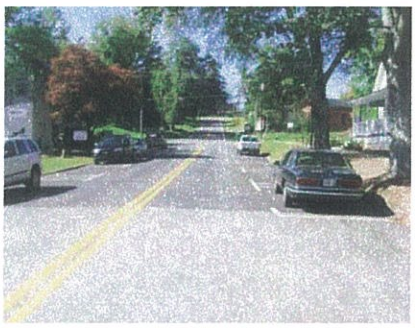
City of Flowery Branch
Downtown Transportation Study



July 30, 2010

POND
Architects • Engineers • Planners

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1 INTRODUCTION

Context

The City of Flowery Branch, with support from the Gainesville-Hall Metropolitan Planning Organization (GHMPO), has funded this study of the transportation needs within the City's historic downtown core. The City, founded in 1874, has seen significant population growth in the recent decade. According to the 2000 Census, the population of Flowery Branch was 1,806. However, more recent population estimates place the City's population at 3,966. The growth that the City has experienced has increased the amount of traffic that moves around and through downtown, which in turn has resulted in a greater strain on the City's aging infrastructure.

Study Area

The study area is bounded by McEver Road to the north, Lights Ferry Road to the west, Atlanta Highway and Mulberry Street to the south, and Gainesville Street to the east. A map of the study area is shown in Figure 1.

Need and Purpose

The purpose of this study is to identify a series of transportation improvements to address the vehicular and pedestrian needs of the City's historic downtown area. It is important that these improvements be developed based on a combination of engineering evaluation, community input, and City staff insight. Furthermore, the recommendations of this study must be achievable with respect to the reality of both funding and construction constraints that affect the implementation of any infrastructure project.

PROJECT INTRODUCTION

Figure 1. Study Area

INVENTORY OF EXISTING CONDITIONS 2

2.1 LAND USE

The Study Area is approximately 543 acres in size. Residential land use makes up more than one-third of the study area, and agricultural use is more than one-fourth of the study area. The current composition of land uses is as follows:

Agricultural	27.74%
Commercial	4.89%
Conservation Use	10.62%
Exempt	3.58%
Industrial	1.64%
Public Utility Area	0.08%
Residential	37.26%
Public Right of Way	14.29%

Figure 2 shows the location of these land uses.

2.1.1 Development and Redevelopment Opportunities

The Flowery Branch Comprehensive Plan identifies a portion of Old Town, the historic core of Flowery Branch, as the redevelopment focus area within downtown. A redevelopment boundary is established within the Plan, which identifies the two most important blocks of land that are in need of redevelopment. These blocks are:

- Block No. 1: That part of the block (excluding existing buildings fronting on Main Street) bounded by Main Street, Church Street, Chestnut Street and Railroad Avenue; and
- Block No. 2: That block bounded by Gainesville, Pine, Mitchell and Main Streets.

In general, the vision for redevelopment in these areas consists primarily of mixed-use development and an increase in development intensity. A proposal for redeveloping a portion of Block No. 1 has already been discussed with the City. From a traffic generation standpoint this redevelopment is estimated to add 1,964 new daily trips, 77 morning weekday peak hour trips, and 185 afternoon weekday peak hour trips to the roadway network if/when completed.

As previously stated, more than one-fourth of the study area (approximately 150 acres) is currently agricultural land and poses the possibility for new development. A proposal for developing 106 acres of this land as single-family residential has been brought before the City in the past. The development, as it was proposed, was estimated to add 2,603 new daily trips, 199 morning weekday peak hour trips, and 264 afternoon weekday peak hour trips to the roadway network. Though the recent economic environment has generally slowed or halted this type of development, it is likely that this property will be developed at some point in the future.

EXISTING CONDITIONS

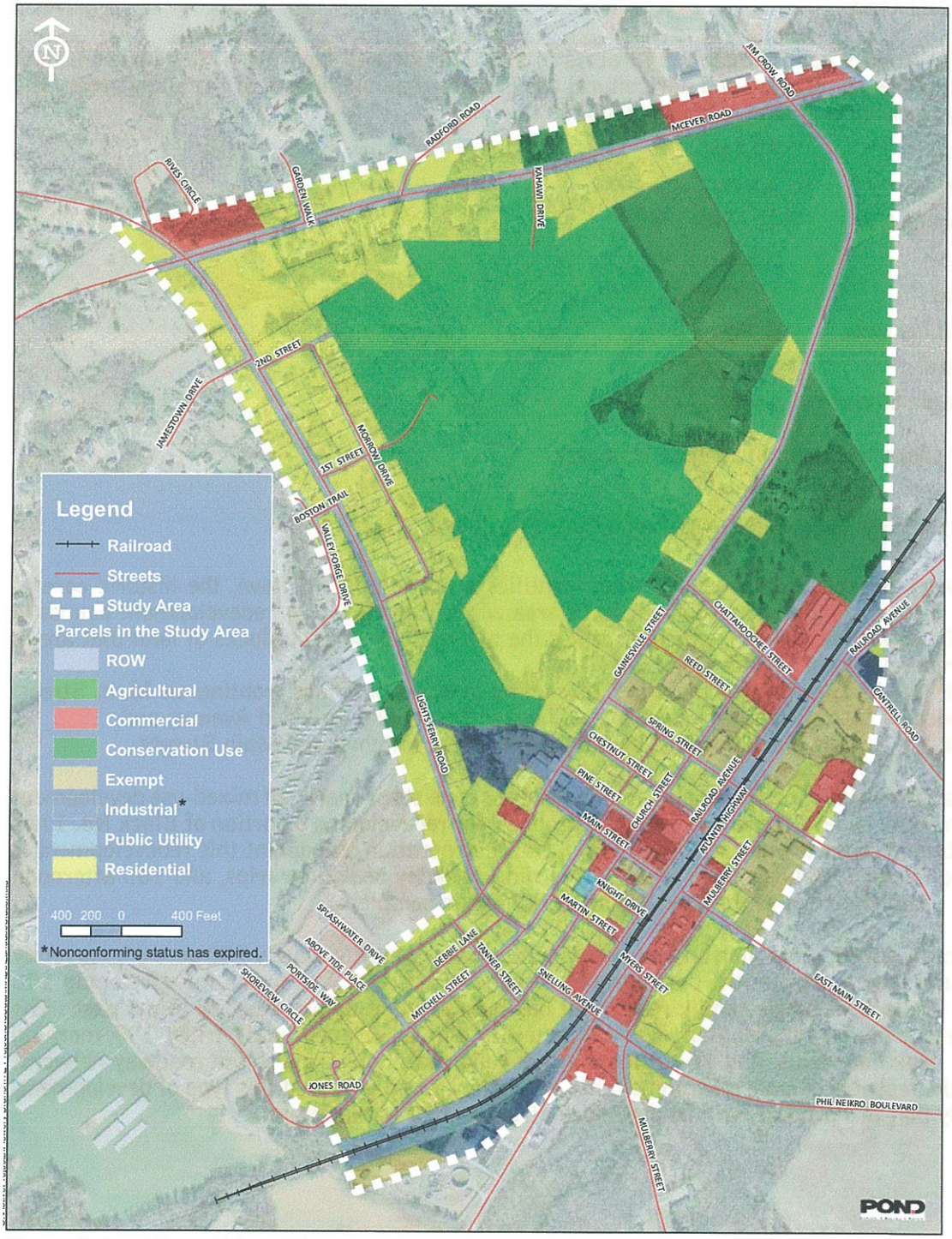

Figure 2. Locations of Land Uses

2.2 TRANSPORTATION INVENTORY

2.2.1 Functional Classifications

Roadway systems are made up of roads that serve different roles. Functional classification is used to define the role or "function" that a given road plays in the overall roadway network. Functional classification groups streets and highways based on the character of the service they are intended to provide. In general terms, the higher the level of access that a roadway provides there is a corresponding lower level of mobility. A good roadway network will have a balance of high access and high mobility roads. There are three primary categories of roads. They are, in order of decreasing mobility: arterials, collectors, and local streets.

Arterials
These are roads that connect cities, towns, and other traffic generators. Arterials typically attract longer trips. At the highest level they can include freeways and have higher levels of mobility, though many minor arterials are only two lanes in width.

Collectors
These medium volume roads collect and distribute traffic between arterials and local streets. They have a lower level of mobility than arterials.

Local Streets
These roads facilitate short-range trips, provide the highest level of access, and usually have the lowest level of mobility. Both travel speeds and volumes are lower on local streets. Though often associated with residential land uses, local streets are not limited to residential areas.

Within the study are there are approximately 10 miles of roadway. These roads, grouped by Georgia DOT functional classification, are shown in Table 1 below. They are also shown in Figure 3.

Road Type	Length (mi.)	Percentage
Urban Minor Arterial Street	3.24	31.64%
Urban Collector Street	0.12	1.16%
Urban Local Road	6.81	66.59%
Rural Local Road	0.06	0.61%
Total:	10.23	100.00%

Table 1. Roadway Classification

As shown in Table 1 above, more than two-thirds of the roads within the study area are local roads.

EXISTING CONDITIONS

Figure 3. Functional Classification

The ownership of roads can be either State, local (City or County), or private. Table 2 shows the breakdown of roadway ownership/responsibility in the study area. This information is also depicted in Figure 4.

Ownership/Responsibility	Length (mi.)	Percentage
Local	9.41	92.01%
Private	0.07	0.67%
State	0.75	7.32%
Total:	10.23	100.00%

Table 2. Roadway Ownership

2.2.2 Existing Transportation Infrastructure Conditions

An existing conditions inventory was performed of the streets within the study area. Information captured in this inventory includes:

Speed Limit (if posted)
Number of Lanes
Pavement Type
Right-of-Way Width (if available)
Roadway Width
Visual Assessment of Pavement and Striping Condition
Observed Safety Issues
Public Right-of-Way
One-way or Two-way Traffic Flow

The detailed Inventory is provided in the Appendix to this report. In general, the condition of the majority of the transportation infrastructure within the study area is poor. Some of the more common issues are summarized below.

Signing and Marking

Much of the pavement marking is faded or does not exist at all. Many of the regulatory signs and warning signs are too low and do not meet the height requirements of the Manual on Uniform Traffic Control Devices (MUTCD). There is also a lack of street name signs and parking signs. Figures 5 and 6 show examples of regulatory signs mounted too low to meet MUTCD requirements. An excerpt from the MUTCD, which shows proper sign locations and heights, is provided in the Appendix.

EXISTING CONDITIONS

Figure 4. Roadway Ownership

Figure 5. Morrow Drive, looking East

Figure 6. Chattahoochee Street, looking Northwest

Roadway Conditions

In some locations the pavement is worn and cracked (see Figure 7). A more in-depth evaluation of pavement condition was recently performed by Hall County Government. This report inventoried all roadways and included a rating sheet that assigned a numerical value on pavement condition, road use, homes or areas served by the road, and the road classification. It is the City's intention to use this inventory in concert with the findings of this study to determine the order and need of transportation improvements within the study area.


Figure 7. Mitchell Street, between Main Street and Spring Street, facing Northeast

Safety Issues

Several of the roads within the study area have very narrow travel lanes, which can have a great influence on the safety and comfort of driving. There were five two-way roads, or segments of roads, identified that have a total width of 12 ft (6 ft per lane), and one two-way road with a total width of 18 ft (9 ft per lane). Recommended typical lane widths range from 9 to 12 ft. The appropriate width depends on factors such as traffic volume, speed of traffic, and adjacent

EXISTING CONDITIONS

land use. The American Association of State Highway and Transportation Officials (AASHTO) Geometric Design of Highways and Streets states that 11 ft lanes in urban conditions, 10 ft lanes on low-speed facilities, and 9 ft lanes on low-volume facilities in rural and residential areas are acceptable.

Other safety concerns include deep ditches (slopes greater than recommended by good design principles) and fixed objects such as trees, that are located too close to the roadway. AASHTO recommends for low-speed rural collectors and local roads a minimum clear zone of 10 ft. For urban conditions, where curbs are used and space is more restrictive, a minimum 18" clear zone should be provided. Examples of some of these conditions are shown in Figures 8, 9, and 10.

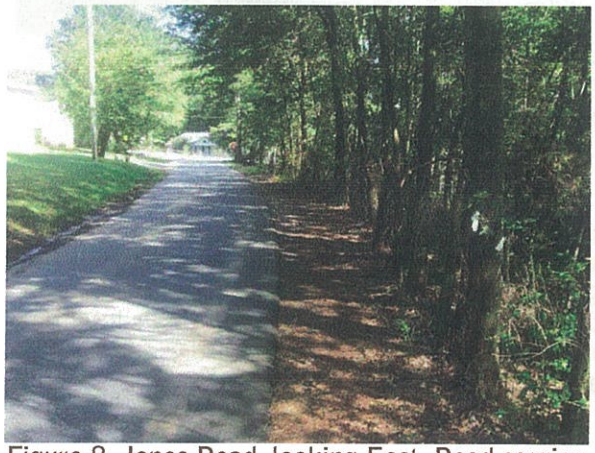

Figure 8. Jones Road, looking East. Road carries two-way traffic and is only 12ft. in width. Water has begun ponding on the North side of the road.

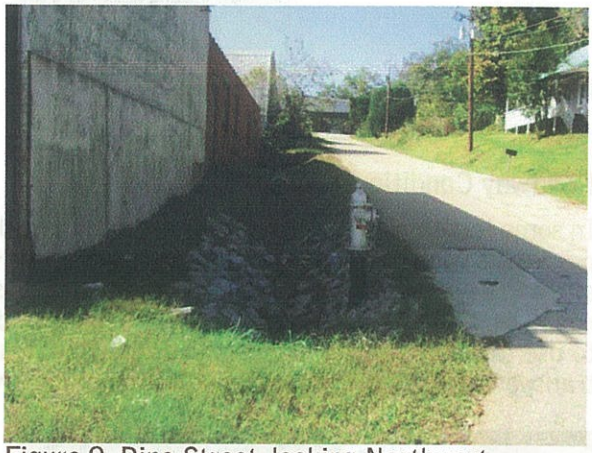

Figure 9. Pine Street, looking Northwest. Dangerous ditches very close to the edge of the pavement.

Figure 10. Dangerous ditch that parallels Church Street extremely close to the edge of pavement.

2.2.3 Data Collection

To evaluate traffic operations within the study area, turning movement counts were performed at key intersections during the weekday morning and afternoon peak times. Traffic counts were performed in mid-November 2009 for a two-hour period in the morning (7:00 a.m. to 9:00 a.m.) and a two-hour period in the afternoon (4:00 p.m. to 6:00 p.m.) at these intersections. From this data the morning and afternoon peak hour volumes for each intersection were determined. These peak hour volumes are shown in Figures 11 and 12. To supplement this data, traffic counts were obtained from past traffic studies performed within the study area for various development projects. These volumes are also shown in Figures 11 and 12. Because these counts were performed in 2005 (McEver Road/Lights Ferry Road), 2006 (Gainesville Street/Cherokee Street), or 2008 (Snelling Avenue/Atlanta Highway), it was necessary that they be adjusted in order to represent 2009 volumes. For the 2005 and 2006 volumes, an annual growth factor of 3% per year was applied to be representative of 2009 volumes. However, the 2008 volumes were equal to or greater than 2009 volumes counted at adjacent intersections. Therefore, no adjustment factor was applied to the 2008 counts.

In addition to turning movement counts, a speed study was performed on Lights Ferry Road between Morrow Drive and Gainesville Street. This location was selected based on input from the Community Workshop performed for this project. Table 3 below summarizes the data collected. A detailed printout of all information collected is provided in the Appendix.

	Northbound	Southbound	Both Directions
Posted Speed	45 mph	45 mph	45 mph
Mean Speed (avg.)	45 mph	45 mph	45 mph
85th Percentile	52 mph	52 mph	52 mph
95th Percentile	55 mph	55 mph	55 mph
24-Hour Volume	1146	1144	2290

Table 3. Lights Ferry Road Speed Data

The 85th percentile speed is the speed at or below which 85% of the vehicles are traveling. So, in this case, 85% of the vehicles are going 52 mph or less. The 85th percentile speed is often used to set speed limits. This information tells us that vehicles are typically traveling at or faster than the posted speed limit.

EXISTING CONDITIONS

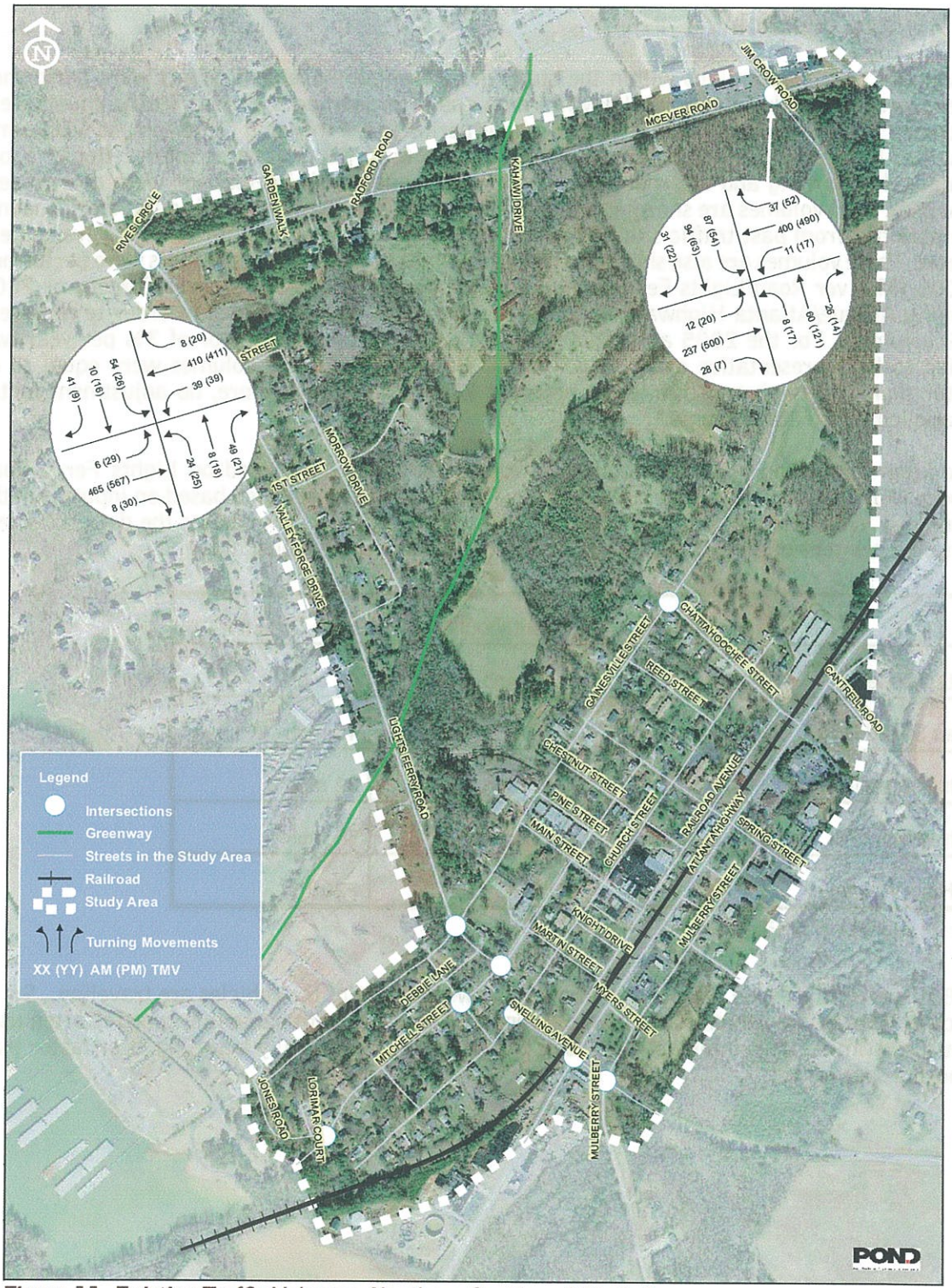

Figure 11. Existing Traffic Volumes, Northern Section of Study Area

EXISTING CONDITIONS

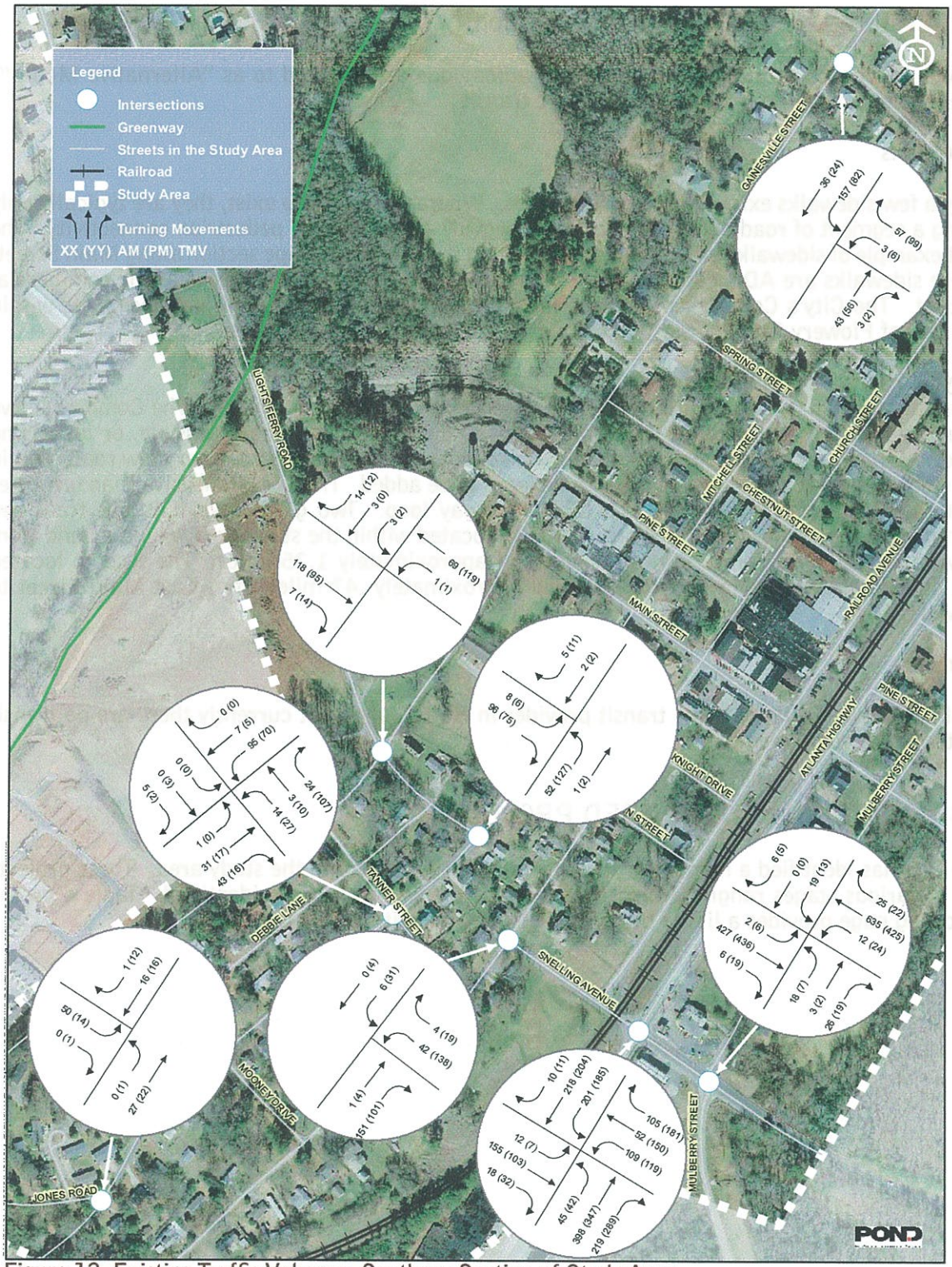

Figure 12. Existing Traffic Volumes, Southern Section of Study Area

2.2.4 Alternative Modes of Transportation

Modes of transportation other than private automobile are referred to as "Alternative Modes". These include walking, bicycling, and public transit.

Sidewalks

Only a few sidewalks exist within the study area. Where sidewalks do exist, they are typically only along a segment of road and therefore do not provide a high level of pedestrian connectivity. The best example of sidewalks in the study area is within the new streetscape section along Main Street. These sidewalks are ADA compliant and of sufficient width to meet the needs of the commercial district. The City's Comprehensive Plan identifies 51,185 LF of sidewalk improvements within the City of Flowery Branch, most of which is located within the study area.

Bicycle Facilities & Greenways/Multi-Use Trails

There are no bike lanes, multi-use paths, or greenways within the study area. The Comprehensive Plan does recommend adding striped bike lanes to existing roads, where possible, or improving roadway shoulders for the purpose of adding bike lanes. However, there are very few roads within the study area that are wide enough for bike lanes to be added. The Comprehensive Plan identifies 86,014 LF of bikeways and 44,310 LF of bikeway loop. Two greenways/multi-use trails are identified in the Comprehensive Plan. The first, located within the study area, would extend from City Park to Alberta Banks Park, a distance of approximately 1.25 miles. The second, located just outside of the study area, would extend approximately .43 miles from East Main Street to Flowery Way.

Transit

Hall Area Transit (HAT) is the transit provider in Hall County, but currently there are no transit routes to the study area.

2.3 PREVIOUSLY IDENTIFIED PROJECTS

The City has identified a number of transportation projects within the study area. These projects are in various stages ranging from conceptual all the way to funding identified. Table 4 on the following page provides a list of those projects that fall within the study area.

#	Project Location	Description	Funding
1	Between Main Street and Snelling Drive, and on Church Street between Main Street and Pine Street	Installation of curb/gutter, sidewalk, street lighting	GDOT Transportation Enhancement (TE) Grant
2	Portions of SR 13 from southern City limits to Thurmon Tanner Parkway	Installation of landscaping	GDOT Gateway Enhancement Grant (pending)
3	Lights Ferry Road/McEver Road Intersection	Intersection improvements, to include turn lanes and roadway widening, as well as horizontal alignment	None
4	Jim Crow Road/McEver Road Intersection	Intersection improvements, to include turn lanes and roadway widening, as well as horizontal alignment	None
5	Pine Street Extension from Church Street to Railroad Avenue	Phase 1 of the Hortman & Dobbs "Old Town" redevelopment project	Property owner(s) with funds from City's Tax Allocation District (TAD)
6	Jones Road	Minor roadway and intersection improvements to include widening this 12ft. two-way road from Mitchell Street to Lorimar Court. Also includes redesignating a portion of roadway to a one-way road from Lorimar Court to Gainesville Street	None
7	Lights Ferry Road to Snelling Drive Connection	Provide for direct access from I-985 to McEver Road via Lights Ferry Road, Snelling Drive, and Phil Neikro Boulevard	None
8	Mitchell Street from Lights Ferry Road to USACE Property	Primary access route for an active marina on Lake Lanier; also serves a 198-unit townhome development	None
9	Chattahoochee Street/Gainesville Street Intersection	Improvements in vertical and horizontal alignment; in concert with Project #12	None
10	Pine Street Extension from Lights Ferry Road to Church Street	Provide roadway frontage within historic district and direct access to downtown from McEver Road; see also Project #6	None
11	Chattahoochee Street Extension	Connect Gainesville Street to McEver Road	None
12	Spout Springs Road Intersection near Holland Dam Road	Minimal roadway adjustments to correct deficient turning radii	Local Funds (pending)

Table 4. Previously Identified Transportation Projects

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3 NEEDS ASSESSMENT

3.1 PURPOSE

The purpose of the Needs Assessment is to identify both existing and future transportation needs within the study area. The scope of this study is much more limited than a comprehensive transportation plan. For that reason, the focus of recommendations will be on existing deficiencies and mid-term needs (10 years), though some major long-term improvements will be recommended. The development of the Needs Assessment for the study area is based on a combination of observed deficiencies, information obtained from City Staff and the public (through the public workshop), and through an operational analysis of existing and projected future traffic volumes. Travel demand modeling for long-term recommendations has not been employed and is beyond the scope of this study.

3.2 CONNECTIVITY ASSESSMENT

Lights Ferry/Snelling/Phil Neikro

One of the most pressing needs that has long been identified is the connectivity of the Lights Ferry Road/Snelling Avenue/Phil Neikro Boulevard corridor that is critical in connecting the study area, and locations beyond the study area, to I-985. This need was reaffirmed by input from the public workshops and an evaluation of traffic patterns.

Old Town

The grid system that exists within the study area should be preserved and, where possible, continued. The Pine Street extension, proposed as a part of a development in Old Town, is an example of this. Other connections from Old Town to the large undeveloped tracts west of Gainesville Street will also be important as that land develops in the future.

3.3 OPERATIONAL ANALYSIS

3.3.1 Intersection Operations

The intersection operational analysis is based on the criteria set forth in the Transportation Research Board's Highway Capacity Manual 2000 (HCM2000). The purpose of the operational analysis is to identify capacity and operational deficiencies of intersections within the roadway network.

Signalized Intersections

For signalized intersections the operations are characterized by its capacity, expressed in terms of a volume/capacity (v/c) ratio, and by Level of Service (LOS). A v/c ratio compares the demand flow rate (volume) of traffic using the various lane groups at the intersection to the capacity of those lane groups. This results in a v/c ratio for each lane group. A v/c ratio greater than 1.0 indicates the volume of traffic has exceeded the capacity available and indicates a temporary excess of demand, which results in congestion.

NEEDS ASSESSMENT

Level of Service for a signalized intersection is a qualitative measure and is expressed in terms of control delay per vehicle (in seconds per vehicle). Control delay depends upon a number of variables including traffic volumes, lane configuration, the quality of progression of traffic from adjacent intersections, the cycle length, and the ratio of green time to the cycle length. The LOS criteria for signalized intersections, based on control delay, are shown in Table 5. Level of Service A indicates operations with very low control delay while level of LOS F describes operations with extremely high control delay. LOS F is considered to be unacceptable to most drivers. LOS E is typically considered the limit of acceptable delay in urbanized areas and LOS D for non-urbanized areas.

LOS	Control Delay per Vehicle (s/veh)
A	≤ 10
B	> 10-20
C	> 20-35
D	> 35-55
E	> 55-80
F	> 80

Table 5. Level of Service Criteria for Signalized Intersections

Unsignalized Intersections

Unsignalized intersections include all-way stop controlled (AWSC) intersections where each approach stops, and two-way stop control (TWSC) intersections where the side street or minor street is controlled by a stop sign. Unlike signalized intersections, a v/c ratio is not calculated. However, a control delay resulting in a Level of Service is calculated. The factors that can affect control delay, and therefore the LOS, of an unsignalized intersection, include the availability and distribution of gaps in the conflicting traffic stream (TWSC intersections), critical gaps (TWSC intersections), and follow-up time for a vehicle in the queue (TWSC and AWSC intersections). The LOS criteria for unsignalized intersections are shown in Table 6.

LOS	Control Delay per Vehicle (s/veh)
A	0-10
B	> 10-15
C	> 15-25
D	> 25-35
E	> 35-50
F	> 50

Table 6. Level of Service Criteria for Unsignalized Intersections

Operational Assessment

The existing condition LOS was evaluated for each intersection for which traffic data was available (see Figures 11 and 12 for existing traffic counts). Future condition (year 2019) traffic volumes were calculated using a 3% annual growth factor to evaluate 2019 traffic conditions. The 2019 volumes are shown in Figures 13 and 14. The results of the LOS analysis for both existing and 2019 conditions are shown in Table 7 that follows.

	Existing Conditions				2019 No Build			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
	LOS	v/c*	LOS	v/c*	LOS	v/c*	LOS	v/c*
McEver Rd. / Gainesville St.	B	0.56	B	0.59	B	0.74	B	0.78
McEver Rd. / Lights Ferry Rd.	A	0.43	A	0.52	B	0.57	A	0.68
Atlanta Hwy. / Snelling Ave.	C	0.72	C	0.80	E	1.01	E	1.09
Snelling Ave. / Church St.	A	-	A	-	A	-	A	-
Mitchell St. / Tanner St.	A	-	A	-	A	-	A	-
Mitchell St. / Lights Ferry Rd.	A	-	A	-	A	-	A	-
Mitchell St. / Jones Rd.	A	-	A	-	A	-	A	-
Snelling Ave. / Mulberry St.	A	-	A	-	C	-	B	-
Gainesville St. / Lights Ferry Rd.	A	-	A	-	A	-	A	-
Gainesville St. / Chattahoochee St.	A	-	A	-	A	-	A	-

Table 7. Existing and 2019 No Build Levels of Service

*v/c only applicable to signalized intersections

NEEDS ASSESSMENT

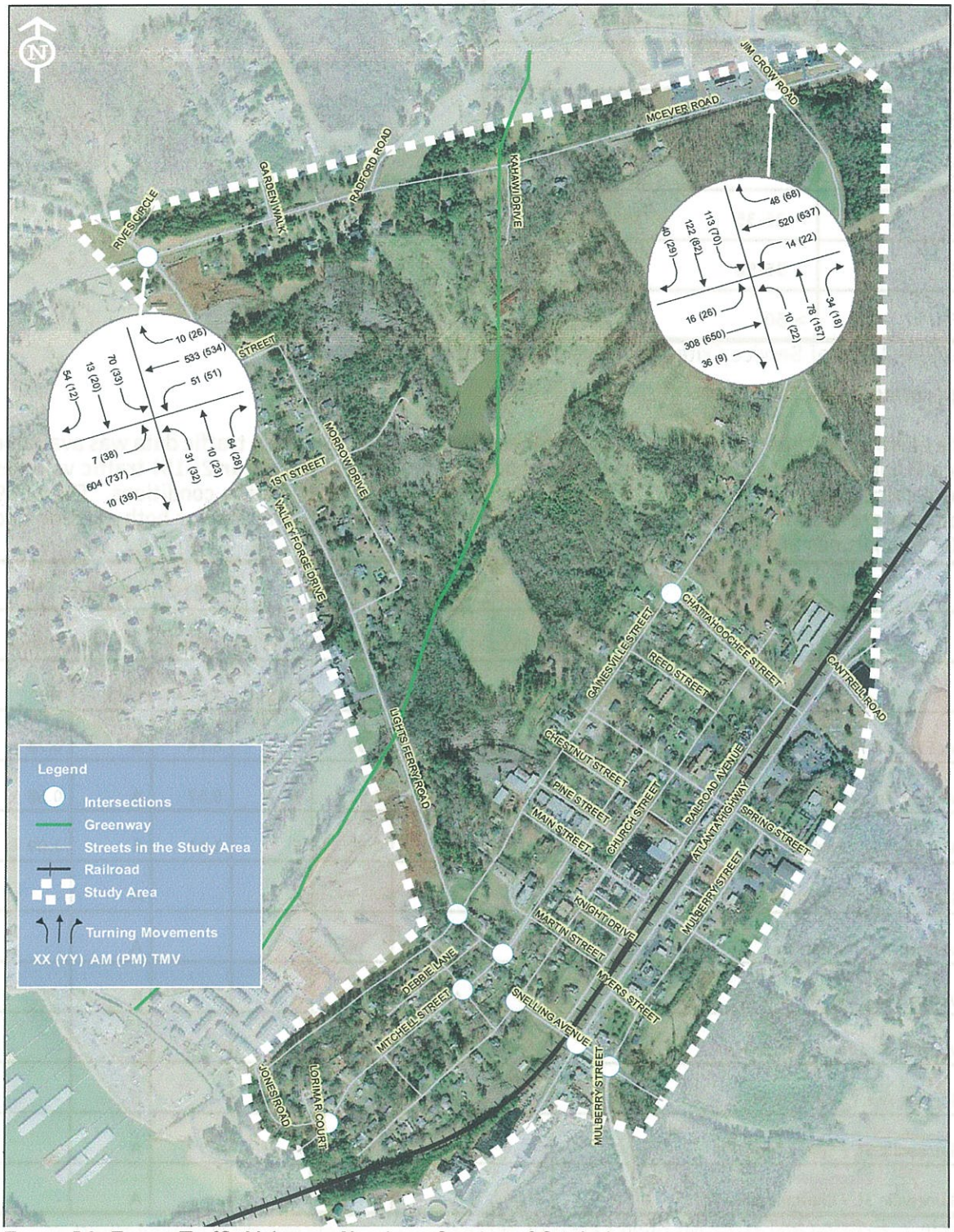

Figure 13. Future Traffic Volumes, Northern Section of Study Area

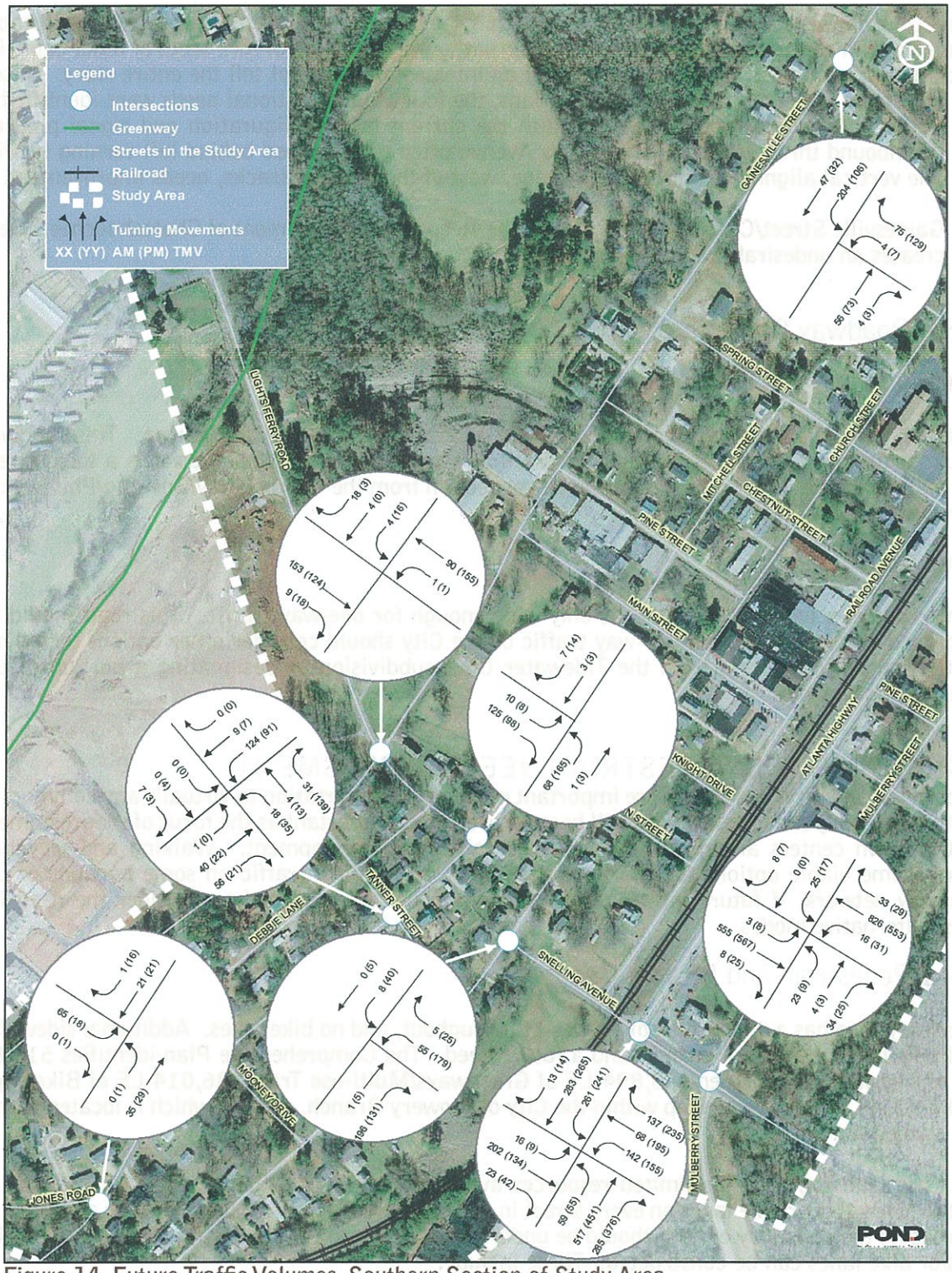

Figure 14. Future Traffic Volumes, Southern Section of Study Area

NEEDS ASSESSMENT

The LOS analysis shows that intersections within the study area currently operate at acceptable levels and will continue to do so in the mid-term without the addition of turn lanes or other capacity adding improvements. However, the LOS of an intersection does not tell the entire story. Based on input from the public and field observations, the following operational needs were identified:

- Snelling Avenue/Atlanta Highway- With the current lane configuration and signal phasing northbound through traffic on Snelling Avenue often gets trapped behind left-turning traffic. The vertical alignment of Snelling Avenue, west of the railroad tracks, needs improvement.

- Gainesville Street/Chattahoochee Street- the steep vertical alignment of Chattahoochee Street creates an undesirable condition which also impacts operations.

3.3.2 Roadway Operations

Mitchell Street

Mitchell Street is a primary corridor used for access to Hideaway Bay Marina. This roadway is under designed to handle this type of traffic. Furthermore, Mitchell Street is a local street serving residential land uses. An improved connection from the Lights Ferry/Snelling/Phil Neikro corridor to the marina is needed.

Jones Road

Jones road is a two-way road that is only wide enough for one-way traffic. This road should be improved to properly handle two-way traffic or the City should consider other options including: restricting vehicle access from the Tidewater Cove subdivision or designating a portion of the roadway as one-way.

3.4 BICYCLE AND PEDESTRIAN NEEDS ASSESSMENT

Pedestrian and bicycle mobility are important modes of transportation to virtually any community. Within the study area these modes will become even more important as the focus of redevelopment in Old Town centers around pedestrian scale mixed-use development. Walking and bicycling can become viable options for shorter length trips, and reduce traffic on some portions of the roadway network, if future infrastructure improvements are designed to consider the need for these alternative modes.

3.4.1 Pedestrian and Bicycle Needs

The study area has a severe lack of sidewalks throughout, and no bike lanes. Additional sidewalks and bike lanes are both a current and a future need. The Comprehensive Plan identifies 51,185 LF of sidewalk improvements, 8,894 LF of Greenways/Multi-use Trails, 86,014 LF of Bikeways, and 44,310LF of Bikeway loop within the City of Flowery Branch, most of which is located within the study area.

It is not realistic, with the limited resources available to the City, that a plan be developed to install sidewalks or bike lanes on every street in the near term. However, a systematic approach to increasing the inventory of both should be undertaken. There are several ways that new sidewalks and/or bike lanes can be constructed. These include:

1. As part of new development.
2. As part of a streetscape project.
3. As part of a major road improvement or construction of a new road.
4. As a stand-alone construction project.

In prioritizing which pedestrian or bicycle facility to invest in first, it is important to understand the characteristics of pedestrians and bicyclists. From a cost to benefit approach, it is more desirable to invest in facilities that will have the highest usage. For example, the majority of pedestrian trips are ¼ mile or less, with only 15% of trips being more than 2 miles. Though pedestrian trips can occur anywhere (for instance, just walking the streets in your neighborhood), it may make more sense to initially invest in sidewalks that are within ¼ mile of a destination such as the commercial businesses in Old Town or a City park.

Bicycle trips are typically 30 minutes or less in length. However, they vary by distance and purpose. Some typical trip types and lengths are as follows:

Entertainment, recreation, and fitness	18.6-24.9 mi.
Work	12.4 mi.
Shopping and trail access	6.2 mi.

Of course safety issues for either pedestrians or bicyclists are a major factor that must be weighed in any prioritization of investment.

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4 RECOMMENDATIONS

The recommendations presented in this section are intended to address the needs identified in the Needs Assessment. While some recommendations are longer-term in nature, the intent is to identify short-term (5 years or less) to mid-term (5 to 10 years) recommendations that are achievable and realistic with consideration to funding. Recommendations have been divided into the following categories:

- Connectivity/New Roadways
- Intersection Improvements
- Roadway improvements
- Pedestrian & Bicycle Improvements

Figure 15 at the end of this section depicts all of the recommendations.

4.1 CONNECTIVITY / NEW ROADWAYS

Though the recent economic situation has stalled development around the country, the potential for new development in large undeveloped tracts adjacent to the historic core of Flowery Branch still exists. And at some point in the future this property will be developed. This future development should be connected back to the core of the city and to the adjacent arterial streets.

1. **Extend Lights Ferry Road to connect to Snelling Avenue (two-lane roadway).** This improvement has long been identified as an important connection for this area. As part of this improvement the vertical alignment of Snelling Avenue, just north of the railroad tracks, should be improved. The subject of grade separating Snelling Avenue at the railroad tracks has been discussed for many years. The purpose would be to improve the flow of through traffic between I-985 and McEver Road. In evaluating the feasibility of such a grade separation there are several factors that must be considered.

- **Physical Impact**
  The physical impact to the character of the immediate area could be significant. For example, if the road were to go over the tracks the minimum clearance between top of track and the lowest point on the structure supporting the road is 23', if the road were to go under the tracks the minimum clearance is 17'-6" (not including the depth of the supporting structure). Whether passing over or under, the presence of a structure of this type would certainly affect the character of the historic Downtown.

- **Cost**
  The cost of a grade separation such as this is extremely high. A similar grade separation in Duluth, GA, completed in 2008, cost approximately $38 million, excluding right-of-way. Funding for a project of this nature would require State and Federal funds, along with local match.

- **Available Alternative Route**
  The planned Martin Road interchange on I-985 will provide a direct connection from McEver Road to I-985 by way of H. F. Reed Industrial Boulevard (which is already grade separated from the railroad). H. F. Reed Industrial Boulevard intersects with McEver Road approximately 2 miles north of the McEver Road/ Lights Ferry intersection. Because of this

close proximity, the new Martin Road interchange will provide a viable alternative to Lights Ferry for accessing I-985. The original Interchange Justification Report (IJR) was approved for this project in 2001. Modifications to the original IJR are currently underway and will be resubmitted to the FHWA for approval. Funds for this project have been ear-marked for right-of-way acquisition. Preliminary engineering has not been completed to date.

For these reasons, a grade separation of Snelling Avenue and the railroad is not recommended.

2. **Provide a connection from Lights Ferry Road to Gainesville Street (two-lane roadway).** This connection will provide another primary access point for Old Town and relieve some traffic on Lights Ferry Road/Snelling Avenue. The City has identified this roadway in the past as connecting into Gainesville Street at Pine Street. This location still seems to be the most viable. A roundabout should be considered as an option for the Pine Street/Gainesville Street/Connector Road intersection. A roundabout could create an excellent gateway to the historic downtown and provide a good transition from the two-way Connector road to Pine Street which is envisioned as one-way in the future.

3. **Provide a connection from McEver Road to Gainesville Street (two-lane roadway).** This connection would likely be a part of the development of the large tract that lies between McEver Road and Gainesville Street. Chattahoochee Street is the most likely connection point along Gainesville Street.

4. **Pine Street extension (one lane roadway).** This project has previously been identified as part of a development proposal for Old Town. The street should be extended as a one-way street with on-street parking. The cross section of this street should match that of Main Street.

4.2 INTERSECTION IMPROVEMENTS

The intersection improvements recommended in this section are based on either an operational analysis of the intersection, field observations, and/or comments from the public and City staff.

1. **Snelling Avenue/Atlanta Highway.**
   - Coordinate with the Georgia Department of Transportation to restripe the northwest bound Snelling Avenue approach to have a separate left-turn lane and a shared through/ right-turn lane OR a separate left-turn, right-turn, and through lanes. This change will improve the projected LOS in 2019 from E to D.

2. **Gainesville Street/Chattahoochee Street.**
   - Modify Chattahoochee Street vertical alignment to improve approach grade and sight distance.
   - Modify signage and pavement markings to meet MUTCD requirements for height and location.

3. **McEver Road/Gainesville Street/Jim Crow Road.** (This project previously identified by Hall County Government but not funded)
   - Add left-turn lanes, all approaches
   - Add left-turn phases if warranted
   - Modify horizontal alignment

4. **McEver Road/Lights Ferry Road.** (This project previously identified by Hall County Government but not funded)
   - Add left-turn lanes, all approaches
   - Add left-turn phases if warranted
   - Modify horizontal alignment

4.3 ROADWAY IMPROVEMENTS

The roadway improvements recommended deal primarily with operational and/or safety issues.

1. **Debbie Lane, Knight Drive, Mitchell Street (Main Street to Spring Street).** These streets are of sub-standard width. However, these streets carry very low traffic volumes and serve primarily residential uses. While it would be ideal to eliminate all streets of sub-standard width, it is recognized that the benefit in improved safety or capacity versus the cost to widen these streets, is negligible. Therefore, widening these streets is not recommended as long as they are used in the same manner as they are today. If development or traffic patterns change such that these streets carry heavier volumes of traffic, then widening should be considered. In the interim, it is recommended that the streets be signed as alleys to alert unfamiliar drivers to the fact that the streets are narrow.

2. **Jones Road (short-term improvements currently planned for implementation by the City).**
   - Widen to a standard width (24 ft. for a two-way roadway) from Mitchell Street to Lorimar Court
   - Redesignate Jones Road as one-way between Lorimar Court and Gainesville Street

3. **Jones Road (long-term improvement recommendation).**
   - Widen to a standard width (24 ft. for a two-way roadway)
   - Realign the Jones Road/Mitchell Street intersection
   - Add sidewalks

4. **Mitchell Street.** Serves as primary access to Hideaway Bay Marina and is therefore over used given its current design.
   - Improve horizontal and vertical alignment
   - Add sidewalks

4.4 PEDESTRIAN & BICYCLE IMPROVEMENTS

It is unrealistic that the City will be able to fund all of the pedestrian and bicycle improvements needed within the study area, and the City as a whole, in the near future. For this reason it is recommended that a systematic approach to prioritizing investment in sidewalks and bicycle facilities be employed.

RECOMMENDATIONS

1. Sidewalks that are within ¼ mile of a destination (i.e. a commercial area or a park) or that provide connectivity by serving as the missing segment between two existing sidewalk should be given a higher priority than stand alone, disconnected sidewalks.

2. Short segments of bike lane or bike lanes that are disconnected are undesirable as stand-alone projects.

3. Sidewalks and bike lanes should be included in the construction of all major roadway improvement projects, streetscape projects, and new roadway or development projects when called for by the Long-Range Bicycle and Pedestrian Improvement Program.

4. Though it is preferred that both sides of a road or street have sidewalks, consideration should be given to installing sidewalks on only one side of the road, in some instances, in order to provide greater coverage.

Greenways/Multi-use Trails

The Alberta Banks Park to City Park greenway/multi-use trail identified in the Comprehensive Plan would be an important amenity for the City. There was support for this multi-use trail connection from some residents that attended the public workshop. Currently, much of the land that the multi-use trail would pass through is undeveloped. It becomes significantly more complicated to design and construct a multi-use trail once property is developed. Therefore, it is recommended that the City coordinate with future developers to preserve right-of-way for the multi-use trail and, to the extent possible, link the multi-use trail with future development plans.

Figure 15. Recommendations

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5 IMPLEMENTATION

The City currently funds roadway maintenance and transportation projects from two sources-the General Fund and the City's portion of the Hall County SPLOST VI program. Table X below shows the funds the City has budgeted from the General Fund since 2006 for both roadway maintenance and transportation projects along with the actual funds spent each year.

Year	Budgeted	Actual
2006	$0	$0
2007	$19,000	$3,020
2008	$50,000	$14,667
2009	$30,000	$166,325*
2010	$60,000	TBD
*Spring Street culvert project cost $149,999		

Table 8. General Fund - Roadway Maintenance/Transportation Projects

Revenue that the City will receive from the SPLOST VI program is allocated to different areas, not just transportation. For years 2010 through 2013, SPLOST VI funds are committed to non-transportation projects. Therefore, SPLOST VI funds for transportation will not be available until 2014. The best case scenario is that the City could receive up to $250,000 a year for 2014 and 2015, depending on the amount of SPLOST dollars collected.

By comparison, Table 9 below shows the funds some other cities in the region have committed to their transportation program.

City	Population (2008 census)	Total Budget Allocated to Road Maintenance & Transportation Projects	Comments
Chamblee	11,202	$265,000	City receives $200,000-$500,000 per year from DeKalb County HOST funds
Clarkston	7,836	$150,000	HOST information not available
Acworth	19,476	$515,233	City received $1,600,000 from Cobb County SPLOST in 2008

Table 9. Funding Amounts Local Cities in Region have Committed to Their Transportation Program

Even after adjusting for population, it is evident that Flowery Branch, when compared to the other cities in Table 9, is under-funded in order to maintain and improve the City's transportation system. Currently the City is responsible for maintaining 24.2 miles of road.

IMPLEMENTATION

Implementation of the recommendations identified in this report has been divided into two sections: Opinion of Probable Cost and Funding Options.

5.1 OPINION OF PROBABLE COST

This section provides an opinion of probable cost for the recommendations identified in this study. The cost figures are based on past experience and general costs for similar type work. All costs are based on 2010 dollars and do not include any necesary right-of-way acquisition. See Table 10 at the end of this section for opinion of probable cost.

5.2 FUNDING OPTIONS

This section provides a description of funding resources that may be accessed to implement infrastructure projects.

Local Maintenance and Improvement Grant (LMIG)

Under Senate Bill 200, signed into law on May 11, 2009, the Local Maintenance and Improvement Grant (LMIG) program replaces funds formerly available under the Local Assistance Road Program (LARP) and State-Aid Program. LMIG will roll out in FY 2011 (July 2010). Guidelines and criteria for the program will be sent to local governments in the spring of 2010. SB 200 requires that funds under the LMIG program be allocated according to a funding formula that will take into consideration paved and unpaved lane miles, vehicle miles traveled, and may include population, employment, local funding matches available, as well as other factors. Funds allocated for the LMIG program will be not less than 10% or more than 20% of the money derived from the motor fuel taxes received by the State in the previous year.

Eligible Activities: Anticipated to be the same as under LARP and State-Aid.

- LARP - leveling and resurfacing of existing roads
- State Aid - used for a variety of local transportation projects including sidewalks, safety-related projects, bridge and drainage projects, and projects that promote economic development.

Transportation Enhancement Program (TE)

The TE program is federally funded and is administered by the Georgia Department of Transportation. Cities can apply for up to $1 million in federal TE grant funds, and a minimum local match of 20% is required. Funds are awarded through a competitive process.

Eligible Activities: Eligible activities fall under four broad categories:

- Multi-use facilities (trails and bicycle lanes)
- Transportation aesthetics (streetscapes and landscaping)
- Historic preservation of transportation related facilities (railroad depots)
- Scenic preservation of views and scenic byways

Georgia Transportation Enhancement (GATEway) Grant Program

Funding comes from contributory value fees paid by outdoor advertising companies to the Georgia Department of Transportation for vegetation removal at outdoor advertising signs. The maximum fund allotment for a government entity is $50,000.

Eligible Activities: May be used for landscape materials and installation in State right-of-way.

Georgia Transportation Infrastructure Bank (GTIB)

The GTIB is a revolving infrastructure investment fund that provides loans with attractive terms to eligible state, regional, and local government entities to fund eligible transportation projects. The GTIB also offers grants, but at the current time the grant program is restricted to Community Improvement Districts that are formally recognized by the State of Georgia. The GTIB operates under the authority of the State Road and Tollway Authority (SRTA). Initial funding for the GTIB loan program is $33.1 million and $10 million for the grant program. The GTIB began accepting applications on October 1, 2009.

The minimum loan amount that may be requested is $25,000 and the maximum amount is 25% of the annual GTIB appropriation. The initial maximum limit is $8,275,000 (25% of $33.1 million). The minimum loan term is 5 years though loans may be prepaid without penalty. The maximum loan term is the lesser of 25 years or the useful life of the project. Though a percentage is not stipulated, it is strongly encouraged that matching funds be used for a portion of the project's financing.

Eligible Activities:

- Eligible costs include: preliminary engineering, traffic and revenue studies, environmental studies, right of way acquisition, legal and financial services associated with the development of the qualified project, construction, construction management, facilities, and other costs associated with the qualified project.
- Eligible projects include those roadway projects that satisfy the requirements of being "motor fuel tax eligible", as set forth in O.C.G.A. § 32-1-1 et seq.

IMPLEMENTATION

State/Local Highway Safety Program

The Governor's Office of Highway Safety (GOHS) provides grants to assist local governments in addressing highway safety deficiencies. Funds are granted on an annual basis according to availability. Previous year's traffic crash data is used to evaluate a relative ranking of each jurisdiction statewide to prioritize funds.

Eligible Activities: Varies-safety related.

Safe Routes to School Program (SRTS)

The SRTS program is federally funded and administered by GDOT. The program's goal is to increase the number of children in grades K-8 who bicycle and walk to school. Specifically the goals are:

- Promote walking/biking as a safe and more appealing transportation alternative.
- Encourage and enable children to more safely walk and bicycle to school.
- Promote healthy and active lifestyles at an early age.
- Implement projects and activities that will improve safety and reduce traffic, fuel consumption, and air pollution in the vicinity of schools.

SRTS funding is awarded through a competitive "Call for Projects" process. The maximum amount awarded per project is $500,000.

Eligible Activities: Sidewalks, crosswalks, pedestrian signals, etc.

Description/Action	Linear Feet	Notes	Construction Cost	Preliminary Engineering Cost	Total Cost
CONNECTIVITY/NEW ROADWAYS					
Extend Lights Ferry Road to connect to Snelling Avenue	800	Includes grading, paving, curb & gutter, stormwater, drainage, some intersection work	$575,000.00	$57,500.00	$632,500.00
Connect Lights Ferry Road to Gainesville Street	930	Paving, curb & gutter, bike lanes, stormwater, drainage, turn lanes, some intersection work	$550,000.00	$55,000.00	$605,000.00
Connect McEver Road to Gainesville Street	3000	Paving, curb & gutter, bike lanes, stormwater, drainage, turn lanes, some intersection work	$1,500,000.00	$150,000.00	$1,650,000.00
Pine Street Extension [1]	275	1-way traffic, angled parking and stormwater both sides, some brick/trees	$450,000.00	$45,000.00	$495,000.00
INTERSECTION IMPROVEMENTS					
Snelling Avenue/Atlanta Highway	N/A	Striping, signal loop modification, encroachment permit	$45,000.00	$10,000.00	$55,000.00
Gainesville Street/Chattahoochee Street	N/A	400 LF vertical realignment, curb & gutter, stormwater, drainage	$160,000.00	$16,000.00	$176,000.00
McEver Road/Gainesville Street/Jim Crow Road [2]	N/A	Vertical/horizontal alignment, curb & gutter, stormwater, drainage, turn lanes	$500,000.00	$50,000.00	$550,000.00
McEver Road/Lights Ferry Road [2]	N/A	Vertical/horizontal alignment, curb & gutter, stormwater, drainage, turn lanes	$450,000.00	$50,000.00	$500,000.00
ROADWAY IMPROVEMENTS					
Debbie Lane, Knight Drive, Mitchell Street	N/A	Signage only	$2,000.00		$2,000.00
Jones Road (short-term improvement)	100	Widen two-way from Mitchell Street to Lorimar Court; redesignate as one-way from Lorimar Court to Gainesville Street	$28,000.00	Complete	$28,000.00
Jones Road (long-term improvement)	700	24' travel, 5' stormwater both sides, incl. intersection improvements	$200,000.00	$20,000.00	$220,000.00
Mitchell Street	2700	24' travel, stormwater both sides	$1,200,000.00	$120,000.00	$1,320,000.00
PEDESTRIAN & BICYCLE IMPROVEMENTS					
Multi-use Trail	7200	12' concrete trail, assume 1/4 total length boardwalk. Includes 1 bridge crossing at $100k. $165/LF concrete vs. $210/LF boardwalk	$1,350,000.00	$135,000.00	$1,485,000.00

Note: Costs do not include Right-of-Way acquisition.

[1] Costs to be paid by the Developer of Old Town Flowery Branch Redevelopment project. No costs to be paid by the City.

[2] Projects to be completed by the Hall County Government. The City is planning on contributing funds that will be used to upgrade the signals from span wires to mast arms and pay for a small portion of the intersection design. The City's anticipated contribution is $40,000 per intersection.

Table 10. Project Cost Estimates

APPENDIX

a. Inventory Table

b. Excerpt from Manual on Uniform Traffic Control Devices (MUTCD)

c. Traffic Count Data

d. Level of Service (LOS) Analyses

APPENDIX a

Flowery Branch Transportation Study - Roadway Inventory

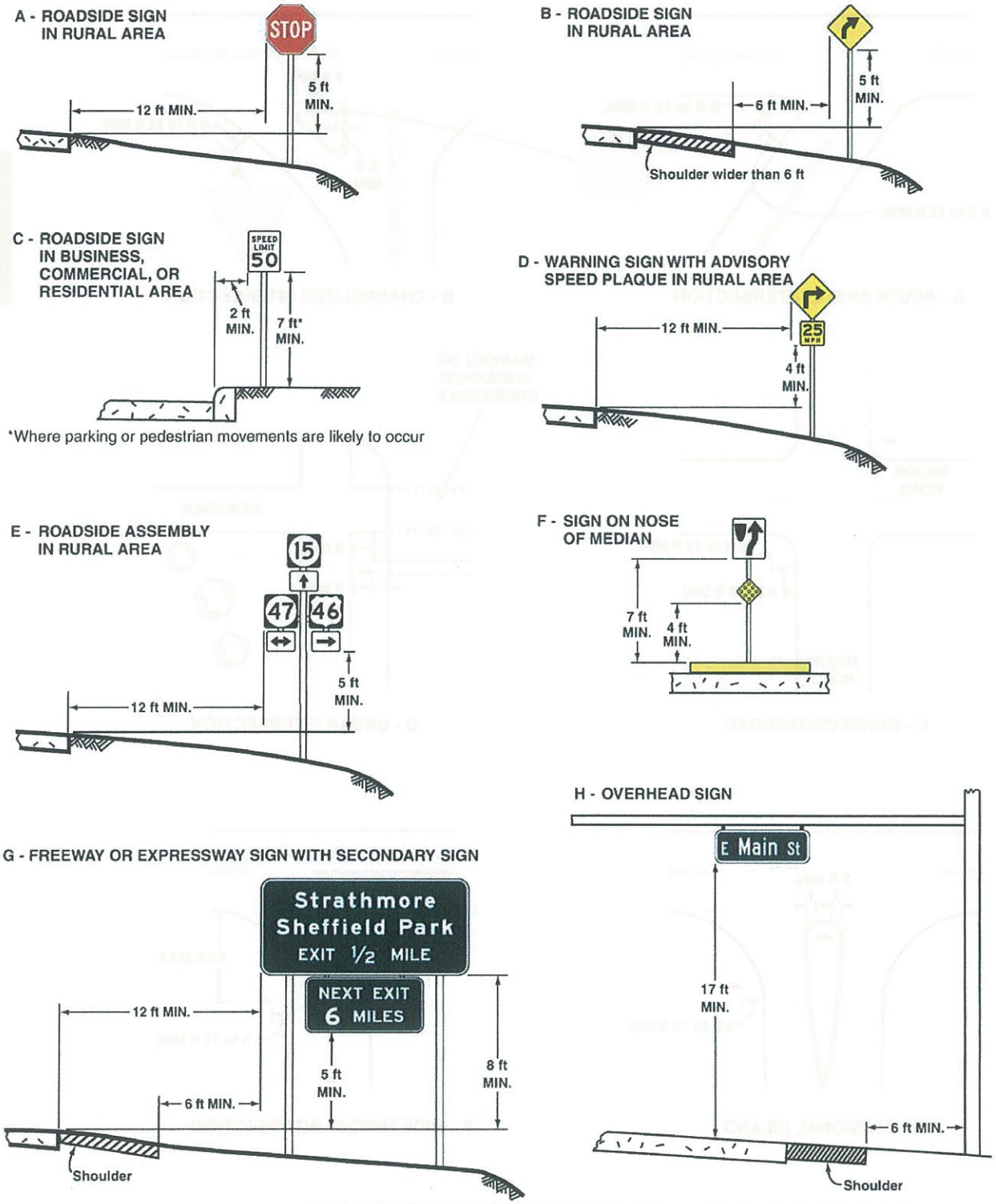
Date: Oct. 7, 2009
By: Mark Edwards, E.I.T.

Road Name	Speed Limit	Number of Lanes	Pavement Type	Width		Condition		Safety Issues	Side-walk	Curb & Gutter	One-way	Two-way	Signal	Notes
				Right/Way	Roadway	Pavement	Striping							
Jones Rd.		2	Asphalt	30	12	good	mostly faded	Poor sight distance around curve. Intersection with Mitchell is very steep and has poor sight distance. Pooled water. Small travel lanes. Fence and steep slopes very close to the road.	no	no		X	no	Around the curve it is nearly impossible for two cars to see each other or avoid each other due to the limited sight distance, and the fencing right next to the road.
Mitchell St.	--	--	--	--	--	--	--		--	--	--	--	--	
- SW of Lights Ferry Rd.	25	2	Asphalt	50	22	good	good		no	no		X	no	
- Lights Ferry Rd. to Main St.	25	2	Asphalt	50	35	worn	faded		L	L,R		X	no	Cars were parked along this part of Mitchell. No sort of signing or striping for parking.
- Spring St. to Main St.	25	2	Asphalt	20	12	worn, cracked	faded	Small travel lanes.	no	no		X	no	
Mooney Dr.		2	Asphalt	40	12	worn, cracked	faded	Small travel lanes. Ditches right on the Edge of Pavement.	no	no		X	no	Very poorly done concrete patch on roadway.
Debbie Lane		2	Asphalt	20	12	worn, cracked	faded	Small travel lanes. Ditches right on the Edge of Pavement.	no	no		X	no	Fence is very close to road.
Tanner St.		2	Asphalt	40	22	worn, cracked	faded	Poorly Placed Class B widening. Trees very close to the Edge of Pavement. Guardrail 2' from edge of pavement.	no	no		X	no	Fence is very close to road, right behind the guardrail.
Snelling Ave.		2	Asphalt	50	25	worn, cracked	faded	Ditches on Edge of Pavement.	no	no		X	yes (Atlanta Hwy)	RR crosses road right before signalized intersection with Atlanta Hwy.
Martin St.	--	--	--	--	--	--	--		--	--	--	--	--	
- Railroad Ave to Church St.		1	Asphalt	20	11	worn, cracked, grass	faded	Ditches on Edge of Pavement.	no	no	X (NW)		no	
- Church St. to Mitchell St.		1	Asphalt	30	11	worn, cracked, grass	faded	Ditches on Edge of Pavement.	no	no	X (NW)		no	
Knight Dr.		2	Asphalt	13	12	worn	faded	Large Tree on Edge of Pavement.	no	no		X	no	
Main St.	--	--	--	--	--	--	--		--	--	--	--	--	
- Church St. to Gainesville St.	15	2	Asphalt	50	22	new	new	Pedestrians.	Partial L,R	no		X	no	Parallel parking on both sides of the road.
- Railroad Ave to Church St.	15	1	Asphalt	50	14	new	new	Pedestrians.	L,R	L,R	X (NW)		no	Angled parking on both sides of the road. Pavement width 50'. ADA compliant ramps in place.
Pine St.	--	--	--	--	--	--	--		--	--	--	--	--	
- Church St. to Gainesville St.		2	Asphalt	50	20	worn, cracked, grass	faded		no	no		X	no	
- Railroad Ave to Church St.		2	Asphalt	40	20	worn, cracked, grass	faded	Metal pipe about 10' off the road is sticking out of ground close to 5 feet. Pipe is draining into the side of a building.	no	no		X	no	
Chestnut St.		2	Asphalt	50	18	worn, cracked	faded	Meets Gainesville St. at a very steep angle.	no	no		X	no	
Mulberry St.	25	2	Asphalt	40	20	worn, cracked	faded		no	no		X	no	
RailRoad Ave.		2	Asphalt	40	22	good	good	RR parallels the road.	no	no		X	no	Some ponding of water in between the roadway and the RR.
Spring St.	--	--	--	--	--	--	--		--	--	--	--	--	
- Church St. to Gainesville St.		2	Asphalt	50	20	worn, cracked	faded		no	no		X	no	
- Railroad Ave to Church St.		2	Asphalt	50	35	worn, cracked	faded		no	no		X	no	
Church St.		2	Asphalt	50	20	worn, cracked	faded	Extremely unsafe ditches on edge of pavement.	no	no		X	no	Buildings are very close to the road
Reed St.		1	Asphalt	15	12	worn, cracked, grass	faded	Ditches on Edge of Pavement.	no	no	X (NW)		no	

Road Name	Speed Limit	Number of Lanes	Pavement Type	Width		Condition		Safety Issues	Side-walk	Curb & Gutter	One-way	Two-way	Signal	Notes
				Right/Way	Roadway	Pavement	Striping							
Chattahoochee St.	25	2	Asphalt	50	20	worn, cracked	faded	Ditches on Edge of Pavement.	no	no		X	no	
Myers St.		2	Asphalt	35	20	worn, cracked	faded		no	no		X	no	
Atlanta Hwy.	45	3	Asphalt	60	45	new	new	Intersection with Snelling Ave is on a crest, and makes it difficult to see. Parallels RR.	R	L,R		X	yes (Snelling Ave)	
Gainesville St.	--	--	--	--	--	--	--		--	--	--	--	--	
- Jones Rd. to Main St.	35	1	Asphalt	30	12	worn, cracked	faded	Large Trees on Edge of Pavement.	no	no	X (SW)		no	Speed Bumps.
- Main St. to McEver Rd.	35	2	Asphalt	60	20	worn, cracked	faded	Overlay of pavement causes big height difference between roadway and shoulder.	no	no		X	yes (McEver Rd)	
McEver Rd.	55	2	Asphalt	80	24	good	good		no	no		X	yes (Gainesville St) (Lights Ferry Rd)	State Highway.
Lights Ferry Rd.	--	--	--	--	--	--	--		--	--	--	--	--	
- Mitchell St. to Gainesville St.	45	2	Asphalt	50	22	good	good		no	no		X	no	
- Gainesville St. to Morrow Dr.	45	2	Asphalt	60	22	good	good	Power pole 2' from edge of pavement. Small speed limit signs.	no	no		X	no	Creek passes under this section of the road.
- Morrow Dr. to McEver Rd.	45	2	Asphalt	80	22	good	good		no	no		X	yes (McEver Rd)	
Morrow Dr.	35	2	Asphalt	30	20	worn, cracked	faded	Ditches on Edge of Pavement.	no	no		X	no	At the City limits road turns to gravel road. Parts of the gravel section are beginning to erode
1st St.		N/A	Gravel	30	20	N/A	N/A		no	no		X	no	
2nd St.		N/A	Gravel	30	20	N/A	N/A		no	no		X	no	

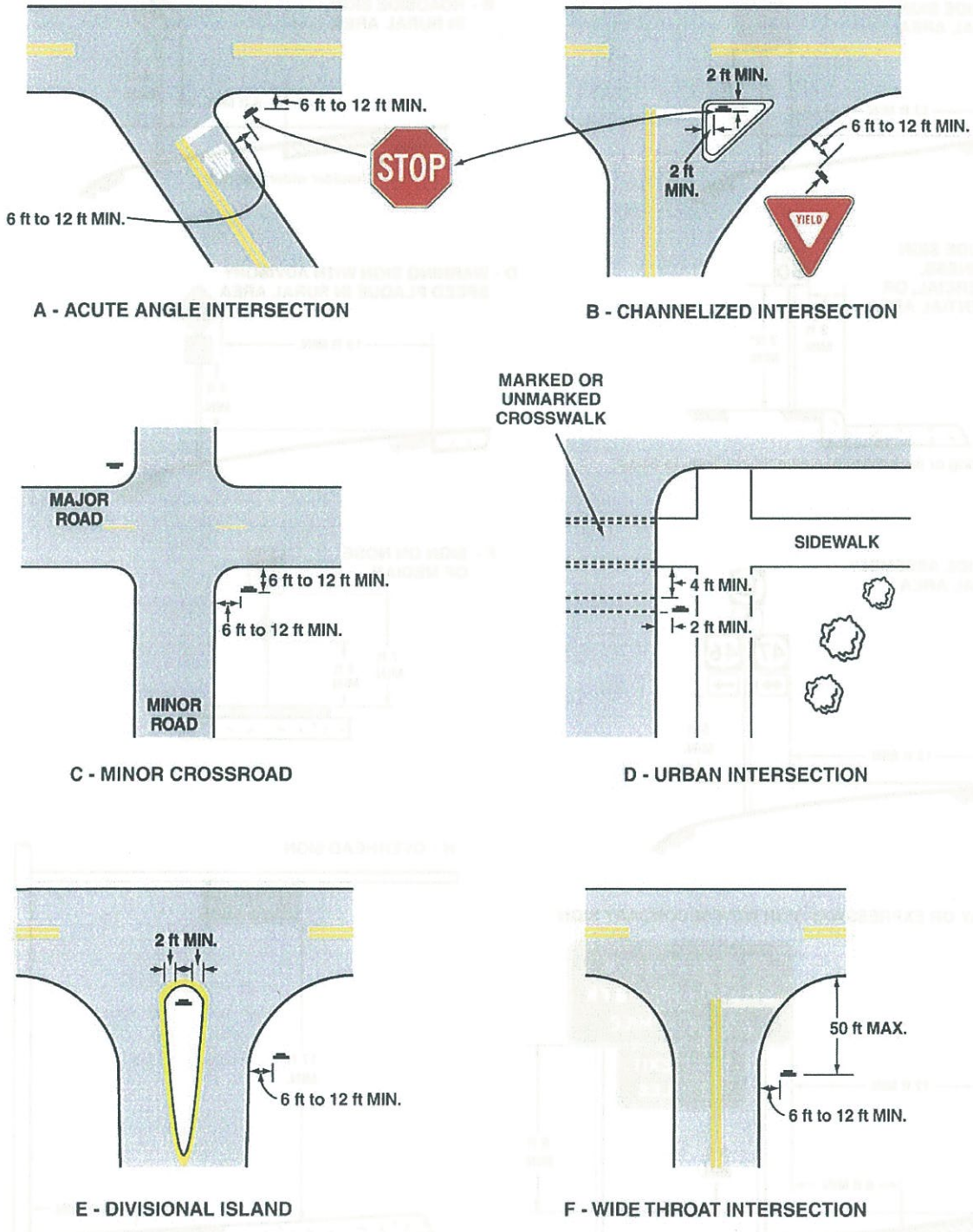
APPENDIX b

Figure 2A-2. Examples of Heights and Lateral Locations of Sign Installations



Note:
See Section 2A.19 for reduced lateral offset distances that may be used in areas where lateral offsets are limited, and in business, commercial, or residential areas where sidewalk width is limited or where existing poles are close to the curb.

Figure 2A-3. Examples of Locations for Some Typical Signs at Intersections



Note: Lateral offset is a minimum of 6 feet measured from the edge of the shoulder, or 12 feet measured from the edge of the traveled way. See Section 2A.19 for lower minimums that may be used in urban areas, or where lateral offset space is limited.

APPENDIX C

Greater Traffic Company

File Name : FBSITE07
Site Code : 00000007
Start Date : 11/11/2009
Page No : 1

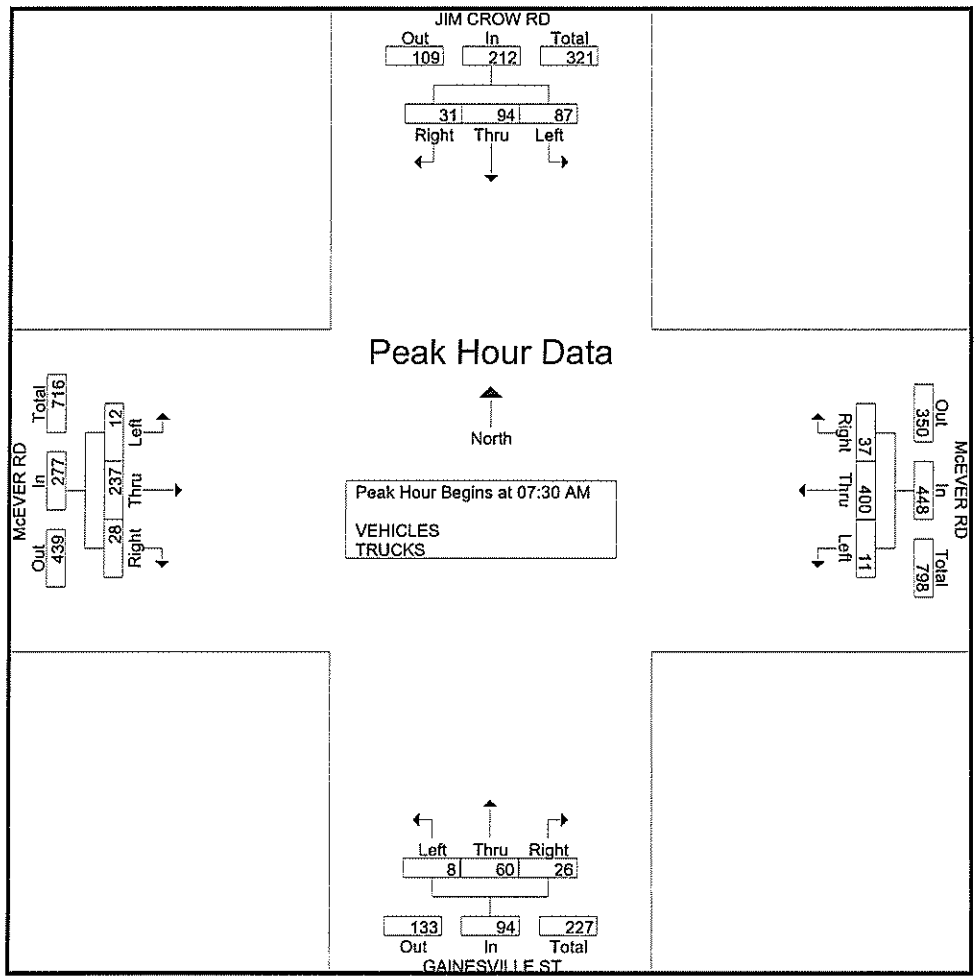
Groups Printed- VEHICLES - TRUCKS

	JIM CROW RD Southbound				McEVER RD Westbound				GAINESVILLE ST Northbound				McEVER RD Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	13	25	8	46	2	82	16	100	5	18	3	26	1	41	1	43	215
07:15 AM	12	40	6	58	4	88	2	94	4	16	5	25	1	48	6	55	232
07:30 AM	20	28	3	51	2	76	12	90	6	31	8	45	3	56	6	65	251
07:45 AM	21	27	5	53	4	141	9	154	0	12	4	16	4	62	11	77	300
Total	66	120	22	208	12	387	39	438	15	77	20	112	9	207	24	240	998
08:00 AM	23	21	14	58	2	94	7	103	2	4	9	15	2	57	7	66	242
08:15 AM	23	18	9	50	3	89	9	101	0	13	5	18	3	62	4	69	238
08:30 AM	13	19	7	39	6	83	5	94	1	4	4	9	3	57	1	61	203
08:45 AM	9	19	12	40	1	77	6	84	2	9	4	15	2	57	4	63	202
Total	68	77	42	187	12	343	27	382	5	30	22	57	10	233	16	259	885
*** BREAK ***																	
04:00 PM	17	19	3	39	3	112	13	128	1	22	2	25	9	94	6	109	301
04:15 PM	17	18	10	45	5	84	15	104	4	27	2	33	7	109	2	118	300
04:30 PM	14	19	6	39	3	107	11	121	4	24	2	30	3	99	8	110	300
04:45 PM	16	16	4	36	4	115	14	133	3	37	1	41	9	119	0	128	338
Total	64	72	23	159	15	418	53	486	12	110	7	129	28	421	16	465	1239
05:00 PM	19	16	4	39	2	129	11	142	2	25	4	31	5	112	1	118	330
05:15 PM	6	21	8	35	4	115	16	135	4	28	0	32	4	151	4	159	361
05:30 PM	13	10	6	29	7	131	11	149	8	31	9	48	2	118	2	122	348
05:45 PM	19	17	6	42	3	110	22	135	5	18	4	27	8	102	1	111	315
Total	57	64	24	145	16	485	60	561	19	102	17	138	19	483	8	510	1354
Grand Total	255	333	111	699	55	1633	179	1867	51	319	66	436	66	1344	64	1474	4476
Apprch %	36.5	47.6	15.9		2.9	87.5	9.6		11.7	73.2	15.1		4.5	91.2	4.3		
Total %	5.7	7.4	2.5	15.6	1.2	36.5	4	41.7	1.1	7.1	1.5	9.7	1.5	30	1.4	32.9	
VEHICLES	251	332	111	694	54	1624	175	1853	51	317	64	432	65	1335	63	1463	4442
% VEHICLES	98.4	99.7	100	99.3	98.2	99.4	97.8	99.3	100	99.4	97	99.1	98.5	99.3	98.4	99.3	99.2
TRUCKS	4	1	0	5	1	9	4	14	0	2	2	4	1	9	1	11	34
% TRUCKS	1.6	0.3	0	0.7	1.8	0.6	2.2	0.7	0	0.6	3	0.9	1.5	0.7	1.6	0.7	0.8

Greater Traffic Company

File Name : FBSITE07
Site Code : 00000007
Start Date : 11/11/2009
Page No : 2

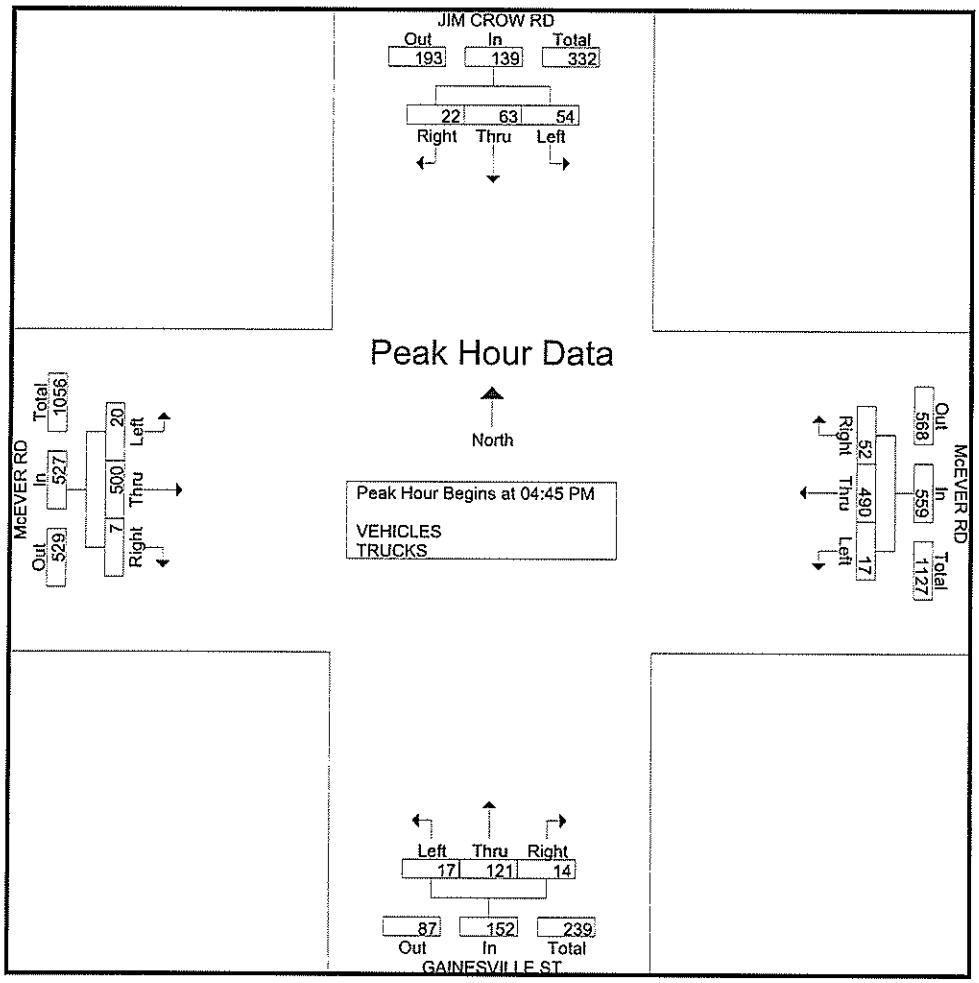
	JIM CROW RD Southbound				McEVER RD Westbound				GAINESVILLE ST Northbound				McEVER RD Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 12:30 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	**20**		3	51	2	76		90			8	**45**	3	56	6	65	251
07:45 AM	21	27	5	53	**4**	**141**	9	**154**	0	12	4	16	**4**	**62**	**11**	**77**	**300**
08:00 AM	**23**	21	**14**	**58**	2	94	7	103	2	4	**9**	15	2	57	7	66	242
08:15 AM	23	18	9	50	3	89	9	101	0	13	5	18	3	62	4	69	238
Total Volume	87	94	31	212	11	400	37	448	8	60	26	94	12	237	28	277	1031
% App. Total	41	44.3	14.6		2.5	89.3	8.3		8.5	63.8	27.7		4.3	85.6	10.1		
PHF	.946	.839	.554	.914	.688	.709	.771	.727	.333	.484	.722	.522	.750	.956	.636	.899	.859



Greater Traffic Company

File Name : FBSITE07
Site Code : 00000007
Start Date : 11/11/2009
Page No : 3

	JIM CROW RD Southbound				McEVER RD Westbound				GAINESVILLE ST Northbound				McEVER RD Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 12:45 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	16	16	4	36	4	115	14	133	3	37			9				
05:00 PM	19	16	4	39	2	129	11	142	2	25	4	31	5	112	1	118	330
05:15 PM	6	21	8	35	4	115	16	135	4	28	0	32	4	151	4	159	361
05:30 PM	13	10	6	29	7	131	11	149	8	31	9	48	2	118	2	122	348
Total Volume	54	63	22	139	17	490	52	559	17	121	14	152	20	500	7	527	1377
% App. Total	38.8	45.3	15.8		3	87.7	9.3		11.2	79.6	9.2		3.8	94.9	1.3		
PHF	.711	.750	.688	.891	.607	.935	.813	.938	.531	.818	.389	.792	.556	.828	.438	.829	.954



Greater Traffic Company

File Name : fbsite01
Site Code : 00000001
Start Date : 11/11/2009
Page No : 1

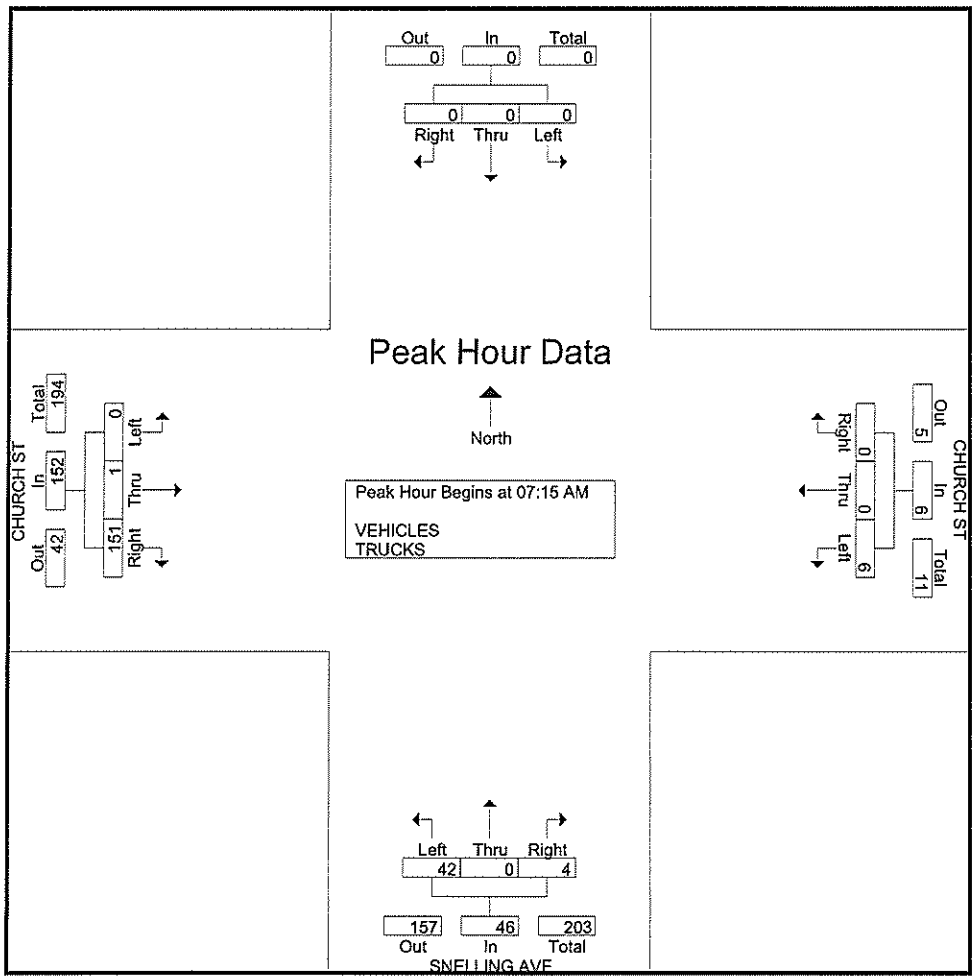
Groups Printed- VEHICLES - TRUCKS

	Southbound				CHURCH ST Westbound				SNELLING AVE Northbound				CHURCH ST Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	2	0	0	2	4	0	1	5	0	0	26	26	33
07:15 AM	0	0	0	0	1	0	0	1	10	0	1	11	0	0	33	33	45
07:30 AM	0	0	0	0	1	0	0	1	10	0	3	13	0	1	46	47	61
07:45 AM	0	0	0	0	2	0	0	2	12	0	0	12	0	0	46	46	60
Total	0	0	0	0	6	0	0	6	36	0	5	41	0	1	151	152	199
08:00 AM	0	0	0	0	2	0	0	2	10	0	0	10	0	0	26	26	38
08:15 AM	0	0	0	0	0	0	0	0	12	0	1	13	0	0	24	24	37
08:30 AM	0	0	0	0	1	0	0	1	11	0	0	11	0	0	20	20	32
08:45 AM	0	0	0	0	2	1	0	3	14	0	0	14	0	0	22	22	39
Total	0	0	0	0	5	1	0	6	47	0	1	48	0	0	92	92	146
*** BREAK ***																	
04:00 PM	0	0	0	0	7	0	0	7	34	0	4	38	0	1	26	27	72
04:15 PM	0	0	0	0	1	0	0	1	30	0	6	36	0	0	28	28	65
04:30 PM	0	0	0	0	9	0	0	9	29	0	5	34	0	0	22	22	65
04:45 PM	0	0	0	0	11	0	0	11	25	0	3	28	0	0	20	20	59
Total	0	0	0	0	28	0	0	28	118	0	18	136	0	1	96	97	261
05:00 PM	0	0	0	0	4	1	0	5	29	0	5	34	0	2	20	22	61
05:15 PM	0	0	0	0	5	0	0	5	35	0	2	37	0	1	20	21	63
05:30 PM	0	0	0	0	15	1	0	16	39	0	7	46	0	0	30	30	92
05:45 PM	0	0	0	0	7	2	0	9	35	0	5	40	0	1	31	32	81
Total	0	0	0	0	31	4	0	35	138	0	19	157	0	4	101	105	297
Grand Total	0	0	0	0	70	5	0	75	339	0	43	382	0	6	440	446	903
Apprch %	0	0	0		93.3	6.7	0		88.7	0	11.3		0	1.3	98.7		
Total %	0	0	0	0	7.8	0.6	0	8.3	37.5	0	4.8	42.3	0	0.7	48.7	49.4	
VEHICLES	0	0	0	0	69	5	0	74	337	0	43	380	0	6	438	444	898
% VEHICLES	0	0	0	0	98.6	100	0	98.7	99.4	0	100	99.5	0	100	99.5	99.6	99.4
TRUCKS	0	0	0	0	1	0	0	1	2	0	0	2	0	0	2	2	5
% TRUCKS	0	0	0	0	1.4	0	0	1.3	0.6	0	0	0.5	0	0	0.5	0.4	0.6

Greater Traffic Company

File Name : fbsite01
Site Code : 00000001
Start Date : 11/11/2009
Page No : 2

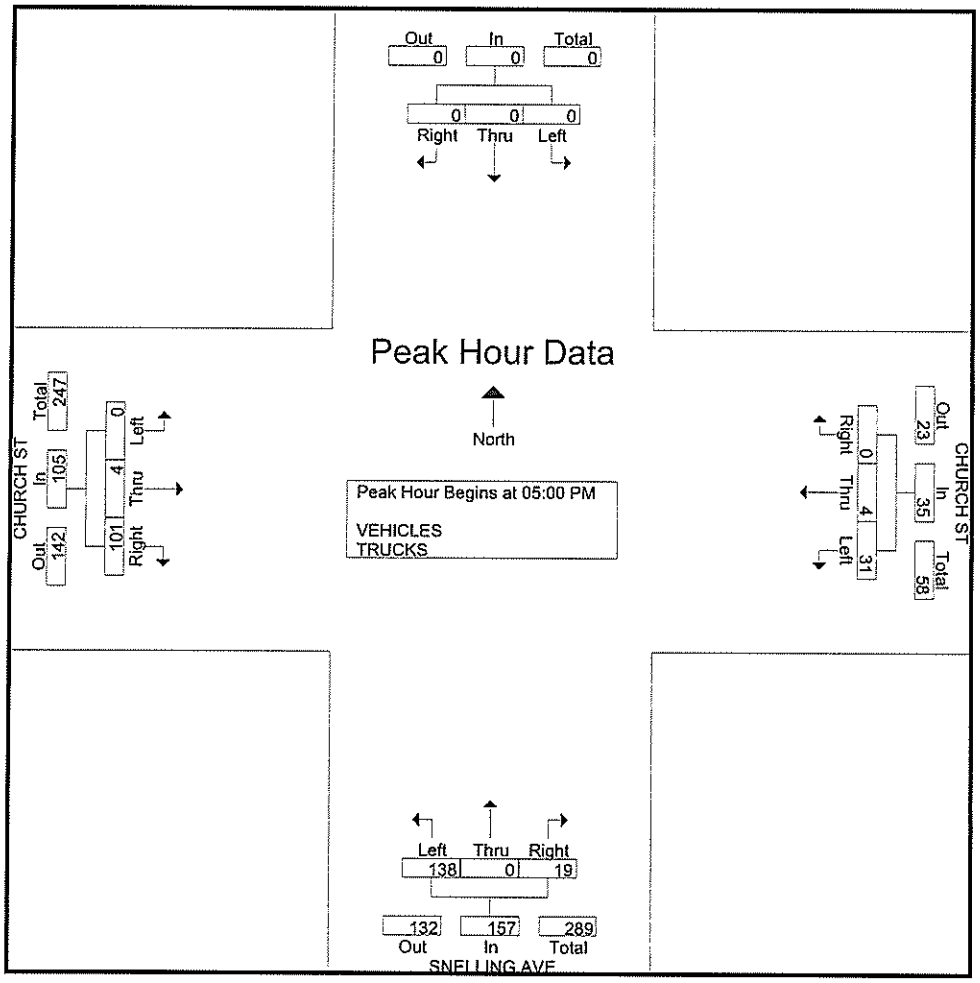
	Southbound				CHURCH ST Westbound				SNELLING AVE Northbound				CHURCH ST Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 12:30 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**10**	**0**	**1**	**11**	**0**	**0**	**33**	**33**	**45**
07:30 AM	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**10**	**0**	**3**	**13**	**0**	**1**	**46**	**47**	**61**
07:45 AM	0	0	0	0	2	0	0	2	12	0	0	12	0	0	46	46	60
08:00 AM	0	0	0	0	2	0	0	2	10	0	0	10	0	0	26	26	38
Total Volume	0	0	0	0	6	0	0	6	42	0	4	46	0	1	151	152	204
% App. Total	0	0	0		100	0	0		91.3	0	8.7		0	0.7	99.3		
PHF	.000	.000	.000	.000	.750	.000	.000	.750	.875	.000	.333	.885	.000	.250	.821	.809	.836



Greater Traffic Company

File Name : fbsite01
Site Code : 00000001
Start Date : 11/11/2009
Page No : 3

	Southbound				CHURCH ST Westbound				SNELLING AVE Northbound				CHURCH ST Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 12:45 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	0	0	0	0	4	1	0	5	29	0	5	34	0	2			
05:15 PM	0	0	0	0	5	0	0	5	35	0	2	37	0	1	20	21	63
05:30 PM	0	0	0	0	15	1	0	16	39	0	7	46	0	0	30	30	92
05:45 PM	0	0	0	0	7	2	0	9	35	0	5	40	0	1	31	32	81
Total Volume	0	0	0	0	31	4	0	35	138	0	19	157	0	4	101	105	297
% App. Total	0	0	0		88.6	11.4	0		87.9	0	12.1		0	3.8	96.2		
PHF	.000	.000	.000	.000	.517	.500	.000	.547	.885	.000	.679	.853	.000	.500	.815	.820	.807



Greater Traffic Company

File Name : FBSITE02
Site Code : 00000002
Start Date : 11/12/2009
Page No : 1

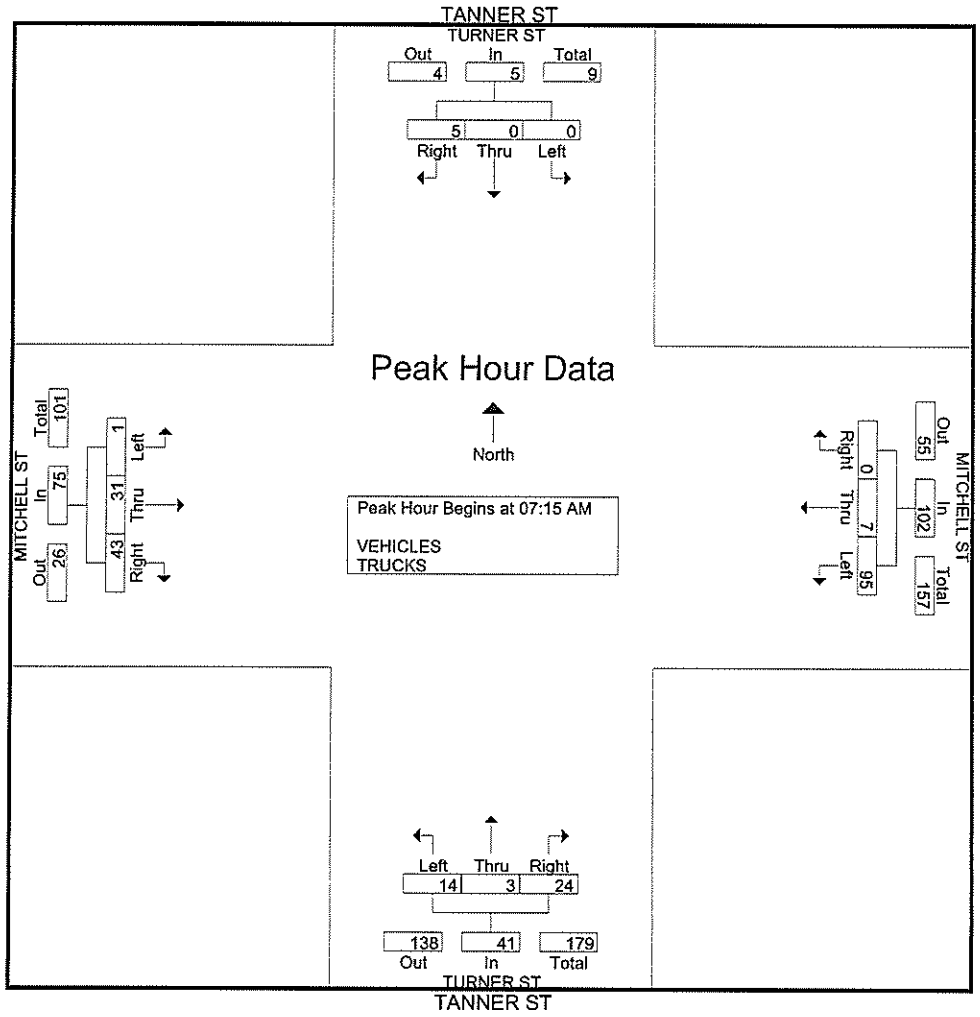
TANNER ST — Groups Printed- VEHICLES - TRUCKS TANNER ST

	TURNER ST Southbound				MITCHELL ST Westbound				TURNER ST Northbound				MITCHELL ST Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	15	0	0	15	0	0	2	2	0	5	14	19	36
07:15 AM	0	0	0	0	26	0	0	26	3	0	4	7	0	7	11	18	51
07:30 AM	0	0	1	1	26	4	0	30	3	1	9	13	0	10	14	24	68
07:45 AM	0	0	2	2	29	3	0	32	6	1	4	11	0	7	14	21	66
Total	0	0	3	3	96	7	0	103	12	2	19	33	0	29	53	82	221
08:00 AM	0	0	2	2	14	0	0	14	2	1	7	10	1	7	4	12	38
08:15 AM	0	0	0	0	18	2	0	20	5	0	8	13	0	5	3	8	41
08:30 AM	0	0	0	0	16	1	0	17	1	0	14	15	0	1	9	10	42
08:45 AM	0	0	0	0	12	1	0	13	6	2	10	18	1	2	6	9	40
Total	0	0	2	2	60	4	0	64	14	3	39	56	2	15	22	39	161
*** BREAK ***																	
04:00 PM	0	3	0	3	17	0	0	17	8	3	25	36	0	2	5	7	63
04:15 PM	0	0	1	1	26	1	0	27	8	3	16	27	0	3	5	8	63
04:30 PM	0	0	0	0	18	3	0	21	9	0	14	23	0	4	9	13	57
04:45 PM	0	1	0	1	16	0	0	16	3	4	18	25	0	5	5	10	52
Total	0	4	1	5	77	4	0	81	28	10	73	111	0	14	24	38	235
05:00 PM	0	1	2	3	15	2	0	17	8	1	19	28	0	3	6	9	57
05:15 PM	0	0	0	0	19	1	0	20	5	3	22	30	0	3	2	5	55
05:30 PM	0	0	0	0	18	2	0	20	8	5	36	49	0	6	4	10	79
05:45 PM	0	2	0	2	18	0	0	18	6	1	30	37	0	5	4	9	66
Total	0	3	2	5	70	5	0	75	27	10	107	144	0	17	16	33	257
Grand Total	0	7	8	15	303	20	0	323	81	25	238	344	2	75	115	192	874
Apprch %	0	46.7	53.3		93.8	6.2	0		23.5	7.3	69.2		1	39.1	59.9		
Total %	0	0.8	0.9	1.7	34.7	2.3	0	37	9.3	2.9	27.2	39.4	0.2	8.6	13.2	22	
VEHICLES	0	7	4	11	302	20	0	322	81	25	238	344	0	71	115	186	863
% VEHICLES	0	100	50	73.3	99.7	100	0	99.7	100	100	100	100	0	94.7	100	96.9	98.7
TRUCKS	0	0	4	4	1	0	0	1	0	0	0	0	2	4	0	6	11
% TRUCKS	0	0	50	26.7	0.3	0	0	0.3	0	0	0	0	100	5.3	0	3.1	1.3

Greater Traffic Company

File Name : FBSITE02
Site Code : 00000002
Start Date : 11/12/2009
Page No : 2

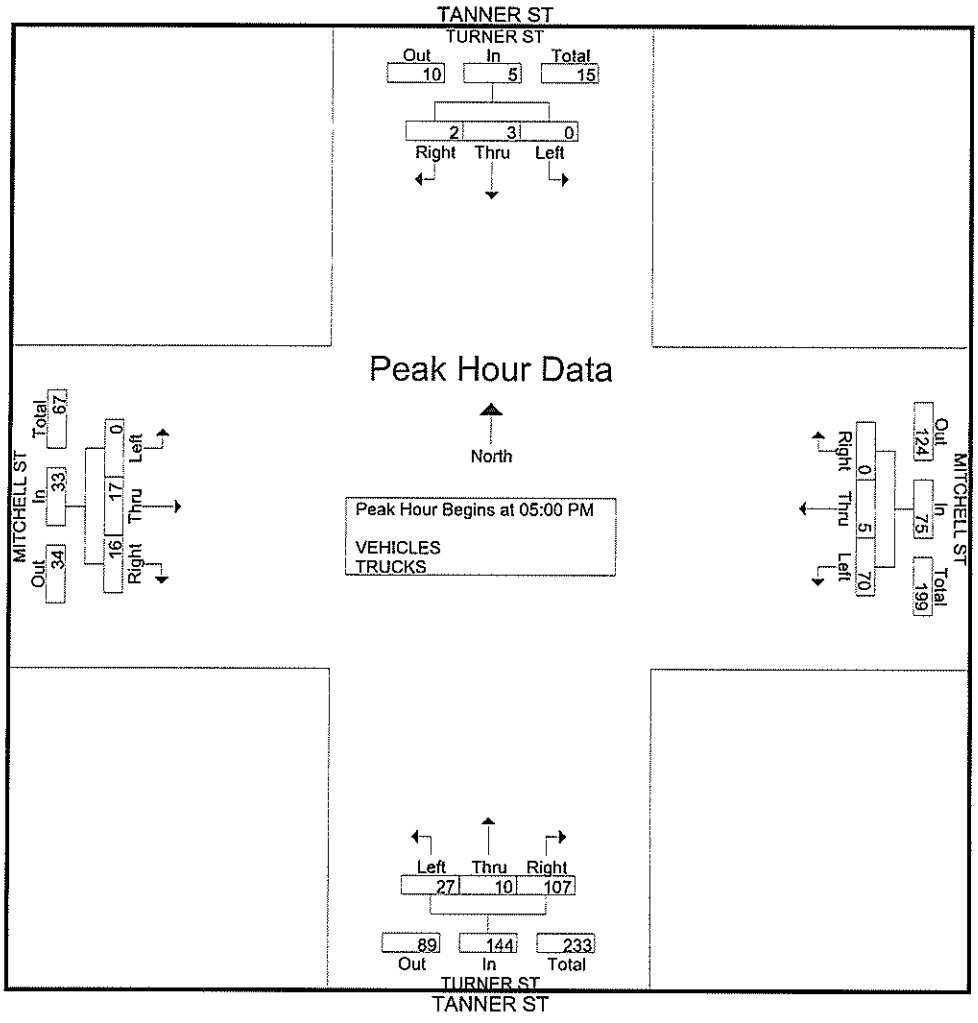
	TANNER ST TURNER ST Southbound				MITCHELL ST Westbound				TANNER ST TURNER ST Northbound				MITCHELL ST Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 12:30 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	0	0	0	26	0	0	26	3	0	4	7	0	7	11	18	51
07:30 AM	0	0	1	1	26	4	0	30	3	1	4	8	0	10	14	24	68
07:45 AM	0	0	2	2	29	3	0	32	6	1	4	11	0	7	14	21	66
08:00 AM	0	0	2	2	14	0	0	14	2	1	7	10	1	7	4	12	38
Total Volume	0	0	5	5	95	7	0	102	14	3	24	41	1	31	43	75	223
% App. Total	0	0	100		93.1	6.9	0		34.1	7.3	58.5		1.3	41.3	57.3		
PHF	.000	.000	.625	.625	.819	.438	.000	.797	.583	.750	.667	.788	.250	.775	.768	.781	.820



Greater Traffic Company

File Name : FBSITE02
Site Code : 00000002
Start Date : 11/12/2009
Page No : 3

	TANNER ST TURNER ST Southbound				MITCHELL ST Westbound				TANNER ST TURNER ST Northbound				MITCHELL ST Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 12:45 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	0	1	2	3		2			8						6		
05:15 PM	0	0	0	0	19	1	0	20	5	3	22	30	0	3	2	5	55
05:30 PM	0	0	0	0	18	2	0	20	8	5	36	49	0	6	4	10	79
05:45 PM	0	2	0	2	18	0	0	18	6	1	30	37	0	5	4	9	66
Total Volume	0	3	2	5	70	5	0	75	27	10	107	144	0	17	16	33	257
% App. Total	0	60	40		93.3	6.7	0		18.8	6.9	74.3		0	51.5	48.5		
PHF	.000	.375	.250	.417	.921	.625	.000	.938	.844	.500	.743	.735	.000	.708	.667	.825	.813



Greater Traffic Company

File Name : FBSITE03
Site Code : 00000002
Start Date : 11/12/2009
Page No : 1

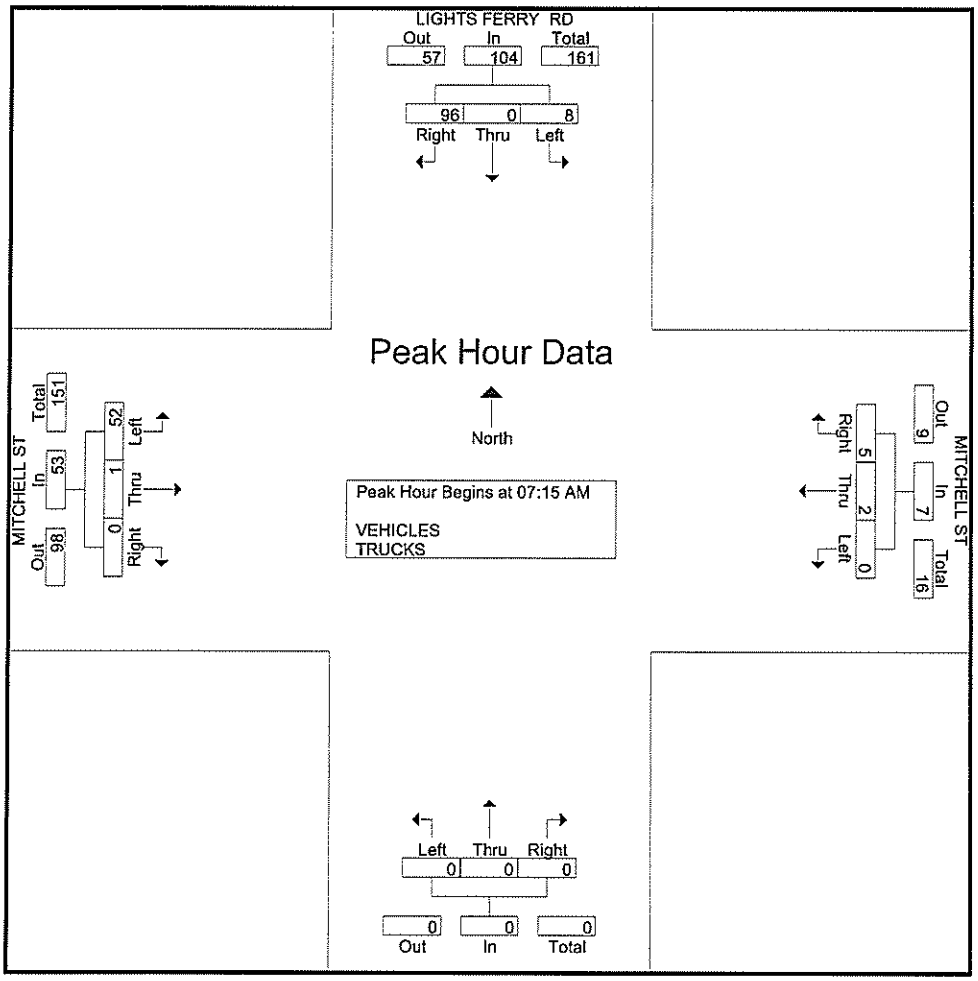
Groups Printed- VEHICLES - TRUCKS

	LIGHTS FERRY RD Southbound				MITCHELL ST Westbound				Northbound				MITCHELL ST Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	3	0	14	17	0	0	1	1	0	0	0	0	6	0	0	6	24
07:15 AM	2	0	27	29	0	1	1	2	0	0	0	0	11	0	0	11	42
07:30 AM	1	0	30	31	0	0	1	1	0	0	0	0	19	0	0	19	51
07:45 AM	3	0	28	31	0	0	1	1	0	0	0	0	10	0	0	10	42
Total	9	0	99	108	0	1	4	5	0	0	0	0	46	0	0	46	159
08:00 AM	2	0	11	13	0	1	2	3	0	0	0	0	12	1	0	13	29
08:15 AM	1	0	20	21	0	1	1	2	0	0	0	0	10	3	0	13	36
08:30 AM	5	0	17	22	0	1	3	4	0	0	0	0	16	0	0	16	42
08:45 AM	0	0	14	14	0	0	1	1	0	0	0	0	11	0	0	11	26
Total	8	0	62	70	0	3	7	10	0	0	0	0	49	4	0	53	133
*** BREAK ***																	
04:00 PM	3	0	15	18	0	0	2	2	0	0	0	0	27	0	0	27	47
04:15 PM	0	0	26	26	0	2	1	3	0	0	0	0	17	0	0	17	46
04:30 PM	2	0	21	23	0	0	3	3	0	0	0	0	19	1	0	20	46
04:45 PM	3	0	16	19	0	2	4	6	0	0	0	0	24	3	0	27	52
Total	8	0	78	86	0	4	10	14	0	0	0	0	87	4	0	91	191
05:00 PM	1	0	17	18	0	1	5	6	0	0	0	0	22	0	0	22	46
05:15 PM	1	0	21	22	0	1	2	3	0	0	0	0	25	0	0	25	50
05:30 PM	2	0	19	21	0	0	3	3	0	0	0	0	43	2	0	45	69
05:45 PM	2	0	18	20	0	0	1	1	0	0	0	0	37	0	0	37	58
Total	6	0	75	81	0	2	11	13	0	0	0	0	127	2	0	129	223
Grand Total	31	0	314	345	0	10	32	42	0	0	0	0	309	10	0	319	706
Apprch %	9	0	91		0	23.8	76.2		0	0	0		96.9	3.1	0		
Total %	4.4	0	44.5	48.9	0	1.4	4.5	5.9	0	0	0	0	43.8	1.4	0	45.2	
VEHICLES	31	0	314	345	0	10	32	42	0	0	0	0	309	10	0	319	706
% VEHICLES	100	0	100	100	0	100	100	100	0	0	0	0	100	100	0	100	100
TRUCKS	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

Greater Traffic Company

File Name : FBSITE03
Site Code : 00000002
Start Date : 11/12/2009
Page No : 2

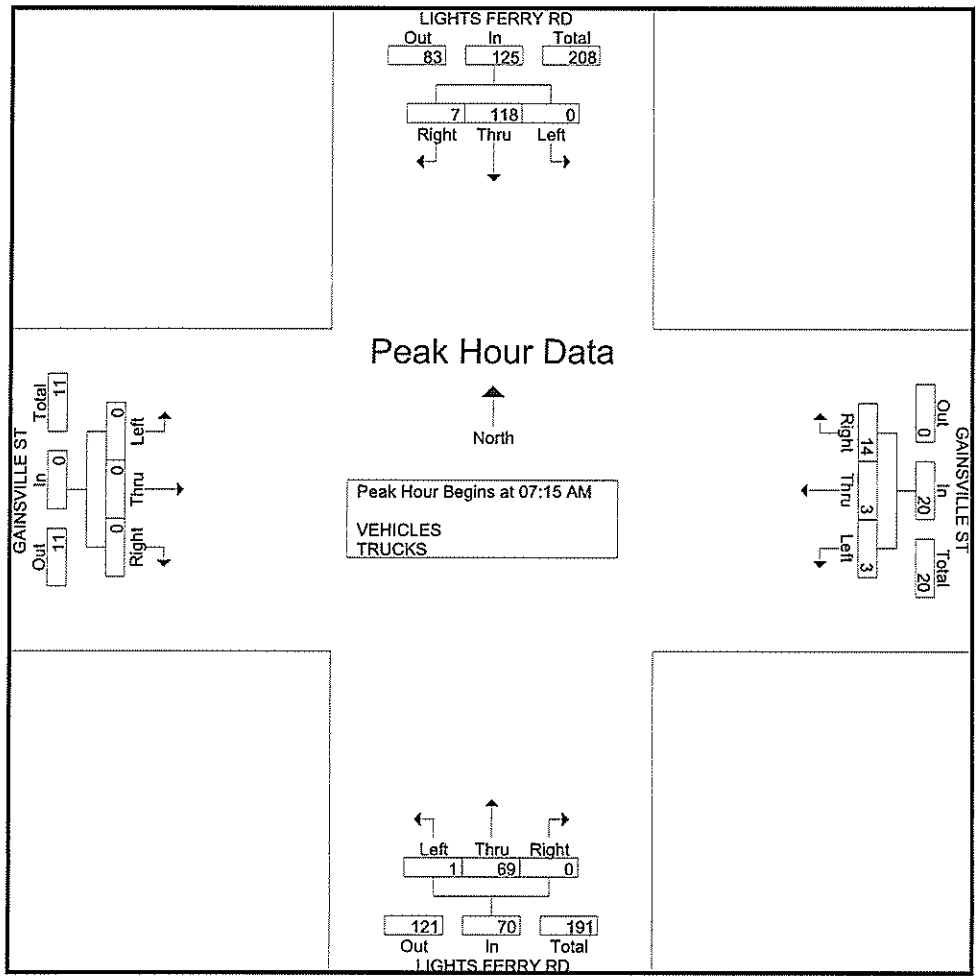
	LIGHTS FERRY RD Southbound				MITCHELL ST Westbound				Northbound				MITCHELL ST Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 12:30 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	**2**	**0**	**27**	**29**	**0**	**1**	**1**	**2**	0	0	0	0	11	0	0	11	42
07:30 AM	1	0	30	31	0	0	1	1	0	0	0	0	19	0	0	**19**	**51**
07:45 AM	3	0	28	31	0	0	1	1	0	0	0	0	10	0	0	10	42
08:00 AM	2	0	11	13	0	1	2	3	0	0	0	0	12	1	0	13	29
Total Volume	8	0	96	104	0	2	5	7	0	0	0	0	52	1	0	53	164
% App. Total	7.7	0	92.3		0	28.6	71.4		0	0	0		98.1	1.9	0		
PHF	.667	.000	.800	.839	.000	.500	.625	.583	.000	.000	.000	.000	.684	.250	.000	.697	.804



Greater Traffic Company

File Name : FBSITE08
Site Code : 00000066
Start Date : 11/17/2009
Page No : 2

	LIGHTS FERRY RD Southbound				GAINSVILLE ST Westbound				LIGHTS FERRY RD Northbound				GAINSVILLE ST Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 12:30 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	**0**	**25**	**0**	**25**	**1**	**0**	**0**	**1**	**0**	**14**	**0**	**14**	**0**	**0**	**0**	**0**	**40**
07:30 AM	**0**	**35**	**2**	**37**	"	"	"	"	0	29	0	29	0	0	0	0	**80**
07:45 AM	0	**38**	1	**39**	0	1	1	2	0	13	0	13	0	0	0	0	54
08:00 AM	0	20	4	24	0	1	2	3	1	13	0	14	0	0	0	0	41
Total Volume	0	118	7	125	3	3	14	20	1	69	0	70	0	0	0	0	215
% App. Total	0	94.4	5.6		15	15	70		1.4	98.6	0		0	0	0		
PHF	.000	.776	.438	.801	.375	.750	.318	.357	.250	.595	.000	.603	.000	.000	.000	.000	.672



Greater Traffic Company

File Name : FBSITE08
Site Code : 00000066
Start Date : 11/17/2009
Page No : 1

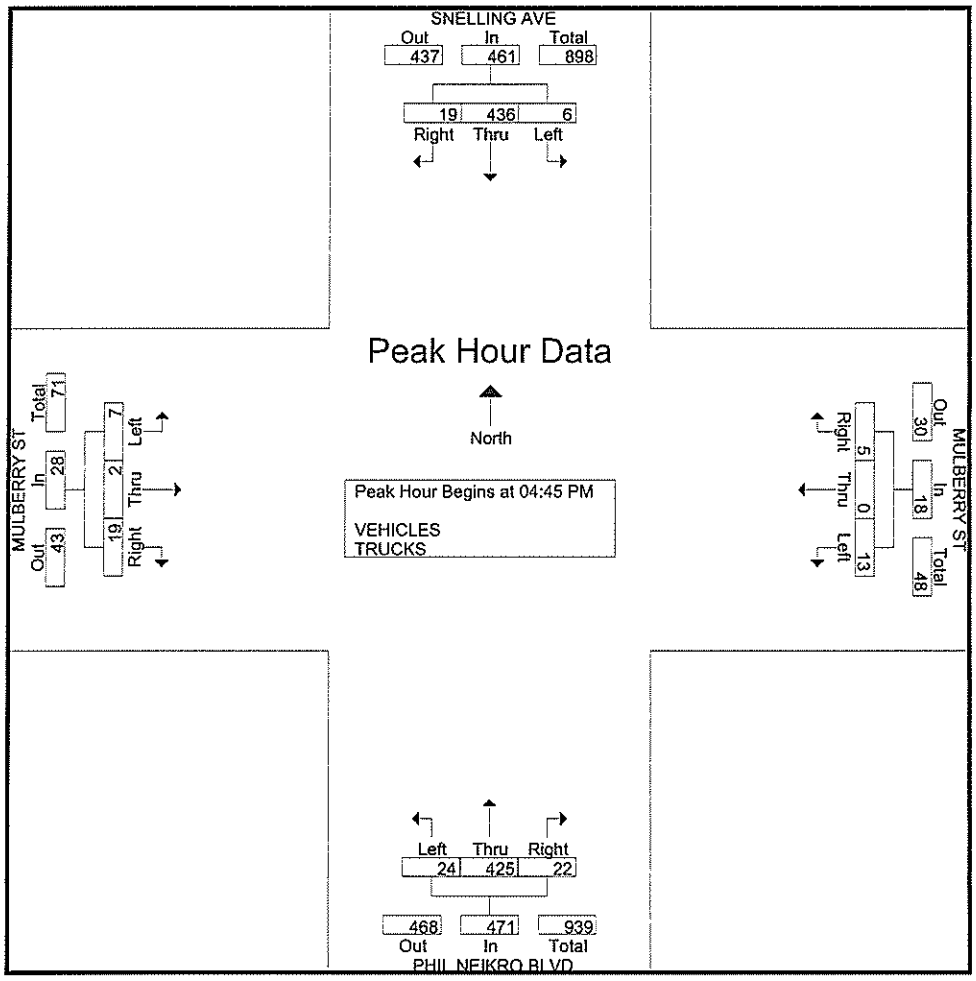
Groups Printed- VEHICLES - TRUCKS

	LIGHTS FERRY RD Southbound				GAINSVILLE ST Westbound				LIGHTS FERRY RD Northbound				GAINSVILLE ST Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	18	2	20	0	0	1	1	0	7	0	7	0	0	0	0	28
07:15 AM	0	25	0	25	1	0	0	1	0	14	0	14	0	0	0	0	40
07:30 AM	0	35	2	37	2	1	11	14	0	29	0	29	0	0	0	0	80
07:45 AM	0	38	1	39	0	1	1	2	0	13	0	13	0	0	0	0	54
Total	0	116	5	121	3	2	13	18	0	63	0	63	0	0	0	0	202
08:00 AM	0	20	4	24	0	1	2	3	1	13	0	14	0	0	0	0	41
08:15 AM	0	26	0	26	0	0	0	0	0	11	0	11	0	0	0	0	37
08:30 AM	0	23	0	23	0	0	2	2	0	13	0	13	0	0	0	0	38
08:45 AM	0	17	1	18	0	0	3	3	0	11	0	11	0	0	0	0	32
Total	0	86	5	91	0	1	7	8	1	48	0	49	0	0	0	0	148
*** BREAK ***																	
04:00 PM	0	17	2	19	2	1	1	4	0	21	0	21	0	0	0	0	44
04:15 PM	0	13	1	14	0	1	2	3	0	25	0	25	0	0	0	0	42
04:30 PM	0	23	0	23	1	1	3	5	0	29	0	29	0	0	0	0	57
04:45 PM	0	29	4	33	1	0	5	6	1	30	0	31	0	0	0	0	70
Total	0	82	7	89	4	3	11	18	1	105	0	106	0	0	0	0	213
05:00 PM	0	21	4	25	0	0	2	2	0	26	0	26	0	0	0	0	53
05:15 PM	0	16	3	19	0	0	5	5	0	35	0	35	0	0	0	0	59
05:30 PM	0	29	3	32	1	0	0	1	0	28	0	28	0	0	0	0	61
05:45 PM	0	22	3	25	1	0	2	3	0	27	0	27	0	0	0	0	55
Total	0	88	13	101	2	0	9	11	0	116	0	116	0	0	0	0	228
Grand Total	0	372	30	402	9	6	40	55	2	332	0	334	0	0	0	0	791
Apprch %	0	92.5	7.5		16.4	10.9	72.7		0.6	99.4	0		0	0	0		
Total %	0	47	3.8	50.8	1.1	0.8	5.1	7	0.3	42	0	42.2	0	0	0	0	
VEHICLES	0	370	30	400	9	4	40	53	2	332	0	334	0	0	0	0	787
% VEHICLES	0	99.5	100	99.5	100	66.7	100	96.4	100	100	0	100	0	0	0	0	99.5
TRUCKS	0	2	0	2	0	2	0	2	0	0	0	0	0	0	0	0	4
% TRUCKS	0	0.5	0	0.5	0	33.3	0	3.6	0	0	0	0	0	0	0	0	0.5

Greater Traffic Company

File Name : FBSITE06
Site Code : 00000066
Start Date : 11/17/2009
Page No : 3

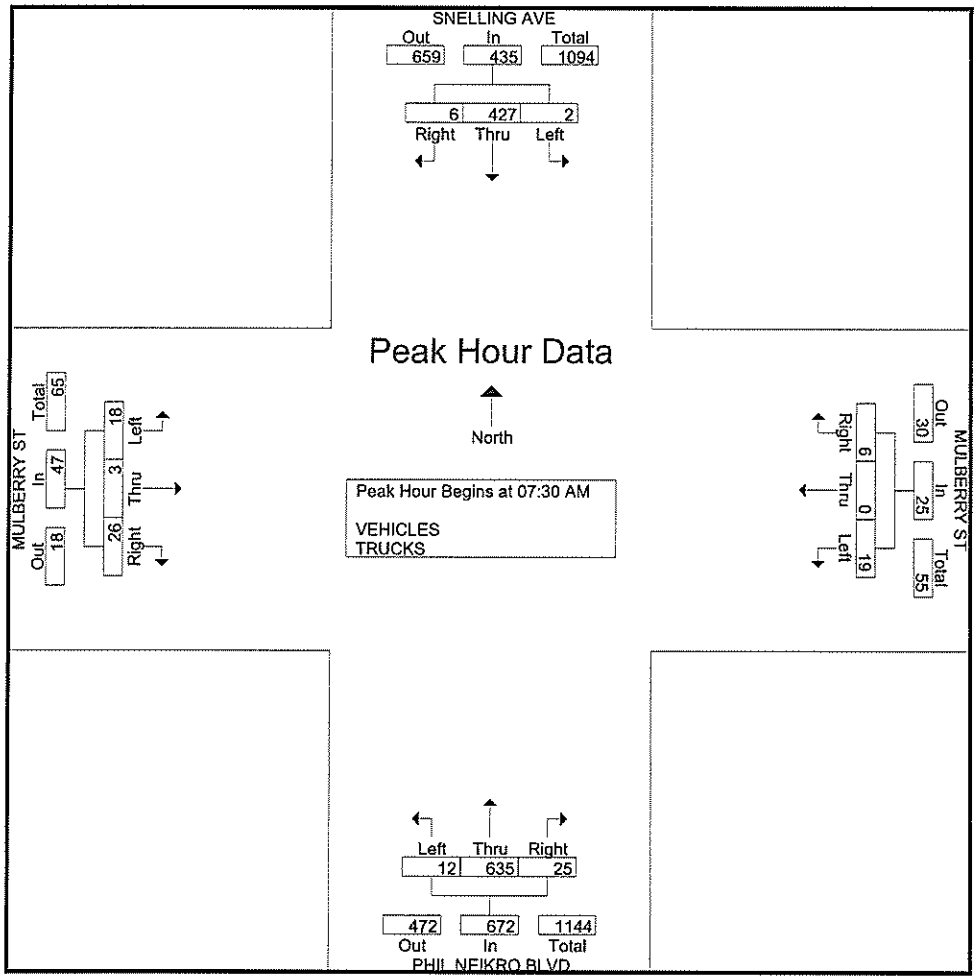
	SNELLING AVE Southbound				MULBERRY ST Westbound				PHIL NEIKRO BLVD Northbound				MULBERRY ST Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 12:45 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	1	116	7										3				259
05:00 PM	3	94	2	99	3	0	1	4	5	98	4	107	1	0	5	6	216
05:15 PM	1	123	6	130	4	0	2	6	9	96	8	113	0	0	6	6	255
05:30 PM	1	103	4	108	4	0	1	5	5	117	4	126	3	2	4	9	248
Total Volume	6	436	19	461	13	0	5	18	24	425	22	471	7	2	19	28	978
% App. Total	1.3	94.6	4.1		72.2	0	27.8		5.1	90.2	4.7		25	7.1	67.9		
PHF	.500	.886	.679	.887	.813	.000	.625	.750	.667	.908	.688	.935	.583	.250	.792	.778	.944



Greater Traffic Company

File Name : FBSITE06
Site Code : 00000066
Start Date : 11/17/2009
Page No : 2

	SNELLING AVE Southbound				MULBERRY ST Westbound				PHIL NEIKRO BLVD Northbound				MULBERRY ST Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 12:30 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	1	106	0	107	5	0	1	6	3	195	11	**209**	4	3	5	12	**334**
07:45 AM	0	**125**	4	**129**	**9**	0	1	**10**	3	166	7	176	5	0	**9**	**14**	329
08:00 AM	1	94	1	96	3	0	1	4	4	146	3	153	**6**	0	4	10	263
08:15 AM	0	102	1	103	2	0	**3**	5	0	128	6	134	3	0	8	11	253
Total Volume	2	427	6	435	19	0	6	25	12	635	25	672	18	3	26	47	1179
% App. Total	0.5	98.2	1.4		76	0	24		1.8	94.5	3.7		38.3	6.4	55.3		
PHF	.500	.854	.375	.843	.528	.000	.500	.625	.600	.814	.694	.804	.750	.250	.722	.839	.882



Greater Traffic Company

File Name : FBSITE06
Site Code : 00000066
Start Date : 11/17/2009
Page No : 1

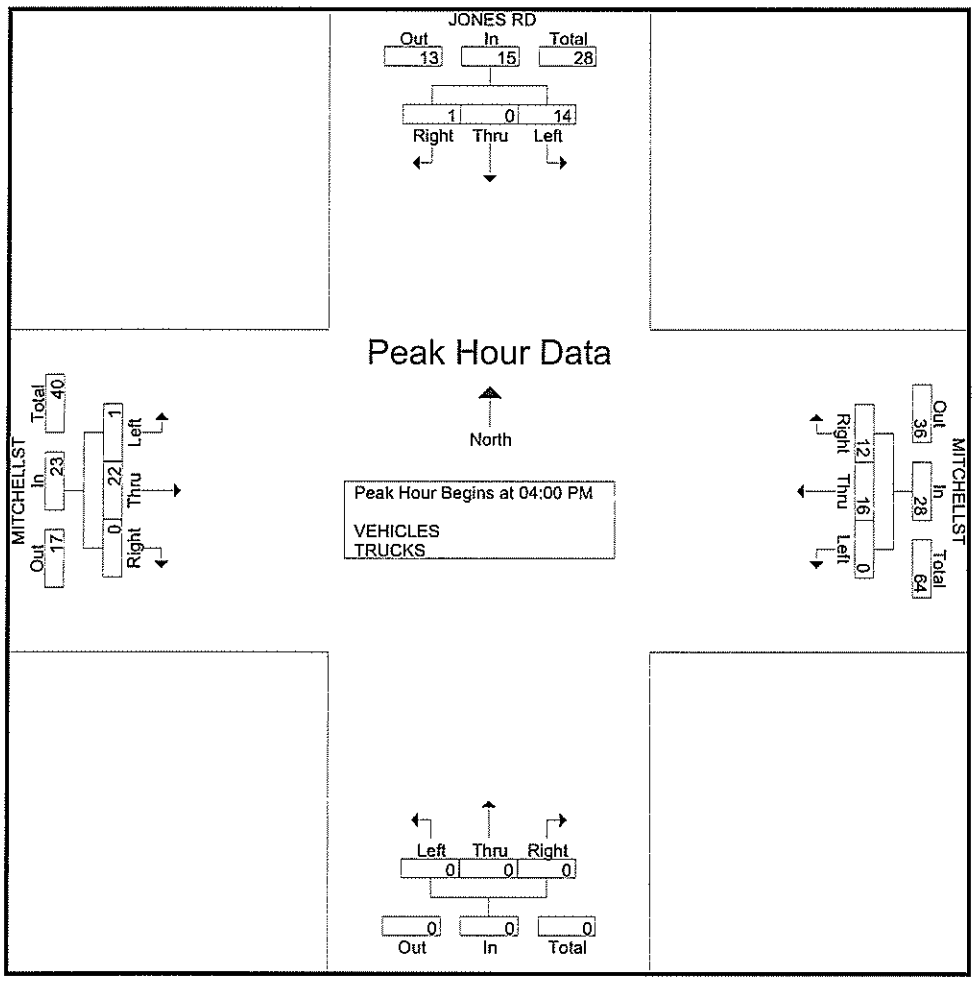
Groups Printed- VEHICLES - TRUCKS

	SNELLING AVE Southbound				MULBERRY ST Westbound				PHIL NEIKRO BLVD Northbound				MULBERRY ST Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	81	0	81	1	0	0	1	1	52	1	54	2	1	1	4	140
07:15 AM	2	67	2	71	0	0	2	2	2	88	6	96	6	0	12	18	187
07:30 AM	1	106	0	107	5	0	1	6	5	195	9	209	4	3	5	12	334
07:45 AM	0	125	4	129	9	0	1	10	3	166	7	176	5	0	9	14	329
Total	3	379	6	388	15	0	4	19	11	501	23	535	17	4	27	48	990
08:00 AM	1	94	1	96	3	0	1	4	4	146	3	153	6	0	4	10	263
08:15 AM	0	102	1	103	2	0	3	5	0	128	6	134	3	0	8	11	253
08:30 AM	0	77	1	78	0	0	1	1	2	83	3	88	1	0	1	2	169
08:45 AM	2	72	1	75	1	0	0	1	2	72	3	77	1	0	3	4	157
Total	3	345	4	352	6	0	5	11	8	429	15	452	11	0	16	27	842
*** BREAK ***																	
04:00 PM	1	83	4	88	6	1	1	8	9	86	3	98	3	0	3	6	200
04:15 PM	0	89	4	93	7	0	0	7	1	85	6	92	1	0	1	2	194
04:30 PM	0	89	6	95	1	0	0	1	4	113	6	123	2	1	5	8	227
04:45 PM	1	116	7	124	2	0	1	3	5	114	6	125	3	0	4	7	259
Total	2	377	21	400	16	1	2	19	19	398	21	438	9	1	13	23	880
05:00 PM	3	94	2	99	3	0	1	4	5	98	4	107	1	0	5	6	216
05:15 PM	1	123	6	130	4	0	2	6	9	96	8	113	0	0	6	6	255
05:30 PM	1	103	4	108	4	0	1	5	5	117	4	126	3	2	4	9	248
05:45 PM	0	83	4	87	2	0	1	3	3	96	2	101	2	0	4	6	197
Total	5	403	16	424	13	0	5	18	22	407	18	447	6	2	19	27	916
Grand Total	13	1504	47	1564	50	1	16	67	60	1735	77	1872	43	7	75	125	3628
Apprch %	0.8	96.2	3		74.6	1.5	23.9		3.2	92.7	4.1		34.4	5.6	60		
Total %	0.4	41.5	1.3	43.1	1.4	0	0.4	1.8	1.7	47.8	2.1	51.6	1.2	0.2	2.1	3.4	
VEHICLES	13	1490	46	1549	50	0	16	66	60	1727	77	1864	41	6	75	122	3601
% VEHICLES	100	99.1	97.9	99	100	0	100	98.5	100	99.5	100	99.6	95.3	85.7	100	97.6	99.3
TRUCKS	0	14	1	15	0	1	0	1	0	8	0	8	2	1	0	3	27
% TRUCKS	0	0.9	2.1	1	0	100	0	1.5	0	0.5	0	0.4	4.7	14.3	0	2.4	0.7

Greater Traffic Company

File Name : FBSITE04
Site Code : 00000002
Start Date : 11/12/2009
Page No : 3

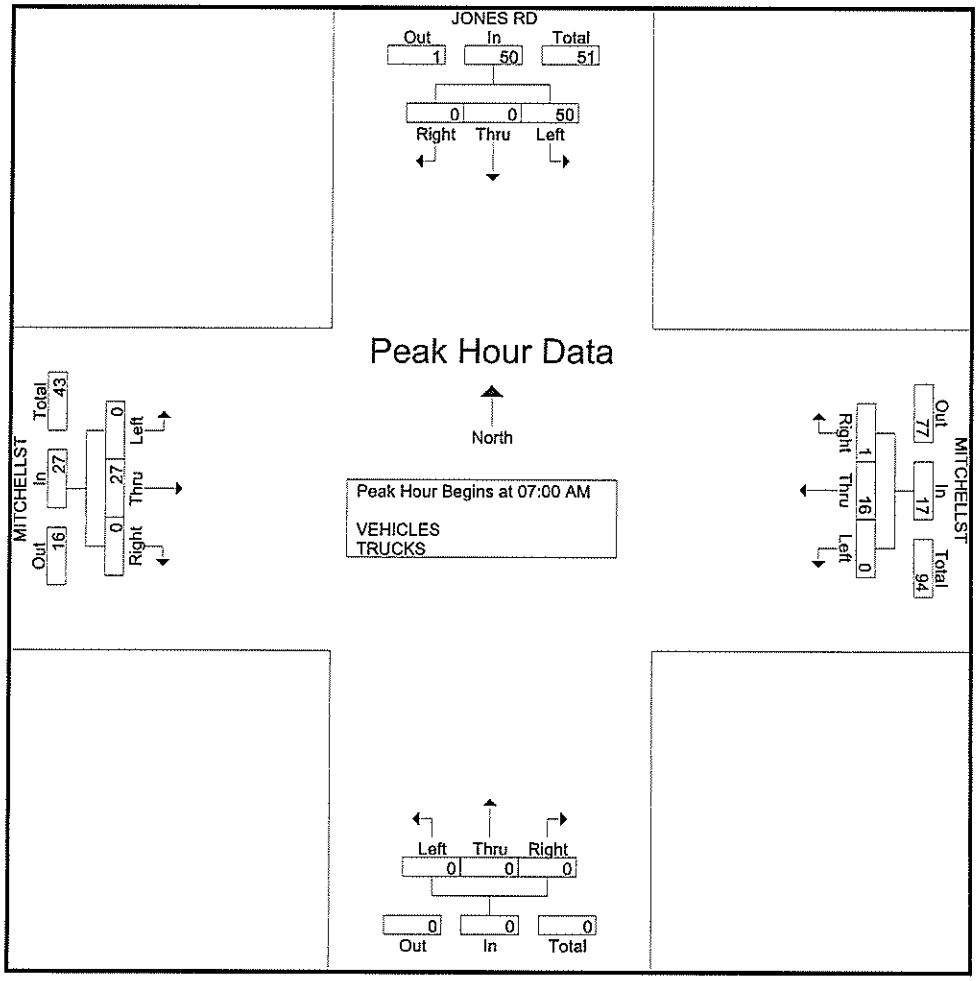
	JONES RD Southbound				MITCHELLST Westbound				Northbound				MITCHELLST Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 12:45 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	3	0	1	4									1				
04:15 PM	4	0	0	4	0	6	6	12	0	0	0	0	0	9	0	9	25
04:30 PM	4	0	0	4	0	3	4	7	0	0	0	0	0	3	0	3	14
04:45 PM	3	0	0	3	0	2	1	3	0	0	0	0	0	5	0	5	11
Total Volume	14	0	1	15	0	16	12	28	0	0	0	0	1	22	0	23	66
% App. Total	93.3	0	6.7		0	57.1	42.9		0	0	0		4.3	95.7	0		
PHF	.875	.000	.250	.938	.000	.667	.500	.583	.000	.000	.000	.000	.250	.611	.000	.639	.660



Greater Traffic Company

File Name : FBSITE04
Site Code : 00000002
Start Date : 11/12/2009
Page No : 2

	JONES RD Southbound				MITCHELLST Westbound				Northbound				MITCHELLST Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 12:30 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	**10**	**0**	**0**	**10**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**6**	**0**	**6**	**16**
07:15 AM	**9**	**0**	**0**	**9**	**0**	**2**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**4**	**0**	**4**	19
07:30 AM	16	0	0	16	0	7	0	7	0	0	0	0	0	8	0	8	**31**
07:45 AM	15	0	0	15	0	7	1	8	0	0	0	0	0	5	0	5	28
Total Volume	50	0	0	50	0	16	1	17	0	0	0	0	0	27	0	27	94
% App. Total	100	0	0		0	94.1	5.9		0	0	0		0	100	0		
PHF	.781	.000	.000	.781	.000	.571	.250	.531	.000	.000	.000	.000	.000	.844	.000	.844	.758



Greater Traffic Company

File Name : FBSITE04
Site Code : 00000002
Start Date : 11/12/2009
Page No : 1

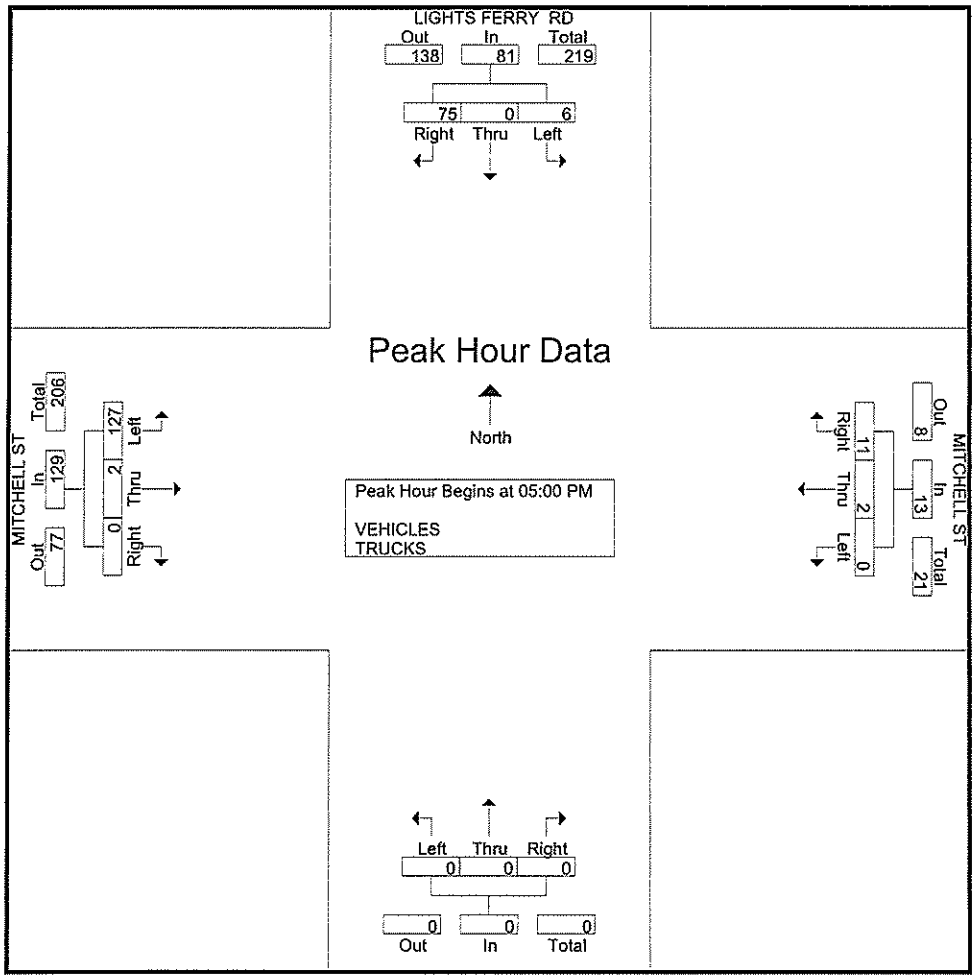
Groups Printed- VEHICLES - TRUCKS

	JONES RD Southbound				MITCHELLST Westbound				Northbound				MITCHELLST Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	10	0	0	10	0	0	0	0	0	0	0	0	0	6	0	6	16
07:15 AM	9	0	0	9	0	2	0	2	0	0	0	0	0	8	0	8	19
07:30 AM	16	0	0	16	0	7	0	7	0	0	0	0	0	8	0	8	31
07:45 AM	15	0	0	15	0	7	1	8	0	0	0	0	0	5	0	5	28
Total	50	0	0	50	0	16	1	17	0	0	0	0	0	27	0	27	94
08:00 AM	7	0	0	7	0	1	2	3	0	0	0	0	0	1	0	1	11
08:15 AM	4	0	0	4	0	6	1	7	0	0	0	0	0	3	0	3	14
08:30 AM	6	0	0	6	0	1	1	2	0	0	0	0	0	3	0	3	11
08:45 AM	3	0	1	4	0	5	1	6	0	0	0	0	0	5	0	5	15
Total	20	0	1	21	0	13	5	18	0	0	0	0	0	12	0	12	51
*** BREAK ***																	
04:00 PM	3	0	1	4	0	5	1	6	0	0	0	0	1	5	0	6	16
04:15 PM	4	0	0	4	0	6	6	12	0	0	0	0	0	9	0	9	25
04:30 PM	4	0	0	4	0	3	4	7	0	0	0	0	0	3	0	3	14
04:45 PM	3	0	0	3	0	2	1	3	0	0	0	0	0	5	0	5	11
Total	14	0	1	15	0	16	12	28	0	0	0	0	1	22	0	23	66
05:00 PM	2	0	0	2	0	2	4	6	0	0	0	0	0	6	0	6	14
05:15 PM	3	0	0	3	0	4	3	7	0	0	0	0	0	2	0	2	12
05:30 PM	5	0	0	5	0	5	2	7	0	0	0	0	0	2	0	2	14
05:45 PM	0	0	0	0	0	2	4	6	0	0	0	0	0	6	0	6	12
Total	10	0	0	10	0	13	13	26	0	0	0	0	0	16	0	16	52
Grand Total	94	0	2	96	0	58	31	89	0	0	0	0	1	77	0	78	263
Apprch %	97.9	0	2.1		0	65.2	34.8		0	0	0		1.3	98.7	0		
Total %	35.7	0	0.8	36.5	0	22.1	11.8	33.8	0	0	0	0	0.4	29.3	0	29.7	
VEHICLES	92	0	2	94	0	58	31	89	0	0	0	0	1	77	0	78	261
% VEHICLES	97.9	0	100	97.9	0	100	100	100	0	0	0	0	100	100	0	100	99.2
TRUCKS	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
% TRUCKS	2.1	0	0	2.1	0	0	0	0	0	0	0	0	0	0	0	0	0.8

Greater Traffic Company

File Name : FBSITE03
Site Code : 00000002
Start Date : 11/12/2009
Page No : 3

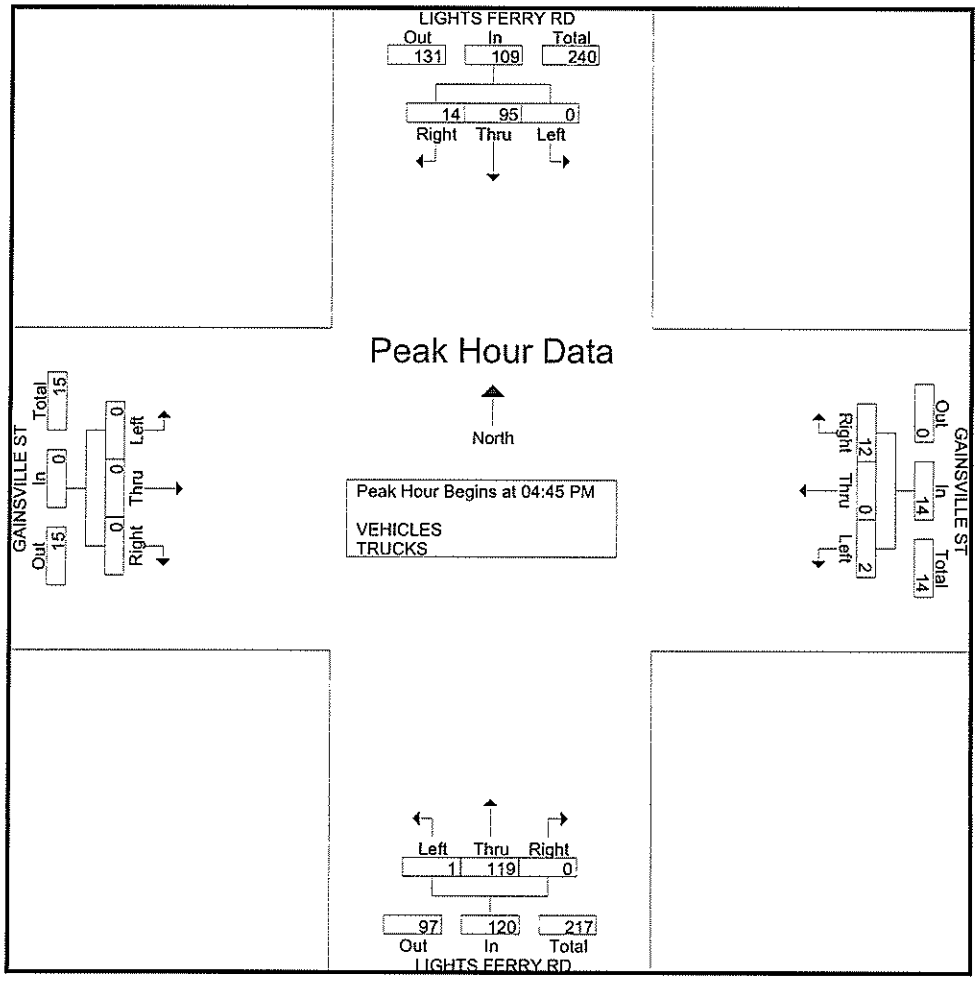
	LIGHTS FERRY RD Southbound				MITCHELL ST Westbound				Northbound				MITCHELL ST Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 12:45 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	1	0	17	18	0	1	5	6									
05:15 PM	1	0	21	22	0	1	2	3	0	0	0	0	25	0	0	25	50
05:30 PM	2	0	19	21	0	0	3	3	0	0	0	0	43	2	0	45	69
05:45 PM	2	0	18	20	0	0	1	1	0	0	0	0	37	0	0	37	58
Total Volume	6	0	75	81	0	2	11	13	0	0	0	0	127	2	0	129	223
% App. Total	7.4	0	92.6		0	15.4	84.6		0	0	0		98.4	1.6	0		
PHF	.750	.000	.893	.920	.000	.500	.550	.542	.000	.000	.000	.000	.738	.250	.000	.717	.808



Greater Traffic Company

File Name : FBSITE08
Site Code : 00000066
Start Date : 11/17/2009
Page No : 3

	LIGHTS FERRY RD Southbound				GAINSVILLE ST Westbound				LIGHTS FERRY RD Northbound				GAINSVILLE ST Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 12:45 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	0	29	4	33	1		5	6	1								70
05:00 PM	0	21	4	25	0	0	2	2	0	26	0	26	0	0	0	0	53
05:15 PM	0	16	3	19	0	0	5	5	0	35	0	35	0	0	0	0	59
05:30 PM	0	29	3	32	1	0	0	1	0	28	0	28	0	0	0	0	61
Total Volume	0	95	14	109	2	0	12	14	1	119	0	120	0	0	0	0	243
% App. Total	0	87.2	12.8		14.3	0	85.7		0.8	99.2	0		0	0	0		
PHF	.000	.819	.875	.826	.500	.000	.600	.583	.250	.850	.000	.857	.000	.000	.000	.000	.868



GREATER TRAFFIC COMPANY
678-524-8489

LIGHTS FERRY RD BTW GAINESVILLE ST & MCEVER RD

NB

fbsite05

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
11/12/09	0	0	0	1	0	1	0	1	1	0	0	0	0	0	4	42-51	2
01:00	0	0	0	0	1	0	1	0	0	0	0	0	0	0	2	22-31	1
02:00	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	27-36	1
03:00	0	0	0	0	1	2	2	0	0	0	0	0	0	0	5	33-42	5
04:00	0	0	1	0	0	0	1	0	0	0	0	0	0	0	2	12-21	1
05:00	0	0	0	0	0	0	1	2	1	0	0	0	0	0	4	42-51	4
06:00	0	0	0	1	1	2	5	10	1	0	0	0	0	0	20	41-50	15
07:00	1	1	0	1	1	4	6	17	12	3	1	0	0	0	47	45-54	29
08:00	0	0	0	0	2	6	13	24	6	4	0	1	0	0	56	41-50	37
09:00	1	0	0	4	2	3	13	11	4	0	1	0	0	0	39	41-50	24
10:00	0	0	1	1	9	10	9	22	5	1	1	0	0	0	59	41-50	31
11:00	0	0	0	3	4	6	12	16	12	3	0	0	0	0	56	43-52	30
12 PM	0	0	1	2	5	7	12	18	9	1	1	0	0	0	56	41-50	30
13:00	0	0	0	4	3	8	20	22	17	4	0	0	0	0	78	41-50	42
14:00	0	3	1	1	4	11	23	27	15	1	0	0	0	0	86	41-50	50
15:00	0	0	0	0	1	5	17	26	13	9	1	0	0	0	72	41-50	43
16:00	1	0	3	4	8	14	32	25	19	4	0	0	0	0	110	41-50	57
17:00	0	0	0	6	7	14	34	48	28	4	0	0	0	0	141	41-50	82
18:00	0	0	1	4	8	11	16	34	7	0	0	0	0	0	81	41-50	50
19:00	0	0	0	3	6	9	32	25	5	0	0	0	0	0	80	41-50	57
20:00	0	0	2	8	6	6	15	25	8	0	0	0	0	0	70	41-50	40
21:00	0	0	0	1	3	0	7	17	5	0	0	0	0	0	33	41-50	24
22:00	0	0	0	0	3	5	9	7	0	2	0	0	0	0	26	38-47	16
23:00	0	0	0	0	1	2	7	7	1	0	0	0	0	0	18	39-48	14
Total	3	4	10	44	76	127	287	384	169	36	5	1	0	0	1146		
Percent	0.3%	0.3%	0.9%	3.8%	6.6%	11.1%	25.0%	33.5%	14.7%	3.1%	0.4%	0.1%	0.0%	0.0%			
AM Peak	07:00	07:00	04:00	09:00	10:00	10:00	08:00	08:00	07:00	08:00	07:00	08:00			10:00		
Vol.	1	1	1	4	9	10	13	24	12	4	1	1			59		
PM Peak	16:00	14:00	16:00	20:00	16:00	16:00	17:00	17:00	17:00	15:00	12:00				17:00		
Vol.	1	3	3	8	8	14	34	48	28	9	1				141		
Total	3	4	10	44	76	127	287	384	169	36	5	1	0	0	1146		
Percent	0.3%	0.3%	0.9%	3.8%	6.6%	11.1%	25.0%	33.5%	14.7%	3.1%	0.4%	0.1%	0.0%	0.0%			

15th Percentile :	37 MPH
50th Percentile :	46 MPH
85th Percentile :	52 MPH
95th Percentile :	55 MPH

Stats

10 MPH Pace Speed :	41-50 MPH
Number in Pace :	671
Percent in Pace :	58.6%
Number of Vehicles > 45 MPH :	595
Percent of Vehicles > 45 MPH :	51.9%
Mean Speed(Average) :	45 MPH

GREATER TRAFFIC COMPANY
678-524-8489

LIGHTS FERRY RD BTW GAINESVILLE ST & MCEVER RD

SB

fbsite05

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
11/12/09	0	0	0	0	0	1	0	2	0	0	0	0	0	0	3	38-47	2
01:00	0	0	1	0	0	0	0	0	1	0	0	0	0	0	2	12-21	1
02:00	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	17-26	1
03:00	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	37-46	1
04:00	0	0	0	0	1	0	0	2	1	1	0	0	0	0	5	46-55	3
05:00	0	1	1	3	0	1	9	5	2	0	0	0	0	0	22	40-49	14
06:00	0	0	2	8	0	5	13	19	8	2	0	0	0	0	57	41-50	32
07:00	0	0	3	7	9	6	18	40	19	8	1	0	0	0	111	43-52	60
08:00	0	1	3	5	5	5	16	28	10	3	1	0	0	0	77	41-50	44
09:00	0	0	6	3	3	5	14	23	15	2	1	0	0	0	72	42-51	38
10:00	0	0	1	11	3	2	14	25	8	4	3	0	0	0	71	41-50	39
11:00	0	0	4	3	2	2	14	19	13	5	1	0	0	0	63	42-51	34
12 PM	0	0	3	7	2	10	14	16	13	3	1	0	0	0	69	42-51	31
13:00	0	0	1	4	1	2	13	28	11	2	0	0	0	0	62	42-51	42
14:00	0	0	1	7	1	4	14	26	10	4	0	0	0	0	67	41-50	40
15:00	0	0	2	5	3	3	12	24	20	6	0	0	0	0	75	46-55	44
16:00	0	0	1	8	5	4	22	26	17	4	1	0	0	0	88	41-50	48
17:00	0	1	2	5	5	4	19	38	11	3	0	0	0	0	88	41-50	57
18:00	0	0	2	6	3	3	32	33	9	0	0	0	0	0	88	41-50	65
19:00	0	0	1	5	2	3	10	26	5	1	0	0	0	0	53	41-50	36
20:00	0	0	2	0	0	3	11	8	2	0	0	0	0	0	26	39-48	19
21:00	0	0	3	0	0	1	5	7	1	0	0	0	0	0	17	40-49	12
22:00	0	0	1	1	2	0	4	7	1	2	0	0	0	0	18	41-50	11
23:00	0	0	0	0	0	0	4	4	0	0	0	0	0	0	8	40-49	8
Total	0	3	40	89	47	64	258	407	177	50	9	0	0	0	1144		
Percent	0.0%	0.3%	3.5%	7.8%	4.1%	5.6%	22.6%	35.6%	15.5%	4.4%	0.8%	0.0%	0.0%	0.0%			
AM Peak		05:00	09:00	10:00	07:00	07:00	07:00	07:00	07:00	07:00	10:00				07:00		
Vol.		1	6	11	9	6	18	40	19	8	3				111		
PM Peak		17:00	12:00	16:00	16:00	12:00	18:00	17:00	15:00	15:00	12:00				16:00		
Vol.		1	3	8	5	10	32	38	20	6	1				88		
Total	0	3	40	89	47	64	258	407	177	50	9	0	0	0	1144		
Percent	0.0%	0.3%	3.5%	7.8%	4.1%	5.6%	22.6%	35.6%	15.5%	4.4%	0.8%	0.0%	0.0%	0.0%			

15th Percentile :	35 MPH
50th Percentile :	46 MPH
85th Percentile :	52 MPH
95th Percentile :	56 MPH

Stats

10 MPH Pace Speed :	41-50 MPH
Number in Pace :	665
Percent in Pace :	58.1%
Number of Vehicles > 45 MPH :	643
Percent of Vehicles > 45 MPH :	56.2%
Mean Speed(Average) :	45 MPH

GREATER TRAFFIC COMPANY
678-524-8489

LIGHTS FERRY RD BTW GAINESVILLE ST & MCEVER RD

NB, SB

fbsite05

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
11/12/09	0	0	0	1	0	2	0	3	1	0	0	0	0	0	7	42-51	4
01:00	0	0	1	0	1	0	1	0	1	0	0	0	0	0	4	12-21	1
02:00	0	0	0	1	0	1	0	0	0	0	0	0	0	0	2	17-26	1
03:00	0	0	0	0	1	2	2	1	0	0	0	0	0	0	6	33-42	5
04:00	0	0	1	0	1	0	1	2	1	1	0	0	0	0	7	38-47	3
05:00	0	1	1	3	0	1	10	7	3	0	0	0	0	0	26	40-49	17
06:00	0	0	2	9	1	7	18	29	9	2	0	0	0	0	77	41-50	47
07:00	1	1	3	8	10	10	24	**57**	**31**	**11**	2	0	0	0	**158**	46-55	88
08:00	0	1	3	5	7	11	**29**	52	16	7	1	1	0	0	133	41-50	81
09:00	1	0	6	7	5	8	27	34	19	2	2	0	0	0	111	41-50	61
10:00	0	0	2	**12**	**12**	**12**	23	47	13	5	**4**	0	0	0	130	41-50	70
11:00	0	0	4	6	6	8	26	35	25	8	1	0	0	0	119	41-50	61
12 PM	0	0	**4**	9	7	17	26	34	22	4	**2**	0	0	0	125	41-50	60
13:00	0	0	1	8	4	10	33	50	28	6	0	0	0	0	140	41-50	83
14:00	0	**3**	2	8	5	15	37	53	25	5	0	0	0	0	153	41-50	90
15:00	0	0	2	5	4	8	29	50	33	**15**	1	0	0	0	147	44-53	83
16:00	1	0	**4**	**12**	**13**	**18**	**54**	51	36	8	1	0	0	0	198	41-50	105
17:00	0	1	2	11	12	18	53	**86**	**39**	7	0	0	0	0	**229**	41-50	139
18:00	0	0	3	10	11	14	48	67	16	0	0	0	0	0	169	41-50	115
19:00	0	0	1	8	8	12	42	51	10	1	0	0	0	0	133	41-50	93
20:00	0	0	4	8	6	9	26	33	10	0	0	0	0	0	96	41-50	59
21:00	0	0	3	1	3	1	12	24	6	0	0	0	0	0	50	41-50	36
22:00	0	0	1	1	5	5	13	14	1	4	0	0	0	0	44	41-50	27
23:00	0	0	0	0	1	2	11	11	1	0	0	0	0	0	26	41-50	22
Total	3	7	50	133	123	191	545	791	346	86	14	1	0	0	2290		
Percent	0.1%	0.3%	2.2%	5.8%	5.4%	8.3%	23.8%	34.5%	15.1%	3.8%	0.6%	0.0%	0.0%	0.0%			
AM Peak	07:00	05:00	09:00	10:00	10:00	10:00	08:00	07:00	07:00	07:00	10:00	08:00			07:00		
Vol.	1	1	6	12	12	12	29	57	31	11	4	1			158		
PM Peak	16:00	14:00	12:00	16:00	16:00	16:00	16:00	17:00	17:00	15:00	12:00				17:00		
Vol.	1	3	4	12	13	18	54	86	39	15	2				229		
Total	3	7	50	133	123	191	545	791	346	86	14	1	0	0	2290		
Percent	0.1%	0.3%	2.2%	5.8%	5.4%	8.3%	23.8%	34.5%	15.1%	3.8%	0.6%	0.0%	0.0%	0.0%			

15th Percentile :	36 MPH
50th Percentile :	46 MPH
85th Percentile :	52 MPH
95th Percentile :	55 MPH

Stats

10 MPH Pace Speed :	41-50 MPH
Number in Pace :	1336
Percent in Pace :	58.3%
Number of Vehicles > 45 MPH :	1238
Percent of Vehicles > 45 MPH :	54.1%
Mean Speed(Average) :	45 MPH

APPENDIX d

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations		↕			↕			↕			↕	
Volume (vph)	12	237	28	11	400	37	87	94	31	8	60	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.0			7.0			6.0			6.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.99			0.99			0.98			0.96	
Flt Protected		1.00			1.00			0.98			1.00	
Satd. Flow (prot)		1834			1840			1789			1786	
Flt Permitted		0.97			0.99			0.82			0.96	
Satd. Flow (perm)		1784			1821			1497			1716	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	13	258	30	12	435	40	95	102	34	9	65	28
RTOR Reduction (vph)	0	7	0	0	6	0	0	12	0	0	21	0
Lane Group Flow (vph)	0	294	0	0	481	0	0	219	0	0	81	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Actuated Green, G (s)		22.6			22.6			12.1			12.1	
Effective Green, g (s)		22.6			22.6			12.1			12.1	
Actuated g/C Ratio		0.47			0.47			0.25			0.25	
Clearance Time (s)		7.0			7.0			6.0			6.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		845			863			380			435	
v/s Ratio Prot												
v/s Ratio Perm		0.16			c0.26			c0.15			0.05	
v/c Ratio		0.35			0.56			0.58			0.19	
Uniform Delay, d1		7.9			9.0			15.6			13.9	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.2			0.8			2.1			0.2	
Delay (s)		8.2			9.8			17.7			14.2	
Level of Service		A			A			B			B	
Approach Delay (s)		8.2			9.8			17.7			14.2	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	11.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	47.7	Sum of lost time (s)	13.0
Intersection Capacity Utilization	56.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations		↕			↕			↕			↕	
Volume (vph)	6	465	8	39	410	8	54	10	41	24	8	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0			6.0			6.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		1.00			1.00			0.95			0.92	
Flt Protected		1.00			1.00			0.97			0.99	
Satd. Flow (prot)		1857			1850			1720			1686	
Flt Permitted		0.99			0.93			0.79			0.91	
Satd. Flow (perm)		1848			1737			1398			1552	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	7	505	9	42	446	9	59	11	45	26	9	53
RTOR Reduction (vph)	0	1	0	0	1	0	0	39	0	0	48	0
Lane Group Flow (vph)	0	520	0	0	496	0	0	76	0	0	40	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			6			2	
Permitted Phases	4			8			6			2		
Actuated Green, G (s)		41.8			41.8			6.2			6.2	
Effective Green, g (s)		41.8			41.8			6.2			6.2	
Actuated g/C Ratio		0.70			0.70			0.10			0.10	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		1287			1210			144			160	
v/s Ratio Prot												
v/s Ratio Perm		0.28			c0.29			c0.05			0.03	
v/c Ratio		0.40			0.41			0.53			0.25	
Uniform Delay, d1		3.8			3.9			25.5			24.8	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.2			0.2			13.3			3.8	
Delay (s)		4.1			4.1			38.8			28.5	
Level of Service		A			A			D			C	
Approach Delay (s)		4.1			4.1			38.8			28.5	
Approach LOS		A			A			D			C	

Intersection Summary			
HCM Average Control Delay	9.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	66.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	45	398	219	201	218	10	12	155	18	109	52	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	5.5		4.7	5.5			5.5			5.5	5.5
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Frt	1.00	0.95		1.00	0.99			0.99			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			1.00			0.97	1.00
Satd. Flow (prot)	1770	1764		1770	1850			1832			1802	1583
Flt Permitted	0.61	1.00		0.15	1.00			0.98			0.55	1.00
Satd. Flow (perm)	1127	1764		272	1850			1794			1024	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	49	433	238	218	237	11	13	168	20	118	57	114
RTOR Reduction (vph)	0	16	0	0	1	0	0	3	0	0	0	86
Lane Group Flow (vph)	49	655	0	218	247	0	0	198	0	0	175	28
Turn Type	Perm			pm+pt			Perm			Perm		Perm
Protected Phases		2		1	6			4			8	
Permitted Phases	2			6			4			8		8
Actuated Green, G (s)	54.5	54.5		79.5	79.5			29.5			29.5	29.5
Effective Green, g (s)	54.5	54.5		79.5	79.5			29.5			29.5	29.5
Actuated g/C Ratio	0.45	0.45		0.66	0.66			0.25			0.25	0.25
Clearance Time (s)	5.5	5.5		4.7	5.5			5.5			5.5	5.5
Lane Grp Cap (vph)	512	801		434	1226			441			252	389
v/s Ratio Prot		c0.37		c0.09	0.13							
v/s Ratio Perm	0.04			0.25				0.11			c0.17	0.02
v/c Ratio	0.10	0.82		0.50	0.20			0.45			0.69	0.07
Uniform Delay, d1	18.7	28.4		16.3	7.9			38.4			41.2	34.7
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	0.4	9.1		4.1	0.4			3.3			14.7	0.4
Delay (s)	19.1	37.5		20.4	8.3			41.6			55.8	35.1
Level of Service	B	D		C	A			D			E	D
Approach Delay (s)		36.2			13.9			41.6			47.6	
Approach LOS		D			B			D			D	

Intersection Summary			
HCM Average Control Delay	32.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	15.7
Intersection Capacity Utilization	81.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Volume (veh/h)	42	4	1	151	6	0
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	46	4	1	164	7	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	96	83			165	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	96	83			165	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	95	100			100	
cM capacity (veh/h)	899	976			1413	

Direction, Lane #	NW 1	NE 1	SW 1
Volume Total	50	165	7
Volume Left	46	0	7
Volume Right	4	164	0
cSH	905	1700	1413
Volume to Capacity	0.06	0.10	0.00
Queue Length 95th (ft)	4	0	0
Control Delay (s)	9.2	0.0	7.6
Lane LOS	A		A
Approach Delay (s)	9.2	0.0	7.6
Approach LOS	A		

Intersection Summary			
Average Delay		2.3	
Intersection Capacity Utilization		19.4%	ICU Level of Service
Analysis Period (min)		15	

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	0	5	14	3	24	1	31	43	95	7	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	5	15	3	26	1	34	47	103	8	0

Direction, Lane #	SE 1	NW 1	NE 1	SW 1
Volume Total (vph)	5	45	82	111
Volume Left (vph)	0	15	1	103
Volume Right (vph)	5	26	47	0
Hadj (s)	-0.57	-0.25	-0.31	0.22
Departure Headway (s)	3.8	4.1	3.8	4.3
Degree Utilization, x	0.01	0.05	0.09	0.13
Capacity (veh/h)	895	837	922	822
Control Delay (s)	6.8	7.3	7.2	8.0
Approach Delay (s)	6.8	7.3	7.2	8.0
Approach LOS	A	A	A	A

Intersection Summary			
Delay	7.5		
HCM Level of Service	A		
Intersection Capacity Utilization	28.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	8	96	52	1	2	5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	9	104	57	1	2	5

Direction, Lane #	SE 1	NE 1	SW 1
Volume Total (vph)	113	58	8
Volume Left (vph)	9	57	0
Volume Right (vph)	104	0	5
Hadj (s)	-0.50	0.23	-0.39
Departure Headway (s)	3.5	4.4	3.8
Degree Utilization, x	0.11	0.07	0.01
Capacity (veh/h)	993	797	917
Control Delay (s)	7.0	7.7	6.8
Approach Delay (s)	7.0	7.7	6.8
Approach LOS	A	A	A

Intersection Summary			
Delay	7.2		
HCM Level of Service	A		
Intersection Capacity Utilization	22.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NEL	NET	SWT	SWR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	50	0	0	27	16	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	54	0	0	29	17	1

Direction, Lane #	EB 1	NE 1	SW 1
Volume Total (vph)	54	29	18
Volume Left (vph)	0	0	17
Volume Right (vph)	0	29	0
Hadj (s)	0.03	-0.57	0.22
Departure Headway (s)	4.0	3.5	4.2
Degree Utilization, x	0.06	0.03	0.02
Capacity (veh/h)	885	998	839
Control Delay (s)	7.3	6.6	7.3
Approach Delay (s)	7.3	6.6	7.3
Approach LOS	A	A	A

Intersection Summary			
Delay		7.1	
HCM Level of Service		A	
Intersection Capacity Utilization		13.3%	ICU Level of Service A
Analysis Period (min)		15	

Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (veh/h)	18	3	26	19	0	6	2	427	6	12	635	25
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	20	3	28	21	0	7	2	464	7	13	690	27
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1208	1215	467	1232	1205	704	717			471		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1208	1215	467	1232	1205	704	717			471		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	87	98	95	86	100	99	100			99		
cM capacity (veh/h)	156	179	596	143	181	437	884			1091		

Direction, Lane #	NB 1	SB 1	SE 1	NW 1
Volume Total	51	27	473	730
Volume Left	20	21	2	13
Volume Right	28	7	7	27
cSH	267	171	884	1091
Volume to Capacity	0.19	0.16	0.00	0.01
Queue Length 95th (ft)	17	14	0	1
Control Delay (s)	21.6	30.0	0.1	0.3
Lane LOS	C	D	A	A
Approach Delay (s)	21.6	30.0	0.1	0.3
Approach LOS	C	D		

Intersection Summary				
Average Delay	1.7			
Intersection Capacity Utilization	53.4%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	118	7	1	69	0	0	0	0	3	3	14
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	128	8	1	75	0	0	0	0	3	3	15

Direction, Lane #	SE 1	NW 1	SW 1
Volume Total (vph)	136	76	22
Volume Left (vph)	0	1	3
Volume Right (vph)	8	0	15
Hadj (s)	0.00	0.04	-0.36
Departure Headway (s)	4.0	4.1	4.0
Degree Utilization, x	0.15	0.09	0.02
Capacity (veh/h)	883	862	848
Control Delay (s)	7.7	7.5	7.1
Approach Delay (s)	7.7	7.5	7.1
Approach LOS	A	A	A

Intersection Summary				
Delay		7.6		
HCM Level of Service		A		
Intersection Capacity Utilization	16.6%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Sign Control	Stop		Stop			Stop
Volume (vph)	3	57	43	3	157	36
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	62	47	3	171	39

Direction, Lane #	NW 1	NE 1	SW 1
Volume Total (vph)	65	50	210
Volume Left (vph)	3	0	171
Volume Right (vph)	62	3	0
Hadj (s)	-0.53	-0.01	0.20
Departure Headway (s)	4.0	4.2	4.3
Degree Utilization, x	0.07	0.06	0.25
Capacity (veh/h)	853	818	825
Control Delay (s)	7.3	7.5	8.7
Approach Delay (s)	7.3	7.5	8.7
Approach LOS	A	A	A

Intersection Summary			
Delay	8.2		
HCM Level of Service	A		
Intersection Capacity Utilization	27.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	20	500	7	17	490	52	54	63	22	17	121	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.0			7.0			6.0			6.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		1.00			0.99			0.98			0.99	
Flt Protected		1.00			1.00			0.98			0.99	
Satd. Flow (prot)		1856			1836			1788			1830	
Flt Permitted		0.97			0.98			0.85			0.95	
Satd. Flow (perm)		1796			1795			1550			1739	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	543	8	18	533	57	59	68	24	18	132	15
RTOR Reduction (vph)	0	1	0	0	6	0	0	15	0	0	7	0
Lane Group Flow (vph)	0	572	0	0	602	0	0	136	0	0	158	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Actuated Green, G (s)		25.1			25.1			8.9			8.9	
Effective Green, g (s)		25.1			25.1			8.9			8.9	
Actuated g/C Ratio		0.53			0.53			0.19			0.19	
Clearance Time (s)		7.0			7.0			6.0			6.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		959			959			294			329	
v/s Ratio Prot												
v/s Ratio Perm		0.32			c0.34			0.09			c0.09	
v/c Ratio		0.60			0.63			0.46			0.48	
Uniform Delay, d1		7.5			7.7			16.9			17.0	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		1.0			1.3			1.2			1.1	
Delay (s)		8.5			9.0			18.1			18.1	
Level of Service		A			A			B			B	
Approach Delay (s)		8.5			9.0			18.1			18.1	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	10.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	47.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	65.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations		↕			↕			↕			↕	
Volume (vph)	29	567	30	39	411	20	26	16	9	25	18	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0			6.0			6.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.99			0.99			0.98			0.96	
Flt Protected		1.00			1.00			0.98			0.98	
Satd. Flow (prot)		1846			1844			1772			1746	
Flt Permitted		0.97			0.92			0.80			0.85	
Satd. Flow (perm)		1787			1703			1459			1513	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	32	616	33	42	447	22	28	17	10	27	20	23
RTOR Reduction (vph)	0	3	0	0	3	0	0	9	0	0	21	0
Lane Group Flow (vph)	0	678	0	0	508	0	0	46	0	0	49	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			6			2	
Permitted Phases	4			8			6			2		
Actuated Green, G (s)		41.8			41.8			6.2			6.2	
Effective Green, g (s)		41.8			41.8			6.2			6.2	
Actuated g/C Ratio		0.70			0.70			0.10			0.10	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		1245			1186			151			156	
v/s Ratio Prot												
v/s Ratio Perm		c0.38			0.30			0.03			c0.03	
v/c Ratio		0.54			0.43			0.30			0.32	
Uniform Delay, d1		4.4			3.9			24.9			24.9	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.5			0.3			5.1			5.3	
Delay (s)		4.9			4.2			30.0			30.2	
Level of Service		A			A			C			C	
Approach Delay (s)		4.9			4.2			30.0			30.2	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM Average Control Delay	7.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	53.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	42	347	289	185	204	11	7	103	32	119	150	181
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	5.5		4.7	5.5			5.5			5.5	5.5
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Frt	1.00	0.93		1.00	0.99			0.97			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			1.00			0.98	1.00
Satd. Flow (prot)	1770	1736		1770	1848			1801			1822	1583
Flt Permitted	0.61	1.00		0.13	1.00			0.98			0.76	1.00
Satd. Flow (perm)	1142	1736		237	1848			1768			1410	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	46	377	314	201	222	12	8	112	35	129	163	197
RTOR Reduction (vph)	0	26	0	0	2	0	0	9	0	0	0	143
Lane Group Flow (vph)	46	665	0	201	232	0	0	146	0	0	292	54
Turn Type	Perm			pm+pt			Perm			Perm		Perm
Protected Phases		2		1	6			4			8	
Permitted Phases	2			6			4			8		8
Actuated Green, G (s)	42.5	42.5		58.2	58.2			26.4			26.4	26.4
Effective Green, g (s)	42.5	42.5		58.2	58.2			26.4			26.4	26.4
Actuated g/C Ratio	0.44	0.44		0.61	0.61			0.28			0.28	0.28
Clearance Time (s)	5.5	5.5		4.7	5.5			5.5			5.5	5.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	3.0
Lane Grp Cap (vph)	508	772		321	1125			488			389	437
v/s Ratio Prot		c0.38		c0.07	0.13							
v/s Ratio Perm	0.04			0.31				0.08			c0.21	0.03
v/c Ratio	0.09	0.86		0.63	0.21			0.30			0.75	0.12
Uniform Delay, d1	15.4	23.9		15.7	8.4			27.3			31.6	25.9
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	0.1	9.8		3.8	0.1			0.3			7.9	0.1
Delay (s)	15.4	33.7		19.5	8.5			27.7			39.5	26.1
Level of Service	B	C		B	A			C			D	C
Approach Delay (s)		32.5			13.6			27.7			34.1	
Approach LOS		C			B			C			C	

Intersection Summary			
HCM Average Control Delay	28.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	95.6	Sum of lost time (s)	15.7
Intersection Capacity Utilization	86.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Volume (veh/h)	138	19	4	101	31	4
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	150	21	4	110	34	4
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	131	59			114	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	131	59			114	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	82	98			98	
cM capacity (veh/h)	843	1006			1475	

Direction, Lane #	NW 1	NE 1	SW 1
Volume Total	171	114	38
Volume Left	150	0	34
Volume Right	21	110	0
cSH	860	1700	1475
Volume to Capacity	0.20	0.07	0.02
Queue Length 95th (ft)	18	0	2
Control Delay (s)	10.2	0.0	6.7
Lane LOS	B		A
Approach Delay (s)	10.2	0.0	6.7
Approach LOS	B		

Intersection Summary			
Average Delay		6.2	
Intersection Capacity Utilization		24.1%	ICU Level of Service
Analysis Period (min)		15	

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	3	2	27	10	107	0	17	16	70	5	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	3	2	29	11	116	0	18	17	76	5	0

Direction, Lane #	SE 1	NW 1	NE 1	SW 1
Volume Total (vph)	5	157	36	82
Volume Left (vph)	0	29	0	76
Volume Right (vph)	2	116	17	0
Hadj (s)	-0.21	-0.37	-0.26	0.22
Departure Headway (s)	4.1	3.8	4.1	4.5
Degree Utilization, x	0.01	0.17	0.04	0.10
Capacity (veh/h)	838	914	844	762
Control Delay (s)	7.1	7.5	7.2	8.0
Approach Delay (s)	7.1	7.5	7.2	8.0
Approach LOS	A	A	A	A

Intersection Summary				
Delay		7.6		
HCM Level of Service		A		
Intersection Capacity Utilization		32.8%	ICU Level of Service	A
Analysis Period (min)		15		

Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	6	75	127	2	2	11
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	7	82	138	2	2	12

Direction, Lane #	SE 1	NE 1	SW 1
Volume Total (vph)	88	140	14
Volume Left (vph)	7	138	0
Volume Right (vph)	82	0	12
Hadj (s)	-0.51	0.23	-0.47
Departure Headway (s)	3.7	4.3	3.7
Degree Utilization, x	0.09	0.17	0.01
Capacity (veh/h)	922	809	927
Control Delay (s)	7.1	8.2	6.8
Approach Delay (s)	7.1	8.2	6.8
Approach LOS	A	A	A

Intersection Summary			
Delay	7.7		
HCM Level of Service	A		
Intersection Capacity Utilization	25.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NEL	NET	SWT	SWR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	14	1	1	22	16	12
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	15	1	1	24	17	13

Direction, Lane #	EB 1	NE 1	SW 1
Volume Total (vph)	16	25	30
Volume Left (vph)	0	1	17
Volume Right (vph)	1	24	0
Hadj (s)	-0.01	-0.53	0.15
Departure Headway (s)	4.0	3.5	4.1
Degree Utilization, x	0.02	0.02	0.03
Capacity (veh/h)	893	1021	865
Control Delay (s)	7.0	6.6	7.3
Approach Delay (s)	7.0	6.6	7.3
Approach LOS	A	A	A

Intersection Summary			
Delay	7.0		
HCM Level of Service	A		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (veh/h)	7	2	19	13	0	5	6	436	19	24	425	22
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	8	2	21	14	0	5	7	474	21	26	462	24
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1029	1035	484	1045	1034	474	486			495		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1029	1035	484	1045	1034	474	486			495		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	96	99	96	93	100	99	99			98		
cM capacity (veh/h)	205	225	583	193	225	590	1077			1069		

Direction, Lane #	NB 1	SB 1	SE 1	NW 1
Volume Total	30	20	501	512
Volume Left	8	14	7	26
Volume Right	21	5	21	24
cSH	370	238	1077	1069
Volume to Capacity	0.08	0.08	0.01	0.02
Queue Length 95th (ft)	7	7	0	2
Control Delay (s)	15.6	21.5	0.2	0.7
Lane LOS	C	C	A	A
Approach Delay (s)	15.6	21.5	0.2	0.7
Approach LOS	C	C		

Intersection Summary				
Average Delay	1.3			
Intersection Capacity Utilization	48.1%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	95	14	1	119	0	0	0	0	2	0	12
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	103	15	1	129	0	0	0	0	2	0	13

Direction, Lane #	SE 1	NW 1	SW 1
Volume Total (vph)	118	130	15
Volume Left (vph)	0	1	2
Volume Right (vph)	15	0	13
Hadj (s)	-0.04	0.04	-0.45
Departure Headway (s)	4.0	4.1	4.0
Degree Utilization, x	0.13	0.15	0.02
Capacity (veh/h)	883	872	845
Control Delay (s)	7.6	7.8	7.0
Approach Delay (s)	7.6	7.8	7.0
Approach LOS	A	A	A

Intersection Summary				
Delay		7.7		
HCM Level of Service		A		
Intersection Capacity Utilization	17.1%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Sign Control	Stop		Stop			Stop
Volume (vph)	6	99	56	2	82	24
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	7	108	61	2	89	26

Direction, Lane #	NW 1	NE 1	SW 1
Volume Total (vph)	114	63	115
Volume Left (vph)	7	0	89
Volume Right (vph)	108	2	0
Hadj (s)	-0.52	0.01	0.19
Departure Headway (s)	3.8	4.3	4.4
Degree Utilization, x	0.12	0.07	0.14
Capacity (veh/h)	908	809	797
Control Delay (s)	7.3	7.6	8.1
Approach Delay (s)	7.3	7.6	8.1
Approach LOS	A	A	A

Intersection Summary			
Delay	7.7		
HCM Level of Service	A		
Intersection Capacity Utilization	25.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations		↕			↕			↕			↕	
Volume (vph)	16	308	36	14	520	48	113	122	40	10	78	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.0			7.0			6.0			6.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.99			0.99			0.98			0.96	
Flt Protected		1.00			1.00			0.98			1.00	
Satd. Flow (prot)		1834			1840			1790			1785	
Flt Permitted		0.96			0.99			0.81			0.95	
Satd. Flow (perm)		1765			1816			1473			1710	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	17	335	39	15	565	52	123	133	43	11	85	37
RTOR Reduction (vph)	0	8	0	0	6	0	0	12	0	0	27	0
Lane Group Flow (vph)	0	383	0	0	626	0	0	287	0	0	106	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Actuated Green, G (s)		22.5			22.5			13.3			13.3	
Effective Green, g (s)		22.5			22.5			13.3			13.3	
Actuated g/C Ratio		0.46			0.46			0.27			0.27	
Clearance Time (s)		7.0			7.0			6.0			6.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		814			837			401			466	
v/s Ratio Prot												
v/s Ratio Perm		0.22			c0.34			c0.20			0.06	
v/c Ratio		0.47			0.75			0.72			0.23	
Uniform Delay, d1		9.1			10.8			16.0			13.8	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.4			3.7			6.0			0.3	
Delay (s)		9.5			14.5			22.1			14.0	
Level of Service		A			B			C			B	
Approach Delay (s)		9.5			14.5			22.1			14.0	
Approach LOS		A			B			C			B	

Intersection Summary			
HCM Average Control Delay	14.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	48.8	Sum of lost time (s)	13.0
Intersection Capacity Utilization	67.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations		↔			↔			↔			↔	
Volume (vph)	7	604	10	51	533	10	70	13	54	31	10	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0			6.0			6.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		1.00			1.00			0.95			0.92	
Flt Protected		1.00			1.00			0.98			0.99	
Satd. Flow (prot)		1858			1851			1719			1685	
Flt Permitted		0.99			0.91			0.87			0.89	
Satd. Flow (perm)		1846			1691			1526			1515	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	8	657	11	55	579	11	76	14	59	34	11	70
RTOR Reduction (vph)	0	1	0	0	1	0	0	39	0	0	63	0
Lane Group Flow (vph)	0	675	0	0	644	0	0	110	0	0	52	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			6			2	
Permitted Phases	4			8			6			2		
Actuated Green, G (s)		41.8			41.8			6.2			6.2	
Effective Green, g (s)		41.8			41.8			6.2			6.2	
Actuated g/C Ratio		0.70			0.70			0.10			0.10	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		1286			1178			158			157	
v/s Ratio Prot												
v/s Ratio Perm		0.37			c0.38			c0.07			0.03	
v/c Ratio		0.52			0.55			0.69			0.33	
Uniform Delay, d1		4.4			4.5			26.0			25.0	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.4			0.5			22.2			5.6	
Delay (s)		4.7			5.0			48.2			30.6	
Level of Service		A			A			D			C	
Approach Delay (s)		4.7			5.0			48.2			30.6	
Approach LOS		A			A			D			C	

Intersection Summary			
HCM Average Control Delay	10.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	84.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	59	517	285	261	283	13	16	202	23	142	68	137
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	5.5		4.7	5.5			5.5			5.5	5.5
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Frt	1.00	0.95		1.00	0.99			0.99			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			1.00			0.97	1.00
Satd. Flow (prot)	1770	1763		1770	1851			1833			1802	1583
Flt Permitted	0.57	1.00		0.07	1.00			0.97			0.47	1.00
Satd. Flow (perm)	1053	1763		126	1851			1785			872	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	64	562	310	284	308	14	17	220	25	154	74	149
RTOR Reduction (vph)	0	16	0	0	1	0	0	3	0	0	0	112
Lane Group Flow (vph)	64	856	0	284	321	0	0	259	0	0	228	37
Turn Type	Perm			pm+pt			Perm			Perm		Perm
Protected Phases		2		1	6			4			8	
Permitted Phases	2			6			4			8		8
Actuated Green, G (s)	54.6	54.6		77.1	77.1			29.5			29.5	29.5
Effective Green, g (s)	54.6	54.6		77.1	77.1			29.5			29.5	29.5
Actuated g/C Ratio	0.46	0.46		0.66	0.66			0.25			0.25	0.25
Clearance Time (s)	5.5	5.5		4.7	5.5			5.5			5.5	5.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	3.0
Lane Grp Cap (vph)	489	819		331	1214			448			219	397
v/s Ratio Prot		c0.49		c0.13	0.17							
v/s Ratio Perm	0.06			0.43				0.15			c0.26	0.02
v/c Ratio	0.13	1.05		0.86	0.26			0.58			1.04	0.09
Uniform Delay, d1	18.0	31.5		37.3	8.4			38.6			44.0	33.8
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	0.1	43.9		19.2	0.1			1.8			72.0	0.1
Delay (s)	18.1	75.4		56.5	8.6			40.4			116.0	33.9
Level of Service	B	E		E	A			D			F	C
Approach Delay (s)		71.4			31.0			40.4			83.6	
Approach LOS		E			C			D			F	

Intersection Summary			
HCM Average Control Delay	58.6	HCM Level of Service	E
HCM Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	117.6	Sum of lost time (s)	15.7
Intersection Capacity Utilization	101.1%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Volume (veh/h)	55	5	1	196	8	0
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	60	5	1	213	9	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	125	108			214	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	125	108			214	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	93	99			99	
cM capacity (veh/h)	864	946			1356	

Direction, Lane #	NW 1	NE 1	SW 1
Volume Total	65	214	9
Volume Left	60	0	9
Volume Right	5	213	0
cSH	871	1700	1356
Volume to Capacity	0.07	0.13	0.01
Queue Length 95th (ft)	6	0	0
Control Delay (s)	9.5	0.0	7.7
Lane LOS	A		A
Approach Delay (s)	9.5	0.0	7.7
Approach LOS	A		

Intersection Summary			
Average Delay	2.4		
Intersection Capacity Utilization	22.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	0	7	18	4	31	1	40	56	124	9	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	8	20	4	34	1	43	61	135	10	0

Direction, Lane #	SE 1	NW 1	NE 1	SW 1
Volume Total (vph)	8	58	105	145
Volume Left (vph)	0	20	1	135
Volume Right (vph)	8	34	61	0
Hadj (s)	-0.57	-0.25	-0.31	0.22
Departure Headway (s)	3.9	4.2	3.9	4.4
Degree Utilization, x	0.01	0.07	0.11	0.18
Capacity (veh/h)	840	803	901	808
Control Delay (s)	7.0	7.5	7.4	8.3
Approach Delay (s)	7.0	7.5	7.4	8.3
Approach LOS	A	A	A	A

Intersection Summary			
Delay	7.8		
HCM Level of Service	A		
Intersection Capacity Utilization	30.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	10	125	68	1	3	7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	136	74	1	3	8

Direction, Lane #	SE 1	NE 1	SW 1
Volume Total (vph)	147	75	11
Volume Left (vph)	11	74	0
Volume Right (vph)	136	0	8
Hadj (s)	-0.51	0.23	-0.39
Departure Headway (s)	3.6	4.4	3.9
Degree Utilization, x	0.15	0.09	0.01
Capacity (veh/h)	977	780	887
Control Delay (s)	7.2	7.9	6.9
Approach Delay (s)	7.2	7.9	6.9
Approach LOS	A	A	A

Intersection Summary			
Delay	7.4		
HCM Level of Service	A		
Intersection Capacity Utilization	25.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NEL	NET	SWT	SWR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	65	0	0	35	21	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	71	0	0	38	23	1

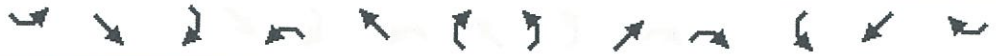
Direction, Lane #	EB 1	NE 1	SW 1
Volume Total (vph)	71	38	24
Volume Left (vph)	0	0	23
Volume Right (vph)	0	38	0
Hadj (s)	0.03	-0.57	0.22
Departure Headway (s)	4.0	3.5	4.3
Degree Utilization, x	0.08	0.04	0.03
Capacity (veh/h)	878	980	830
Control Delay (s)	7.4	6.7	7.4
Approach Delay (s)	7.4	6.7	7.4
Approach LOS	A	A	A

Intersection Summary			
Delay	7.2		
HCM Level of Service	A		
Intersection Capacity Utilization	13.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations		↕			↕			↕			↕	
Volume (veh/h)	23	4	34	25	0	8	3	555	8	16	826	33
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	25	4	37	27	0	9	3	603	9	17	898	36
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1573	1583	608	1604	1569	916	934			612		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1573	1583	608	1604	1569	916	934			612		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	71	96	93	64	100	97	100			98		
cM capacity (veh/h)	85	106	496	75	108	330	733			967		

Direction, Lane #	NB 1	SB 1	SE 1	NW 1
Volume Total	66	36	615	951
Volume Left	25	27	3	17
Volume Right	37	9	9	36
cSH	162	92	733	967
Volume to Capacity	0.41	0.39	0.00	0.02
Queue Length 95th (ft)	45	39	0	1
Control Delay (s)	41.7	67.0	0.1	0.5
Lane LOS	E	F	A	A
Approach Delay (s)	41.7	67.0	0.1	0.5
Approach LOS	E	F		

Intersection Summary				
Average Delay	3.4			
Intersection Capacity Utilization	66.8%	ICU Level of Service	C	
Analysis Period (min)	15			



Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	153	9	1	90	0	0	0	0	4	4	18
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	166	10	1	98	0	0	0	0	4	4	20

Direction, Lane #	SE 1	NW 1	SW 1
Volume Total (vph)	176	99	28
Volume Left (vph)	0	1	4
Volume Right (vph)	10	0	20
Hadj (s)	0.00	0.04	-0.35
Departure Headway (s)	4.1	4.2	4.1
Degree Utilization, x	0.20	0.11	0.03
Capacity (veh/h)	873	849	810
Control Delay (s)	8.1	7.7	7.3
Approach Delay (s)	8.1	7.7	7.3
Approach LOS	A	A	A

Intersection Summary			
Delay	7.9		
HCM Level of Service	A		
Intersection Capacity Utilization	18.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Sign Control	Stop		Stop			Stop
Volume (vph)	4	75	56	4	204	47
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	82	61	4	222	51

Direction, Lane #	NW 1	NE 1	SW 1
Volume Total (vph)	86	65	273
Volume Left (vph)	4	0	222
Volume Right (vph)	82	4	0
Hadj (s)	-0.53	-0.01	0.20
Departure Headway (s)	4.1	4.4	4.4
Degree Utilization, x	0.10	0.08	0.33
Capacity (veh/h)	798	789	801
Control Delay (s)	7.6	7.7	9.5
Approach Delay (s)	7.6	7.7	9.5
Approach LOS	A	A	A

Intersection Summary			
Delay	8.8		
HCM Level of Service	A		
Intersection Capacity Utilization	32.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	26	650	9	22	637	68	70	82	29	22	157	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.0			7.0			6.0			6.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		1.00			0.99			0.98			0.99	
Flt Protected		1.00			1.00			0.98			0.99	
Satd. Flow (prot)		1856			1836			1787			1829	
Flt Permitted		0.95			0.97			0.81			0.94	
Satd. Flow (perm)		1774			1777			1482			1736	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	28	707	10	24	692	74	76	89	32	24	171	20
RTOR Reduction (vph)	0	1	0	0	6	0	0	15	0	0	8	0
Lane Group Flow (vph)	0	744	0	0	784	0	0	182	0	0	207	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Actuated Green, G (s)		25.3			25.3			9.0			9.0	
Effective Green, g (s)		25.3			25.3			9.0			9.0	
Actuated g/C Ratio		0.53			0.53			0.19			0.19	
Clearance Time (s)		7.0			7.0			6.0			6.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		949			950			282			330	
v/s Ratio Prot												
v/s Ratio Perm		0.42			c0.44			c0.12			0.12	
v/c Ratio		0.78			0.83			0.65			0.63	
Uniform Delay, d1		8.8			9.2			17.7			17.6	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		4.3			5.9			5.0			3.7	
Delay (s)		13.1			15.1			22.7			21.3	
Level of Service		B			B			C			C	
Approach Delay (s)		13.1			15.1			22.7			21.3	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM Average Control Delay	15.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	47.3	Sum of lost time (s)	13.0
Intersection Capacity Utilization	81.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations		↔			↔			↔			↔	
Volume (vph)	38	737	39	51	534	26	33	20	12	32	23	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0			6.0			6.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.99			0.99			0.98			0.96	
Flt Protected		1.00			1.00			0.98			0.98	
Satd. Flow (prot)		1847			1844			1772			1745	
Flt Permitted		0.95			0.89			0.79			0.84	
Satd. Flow (perm)		1765			1641			1441			1497	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	41	801	42	55	580	28	36	22	13	35	25	30
RTOR Reduction (vph)	0	3	0	0	3	0	0	12	0	0	27	0
Lane Group Flow (vph)	0	881	0	0	660	0	0	59	0	0	63	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			6			2	
Permitted Phases	4			8			6			2		
Actuated Green, G (s)		41.8			41.8			6.2			6.2	
Effective Green, g (s)		41.8			41.8			6.2			6.2	
Actuated g/C Ratio		0.70			0.70			0.10			0.10	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		1230			1143			149			155	
v/s Ratio Prot												
v/s Ratio Perm		c0.50			0.40			0.04			c0.04	
v/c Ratio		0.72			0.58			0.40			0.41	
Uniform Delay, d1		5.5			4.6			25.2			25.2	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		2.0			0.7			7.8			7.7	
Delay (s)		7.5			5.3			32.9			32.9	
Level of Service		A			A			C			C	
Approach Delay (s)		7.5			5.3			32.9			32.9	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM Average Control Delay	9.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	60.0	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			

Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	55	451	376	241	265	14	9	134	42	155	195	235
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	5.5		4.7	5.5			5.5			5.5	5.5
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Frt	1.00	0.93		1.00	0.99			0.97			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			1.00			0.98	1.00
Satd. Flow (prot)	1770	1736		1770	1849			1801			1822	1583
Flt Permitted	0.58	1.00		0.07	1.00			0.85			0.64	1.00
Satd. Flow (perm)	1072	1736		126	1849			1530			1201	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	60	490	409	262	288	15	10	146	46	168	212	255
RTOR Reduction (vph)	0	24	0	0	2	0	0	9	0	0	0	190
Lane Group Flow (vph)	60	875	0	262	301	0	0	193	0	0	380	65
Turn Type	Perm			pm+pt			Perm			Perm		Perm
Protected Phases		2		1	6			4			8	
Permitted Phases	2			6			4			8		8
Actuated Green, G (s)	54.6	54.6		75.9	75.9			29.5			29.5	29.5
Effective Green, g (s)	54.6	54.6		75.9	75.9			29.5			29.5	29.5
Actuated g/C Ratio	0.47	0.47		0.65	0.65			0.25			0.25	0.25
Clearance Time (s)	5.5	5.5		4.7	5.5			5.5			5.5	5.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	3.0
Lane Grp Cap (vph)	503	814		317	1206			388			304	401
v/s Ratio Prot		c0.50		c0.12	0.16							
v/s Ratio Perm	0.06			0.42				0.13			c0.32	0.04
v/c Ratio	0.12	1.07		0.83	0.25			0.50			1.25	0.16
Uniform Delay, d1	17.4	30.9		36.2	8.4			37.1			43.4	33.8
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	0.1	53.5		16.0	0.1			1.0			136.8	0.2
Delay (s)	17.5	84.4		52.2	8.5			38.1			180.3	34.0
Level of Service	B	F		D	A			D			F	C
Approach Delay (s)		80.2			28.8			38.1			121.5	
Approach LOS		F			C			D			F	

Intersection Summary			
HCM Average Control Delay	75.4	HCM Level of Service	E
HCM Volume to Capacity ratio	1.09		
Actuated Cycle Length (s)	116.4	Sum of lost time (s)	15.7
Intersection Capacity Utilization	106.7%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Volume (veh/h)	179	25	5	131	40	5
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	195	27	5	142	43	5
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	169	77			148	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	169	77			148	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	76	97			97	
cM capacity (veh/h)	796	984			1434	

Direction, Lane #	NW 1	NE 1	SW 1
Volume Total	222	148	49
Volume Left	195	0	43
Volume Right	27	142	0
cSH	815	1700	1434
Volume to Capacity	0.27	0.09	0.03
Queue Length 95th (ft)	28	0	2
Control Delay (s)	11.1	0.0	6.8
Lane LOS	B		A
Approach Delay (s)	11.1	0.0	6.8
Approach LOS	B		

Intersection Summary			
Average Delay		6.6	
Intersection Capacity Utilization		33.1%	ICU Level of Service A
Analysis Period (min)		15	

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	4	3	35	13	139	0	22	21	91	7	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	4	3	38	14	151	0	24	23	99	8	0

Direction, Lane #	SE 1	NW 1	NE 1	SW 1
Volume Total (vph)	8	203	47	107
Volume Left (vph)	0	38	0	99
Volume Right (vph)	3	151	23	0
Hadj (s)	-0.22	-0.37	-0.26	0.22
Departure Headway (s)	4.2	3.9	4.2	4.6
Degree Utilization, x	0.01	0.22	0.05	0.14
Capacity (veh/h)	794	888	807	737
Control Delay (s)	7.3	8.0	7.5	8.3
Approach Delay (s)	7.3	8.0	7.5	8.3
Approach LOS	A	A	A	A

Intersection Summary			
Delay	8.0		
HCM Level of Service	A		
Intersection Capacity Utilization	36.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	8	98	165	3	3	14
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	9	107	179	3	3	15

Direction, Lane #	SE 1	NE 1	SW 1
Volume Total (vph)	115	183	18
Volume Left (vph)	9	179	0
Volume Right (vph)	107	0	15
Hadj (s)	-0.51	0.23	-0.46
Departure Headway (s)	3.9	4.4	3.9
Degree Utilization, x	0.12	0.22	0.02
Capacity (veh/h)	888	795	879
Control Delay (s)	7.4	8.6	7.0
Approach Delay (s)	7.4	8.6	7.0
Approach LOS	A	A	A

Intersection Summary			
Delay	8.1		
HCM Level of Service	A		
Intersection Capacity Utilization	29.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NEL	NET	SWT	SWR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	18	1	1	29	21	16
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	20	1	1	32	23	17

Direction, Lane #	EB 1	NE 1	SW 1
Volume Total (vph)	21	33	40
Volume Left (vph)	0	1	23
Volume Right (vph)	1	32	0
Hadj (s)	0.00	-0.54	0.15
Departure Headway (s)	4.0	3.5	4.1
Degree Utilization, x	0.02	0.03	0.05
Capacity (veh/h)	884	1000	860
Control Delay (s)	7.1	6.6	7.3
Approach Delay (s)	7.1	6.6	7.3
Approach LOS	A	A	A

Intersection Summary			
Delay	7.0		
HCM Level of Service	A		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations		↕			↕			↕			↕	
Volume (veh/h)	9	3	25	17	0	7	8	567	25	31	553	29
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	10	3	27	18	0	8	9	616	27	34	601	32
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1339	1347	630	1360	1345	617	633			643		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1339	1347	630	1360	1345	617	633			643		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	92	98	94	84	100	98	99			96		
cM capacity (veh/h)	123	144	482	112	145	490	950			941		

Direction, Lane #	NB 1	SB 1	SE 1	NW 1
Volume Total	40	26	652	666
Volume Left	10	18	9	34
Volume Right	27	8	27	32
cSH	254	145	950	941
Volume to Capacity	0.16	0.18	0.01	0.04
Queue Length 95th (ft)	14	16	1	3
Control Delay (s)	21.8	35.2	0.2	0.9
Lane LOS	C	E	A	A
Approach Delay (s)	21.8	35.2	0.2	0.9
Approach LOS	C	E		

Intersection Summary				
Average Delay	1.9			
Intersection Capacity Utilization	59.3%	ICU Level of Service	B	
Analysis Period (min)	15			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	124	18	1	155	0	0	0	0	16	0	3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	135	20	1	168	0	0	0	0	17	0	3

Direction, Lane #	SE 1	NW 1	SW 1
Volume Total (vph)	154	170	21
Volume Left (vph)	0	1	17
Volume Right (vph)	20	0	3
Hadj (s)	-0.04	0.04	0.11
Departure Headway (s)	4.1	4.1	4.7
Degree Utilization, x	0.17	0.19	0.03
Capacity (veh/h)	869	859	711
Control Delay (s)	7.9	8.1	7.8
Approach Delay (s)	7.9	8.1	7.8
Approach LOS	A	A	A

Intersection Summary			
Delay	8.0		
HCM Level of Service	A		
Intersection Capacity Utilization	19.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Sign Control	Stop		Stop			Stop
Volume (vph)	7	129	73	3	106	32
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	8	140	79	3	115	35

Direction, Lane #	NW 1	NE 1	SW 1
Volume Total (vph)	148	83	150
Volume Left (vph)	8	0	115
Volume Right (vph)	140	3	0
Hadj (s)	-0.52	0.01	0.19
Departure Headway (s)	3.9	4.4	4.5
Degree Utilization, x	0.16	0.10	0.19
Capacity (veh/h)	871	783	766
Control Delay (s)	7.7	7.9	8.5
Approach Delay (s)	7.7	7.9	8.5
Approach LOS	A	A	A

Intersection Summary			
Delay	8.1		
HCM Level of Service	A		
Intersection Capacity Utilization	29.3%	ICU Level of Service	A
Analysis Period (min)	15		

POND
Architects • Engineers • Planners

3500 Parkway Lane
Suite 600
Norcross, GA 30092

p 678.336.7740
f 678.336.7744
www.pondco.com