
End Time (s)	9	54	0
Yield/Force Off (s)	4	49	61
Yield/Force Off 170(s)	4	49	61
Local Start Time (s)	57	0	45
Local Yield (s)	61	40	52
Local Yield 170(s)	61	40	52

Intersection Summary

Cycle Length	66
Control Type	Actuated-Uncoordinated
Natural Cycle	130

Splits and Phases: 7: Fays Avenue & Route 107



Queuing and Blocking Report

Intersection: 7: Fays Avenue & Route 107











Movement	EB	NB	NB	SB	B20	B20
Directions Served	LR	L	T	TR	T	
Maximum Queue (ft)	133	72	872	1768	604	584
Average Queue (ft)	64	32	462	1698	443	197
95th Queue (ft)	103	65	1035	1887	839	635
Link Distance (ft)	887		857	1677	509	509
Upstream Blk Time (%)			7	25	27	2
Queuing Penalty (veh)			0	329	180	13
Storage Bay Dist (ft)		100				
Storage Blk Time (%)			13			
Queuing Penalty (veh)			7			

Network Summary

Network wide Queuing Penalty: 3229

7: Fays Avenue & Route 107
 HCM Signalized Intersection Capacity Analysis

2014 Build
 Saturday Midday

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	
Lane Util. Factor	1.00		1.00	1.00	1.00	
Fr _t	0.96		1.00	1.00	0.99	
Fl _t Protected	0.97		0.95	1.00	1.00	
Satd. Flow (prot)	1734		1736	1863	1849	
Fl _t Permitted	0.97		0.10	1.00	1.00	
Satd. Flow (perm)	1734		177	1863	1849	
Volume (vph)	77	38	55	1211	1140	80
Peak-hour factor, PHF	0.88	0.88	0.93	0.93	0.95	0.95
Adj. Flow (vph)	88	43	59	1302	1200	84
RTOR Reduction (vph)	26	0	0	0	3	0
Lane Group Flow (vph)	105	0	59	1302	1281	0
Heavy Vehicles (%)	2%	0%	4%	2%	2%	0%
Turn Type			pm+pt			
Protected Phases	4		1	1 2	2	
Permitted Phases			1 2			
Actuated Green, G (s)	5.4		46.2	51.2	40.2	
Effective Green, g (s)	6.4		48.2	52.2	41.2	
Actuated g/C Ratio	0.10		0.72	0.78	0.62	
Clearance Time (s)	5.0		5.0		5.0	
Vehicle Extension (s)	3.0		3.0		3.0	
Lane Grp Cap (vph)	167		292	1460	1144	
v/s Ratio Prot	c0.06		0.02	c0.70	c0.69	
v/s Ratio Perm			0.12			
v/c Ratio	0.63		0.20	0.89	1.12	
Uniform Delay, d ₁	29.0		27.6	5.2	12.7	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d ₂	7.2		0.3	7.3	65.8	
Delay (s)	36.1		27.9	12.5	78.5	
Level of Service	D		C	B	E	
Approach Delay (s)	36.1			13.1	78.5	
Approach LOS	D			B	E	
Intersection Summary						
HCM Average Control Delay			44.4		HCM Level of Service	D
HCM Volume to Capacity ratio			1.06			
Actuated Cycle Length (s)			66.6		Sum of lost time (s)	12.0
Intersection Capacity Utilization			78.1%		ICU Level of Service	D
Analysis Period (min)			15			
c Critical Lane Group						

7: Fays Avenue & Route 107
 Timing Report, Sorted By Phase

2014 Build
 Saturday MIDDAY



Phase Number	1	2	4
Movement	NBTL	NBSB	EBL
Lead/Lag	Lead	Lag	
Lead-Lag Optimize		Yes	
Recall Mode	None	Min	None
Maximum Split (s)	11	45	12
Maximum Split (%)	16.2%	66.2%	17.6%
Minimum Split (s)	9	15	12
Yellow Time (s)	4	4	4
All-Red Time (s)	1	1	1
Minimum Initial (s)	4	10	7
Vehicle Extension (s)	3	3	3
Minimum Gap (s)	3	3	3
Time Before Reduce (s)	0	0	0
Time To Reduce (s)	0	0	0
Walk Time (s)			
Flash Dont Walk (s)			
Dual Entry	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes
Start Time (s)	0	11	56
End Time (s)	11	56	0
Yield/Force Off (s)	6	51	63
Yield/Force Off 170(s)	6	51	63
Local Start Time (s)	57	0	45
Local Yield (s)	63	40	52
Local Yield 170(s)	63	40	52

Intersection Summary

Cycle Length	68
Control Type	Actuated-Uncoordinated
Natural Cycle	120

Splits and Phases: 7: Fays Avenue & Route 107

ø1	ø2	ø4
11 s	45 s	12 s

Queuing and Blocking Report

Intersection: 4: Main Wal-Mart Driveway & Route 107

Movement	EB	EB	EB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	LT	R	LTR	L	L	T	TR	L	T	T	R
Maximum Queue (ft)	45	67	62	30	69	82	253	213	49	244	198	53
Average Queue (ft)	10	26	18	3	24	38	66	61	11	114	52	9
95th Queue (ft)	33	52	48	18	56	67	170	149	40	231	151	35
Link Distance (ft)		807		649			380	380		551	551	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	150		120		315	315			275			275
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 5: Meineke Driveway & Route 107

Movement	EB
Directions Served	R
Maximum Queue (ft)	27
Average Queue (ft)	5
95th Queue (ft)	22
Link Distance (ft)	113
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 6: Fays Avenue & Route 107












Movement	EB	NB	NB	SB	SB
Directions Served	LR	L	T	T	R
Maximum Queue (ft)	133	75	872	720	114
Average Queue (ft)	58	25	242	374	8
95th Queue (ft)	104	61	574	678	46
Link Distance (ft)	875		857	1500	
Upstream Blk Time (%)			0		
Queuing Penalty (veh)			0		
Storage Bay Dist (ft)		100			100
Storage Blk Time (%)			8	20	0
Queuing Penalty (veh)			2	6	0

Network Summary

Network wide Queuing Penalty: 24

6: Fays Avenue & Route 107
 HCM Signalized Intersection Capacity Analysis

2014 Build Mitigated
 Weekday AM

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	1.00		1.00	1.00	1.00	1.00
Frt	0.95		1.00	1.00	1.00	0.85
Flt Protected	0.97		0.95	1.00	1.00	1.00
Satd. Flow (prot)	1727		1752	1776	1776	1553
Flt Permitted	0.97		0.12	1.00	1.00	1.00
Satd. Flow (perm)	1727		220	1776	1776	1553
Volume (vph)	58	36	31	1150	936	30
Peak-hour factor, PHF	0.85	0.85	0.88	0.88	0.97	0.97
Adj. Flow (vph)	68	42	35	1307	965	31
RTOR Reduction (vph)	26	0	0	0	0	7
Lane Group Flow (vph)	84	0	35	1307	965	24
Heavy Vehicles (%)	2%	0%	3%	7%	7%	4%
Turn Type			pm+pt			Perm
Protected Phases	4		1	1 2	2	
Permitted Phases			1 2			2
Actuated Green, G (s)	5.1		59.1	64.1	48.4	48.4
Effective Green, g (s)	6.1		61.1	65.1	49.4	49.4
Actuated g/C Ratio	0.08		0.77	0.82	0.62	0.62
Clearance Time (s)	5.0		5.0		5.0	5.0
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Lane Grp Cap (vph)	133		396	1460	1108	969
v/s Ratio Prot	c0.05		0.01	c0.74	0.54	
v/s Ratio Perm			0.06			0.02
v/c Ratio	0.63		0.09	0.90	0.87	0.02
Uniform Delay, d1	35.5		8.3	4.8	12.3	5.7
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	9.4		0.1	7.5	7.7	0.0
Delay (s)	44.9		8.4	12.2	19.9	5.7
Level of Service	D		A	B	B	A
Approach Delay (s)	44.9			12.1	19.5	
Approach LOS	D			B	B	
Intersection Summary						
HCM Average Control Delay			16.6		HCM Level of Service	B
HCM Volume to Capacity ratio			0.87			
Actuated Cycle Length (s)			79.2		Sum of lost time (s)	8.0
Intersection Capacity Utilization			73.0%		ICU Level of Service	D
Analysis Period (min)			15			
c Critical Lane Group						

6: Fays Avenue & Route 107
 Timing Report, Sorted By Phase

2014 Build Mitigated
 Weekday AM



Phase Number	1	2	4
Movement	NBTL	NBSB	EBL
Lead/Lag	Lead	Lag	
Lead-Lag Optimize			
Recall Mode	None	Min	None
Maximum Split (s)	15	60	12
Maximum Split (%)	17.2%	69.0%	13.8%
Minimum Split (s)	9	15	12
Yellow Time (s)	4	4	4
All-Red Time (s)	1	1	1
Minimum Initial (s)	4	10	7
Vehicle Extension (s)	3	3	3
Minimum Gap (s)	3	3	3
Time Before Reduce (s)	0	0	0
Time To Reduce (s)	0	0	0
Walk Time (s)			
Flash Dont Walk (s)			
Dual Entry	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes
Start Time (s)	0	15	75
End Time (s)	15	75	0
Yield/Force Off (s)	10	70	82
Yield/Force Off 170(s)	10	70	82
Local Start Time (s)	72	0	60
Local Yield (s)	82	55	67
Local Yield 170(s)	82	55	67

Intersection Summary

Cycle Length		87
Control Type	Actuated-Uncoordinated	
Natural Cycle		90

Splits and Phases: 6: Fays Avenue & Route 107

 ø1	 ø2	 ø4
15 s	60 s	12 s

Queuing and Blocking Report

Intersection: 4: Main Wal-Mart Driveway & Route 107

Movement	EB	EB	EB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	LT	R	LTR	L	L	T	TR	L	T	T	R
Maximum Queue (ft)	174	178	146	31	151	152	455	424	49	438	292	31
Average Queue (ft)	76	88	60	5	59	75	128	120	11	194	123	9
95th Queue (ft)	141	154	120	24	98	118	292	285	34	349	244	30
Link Distance (ft)		807		778			380	380		550	550	
Upstream Blk Time (%)							1	1				
Queuing Penalty (veh)							4	4				
Storage Bay Dist (ft)	150		120		315	315			275			275
Storage Blk Time (%)	0	3	0				1			2	0	
Queuing Penalty (veh)	1	10	1				2			0	0	

Intersection: 5: Meineke Driveway & Route 107

Movement	EB	NB	SB	SB
Directions Served	R	T	T	TR
Maximum Queue (ft)	46	57	480	430
Average Queue (ft)	6	2	138	60
95th Queue (ft)	26	19	463	294
Link Distance (ft)	113	384	380	380
Upstream Blk Time (%)			2	1
Queuing Penalty (veh)			15	4
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 6: Fays Avenue & Route 107












Movement	EB	NB	NB	SB	SB
Directions Served	LR	L	T	T	R
Maximum Queue (ft)	109	93	626	715	126
Average Queue (ft)	48	40	145	309	17
95th Queue (ft)	99	75	389	608	80
Link Distance (ft)	875		857	1500	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)		100			100
Storage Blk Time (%)		0	5	14	0
Queuing Penalty (veh)		1	3	9	0

Network Summary

Network wide Queuing Penalty: 131

6: Fays Avenue & Route 107
 HCM Signalized Intersection Capacity Analysis

2014 Build Mitigated
 Weekday PM

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	1.00		1.00	1.00	1.00	1.00
Fr _t	0.96		1.00	1.00	1.00	0.85
Fl _t Protected	0.97		0.95	1.00	1.00	1.00
Satd. Flow (prot)	1690		1805	1881	1863	1583
Fl _t Permitted	0.97		0.07	1.00	1.00	1.00
Satd. Flow (perm)	1690		138	1881	1863	1583
Volume (vph)	60	27	54	1177	1204	64
Peak-hour factor, PHF	0.76	0.76	0.95	0.95	0.90	0.90
Adj. Flow (vph)	79	36	57	1239	1338	71
RTOR Reduction (vph)	21	0	0	0	0	11
Lane Group Flow (vph)	94	0	57	1239	1338	60
Heavy Vehicles (%)	6%	0%	0%	1%	2%	2%
Turn Type			pm+pt			Perm
Protected Phases	4		1	1 2	2	
Permitted Phases			1 2			2
Actuated Green, G (s)	5.4		58.2	63.2	54.2	54.2
Effective Green, g (s)	6.4		60.2	64.2	55.2	55.2
Actuated g/C Ratio	0.08		0.77	0.82	0.70	0.70
Clearance Time (s)	5.0		5.0		5.0	5.0
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Lane Grp Cap (vph)	138		212	1536	1308	1112
v/s Ratio Prot	c0.06		0.02	c0.66	c0.72	
v/s Ratio Perm			0.19			0.04
v/c Ratio	0.68		0.27	0.81	1.02	0.05
Uniform Delay, d ₁	35.1		35.6	3.9	11.7	3.6
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d ₂	12.9		0.7	3.2	30.9	0.0
Delay (s)	48.0		36.3	7.1	42.6	3.6
Level of Service	D		D	A	D	A
Approach Delay (s)	48.0			8.4	40.6	
Approach LOS	D			A	D	
Intersection Summary						
HCM Average Control Delay			26.1		HCM Level of Service	C
HCM Volume to Capacity ratio			0.99			
Actuated Cycle Length (s)			78.6		Sum of lost time (s)	12.0
Intersection Capacity Utilization			75.9%		ICU Level of Service	D
Analysis Period (min)			15			
c Critical Lane Group						



Phase Number	1	2	4
Movement	NBTL	NBSB	EBL
Lead/Lag	Lead	Lag	
Lead-Lag Optimize			
Recall Mode	None	Min	None
Maximum Split (s)	9	59	12
Maximum Split (%)	11.3%	73.8%	15.0%
Minimum Split (s)	9	15	12
Yellow Time (s)	4	4	4
All-Red Time (s)	1	1	1
Minimum Initial (s)	4	10	7
Vehicle Extension (s)	3	3	3
Minimum Gap (s)	3	3	3
Time Before Reduce (s)	0	0	0
Time To Reduce (s)	0	0	0
Walk Time (s)			
Flash Dont Walk (s)			
Dual Entry	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes
Start Time (s)	0	9	68
End Time (s)	9	68	0
Yield/Force Off (s)	4	63	75
Yield/Force Off 170(s)	4	63	75
Local Start Time (s)	71	0	59
Local Yield (s)	75	54	66
Local Yield 170(s)	75	54	66

Intersection Summary

Cycle Length	80
Control Type	Actuated-Uncoordinated
Natural Cycle	90

Splits and Phases: 6: Fays Avenue & Route 107

01	02	04
9 s	59 s	12 s

Queuing and Blocking Report

Intersection: 4: Main Wal-Mart Driveway & Route 107

Movement	EB	EB	EB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	LT	R	LTR	L	L	T	TR	L	T	T	R
Maximum Queue (ft)	172	255	145	32	169	173	174	125	28	441	263	120
Average Queue (ft)	85	102	68	4	79	90	74	64	9	200	138	36
95th Queue (ft)	148	172	129	22	134	140	139	120	30	315	247	79
Link Distance (ft)		807		787			380	380		550	550	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	150		120		315	315			275			275
Storage Blk Time (%)	0	3	2							2	0	
Queuing Penalty (veh)	0	12	6							0	0	

Intersection: 6: Fays Avenue & Route 107

Movement	EB	NB	NB	SB	SB
Directions Served	LR	L	T	T	R
Maximum Queue (ft)	151	123	550	740	126
Average Queue (ft)	73	39	192	406	36
95th Queue (ft)	122	79	375	701	113
Link Distance (ft)	875		857	1500	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)		100			100
Storage Blk Time (%)			8	22	0
Queuing Penalty (veh)			5	17	0

Intersection: 7: Meineke Driveway & Route 107












Movement	EB	SB	SB
Directions Served	R	T	TR
Maximum Queue (ft)	27	433	420
Average Queue (ft)	12	77	68
95th Queue (ft)	34	312	304
Link Distance (ft)	113	380	380
Upstream Blk Time (%)		1	0
Queuing Penalty (veh)		5	3
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Network Summary

Network wide Queuing Penalty: 66

6: Fays Avenue & Route 107
 HCM Signalized Intersection Capacity Analysis

2014 Build Mitigated
 Saturday MIDDAY

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	1.00		1.00	1.00	1.00	1.00
Frt	0.96		1.00	1.00	1.00	0.85
Flt Protected	0.97		0.95	1.00	1.00	1.00
Satd. Flow (prot)	1734		1736	1863	1863	1615
Flt Permitted	0.97		0.07	1.00	1.00	1.00
Satd. Flow (perm)	1734		130	1863	1863	1615
Volume (vph)	77	38	55	1211	1140	80
Peak-hour factor, PHF	0.88	0.88	0.93	0.93	0.95	0.95
Adj. Flow (vph)	88	43	59	1302	1200	84
RTOR Reduction (vph)	21	0	0	0	0	15
Lane Group Flow (vph)	110	0	59	1302	1200	69
Heavy Vehicles (%)	2%	0%	4%	2%	2%	0%
Turn Type			pm+pt			Perm
Protected Phases	4		1	1 2	2	
Permitted Phases			1 2			2
Actuated Green, G (s)	7.0		62.0	67.0	55.0	55.0
Effective Green, g (s)	8.0		64.0	68.0	56.0	56.0
Actuated g/C Ratio	0.10		0.76	0.81	0.67	0.67
Clearance Time (s)	5.0		5.0		5.0	5.0
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Lane Grp Cap (vph)	165		252	1508	1242	1077
v/s Ratio Prot	c0.06		0.02	c0.70	c0.64	
v/s Ratio Perm			0.16			0.04
v/c Ratio	0.67		0.23	0.86	0.97	0.06
Uniform Delay, d1	36.7		19.1	5.1	13.1	4.9
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	9.8		0.5	5.4	17.8	0.0
Delay (s)	46.5		19.6	10.4	31.0	4.9
Level of Service	D		B	B	C	A
Approach Delay (s)	46.5			10.8	29.2	
Approach LOS	D			B	C	

Intersection Summary

HCM Average Control Delay	21.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	84.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	77.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Phase Number	1	2	4
Movement	NBTL	NBSB	EBL
Lead/Lag	Lead	Lag	
Lead-Lag Optimize		Yes	
Recall Mode	None	Min	None
Maximum Split (s)	12	60	12
Maximum Split (%)	14.3%	71.4%	14.3%
Minimum Split (s)	9	15	12
Yellow Time (s)	4	4	4
All-Red Time (s)	1	1	1
Minimum Initial (s)	4	10	7
Vehicle Extension (s)	3	3	3
Minimum Gap (s)	3	3	3
Time Before Reduce (s)	0	0	0
Time To Reduce (s)	0	0	0
Walk Time (s)			
Flash Dont Walk (s)			
Dual Entry	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes
Start Time (s)	0	12	72
End Time (s)	12	72	0
Yield/Force Off (s)	7	67	79
Yield/Force Off 170(s)	7	67	79
Local Start Time (s)	72	0	60
Local Yield (s)	79	55	67
Local Yield 170(s)	79	55	67

Intersection Summary

Cycle Length	84
Control Type	Actuated-Uncoordinated
Natural Cycle	90

Splits and Phases: 6: Fays Avenue & Route 107

01	02	04
12 s	60 s	12 s

TRAFFIC IMPACT AND ACCESS STUDY

Walmart and Meineke Expansions and Lowe's Home Improvement Warehouse - Salem, Massachusetts

CORRIDOR EMISSION WORKSHEETS

SimTraffic Simulation Summary

Summary of All Intervals

Start Time	11:57
End Time	12:00
Total Time (min)	1443
Time Recorded (min)	1440
# of Intervals	20
# of Recorded Intvls	19
Volume counts from "V:\08571\Environmental\08571 PM Existing Volumes.csv" data file(s)	
Volume date = 5/30/2008	
Vehs Entered	41196
Vehs Exited	41267
Starting Vehs	104
Ending Vehs	33
Denied Entry Before	0
Denied Entry After	0
Travel Distance (mi)	37778
Travel Time (hr)	1452.7
Total Delay (hr)	409.6
Total Stops	37174
Fuel Used (gal)	2750.7

Interval #0 Information Seeding

Start Time	11:57
End Time	12:00
Total Time (min)	3
Volumes adjusted by Growth Factors.	
No data recorded this interval.	

Interval #1 Information Recording

Start Time	12:00
End Time	2:00
Total Time (min)	120
Volumes adjusted by Growth Factors.	

Vehs Entered	647
Vehs Exited	746
Starting Vehs	104
Ending Vehs	5
Denied Entry Before	0
Denied Entry After	0
Travel Distance (mi)	648
Travel Time (hr)	19.9
Total Delay (hr)	2.2
Total Stops	312
Fuel Used (gal)	39.3

SimTraffic Simulation Summary

Interval #2 Information

Start Time	2:00
End Time	4:00
Total Time (min)	120

Volumes adjusted by Growth Factors.

Vehs Entered	335
Vehs Exited	335
Starting Vehs	5
Ending Vehs	5
Denied Entry Before	0
Denied Entry After	0
Travel Distance (mi)	309
Travel Time (hr)	9.1
Total Delay (hr)	0.6
Total Stops	116
Fuel Used (gal)	14.5

Interval #3 Information

Start Time	4:00
End Time	6:00
Total Time (min)	120

Volumes adjusted by Growth Factors.

Vehs Entered	810
Vehs Exited	802
Starting Vehs	5
Ending Vehs	13
Denied Entry Before	0
Denied Entry After	0
Travel Distance (mi)	745
Travel Time (hr)	22.8
Total Delay (hr)	2.5
Total Stops	395
Fuel Used (gal)	45.0

SimTraffic Simulation Summary

Interval #4 Information

Start Time	6:00
End Time	7:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Vehs Entered	1464
Vehs Exited	1430
Starting Vehs	13
Ending Vehs	47
Denied Entry Before	0
Denied Entry After	0
Travel Distance (mi)	1312
Travel Time (hr)	45.7
Total Delay (hr)	9.5
Total Stops	1043
Fuel Used (gal)	89.1

Interval #5 Information

Start Time	7:00
End Time	8:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Vehs Entered	2361
Vehs Exited	2327
Starting Vehs	47
Ending Vehs	81
Denied Entry Before	0
Denied Entry After	0
Travel Distance (mi)	2140
Travel Time (hr)	83.0
Total Delay (hr)	23.9
Total Stops	2176
Fuel Used (gal)	154.0

SimTraffic Simulation Summary

Interval #6 Information

Start Time	8:00
End Time	9:00
Total Time (min)	60
Volumes adjusted by Growth Factors.	

Vehs Entered	2619
Vehs Exited	2609
Starting Vehs	81
Ending Vehs	91
Denied Entry Before	0
Denied Entry After	3
Travel Distance (mi)	2386
Travel Time (hr)	97.1
Total Delay (hr)	30.9
Total Stops	2689
Fuel Used (gal)	188.1

Interval #7 Information

Start Time	9:00
End Time	10:00
Total Time (min)	60
Volumes adjusted by Growth Factors.	

Vehs Entered	2396
Vehs Exited	2396
Starting Vehs	91
Ending Vehs	91
Denied Entry Before	3
Denied Entry After	3
Travel Distance (mi)	2223
Travel Time (hr)	85.9
Total Delay (hr)	24.8
Total Stops	2116
Fuel Used (gal)	160.0

SimTraffic Simulation Summary

Interval #8 Information

Start Time	10:00
End Time	11:00
Total Time (min)	60
Volumes adjusted by Growth Factors.	

Vehs Entered	2293
Vehs Exited	2315
Starting Vehs	91
Ending Vehs	69
Denied Entry Before	3
Denied Entry After	0
Travel Distance (mi)	2091
Travel Time (hr)	81.2
Total Delay (hr)	23.1
Total Stops	2072
Fuel Used (gal)	153.3

Interval #9 Information

Start Time	11:00
End Time	12:00
Total Time (min)	60
Volumes adjusted by Growth Factors.	

Vehs Entered	2268
Vehs Exited	2266
Starting Vehs	69
Ending Vehs	71
Denied Entry Before	0
Denied Entry After	8
Travel Distance (mi)	2070
Travel Time (hr)	78.9
Total Delay (hr)	21.9
Total Stops	1961
Fuel Used (gal)	154.4

SimTraffic Simulation Summary

Interval #10 Information

Start Time	12:00
End Time	1:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Vehs Entered	2283
Vehs Exited	2253
Starting Vehs	71
Ending Vehs	81
Denied Entry Before	8
Denied Entry After	0
Travel Distance (mi)	2065
Travel Time (hr)	78.5
Total Delay (hr)	21.7
Total Stops	1937
Fuel Used (gal)	152.4

Interval #11 Information

Start Time	1:00
End Time	2:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Vehs Entered	2366
Vehs Exited	2355
Starting Vehs	81
Ending Vehs	92
Denied Entry Before	0
Denied Entry After	1
Travel Distance (mi)	2148
Travel Time (hr)	83.7
Total Delay (hr)	24.5
Total Stops	2242
Fuel Used (gal)	159.7

SimTraffic Simulation Summary

Interval #12 Information

Start Time 2:00
End Time 3:00
Total Time (min) 60

Volumes adjusted by Growth Factors.

Vehs Entered 2855
Vehs Exited 2649
Starting Vehs 92
Ending Vehs 98
Denied Entry Before 1
Denied Entry After 1
Travel Distance (mi) 2468
Travel Time (hr) 99.8
Total Delay (hr) 31.7
Total Stops 2715
Fuel Used (gal) 187.8

Interval #13 Information

Start Time 3:00
End Time 4:00
Total Time (min) 60

Volumes adjusted by Growth Factors.

Vehs Entered 2759
Vehs Exited 2745
Starting Vehs 98
Ending Vehs 112
Denied Entry Before 1
Denied Entry After 0
Travel Distance (mi) 2500
Travel Time (hr) 103.5
Total Delay (hr) 34.3
Total Stops 2933
Fuel Used (gal) 193.9

SimTraffic Simulation Summary

Interval #14 Information

Start Time 4:00
 End Time 5:00
 Total Time (min) 60
 Volumes adjusted by Growth Factors.

Vehs Entered 2328
Vehs Exited 2383
 Starting Vehs 112
 Ending Vehs 57
 Denied Entry Before 0
 Denied Entry After 0
 Travel Distance (mi) 2159
 Travel Time (hr) 84.0
 Total Delay (hr) 24.0
 Total Stops 2160
 Fuel Used (gal) 163.8

Interval #15 Information

Start Time 5:00
 End Time 6:00
 Total Time (min) 60
 Volumes adjusted by Growth Factors.

Vehs Entered 2705
Vehs Exited 2650
 Starting Vehs 57
 Ending Vehs 112
 Denied Entry Before 0
 Denied Entry After 0
 Travel Distance (mi) 2461
 Travel Time (hr) 99.2
 Total Delay (hr) 31.1
 Total Stops 2709
 Fuel Used (gal) 184.6

SimTraffic Simulation Summary

Interval #16 Information

Start Time	6:00
End Time	7:00
Total Time (min)	60
Volumes adjusted by Growth Factors.	
	2795
Vehs Exited	2760
Starting Vehs	112
Ending Vehs	147
Denied Entry Before	0
Denied Entry After	0
Travel Distance (mi)	2552
Travel Time (hr)	107.6
Total Delay (hr)	37.1
Total Stops	3214
Fuel Used (gal)	186.7

Interval #17 Information

Start Time	7:00
End Time	8:00
Total Time (min)	60
Volumes adjusted by Growth Factors.	
Vehs Entered	2383
Vehs Exited	2438
Starting Vehs	147
Ending Vehs	92
Denied Entry Before	0
Denied Entry After	0
Travel Distance (mi)	2229
Travel Time (hr)	87.5
Total Delay (hr)	25.9
Total Stops	2309
Fuel Used (gal)	157.3

SimTraffic Simulation Summary

Interval #18 Information

Start Time	8:00
End Time	10:00
Total Time (min)	120

Volumes adjusted by Growth Factors.

Vehs Entered	3679
Vehs Exited	3726
Starting Vehs	92
Ending Vehs	45
Denied Entry Before	0
Denied Entry After	0
Travel Distance (mi)	3366
Travel Time (hr)	121.8
Total Delay (hr)	29.3
Total Stops	2837
Fuel Used (gal)	246.3

Interval #19 Information

Start Time	10:00
End Time	12:00
Total Time (min)	120

Volumes adjusted by Growth Factors.

Vehs Entered	2070
Vehs Exited	2082
Starting Vehs	45
Ending Vehs	33
Denied Entry Before	0
Denied Entry After	0
Travel Distance (mi)	1907
Travel Time (hr)	63.4
Total Delay (hr)	10.6
Total Stops	1238
Fuel Used (gal)	120.4

SimTraffic Performance Report

1: Ravenna Avenue & Route 107 Performance by movement

Movement	EBL	EBR	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Travel Dist (mi)	36.2	13.9	2.3	45.0	16.7	1600.1	11.3	179.8	2832.8	34.7	4772.8
Fuel Used (gal)	3.1	0.9	0.2	2.1	1.4	135.1	0.6	15.2	188.8	1.6	349.1
HC Emissions (g)	10	3	0	5	5	415	3	58	655	6	1158
CO Emissions (g)	246	80	8	129	135	21467	107	2771	34958	260	60161
NOx Emissions (g)	30	6	1	11	15	1463	7	164	1931	14	3642
Vehicles Entered	388	149	16	320	171	16502	117	1012	16021	197	34893
Vehicles Exited	388	149	16	320	172	16502	117	1010	16023	197	34894
Hourly Exit Rate	16	6	1	13	7	688	5	42	668	8	1454
Denied Entry Before	0	0	0	0	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0	0	0	0	0

2: Olde Village Drive & Route 107 Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Travel Dist (mi)	129.5	24.6	64.0	1679.5	1497.3	101.3	3496.2
Fuel Used (gal)	13.6	1.1	5.9	185.7	137.2	6.7	350.2
HC Emissions (g)	40	3	21	592	426	27	1110
CO Emissions (g)	1369	43	968	38175	17948	1226	59729
NOx Emissions (g)	126	5	73	2145	1382	74	3806
Vehicles Entered	1192	226	596	15604	15338	1032	33988
Vehicles Exited	1192	226	596	15609	15346	1032	34001
Hourly Exit Rate	50	9	25	650	639	43	1417
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0

3: Wal-Mart North Driveway & Route 107 Performance by movement

Movement	WBR	NBT	NBR	SBT	SBR	All
Travel Dist (mi)	54.0	852.9	15.8	1724.9	2.3	2649.8
Fuel Used (gal)	3.2	89.9	1.3	209.6	0.2	304.1
HC Emissions (g)	7	260	4	702	1	974
CO Emissions (g)	175	14071	112	41225	43	55626
NOx Emissions (g)	15	962	11	2612	3	3603
Vehicles Entered	470	15701	293	15898	21	32383
Vehicles Exited	471	15707	293	15901	21	32393
Hourly Exit Rate	20	654	12	663	1	1350
Denied Entry Before	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0

SimTraffic Performance Report

4: Main Wal-Mart Driveway & Route 107 Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Travel Dist (mi)	185.2	85.9	82.5	813.1	809.2	68.4	2044.3
Fuel Used (gal)	14.3	4.1	9.0	47.2	74.6	3.0	152.1
HC Emissions (g)	44	10	25	114	209	10	413
CO Emissions (g)	1542	216	472	3291	7230	171	12923
NOx Emissions (g)	132	18	79	292	619	16	1155
Vehicles Entered	1193	551	1366	13406	14656	1246	32418
Vehicles Exited	1193	551	1366	13407	14662	1247	32426
Hourly Exit Rate	50	23	57	559	611	52	1351
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0

5: South Wal-Mart Driveway & Route 107 Performance by movement

Movement	EBR	NBT	SBT	SBR	All
Travel Dist (mi)	49.2	422.5	947.6	2.7	1422.0
Fuel Used (gal)	3.3	16.4	133.7	0.2	153.5
HC Emissions (g)	10	39	417	1	466
CO Emissions (g)	208	618	23924	37	24788
NOx Emissions (g)	22	62	1618	3	1705
Vehicles Entered	1146	14764	15319	44	31273
Vehicles Exited	1146	14764	15319	44	31273
Hourly Exit Rate	48	615	638	2	1303
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

6: Meineke Driveway & Route 107 Performance by movement

Movement	EBR	NBT	SBT	SBR	All
Travel Dist (mi)	3.6	1573.9	454.3	0.8	2032.6
Fuel Used (gal)	0.3	91.3	66.3	0.0	157.9
HC Emissions (g)	1	216	188	0	404
CO Emissions (g)	11	9474	11034	2	20521
NOx Emissions (g)	1	549	777	0	1328
Vehicles Entered	145	14787	16444	29	31405
Vehicles Exited	145	14789	16444	29	31407
Hourly Exit Rate	6	616	685	1	1309
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

SimTraffic Performance Report

7: Fays Avenue & Route 107 Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Travel Dist (mi)	116.3	62.9	114.0	2273.2	4962.6	237.7	7766.8
Fuel Used (gal)	11.0	3.9	7.9	116.0	210.4	9.8	359.0
HC Emissions (g)	27	12	26	316	489	24	894
CO Emissions (g)	801	442	1044	10705	6687	321	20000
NOx Emissions (g)	83	30	65	694	777	34	1683
Vehicles Entered	686	372	702	13967	15853	725	32305
Vehicles Exited	690	372	702	13972	15860	725	32321
Hourly Exit Rate	29	16	29	582	661	30	1347
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0

Total Network Performance

Travel Dist (mi)	37778.2
Fuel Used (gal)	2750.7
HC Emissions (g)	7931
CO Emissions (g)	370546
NOx Emissions (g)	25138
Vehicles Entered	41196
Vehicles Exited	41267
Hourly Exit Rate	1719
Denied Entry Before	0
Denied Entry After	0

SimTraffic Simulation Summary

Summary of All Intervals

Start Time	11:57
End Time	12:00
Total Time (min)	1443
Time Recorded (min)	1440
# of Intervals	20
# of Recorded Intvls	19
Volume counts from "V:\08571\Environmental\08571 PM No-Build Volumes.csv" data file(s)	
Volume date = 5/30/2008	
Vehs Entered	45821
Vehs Exited	45898
Starting Vehs	115
Ending Vehs	38
Denied Entry Before	1
Denied Entry After	0
Travel Distance (mi)	42080
Travel Time (hr)	1699.4
Total Delay (hr)	539.1
Total Stops	39461
Fuel Used (gal)	3062.1

Interval #0 Information Seeding

Start Time	11:57
End Time	12:00
Total Time (min)	3
Volumes adjusted by Growth Factors.	
No data recorded this interval.	

Interval #1 Information Recording

Start Time	12:00
End Time	2:00
Total Time (min)	120
Volumes adjusted by Growth Factors.	
Vehs Entered	745
Vehs Exited	858
Starting Vehs	115
Ending Vehs	2
Denied Entry Before	1
Denied Entry After	0
Travel Distance (mi)	730
Travel Time (hr)	21.8
Total Delay (hr)	2.1
Total Stops	236
Fuel Used (gal)	672.8

SimTraffic Simulation Summary

Interval #2 Information

Start Time	2:00
End Time	4:00
Total Time (min)	120
Volumes adjusted by Growth Factors.	

Vehs Entered	373
Vehs Exited	372
Starting Vehs	2
Ending Vehs	3
Denied Entry Before	0
Denied Entry After	0
Travel Distance (mi)	351
Travel Time (hr)	10.3
Total Delay (hr)	0.7
Total Stops	92
Fuel Used (gal)	16.7

Interval #3 Information

Start Time	4:00
End Time	6:00
Total Time (min)	120
Volumes adjusted by Growth Factors.	

Vehs Entered	974
Vehs Exited	965
Starting Vehs	3
Ending Vehs	12
Denied Entry Before	0
Denied Entry After	0
Travel Distance (mi)	898
Travel Time (hr)	28.0
Total Delay (hr)	3.3
Total Stops	368
Fuel Used (gal)	49.4

SimTraffic Simulation Summary

Interval #4 Information

Start Time 6:00
End Time 7:00
Total Time (min) 60

Volumes adjusted by Growth Factors.

Vehs Entered 1631
Vehs Exited 1597
Starting Vehs 12
Ending Vehs 46
Denied Entry Before 0
Denied Entry After 2
Travel Distance (mi) 1468
Travel Time (hr) 51.6
Total Delay (hr) 11.0
Total Stops 938
Fuel Used (gal) 97.2

Interval #5 Information

Start Time 7:00
End Time 8:00
Total Time (min) 60

Volumes adjusted by Growth Factors.

Vehs Entered 2664
Vehs Exited 2601
Starting Vehs 46
Ending Vehs 109
Denied Entry Before 2
Denied Entry After 0
Travel Distance (mi) 2407
Travel Time (hr) 97.6
Total Delay (hr) 31.6
Total Stops 2238
Fuel Used (gal) 173.6

SimTraffic Simulation Summary

Interval #6 Information

Start Time 8:00
End Time 9:00
Total Time (min) 60

Volumes adjusted by Growth Factors.

Vehs Entered 2864
Vehs Exited 2848
Starting Vehs 109
Ending Vehs 125
Denied Entry Before 0
Denied Entry After 0
Travel Distance (mi) 2610
Travel Time (hr) 110.6
Total Delay (hr) 38.5
Total Stops 2765
Fuel Used (gal) 202.4

Interval #7 Information

Start Time 9:00
End Time 10:00
Total Time (min) 60

Volumes adjusted by Growth Factors.

Vehs Entered 2582
Vehs Exited 2616
Starting Vehs 125
Ending Vehs 91
Denied Entry Before 0
Denied Entry After 0
Travel Distance (mi) 2400
Travel Time (hr) 93.7
Total Delay (hr) 27.5
Total Stops 1872
Fuel Used (gal) 173.4

SimTraffic Simulation Summary

Interval #8 Information

Start Time 10:00
End Time 11:00
Total Time (min) 60
Volumes adjusted by Growth Factors.

Vehs Entered 2505
Vehs Exited 2529
Starting Vehs 91
Ending Vehs 67
Denied Entry Before 0
Denied Entry After 1
Travel Distance (mi) 2301
Travel Time (hr) 91.7
Total Delay (hr) 28.4
Total Stops 1988
Fuel Used (gal) 161.6

Interval #9 Information

Start Time 11:00
End Time 12:00
Total Time (min) 60
Volumes adjusted by Growth Factors.

Vehs Entered 2579
Vehs Exited 2557
Starting Vehs 67
Ending Vehs 89
Denied Entry Before 1
Denied Entry After 3
Travel Distance (mi) 2355
Travel Time (hr) 92.2
Total Delay (hr) 27.0
Total Stops 1947
Fuel Used (gal) 174.5

SimTraffic Simulation Summary

Interval #10 Information

Start Time	12:00
End Time	1:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Vehs Entered	2516
Vehs Exited	2494
Starting Vehs	89
Ending Vehs	111
Denied Entry Before	3
Denied Entry After	0
Travel Distance (mi)	2323
Travel Time (hr)	93.3
Total Delay (hr)	29.1
Total Stops	2065
Fuel Used (gal)	172.5

Interval #11 Information

Start Time	1:00
End Time	2:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Vehs Entered	2611
Vehs Exited	2629
Starting Vehs	111
Ending Vehs	93
Denied Entry Before	0
Denied Entry After	0
Travel Distance (mi)	2390
Travel Time (hr)	96.9
Total Delay (hr)	31.2
Total Stops	2243
Fuel Used (gal)	175.5

SimTraffic Simulation Summary

Interval #12 Information

Start Time 2:00
End Time 3:00
Total Time (min) 60
Volumes adjusted by Growth Factors.

Vehs Entered 2998
Vehs Exited 2982
Starting Vehs 93
Ending Vehs 109
Denied Entry Before 0
Denied Entry After 0
Travel Distance (mi) 2751
Travel Time (hr) 124.1
Total Delay (hr) 48.3
Total Stops 3579
Fuel Used (gal) 213.7

Interval #13 Information

Start Time 3:00
End Time 4:00
Total Time (min) 60
Volumes adjusted by Growth Factors.

Vehs Entered 3104
Vehs Exited 3061
Starting Vehs 109
Ending Vehs 152
Denied Entry Before 0
Denied Entry After 0
Travel Distance (mi) 2799
Travel Time (hr) 126.3
Total Delay (hr) 48.4
Total Stops 3365
Fuel Used (gal) 218.2

SimTraffic Simulation Summary

Interval #14 Information

Start Time 4:00
 End Time 5:00
 Total Time (min) 60
 Volumes adjusted by Growth Factors.

Vehs Entered 2555
 Vehs Exited 2605
 Starting Vehs 152
 Ending Vehs 102
 Denied Entry Before 0
 Denied Entry After 0
 Travel Distance (mi) 2366
 Travel Time (hr) 97.1
 Total Delay (hr) 32.0
 Total Stops 2321
 Fuel Used (gal) 178.0

Interval #15 Information

Start Time 5:00
 End Time 6:00
 Total Time (min) 60
 Volumes adjusted by Growth Factors.

Vehs Entered 3070
 Vehs Exited 3051
 Starting Vehs 102
 Ending Vehs 121
 Denied Entry Before 0
 Denied Entry After 1
 Travel Distance (mi) 2835
 Travel Time (hr) 127.0
 Total Delay (hr) 48.8
 Total Stops 3476
 Fuel Used (gal) 216.2

SimTraffic Simulation Summary

Interval #16 Information

Start Time 6:00
End Time 7:00
Total Time (min) 60
Volumes adjusted by Growth Factors.

Vehs Entered 3068
Vehs Exited 3073
Starting Vehs 121
Ending Vehs 116
Denied Entry Before 1
Denied Entry After 0
Travel Distance (mi) 2806
Travel Time (hr) 130.0
Total Delay (hr) 52.5
Total Stops 4007
Fuel Used (gal) 220.6

Interval #17 Information

Start Time 7:00
End Time 8:00
Total Time (min) 60
Volumes adjusted by Growth Factors.

Vehs Entered 2650
Vehs Exited 2659
Starting Vehs 116
Ending Vehs 107
Denied Entry Before 0
Denied Entry After 0
Travel Distance (mi) 2443
Travel Time (hr) 98.4
Total Delay (hr) 31.3
Total Stops 2229
Fuel Used (gal) 184.0

SimTraffic Simulation Summary

Interval #18 Information

Start Time 8:00
End Time 10:00
Total Time (min) 120

Volumes adjusted by Growth Factors.

Vehs Entered 4131
Vehs Exited 4167
Starting Vehs 107
Ending Vehs 71
Denied Entry Before 0
Denied Entry After 0
Travel Distance (mi) 3813
Travel Time (hr) 141.2
Total Delay (hr) 35.8
Total Stops 2723
Fuel Used (gal) 268.3

Interval #19 Information

Start Time 10:00
End Time 12:00
Total Time (min) 120

Volumes adjusted by Growth Factors.

Vehs Entered 2201
Vehs Exited 2234
Starting Vehs 71
Ending Vehs 38
Denied Entry Before 0
Denied Entry After 0
Travel Distance (mi) 2035
Travel Time (hr) 67.6
Total Delay (hr) 11.6
Total Stops 1009
Fuel Used (gal) 128.7

SimTraffic Performance Report

1: Ravenna Avenue & Route 107 Performance by movement

Movement	EBL	EBT	EBR	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Total Delay (hr)	7.9	0.2	0.6	0.3	0.7	10.2	29.4	0.1	21.9	61.9	0.5	133.9
Delay / Veh (s)	42.0	45.5	15.3	36.6	7.1	54.7	5.9	3.2	53.8	12.6	8.1	12.2
Travel Dist (mi)	63.2	1.5	14.0	4.2	50.5	65.6	1745.3	11.2	260.6	3133.1	39.6	5388.8
Fuel Used (gal)	8.3	0.2	1.2	0.4	2.5	8.9	141.2	0.6	28.7	234.0	2.3	428.4
HC Emissions (g)	26	1	4	1	7	27	409	2	97	800	9	1384
CO Emissions (g)	802	15	153	31	167	614	18848	96	4063	39685	460	64933
NOx Emissions (g)	91	3	11	4	14	97	1398	6	280	2298	24	4226
Vehicles Entered	677	16	150	30	359	673	18005	116	1466	17727	225	39444
Vehicles Exited	677	16	150	30	359	673	18015	116	1467	17741	224	39468
Hourly Exit Rate	28	1	6	1	15	28	751	5	61	739	9	1645
Denied Entry Before	0	0	0	0	0	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0	0	0	0	0	0

2: Olde Village Drive & Route 107 Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Total Delay (hr)	12.4	0.3	5.7	14.0	29.8	0.8	63.1
Delay / Veh (s)	36.5	4.8	38.6	2.9	6.3	2.8	6.0
Travel Dist (mi)	133.0	26.5	57.6	1894.3	1672.3	99.7	3883.3
Fuel Used (gal)	16.2	1.2	6.8	209.1	178.5	6.8	418.7
HC Emissions (g)	49	3	23	648	525	27	1275
CO Emissions (g)	1617	55	876	40995	27446	1299	72286
NOx Emissions (g)	152	6	84	2351	1974	84	4650
Vehicles Entered	1223	243	535	17586	17102	1014	37703
Vehicles Exited	1224	243	535	17588	17102	1014	37706
Hourly Exit Rate	51	10	22	733	713	42	1571
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0

3: Wal-Mart North Driveway & Route 107 Performance by movement

Movement	WBR	NBT	NBR	SBT	SBR	All
Total Delay (hr)	0.7	5.3	0.1	19.0	0.0	25.1
Delay / Veh (s)	4.8	1.1	0.6	3.9	2.0	2.5
Travel Dist (mi)	63.3	951.4	18.6	1919.4	1.9	2954.5
Fuel Used (gal)	3.4	94.9	1.0	172.7	0.2	272.2
HC Emissions (g)	9	263	3	525	1	801
CO Emissions (g)	199	13682	105	27438	38	41461
NOx Emissions (g)	17	961	9	1868	3	2857
Vehicles Entered	551	17555	348	17637	17	36108
Vehicles Exited	551	17555	348	17637	17	36108
Hourly Exit Rate	23	731	15	735	1	1505
Denied Entry Before	0	0	0	1	0	1
Denied Entry After	0	0	0	0	0	0

SimTraffic Performance Report

4: Main Wal-Mart Driveway & Route 107 Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Total Delay (hr)	12.9	0.5	15.2	11.2	26.4	0.3	66.6
Delay / Veh (s)	39.3	3.4	39.7	2.7	5.8	1.0	6.7
Travel Dist (mi)	183.5	83.9	83.2	919.4	903.2	66.7	2240.0
Fuel Used (gal)	17.2	4.3	12.4	51.9	74.1	2.5	162.4
HC Emissions (g)	53	10	35	123	206	9	436
CO Emissions (g)	1765	214	611	3530	8338	127	14585
NOx Emissions (g)	165	18	112	308	648	11	1261
Vehicles Entered	1183	538	1379	15156	16422	1223	35901
Vehicles Exited	1182	538	1379	15161	16426	1223	35909
Hourly Exit Rate	49	22	57	632	684	51	1496
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0

5: South Wal-Mart Driveway & Route 107 Performance by movement

Movement	EBR	NBT	SBT	SBR	All
Total Delay (hr)	1.2	1.9	16.5	0.0	19.6
Delay / Veh (s)	3.9	0.4	3.5	0.4	2.0
Travel Dist (mi)	47.5	472.8	1057.7	1.5	1579.5
Fuel Used (gal)	3.2	18.8	120.9	0.1	142.9
HC Emissions (g)	9	43	347	0	400
CO Emissions (g)	194	686	18931	14	19825
NOx Emissions (g)	21	70	1281	1	1373
Vehicles Entered	1107	16524	17104	24	34759
Vehicles Exited	1108	16524	17104	24	34760
Hourly Exit Rate	46	689	713	1	1448
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

6: Meineke Driveway & Route 107 Performance by movement

Movement	EBR	NBT	SBT	SBR	All
Total Delay (hr)	0.1	6.4	6.3	0.0	12.8
Delay / Veh (s)	3.4	1.4	1.2	0.0	1.3
Travel Dist (mi)	2.9	1761.2	503.1	0.5	2267.7
Fuel Used (gal)	0.2	106.1	59.4	0.0	165.7
HC Emissions (g)	1	249	163	0	412
CO Emissions (g)	9	11028	8831	1	19870
NOx Emissions (g)	1	645	632	0	1279
Vehicles Entered	117	16558	18203	18	34896
Vehicles Exited	117	16561	18203	18	34899
Hourly Exit Rate	5	690	758	1	1454
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

SimTraffic Performance Report

7: Fays Avenue & Route 107 Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Total Delay (hr)	5.8	1.6	4.4	25.7	94.5	3.8	135.7
Delay / Veh (s)	30.1	15.6	20.8	5.9	19.4	18.2	13.6
Travel Dist (mi)	117.4	62.3	123.1	2557.5	5520.7	246.9	8628.0
Fuel Used (gal)	12.6	4.0	9.0	129.8	257.7	11.5	424.7
HC Emissions (g)	30	13	30	354	612	28	1067
CO Emissions (g)	887	456	1160	11303	8428	376	22610
NOx Emissions (g)	91	34	78	763	984	41	1991
Vehicles Entered	694	368	758	15713	17555	753	35841
Vehicles Exited	695	369	758	15718	17571	753	35864
Hourly Exit Rate	29	15	32	655	732	31	1494
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0

Total Network Performance

Total Delay (hr)	539.1
Delay / Veh (s)	42.3
Travel Dist (mi)	42079.5
Fuel Used (gal)	3062.1
HC Emissions (g)	8584
CO Emissions (g)	383562
NOx Emissions (g)	26880
Vehicles Entered	45821
Vehicles Exited	45898
Hourly Exit Rate	1912
Denied Entry Before	1
Denied Entry After	0

SimTraffic Simulation Summary

Summary of All Intervals

Start Time	11:57
End Time	12:00
Total Time (min)	1443
Time Recorded (min)	1440
# of Intervals	20
# of Recorded Intvls	19
Volume counts from "V:\08571\Environmental\08571 PM Build Volumes.csv" data file(s)	
Volume date = 5/30/2008	
Vehs Entered	53065
Vehs Exited	53157
Starting Vehs	145
Ending Vehs	53
Denied Entry Before	1
Denied Entry After	0
Travel Distance (mi)	46889
Travel Time (hr)	2252.1
Total Delay (hr)	939.7
Total Stops	76686
Fuel Used (gal)	3672.4

Interval #0 Information Seeding

Start Time	11:57
End Time	12:00
Total Time (min)	3
Volumes adjusted by Growth Factors.	
No data recorded this interval.	

Interval #1 Information Recording

Start Time	12:00
End Time	2:00
Total Time (min)	120
Volumes adjusted by Growth Factors.	
Vehs Entered	821
Vehs Exited	952
Starting Vehs	145
Ending Vehs	14
Denied Entry Before	1
Denied Entry After	0
Travel Distance (mi)	769
Travel Time (hr)	25.4
Total Delay (hr)	3.8
Total Stops	462
Fuel Used (gal)	47.4

SimTraffic Simulation Summary

Interval #2 Information

Start Time 2:00
 End Time 4:00
 Total Time (min) 120
 Volumes adjusted by Growth Factors.

Vehs Entered 460
 Vehs Exited 472
 Starting Vehs 14
 Ending Vehs 2
 Denied Entry Before 0
 Denied Entry After 0
 Travel Distance (mi) 406
 Travel Time (hr) 12.3
 Total Delay (hr) 1.1
 Total Stops 190
 Fuel Used (gal) 21.1

Interval #3 Information

Start Time 4:00
 End Time 6:00
 Total Time (min) 120
 Volumes adjusted by Growth Factors.

Vehs Entered 1054
 Vehs Exited 1037
 Starting Vehs 2
 Ending Vehs 19
 Denied Entry Before 0
 Denied Entry After 0
 Travel Distance (mi) 913
 Travel Time (hr) 29.1
 Total Delay (hr) 3.6
 Total Stops 474
 Fuel Used (gal) 58.7

SimTraffic Simulation Summary

Interval #4 Information

Start Time	6:00
End Time	7:00
Total Time (min)	60
Volumes adjusted by Growth Factors.	

Vehs Entered	1989
Vehs Exited	1920
Starting Vehs	19
Ending Vehs	88
Denied Entry Before	0
Denied Entry After	0
Travel Distance (mi)	1756
Travel Time (hr)	67.0
Total Delay (hr)	18.0
Total Stops	1476
Fuel Used (gal)	126.6

Interval #5 Information

Start Time	7:00
End Time	8:00
Total Time (min)	60
Volumes adjusted by Growth Factors.	

Vehs Entered	3024
Vehs Exited	2968
Starting Vehs	88
Ending Vehs	144
Denied Entry Before	0
Denied Entry After	4
Travel Distance (mi)	2638
Travel Time (hr)	114.4
Total Delay (hr)	40.6
Total Stops	3163
Fuel Used (gal)	202.2

SimTraffic Simulation Summary

Interval #6 Information

Start Time	8:00
End Time	9:00
Total Time (min)	60
Volumes adjusted by Growth Factors.	

Entered	3283
Vehs Exited	3261
Starting Vehs	144
Ending Vehs	166
Denied Entry Before	4
Denied Entry After	0
Travel Distance (mi)	2892
Travel Time (hr)	143.4
Total Delay (hr)	62.5
Total Stops	4994
Fuel Used (gal)	237.8

Interval #7 Information

Start Time	9:00
End Time	10:00
Total Time (min)	60
Volumes adjusted by Growth Factors.	

Entered	3100
Vehs Exited	3137
Starting Vehs	166
Ending Vehs	129
Denied Entry Before	0
Denied Entry After	2
Travel Distance (mi)	2771
Travel Time (hr)	128.4
Total Delay (hr)	50.6
Total Stops	3818
Fuel Used (gal)	219.4

SimTraffic Simulation Summary

Interval #8 Information

Start Time	10:00
End Time	11:00
Total Time (min)	60
Volumes adjusted by Growth Factors.	

Vehs Entered	2875
Vehs Exited	2907
Starting Vehs	129
Ending Vehs	97
Denied Entry Before	2
Denied Entry After	0
Travel Distance (mi)	2552
Travel Time (hr)	109.2
Total Delay (hr)	37.9
Total Stops	2844
Fuel Used (gal)	198.7

Interval #9 Information

Start Time	11:00
End Time	12:00
Total Time (min)	60
Volumes adjusted by Growth Factors.	

Vehs Entered	2978
Vehs Exited	2965
Starting Vehs	97
Ending Vehs	110
Denied Entry Before	0
Denied Entry After	0
Travel Distance (mi)	2590
Travel Time (hr)	112.8
Total Delay (hr)	40.0
Total Stops	2903
Fuel Used (gal)	196.6

SimTraffic Simulation Summary

Interval #10 Information

Start Time 12:00
 End Time 1:00
 Total Time (min) 60
 Volumes adjusted by Growth Factors.

Vehs Entered 2948
 Vehs Exited 2930
 Starting Vehs 110
 Ending Vehs 128
 Denied Entry Before 0
 Denied Entry After 6
 Travel Distance (mi) 2606
 Travel Time (hr) 115.5
 Total Delay (hr) 42.2
 Total Stops 3100
 Fuel Used (gal) 200.1

Interval #11 Information

Start Time 1:00
 End Time 2:00
 Total Time (min) 60
 Volumes adjusted by Growth Factors.

Vehs Entered 3050
 Vehs Exited 3073
 Starting Vehs 128
 Ending Vehs 105
 Denied Entry Before 6
 Denied Entry After 1
 Travel Distance (mi) 2690
 Travel Time (hr) 116.4
 Total Delay (hr) 41.5
 Total Stops 3131
 Fuel Used (gal) 204.1

SimTraffic Simulation Summary

Interval #12 Information

Start Time **2:00**
 End Time **3:00**
 Total Time (min) **60**
 Volumes adjusted by Growth Factors.

Vehs Entered 3524
Vehs Exited 3421
 Starting Vehs **105**
 Ending Vehs **208**
 Denied Entry Before **1**
 Denied Entry After **3**
 Travel Distance (mi) **3062**
 Travel Time (hr) **179.2**
 Total Delay (hr) **93.2**
 Total Stops **7801**
 Fuel Used (gal) **259.9**

Interval #13 Information

Start Time **3:00**
 End Time **4:00**
 Total Time (min) **60**
 Volumes adjusted by Growth Factors.

Vehs Entered 3507
Vehs Exited 3510
 Starting Vehs **208**
 Ending Vehs **205**
 Denied Entry Before **3**
 Denied Entry After **3**
 Travel Distance (mi) **3086**
 Travel Time (hr) **212.6**
 Total Delay (hr) **126.2**
 Total Stops **10731**
 Fuel Used (gal) **275.8**

SimTraffic Simulation Summary

Interval #14 Information

Start Time 4:00
End Time 5:00
Total Time (min) 60
Volumes adjusted by Growth Factors.

Vehs Entered 3005
Vehs Exited 3096
Starting Vehs 205
Ending Vehs 114
Denied Entry Before 3
Denied Entry After 0
Travel Distance (mi) 2691
Travel Time (hr) 134.3
Total Delay (hr) 58.4
Total Stops 4728
Fuel Used (gal) 214.9

Interval #15 Information

Start Time 5:00
End Time 6:00
Total Time (min) 60
Volumes adjusted by Growth Factors.

Vehs Entered 3525
Vehs Exited 3442
Starting Vehs 114
Ending Vehs 197
Denied Entry Before 0
Denied Entry After 0
Travel Distance (mi) 3079
Travel Time (hr) 165.1
Total Delay (hr) 79.5
Total Stops 6572
Fuel Used (gal) 255.7

SimTraffic Simulation Summary

Interval #16 Information

Start Time	6:00
End Time	7:00
Total Time (min)	60
Volumes adjusted by Growth Factors.	

Vehs Entered	3463
Vehs Exited	3472
Starting Vehs	197
Ending Vehs	188
Denied Entry Before	0
Denied Entry After	0
Travel Distance (mi)	3069
Travel Time (hr)	198.5
Total Delay (hr)	112.6
Total Stops	9592
Fuel Used (gal)	274.7

Interval #17 Information

Start Time	7:00
End Time	8:00
Total Time (min)	60
Volumes adjusted by Growth Factors.	

Vehs Entered	3058
Vehs Exited	3140
Starting Vehs	188
Ending Vehs	106
Denied Entry Before	0
Denied Entry After	0
Travel Distance (mi)	2788
Travel Time (hr)	142.0
Total Delay (hr)	64.4
Total Stops	5323
Fuel Used (gal)	220.6

SimTraffic Simulation Summary

Interval #18 Information

Start Time 8:00
End Time 10:00
Total Time (min) 120
Volumes adjusted by Growth Factors.

Vehs Entered 4658
Vehs Exited 4684
Starting Vehs 106
Ending Vehs 80
Denied Entry Before 0
Denied Entry After 1
Travel Distance (mi) 4093
Travel Time (hr) 161.4
Total Delay (hr) 46.4
Total Stops 3782
Fuel Used (gal) 291.1

Interval #19 Information

Start Time 10:00
End Time 12:00
Total Time (min) 120
Volumes adjusted by Growth Factors.

Vehs Entered 2743
Vehs Exited 2770
Starting Vehs 80
Ending Vehs 53
Denied Entry Before 1
Denied Entry After 0
Travel Distance (mi) 2440
Travel Time (hr) 85.0
Total Delay (hr) 17.2
Total Stops 1602
Fuel Used (gal) 167.2

SimTraffic Performance Report

1: Ravenna Avenue & Route 107 Performance by movement

Movement	EBL	EBT	EBR	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Travel Dist (mi)	58.5	0.8	12.5	5.8	51.3	59.9	1886.4	12.4	266.0	3396.3	34.5
Fuel Used (gal)	7.7	0.1	1.1	0.6	2.7	8.3	150.6	0.7	29.3	249.3	2.1
HC Emissions (g)	24	0	4	2	7	25	430	3	99	841	8
CO Emissions (g)	699	12	135	29	193	533	19321	100	4143	40766	429
NOx Emissions (g)	85	2	11	6	17	87	1480	7	280	2399	21
Vehicles Entered	626	9	134	41	365	616	19465	129	1497	19220	196
Vehicles Exited	626	9	135	41	365	617	19469	129	1499	19222	196
Hourly Exit Rate	26	0	6	2	15	26	811	5	62	801	8
Denied Entry Before	0	0	0	0	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0	0	0	0	0

2: Olde Village Drive & Route 107 Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Travel Dist (mi)	136.6	22.6	63.4	2043.6	1820.4	99.2	4185.8
Fuel Used (gal)	15.8	1.1	7.6	226.2	180.1	6.7	437.6
HC Emissions (g)	51	3	26	716	538	26	1361
CO Emissions (g)	1746	64	1049	46370	26616	1210	77055
NOx Emissions (g)	158	5	92	2554	1967	83	4859
Vehicles Entered	1256	208	591	18961	18616	1009	40641
Vehicles Exited	1259	208	593	18965	18615	1009	40649
Hourly Exit Rate	52	9	25	790	776	42	1694
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0

3: Wal-Mart North Driveway & Route 107 Performance by movement

Movement	EBR	WBR	NBT	NBR	SBT	SBR	All
Travel Dist (mi)	112.8	66.6	1040.8	20.6	1910.4	173.1	3324.4
Fuel Used (gal)	9.2	3.5	131.4	1.5	159.2	13.8	318.7
HC Emissions (g)	26	10	400	5	493	48	982
CO Emissions (g)	839	251	22674	189	20957	2336	47246
NOx Emissions (g)	63	21	1557	17	1524	140	3321
Vehicles Entered	1035	580	18955	373	17554	1594	40091
Vehicles Exited	1035	580	18959	373	17553	1594	40094
Hourly Exit Rate	43	24	790	16	731	66	1671
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0

SimTraffic Performance Report

4: Main Wal-Mart Driveway & Route 107 Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Travel Dist (mi)	527.2	442.1	203.7	877.0	925.3	93.0	3068.4
Fuel Used (gal)	52.9	30.6	31.7	62.0	118.3	6.9	302.5
HC Emissions (g)	165	80	85	156	323	24	833
CO Emissions (g)	5742	2763	1411	5109	9871	700	25597
NOx Emissions (g)	444	185	229	434	974	68	2334
Vehicles Entered	3395	2836	3371	14455	16912	1712	42681
Vehicles Exited	3401	2836	3378	14455	16912	1712	42694
Hourly Exit Rate	142	118	141	602	705	71	1779
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0

5: South Wal-Mart Driveway & Route 107 Performance by movement

Movement	NBT	SBT	All
Travel Dist (mi)	509.7	1221.7	1731.4
Fuel Used (gal)	19.8	194.5	214.3
HC Emissions (g)	52	602	654
CO Emissions (g)	939	33297	34236
NOx Emissions (g)	86	2239	2324
Vehicles Entered	17820	19934	37754
Vehicles Exited	17820	19938	37758
Hourly Exit Rate	743	831	1573
Denied Entry Before	0	0	0
Denied Entry After	0	0	0

6: Meineke Driveway & Route 107 Performance by movement

Movement	EBR	NBT	SBT	SBR	All
Travel Dist (mi)	2.6	1900.8	554.9	0.6	2458.9
Fuel Used (gal)	0.2	113.1	74.7	0.0	188.1
HC Emissions (g)	1	278	206	0	485
CO Emissions (g)	8	12387	12040	1	24436
NOx Emissions (g)	1	724	738	0	1463
Vehicles Entered	105	17872	19890	20	37887
Vehicles Exited	105	17876	19892	20	37893
Hourly Exit Rate	4	745	829	1	1579
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

SimTraffic Performance Report

7: Fays Avenue & Route 107 Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Travel Dist (mi)	144.4	68.8	129.1	2744.4	6032.5	287.2	9406.3
Fuel Used (gal)	14.0	4.7	10.1	143.7	354.7	16.6	543.7
HC Emissions (g)	39	15	34	388	843	40	1358
CO Emissions (g)	1247	528	1248	11651	12021	550	27245
NOx Emissions (g)	117	39	89	824	1529	69	2666
Vehicles Entered	853	406	795	16862	19131	875	38922
Vehicles Exited	853	407	794	16874	19155	876	38959
Hourly Exit Rate	36	17	33	703	798	37	1623
Denied Entry Before	0	0	0	1	0	0	1
Denied Entry After	0	0	0	0	0	0	0

Total Network Performance

Travel Dist (mi)	46889.4
Fuel Used (gal)	3672.4
HC Emissions (g)	10376
CO Emissions (g)	448051
NOx Emissions (g)	32137
Vehicles Entered	53065
Vehicles Exited	53157
Hourly Exit Rate	2215
Denied Entry Before	1
Denied Entry After	0

SimTraffic Simulation Summary

Summary of All Intervals

Start Time	11:57
End Time	12:00
Total Time (min)	1443
Time Recorded (min)	1440
# of Intervals	20
# of Recorded Intvls	19
Volume counts from "V:\08571\Environmental\08571 PM Build Mit Volumes.csv" data file(s)	
Volume date = 5/30/2008	
Vehs Entered	53051
Vehs Exited	53145
Starting Vehs	130
Ending Vehs	36
Denied Entry Before	6
Denied Entry After	0
Travel Distance (mi)	46948
Travel Time (hr)	1990.7
Total Delay (hr)	680.2
Total Stops	51915
Fuel Used (gal)	3588.9

Interval #0 Information Seeding

Start Time	11:57
End Time	12:00
Total Time (min)	3
Volumes adjusted by Growth Factors.	
No data recorded this interval.	

Interval #1 Information Recording

Start Time	12:00
End Time	2:00
Total Time (min)	120
Volumes adjusted by Growth Factors.	
Vehs Entered	837
Vehs Exited	957
Starting Vehs	130
Ending Vehs	10
Denied Entry Before	6
Denied Entry After	0
Travel Distance (mi)	798
Travel Time (hr)	25.9
Total Delay (hr)	3.7
Total Stops	400
Fuel Used (gal)	47.6

SimTraffic Simulation Summary

Interval #2 Information

Start Time 2:00
 End Time 4:00
 Total Time (min) 120
 Volumes adjusted by Growth Factors.

Vehs Entered 426
 Vehs Exited 429
 Starting Vehs 10
 Ending Vehs 7
 Denied Entry Before 0
 Denied Entry After 0
 Travel Distance (mi) 382
 Travel Time (hr) 11.4
 Total Delay (hr) 0.9
 Total Stops 152
 Fuel Used (gal) 19.6

Interval #3 Information

Start Time 4:00
 End Time 6:00
 Total Time (min) 120
 Volumes adjusted by Growth Factors.

Vehs Entered 1051
 Vehs Exited 1047
 Starting Vehs 7
 Ending Vehs 11
 Denied Entry Before 0
 Denied Entry After 0
 Travel Distance (mi) 931
 Travel Time (hr) 29.1
 Total Delay (hr) 3.3
 Total Stops 450
 Fuel Used (gal) 54.8

SimTraffic Simulation Summary

Interval #4 Information

Start Time 6:00
End Time 7:00
Total Time (min) 60
Volumes adjusted by Growth Factors.

Vehs Entered 1971
Vehs Exited 1897
Starting Vehs 11
Ending Vehs 85
Denied Entry Before 0
Denied Entry After 0
Travel Distance (mi) 1714
Travel Time (hr) 64.8
Total Delay (hr) 16.8
Total Stops 1424
Fuel Used (gal) 129.0

Interval #5 Information

Start Time 7:00
End Time 8:00
Total Time (min) 60
Volumes adjusted by Growth Factors.

Vehs Entered 3057
Vehs Exited 3034
Starting Vehs 85
Ending Vehs 118
Denied Entry Before 0
Denied Entry After 3
Travel Distance (mi) 2674
Travel Time (hr) 115.3
Total Delay (hr) 40.6
Total Stops 3024
Fuel Used (gal) 208.0

SimTraffic Simulation Summary

Interval #6 Information

Start Time	8:00
End Time	9:00
Total Time (min)	60
Volumes adjusted by Growth Factors.	
Vehs Entered	3315
Vehs Exited	3312
Starting Vehs	118
Ending Vehs	121
Denied Entry Before	3
Denied Entry After	0
Travel Distance (mi)	2927
Travel Time (hr)	131.7
Total Delay (hr)	49.6
Total Stops	3558
Fuel Used (gal)	227.1

Interval #7 Information

Start Time	9:00
End Time	10:00
Total Time (min)	60
Volumes adjusted by Growth Factors.	
Vehs Entered	3057
Vehs Exited	3057
Starting Vehs	121
Ending Vehs	116
Denied Entry Before	0
Denied Entry After	0
Travel Distance (mi)	2707
Travel Time (hr)	115.7
Total Delay (hr)	39.7
Total Stops	2961
Fuel Used (gal)	203.7

SimTraffic Simulation Summary

Interval #8 Information

Start Time 10:00
End Time 11:00
Total Time (min) 60
Volumes adjusted by Growth Factors.

Vehs Entered 2904
Vehs Exited 2896
Starting Vehs 116
Ending Vehs 124
Denied Entry Before 0
Denied Entry After 2
Travel Distance (mi) 2551
Travel Time (hr) 106.9
Total Delay (hr) 35.8
Total Stops 2666
Fuel Used (gal) 202.4

Interval #9 Information

Start Time 11:00
End Time 12:00
Total Time (min) 60
Volumes adjusted by Growth Factors.

Vehs Entered 3038
Vehs Exited 3068
Starting Vehs 124
Ending Vehs 94
Denied Entry Before 2
Denied Entry After 0
Travel Distance (mi) 2683
Travel Time (hr) 115.6
Total Delay (hr) 40.8
Total Stops 3078
Fuel Used (gal) 207.2

SimTraffic Simulation Summary

Interval #10 Information

Start Time 12:00
End Time 1:00
Total Time (min) 60
Volumes adjusted by Growth Factors.

Vehs Entered 3019
Vehs Exited 3006
Starting Vehs 94
Ending Vehs 107
Denied Entry Before 0
Denied Entry After 2
Travel Distance (mi) 2634
Travel Time (hr) 110.9
Total Delay (hr) 37.3
Total Stops 2832
Fuel Used (gal) 210.7

Interval #11 Information

Start Time 1:00
End Time 2:00
Total Time (min) 60
Volumes adjusted by Growth Factors.

Vehs Entered 2981
Vehs Exited 2963
Starting Vehs 107
Ending Vehs 125
Denied Entry Before 2
Denied Entry After 1
Travel Distance (mi) 2634
Travel Time (hr) 110.7
Total Delay (hr) 37.4
Total Stops 2817
Fuel Used (gal) 210.3

SimTraffic Simulation Summary

Interval #12 Information

Start Time 2:00
End Time 3:00
Total Time (min) 60

Volumes adjusted by Growth Factors.

Vehs Entered 3494
Vehs Exited 3465
Starting Vehs 125
Ending Vehs 154
Denied Entry Before 1
Denied Entry After 0
Travel Distance (mi) 3084
Travel Time (hr) 144.0
Total Delay (hr) 57.6
Total Stops 4366
Fuel Used (gal) 241.9

Interval #13 Information

Start Time 3:00
End Time 4:00
Total Time (min) 60

Volumes adjusted by Growth Factors.

Vehs Entered 3483
Vehs Exited 3498
Starting Vehs 154
Ending Vehs 139
Denied Entry Before 0
Denied Entry After 0
Travel Distance (mi) 3145
Travel Time (hr) 151.9
Total Delay (hr) 64.4
Total Stops 4951
Fuel Used (gal) 250.5

SimTraffic Simulation Summary

Interval #14 Information

Start Time 4:00
End Time 5:00
Total Time (min) 60
Volumes adjusted by Growth Factors.

Vehs Entered 2998
Vehs Exited 3030
Starting Vehs 139
Ending Vehs 107
Denied Entry Before 0
Denied Entry After 0
Travel Distance (mi) 2659
Travel Time (hr) 113.4
Total Delay (hr) 39.1
Total Stops 2960
Fuel Used (gal) 202.1

Interval #15 Information

Start Time 5:00
End Time 6:00
Total Time (min) 60
Volumes adjusted by Growth Factors.

Vehs Entered 3537
Vehs Exited 3506
Starting Vehs 107
Ending Vehs 138
Denied Entry Before 0
Denied Entry After 0
Travel Distance (mi) 3065
Travel Time (hr) 142.1
Total Delay (hr) 56.5
Total Stops 4101
Fuel Used (gal) 249.2

SimTraffic Simulation Summary

Interval #16 Information

Start Time 6:00
End Time 7:00
Total Time (min) 60
Volumes adjusted by Growth Factors.

Vehs Entered	3406
Vehs Exited	3413
Starting Vehs	138
Ending Vehs	131
Denied Entry Before	0
Denied Entry After	1
Travel Distance (mi)	3039
Travel Time (hr)	136.0
Total Delay (hr)	51.4
Total Stops	3723
Fuel Used (gal)	232.7

Interval #17 Information

Start Time 7:00
End Time 8:00
Total Time (min) 60
Volumes adjusted by Growth Factors.

Vehs Entered	3167
Vehs Exited	3198
Starting Vehs	131
Ending Vehs	100
Denied Entry Before	1
Denied Entry After	1
Travel Distance (mi)	2818
Travel Time (hr)	121.4
Total Delay (hr)	42.7
Total Stops	3116
Fuel Used (gal)	218.9

SimTraffic Simulation Summary

Interval #18 Information

Start Time 8:00
 End Time 10:00
 Total Time (min) 120
 Volumes adjusted by Growth Factors.

Vehs Entered 4649
Vehs Exited 4673
 Starting Vehs 100
 Ending Vehs 76
 Denied Entry Before 1
 Denied Entry After 1
 Travel Distance (mi) 4141
 Travel Time (hr) 160.1
 Total Delay (hr) 44.7
 Total Stops 3626
 Fuel Used (gal) 310.3

Interval #19 Information

Start Time 10:00
 End Time 12:00
 Total Time (min) 120
 Volumes adjusted by Growth Factors.

Vehs Entered 2656
Vehs Exited 2696
 Starting Vehs 76
 Ending Vehs 36
 Denied Entry Before 1
 Denied Entry After 0
 Travel Distance (mi) 2362
 Travel Time (hr) 83.7
 Total Delay (hr) 18.0
 Total Stops 1710
 Fuel Used (gal) 162.8

SimTraffic Performance Report

1: Ravenna Avenue & Route 107 Performance by movement

Movement	EBL	EBT	EBR	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Travel Dist (mi)	61.1	1.4	12.9	4.5	50.5	59.9	1877.1	12.3	270.0	3382.7	35.7	5768.1
Fuel Used (gal)	8.2	0.2	1.2	0.4	2.5	8.5	149.2	0.6	29.6	254.0	2.2	456.7
Fuel Eff. (mpg)	7.4	8.1	11.2	10.0	20.0	7.0	12.6	19.8	9.1	13.3	16.5	12.6
HC Emissions (g)	25	1	4	1	7	26	430	2	99	845	8	1449
CO Emissions (g)	747	16	141	33	162	615	19207	66	4167	41302	430	66887
NOx Emissions (g)	88	1	10	7	14	99	1456	5	270	2462	22	4436
Vehicles Entered	654	15	138	32	359	616	19370	128	1517	19139	203	42171
Vehicles Exited	655	15	138	33	359	617	19373	128	1523	19159	203	42203
Hourly Exit Rate	27	1	6	1	15	26	807	5	63	798	8	1758
Denied Entry Before	0	0	0	0	0	0	0	0	0	3	0	3
Denied Entry After	0	0	0	0	0	0	0	0	0	0	0	0

2: Olde Village Drive & Route 107 Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Travel Dist (mi)	127.6	23.8	60.0	2041.6	1813.2	100.8	4167.1
Fuel Used (gal)	16.2	1.1	7.0	210.2	195.1	7.1	436.7
Fuel Eff. (mpg)	7.9	21.0	8.5	9.7	9.3	14.3	9.5
HC Emissions (g)	48	3	25	675	557	26	1334
CO Emissions (g)	1637	62	950	42016	28691	1181	74538
NOx Emissions (g)	157	6	85	2407	2132	84	4871
Vehicles Entered	1175	219	557	18953	18567	1026	40497
Vehicles Exited	1173	219	558	18954	18567	1026	40497
Hourly Exit Rate	49	9	23	790	774	43	1687
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0

3: Wal-Mart North Driveway & Route 107 Performance by movement

Movement	EBR	WBR	NBT	NBR	SBT	SBR	All
Travel Dist (mi)	100.6	66.9	2181.8	42.1	1914.5	168.9	4474.8
Fuel Used (gal)	6.4	3.9	167.7	2.8	184.9	14.4	380.1
Fuel Eff. (mpg)	15.6	17.2	13.0	15.2	10.4	11.8	11.8
HC Emissions (g)	18	10	474	10	551	50	1112
CO Emissions (g)	566	236	22660	446	29475	2645	56028
NOx Emissions (g)	41	20	1637	31	2019	149	3897
Vehicles Entered	1030	583	18912	364	17580	1559	40028
Vehicles Exited	1029	583	18915	364	17578	1559	40028
Hourly Exit Rate	43	24	788	15	732	65	1668
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0

SimTraffic Performance Report

4: Main Wal-Mart Driveway & Route 107 Performance by movement

	EBL	EBR	NBL	NBT	SBL	SBT	SBR	All
Travel Dist (mi)	502.3	424.3	299.8	1240.4	1.4	1947.1	192.0	4607.3
Fuel Used (gal)	45.1	40.0	35.9	68.4	0.2	163.4	13.1	366.0
Fuel Eff. (mpg)	11.1	10.6	8.4	18.1	9.1	11.9	14.7	12.6
HC Emissions (g)	135	103	100	168	0	488	53	1046
CO Emissions (g)	3985	3819	2050	4396	11	19031	2701	35994
NOx Emissions (g)	387	259	279	398	2	1451	151	2926
Vehicles Entered	3253	2738	3558	14549	12	16971	1682	42763
Vehicles Exited	3254	2740	3559	14551	12	16974	1682	42772
Hourly Exit Rate	136	114	148	606	1	707	70	1782
Denied Entry Before	0	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0	0

5: Meineke Driveway & Route 107 Performance by movement

Movement	EBR	NBT	SBT	SBR	All
Travel Dist (mi)	2.4	1502.0	1723.2	1.8	3229.3
Fuel Used (gal)	0.2	106.5	247.2	0.2	354.0
Fuel Eff. (mpg)	12.5	14.1	7.0	10.6	9.1
HC Emissions (g)	1	261	701	1	963
CO Emissions (g)	8	13482	38789	46	52325
NOx Emissions (g)	1	732	2632	3	3367
Vehicles Entered	109	18158	19889	20	38176
Vehicles Exited	109	18162	19886	20	38177
Hourly Exit Rate	5	757	829	1	1591
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

6: Fays Avenue & Route 107 Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Travel Dist (mi)	146.7	61.3	122.8	2786.9	5372.2	281.2	8771.0
Fuel Used (gal)	16.5	4.4	9.3	144.5	259.9	12.8	447.5
Fuel Eff. (mpg)	8.9	13.8	13.2	19.3	20.7	21.9	19.6
HC Emissions (g)	44	14	31	386	617	33	1125
CO Emissions (g)	1337	494	1202	11526	9238	536	24333
NOx Emissions (g)	133	36	84	809	1105	58	2225
Vehicles Entered	878	367	756	17121	19000	955	39077
Vehicles Exited	881	368	757	17132	19016	956	39110
Hourly Exit Rate	37	15	32	714	792	40	1630
Denied Entry Before	0	0	0	3	0	0	3
Denied Entry After	0	0	0	0	0	0	0

SimTraffic Performance Report

Total Network Performance

Travel Dist (mi)	46948.1
Fuel Used (gal)	3588.9
Fuel Eff. (mpg)	13.1
HC Emissions (g)	10104
CO Emissions (g)	451567
NOx Emissions (g)	32008
Vehicles Entered	53051
Vehicles Exited	53145
Hourly Exit Rate	2214
Denied Entry Before	6
Denied Entry After	0

SimTraffic Simulation Summary

Summary of All Intervals

Start Time	11:57
End Time	12:00
Total Time (min)	1443
Time Recorded (min)	1440
# of Intervals	20
# of Recorded Intvls	19
Volume counts from "V:\08571\Environmental\08571 SAT Existing Volumes.csv" data file(s)	
Volume date = 5/31/2008	
Vehs Entered	40030
Vehs Exited	40096
Starting Vehs	101
Ending Vehs	35
Denied Entry Before	0
Denied Entry After	0
Travel Distance (mi)	35256
Travel Time (hr)	1393.5
Total Delay (hr)	409.2
Total Stops	39990
Fuel Used (gal)	2653.8

Interval #0 Information Seeding

Start Time	11:57
End Time	12:00
Total Time (min)	3
Volumes adjusted by Growth Factors.	
No data recorded this interval.	

Interval #1 Information Recording

Start Time	12:00
End Time	2:00
Total Time (min)	120
Volumes adjusted by Growth Factors.	
Vehs Entered	1061
Vehs Exited	1148
Starting Vehs	101
Ending Vehs	14
Denied Entry Before	0
Denied Entry After	0
Travel Distance (mi)	981
Travel Time (hr)	32.1
Total Delay (hr)	4.6
Total Stops	715
Fuel Used (gal)	63.3

SimTraffic Simulation Summary

Interval #2 Information

Start Time	2:00
End Time	4:00
Total Time (min)	120

Volumes adjusted by Growth Factors.

Vehs Entered	520
Vehs Exited	527
Starting Vehs	14
Ending Vehs	7
Denied Entry Before	0
Denied Entry After	0
Travel Distance (mi)	468
Travel Time (hr)	14.6
Total Delay (hr)	1.6
Total Stops	281
Fuel Used (gal)	27.8

Interval #3 Information

Start Time	4:00
End Time	6:00
Total Time (min)	120

Volumes adjusted by Growth Factors.

Vehs Entered	479
Vehs Exited	481
Starting Vehs	7
Ending Vehs	5
Denied Entry Before	0
Denied Entry After	0
Travel Distance (mi)	417
Travel Time (hr)	12.9
Total Delay (hr)	1.4
Total Stops	297
Fuel Used (gal)	25.7

SimTraffic Simulation Summary

Interval #4 Information

Start Time 6:00
End Time 7:00
Total Time (min) 60

Volumes adjusted by Growth Factors.

Vehs Entered 834
Vehs Exited 816
Starting Vehs 5
Ending Vehs 23
Denied Entry Before 0
Denied Entry After 0
Travel Distance (mi) 708
Travel Time (hr) 23.7
Total Delay (hr) 3.8
Total Stops 569
Fuel Used (gal) 45.0

Interval #5 Information

Start Time 7:00
End Time 8:00
Total Time (min) 60

Volumes adjusted by Growth Factors.

Vehs Entered 1449
Vehs Exited 1432
Starting Vehs 23
Ending Vehs 40
Denied Entry Before 0
Denied Entry After 1
Travel Distance (mi) 1271
Travel Time (hr) 44.9
Total Delay (hr) 9.3
Total Stops 1077
Fuel Used (gal) 92.7

SimTraffic Simulation Summary

Interval #6 Information

Start Time 8:00
 End Time 9:00
 Total Time (min) 60
 Volumes adjusted by Growth Factors.

Vehs Entered 1780
Vehs Exited 1760
 Starting Vehs 40
 Ending Vehs 60
 Denied Entry Before 1
 Denied Entry After 0
 Travel Distance (mi) 1553
 Travel Time (hr) 57.1
 Total Delay (hr) 13.8
 Total Stops 1655
 Fuel Used (gal) 116.7

Interval #7 Information

Start Time 9:00
 End Time 10:00
 Total Time (min) 60
 Volumes adjusted by Growth Factors.

Vehs Entered 2332
Vehs Exited 2330
 Starting Vehs 60
 Ending Vehs 62
 Denied Entry Before 0
 Denied Entry After 1
 Travel Distance (mi) 2051
 Travel Time (hr) 78.6
 Total Delay (hr) 21.5
 Total Stops 2079
 Fuel Used (gal) 152.6

SimTraffic Simulation Summary

Interval #8 Information

Start Time	10:00
End Time	11:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Vehs Entered	2872
Vehs Exited	2855
Starting Vehs	62
Ending Vehs	79
Denied Entry Before	1
Denied Entry After	3
Travel Distance (mi)	2523
Travel Time (hr)	111.6
Total Delay (hr)	41.4
Total Stops	3516
Fuel Used (gal)	205.7

Interval #9 Information

Start Time	11:00
End Time	12:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Vehs Entered	2827
Vehs Exited	2776
Starting Vehs	79
Ending Vehs	130
Denied Entry Before	3
Denied Entry After	0
Travel Distance (mi)	2458
Travel Time (hr)	104.8
Total Delay (hr)	36.1
Total Stops	3194
Fuel Used (gal)	204.9

SimTraffic Simulation Summary

Interval #10 Information

Start Time 12:00
 End Time 1:00
 Total Time (min) 60
 Volumes adjusted by Growth Factors.

Vehs Entered 2870
Vehs Exited 2892
 Starting Vehs 130
 Ending Vehs 108
 Denied Entry Before 0
 Denied Entry After 5
 Travel Distance (mi) 2532
 Travel Time (hr) 109.4
 Total Delay (hr) 38.6
 Total Stops 3351
 Fuel Used (gal) 191.9

Interval #11 Information

Start Time 1:00
 End Time 2:00
 Total Time (min) 60
 Volumes adjusted by Growth Factors.

Vehs Entered 2891
Vehs Exited 2905
 Starting Vehs 108
 Ending Vehs 94
 Denied Entry Before 5
 Denied Entry After 3
 Travel Distance (mi) 2562
 Travel Time (hr) 109.0
 Total Delay (hr) 37.5
 Total Stops 3247
 Fuel Used (gal) 197.5

SimTraffic Simulation Summary

Interval #12 Information

Start Time 2:00
 End Time 3:00
 Total Time (min) 60
 Volumes adjusted by Growth Factors.

Vehs Entered 3014
Vehs Exited 2993
 Starting Vehs 94
 Ending Vehs 115
 Denied Entry Before 3
 Denied Entry After 0
 Travel Distance (mi) 2648
 Travel Time (hr) 119.6
 Total Delay (hr) 45.5
 Total Stops 3972
 Fuel Used (gal) 210.1

Interval #13 Information

Start Time 3:00
 End Time 4:00
 Total Time (min) 60
 Volumes adjusted by Growth Factors.

Vehs Entered 2705
Vehs Exited 2707
 Starting Vehs 115
 Ending Vehs 113
 Denied Entry Before 0
 Denied Entry After 0
 Travel Distance (mi) 2376
 Travel Time (hr) 97.7
 Total Delay (hr) 31.2
 Total Stops 2958
 Fuel Used (gal) 187.0

SimTraffic Simulation Summary

Interval #14 Information

Start Time	4:00
End Time	5:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Vehs Entered	2482
Vehs Exited	2504
Starting Vehs	113
Ending Vehs	91
Denied Entry Before	0
Denied Entry After	0
Travel Distance (mi)	2197
Travel Time (hr)	87.6
Total Delay (hr)	26.3
Total Stops	2562
Fuel Used (gal)	167.6

Interval #15 Information

Start Time	5:00
End Time	6:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Vehs Entered	2414
Vehs Exited	2414
Starting Vehs	91
Ending Vehs	91
Denied Entry Before	0
Denied Entry After	0
Travel Distance (mi)	2132
Travel Time (hr)	83.4
Total Delay (hr)	23.9
Total Stops	2343
Fuel Used (gal)	160.8

SimTraffic Simulation Summary

Interval #16 Information

Start Time	6:00
End Time	7:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Vehs Entered	2246
Vehs Exited	2254
Starting Vehs	91
Ending Vehs	83
Denied Entry Before	0
Denied Entry After	4
Travel Distance (mi)	1959
Travel Time (hr)	75.9
Total Delay (hr)	21.0
Total Stops	2241
Fuel Used (gal)	145.1

Interval #17 Information

Start Time	7:00
End Time	8:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Vehs Entered	2015
Vehs Exited	2042
Starting Vehs	83
Ending Vehs	56
Denied Entry Before	4
Denied Entry After	0
Travel Distance (mi)	1789
Travel Time (hr)	67.6
Total Delay (hr)	17.7
Total Stops	1859
Fuel Used (gal)	128.6

SimTraffic Simulation Summary

Interval #18 Information

Start Time	8:00
End Time	10:00
Total Time (min)	120
Volumes adjusted by Growth Factors.	
Vehs Entered	3246
Vehs Exited	3242
Starting Vehs	56
Ending Vehs	60
Denied Entry Before	0
Denied Entry After	0
Travel Distance (mi)	2858
Travel Time (hr)	102.6
Total Delay (hr)	22.9
Total Stops	2630
Fuel Used (gal)	207.1

Interval #19 Information

Start Time	10:00
End Time	12:00
Total Time (min)	120
Volumes adjusted by Growth Factors.	
Vehs Entered	1993
Vehs Exited	2018
Starting Vehs	60
Ending Vehs	35
Denied Entry Before	0
Denied Entry After	0
Travel Distance (mi)	1775
Travel Time (hr)	60.5
Total Delay (hr)	11.0
Total Stops	1444
Fuel Used (gal)	123.8

SimTraffic Performance Report

1: Ravenna Avenue & Route 107 Performance by movement

Movement	EBL	EBT	EBR	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Travel Dist (mi)	28.9	1.6	16.4	5.8	40.4	23.6	1440.9	8.1	173.0	2612.3	38.5	4389.5
Fuel Used (gal)	2.4	0.1	1.2	0.4	2.0	2.5	173.0	0.6	14.2	168.1	3.6	368.0
HC Emissions (g)	7	0	3	1	5	9	522	3	54	580	8	1192
CO Emissions (g)	187	10	79	16	110	329	31369	138	2528	31056	367	66190
NOx Emissions (g)	23	1	7	2	10	32	1950	9	156	1717	23	3930
Vehicles Entered	309	17	176	41	287	242	14999	84	974	14774	219	32122
Vehicles Exited	309	17	176	41	287	244	14998	84	973	14781	219	32129
Hourly Exit Rate	13	1	7	2	12	10	625	4	41	616	9	1339
Denied Entry Before	0	0	0	0	0	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0	0	0	0	0	0

2: Olde Village Drive & Route 107 Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Travel Dist (mi)	123.6	11.8	55.0	1510.0	1395.9	88.2	3184.4
Fuel Used (gal)	9.9	0.5	5.2	140.6	126.7	6.2	289.1
HC Emissions (g)	32	1	18	509	393	24	978
CO Emissions (g)	1076	21	807	30912	16482	1101	50398
NOx Emissions (g)	93	2	60	1742	1273	67	3238
Vehicles Entered	1135	108	512	14028	14350	908	31041
Vehicles Exited	1136	108	512	14030	14358	907	31051
Hourly Exit Rate	47	5	21	585	598	38	1294
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0

3: Wal-Mart North Driveway & Route 107 Performance by movement

Movement	WBR	NBT	NBR	SBT	All
Travel Dist (mi)	77.0	812.9	5.6	1623.9	2519.4
Fuel Used (gal)	3.7	88.4	0.8	190.6	283.5
HC Emissions (g)	11	282	2	705	999
CO Emissions (g)	283	16038	51	43142	59514
NOx Emissions (g)	21	1032	5	2598	3656
Vehicles Entered	671	14326	97	15163	30257
Vehicles Exited	671	14330	97	15164	30262
Hourly Exit Rate	28	597	4	632	1261
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

SimTraffic Performance Report

4: Main Wal-Mart Driveway & Route 107 Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Travel Dist (mi)	334.9	47.9	125.9	745.5	693.5	141.6	2089.3
Fuel Used (gal)	37.6	2.0	21.0	46.8	63.0	6.3	176.8
HC Emissions (g)	111	5	58	120	176	21	491
CO Emissions (g)	3673	93	950	4153	6818	328	16015
NOx Emissions (g)	303	9	156	335	548	30	1381
Vehicles Entered	2158	307	2084	12301	12686	2600	32136
Vehicles Exited	2158	307	2085	12301	12687	2600	32138
Hourly Exit Rate	90	13	87	513	529	108	1339
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0

5: South Wal-Mart Driveway & Route 107 Performance by movement

Movement	EBR	NBT	SBT	SBR	All
Travel Dist (mi)	67.8	411.4	805.5	1.1	1285.7
Fuel Used (gal)	4.6	16.4	124.8	0.1	145.8
HC Emissions (g)	13	41	372	0	427
CO Emissions (g)	298	770	22121	23	23212
NOx Emissions (g)	31	70	1479	1	1582
Vehicles Entered	1578	14381	12987	18	28964
Vehicles Exited	1578	14383	12990	18	28969
Hourly Exit Rate	66	599	541	1	1207
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

6: Meineke Driveway & Route 107 Performance by movement

Movement	EBR	NBT	SBT	SBR	All
Travel Dist (mi)	4.8	1504.3	397.3	3.0	1909.5
Fuel Used (gal)	0.4	85.0	59.1	0.1	144.6
HC Emissions (g)	1	211	174	0	386
CO Emissions (g)	13	9393	10215	6	19627
NOx Emissions (g)	2	528	730	0	1260
Vehicles Entered	196	14377	14471	111	29155
Vehicles Exited	196	14381	14471	111	29159
Hourly Exit Rate	8	599	603	5	1215
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

SimTraffic Performance Report

7: Fays Avenue & Route 107 Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Travel Dist (mi)	136.1	84.9	107.2	2114.4	4374.2	258.2	7075.1
Fuel Used (gal)	11.8	5.4	9.8	115.3	190.0	10.5	342.9
HC Emissions (g)	32	17	26	304	446	26	851
CO Emissions (g)	995	630	1000	10432	6025	343	19425
NOx Emissions (g)	96	43	67	681	734	38	1658
Vehicles Entered	804	502	660	12990	13860	787	29603
Vehicles Exited	804	503	660	12994	13868	788	29617
Hourly Exit Rate	34	21	28	541	578	33	1234
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0

Total Network Performance

Travel Dist (mi)	35256.5
Fuel Used (gal)	2653.8
HC Emissions (g)	7749
CO Emissions (g)	368303
NOx Emissions (g)	24684
Vehicles Entered	40030
Vehicles Exited	40096
Hourly Exit Rate	1671
Denied Entry Before	0
Denied Entry After	0

SimTraffic Simulation Summary

Summary of All Intervals

Start Time	11:57
End Time	12:00
Total Time (min)	1443
Time Recorded (min)	1440
# of Intervals	20
# of Recorded Intvls	19
Volume counts from "V:\08571\Environmental\08571 SAT No-Build Volumes.csv" data file(s)	
Volume date = 5/31/2008	
Vehs Entered	43120
Vehs Exited	43198
Starting Vehs	105
Ending Vehs	27
Denied Entry Before	1
Denied Entry After	0
Travel Distance (mi)	38263
Travel Time (hr)	1509.6
Total Delay (hr)	442.9
Total Stops	36811
Fuel Used (gal)	2756.0

Interval #0 Information Seeding

Start Time	11:57
End Time	12:00
Total Time (min)	3
Volumes adjusted by Growth Factors.	
No data recorded this interval.	

Interval #1 Information Recording

Start Time	12:00
End Time	2:00
Total Time (min)	120
Volumes adjusted by Growth Factors.	
Vehs Entered	1131
Vehs Exited	1218
Starting Vehs	105
Ending Vehs	18
Denied Entry Before	1
Denied Entry After	0
Travel Distance (mi)	1036
Travel Time (hr)	33.0
Total Delay (hr)	4.2
Total Stops	518
Fuel Used (gal)	56.8

SimTraffic Simulation Summary

Interval #2 Information

Start Time 2:00
End Time 4:00
Total Time (min) 120

Volumes adjusted by Growth Factors.

Vehs Entered 547
Vehs Exited 555
Starting Vehs 18
Ending Vehs 10
Denied Entry Before 0
Denied Entry After 0
Travel Distance (mi) 490
Travel Time (hr) 14.7
Total Delay (hr) 1.2
Total Stops 173
Fuel Used (gal) 25.4

Interval #3 Information

Start Time 4:00
End Time 6:00
Total Time (min) 120

Volumes adjusted by Growth Factors.

Vehs Entered 510
Vehs Exited 514
Starting Vehs 10
Ending Vehs 6
Denied Entry Before 0
Denied Entry After 0
Travel Distance (mi) 443
Travel Time (hr) 13.3
Total Delay (hr) 1.2
Total Stops 187
Fuel Used (gal) 23.8

SimTraffic Simulation Summary

Interval #4 Information

Start Time	6:00
End Time	7:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Entered	942
Vehs Exited	924
Starting Vehs	6
Ending Vehs	24
Denied Entry Before	0
Denied Entry After	0
Travel Distance (mi)	821
Travel Time (hr)	27.5
Total Delay (hr)	4.6
Total Stops	490
Fuel Used (gal)	46.8

Interval #5 Information

Start Time	7:00
End Time	8:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Vehs Entered	1549
Vehs Exited	1522
Starting Vehs	24
Ending Vehs	51
Denied Entry Before	0
Denied Entry After	0
Travel Distance (mi)	1356
Travel Time (hr)	47.3
Total Delay (hr)	9.6
Total Stops	912
Fuel Used (gal)	87.2

SimTraffic Simulation Summary

Interval #6 Information

Start Time	8:00
End Time	9:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Vehs Entered	1871
Vehs Exited	1855
Starting Vehs	51
Ending Vehs	67
Denied Entry Before	0
Denied Entry After	0
Travel Distance (mi)	1644
Travel Time (hr)	59.5
Total Delay (hr)	13.6
Total Stops	1249
Fuel Used (gal)	121.7

Interval #7 Information

Start Time	9:00
End Time	10:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Vehs Entered	2396
Vehs Exited	2380
Starting Vehs	67
Ending Vehs	83
Denied Entry Before	0
Denied Entry After	1
Travel Distance (mi)	2106
Travel Time (hr)	78.8
Total Delay (hr)	20.2
Total Stops	1681
Fuel Used (gal)	146.8

SimTraffic Simulation Summary

Interval #8 Information

Start Time	10:00
End Time	11:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Vehs Entered	2997
Vehs Exited	2960
Starting Vehs	83
Ending Vehs	120
Denied Entry Before	1
Denied Entry After	2
Travel Distance (mi)	2651
Travel Time (hr)	111.2
Total Delay (hr)	37.5
Total Stops	2906
Fuel Used (gal)	205.2

Interval #9 Information

Start Time	11:00
End Time	12:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Vehs Entered	3005
Vehs Exited	2996
Starting Vehs	120
Ending Vehs	129
Denied Entry Before	2
Denied Entry After	2
Travel Distance (mi)	2649
Travel Time (hr)	110.3
Total Delay (hr)	36.5
Total Stops	2787
Fuel Used (gal)	197.4

SimTraffic Simulation Summary

Interval #10 Information

Start Time 12:00
End Time 1:00
Total Time (min) 60

Volumes adjusted by Growth Factors.

Vehs Entered 3105
Vehs Exited 3130
Starting Vehs 129
Ending Vehs 104
Denied Entry Before 2
Denied Entry After 1
Travel Distance (mi) 2751
Travel Time (hr) 120.1
Total Delay (hr) 43.2
Total Stops 3407
Fuel Used (gal) 219.0

Interval #11 Information

Start Time 1:00
End Time 2:00
Total Time (min) 60

Volumes adjusted by Growth Factors.

Vehs Entered 3090
Vehs Exited 3111
Starting Vehs 104
Ending Vehs 83
Denied Entry Before 1
Denied Entry After 0
Travel Distance (mi) 2770
Travel Time (hr) 121.7
Total Delay (hr) 44.5
Total Stops 3577
Fuel Used (gal) 213.1

SimTraffic Simulation Summary

Interval #12 Information

Start Time 2:00
End Time 3:00
Total Time (min) 60

Volumes adjusted by Growth Factors.

Vehs Entered 3171
Vehs Exited 3114
Starting Vehs 83
Ending Vehs 140
Denied Entry Before 0
Denied Entry After 0
Travel Distance (mi) 2806
Travel Time (hr) 128.3
Total Delay (hr) 50.0
Total Stops 4136
Fuel Used (gal) 209.3

Interval #13 Information

Start Time 3:00
End Time 4:00
Total Time (min) 60

Volumes adjusted by Growth Factors.

Entered 2998
Vehs Exited 3022
Starting Vehs 140
Ending Vehs 116
Denied Entry Before 0
Denied Entry After 0
Travel Distance (mi) 2675
Travel Time (hr) 112.0
Total Delay (hr) 37.5
Total Stops 2947
Fuel Used (gal) 206.9

SimTraffic Simulation Summary

Interval #14 Information

Start Time 4:00
End Time 5:00
Total Time (min) 60

Volumes adjusted by Growth Factors.

Vehs Entered 2680
Vehs Exited 2708
Starting Vehs 116
Ending Vehs 88
Denied Entry Before 0
Denied Entry After 0
Travel Distance (mi) 2408
Travel Time (hr) 97.6
Total Delay (hr) 30.6
Total Stops 2391
Fuel Used (gal) 180.8

Interval #15 Information

Start Time 5:00
End Time 6:00
Total Time (min) 60

Volumes adjusted by Growth Factors.

Vehs Entered 2681
Vehs Exited 2662
Starting Vehs 88
Ending Vehs 107
Denied Entry Before 0
Denied Entry After 3
Travel Distance (mi) 2376
Travel Time (hr) 94.4
Total Delay (hr) 27.9
Total Stops 2215
Fuel Used (gal) 171.3

SimTraffic Simulation Summary

Interval #16 Information

Start Time	6:00
End Time	7:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Vehs Entered	2491
Vehs Exited	2501
Starting Vehs	107
Ending Vehs	97
Denied Entry Before	3
Denied Entry After	0
Travel Distance (mi)	2199
Travel Time (hr)	87.1
Total Delay (hr)	25.6
Total Stops	2177
Fuel Used (gal)	157.1

Interval #17 Information

Start Time	7:00
End Time	8:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Vehs Entered	2263
Vehs Exited	2284
Starting Vehs	97
Ending Vehs	76
Denied Entry Before	0
Denied Entry After	0
Travel Distance (mi)	2044
Travel Time (hr)	76.9
Total Delay (hr)	20.0
Total Stops	1658
Fuel Used (gal)	143.7

SimTraffic Simulation Summary

Interval #18 Information

Start Time 8:00
End Time 10:00
Total Time (min) 120

Volumes adjusted by Growth Factors.

Entered 3424
Vehs Exited 3450
Starting Vehs 76
Ending Vehs 50
Denied Entry Before 0
Denied Entry After 0
Travel Distance (mi) 3029
Travel Time (hr) 108.7
Total Delay (hr) 23.9
Total Stops 2232
Fuel Used (gal) 213.0

Interval #19 Information

Start Time 10:00
End Time 12:00
Total Time (min) 120

Volumes adjusted by Growth Factors.

Entered 2289
Vehs Exited 2292
Starting Vehs 50
Ending Vehs 27
Denied Entry Before 0
Denied Entry After 0
Travel Distance (mi) 2010
Travel Time (hr) 67.0
Total Delay (hr) 11.2
Total Stops 1168
Fuel Used (gal) 130.9

SimTraffic Performance Report

1: Ravenna Avenue & Route 107 Performance by movement

Movement	EBL	EBT	EBR	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Travel Dist (mi)	33.4	2.1	19.0	7.7	43.0	29.5	1570.6	7.0	206.9	2812.7	36.4	4768.4
Fuel Used (gal)	3.8	0.2	1.9	0.7	2.4	3.7	125.6	0.5	18.7	191.2	4.4	353.0
HC Emissions (g)	12	1	5	2	6	12	333	2	65	634	8	1078
CO Emissions (g)	332	26	138	39	129	305	15109	71	2787	33083	320	52338
NOx Emissions (g)	38	2	12	5	12	47	1141	5	182	1896	22	3364
Vehicles Entered	358	23	204	55	306	303	16359	72	1164	15906	207	34957
Vehicles Exited	358	23	204	55	306	302	16366	72	1169	15910	207	34972
Hourly Exit Rate	15	1	9	2	13	13	682	3	49	663	9	1457
Denied Entry Before	0	0	0	0	0	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0	0	0	0	0	0

2: Olde Village Drive & Route 107 Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Travel Dist (mi)	108.9	11.2	53.1	1677.5	1506.7	94.9	3452.3
Fuel Used (gal)	11.7	0.5	6.3	162.4	145.2	5.6	331.6
HC Emissions (g)	37	1	22	604	435	23	1122
CO Emissions (g)	1275	22	938	40165	22975	1028	66404
NOx Emissions (g)	121	2	75	2149	1590	64	4001
Vehicles Entered	1002	103	494	15568	15485	969	33621
Vehicles Exited	1002	103	494	15572	15493	970	33634
Hourly Exit Rate	42	4	21	649	646	40	1401
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0

3: Wal-Mart North Driveway & Route 107 Performance by movement

Movement	WBR	NBT	NBR	SBT	All
Travel Dist (mi)	93.0	891.5	8.3	1741.4	2734.3
Fuel Used (gal)	4.7	94.1	0.9	124.0	223.8
HC Emissions (g)	14	294	2	445	755
CO Emissions (g)	400	16276	56	23110	39841
NOx Emissions (g)	29	1109	7	1454	2599
Vehicles Entered	810	15732	145	16197	32884
Vehicles Exited	810	15730	145	16197	32882
Hourly Exit Rate	34	655	6	675	1370
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

SimTraffic Performance Report

4: Main Wal-Mart Driveway & Route 107 Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Travel Dist (mi)	340.9	53.6	131.7	831.6	748.2	142.8	2248.8
Fuel Used (gal)	33.9	2.3	18.3	51.4	66.7	5.9	178.5
HC Emissions (g)	98	6	50	128	185	21	487
CO Emissions (g)	3384	104	895	4033	7168	296	15880
NOx Emissions (g)	282	10	153	340	559	28	1372
Vehicles Entered	2196	344	2179	13721	13723	2619	34782
Vehicles Exited	2197	344	2179	13718	13723	2619	34780
Hourly Exit Rate	92	14	91	572	572	109	1449
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0

5: South Wal-Mart Driveway & Route 107 Performance by movement

Movement	EBR	NBT	SBT	SBR	All
Travel Dist (mi)	66.8	454.7	870.5	1.5	1393.5
Fuel Used (gal)	4.7	18.1	117.8	0.1	140.7
HC Emissions (g)	14	45	324	0	383
CO Emissions (g)	316	799	18314	19	19448
NOx Emissions (g)	34	73	1227	1	1336
Vehicles Entered	1554	15893	14057	24	31528
Vehicles Exited	1556	15896	14063	24	31539
Hourly Exit Rate	65	662	586	1	1314
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

6: Meineke Driveway & Route 107 Performance by movement

Movement	EBR	NBT	SBT	SBR	All
Travel Dist (mi)	4.5	1664.2	426.4	3.2	2098.3
Fuel Used (gal)	0.3	95.5	55.4	0.1	151.3
HC Emissions (g)	1	236	162	0	400
CO Emissions (g)	14	10474	9035	6	19528
NOx Emissions (g)	2	600	650	1	1252
Vehicles Entered	185	15889	15517	117	31708
Vehicles Exited	185	15893	15521	117	31716
Hourly Exit Rate	8	662	647	5	1322
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

SimTraffic Performance Report

7: Fays Avenue & Route 107 Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Travel Dist (mi)	134.7	88.1	118.4	2356.3	4674.2	281.0	7652.9
Fuel Used (gal)	11.3	5.6	11.7	128.9	216.8	12.1	386.4
HC Emissions (g)	32	18	30	335	510	29	955
CO Emissions (g)	1015	644	1156	10721	6921	387	20844
NOx Emissions (g)	94	44	79	728	830	43	1818
Vehicles Entered	796	520	728	14476	14823	857	32200
Vehicles Exited	796	521	731	14484	14828	858	32218
Hourly Exit Rate	33	22	30	604	618	36	1342
Denied Entry Before	0	0	0	1	0	0	1
Denied Entry After	0	0	0	0	0	0	0

Total Network Performance

Travel Dist (mi)	38263.3
Fuel Used (gal)	2756.0
HC Emissions (g)	7801
CO Emissions (g)	354760
NOx Emissions (g)	24372
Vehicles Entered	43120
Vehicles Exited	43198
Hourly Exit Rate	1800
Denied Entry Before	1
Denied Entry After	0

SimTraffic Simulation Summary

Summary of All Intervals

Start Time	11:57
End Time	12:00
Total Time (min)	1443
Time Recorded (min)	1440
# of Intervals	20
# of Recorded Intvls	19
Volume counts from "V:\08571\Environmental\08571 SAT Build Volumes.csv" data file(s)	
Volume date = 5/31/2008	
Vehs Entered	51737
Vehs Exited	51836
Starting Vehs	133
Ending Vehs	34
Denied Entry Before	2
Denied Entry After	1
Travel Distance (mi)	44306
Travel Time (hr)	5963.3
Total Delay (hr)	4705.8
Total Stops	124003
Fuel Used (gal)	5729.7

Interval #0 Information Seeding

Start Time	11:57
End Time	12:00
Total Time (min)	3
Volumes adjusted by Growth Factors.	
No data recorded this interval.	

Interval #1 Information Recording

Start Time	12:00
End Time	2:00
Total Time (min)	120
Volumes adjusted by Growth Factors.	

Vehs Entered	1404
Vehs Exited	1520
Starting Vehs	133
Ending Vehs	17
Denied Entry Before	2
Denied Entry After	0
Travel Distance (mi)	1245
Travel Time (hr)	42.4
Total Delay (hr)	7.1
Total Stops	833
Fuel Used (gal)	75.3

SimTraffic Simulation Summary

Interval #2 Information

Start Time	2:00
End Time	4:00
Total Time (min)	120

Volumes adjusted by Growth Factors.

Vehs Entered	665
Vehs Exited	665
Starting Vehs	17
Ending Vehs	18
Denied Entry Before	0
Denied Entry After	0
Travel Distance (mi)	568
Travel Time (hr)	17.7
Total Delay (hr)	1.8
Total Stops	270
Fuel Used (gal)	30.0

Interval #3 Information

Start Time	4:00
End Time	6:00
Total Time (min)	120

Volumes adjusted by Growth Factors.

Vehs Entered	627
Vehs Exited	637
Starting Vehs	18
Ending Vehs	8
Denied Entry Before	0
Denied Entry After	0
Travel Distance (mi)	539
Travel Time (hr)	16.9
Total Delay (hr)	1.8
Total Stops	281
Fuel Used (gal)	32.3

SimTraffic Simulation Summary

Interval #4 Information

Start Time	6:00
End Time	7:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Vehs Entered	1112
Vehs Exited	1084
Starting Vehs	8
Ending Vehs	36
Denied Entry Before	0
Denied Entry After	0
Travel Distance (mi)	929
Travel Time (hr)	32.3
Total Delay (hr)	6.0
Total Stops	666
Fuel Used (gal)	59.3

Interval #5 Information

Start Time	7:00
End Time	8:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Vehs Entered	1783
Vehs Exited	1775
Starting Vehs	36
Ending Vehs	44
Denied Entry Before	0
Denied Entry After	0
Travel Distance (mi)	1529
Travel Time (hr)	55.8
Total Delay (hr)	12.8
Total Stops	1178
Fuel Used (gal)	108.6

SimTraffic Simulation Summary

Interval #6 Information

Start Time 8:00
End Time 9:00
Total Time (min) 60
Volumes adjusted by Growth Factors.

Vehs Entered 2277
Vehs Exited 2253
Starting Vehs 44
Ending Vehs 68
Denied Entry Before 0
Denied Entry After 0
Travel Distance (mi) 1953
Travel Time (hr) 73.8
Total Delay (hr) 18.9
Total Stops 1689
Fuel Used (gal) 150.2

Interval #7 Information

Start Time 9:00
End Time 10:00
Total Time (min) 60
Volumes adjusted by Growth Factors.

Vehs Entered 2957
Vehs Exited 2933
Starting Vehs 68
Ending Vehs 92
Denied Entry Before 0
Denied Entry After 0
Travel Distance (mi) 2510
Travel Time (hr) 104.6
Total Delay (hr) 33.5
Total Stops 2776
Fuel Used (gal) 189.2

SimTraffic Simulation Summary

Interval #8 Information

Start Time 10:00
 End Time 11:00
 Total Time (min) 60
 Volumes adjusted by Growth Factors.

Vehs Entered 3649
Vehs Exited 3512
 Starting Vehs 92
 Ending Vehs 229
 Denied Entry Before 0
 Denied Entry After 16
 Travel Distance (mi) 3054
 Travel Time (hr) 216.9
 Total Delay (hr) 130.5
 Total Stops 10597
 Fuel Used (gal) 284.9

Interval #9 Information

Start Time 11:00
 End Time 12:00
 Total Time (min) 60
 Volumes adjusted by Growth Factors.

Vehs Entered 3571
Vehs Exited 3510
 Starting Vehs 229
 Ending Vehs 290
 Denied Entry Before 16
 Denied Entry After 163
 Travel Distance (mi) 3059
 Travel Time (hr) 403.0
 Total Delay (hr) 316.0
 Total Stops 14005
 Fuel Used (gal) 375.8

SimTraffic Simulation Summary

Interval #10 Information

Start Time 12:00
 End Time 1:00
 Total Time (min) 60
 Volumes adjusted by Growth Factors.

Vehs Entered 3597
 Vehs Exited 3588
 Starting Vehs 290
 Ending Vehs 299
 Denied Entry Before 163
 Denied Entry After 283
 Travel Distance (mi) 3128
 Travel Time (hr) 547.5
 Total Delay (hr) 458.7
 Total Stops 14415
 Fuel Used (gal) 478.8

Interval #11 Information

Start Time 1:00
 End Time 2:00
 Total Time (min) 60
 Volumes adjusted by Growth Factors.

Vehs Entered 3510
 Vehs Exited 3503
 Starting Vehs 299
 Ending Vehs 306
 Denied Entry Before 283
 Denied Entry After 410
 Travel Distance (mi) 3029
 Travel Time (hr) 675.7
 Total Delay (hr) 589.8
 Total Stops 14659
 Fuel Used (gal) 545.0

SimTraffic Simulation Summary

Interval #12 Information

Start Time 2:00
End Time 3:00
Total Time (min) 60

Volumes adjusted by Growth Factors.

Vehs Entered 3871
Vehs Exited 3649
Starting Vehs 306
Ending Vehs 328
Denied Entry Before 410
Denied Entry After 495
Travel Distance (mi) 3149
Travel Time (hr) 777.5
Total Delay (hr) 688.2
Total Stops 15357
Fuel Used (gal) 613.3

Interval #13 Information

Start Time 3:00
End Time 4:00
Total Time (min) 60

Volumes adjusted by Growth Factors.

Vehs Entered 3473
Vehs Exited 3472
Starting Vehs 328
Ending Vehs 329
Denied Entry Before 495
Denied Entry After 654
Travel Distance (mi) 2980
Travel Time (hr) 909.2
Total Delay (hr) 824.7
Total Stops 16008
Fuel Used (gal) 693.1

SimTraffic Simulation Summary

Interval #14 Information

Start Time 4:00
End Time 5:00
Total Time (min) 60
Volumes adjusted by Growth Factors.

Vehs Entered 3354
Vehs Exited 3502
Starting Vehs 329
Ending Vehs 181
Denied Entry Before 654
Denied Entry After 518
Travel Distance (mi) 2926
Travel Time (hr) 801.9
Total Delay (hr) 718.4
Total Stops 11767
Fuel Used (gal) 634.8

Interval #15 Information

Start Time 5:00
End Time 6:00
Total Time (min) 60
Volumes adjusted by Growth Factors.

Vehs Entered 3359
Vehs Exited 3353
Starting Vehs 181
Ending Vehs 187
Denied Entry Before 518
Denied Entry After 328
Travel Distance (mi) 2811
Travel Time (hr) 585.4
Total Delay (hr) 505.0
Total Stops 5789
Fuel Used (gal) 506.7

SimTraffic Simulation Summary

Interval #16 Information

Start Time 6:00
 End Time 7:00
 Total Time (min) 60
 Volumes adjusted by Growth Factors.

Vehs Entered 3232
 Vehs Exited 3255
 Starting Vehs 187
 Ending Vehs 164
 Denied Entry Before 328
 Denied Entry After 87
 Travel Distance (mi) 2730
 Travel Time (hr) 367.0
 Total Delay (hr) 289.1
 Total Stops 5537
 Fuel Used (gal) 352.7

Interval #17 Information

Start Time 7:00
 End Time 8:00
 Total Time (min) 60
 Volumes adjusted by Growth Factors.

Vehs Entered 2793
 Vehs Exited 2856
 Starting Vehs 164
 Ending Vehs 101
 Denied Entry Before 87
 Denied Entry After 0
 Travel Distance (mi) 2413
 Travel Time (hr) 122.9
 Total Delay (hr) 54.4
 Total Stops 3457
 Fuel Used (gal) 200.3

SimTraffic Simulation Summary

Interval #18 Information

Start Time 8:00

End Time 10:00

Total Time (min) 120

Volumes adjusted by Growth Factors.

Entered 4012

Vehs Exited 4051

Starting Vehs 101

Ending Vehs 62

Denied Entry Before 0

Denied Entry After 0

Travel Distance (mi) 3467

Travel Time (hr) 131.3

Total Delay (hr) 32.7

Total Stops 3012

Fuel Used (gal) 242.7

Interval #19 Information

Start Time 10:00

End Time 12:00

Total Time (min) 120

Volumes adjusted by Growth Factors.

Entered 2690

Vehs Exited 2718

Starting Vehs 62

Ending Vehs 34

Denied Entry Before 0

Denied Entry After 1

Travel Distance (mi) 2286

Travel Time (hr) 81.6

Total Delay (hr) 16.5

Total Stops 1707

Fuel Used (gal) 156.8

1: Ravenna Avenue & Route 107 Performance by movement

Movement	EBL	EBT	EBR	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Travel Dist (mi)	29.0	2.5	18.8	9.0	40.6	30.3	1755.8	6.1	198.1	3155.2	32.0	5277.5
Fuel Used (gal)	3.3	0.3	1.7	0.8	2.1	3.9	149.5	0.3	18.7	204.7	2.5	387.9
HC Emissions (g)	10	1	4	2	5	12	369	1	68	693	6	1172
CO Emissions (g)	275	22	117	58	104	305	16361	57	3028	34775	229	55330
NOx Emissions (g)	36	2	10	8	11	45	1294	4	198	1984	16	3607
Vehicles Entered	311	27	201	64	289	311	18302	63	1115	17846	182	38711
Vehicles Exited	311	27	201	64	289	310	18304	63	1117	17853	182	38721
Hourly Exit Rate	13	1	8	3	12	13	763	3	47	744	8	1613
Denied Entry Before	0	0	0	0	0	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0	0	1	0	0	1

2: Olde Village Drive & Route 107 Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Travel Dist (mi)	115.1	12.1	56.3	1876.6	1706.7	88.0	3854.9
Fuel Used (gal)	13.1	0.7	6.7	183.4	155.4	5.8	365.1
HC Emissions (g)	42	2	25	681	457	22	1227
CO Emissions (g)	1402	24	1131	45841	18978	872	68247
NOx Emissions (g)	131	3	87	2364	1463	60	4109
Vehicles Entered	1059	111	524	17416	17534	900	37544
Vehicles Exited	1059	111	524	17419	17544	900	37557
Hourly Exit Rate	44	5	22	726	731	38	1565
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0

3: Wal-Mart North Driveway & Route 107 Performance by movement

Movement	EBR	WBR	NBT	NBR	SBT	SBR	All
Travel Dist (mi)	185.9	91.6	1006.9	8.3	1672.6	291.7	3257.0
Fuel Used (gal)	345.6	5.2	134.2	1.3	174.2	27.9	688.4
HC Emissions (g)	1709	15	433	3	532	86	2777
CO Emissions (g)	10070	460	25514	84	15339	2500	53967
NOx Emissions (g)	914	36	1683	9	1259	197	4099
Vehicles Entered	1219	799	17600	144	15485	2703	37950
Vehicles Exited	1220	798	17601	144	15489	2703	37955
Hourly Exit Rate	51	33	733	6	645	113	1581
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0

4: Main Wal-Mart Driveway & Route 107 Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Travel Dist (mi)	728.9	479.4	282.7	793.2	778.8	135.1	3198.1
Fuel Used (gal)	1136.2	664.1	62.8	63.0	133.7	13.7	2073.5
HC Emissions (g)	6173	3739	164	171	347	41	10636
CO Emissions (g)	35280	20530	2383	6415	8114	1108	73830
NOx Emissions (g)	3136	1718	380	509	963	125	6830
Vehicles Entered	4694	3074	4670	13079	14347	2489	42353
Vehicles Exited	4701	3077	4673	13082	14360	2489	42382
Hourly Exit Rate	196	128	195	545	598	104	1766
Denied Entry Before	0	1	0	0	0	0	1
Denied Entry After	0	0	0	0	0	0	0

5: South Wal-Mart Driveway & Route 107 Performance by movement

Movement	NBT	SBT	All
Travel Dist (mi)	507.6	1067.7	1575.3
Fuel Used (gal)	35.9	186.2	222.1
HC Emissions (g)	92	558	650
CO Emissions (g)	1576	29200	30776
NOx Emissions (g)	169	2024	2192
Vehicles Entered	17747	17438	35185
Vehicles Exited	17746	17446	35192
Hourly Exit Rate	739	727	1466
Denied Entry Before	0	0	0
Denied Entry After	0	0	0

6: Meineke Driveway & Route 107 Performance by movement

Movement	EBR	NBT	SBT	SBR	All
Travel Dist (mi)	4.5	1864.4	483.2	3.5	2355.6
Fuel Used (gal)	0.4	137.7	70.1	0.1	208.4
HC Emissions (g)	1	374	185	0	560
CO Emissions (g)	18	13032	9754	5	22810
NOx Emissions (g)	3	893	608	0	1505
Vehicles Entered	183	17753	17321	127	35384
Vehicles Exited	183	17753	17323	128	35387
Hourly Exit Rate	8	740	722	5	1474
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

7: Fays Avenue & Route 107 Performance by movement

	EBL	EBR	NBL	NBT	SBT	SBR	All
Travel Dist (mi)	167.6	88.3	121.9	2631.8	5205.5	347.0	8562.2
Fuel Used (gal)	15.7	6.0	10.9	151.5	372.9	24.0	581.0
HC Emissions (g)	44	19	33	389	876	58	1419
CO Emissions (g)	1453	645	1179	11007	12771	828	27883
NOx Emissions (g)	127	48	89	831	1695	107	2897
Vehicles Entered	991	522	751	16174	16451	1057	35946
Vehicles Exited	990	522	750	16183	16454	1058	35957
Hourly Exit Rate	41	22	31	674	686	44	1498
Denied Entry Before	0	0	0	1	0	0	1
Denied Entry After	0	0	0	0	0	0	0

Total Network Performance

Travel Dist (mi)	44305.6
Fuel Used (gal)	5729.7
HC Emissions (g)	21576
CO Emissions (g)	467689
NOx Emissions (g)	35434
Vehicles Entered	51737
Vehicles Exited	51836
Hourly Exit Rate	2160
Denied Entry Before	2
Denied Entry After	1

SimTraffic Simulation Summary

Summary of All Intervals

Start Time	11:57
End Time	12:00
Total Time (min)	1443
Time Recorded (min)	1440
# of Intervals	20
# of Recorded Intvls	19
Volume counts from "V:\08571\Environmental\08571 SAT Build Mit Volumes.csv" data file(s)	
Volume date = 5/31/2008	
Vehs Entered	52191
Vehs Exited	52265
Starting Vehs	115
Ending Vehs	41
Denied Entry Before	2
Denied Entry After	0
Travel Distance (mi)	44719
Travel Time (hr)	1936.8
Total Delay (hr)	670.4
Total Stops	56845
Fuel Used (gal)	3389.4

Interval #0 Information Seeding

Start Time	11:57
End Time	12:00
Total Time (min)	3
Volumes adjusted by Growth Factors.	
No data recorded this interval.	

Interval #1 Information Recording

Start Time	12:00
End Time	2:00
Total Time (min)	120
Volumes adjusted by Growth Factors.	
Vehs Entered	1382
Vehs Exited	1470
Starting Vehs	115
Ending Vehs	27
Denied Entry Before	2
Denied Entry After	0
Travel Distance (mi)	1233
Travel Time (hr)	40.8
Total Delay (hr)	6.2
Total Stops	715
Fuel Used (gal)	77.2

SimTraffic Simulation Summary

Interval #2 Information

Start Time 2:00
End Time 4:00
Total Time (min) 120
Volumes adjusted by Growth Factors.

Vehs Entered 687
Vehs Exited 699
Starting Vehs 27
Ending Vehs 15
Denied Entry Before 0
Denied Entry After 1
Travel Distance (mi) 576
Travel Time (hr) 18.3
Total Delay (hr) 2.0
Total Stops 308
Fuel Used (gal) 31.6

Interval #3 Information

Start Time 4:00
End Time 6:00
Total Time (min) 120
Volumes adjusted by Growth Factors.

Vehs Entered 661
Vehs Exited 663
Starting Vehs 15
Ending Vehs 13
Denied Entry Before 1
Denied Entry After 0
Travel Distance (mi) 565
Travel Time (hr) 17.5
Total Delay (hr) 1.8
Total Stops 255
Fuel Used (gal) 29.4

SimTraffic Simulation Summary

Interval #4 Information

Start Time 6:00
 End Time 7:00
 Total Time (min) 60
 Volumes adjusted by Growth Factors.

Vehs Entered 1147
 Vehs Exited 1131
 Starting Vehs 13
 Ending Vehs 29
 Denied Entry Before 0
 Denied Entry After 0
 Travel Distance (mi) 990
 Travel Time (hr) 34.2
 Total Delay (hr) 6.3
 Total Stops 715
 Fuel Used (gal) 64.2

Interval #5 Information

Start Time 7:00
 End Time 8:00
 Total Time (min) 60
 Volumes adjusted by Growth Factors.

Vehs Entered 1887
 Vehs Exited 1849
 Starting Vehs 29
 Ending Vehs 67
 Denied Entry Before 0
 Denied Entry After 0
 Travel Distance (mi) 1581
 Travel Time (hr) 57.6
 Total Delay (hr) 13.0
 Total Stops 1286
 Fuel Used (gal) 112.1

SimTraffic Simulation Summary

Interval #6 Information

Start Time 8:00
End Time 9:00
Total Time (min) 60
Volumes adjusted by Growth Factors.

Vehs Entered 2317
Vehs Exited 2300
Starting Vehs 67
Ending Vehs 84
Denied Entry Before 0
Denied Entry After 0
Travel Distance (mi) 1976
Travel Time (hr) 74.8
Total Delay (hr) 19.0
Total Stops 1722
Fuel Used (gal) 143.0

Interval #7 Information

Start Time 9:00
End Time 10:00
Total Time (min) 60
Volumes adjusted by Growth Factors.

Vehs Entered 3010
Vehs Exited 2990
Starting Vehs 84
Ending Vehs 104
Denied Entry Before 0
Denied Entry After 1
Travel Distance (mi) 2553
Travel Time (hr) 105.2
Total Delay (hr) 32.9
Total Stops 2762
Fuel Used (gal) 190.3

SimTraffic Simulation Summary

Interval #8 Information

Start Time 10:00
End Time 11:00
Total Time (min) 60
Volumes adjusted by Growth Factors.

Vehs Entered 3575
Vehs Exited 3558
Starting Vehs 104
Ending Vehs 121
Denied Entry Before 1
Denied Entry After 0
Travel Distance (mi) 3062
Travel Time (hr) 135.4
Total Delay (hr) 48.6
Total Stops 3885
Fuel Used (gal) 233.1

Interval #9 Information

Start Time 11:00
End Time 12:00
Total Time (min) 60
Volumes adjusted by Growth Factors.

Vehs Entered 3653
Vehs Exited 3611
Starting Vehs 121
Ending Vehs 163
Denied Entry Before 0
Denied Entry After 1
Travel Distance (mi) 3113
Travel Time (hr) 147.4
Total Delay (hr) 59.0
Total Stops 4772
Fuel Used (gal) 243.0

SimTraffic Simulation Summary

Interval #10 Information

Start Time 12:00
End Time 1:00
Total Time (min) 60
Volumes adjusted by Growth Factors.

Vehs Entered 3891
Vehs Exited 3832
Starting Vehs 163
Ending Vehs 222
Denied Entry Before 1
Denied Entry After 9
Travel Distance (mi) 3317
Travel Time (hr) 173.5
Total Delay (hr) 79.5
Total Stops 6461
Fuel Used (gal) 274.1

Interval #11 Information

Start Time 1:00
End Time 2:00
Total Time (min) 60
Volumes adjusted by Growth Factors.

Vehs Entered 3748
Vehs Exited 3757
Starting Vehs 222
Ending Vehs 211
Denied Entry Before 9
Denied Entry After 1
Travel Distance (mi) 3265
Travel Time (hr) 180.6
Total Delay (hr) 87.8
Total Stops 7551
Fuel Used (gal) 271.5

SimTraffic Simulation Summary

Interval #12 Information

Start Time	2:00
End Time	3:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Vehs Entered	3786
Vehs Exited	3843
Starting Vehs	211
Ending Vehs	134
Denied Entry Before	1
Denied Entry After	6
Travel Distance (mi)	3288
Travel Time (hr)	169.9
Total Delay (hr)	76.8
Total Stops	6335
Fuel Used (gal)	273.1

Interval #13 Information

Start Time	3:00
End Time	4:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Vehs Entered	3516
Vehs Exited	3521
Starting Vehs	134
Ending Vehs	129
Denied Entry Before	6
Denied Entry After	1
Travel Distance (mi)	2999
Travel Time (hr)	135.5
Total Delay (hr)	50.2
Total Stops	4017
Fuel Used (gal)	234.1

SimTraffic Simulation Summary

Interval #14 Information

Start Time 4:00
End Time 5:00
Total Time (min) 60

Volumes adjusted by Growth Factors.

Vehs Entered 3256
Vehs Exited 3262
Starting Vehs 129
Ending Vehs 123
Denied Entry Before 1
Denied Entry After 1
Travel Distance (mi) 2760
Travel Time (hr) 117.7
Total Delay (hr) 39.6
Total Stops 3230
Fuel Used (gal) 214.4

Interval #15 Information

Start Time 5:00
End Time 6:00
Total Time (min) 60

Volumes adjusted by Growth Factors.

Vehs Entered 3238
Vehs Exited 3237
Starting Vehs 123
Ending Vehs 122
Denied Entry Before 1
Denied Entry After 0
Travel Distance (mi) 2773
Travel Time (hr) 117.5
Total Delay (hr) 39.0
Total Stops 3122
Fuel Used (gal) 222.1

SimTraffic Simulation Summary

Interval #16 Information

Start Time 6:00
 End Time 7:00
 Total Time (min) 60
 Volumes adjusted by Growth Factors.

Vehs Entered 2893
 Vehs Exited 2926
 Starting Vehs 122
 Ending Vehs 89
 Denied Entry Before 0
 Denied Entry After 1
 Travel Distance (mi) 2482
 Travel Time (hr) 99.8
 Total Delay (hr) 29.7
 Total Stops 2422
 Fuel Used (gal) 182.5

Interval #17 Information

Start Time 7:00
 End Time 8:00
 Total Time (min) 60
 Volumes adjusted by Growth Factors.

Vehs Entered 2712
 Vehs Exited 2722
 Starting Vehs 89
 Ending Vehs 79
 Denied Entry Before 1
 Denied Entry After 2
 Travel Distance (mi) 2344
 Travel Time (hr) 94.8
 Total Delay (hr) 28.2
 Total Stops 2353
 Fuel Used (gal) 175.5

SimTraffic Simulation Summary

Interval #18 Information

Start Time 8:00
 End Time 10:00
 Total Time (min) 120
 Volumes adjusted by Growth Factors.

Vehs Entered 4134
 Vehs Exited 4150
 Starting Vehs 79
 Ending Vehs 63
 Denied Entry Before 2
 Denied Entry After 2
 Travel Distance (mi) 3530
 Travel Time (hr) 134.3
 Total Delay (hr) 34.1
 Total Stops 3173
 Fuel Used (gal) 257.3

Interval #19 Information

Start Time 10:00
 End Time 12:00
 Total Time (min) 120
 Volumes adjusted by Growth Factors.

Vehs Entered 2722
 Vehs Exited 2744
 Starting Vehs 63
 Ending Vehs 41
 Denied Entry Before 2
 Denied Entry After 0
 Travel Distance (mi) 2312
 Travel Time (hr) 82.1
 Total Delay (hr) 16.7
 Total Stops 1761
 Fuel Used (gal) 160.8

SimTraffic Performance Report

1: Ravenna Avenue & Route 107 Performance by movement

Movement	EBL	EBT	EBR	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Travel Dist (mi)	29.4	2.9	16.2	8.7	43.9	28.5	1768.4	6.0	201.0	3187.0	29.6 5321.6
Fuel Used (gal)	3.4	0.3	1.5	0.7	2.3	3.6	148.9	0.4	17.7	212.2	2.6 393.7
Fuel Eff. (mpg)	8.7	9.7	10.6	12.2	18.8	7.9	11.9	15.9	11.3	15.0	11.4 13.5
HC Emissions (g)	10	1	4	2	6	11	374	1	64	700	6 1180
CO Emissions (g)	263	34	104	55	140	270	16725	67	2727	35855	242 56482
NOx Emissions (g)	37	3	10	6	13	43	1327	4	184	2084	17 3728
Vehicles Entered	315	31	174	62	312	293	18425	62	1131	18022	168 38995
Vehicles Exited	315	31	174	62	312	292	18433	62	1132	18026	168 39007
Hourly Exit Rate	13	1	7	3	13	12	768	3	47	751	7 1625
Denied Entry Before	0	0	0	0	0	0	0	0	0	0	0 0
Denied Entry After	0	0	0	0	0	0	0	0	0	0	0 0

2: Olde Village Drive & Route 107 Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Travel Dist (mi)	115.4	11.4	58.5	1888.8	1719.0	90.6	3883.8
Fuel Used (gal)	12.4	0.5	6.8	171.9	152.6	5.4	349.7
Fuel Eff. (mpg)	9.3	22.1	8.6	11.0	11.3	16.7	11.1
HC Emissions (g)	39	1	24	647	462	21	1194
CO Emissions (g)	1327	23	1018	42240	22861	860	68329
NOx Emissions (g)	125	2	83	2271	1655	58	4195
Vehicles Entered	1062	105	545	17531	17648	925	37816
Vehicles Exited	1062	105	545	17531	17652	926	37821
Hourly Exit Rate	44	4	23	730	736	39	1576
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0

3: Wal-Mart North Driveway & Route 107 Performance by movement

Movement	EBR	WBR	NBT	NBR	SBT	SBR	All
Travel Dist (mi)	151.5	91.4	2122.1	16.1	1694.8	287.5	4363.5
Fuel Used (gal)	9.4	4.8	178.8	4.1	139.2	21.6	357.9
Fuel Eff. (mpg)	16.1	19.0	11.9	3.9	12.2	13.3	12.2
HC Emissions (g)	23	14	515	4	483	73	1114
CO Emissions (g)	719	392	25914	164	26210	3416	56815
NOx Emissions (g)	51	30	1857	16	1718	216	3888
Vehicles Entered	1191	797	17776	134	15668	2668	38234
Vehicles Exited	1191	797	17775	134	15670	2669	38236
Hourly Exit Rate	50	33	741	6	653	111	1593
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0

SimTraffic Performance Report

4: Main Wal-Mart Driveway & Route 107 Performance by movement

Movement	EBL	EBR	WBR	NBL	NBT	NBR	SBT	SBR	All
Travel Dist (mi)	710.6	470.3	1.6	408.5	1134.8	3.1	1649.8	285.6	4664.3
Fuel Used (gal)	64.6	33.9	0.1	44.1	65.9	0.1	147.0	21.7	377.5
Fuel Eff. (mpg)	11.0	13.9	22.2	9.3	17.2	21.4	11.2	13.2	12.4
HC Emissions (g)	184	109	0	124	163	1	439	82	1103
CO Emissions (g)	5201	4005	2	2524	4636	20	15551	4142	36082
NOx Emissions (g)	496	262	0	332	400	1	1257	243	2991
Vehicles Entered	4602	3034	11	4843	13303	36	14495	2505	42829
Vehicles Exited	4607	3039	11	4849	13306	36	14498	2506	42852
Hourly Exit Rate	192	127	0	202	554	2	604	104	1786
Denied Entry Before	0	0	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0	0	0

5: Meineke Driveway & Route 107 Performance by movement

Movement	EBR	NBT	SBT	SBR	All
Travel Dist (mi)	3.8	1484.7	1505.9	13.1	3007.5
Fuel Used (gal)	0.3	102.0	222.1	1.1	325.6
Fuel Eff. (mpg)	12.7	14.6	6.8	11.6	9.2
HC Emissions (g)	1	255	677	5	938
CO Emissions (g)	12	12832	38345	274	51463
NOx Emissions (g)	2	710	2541	16	3269
Vehicles Entered	172	18174	17394	151	35891
Vehicles Exited	172	18176	17399	151	35898
Hourly Exit Rate	7	757	725	6	1496
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

6: Fays Avenue & Route 107 Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Travel Dist (mi)	179.0	87.9	117.5	2687.5	4690.3	318.0	8080.1
Fuel Used (gal)	17.2	6.7	10.7	151.5	249.2	15.6	451.0
Fuel Eff. (mpg)	10.4	13.2	10.9	17.7	18.8	20.3	17.9
HC Emissions (g)	49	22	32	392	600	39	1134
CO Emissions (g)	1576	798	1124	11161	9131	632	24421
NOx Emissions (g)	144	55	82	827	1126	70	2305
Vehicles Entered	1072	526	723	16515	16494	1081	36411
Vehicles Exited	1072	527	724	16520	16504	1080	36427
Hourly Exit Rate	45	22	30	688	688	45	1518
Denied Entry Before	0	0	0	2	0	0	2
Denied Entry After	0	0	0	0	0	0	0

SimTraffic Performance Report

Total Network Performance

Travel Dist (mi)	44719.2
Fuel Used (gal)	3389.4
Fuel Eff. (mpg)	13.2
HC Emissions (g)	9619
CO Emissions (g)	427525
NOx Emissions (g)	30187
Vehicles Entered	52191
Vehicles Exited	52265
Hourly Exit Rate	2178
Denied Entry Before	2
Denied Entry After	0