Gwinnett Place Community Improvement District

Traffic Study Update

September 2016

POND

Table of Contents

Executive Summary 1
Introduction 9
- Goals 9
- Previous and Ongoing Studies 9
- How to Use this Report 10

Updates to Previous Study 13
- Implemented Improvements 14
- Pleasant Hill Road Corridor 15
- I-85 Diverging Diamond Interchange 19
- Pedestrian Crossings 20
- Transit Considerations 23

New Study Areas 25
- Breckinridge Boulevard 25
- Opportunities for Interparcel Connections 30

Final Recommendations 33
- Keystone Projects 33
- Other Recommendations 36

Appendices
- A: Project Information Sheets
- B: Complete Project Table
- C: Pedestrian Counts
- D: Traffic Counts
- E: Synchro Output

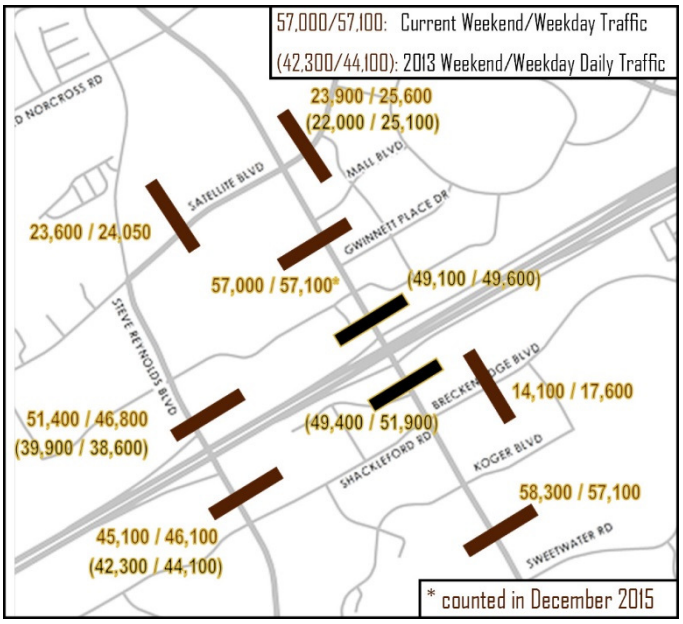
Executive Summary

In 2013, the Gwinnett Place Community Improvement District (GPCID) conducted a traffic study to examine the Pleasant Hill Road, Steve Reynolds Boulevard, and Satellite Boulevard corridors. This study examined several critical intersections, as well as bicycle and pedestrian needs in those three corridors.

In the years since, GPCID boundaries have expanded to additional areas south of I-85, the conversion of the interchange of I-85 and Pleasant Hill Road into a Diverging Diamond Interchange (DDI) was completed, and regional traffic and development growth continued. This updated version of the traffic study serves as an examination of the new areas and a review of the transportation changes present in the GPCID area.

Updates to Previous Study

In partnership with Gwinnett County DOT, GDOT, GPCID, and other organizations, many transportation infrastructure improvement projects have been constructed since the completion of the 2013 study. A comprehensive review of recommendations from the previous study was made and were either removed or amended for consistency with the current state and needs of the CID. This included removing projects that had been completed, amending projects that had been partially completed, and modifying projects based on changing existing conditions.



2013 and 2015/2016 Traffic Volumes

New traffic data was collected on Pleasant Hill Road, including both traffic counts and travel time runs. This set of data revealed that the corridor is serving a notably higher amount of traffic than it was just a few years ago, with moderately increased congestion on the whole. As such, additional project recommendations have been made to alleviate traffic on this corridor. While the DDI is performing well, minor safety modifications were recommended as well, focusing on the turn from southbound Pleasant Hill Road onto the I-85 on ramp.

New Study Areas

Since the previous study was completed, GPCID has expanded to the areas around Breckinridge Boulevard. As part of this study effort, new traffic and capacity analyses were performed at intersections on Breckinridge Boulevard between Old Norcross Road and Pleasant Hill Road. This new analysis yielded new recommendations for intersections and sidewalks in this area.

This area was also examined for bike and pedestrian opportunities. Several intersections could be modified or improved to enhance the pedestrian experience, including notable safety improvements.

Final Recommendations

Certain projects were identified as "Keystone Projects". These projects serve critical roles or areas in maintaining and enhancing the quality of the CID area as a whole. These projects are shown in the map on page 4. These projects include:

- **McDaniel Farm Park Connections; S-37, S-28, L-8, L-9, L-15** – One of the CID's largest and least-utilized resources is McDaniel Farm Park. These project recommendations all work to increase access between the core of GPCID and the park, by creating multi-use paths and pedestrian crossing improvements between the park and other parts of the CID to better connect the area.
- **Multi-Modal "Green Corridor"; RD-13** – The recent ACTivate Gwinnett Place report recommended the creation of a "Green Corridor" south of Satellite Boulevard, reaching from Pleasant Hill Road, incorporating the GCT transfer center, and then extending to McDaniel Farm Park. This kind of connection would provide a safe, welcoming space for alternative transportation users and could form the backbone of a more urban, walkable part of the area.
- **Gwinnett County Transit Gwinnett Place Mall Transit Center Upgrades; S-26** – In order to capitalize on the area's current status as a major transit hub within Gwinnett County, the Transit Center could receive substantial upgrades to improve access to and from the site, and to improve users' experience.
- **Pleasant Hill Road at Satellite Boulevard Major Capacity Improvement; L-17** – As the area redevelops and changes, the intersection of Satellite Boulevard and Pleasant Hill Road will become an ever-increasingly critical juncture for all users of the area. As such, it will likely need a substantial improvement to ensure the safe and efficient movement of people and vehicles. Such an improvement should be compatible with a more densely developed, walkable area.
- **Multi-Use Path Connections on Mall Boulevard, Gwinnett Place Drive, and Venture Parkway; M-17, M-24, M-25** – Currently the area immediately southwest of Gwinnett Place Mall is somewhat lacking in dedicated pedestrian and bicycle facilities. These improvements would create dedicated spaces for these users, making the area easier to move around without a car.
- **Bike and Pedestrian Improvements on Market Street**; **M-14, M-19, RD-6** – Market Street runs through the area immediately southeast of Gwinnett Place Mall, and currently provides minimal pedestrian and cyclist accommodations. In order to further enhance this crucial area, facilities could be added to the existing roadway, and as the area around it changes, it could be enhanced to have dedicated facilities for all users.
- **Pleasant Hill Road at I-85 Interchange Improvements; S-32, L-14** – Access to the freeway system and thus the rest of Gwinnett County and the metropolitan Atlanta region is critical for sustained and increased growth within the CID. Minor improvements may help improve operations now, and continued monitoring and analysis can ensure that the interchange is ready for future traffic growth.
- **Pleasant Hill Road/I-85/SR 316 C-D System Improvements; M-26** – Immediately north of the interchange, the collector-distributor system is similarly important to the CID area and needs a similar level of monitoring and periodic improvements to ensure that vehicular access to the greater region is preserved and enhanced as possible.

- **West Liddell Road to Club Drive Connector; S-15, M-7, M-17** – As a way to better connect the CID area and provide access across I-85, a roadway could be built connecting Club Drive (near its intersection with Shackleford Road) to West Liddell Road (near Venture Drive). A new roadway and new connection would also create the opportunity for a new bike and pedestrian link. This new roadway should be designed with a multi-use path to provide space for both pedestrians and cyclists.

Maps showing all recommended improvements are shown in the three maps on pages 5 through 7.

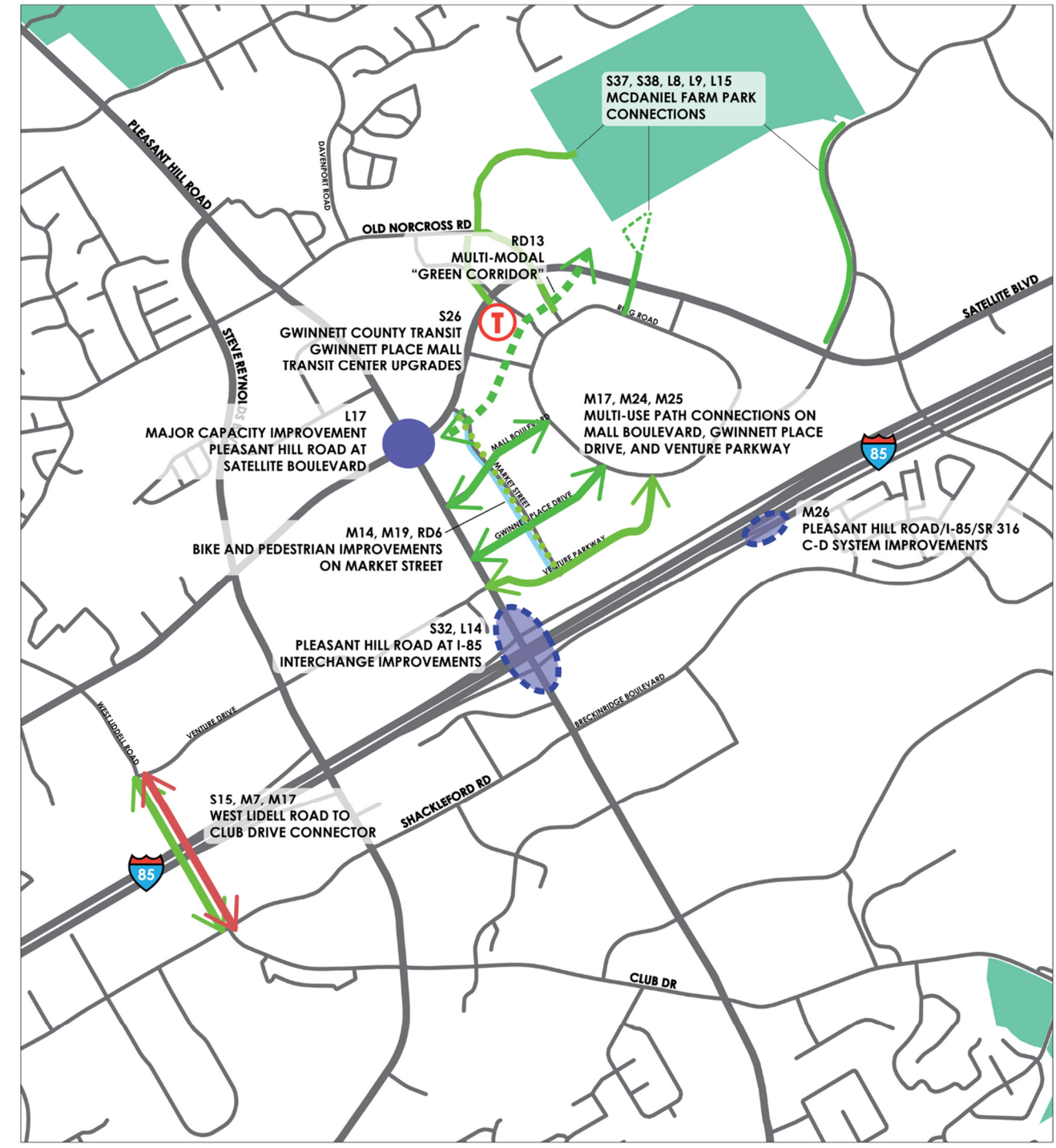
In addition, cost estimates for projects carried over from the previous plan were adjusted to account for inflation while modified or new projects had new cost estimates constructed for them.

The end of this report document includes a detailed table of all project recommendations. In addition, the appendix contains a project information sheet for each project (except for those projects recommended to be completed with redevelopment).

Other notable projects were also identified and include the following:

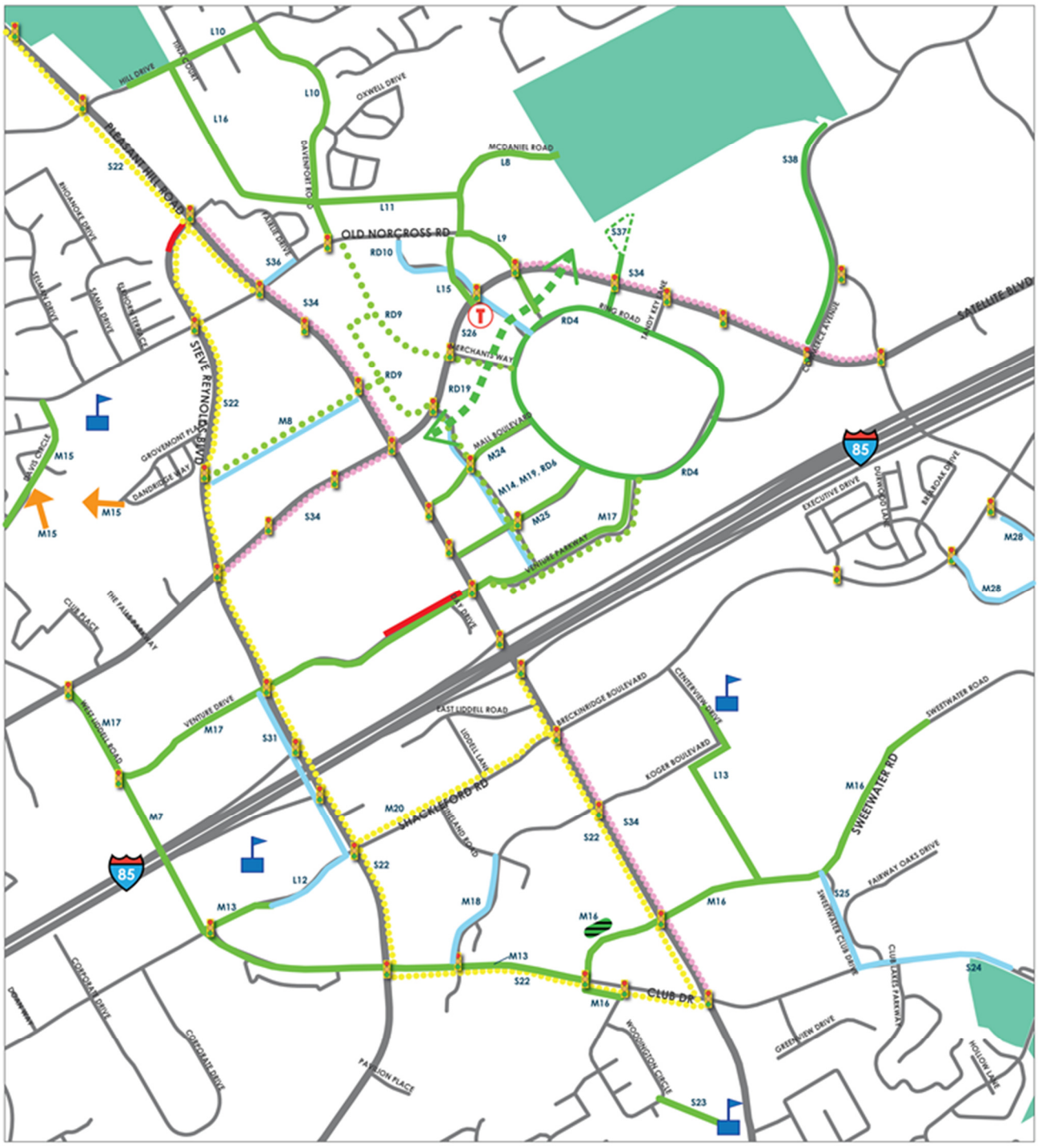
- **Satellite Boulevard-Gwinnett Place Drive Connector; S-39** – An existing private roadway that could be converted to public maintenance with notable improvements for all users
- **Pleasant Hill Road-Satellite Boulevard Connector; L-16**– Similar to previous, an existing private roadway that could be converted to public maintenance with notable improvements for all users
- **Venture Drive Widening; S-12** – Improving Venture Drive, an important local alternative to Satellite Boulevard
- **Satellite Boulevard at Old Norcross Road (West) Right Turn Lane Modifications; S-8** – Improving operations and safety at a critical juncture near the GCT Transit Center
- **Venture Drive at Steve Reynolds Boulevard Dual Left Turn Lanes; M-5** – Operational improvement to relieve congestion on both Steve Reynolds Boulevard and Venture Drive
- **Steve Reynolds Boulevard at Shackleford Road Intersection Improvements; M-6** – Improvements to important roadways, increasing access to and from I-85
- **Pleasant Hill Road at Crestwood Parkway/Koger Boulevard Right Turn Lane; M-2** – Proactive accommodation of future traffic as Koger Boulevard becomes an attractive alternate route
- **Pleasant Hill Road at Sweetwater Road – Extend Left Turn Lanes; M-23** – Accommodating increased traffic levels in the southern portion of the CID

KEYSTONE TRANSPORTATION RECOMMENDATIONS



RECOMMENDATIONS: ROAD & INTERSECTION IMPROVEMENTS

RECOMMENDATIONS: PED/BIKE CONNECTIONS



Programmed Sidewalk
Streetlight Installation
Bike/Ped Connection
New Bike Lane / Sharrow
Streetscape Improvements
New Sidewalk
New Multiuse Path
Proposed Pocket Park
Signalized Intersection
Grade Separated Greenway
Transit Center Upgrade
School
0 500 1,000 2,000 3,000 4,000 Feet

RECOMMENDATIONS: PED CROSSING IMPROVEMENTS

Introduction

The Gwinnett Place Community Improvement District (GPCID) is a self-taxing organization of commercial property owners located in the vicinity of I-85, Pleasant Hill Road, Satellite Boulevard, Steve Reynolds Boulevard, and the Gwinnett Place Mall. GPCID conducted a study to investigate opportunities to improve traffic congestion and enhance the pedestrian experience in 2013. This update to the traffic study was conducted to investigate whether the recommendations are still appropriate, to add analysis of new areas in the CID, and to expand the analysis to new topics not previously explored.

This report updates specific sections of the previous report and adds analysis of new topics and areas, but does not recreate every analysis performed previously. The previous report should still be considered as in effect for any topics not explicitly discussed in this report.

Goals

In order to continue to improve the quality of life and economic competitiveness of the GPCID area, this study was conducted with a set of goals in mind. These goals were developed as part of the 2013 traffic study of the area, and are described below:

- Reduce Congestion/Improve Operations – Overall improvements in vehicular movement and accessibility to and from the CID as well as efficient movement within the area
- Increase System Connectivity – Increasing options for any and all transportation users, giving travelers options to get around, improving the resilience of the transportation system
- Serves Growth in Travel Demand – To anticipate future travel growth and changes in travel patterns throughout the CID and to be prepared for them
- Increase Utilization of Steve Reynolds Boulevard – As a parallel road, Steve Reynolds Boulevard could serve many of the same trips that Pleasant Hill Road does, which would improve overall traffic flow
- Improve Traffic Safety – Making Gwinnett Place's roadways safer for all users
- Improve Pedestrian Crossing Safety – Added emphasis on increasing safety for pedestrians, often the most vulnerable roadways users, as they cross roadways
- Sidewalk/Bike Connections to Activity Areas – Creating connections to hubs of activity as a way to enable and encourage pedestrian and cycling trips
- Enhance Access to Transit – Improve quality of life by providing better access to and from transit, including nearby pedestrian facilities, bus stops, and transfer facilities.

Previous and Ongoing Studies

As part of this study update effort, relevant studies were reviewed to understand the planning context in the area.

Gwinnett County 2030 Unified Plan (2009)

In 2009, Gwinnett County approved the 2030 Unified Plan, which contains the Comprehensive Plan, Comprehensive Housing Plan, and Comprehensive Transportation Plan (CTP) for the county, guiding both land use and transportation decisions. This document provides fiscally constrained recommendations and aspirational concepts to serve current and future development. There is an ongoing effort to update the county's CTP, which is projected to be completed in 2017, discussed below. Until that update is complete, the 2009 plan is the CTP in effect.

Gwinnett Place Livable Centers Initiative (LCI) Update (2012)

In 2002, GPCID worked with ARC to conduct an LCI study of the Gwinnett Place area. A ten year update of this study was completed in 2012. This update developed the base strategies to reinvigorate the areas immediately around Gwinnett Place Mall. This update also called for a more in-depth look at traffic along major corridors which was accomplished by the 2013 traffic study that this report updates.

ACTivate Gwinnett Place Multi-Modal Green Corridor Master Plan (2015)

As part of the effort to determine a strategy to reimagine the Gwinnett Place area to implement the existing LCI study, GPCID completed the ACTivate Gwinnett Place Multi-Modal Green Corridor Master Plan. The study recommended a series of "catalyst projects" which were designed to enhance mobility of all modes while encouraging new development and redevelopment in the area. These projects include a bike and pedestrian bridge over Satellite Boulevard, improving connections to McDaniel Farm Park, a Grand Promenade along internal streets enhancing bicycle and pedestrian mobility, and various improvements to the existing Transit Center, improving service and comfort for riders.

Gwinnett County Comprehensive Transportation Plan (2017)

Gwinnett County is currently updating their Comprehensive Transportation Plan (CTP). This update considers the most recent socioeconomic and travel changes in the region and will extend the planning horizon to the year 2040. This plan will consider all modes of transportation throughout the county, including the Gwinnett Place area. As part of this planning effort, a Short Term Work Program will be created, possibly as early as fall of 2016. The CID has been engaged in the CTP process and has submitted several transportation initiatives from this study for consideration in the CTP.

How to Use this Report

In addition to this Introduction section, this report includes three major sections, described below:

- **Updates to Previous Studies** – This section summarizes a variety of field observations and data collection to address corridors previously studies and determined the current appropriateness of recommendations previously made.
- **New Study Areas** – This section summarizes new technical analyses conducted at locations that were not the focus of previous studies.
- **Final Recommendations** – This section includes the cumulative recommendations being made from this study, including the identification of critical "Keystone Projects," and other notable initiatives.

Updates to Previous Study

Locations examined in the previous traffic study were reviewed in order to ensure that project recommendations were sensitive to current conditions, and any new areas of concern were identified. This analysis was developed to address major needs identified in the previous study and described below:

- Reduce Traffic Congestion - Minor traffic congestion occurs at several intersections in the study area. However, severe congestion occurs primarily at three locations:
  - *Pleasant Hill Road at I-85* - This severe congestion has been largely addressed by implementation of the DDI interchange. However, growth is anticipated to result in additional demand in future years.
  - *Pleasant Hill Road at Club Drive* - This intersection experiences moderate northbound congestion during the AM peak hour. However, during the PM peak hour and on Saturday, the southbound direction and eastbound /westbound directions experience significant delay. This has increased since the implementation of the DDI interchange, since the bottleneck at I-85 has been removed and more traffic reaches the Club Drive intersection. Notably, improvements at this intersection are currently in the design and right of way acquisition stage.
  - *Steve Reynolds Boulevard at Venture Drive* - This intersection experiences severe congestion during the Saturday Midday peak period. Heavy volumes traveling through the area are combined with heavy traffic traveling to and from the retail commercial businesses along Venture Drive. Improvements at this intersection are also currently in the design and right of way acquisition stage.
- Improve Conditions for Walking Along and Crossing Major Roads - The GPCID, in coordination with Gwinnett County DOT, has added new sidewalks and streetscapes in many areas. However, the need to connect the commercial areas to nearby residential areas was identified. In addition, improvements to intersection crossings are needed to facilitate crossings of multilane roads. In addition, streetlights are needed to support pedestrian visibility and security at night.
- Provide Pedestrian and Bicycle Connections to Schools, Parks, and Commercial Centers - Providing connections between neighborhoods and community facilities for walking and bicycling is critical to creating a walkable community. Additional connections are needed to tie in neighborhoods to and through commercial areas.
- Improve Transit Connection to Commercial Center and LCI Redevelopment Area - Providing improvements to facilitate effective use of transit is important. A transit transfer center is present along Satellite Boulevard at Gwinnett Plantation Way. This facility is occupied by people waiting to change from one bus route to another. In addition, this area serves a large, common bus stop with pedestrians walking in several directions from the center to access work and residential destinations. The section of Pleasant Hill Road from Sweetwater Road to Satellite Boulevard has many retail commercial businesses, but is not served by local transit.

Implemented Improvements

A number of improvements to the area have been implemented since the previous traffic study was conducted. Below is a list of recent accomplishments, many of which were recommendations of the previous traffic study:

Intersection Capacity Improvements

- **Pleasant Hill Road at Breckinridge Boulevard** – Added second westbound left turn lane, removed striped island and installed stop bar for westbound right turn
- **Venture Drive** – Various improvements at the intersections of Venture Drive at Day Drive, Pleasant Hill Road at Venture Drive/Venture Parkway and Pleasant Hill Road at Gwinnett Place Drive (future intersection of Venture Drive) to support the eventual realignment of Venture Drive north to connect with Gwinnett Place Drive
- **Pleasant Hill Road at Club Drive** – Currently in design and right of way acquisition, this project will add a third northbound left turn lane to Pleasant Hill Road, and add a second eastbound right turn lane to Club Drive

Pedestrian Improvements

- **Gwinnett Place Drive and Market Street** – Added crosswalk across eastern leg, connecting Market Street sidewalk
- **Old Norcross Road and Davenport Road** – Added crosswalks and pedestrian signals across eastern and northern legs, creating a much needed crossing of Old Norcross Road and connecting sidewalks along Old Norcross Road
- **Club Drive** – extended sidewalk from Pleasant Hill Road to Sweetwater Club Drive, including raised island and crosswalk at intersection with Sweetwater Club Drive
- **East Liddell Road/Liddell Lane** – added sidewalk from Pleasant Hill Road to Shackleford Road, including crosswalks at driveways and across Liddell Lane
- **Pineland Road** – added sidewalk from Shackleford Road to Crestwood Parkway, completing connection from Shackleford Road to Pleasant Hill Road; additional sidewalk on Crestwood Parkway to the south will complete connection to Club Drive
- **Tandy Key Lane** – added sidewalk completing connection between Ring Road and Satellite Boulevard
- **Commerce Avenue** – added sidewalk completing connection between Ring Road and Satellite Boulevard

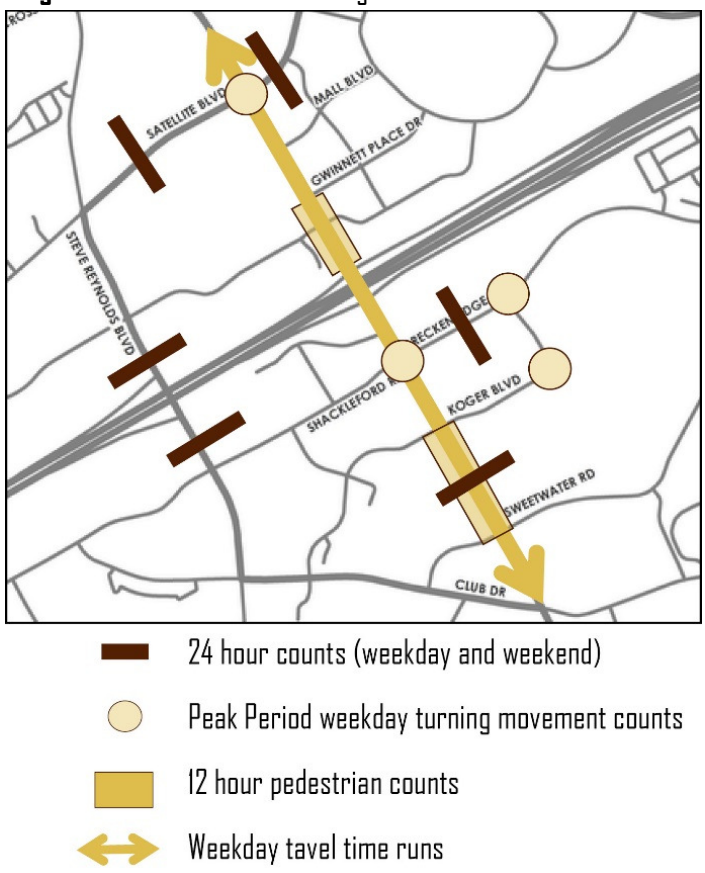
Pleasant Hill Road Corridor

Data Collection

On Tuesday, March 22, 2016, traffic volume counts along Pleasant Hill Road were conducted. These volume counts were used to compare the current traffic volumes along the corridor with historic volumes, to examine how traffic levels have changed over time.

In addition, on the same day, travel time runs were performed in both directions of Pleasant Hill Road during the morning, midday, and afternoon peak periods. In these runs, a vehicle drives with traffic and measures its speed, providing an understanding of exactly where congestion exists on the corridor. Seven runs were performed in each direction during the morning and afternoon peak periods, and nine runs were performed in each direction during the midday peak period. All of these data collection efforts can be seen in Figure 1.

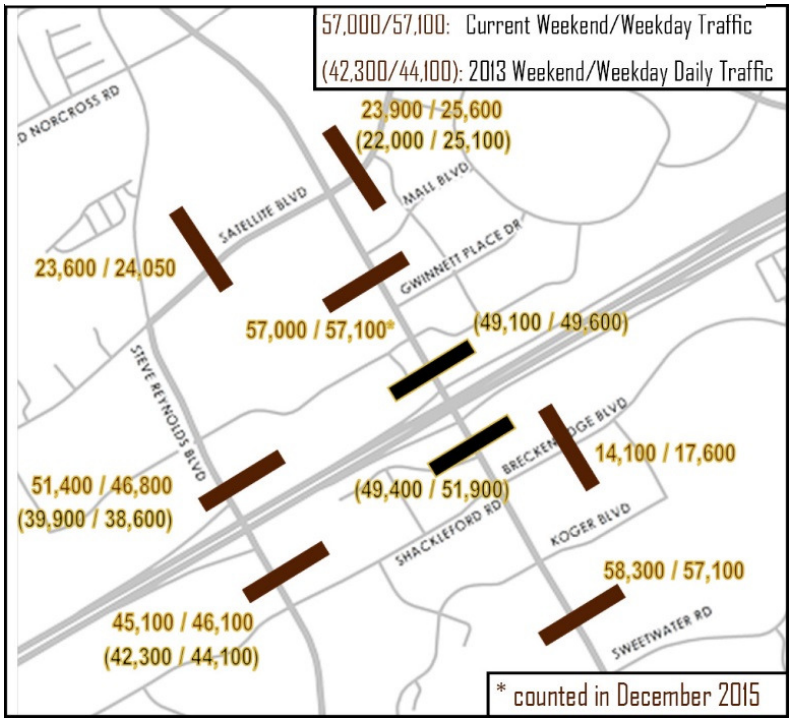
Figure 1 Data Collection Program



Analysis Results

The observed daily traffic volumes from the 2013 study and the observed volumes in 2016 (except where noted) are shown in Figure 2. Overall, the changes show a notably large increase in traffic in the area, including traffic on Pleasant Hill Road. Pleasant Hill Road has seen an approximately 19 percent increase in weekend traffic and an approximately 15 percent increase in weekday traffic.

Figure 2 Observed Volumes



The travel time results were analyzed and compared to a 2013 study of travel times on the same corridor, conducted as part of the installation of the Diverging Diamond Interchange (DDI). Comparison graphics are shown in **Figure 3**. These results show increases in peak period, peak direction travel times since 2013 in the morning northbound (76.2 seconds, 26% increase) and evening southbound (256.2 seconds, 85% increase) which underscore the large increases in traffic demand since 2013. However, other patterns were shown to have improved travel times, including morning southbound (6 seconds, 2% decrease) and evening northbound (51 seconds, 16% decrease).

The detailed results from the travel time runs were also compiled and analyzed. A visual display of the average speeds along the corridor is shown in **Figure 4**. These graphics indicate the impact of traffic signals on travel speeds. These results highlight the need for intersection or timing improvements along the corridor, by showing several bottlenecks, such as Koger Boulevard/Crestwood Parkway (most notable in the morning northbound) and Sweetwater Road (most notable in the afternoon southbound).

In order to maintain an acceptable level of performance along this corridor, GPCID should continue to work with Gwinnett County and other applicable entities to keep the timing plans on the corridor updated and optimized for the rapidly growing and constantly changing traffic seen on this corridor.

Figure 3 Travel Time Run Comparisons to 2013 Study

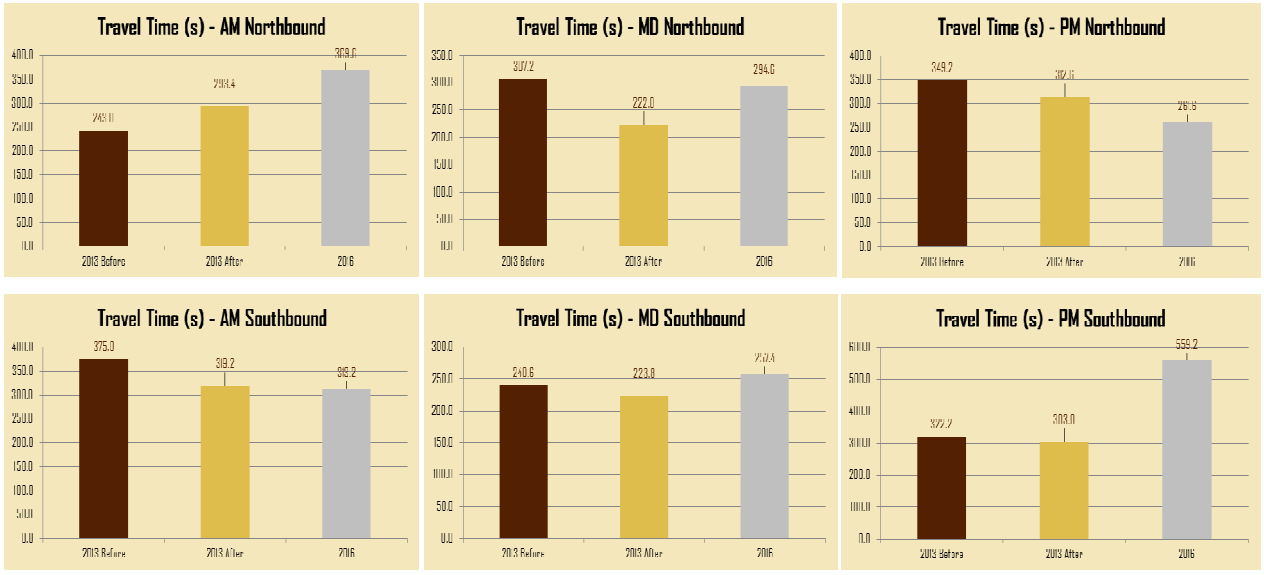
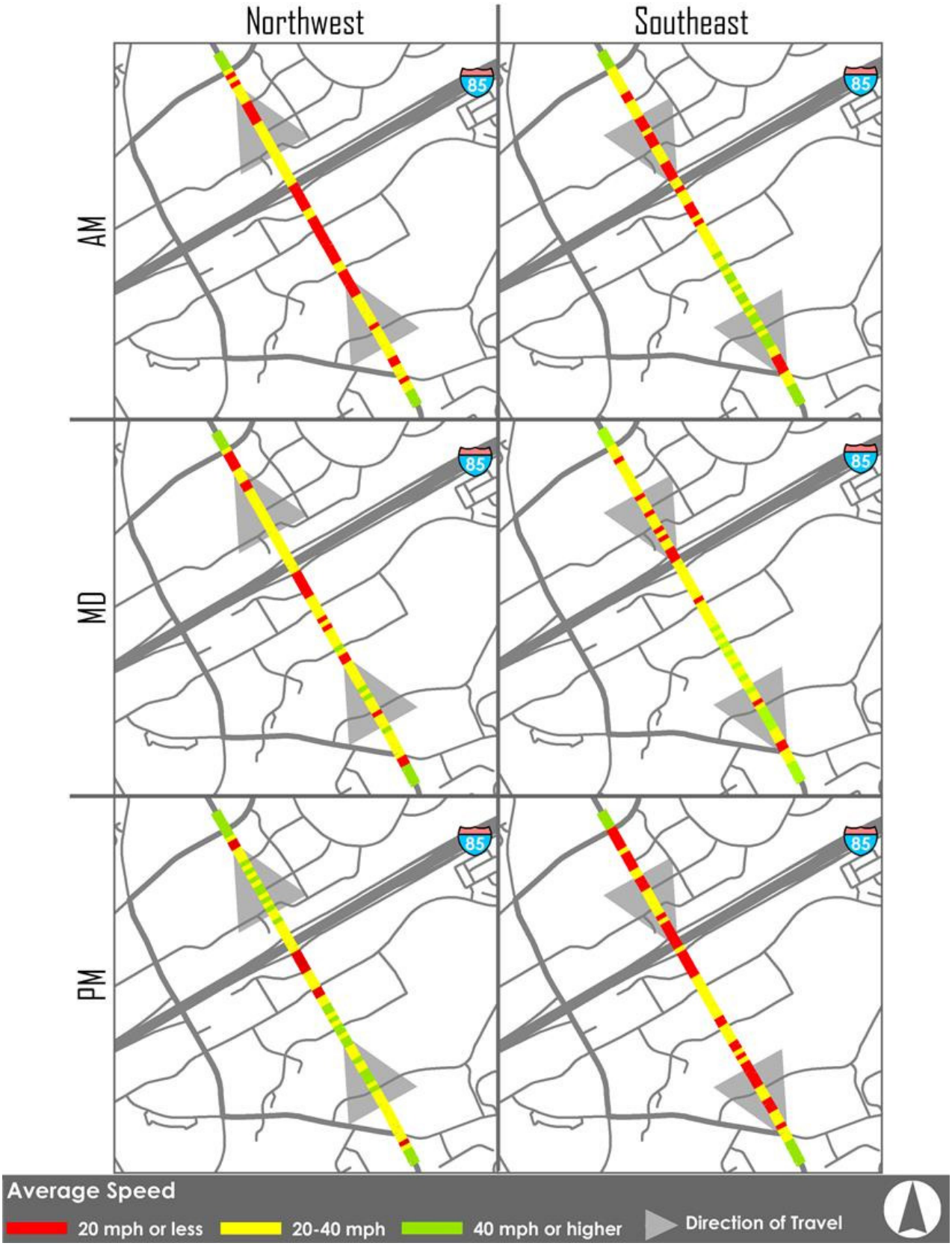


Figure 4 Travel Time Run Results



Intersection Improvements

Intersection improvements recommended in the previous study were revised for consistency with new field observations of the study area. Findings include:

North Berkeley Lake Road and Pleasant Hill Road

Congestion affecting left turns from could be improved by pulling back the median nose to create a wider turning radius. At North Berkeley Lake Road, this could be useful on the northbound left turn, while at Steve Reynolds Boulevard, it would could be applied to the eastbound left turn.

Old Norcross Road and Pleasant Hill Road

The northbound right turn currently has only a painted island. This island could be removed, and the right turn moved back to the stop bar to improve safety for both motorists and pedestrians. In order to minimize or eliminate any loss of throughput from this change, a right turn overlap indication could be added for the right turn movements on Old Norcross Road.

Satellite Boulevard and Pleasant Hill Road

This is a critical intersection likely to be increasingly important as the surrounding area redevelops from being primarily retail oriented to the anticipated mix of retail, office, and housing. With these changes, it is anticipated that this intersection will need significant capacity improvements. Several concepts have been proposed, including overpasses, innovative intersection configurations like Continuous Flow Intersections (CFI), and a large traffic circle with park space in the center. As the area develops, improvements at this intersection should continue to be investigated.

Venture Drive, Gwinnett Place Drive, and Pleasant Hill Road

Venture drive does not currently provide access across Pleasant Hill Road to Venture Parkway. Travelers on both Venture Drive and Venture Parkway are forced to turn right onto Pleasant Hill Road. In order to improve operations on Pleasant Hill Road and provide alternatives to I-85 and Satellite Boulevard, GPCID and Gwinnett DOT plan to realign Venture Drive so that it crosses Pleasant Hill Road directly across from Gwinnett Place Drive. This will create a unified east-west road from Gwinnett Place Mall, across both Pleasant Hill Road and Steve Reynolds Boulevard to West Liddell Road between Satellite Boulevard and I-85. This will also require modifying Pleasant Hill Road and Gwinnett Place Drive. Currently, neither southbound nor eastbound travelers can access Gwinnett Place Drive, but this realignment will require restoring full access to the intersection.

Koger Boulevard and Pleasant Hill Road

As traffic grows over time, Koger Boulevard and Centerview Drive have become increasingly popular alternatives to Pleasant Hill Road and Breckinridge Boulevard. In order to accommodate this traffic pattern, a right turn lane could be added to the northbound side of Pleasant Hill Road.

Sweetwater Road and Pleasant Hill Road

Since the 2013 study, this intersection of has been observed to have notable and increasing levels of congestions. Sweetwater Road's left turn queues regularly spill over into through lanes during peak periods. Both left turn lanes can be extended by simply moving the concrete medians that currently define the left turn lanes. Such a move would reduce the amount of queue spillover and thus relieve some congestion and allow the intersection to perform better.

Club Drive and Pleasant Hill Road

As identified in the 2013 study, the intersection of Club Drive and Pleasant Hill Road is key to accessibility to the CID area and within the areas surrounding it. While capacity improvements are

currently in design, it is anticipated that in the long term this intersection may be a candidate site for a major capacity improvement, such as a flyover, left turn overpass, Continuous Flow Intersection (CFI), or other innovative application.

I-85 Diverging Diamond Interchange

In addition to observations of delay of the whole corridor, a detailed examination of the DDI, completed in 2013, was also made. The DDI has provided an enormous amount of congestion relief on I-85 and on Pleasant Hill Road. It still performs well even with notably increased volumes of traffic. As a critical juncture, it is important to continue to monitor the interchange and to consider additional improvements that may become necessary as the mall area redevelops with more intensive uses. Visits were made to the DDI throughout a typical day and observations of traffic operations were conducted to understand its current operations.

Data Collection

During the field observations of the Pleasant Hill Road DDI operations, a few specific challenges were noted, primarily affecting the southern part of the interchange, where the I-85 northbound ramp intersects Pleasant Hill Road. An aerial view of this intersection is shown in **Figure 5**.

Figure 5 Aerial View of Pleasant Hill Road at I-85 Northbound Ramp

Vehicles making a left turn from the I-85 northbound off-ramp onto Pleasant Hill Road disproportionately use the rightmost turn lane. However, other corridor observations do not indicate that many vehicles make an immediate right turn after passing through the interchange, and thus that drivers could use both lanes. Motorists are increasing delay and lowering intersection throughput by using one lane much more than the other.

The left turn from Pleasant Hill Road southbound to the I-85 northbound on-ramp has a tight turning radius. There is a guardrail immediately adjacent to the curb, which has been frequently hit due to the tightness of the curve.

The merge further down the northbound on-ramp sometimes caused back-ups that stretched back into the intersection with Pleasant Hill Road. Additionally, observed driver behavior indicated that drivers may be confused about how and when they access the freeway.

Findings

These field observations were used to conceive several initiatives to maintain and/or improve congestion and safety at the interchange. These are described below

I-85 Northbound Off-Ramp

Lane utilization on the I-85 northbound off-ramp to Pleasant Hill Road northbound movement could likely be improved with additional signage. Currently, when drivers approach the intersection, they see two "through only" lane signs positioned on spanwire above Pleasant Hill Road. The presence of these two indicators without any others may make drivers think that the left two lanes do not allow for a through movement across the interchange. The lane marking in the intersection guide the left turn lane to one of the lanes with no indication on the spanwire. In order to better inform drivers, signage should be added indicating that the lanes they are turning onto both allow movement across the interchange. Alternatively, the lane markings inside the intersection could be moved to guide drivers to the inside lanes, both of which are already signed.

Southbound Left Turn

Physical changes could make the other side of the intersection safer. The turn radius of the southbound left turn movement could be increased by narrowing the existing raised island and extending the curve into the existing shoulder area on the on-ramp. If possible, the existing guardrail should also be moved back from the curve to reduce the chance of future collisions.

Collector-Distributor System

The merge point on the on-ramp could be pushed further downstream, using existing shoulder space. This would give vehicles more space to merge and reduce the frequency of back-ups extending into the intersection. The ramp leads into a collector-distributor system, which is confusing for some motorists expecting to be on I-85. Additional signage could be added to indicate to all motorists on the system when access to I-85, SR 316, and SR 120 is provided and which lanes access is provided from, giving motorists more time and space to maneuver to the appropriate lane.

Long-Term Needs

The DDI has been very successful at accommodating large amounts of traffic However, as traffic demand increases, the long-term design for the interchange should be routinely considered.

Pedestrian Crossings

On either side of the I-85 interchange, there is concern for pedestrians who cross Pleasant Hill Road at mid-block locations rather than at crosswalks at existing signals. In order to understand this need, twelve hour pedestrian counts were performed for two areas, shown in **Figure 6**. The first area reaches between Gwinnett Place Drive and the northern signal of the I-85 interchange, and the second area lies between Koger Boulevard and Sweetwater Road to the south of the interchange.

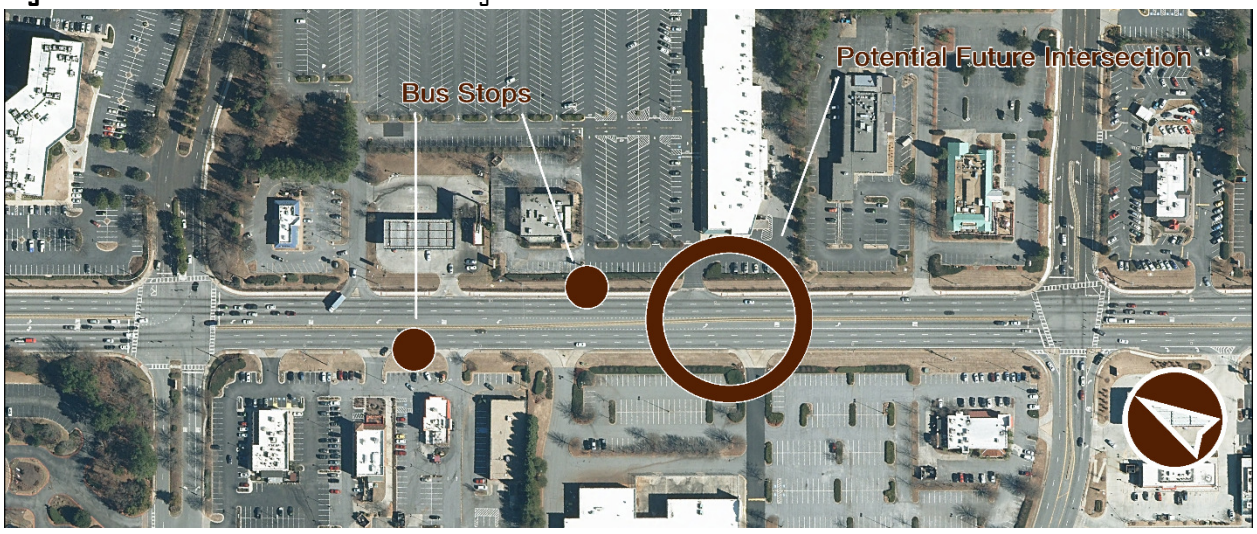
From 7am to 7pm on a typical weekday, twenty seven pedestrians were seen crossing Pleasant Hill Road between the I-85 interchange and the intersection of Gwinnett Place Drive. During the same period, forty eight pedestrians were observed crossing Pleasant Hill Road between Koger Boulevard and Sweetwater Road. Based on these pedestrian volumes, neither location warrants mid-block crossing improvements.

Figure 6 Pedestrian Crossing Count Locations

However, in the southern span, there is an approximately a 1,400 foot long segment with no pedestrian crossing opportunities. This section of roadway is shown in Figure 7. On this same segment there are two bus stops near the middle of the segment. The presence of these stops at this location currently encourages pedestrians to cross Pleasant Hill Road nearby, rather than walking over 1000 feet to cross at the nearest signal and back. In the short term, the bus stops could be moved to the nearest signalized intersection in order to encourage crossings at the signal rather than mid-block.

Also near the middle of this segment, there are major driveways on either side of Pleasant Hill Road – one to the Pleasant Hill Plaza (Dollar Tree, Assi Supermarket, YouFit), and the other to Promenade at Pleasant Hill (Publix, LA Fitness, K1Speed). In the future, these driveways could be connected with a new signalized intersection, providing improved access to these shopping centers and other nearby parcels as well as adding a more safe way for pedestrians to cross between them. If this intersection were created, it would be an appropriate place to have bus stops.

Figure 7 Pleasant Hill Road between Koger Boulevard and Sweetwater Road



Other Bike/Pedestrian Needs

At multiple points along Pleasant Hill Road, and at other intersections in the GPCID area, pedestrian signals do not indicate countdown timers. Throughout the area, these signal heads should be upgraded to include countdowns. Additional areas along Pleasant Hill Road provide opportunities for other, site-specific improvements for pedestrians and bicyclists.

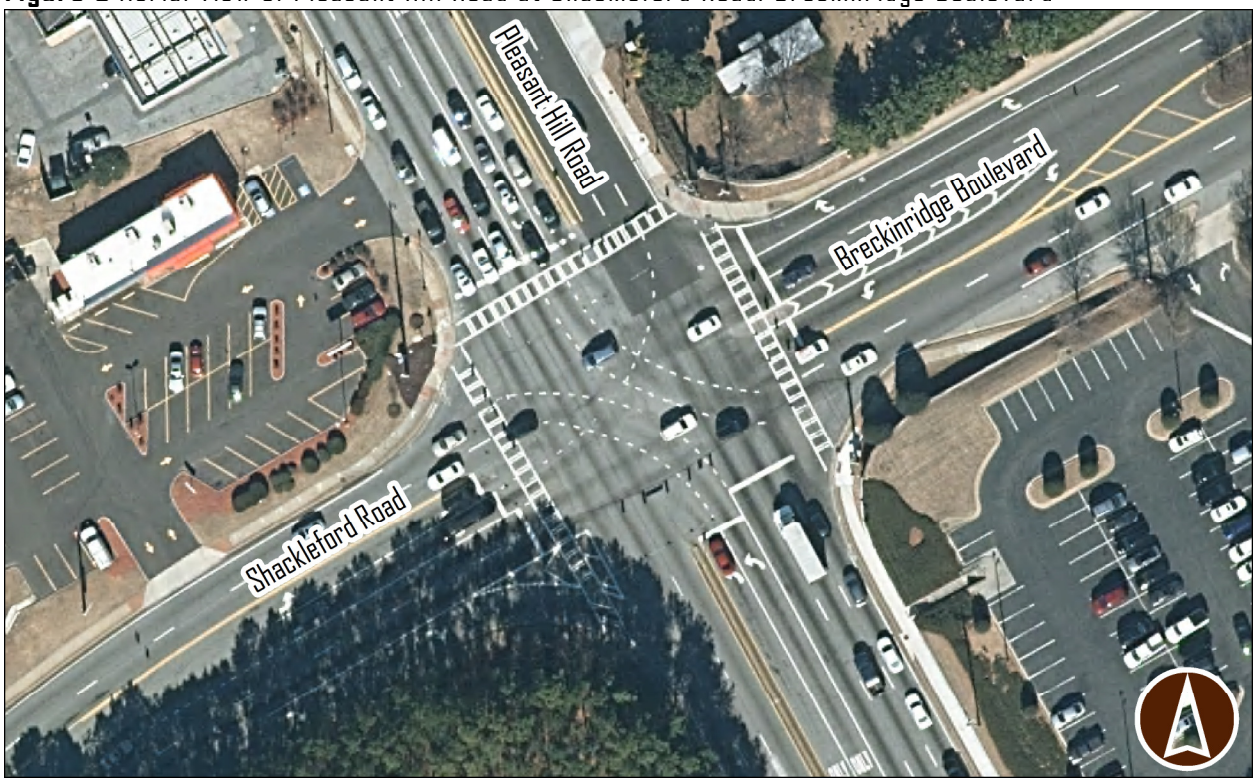
Pleasant Hill Road at Venture Drive/Parkway

As discussed earlier, GPCID plans to realign Venture Drive with Gwinnett Place Drive, away from Venture Parkway. Currently this intersection's only crosswalk is along the western leg. As part of the signal modifications necessary to accommodate the realignment, it is recommended that a new crosswalk be added across the northern leg of Pleasant Hill Road, with a new pedestrian phase added, corresponding to a dedicated northbound left turn phase. This will further develop the pedestrian network and provide safer crossing opportunities.

Pleasant Hill Road at Shackleford Road/Breckinridge Boulevard

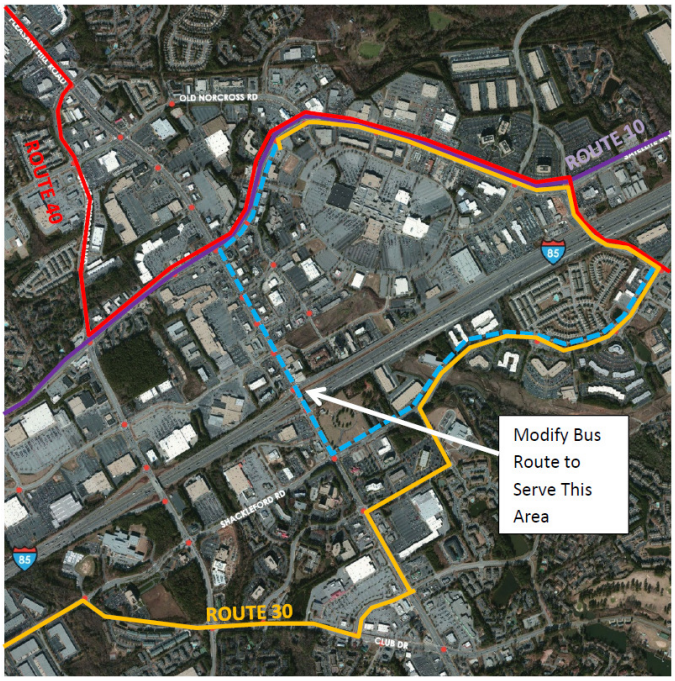
At the intersection of Pleasant Hill Road and Shackleford Road/Breckinridge Boulevard – shown in **Figure 8** – there is currently no crosswalk across the southern leg of Pleasant Hill Road. A crosswalk could be added across this leg, with ADA-compliant ramps and modern pedestrian signals with countdowns. This crosswalk would improve pedestrian connectivity in the area and decrease the temptation for pedestrians to cross Pleasant Hill Road south of this intersection away from a signal. It would be preferable to replace the existing striped island with a raised island, separating the eastbound right turn lane from the rest of the intersection, as well as providing a refuge and shortening the total crossing distance for pedestrians.

Figure 8 Aerial View of Pleasant Hill Road at Shackleford Road/Breckinridge Boulevard



Transit Considerations

Currently Gwinnett County Transit (GCT) has a major transfer center in the GPCID area. All local GCT routes connect at the center, which also serves Xpress buses provided by the Georgia Regional Transportation Authority (GRTA). Gwinnett County and GCT are considering long-term options for relocation or improvement to the transit center.



South of I-85, bus stops on Pleasant Hill Road are regularly placed mid-block, well away from designated crosswalks. This placement encourages mid-block crossing, which puts pedestrians and motorists at risk. If these stops were moved to nearby signalized intersections (either Koger Boulevard/Crestwood Parkway or Sweetwater Road), transit riders could more easily cross at the existing signalized crosswalks.

Even though the GPCID area is served by GCT routes 10 and 30, neither one provides effective service to the length of the Pleasant Hill Road corridor. Both access the Gwinnett Place Transit Center on Satellite Boulevard. One of these routes, or both, could be rerouted to provide better, continuous, single-seat transit service along the corridor.

New Study Areas

As part of this study effort, new areas within the CID along Breckinridge Boulevard were examined for potential improvements.

Breckinridge Boulevard

Along with Satellite Boulevard, Breckinridge Boulevard provides a local alternative to I-85, giving short trips a way to get around without using the freeway. As part of this study, the segment of Breckinridge Boulevard from Pleasant Hill Road to Old Norcross Road was examined. Also examined was Centerview Drive and Koger Boulevard, which provide access between Pleasant Hill Road and Breckinridge Boulevard, and which are commonly used as bypass routes during periods of heavy congestion.

Traffic

The following four intersections were analyzed to determine the need for and best form of intersection improvements:

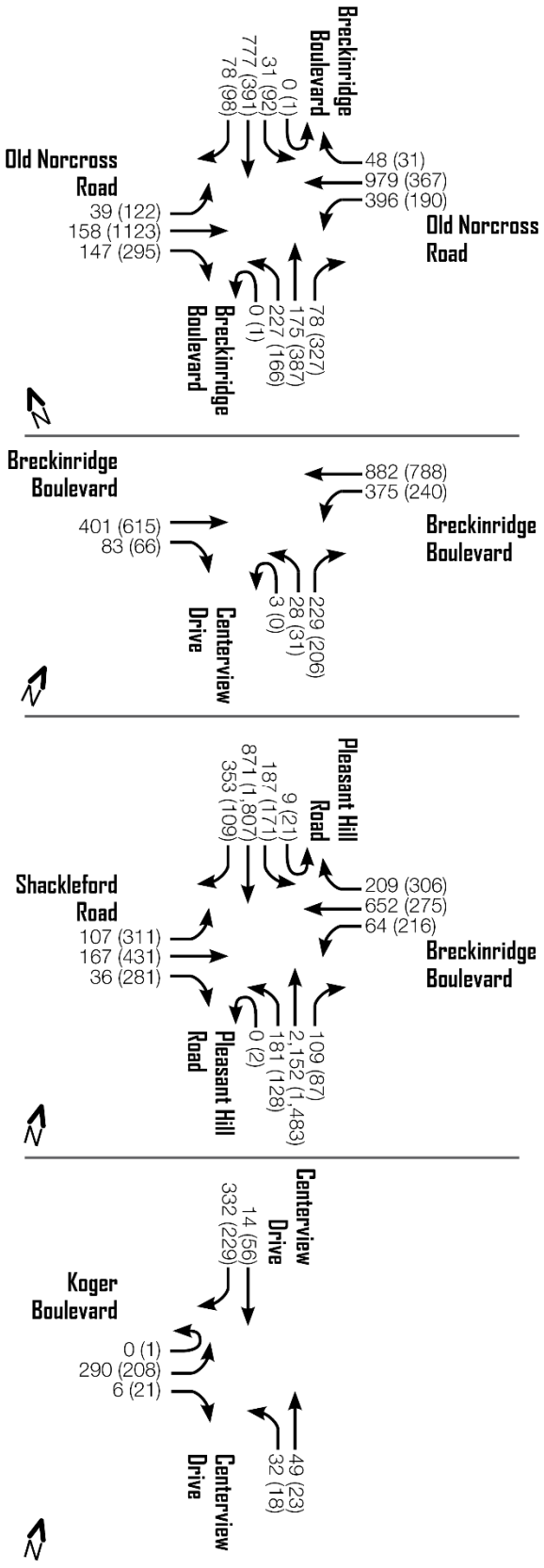
- Old Norcross Road and Breckinridge Boulevard
- Breckinridge Boulevard and Centerview Drive
- Breckinridge Boulevard and Pleasant Hill Road
- Centerview Drive and Koger Boulevard.

Data Collection

Turning movement counts were taken at all four intersections on Tuesday, March 22, 2016, during both morning and afternoon peak periods. Observed volumes are shown in Figure 9.

An examination of existing lane configurations was also conducted for use in intersection analysis. A graphic showing all existing lane configurations is shown in Figure 10.

Figure 9 Observed Traffic Volumes (2016)



Analysis Methodology

In order to anticipate conditions in future years, observed traffic volumes were projected to year 2026 and year 2036. Observed traffic volumes were increased by 1.3% per year (compounded annually). This growth rate was used for consistency with the previous traffic study. The projected traffic volumes used for the future year analyses are shown in Figure 11.

The *Highway Capacity Manual* (HCM) defines Level of Service (LOS) at signalized intersections in terms of average control delay per vehicle, which is composed of initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. Unsignalized intersection LOS is defined in similar terms, but with lower delay thresholds. An illustration of traffic conditions at different levels is shown in Figure 12.

Figure 12 Traffic Conditions and Varying Levels of Service

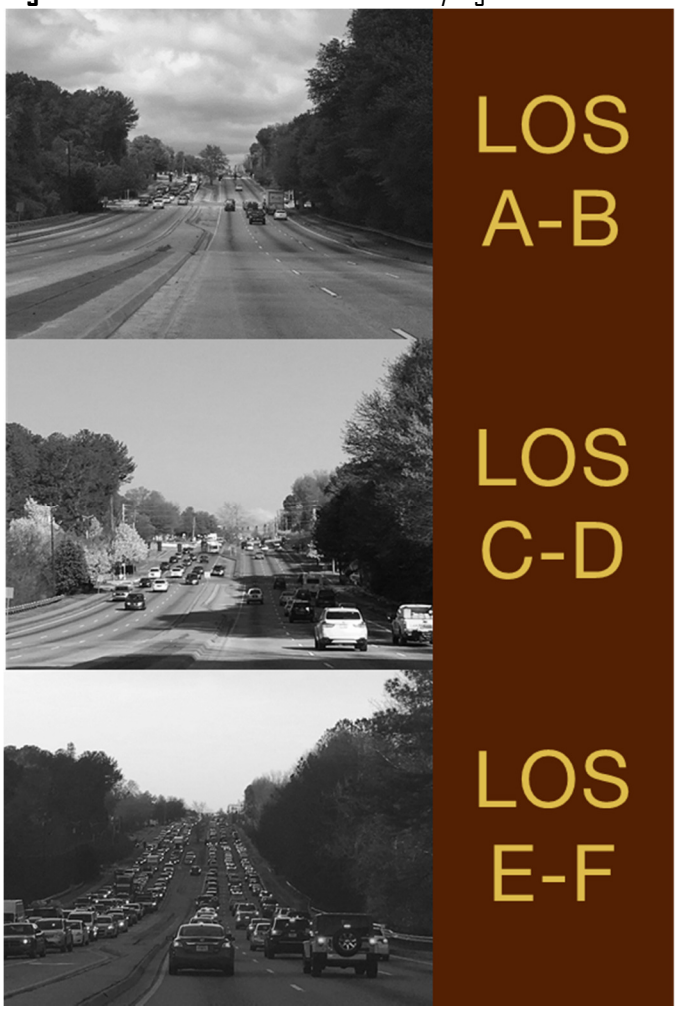


Figure 10 Existing Lane Configurations at Study Intersections

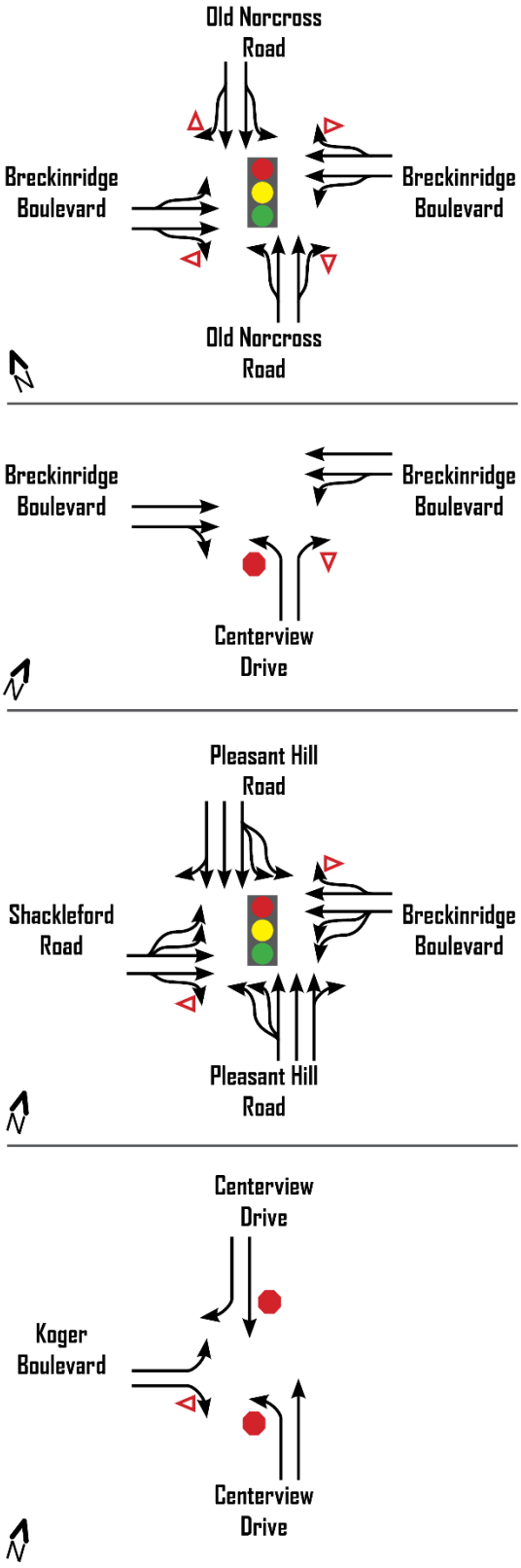
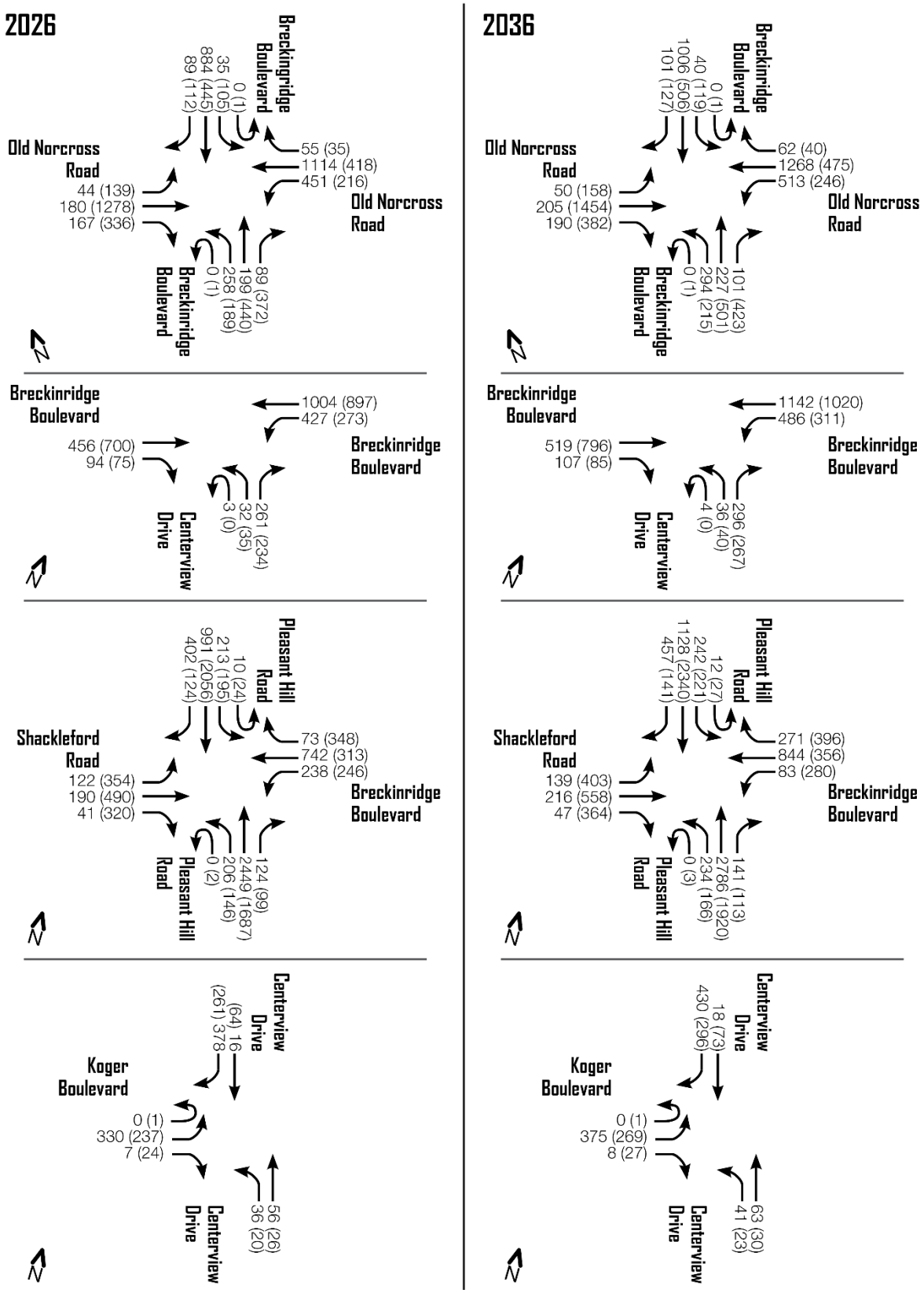


Figure 11 Projected Traffic Volumes for Future Year Scenarios



The HCM states that unsignalized intersections are associated with more uncertainty for users, as delays are less predictable than they are at signals, which can reduce a user's tolerance to delay. Unfortunately, limitations in the methodology also assume uniform gaps in traffic on major streets which often results in the analysis showing a significantly more conservative delay result for side street stop approaches. Table 1 presents LOS thresholds for all both intersection types.

Table 1 Level of Service Thresholds

Level of Service	Signalized Average Delay (sec/veh)	Unsignalized Average delay (sec/veh)
A	≤10.0	≤10.0
B	>10.0 and ≤20.0	>10.0 and ≤15.0
C	>20.0 and ≤35.0	>15.0 and ≤25.0
D	>35.0 and ≤55.0	>25.0 and ≤35.0
E	>55.0 and ≤80.0	>35.0 and ≤50.0
F	>80.0	>50.0

Analysis of the signalized and stop-controlled intersections along the corridor was conducted with Synchro 9.0. Due to limitations within HCM 2010 methodology, all intersections were analyzed using HCM 2000 methodology.

Analysis Results

The results of the no-build analysis for signalized intersections are shown in Table 2. Results of the no-build analysis for stop-controlled movements at unsignalized intersections are shown in Table 3. These results reveal that the signal at Pleasant Hill Road and Breckinridge Boulevard already operates at a LOS of E during both the morning and afternoon peak periods. Both signals are expected to operate with LOS of F by year 2036 without any changes.

Table 2 No-Build Analysis Results for Signalized Intersections

		Old Norcross Road and Breckinridge Boulevard		Pleasant Hill Road and Breckinridge Boulevard	
		Delay (s/veh)	LOS	Delay (s/veh)	LOS
2016	AM	51	D	46	D
	PM	45	D	46	D
2026	AM	62	E	63	E
	PM	54	D	60	E
2036	AM	81	F	99	F
	PM	78	E	65	E

Table 3 No-Build Analysis Results for Stop-Controlled Movements at Unsignalized Intersection

		Centerview Drive Northbound Left at Breckinridge Boulevard		Centerview Drive Southbound Through at Koger Boulevard		Centerview Drive Northbound Left at Koger Boulevard	
		Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS
2016	AM	50	E	10	B	30	D
	PM	25	C	15	C	18	C
2026	AM	95	F	21	C	43	E
	PM	32	D	17	C	22	C
2036	AM	271	F	25	C	73	F
	PM	49	E	19	C	28	D

Findings

At the intersection of Old Norcross Road and Breckinridge Boulevard, a disproportionate amount of the delay is experienced by the northbound left turn movement. This delay could be reduced with the construction of a second left turn lane on Breckinridge Boulevard. This turn lane could be largely constructed in the paved, marked space on the southeastern side of the roadway, with minimal impacts to the median and/or the existing curb line. The delay at this intersection with and without the second turn lane is shown in **Table 4**.

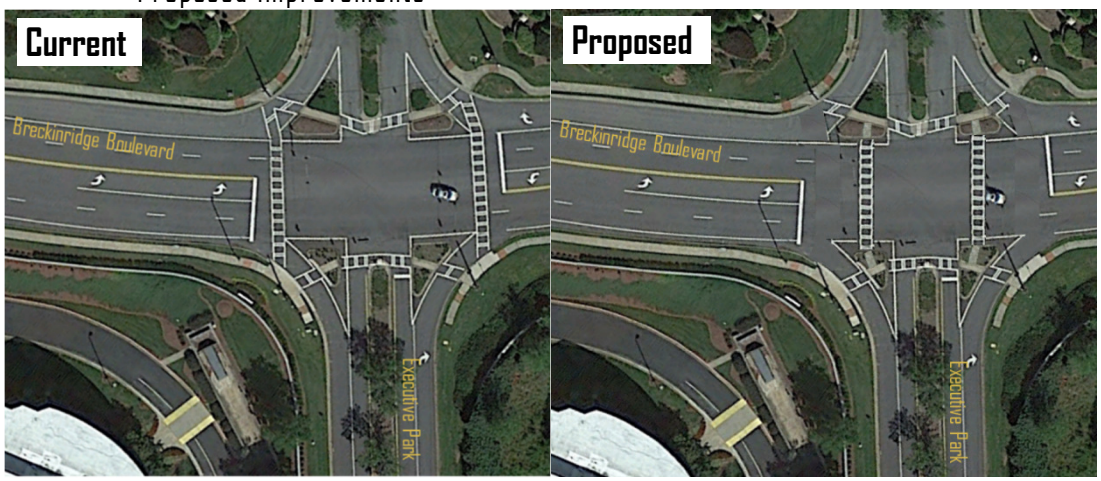
Table 4 Delay at Old Norcross Road and Breckinridge Boulevard with Current Lane Configuration and with Additional Northbound Left Turn Lane

		Current Configuration		Additional Northbound Left Turn Lane	
		Delay (s/veh)	LOS	Delay (s/veh)	LOS
2016	AM	51	D	46	D
	PM	45	D	40	D
2026	AM	62	E	49	D
	PM	54	D	46	D
2036	AM	81	F	70	E
	PM	78	E	49	D

Pedestrian Improvements

Pedestrian elements at the intersection of Breckinridge Boulevard and Executive Drive, shown in **Figure 13**, were not built to current standards. At intersections with islands separating right turn lanes, standards require a single crosswalk and set of ramps leading from the sidewalk to the islands, and crosswalks connecting the islands. Pedestrian signals and pushbuttons are also expected to be present on the islands, not on the outside of the sidewalk.

Figure 13 Aerial View of Breckinridge Boulevard at Executive Drive as it Currently Exists, and with Proposed Improvements



Findings

As a results, there is an opportunity to upgrade intersection of Breckinridge Boulevard and Executive Drive to current standards. This would include restriping crosswalks, providing new ADA-compliant ramps where necessary, and moving pedestrian signals and pushbuttons to the islands.

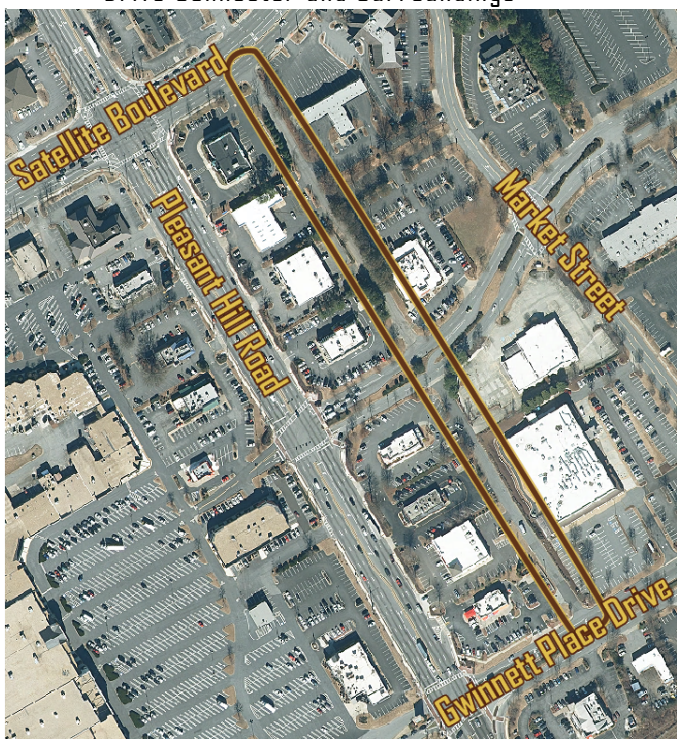
Opportunities for Interparcel Connections

Throughout the CID area, there are opportunities involving connections between privately developed properties. Such connections give people the ability to move between nearby businesses without congesting adjacent roadways. With better access between businesses, it is easier to limit the total number of access points along roadways, increasing the roadways' safety and throughput. While many opportunities exist to connect adjacent properties to each other, the study area includes two private roadways that could be utilized to connect several properties and have a significant impact on overall connectivity in the area.

Satellite Boulevard – Gwinnett Place Drive Connector

Currently, there is a private roadway running between and roughly parallel to Pleasant Hill Road and Market Street, just southwest of Gwinnett Place Mall. This roadway and its immediate surroundings are shown in **Figure 14.** This access roadway – which is split into two distinct segments by Mall Boulevard – provides access to almost a dozen businesses, taking traffic off of Pleasant Hill Road. However, this access does not conform to typical public roadway standards, and lacks a centerline, signage, sidewalks, crosswalks, and bike facilities. If the access were a publicly owned and maintained roadway, it could be enhanced to better support all modes of transportation, with further control over how it interacts with nearby businesses and roadways. These improvements are included as recommendations S-39, M-14, and M-19, shown in Figures 15 and 16 at the end of this report.

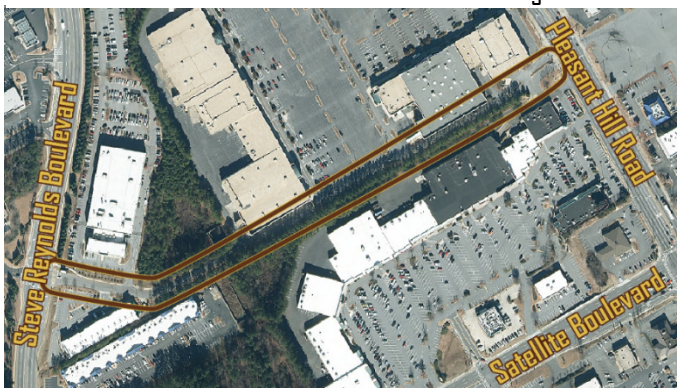
Figure 14 Proposed Satellite Boulevard-Gwinnett Place Drive Connector and Surroundings



Steve Reynolds Boulevard – Pleasant Hill Road Connector

Similar to the previously described access roadway, there is a roadway connecting the Pleasant Hill Square shopping center (including Toys R Us, Phantom Fireworks, Jo-Ann Fabrics and Crafts, and others) to both Steve Reynolds Boulevard, shown in **Figure 15**. It also provides access to the nearby United Collision Center and other retail centers. However, it does not consistently have sidewalks, has no cyclist facilities, and does not have standard roadways features

Figure 15 Proposed Steve Reynolds Boulevard-Pleasant Hill Road Connector and Surroundings



such as a centerline. Public ownership would make it possible to include these kinds of features and to create a new bike and pedestrian link in the CID area. These improvements are included as recommendations M-8 and L-18, shown in Figures 15 and 16 at the end of this report.

Final Recommendations

Based on the technical and observational analyses documented in this report and the 2013 Traffic Study, 15 "Keystone Projects" are recommended. These Keystone Projects are those which are considered to be critical to the future success and viability of the GPCID area and are particularly successful at addressing the following goals, previously discussed in the Introduction section:

- Reduce Congestion/Improve Operations
- Increase System Connectivity
- Serves Growth in Travel Demand
- Increase Utilization of Steve Reynolds Boulevard
- Improve Traffic Safety
- Improve Pedestrian Crossing Safety
- Sidewalk/Bike Connections to Activity Areas
- Enhance Access to Transit

Keystone Projects

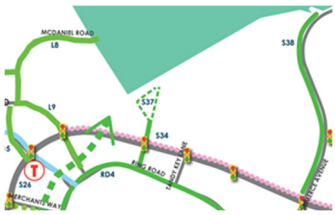
Recommended Keystone Projects are shown in **Figure 14** and include the following:

McDaniel Farm Park Connections; S-37, S-38, L-8, L-9, L-15

Description: One of the CID's largest and least-utilized resources is McDaniel Farm Park. These project recommendations all work to increase access between the core of GPCID and the park, by creating multi-use paths and pedestrian crossing improvements between the park and other parts of the CID to better connect the area.

Goals Achieved:

- ✓ Increase System Connectivity
- ✓ Improve Pedestrian Crossing Safety
- ✓ Sidewalk/Bike Connections to Activity Areas
- ✓ Enhance Access to Transit



Multi-Modal "Green Corridor"; RD-13

Description: The recent ACTivate Gwinnett Place report recommended the creation of a "Green Corridor" south of Satellite Boulevard, reaching from Pleasant Hill Road, incorporating the GCT transfer center, and then extending to McDaniel Farm Park. This kind of connection would provide a safe, welcoming space for alternative transportation users and could form the backbone of a more urban, walkable part of the area.

Goals Achieved:

- ✓ Increase System Connectivity
- ✓ Improve Pedestrian Crossing Safety
- ✓ Sidewalk/Bike Connections to Activity Areas
- ✓ Enhance Access to Transit

Gwinnett County Transit Gwinnett Place Mall Transit Center Upgrades; S-26

Description: In order to capitalize on the area's current status as a major transit hub within Gwinnett County, the Transit Center could receive substantial upgrades to improve access to and from the site, and to improve users' experience.

Goals Achieved:

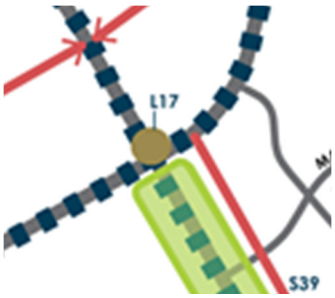
- ✓ Serves Growth in Travel Demand
- ✓ Enhance Access to Transit
- ✓ Sidewalk/Bike Connections to Activity Areas

Pleasant Hill Road at Satellite Boulevard Major Capacity Improvement; L-17

Description: As the area redevelops and changes, the intersection of Satellite Boulevard and Pleasant Hill Road will become an ever-increasingly critical juncture for all users of the area. As such, it will likely need a substantial improvement to ensure the safe and efficient movement of people and vehicles. Such an improvement should be compatible with a more densely developed, walkable area.

Goals Achieved:

- ✓ Reduce Congestion/Improve Operations
- ✓ Serves Growth in Travel Demand
- ✓ Improve Traffic Safety



Multi-Use Path Connections on Mall Boulevard, Gwinnett Place Drive, and Venture Parkway; M-17, M-24, M-25

Description: Currently the area immediately southwest of Gwinnett Place Mall is somewhat lacking in dedicated pedestrian and bicycle facilities. These improvements would create dedicated spaces for these users, making the area easier to move around without a car.

Goals Achieved:

- ✓ Sidewalk/Bike Connections to Activity Areas

Bike and Pedestrian Improvements on Market Street; M-14, M-19, RD-6

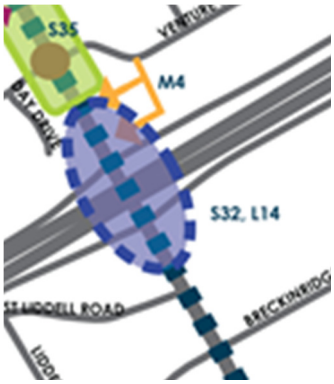
Description: Market Street runs through the area immediately southeast of Gwinnett Place Mall, and currently provides minimal pedestrian and cyclist accommodations. In order to further enhance this crucial area, facilities could be added to the existing roadway, and as the area around it changes, it could be enhanced to have dedicated facilities for all users.

Goals Achieved:

- ✓ Serves Growth in Travel Demand
- ✓ Enhance Access to Transit
- ✓ Sidewalk/Bike Connections to Activity Areas

Pleasant Hill Road at I-85 Interchange Improvements; S-32, L-14

Description: Access to the freeway system and thus the rest of Gwinnett County and the metropolitan Atlanta region is critical for sustained and increased growth within the CID. As such, utmost attention should be given to the operations at the interchange. Minor improvements may help improve operations now, and continued monitoring and analysis can ensure that the interchange is ready for future traffic growth.

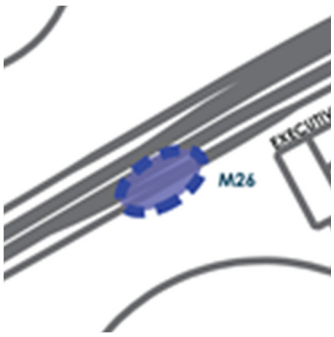


Goals Achieved:

- ✓ Reduce Congestion/Improve Operations
- ✓ Serves Growth in Travel Demand
- ✓ Improve Traffic Safety
- ✓ Improve Pedestrian Crossing Safety

Pleasant Hill Road/I-85/SR 316 C-D System Improvements; M-26

Description: Immediately north of the interchange, the collector-distributor system is similarly important to the CID area and needs a similar level of monitoring and periodic improvements to ensure that vehicular access to the greater region is preserved and enhanced as possible.



Goals Achieved:

- ✓ Reduce Congestion/Improve Operations
- ✓ Improve Traffic Safety
- ✓ Serves Growth in Travel Demand

West Liddell Road to Club Drive Connector; S-15, M-7, M-17

Description: As a way to better connect the CID area and provide access across I-85, a roadway could be built connecting Club Drive (near its intersection with Shackleford Road) to West Liddell Road (near Venture Drive). A new roadway and new connection would also create the opportunity for a new bike and pedestrian link. This new roadway should be designed with a multi-use path to provide space for both pedestrians and cyclists.

Goals Achieved:

- ✓ Reduce Congestion/Improve Operations
- ✓ Increase System Connectivity
- ✓ Serves Growth in Travel Demand
- ✓ Sidewalk/Bike Connections to Activity Areas

Other Recommendations

Figure 15, 16, and 17 show all recommendations for the study area, split into the following three categories, respectively:

- Roadway and Intersection Projects
- Pedestrian Crossing Projects
- Bike and Pedestrian Facilities Projects

Notable initiatives include:

Satellite Boulevard-Gwinnett Place Drive Connector; S-39

Description: An existing private roadway that could be converted to public maintenance with notable improvements for all users.

Goals Achieved:

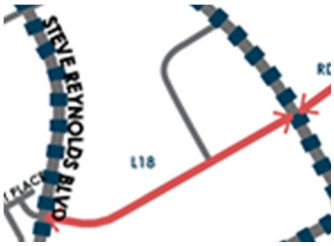
- ✓ Increase System Connectivity
- ✓ Serves Growth in Travel Demand
- ✓ Sidewalk/Bike Connections to Activity Areas

Pleasant Hill Road-Satellite Boulevard Connector; L-18

Description: Similar to previous, an existing private roadway that could be converted to public maintenance with notable improvements for all users.

Goals Achieved:

- ✓ Increase Utilization of Steve Reynolds Boulevard
- ✓ Increase System Connectivity
- ✓ Serves Growth in Travel Demand



Venture Drive Widening; S-12

Description: Improving Venture Drive, an important local alternative to Satellite Boulevard. Includes a 10' multi-use path.

Goals Achieved:

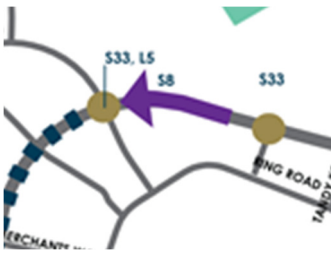
- ✓ Reduce Congestion/Improve Operations
- ✓ Increase System Connectivity
- ✓ Serves Growth in Travel Demand
- ✓ Improve Traffic Safety
- ✓ Sidewalk/Bike Connections to Activity Areas

Satellite Boulevard at Old Norcross Road (West) Right Turn Lane Modifications; S-8

Description: Improving operations and safety at a critical juncture near the GCT Transit Center

Goals Achieved:

- ✓ Reduce Congestion/Improve Operations
- ✓ Serves Growth in Travel Demand
- ✓ Improve Traffic Safety
- ✓ Improve Pedestrian Crossing Safety
- ✓ Sidewalk/Bike Connections to Activity Areas
- ✓ Enhance Access to Transit

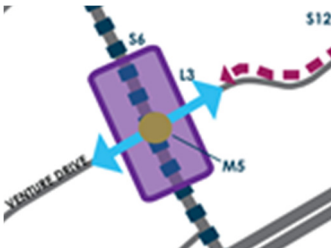


Venture Drive at Steve Reynolds Boulevard Dual Left Turn Lanes; M-5

Description: Operational improvement to relieve congestion on both Steve Reynolds Boulevard and Venture Drive.

Goals Achieved:

- ✓ Reduce Congestion/Improve Operations
- ✓ Increase Utilization of Steve Reynolds Boulevard
- ✓ Serves Growth in Travel Demand
- ✓ Improve Traffic Safety
- ✓ Improve Pedestrian Crossing Safety

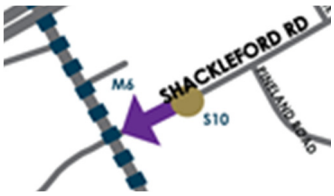


Steve Reynolds Boulevard at Shackleford Road Intersection Improvements; M-6

Description: Improvements to important roadways, increasing access to and from I-85.

Goals Achieved:

- ✓ Reduce Congestion/Improve Operations

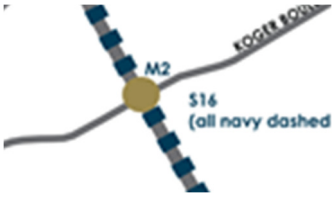


Pleasant Hill Road at Crestwood Parkway/Koger Boulevard Right Turn Lane; M-2

Description: Proactive accommodation of future traffic as Koger Boulevard becomes an attractive alternate route.

Goals Achieved:

- ✓ Serves Growth in Travel Demand



Pleasant Hill Road at Sweetwater Road – Extend Left Turn Lanes; M-23

Description: Accommodating increased traffic levels in the southern portion of the CID.

Goals Achieved:

- ✓ Reduce Congestion/Improve Operations
- ✓ Serves Growth in Travel Demand
- ✓ Improve Traffic Safety

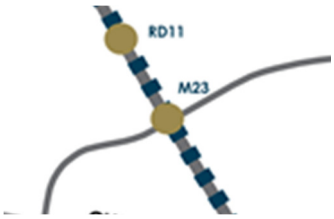


Table 5 compiles the recommended projects from this update and the previous study, including descriptions and cost estimate for each. Accordingly, this table includes projects discussed in this report as well as several which were not explicitly discussed here, but were introduced in the previous version of this document, completed in 2013. These projects are identified as follows:

- Projects with a white background are projects that were carried over with no significant changes. The costs associated with these projects have been updated to consider overall inflation, but are otherwise identical to the 2013 report.
- Projects with a blue background are projects that were present in the previous plan, but have been changes substantially. Their costs have been recalculated based.
- Projects with a green background are projects that were not present in the previous plan. These projects are entirely new, and new cost estimates have been calculated for them.
- Projects with a grey background and text were in the previous plan and have since either been completed, or – in rare cases – other changes have occurred that have removed them from the recommendation pool.

There are project information sheets for all listed projects, except for projects in the “redevelopment” implementation timeframe, in the appendix of this report. These sheets show the projects location, and include its description and approximate cost.

Figure 14 Keystone Transportation Recommendations

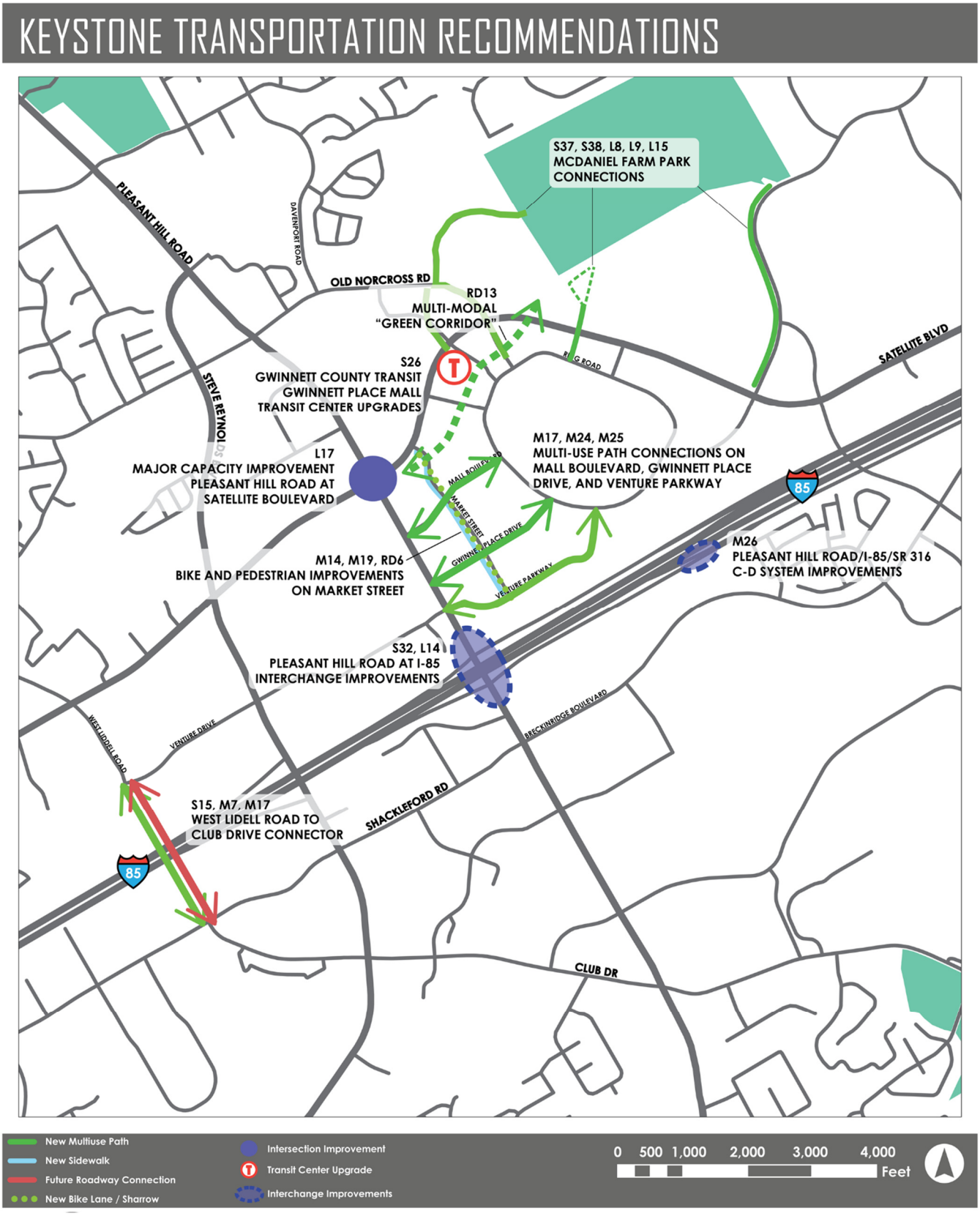


Figure 15 Road and Intersection Recommendations

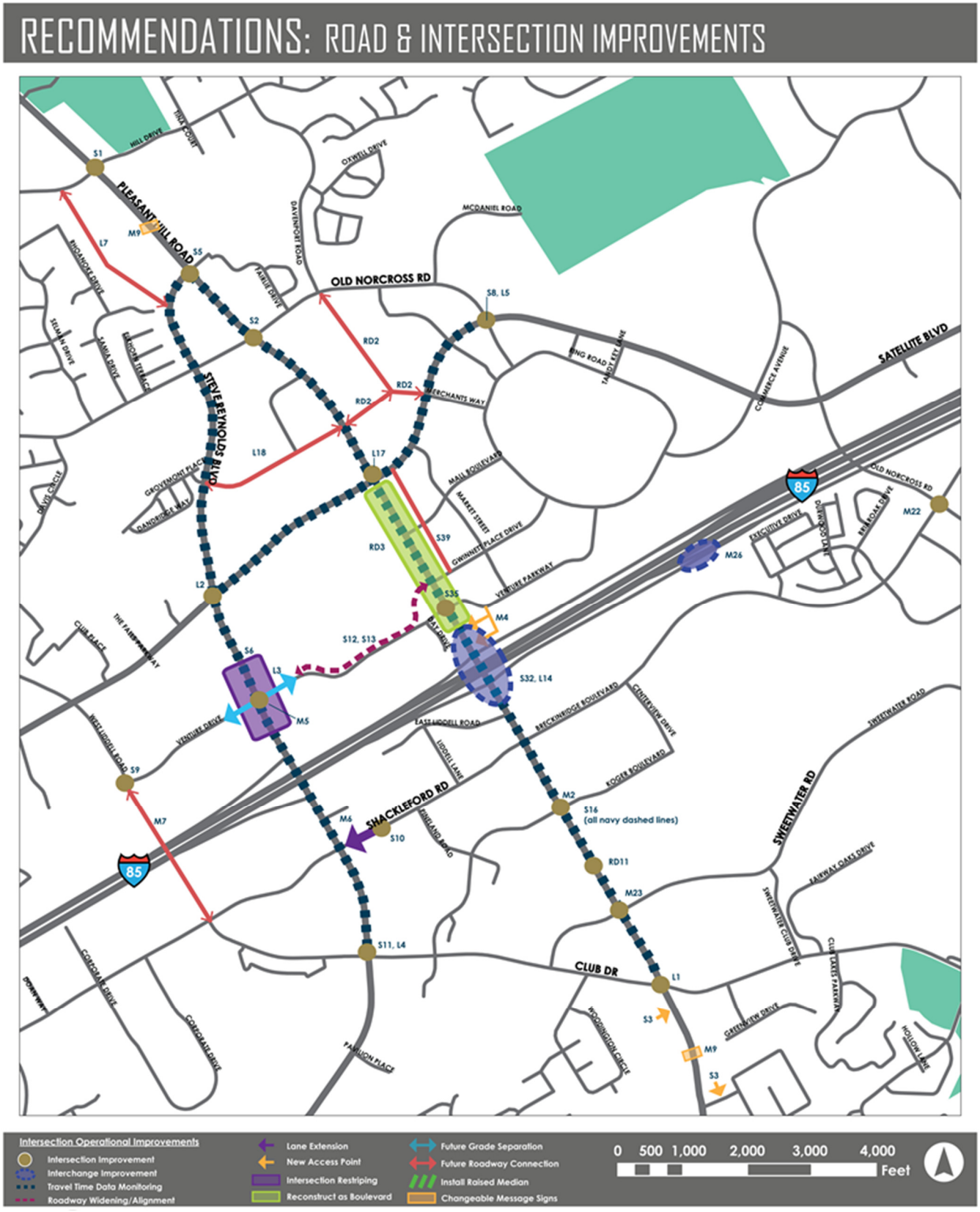


Figure 16 Pedestrian Crossing Recommendations

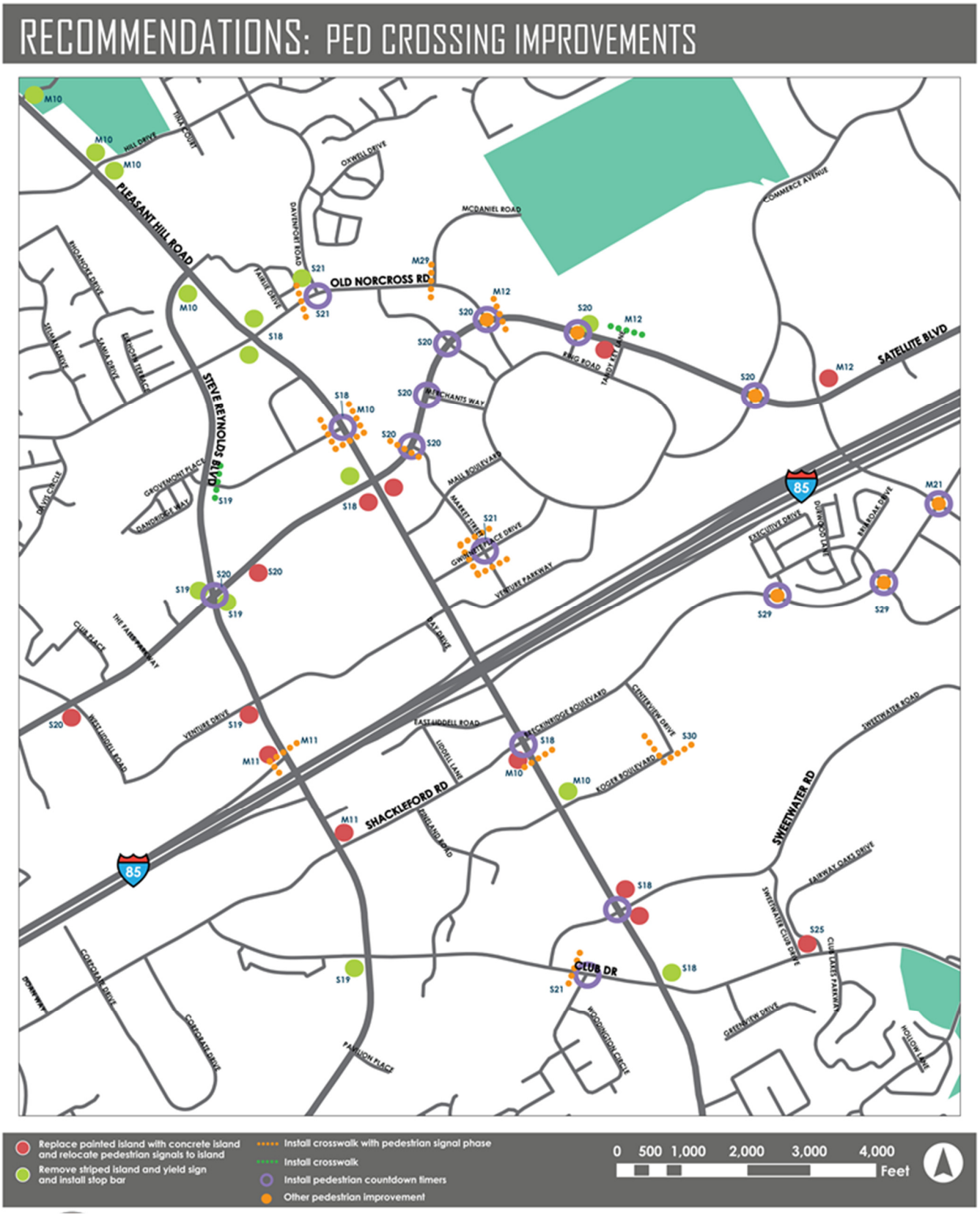
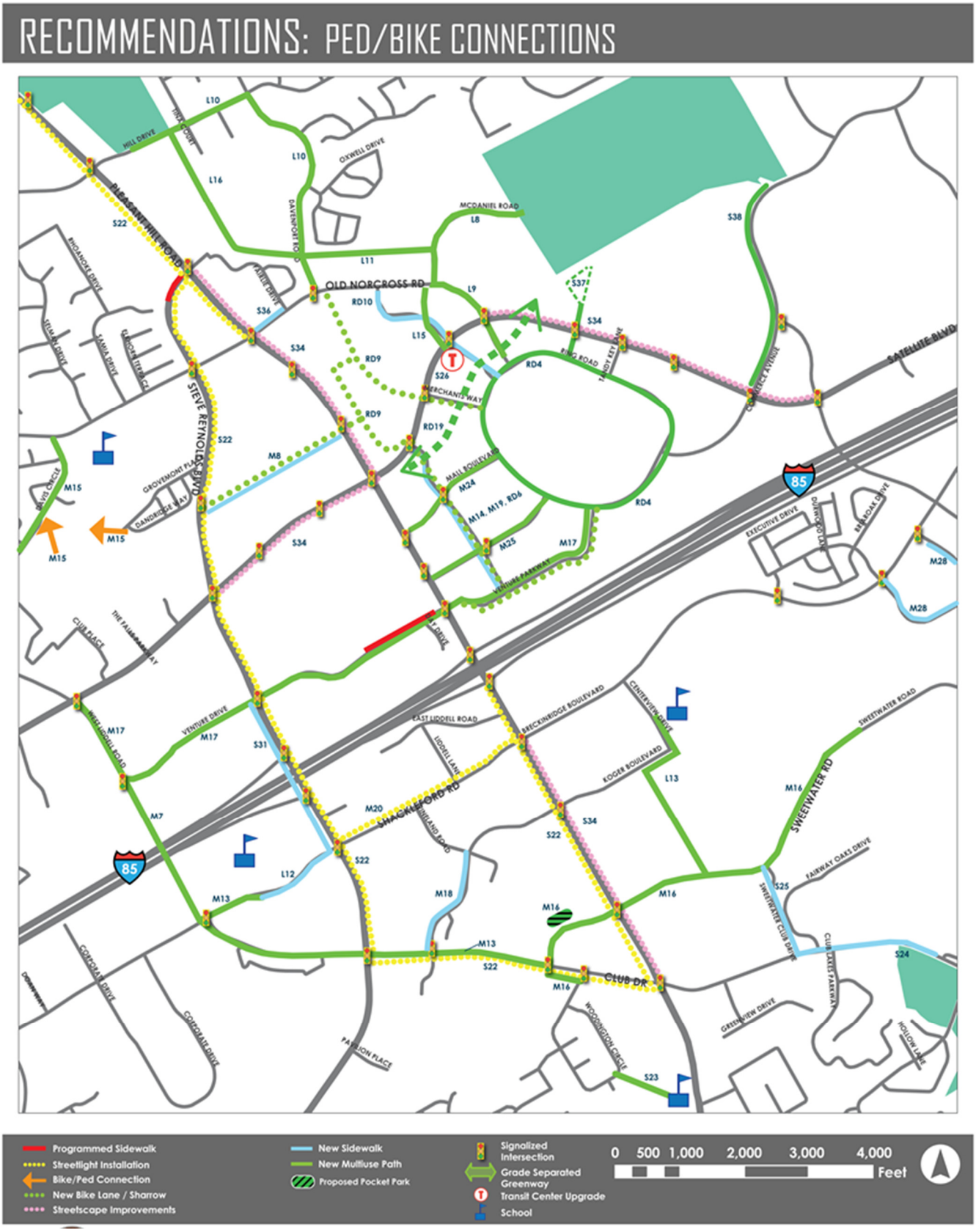


Figure 17 Pedestrian and Bike Recommendations



Appendices

A: Project Information Sheets
B: Complete Project Table
C: Pedestrian Counts
D: Traffic Counts
E: Synchro Output

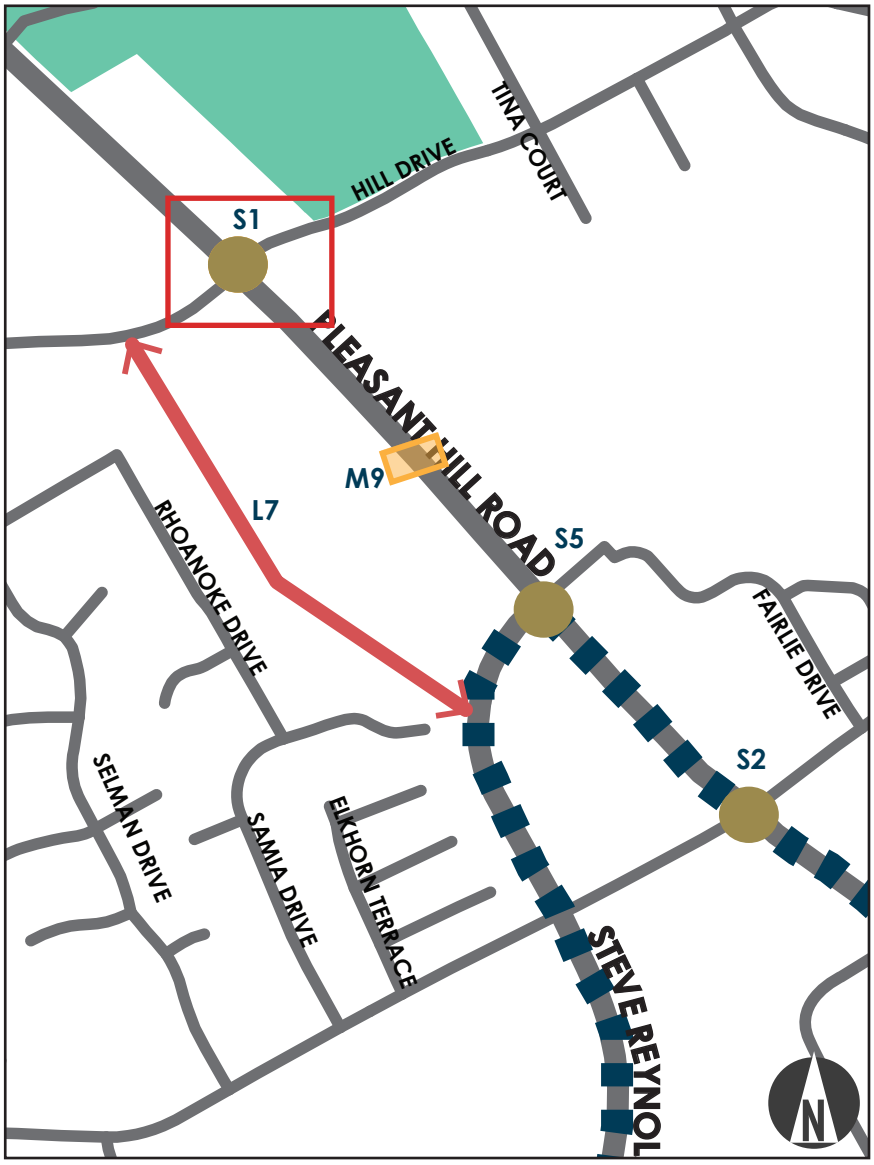
Appendix A: Project Information Sheets

Pleasant Hill Rd at North Berkeley Lake Rd - Median Nose Improvement

Ref. No.
S-1

Project Description

Increase radius of NB dual left turn by pulling back median nose on west side of intersection. Lengthen receiving area for dual left turns to extend past shopping center entrance.



Justification

Improves traffic operations and safety at the intersection and along North Berkley Lake Road. Increases utilization of the northbound dual left turn lanes.

Jurisdiction

Gwinnett County

Service Type

Minor Roadway

Project Source

- ☐ Livable Centers Initiative
- ☑ GPCID Traffic Studies
- ☐ Gwinnett County CTP
- ☐ ACTivate Gwinnett

LCI Project Ref. n/a

Implementation Short-term

Goals Addressed by Improvement:

- ☑ Reduce Congestion/Improve Operations
- ☑ Serves Growth in Travel Demand

Project Costs

Engineering Year	Engineering Costs	ROW Year	ROW Costs	Construction Year	Construction Costs	Contingency Costs	Total Project Costs
2017	**$19,000**	**NA**	**$0**	**2017**	**$95,200**	**$19,000**	**$133,200**

Pleasant Hill Rd at Old Norcross Rd - Right Turn Lane Modification

Ref. No.
S-2

Project Description

Remove channelization and yield sign for the WB right turn movement and install right turn overlap indication for the EB and WB right turn movements.

Justification

Improves traffic operations at the intersection. Improves pedestrian crossing safety.

Jurisdiction

Gwinnett County

Service Type

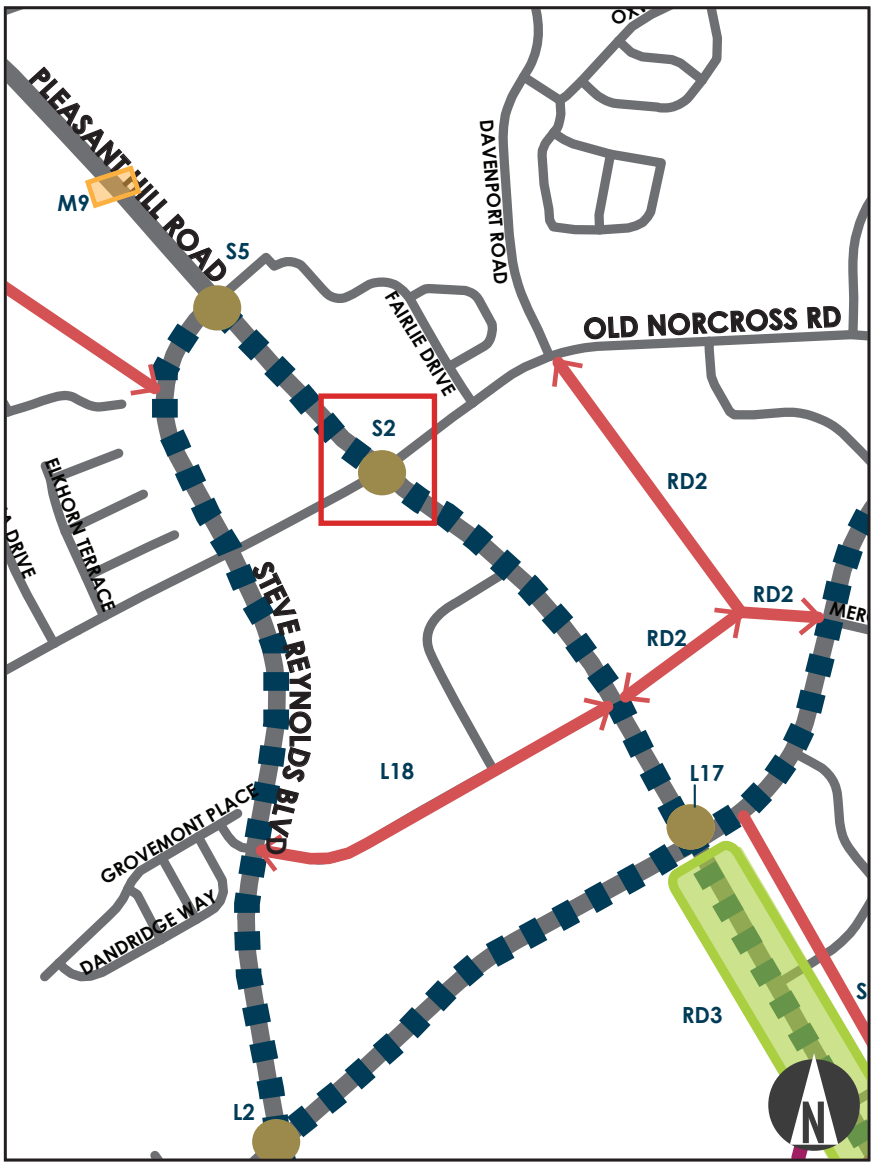
Intersection

Project Source

- ☑ Livable Centers Initiative
- ☑ GPCID Traffic Studies
- ☐ Gwinnett County CTP
- ☐ ACTivate Gwinnett

LCI Project Ref. O-2

Implementation Short-term



Goals Addressed by Improvement:

- ☑ Reduce Congestion/Improve Operations
- ☑ Serves Growth in Travel Demand
- ☑ Improve Pedestrian Crossing Safety

Project Costs

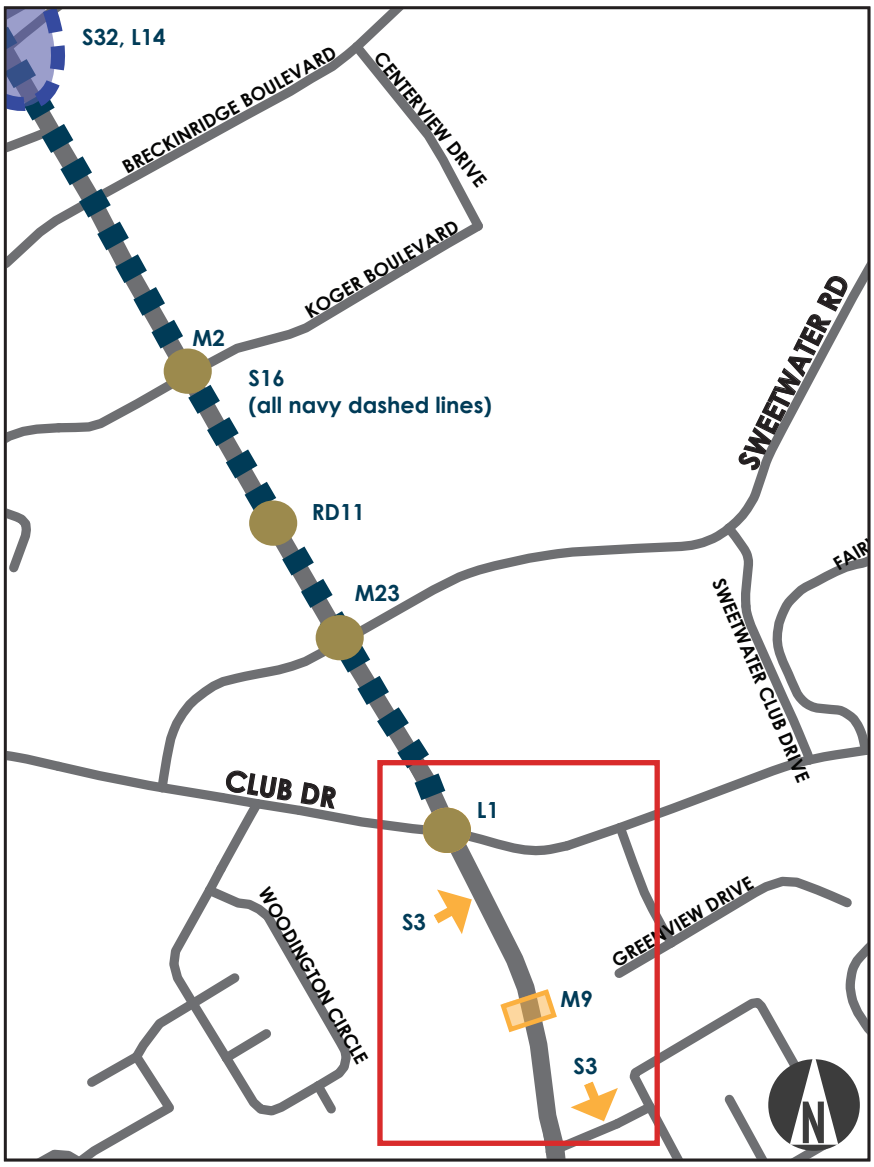
Engineering Year	Engineering Costs	ROW Year	ROW Costs	Construction Year	Construction Costs	Contingency Costs	Total Project Costs
2017	**$3,100**	**NA**	**$0**	**2017**	**$6,200**	**$1,200**	**$10,500**

Pleasant Hill Road at Club Drive - Access Modification to Remove U-Turn Conflict

Ref. No.
S-3

Project Description

Remove northbound U-turn Conflict - Provide left turn into development on southwest quadrant, connect parcels east of Pleasant Hill Rd to Corely Rd, and prohibit NB U-turn from Pleasant Hill Rd at Club Dr.



Justification

Improves intersection operations and safety at a bottleneck location by removing the primary need for u-turns so that u-turns can be prohibited.

Jurisdiction

Gwinnett County

Service Type

Minor Roadway

Project Source

- ☑ Livable Centers Initiative
- ☑ GPCID Traffic Studies
- ☑ Gwinnett County CTP
- ☐ ACTivate Gwinnett

LCI Project Ref. O-2

Implementation Short-term

Goals Addressed by Improvement:

- ☑ Reduce Congestion/Improve Operations
- ☑ Increase Utilization of Steve Reynolds
- ☑ Improve Traffic Safety

Project Costs

Engineering Year	Engineering Costs	ROW Year	ROW Costs	Construction Year	Construction Costs	Contingency Costs	Total Project Costs
2017	**$24,800**	**2017**	**$22,400**	**2018**	**$124,200**	**$24,800**	**$196,200**

Steve Reynolds Blvd at Pleasant Hill Rd - Median Nose Modification

Ref. No.
S-5

Project Description

Increase radius of EB triple left turn by pulling back median nose on north side of intersection.

Justification

Improves traffic operations and safety at the intersection. Increases utilization of the northbound left turn lanes.

Jurisdiction

Gwinnett County

Service Type

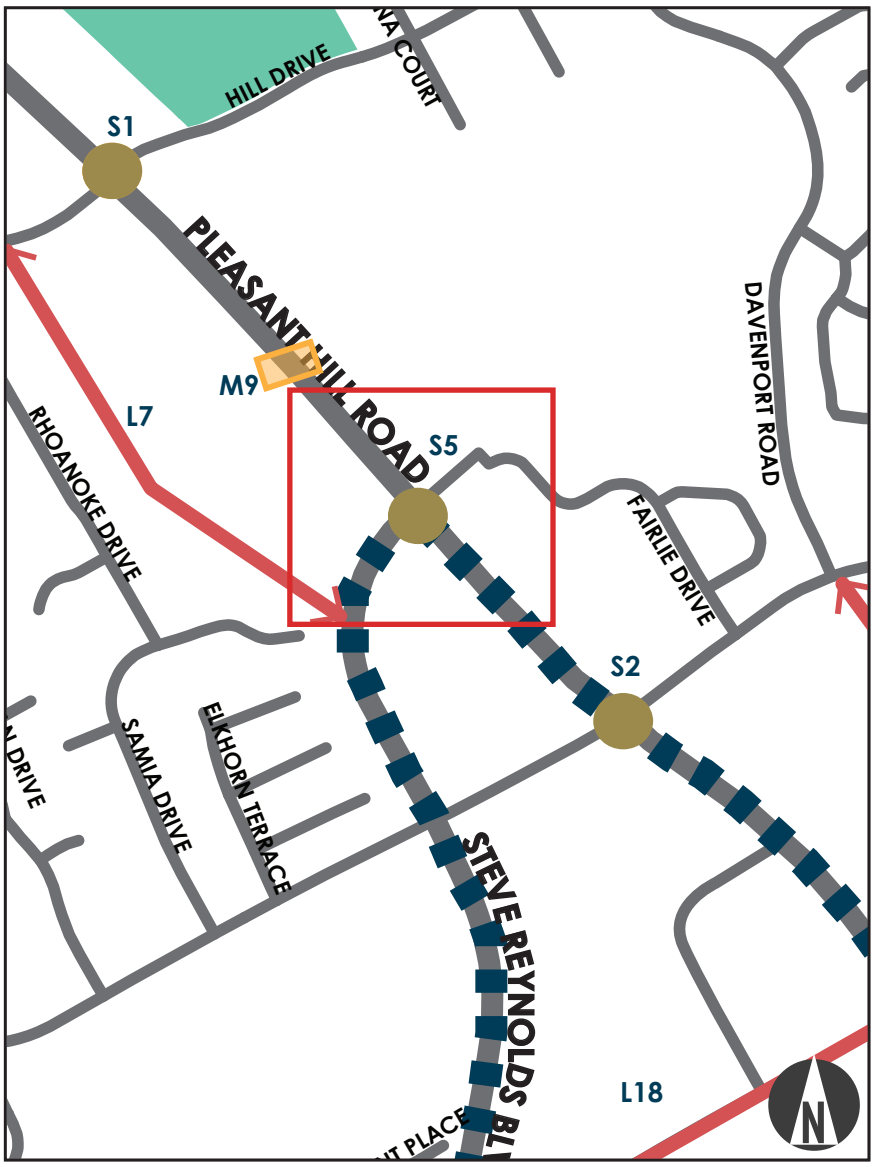
Minor Roadway

Project Source

- ☐ Livable Centers Initiative
- ☑ GPCID Traffic Studies
- ☐ Gwinnett County CTP
- ☐ ACTivate Gwinnet

LCI Project Ref. n/a

Implementation Short-term



Goals Addressed by Improvement:

- ☑ Reduce Congestion/Improve Operations
- ☑ Serves Growth in Travel Demand
- ☑ Increase Utilization of Steve Reynolds
- ☑ Improve Traffic Safety

Project Costs

Engineering Year	Engineering Costs	ROW Year	ROW Costs	Construction Year	Construction Costs	Contingency Costs	Total Project Costs
2017	**$2,100**	**NA**	**$0**	**2017**	**$6,200**	**$1,200**	**$9,500**

Venture Dr at Steve Reynolds Blvd - Lane Alignment Changes

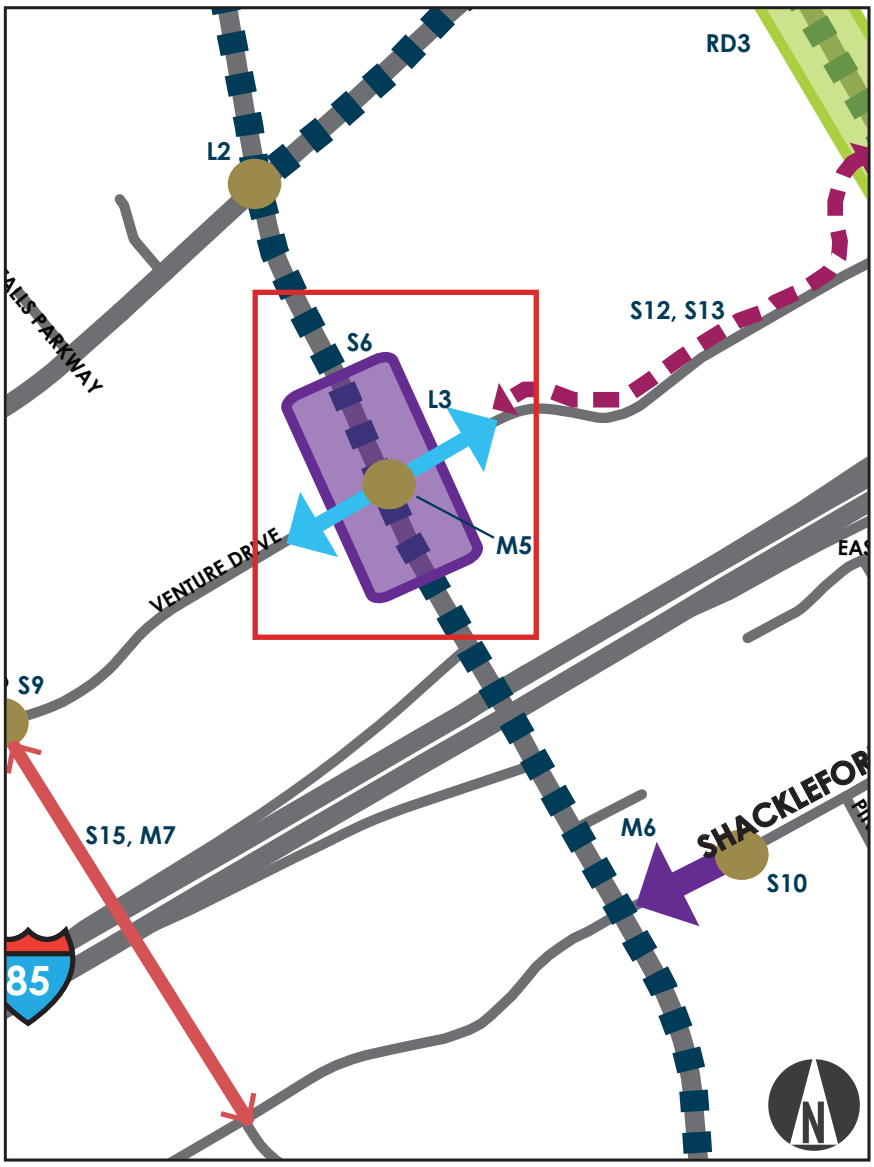
Ref. No.
S-6

Project Description

Restripe northbound approach to align left lane departing the I-85 NB intersection with left most through lane for Venture Drive and right lane departing the I-85 NB intersection with center through lane for Venture Dr. Replace striped island with concrete island with ADA ramps and pedestrian crossing indications on SW corner.

Justification

Improves intersection operations at bottleneck location by facilitating a uniform lane utilization.



Jurisdiction

Gwinnett County

Service Type

Pavement Marking

Project Source

- ☑ Livable Centers Initiative
- ☑ GPCID Traffic Studies
- ☐ Gwinnett County CTP
- ☐ ACTivate Gwinnett

LCI Project Ref. O-4

Implementation Short-term

Goals Addressed by Improvement:

- ☑ Reduce Congestion/Improve Operations
- ☑ Increase Utilization of Steve Reynolds
- ☑ Improve Traffic Safety

Project Costs

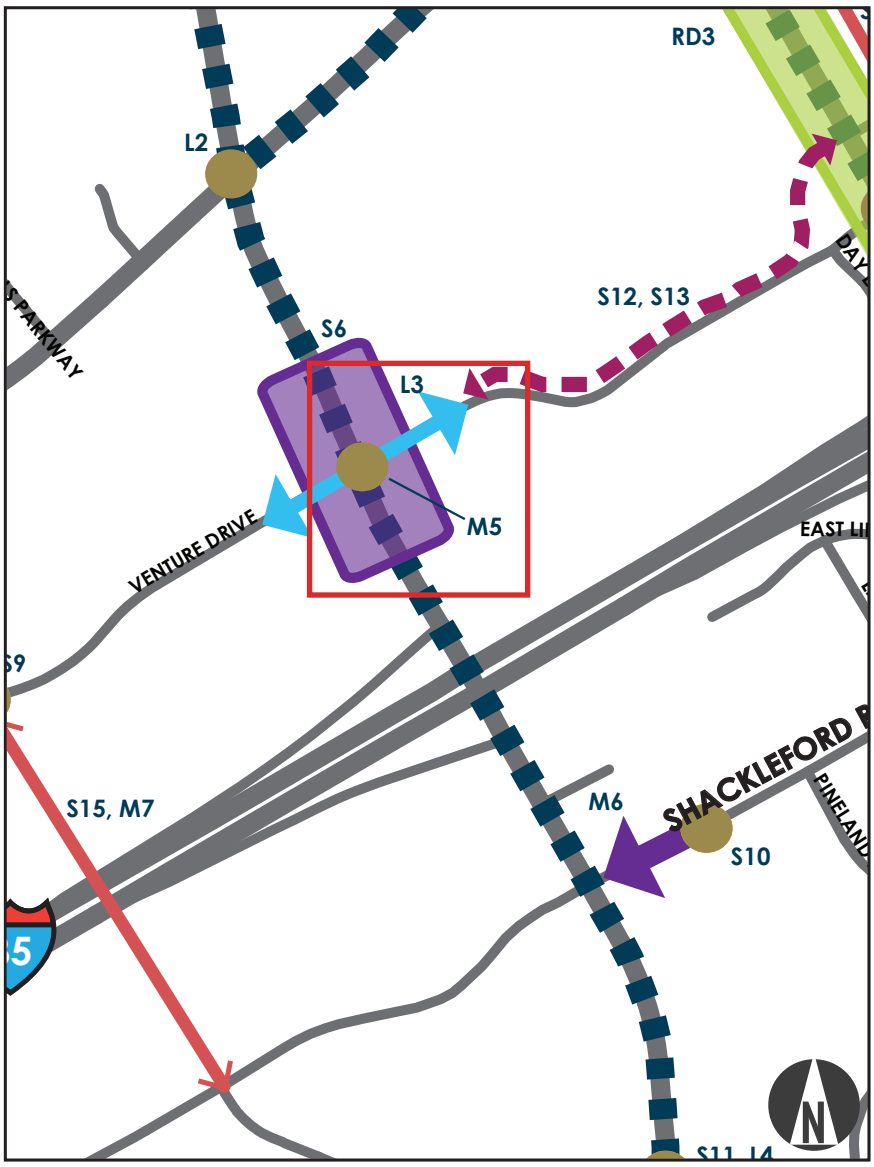
Engineering Year	Engineering Costs	ROW Year	ROW Costs	Construction Year	Construction Costs	Contingency Costs	Total Project Costs
2017	**$5,200**	**NA**	**$0**	**2017**	**$16,600**	**$3,300**	**$25,100**

Venture Dr at Steve Reynolds Blvd - Dual Left Turns

Ref. No.
S-7

Project Description

Install NB, SB, and EB dual left turns. Extend NB right turn lane and install SB right turn lane. (PE Only, other phases included in M-5)



Justification

Improves intersection operations at bottleneck location by increasing intersection capacity. Facilitates the increased use of the Steve Reynolds Blvd corridor as an alternative to Pleasant Hill Road.

Jurisdiction

Gwinnett County

Service Type

Intersection

Project Source

- ☑ Livable Centers Initiative
- ☑ GPCID Traffic Studies
- ☐ Gwinnett County CTP
- ☐ ACTivate Gwinnett

LCI Project Ref. O-4

Implementation Short- to mid-term

Goals Addressed by Improvement:

- ☑ Reduce Congestion/Improve Operations
- ☑ Serves Growth in Travel Demand
- ☑ Increase Utilization of Steve Reynolds
- ☑ Improve Traffic Safety
- ☑ Improve Pedestrian Crossing Safety
- ☑

Project Costs

Engineering Year	Engineering Costs	ROW Year	ROW Costs	Construction Year	Construction Costs	Contingency Costs	Total Project Costs
2017	**$118,200**	**NA**	**$0**	**NA**	**$0**	**$0**	**$118,200**

Satellite Blvd at Old Norcross Road (west) - Right Turn Lane Modification

Ref. No.
S-8

Project Description

Extend WB right turn lane to upstream signal by connecting right turn deceleration lanes. Install pedestrian and vehicle signals on free-flow right turn lane to provide signalized pedestrian crossing. Install Pedestrian crossing signals and crosswalk on east side of intersection.

Justification

Improves traffic operations at the intersection. Improves pedestrian crossing safety.

Jurisdiction

Gwinnett County

Service Type

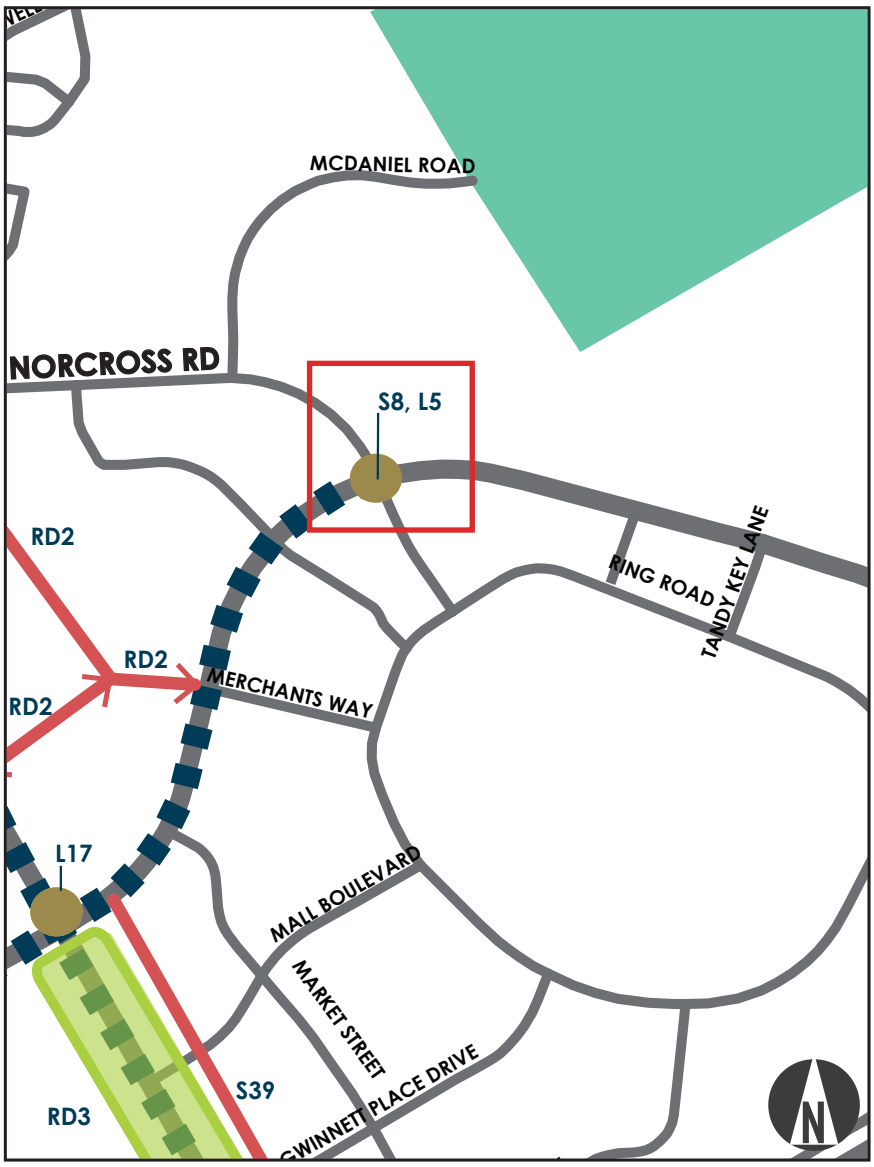
Minor Roadway

Project Source

- ☑ Livable Centers Initiative
- ☑ GPCID Traffic Studies
- ☐ Gwinnett County CTP
- ☐ ACTivate Gwinnett

LCI Project Ref. C-15

Implementation Short-term



Selected Project

Goals Addressed by Improvement:

- ☑ Reduce Congestion/Improve Operations
- ☑ Serves Growth in Travel Demand
- ☑ Improve Traffic Safety
- ☑ Improve Pedestrian Crossing Safety
- ☑ Sidewalk/Bike Connections to Activity Areas
- ☑ Enhance Access to Transit

Project Costs

Engineering Year	Engineering Costs	ROW Year	ROW Costs	Construction Year	Construction Costs	Contingency Costs	Total Project Costs
2017	**$14,200**	**2018**	**$26,600**	**2019**	**$80,700**	**$16,100**	**$137,600**

Venture Dr at West Liddell Dr - Intersection Restriping

Ref. No.
S-9

Project Description

Improve unsignalized intersection (Restripe to provide single lane approaches at multiway stop with channelized WB right turn and crosswalks).

Justification

Improves traffic operations and safety at the intersection. Improves pedestrian crossing safety.

Jurisdiction

Gwinnett County

Service Type

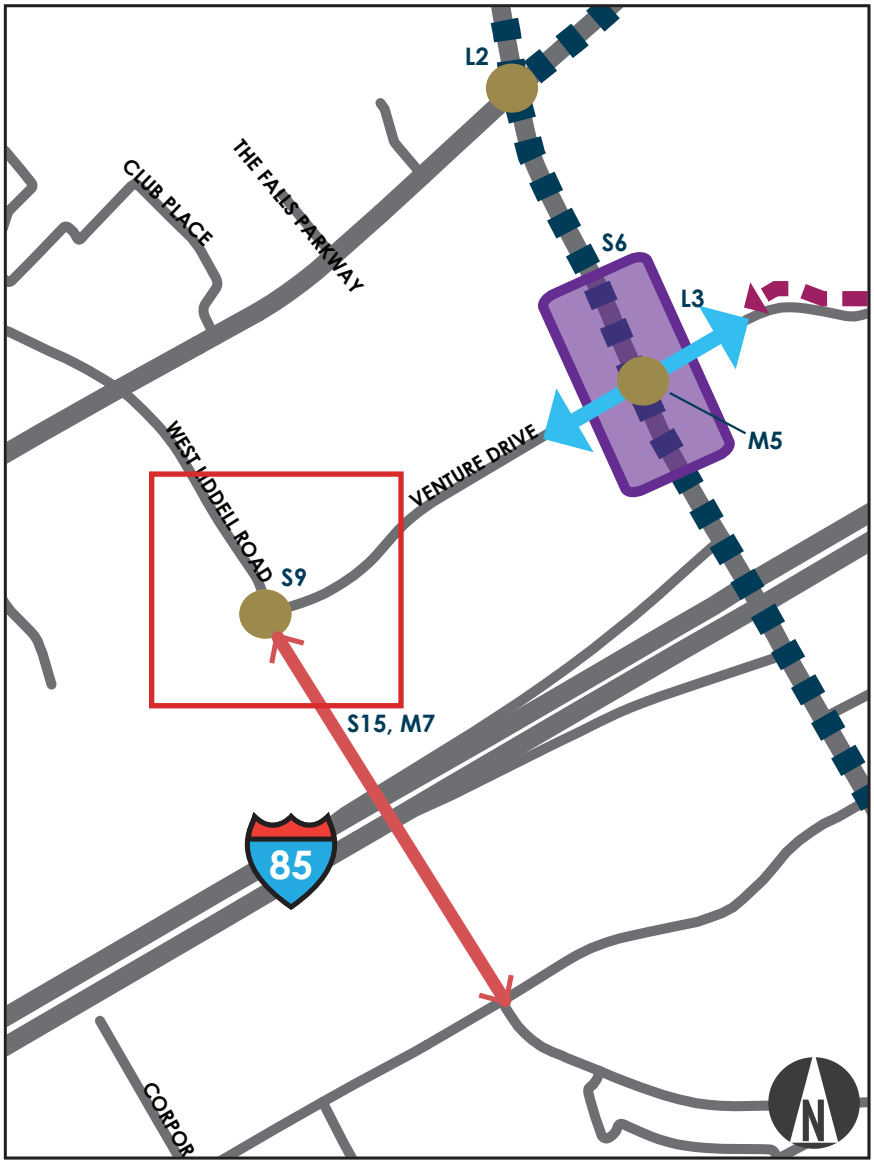
Intersection

Project Source

- ☐ Livable Centers Initiative
- ☑ GPCID Traffic Studies
- ☐ Gwinnett County CTP
- ☐ ACTivate Gwinnett

LCI Project Ref. n/a

Implementation Short-term



Goals Addressed by Improvement:

- ☑ Reduce Congestion/Improve Operations
- ☑ Improve Traffic Safety
- ☑ Improve Pedestrian Crossing Safety

Project Costs

Engineering Year	Engineering Costs	ROW Year	ROW Costs	Construction Year	Construction Costs	Contingency Costs	Total Project Costs
2017	**$2,600**	**NA**	**$0**	**2017**	**$8,300**	**$1,700**	**$12,600**

Shackleford Road at Medical Center - Modification to Site Access

Ref. No.
S-10

Project Description

Modify access to Medical Center and Farmers Market to reduce conflicts (Signalize or relocate Farmers Market Driveway to west).

Justification

Improves traffic operations and safety at the intersection. Enhances access to a major medical facility.

Jurisdiction

Gwinnett County

Service Type

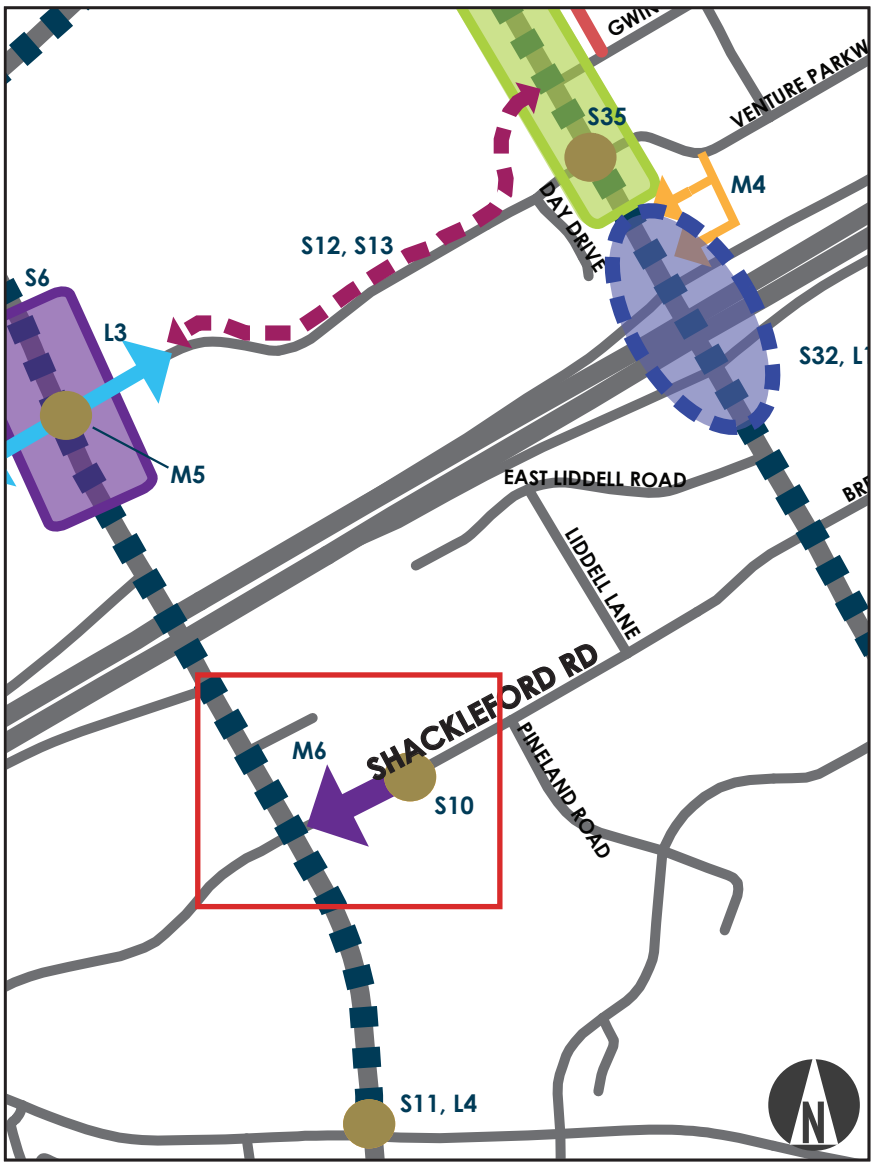
Signal / Driveway

Project Source

- ☐ Livable Centers Initiative
- ☑ GPCID Traffic Studies
- ☐ Gwinnett County CTP
- ☐ ACTivate Gwinnett

LCI Project Ref. n/a

Implementation Short-term



Goals Addressed by Improvement:

- ☑ Reduce Congestion/Improve Operations
- ☑ Improve Traffic Safety

Project Costs

Engineering Year	Engineering Costs	ROW Year	ROW Costs	Construction Year	Construction Costs	Contingency Costs	Total Project Costs
2017	**$20,200**	**NA**	**$0**	**2018**	**$134,600**	**$26,900**	**$181,700**

Club Dr at Steve Reynolds Blvd - Widen Median for U-Turns

Ref. No.
S-11

Project Description

Widen median area to allow U-turns for southbound direction.

Justification

Enhances access to a major medical facility.

Jurisdiction

Gwinnett County

Service Type

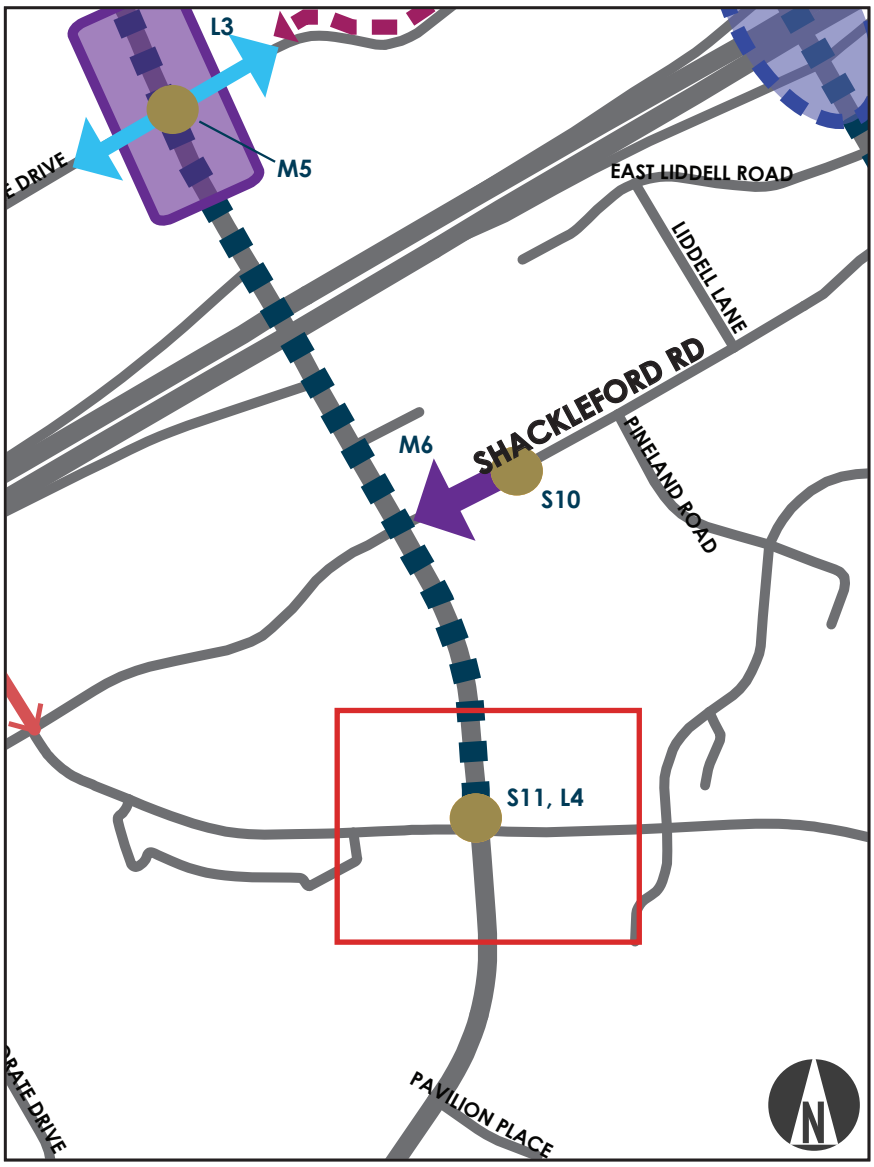
Intersection

Project Source

- ☐ Livable Centers Initiative
- ☑ GPCID Traffic Studies
- ☐ Gwinnett County CTP
- ☐ ACTivate Gwinnett

LCI Project Ref. n/a

Implementation Short-term



Selected Project

Goals Addressed by Improvement:

- ☑ Reduce Congestion/Improve Operations
- ☑ Serves Growth in Travel Demand
- ☑ Increase Utilization of Steve Reynolds
- ☑ Improve Traffic Safety

Project Costs

Engineering Year	Engineering Costs	ROW Year	ROW Costs	Construction Year	Construction Costs	Contingency Costs	Total Project Costs
2017	**$23,800**	**2018**	**$21,400**	**2019**	**$119,000**	**$23,800**	**$188,000**

Venture Drive - Widening from Steve Reynolds Blvd to Day Drive

Ref. No.
S-12

Project Description

Widen Venture Drive to 4-lanes from Steve Reynolds Blvd to Day Drive and realign to tie in with current Venture Drive at Gwinnett Place Drive intersection improvement project. Include 10' Multi-use path on south side of Venture Drive.

Justification

Increases capacity for movement between Pleasant Hill Road and Venture Drive.

Jurisdiction

Gwinnett County

Service Type

Major Roadway

Project Source

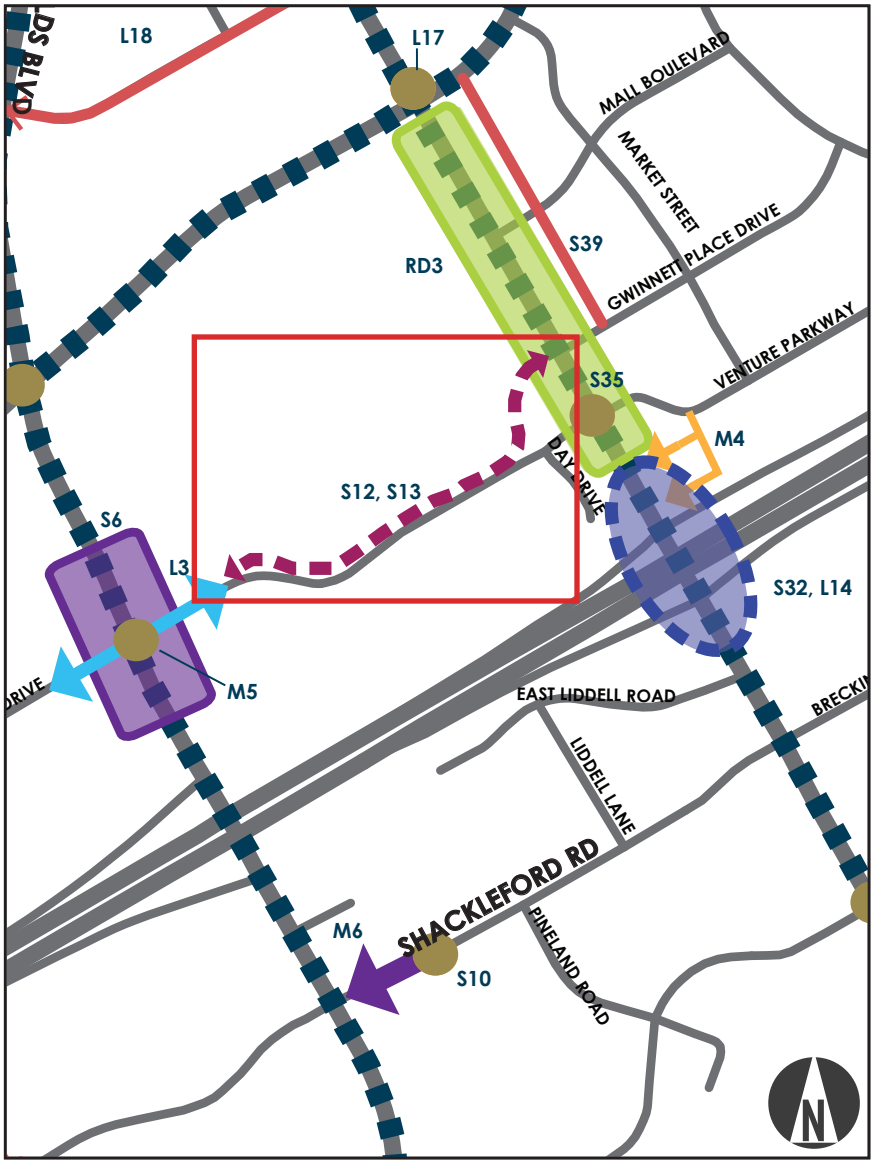
- ☑ Livable Centers Initiative
- ☑ GPCID Traffic Studies
- ☐ Gwinnett County CTP
- ☐ ACTivate Gwinnett

LCI Project Ref.

R-8/C-19

Implementation

Short-term



Goals Addressed by Improvement:

- ☑ Reduce Congestion/Improve Operations
- ☑ Increase System Connectivity
- ☑ Serves Growth in Travel Demand
- ☑ Improve Traffic Safety
- ☑ Sidewalk/Bike Connections to Activity Areas
- ☑ Enhance Access to Transit

Project Costs

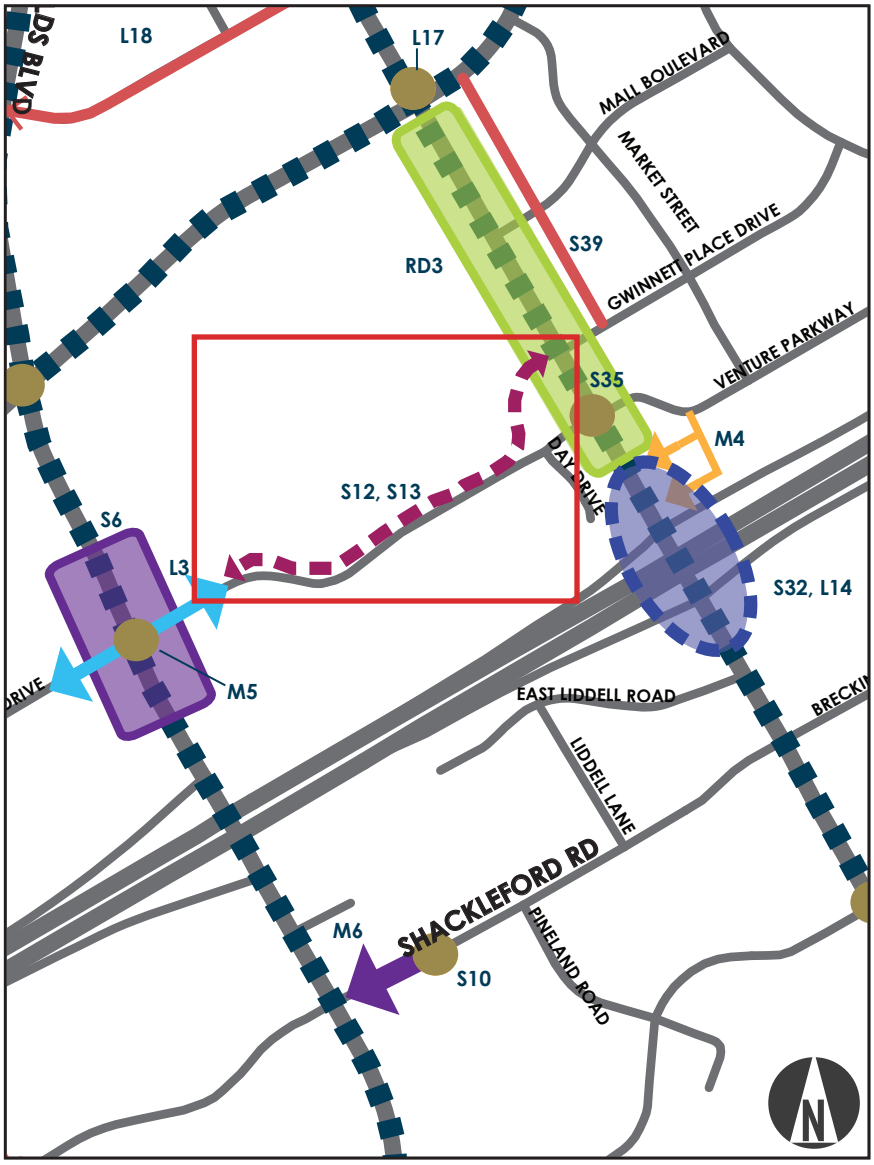
Engineering Year	Engineering Costs	ROW Year	ROW Costs	Construction Year	Construction Costs	Contingency Costs	Total Project Costs
2017	**$192,700**	**2018**	**$318,000**	**2019-2020**	**$963,600**	**$192,700**	**$1,667,000**

Venture Drive Connector

Ref. No.
S-13

Project Description

Construct 4-lane Venture Drive Connector from Day Drive to Gwinnett Place Drive.



Justification

Increases capacity for movement between Pleasant Hill Road and Venture Drive. Provides continuous connection from Gwinnett Place Mall area to retail area near Venture Drive.

Jurisdiction

Gwinnett County

Service Type

Major Roadway

Project Source

- ☑ Livable Centers Initiative
- ☑ GPCID Traffic Studies
- ☐ Gwinnett County CTP
- ☐ ACTivate Gwinnett

LCI Project Ref. R-8

Implementation Short-term

Goals Addressed by Improvement:

- ☑ Reduce Congestion/Improve Operations
- ☑ Increase System Connectivity
- ☑ Serves Growth in Travel Demand
- ☑ Increase Utilization of Steve Reynolds

Project Costs

Engineering Year	Engineering Costs	ROW Year	ROW Costs	Construction Year	Construction Costs	Contingency Costs	Total Project Costs
2017	**$200,800**	**2018**	**$1,795,700**	**2019-2020**	**$1,173,700**	**$234,700**	**$3,404,900**

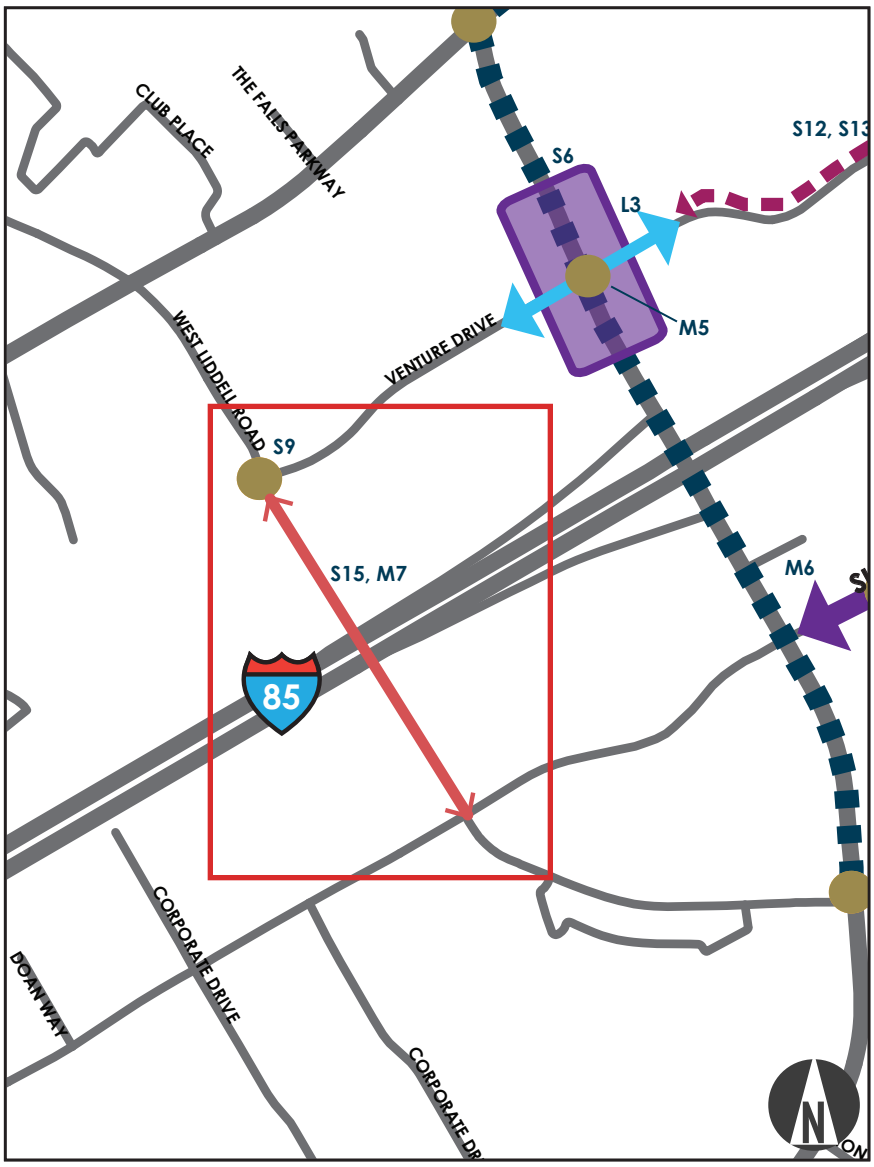
West Liddell Rd to Club Dr Connector

Keystone Project

Ref. No.
S-15

Project Description

New 4-lane roadway with 10' Multi-use path on one side and 5' sidewalk on the other side from Club Dr to Venture Drive including and overpass at I-85. (PE ONLY - This cost is for the planning and engineering of improvements. The total cost is estimated at $39 million).



Selected Project

Justification

Provides regional roadway connection across I-85 to reduce traffic on Steve Reynolds Boulevard and Pleasant Hill Road to accommodate current traffic and future growth. Provides pedestrian and bicycle connections across I-85.

Jurisdiction

Gwinnett County

Service Type

Major Roadway

Project Source

- ☑ Livable Centers Initiative
- ☑ GPCID Traffic Studies
- ☐ Gwinnett County CTP
- ☐ ACTivate Gwinnett

LCI Project Ref. R-9

Implementation Short- to mid-term

Goals Addressed by Improvement:

- ☑ Reduce Congestion/Improve Operations
- ☑ Increase System Connectivity
- ☑ Serves Growth in Travel Demand

Project Costs

Engineering Year	Engineering Costs	ROW Year	ROW Costs	Construction Year	Construction Costs	Contingency Costs	Total Project Costs
2017-2018	**$776,300**	**NA**	**$0**	**NA**	**$0**	**$0**	**$776,300**

Travel Time Data Monitoring

Ref. No.
S-16

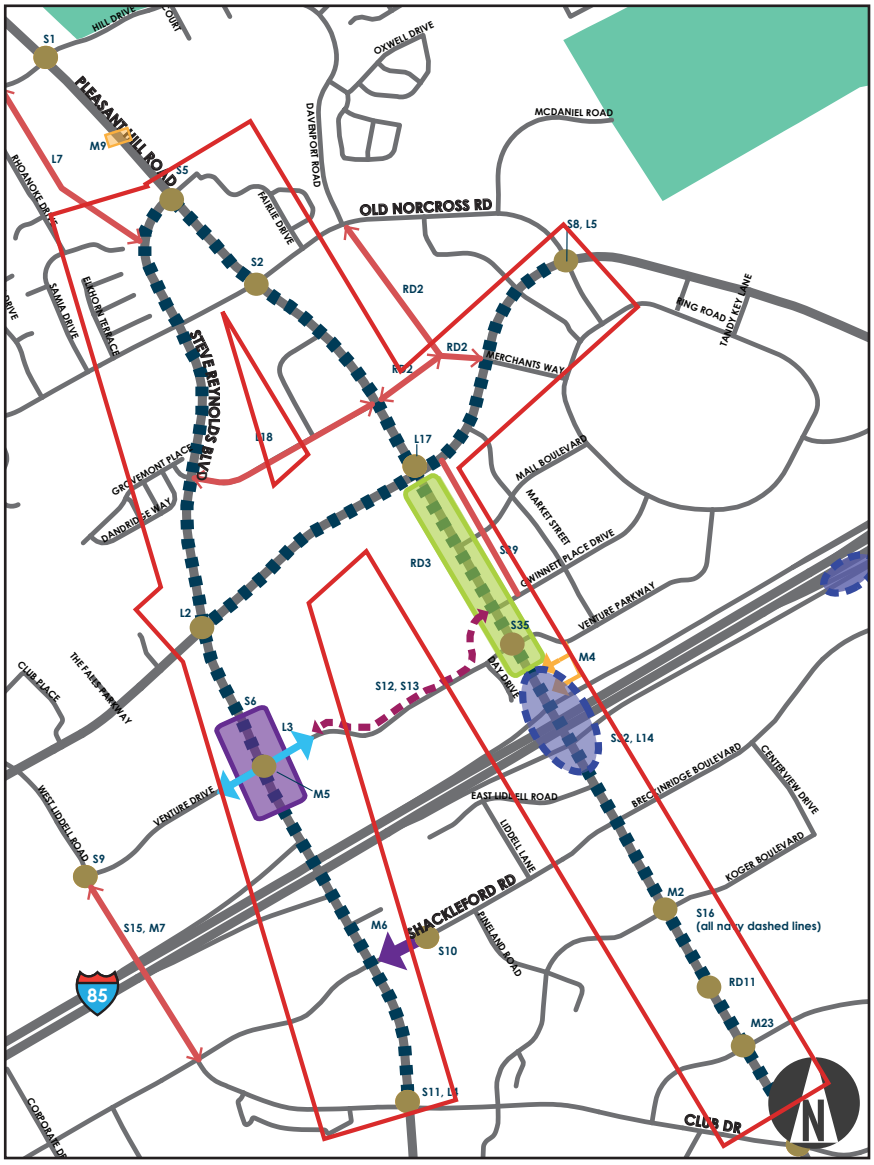
Project Description

Install System to Gather Travel Time Data from Blue Tooth Devices along the following corridors (includes five years monitoring cost):

- Pleasant Hill Rd from Club Drive to Steve Reynolds Blvd (4 stations)
- Satellite Blvd from Steve Reynolds Blvd to Old Norcross Rd (3 stations)
- Steve Reynolds Blvd from Pleasant Hill Rd to Club Drive (3 stations)

Justification

Provides travel times for use in optimizing signal system and information to drivers to address corridor congestion.



Selected Project

Jurisdiction

Gwinnett County

Service Type

ITS

Project Source

- ☑ Livable Centers Initiative
- ☑ GPCID Traffic Studies
- ☐ Gwinnett County CTP
- ☐ ACTivate Gwinnett

LCI Project Ref. O-1

Implementation Short-term

Goals Addressed by Improvement:

☑ Reduce Congestion/Improve Operations

Project Costs

Engineering Year	Engineering Costs	ROW Year	ROW Costs	Construction Year	Construction Costs	Contingency Costs	Total Project Costs
2019	**$20,200**	**NA**	**$0**	**2019**	**$134,600**	**$26,900**	**$181,700**

Pedestrian Crossing Safety Modifications Along Pleasant Hill Road

Ref. No.
S-18

Project Description

- Old Norcross Rd- Remove right turn island striping on NE and SW corners and install stop bars.
- Satellite Blvd - Replace striped islands with concrete islands with ADA ramps and pedestrian crossing indications on SE and SW corners. Remove striped island on NW corner.
- Sweetwater Rd - Replace striped islands with concrete islands with ADA ramps and pedestrian crossing indications on NE and SE corners.
- Club Dr - Remove right turn island striping on NE corner and install stop bar.
- Breckingridge Blvd - Add crosswalk across touthern leg of Pleasant Hill Road
- Install pedestrian signal heads with countdown timers at the intersections of Pleasant Hill Rd at Sweetwater Rd, Breckinridge Blvd, Gwinnett Place Dr, Mall Blvd, and Gwinnett Station.

Justification

Improves pedestrian crossing safety along Pleasant Hill Road.

Jurisdiction

Gwinnett County

Service Type

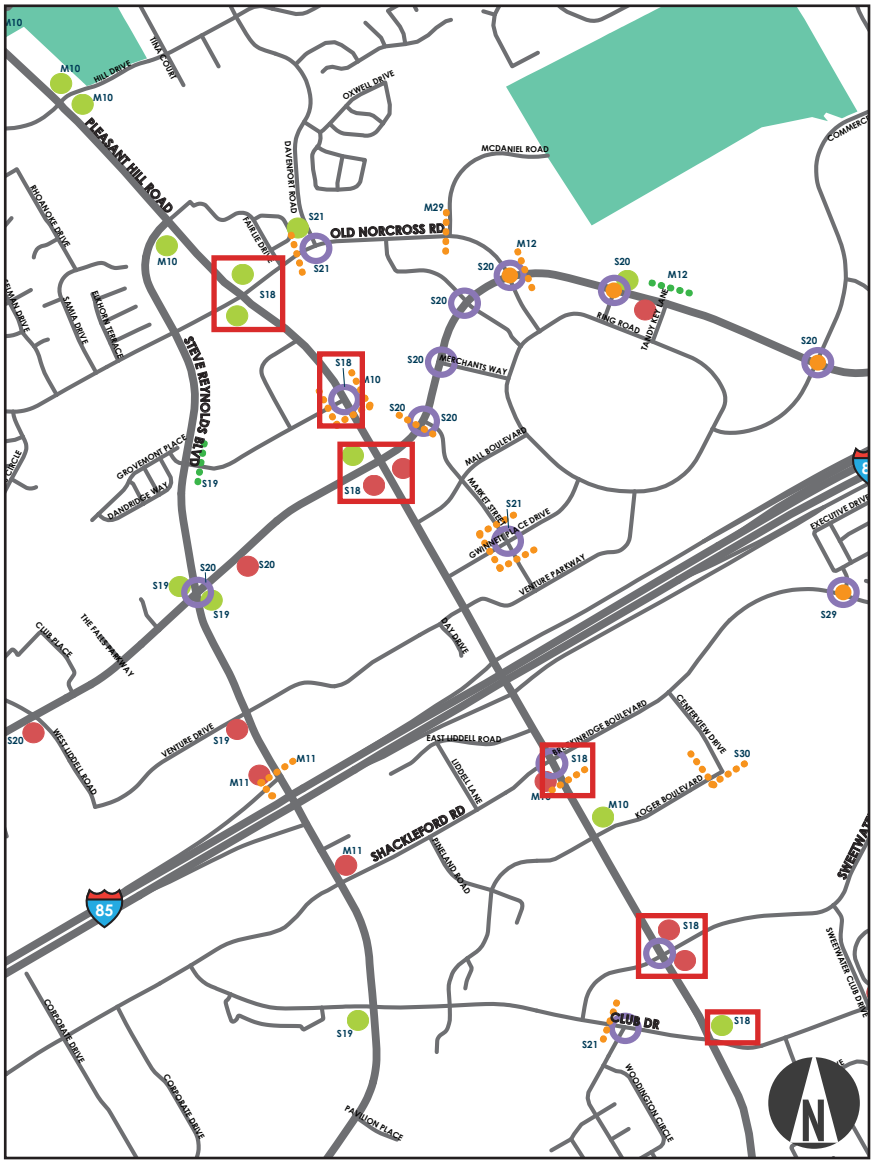
Pedestrian

Project Source

- ☑ Livable Centers Initiative
- ☑ GPCID Traffic Studies
- ☐ Gwinnett County CTP
- ☐ ACTivate Gwinnett

LCI Project Ref. C-6/O-2

Implementation Short-term



Selected Project

Modified Project

Goals Addressed by Improvement:

- ☑ Improve Pedestrian Crossing Safety
- ☑ Sidewalk/Bike Connections to Activity Areas
- ☑ Enhance Access to Transit

Project Costs

Engineering Year	Engineering Costs	ROW Year	ROW Costs	Construction Year	Construction Costs	Contingency Costs	Total Project Costs
2017	**$16,100**	**NA**	**$0**	**2018**	**$80,700**	**$16,100**	**$112,900**

Pedestrian Crossing Safety Modifications Along Steve Reynolds Boulevard

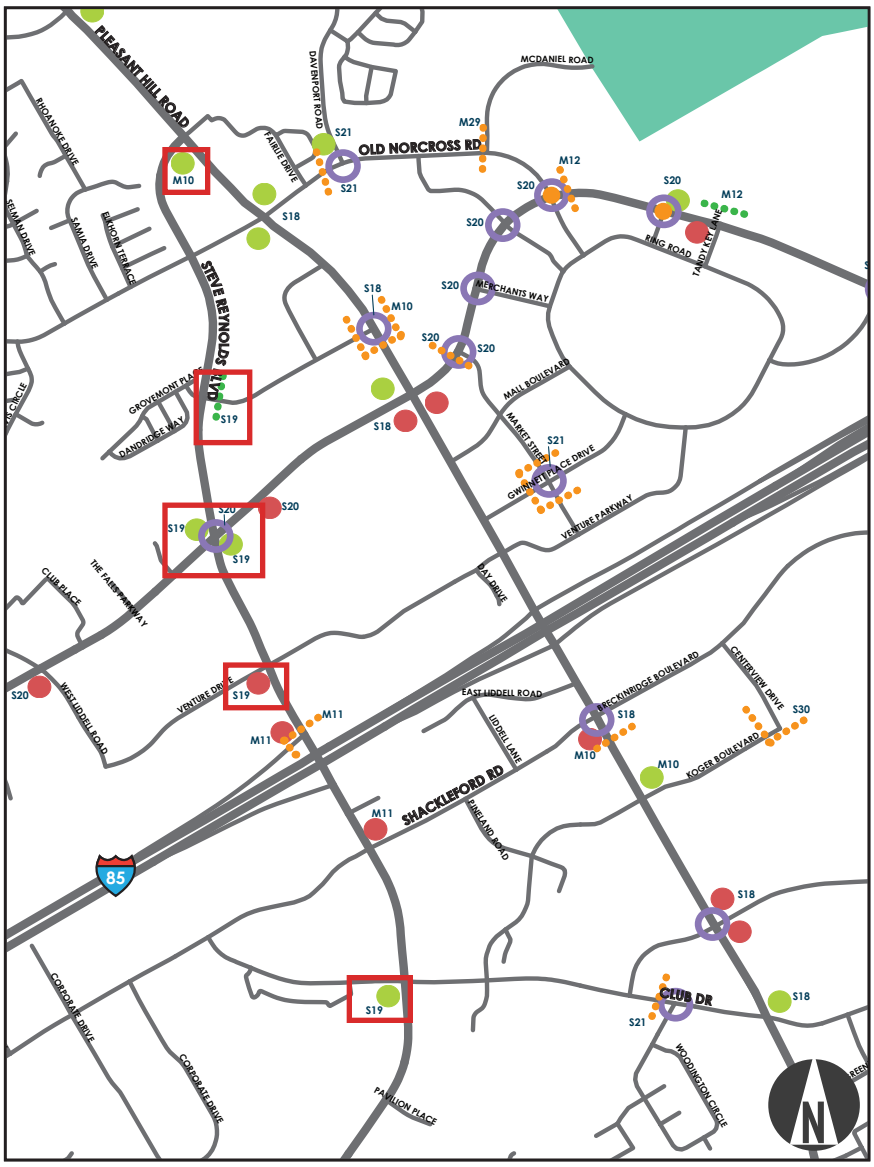
Ref. No.
S-19

Project Description

- Satellite Blvd - Remove striped islands on NW and SE corners and install stop bars.
- Chesden Dr - Install crosswalk on east side of intersection.
- Venture Drive - Replace striped island with concrete island with ADA ramps and pedestrian crossing indications on SW corner.
- Club Drive - Remove right turn island striping on SW corner and install stop bar.

Justification

Improves pedestrian crossing safety along Steve Reynolds Boulevard.



Selected Project

Jurisdiction

Gwinnett County

Service Type

Pedestrian

Project Source

- ☑ Livable Centers Initiative
- ☑ GPCID Traffic Studies
- ☐ Gwinnett County CTP
- ☐ ACTivate Gwinnett

LCI Project Ref. C-16/O-3/O-4

Implementation Short-term

Goals Addressed by Improvement:

- ☑ Improve Pedestrian Crossing Safety
- ☑ Sidewalk/Bike Connections to Activity Areas

Project Costs

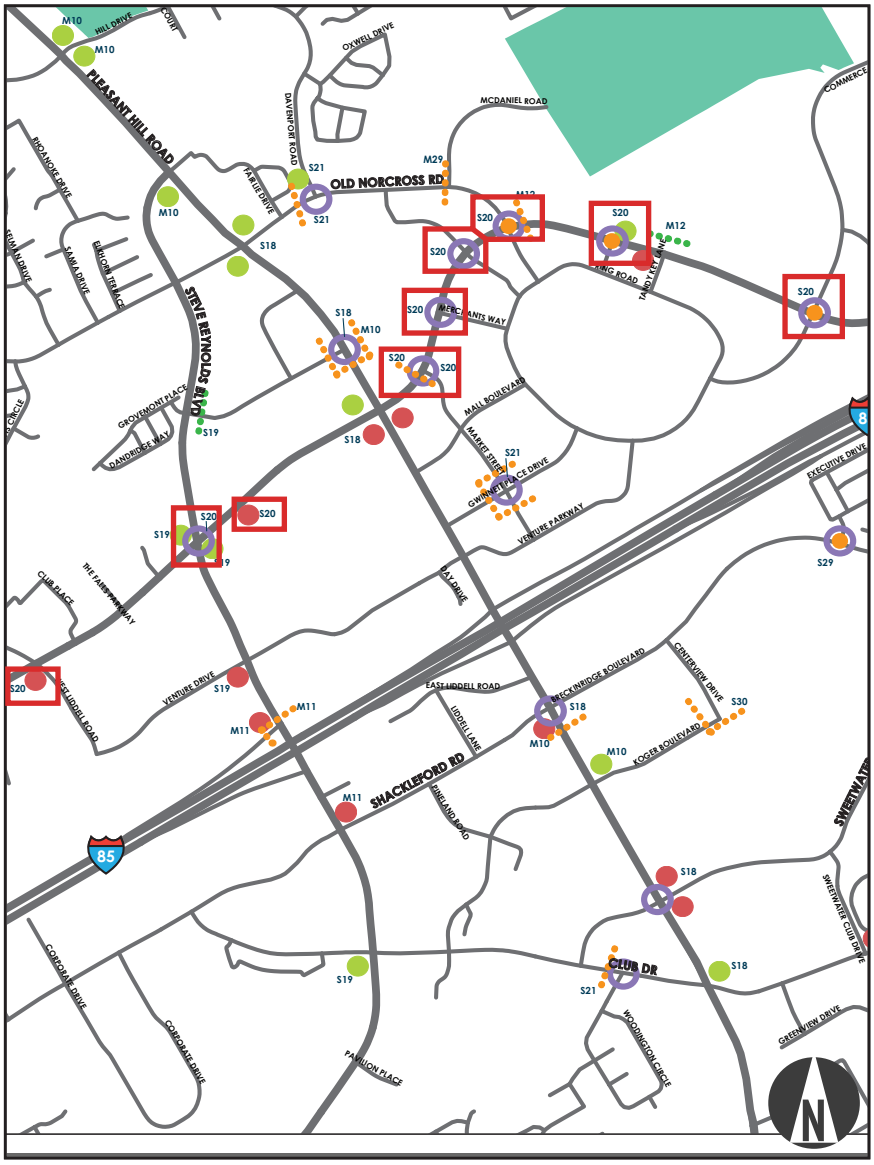
Engineering Year	Engineering Costs	ROW Year	ROW Costs	Construction Year	Construction Costs	Contingency Costs	Total Project Costs
2017	**$5,800**	**NA**	**$0**	**2018**	**$29,000**	**$5,800**	**$40,600**

Pedestrian Crossing Safety Modifications Along Satellite Boulevard

Ref. No.
S-20

Project Description

- Mall Access Rd - Remove striped islands on NW corner and install stop bar.
- Market St - Install pedestrian signal heads and crosswalk on west side of intersection.
- In-Town Suites - Replace striped island with concrete island with ADA ramps and pedestrian crossing indications on SE corner.
- West Liddell - Replace striped island on SW corner with concrete island.
- Gwinnett Place Honda/Pars Car Sales Driveway - add pedestrian countdown signals to southern crosswalk, upgrade all pedestrian signals to countdown timers
- Install pedestrian signal heads with countdown timers at intersections with Steve Reynolds Boulevard, Market St, Merchants Way, Gwinnett Plantation Way, Old Norcross Road, and Commerce Avenue



Selected Project

Modified Project

Justification

Improves pedestrian crossing safety along Satellite Boulevard.

Jurisdiction

Gwinnett County

Service Type

Pedestrian

Project Source

- ☑ Livable Centers Initiative
- ☑ GPCID Traffic Studies
- ☐ Gwinnett County CTP
- ☐ ACTivate Gwinnett

LCI Project Ref.

C-16/O-3

Implementation

Short-term

Goals Addressed by Improvement:

- ☑ Improve Pedestrian Crossing Safety
- ☑ Sidewalk/Bike Connections to Activity Areas
- ☑ Enhance Access to Transit

Project Costs

Engineering Year	Engineering Costs	ROW Year	ROW Costs	Construction Year	Construction Costs	Contingency Costs	Total Project Costs
2018	**$5,400**	**NA**	**$0**	**2019**	**$85,700**	**$17,100**	**$108,200**

Pedestrian Crossing Safety Modifications - Various Locations

Ref. No.
S-21

Project Description

- Club Dr at Woodington Cir - Install pedestrian signal heads with countdown timers on all legs and install a crosswalk on the west side of the intersection.
- Gwinnett Place Dr at Market St - Install pedestrian signal heads with countdown timers, brick paver crosswalks, and ADA ramps for the north, south, and west sides of the intersection.
- Old Norcross Rd at Davenport Rd - Install crosswalks on the southern and western sides of the intersection. Upgrade all pedestrian signal heads with countdown timers. Remove striped island on southbound approach and install stop bar.

Justification

Improves pedestrian crossing safety along Club Drive, Gwinnett Place Drive, and Old Norcross Road.

Jurisdiction

Gwinnett County

Service Type

Pedestrian

Project Source

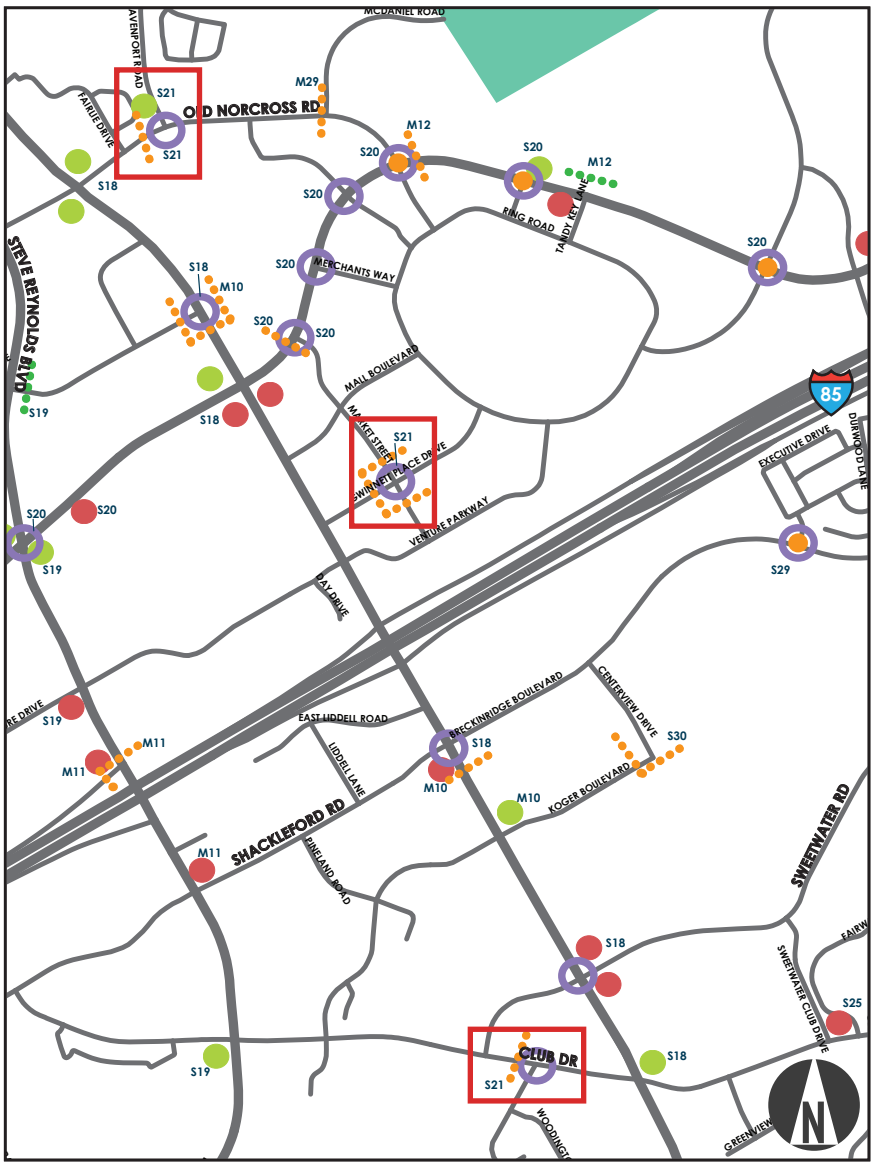
- ☑ Livable Centers Initiative
- ☑ GPCID Traffic Studies
- ☐ Gwinnett County CTP
- ☐ ACTivate Gwinnett

LCI Project Ref.

C-15/C-16

Implementation

Short-term



Selected Project

Modified Project

Goals Addressed by Improvement:

- ☑ Improve Pedestrian Crossing Safety
- ☑ Sidewalk/Bike Connections to Activity Areas
- ☑ Enhance Access to Transit

Project Costs

Engineering Year	Engineering Costs	ROW Year	ROW Costs	Construction Year	Construction Costs	Contingency Costs	Total Project Costs
2018	**$9,300**	**NA**	**$0**	**2019**	**$46,300**	**$9,300**	**$64,900**

Streetlights along Pleasant Hill Road, Club Drive, and Steve Reynolds Boulevard

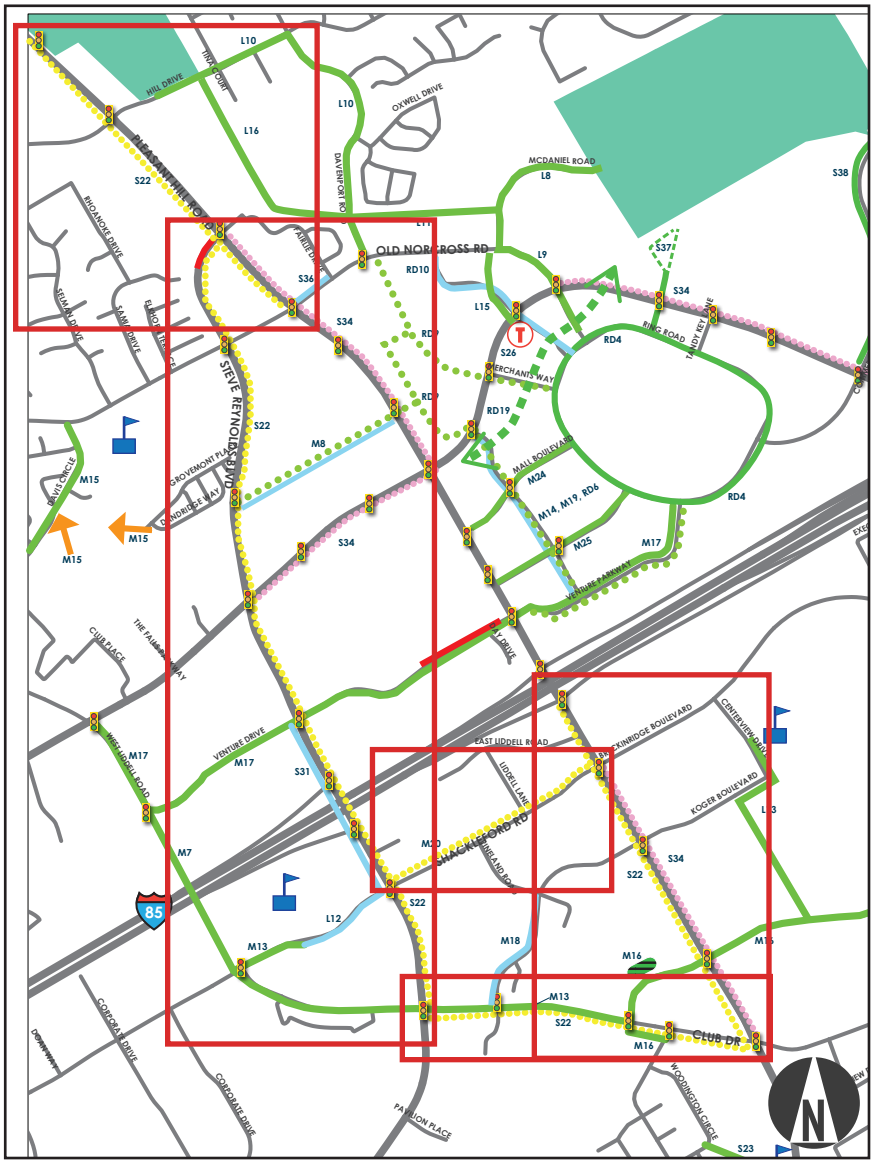
Ref. No.
S-22

Project Description

Install streetlights along Pleasant Hill Road from Shorty Howell Park to Old Norcross Road (20), on Pleasant Hill Road from I-85 to Club Drive (20), on Club Drive from Pleasant Hill Road to Steve Reynolds Boulevard (15), on Steve Reynolds Boulevard from Club Drive to Pleasant Hill Road (40), and on Shackleford Road from Steve Reynolds Boulevard to Pleasant Hill Road (12).

Justification

Improves pedestrian safety for travel along and across Pleasant Hill Road, Club Drive, and Steve Reynold Boulevard.



Selected Project

Modified Project

Jurisdiction

Gwinnett County

Service Type

Pedestrian

Project Source

- ☑ Livable Centers Initiative
- ☑ GPCID Traffic Studies
- ☐ Gwinnett County CTP
- ☐ ACTivate Gwinnett

LCI Project Ref. C-11/C-12

Implementation Short-term

Goals Addressed by Improvement:

- ☑ Improve Pedestrian Crossing Safety
- ☑ Sidewalk/Bike Connections to Activity Areas
- ☑ Enhance Access to Transit

Project Costs

Engineering Year	Engineering Costs	ROW Year	ROW Costs	Construction Year	Construction Costs	Contingency Costs	Total Project Costs
2018	**$28,400**	**NA**	**$0**	**2019**	**$354,800**	**$71,000**	**$454,200**

Woodington Circle Multi-use Path Connection to Corley Elementary School

Ref. No.
S-23

Project Description

Woodington Circle Multi-use Path Connection to Corley Elementary School. Path goes around existing greenspace area.

Justification

Provides pedestrian route for travel between transit center and Old Norcross Road.

Jurisdiction

Gwinnett County

Service Type

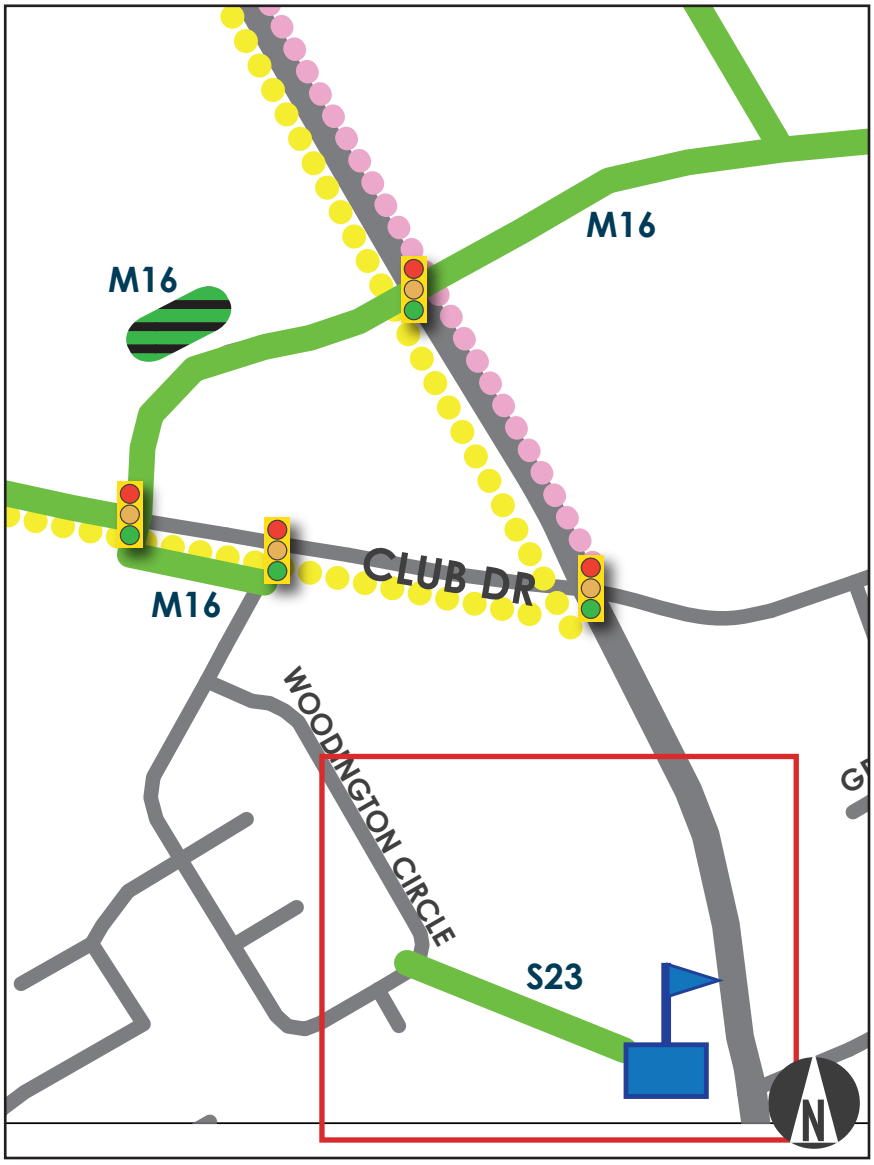
Sidewalk

Project Source

- ☐ Livable Centers Initiative
- ☑ GPCID Traffic Studies
- ☐ Gwinnett County CTP
- ☐ ACTivate Gwinnett

LCI Project Ref. n/a

Implementation Short-term



Goals Addressed by Improvement:

- ☑ Sidewalk/Bike Connections to Activity Areas
- ☑ Enhance Access to Transit

Project Costs

Engineering Year	Engineering Costs	ROW Year	ROW Costs	Construction Year	Construction Costs	Contingency Costs	Total Project Costs
2017	**$18,800**	**2018**	**$62,200**	**2019**	**$188,400**	**$37,700**	**$307,100**

Club Drive Sidewalk

Ref. No.
S-24

Project Description

Install sidewalk along both sides of Club Drive from Sweetwater Club Drive to existing sidewalk at Club Drive Park.

Justification

Provides pedestrian connection between commercial center and neighborhoods/ park.

Jurisdiction

Gwinnett County

Service Type

Sidewalk

Project Source

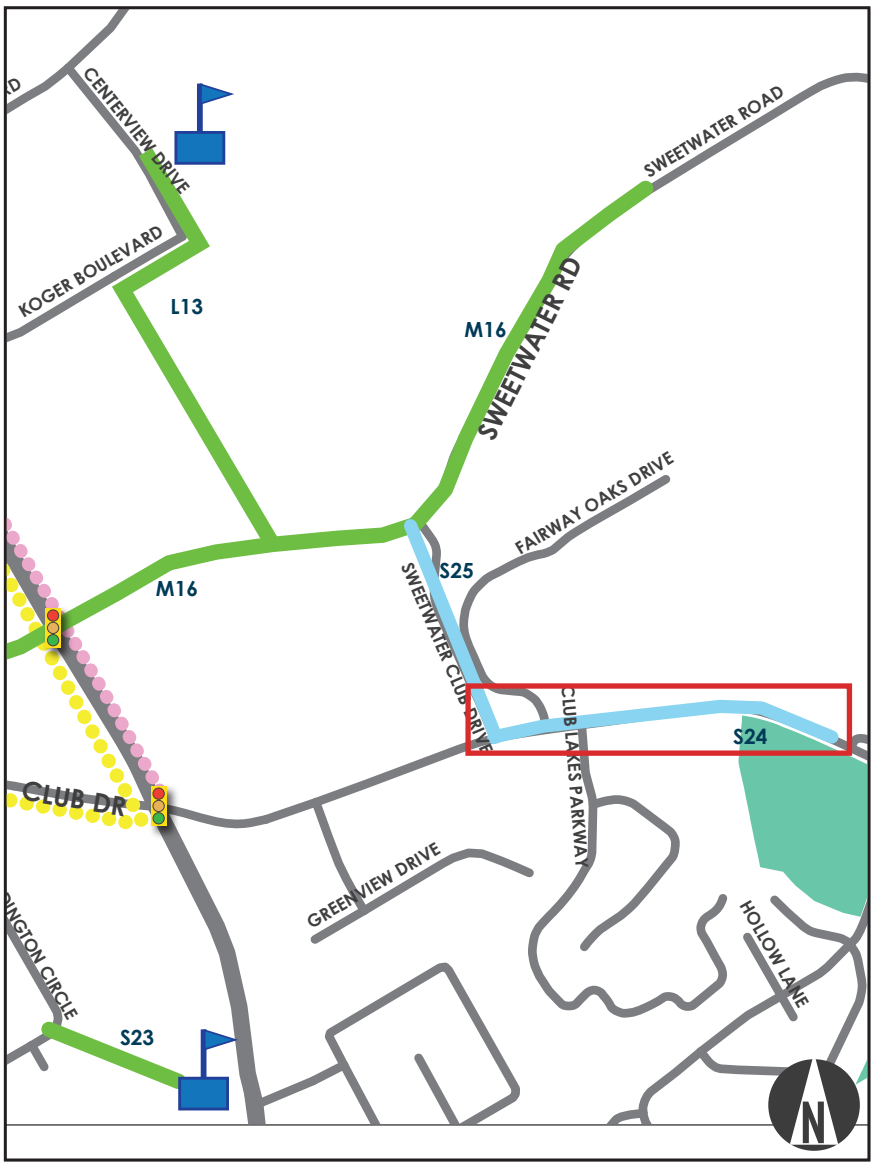
- ☐ Livable Centers Initiative
- ☑ GPCID Traffic Studies
- ☐ Gwinnett County CTP
- ☐ ACTivate Gwinnett

LCI Project Ref.

n/a

Implementation

Short-term



Selected Project

Modified Project

Goals Addressed by Improvement:

- ☑ Sidewalk/Bike Connections to Activity Areas
- ☑ Enhance Access to Transit

Project Costs

Engineering Year	Engineering Costs	ROW Year	ROW Costs	Construction Year	Construction Costs	Contingency Costs	Total Project Costs
2017	**$40,300**	**2018**	**$72,500**	**2018**	**$402,500**	**$80,500**	**$595,800**

Sweetwater Club Drive Sidewalk

Ref. No.
S-25

Project Description

Install sidewalk along the west side of Sweetwater Club Drive from Sweetwater Rd to Club Dr. At the intersection of Sweetwater Club Dr at Club Dr, replace striped islands with concrete islands with ADA ramps on the NE and NW corners.

Justification

Provides pedestrian route for travel between Club Drive and Sweetwater Road. Improves pedestrian crossing safety.

Jurisdiction

Gwinnett County

Service Type

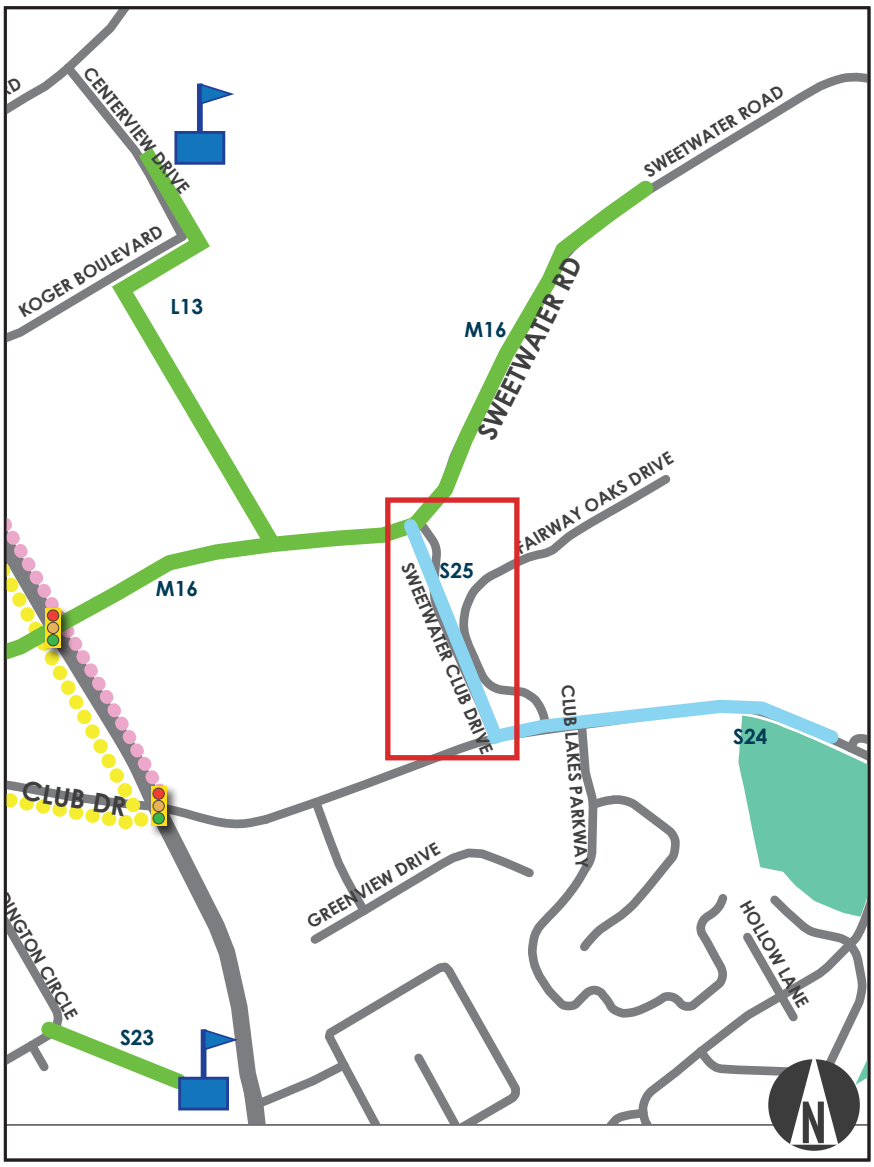
Sidewalk

Project Source

- ☐ Livable Centers Initiative
- ☑ GPCID Traffic Studies
- ☐ Gwinnett County CTP
- ☐ ACTivate Gwinnett

LCI Project Ref. n/a

Implementation Short-term



Goals Addressed by Improvement:

- ☑ Sidewalk/Bike Connections to Activity Areas
- ☑ Enhance Access to Transit

Project Costs

Engineering Year	Engineering Costs	ROW Year	ROW Costs	Construction Year	Construction Costs	Contingency Costs	Total Project Costs
2017	**$12,300**	**2018**	**$35,200**	**2018**	**$123,100**	**$12,300**	**$182,900**

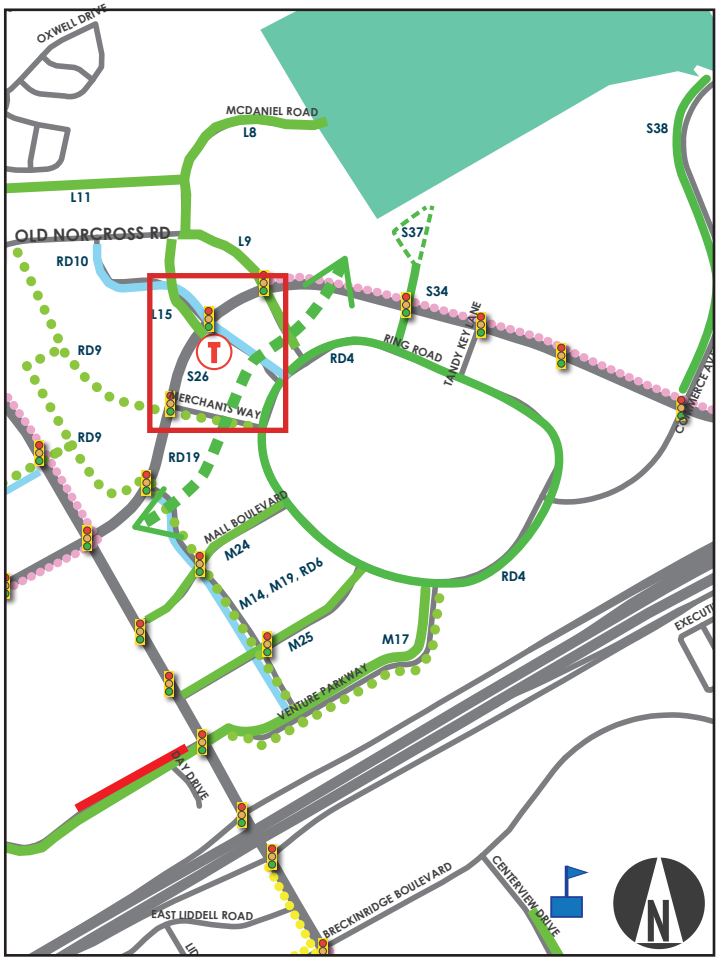
Gwinnett County Transit Gwinnett Place Mall Transit Center Upgrade

Keystone Project

Ref. No.
S-26

Project Description

- Transit Center Design - Upgrade existing transit center design with improved passenger amenities that include an enclosed/ covered waiting area with benches, trash receptacles, bike parking facilities, vending machines, restrooms, and transit kiosk.
- Transit Center Access - Extend the curbs on the south leg of the intersection of Satellite Blvd at Gwinnett Plantation Way to reduce the roadway width to 36 ft. Stripe the south leg with three total lanes, a left-turn lane and a shared through/right-turn lane on the northbound approach and one southbound receiving lane.
- Transit Center Access - Modify access to traffic circulation for the transit center from Gwinnett Plantation Way to move the access point further from Satellite Boulevard.
- Transit Center Access - Create a new taxi stand close to the buses to prevent the need for pedestrians to cross Gwinnett Plantation Way to access taxis or improve the pedestrian crossing to the existing parking lot/informal taxi stand area.



Selected Project

Justification

Provides improved transit center access and circulation. Provides improved transit center amenities and information for riders.

Jurisdiction

Gwinnett County

Service Type

Transit Center

Project Source

- ☑ Livable Centers Initiative
- ☑ GPCID Traffic Studies
- ☐ Gwinnett County CTP
- ☑ ACTivate Gwinnett

LCI Project Ref. T-1/O-3

Implementation Short-term

Goals Addressed by Improvement:

- ☑ Serves Growth in Travel Demand
- ☑ Sidewalk/Bike Connections to Activity Areas
- ☑ Enhance Access to Transit

Project Costs

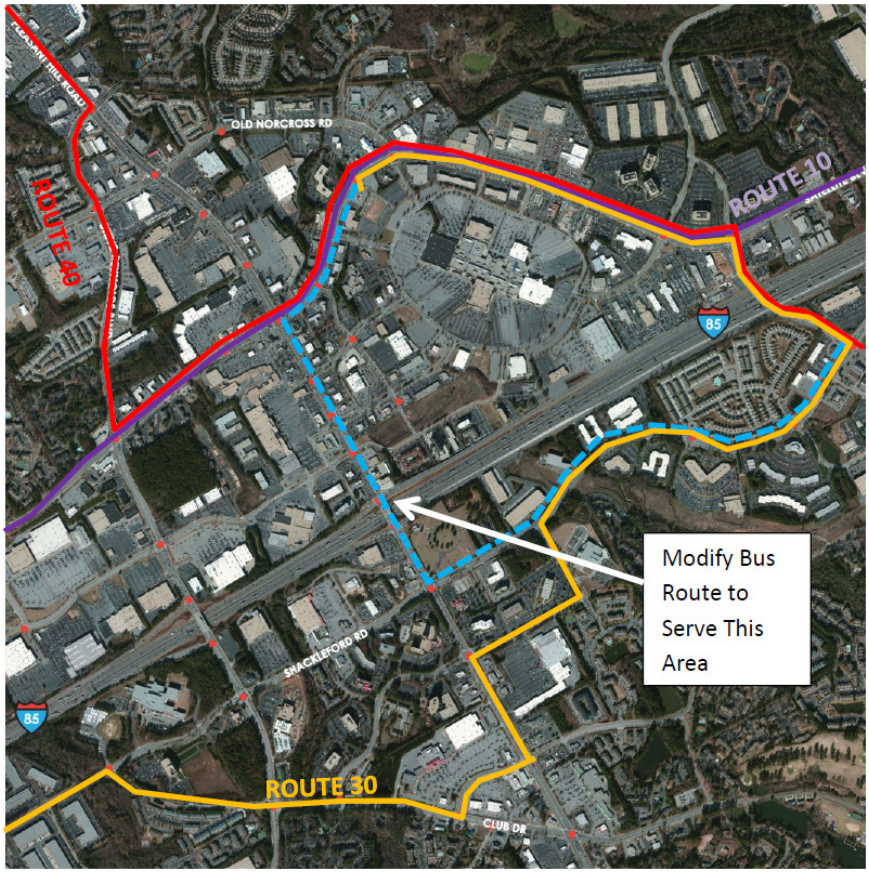
Engineering Year	Engineering Costs	ROW Year	ROW Costs	Construction Year	Construction Costs	Contingency Costs	Total Project Costs
2017	**$89,000**	**2018**	**$150,000**	**2018**	**$651,000**	**$130,200**	**$1,020,200**

Gwinnett County Transit Bus Route Modification

Ref. No.
S-27

Project Description

Change Bus Route 10 or 30 to provide transit access to Pleasant Hill Road north of I-85. Utilize Breckinridge Road west from Old Norcross Road to Pleasant Hill Road, then Pleasant Hill Road north to Satellite Boulevard, then east to the transit center. Install four bus shelters along Pleasant Hill Road. Consider increased bus frequency for routes 10 and 40. (cost includes changes to signage and bus shelters only - no transit operational costs.



Selected Project

Justification

Provides improved access to transit for patrons and workers in retail establishments along Pleasant Hill Road.

Jurisdiction

Gwinnett County

Service Type

Transit

Project Source

- ☑ Livable Centers Initiative
- ☑ GPCID Traffic Studies
- ☐ Gwinnett County CTP
- ☐ ACTivate Gwinnett

LCI Project Ref. T-2

Implementation Short-term

Goals Addressed by Improvement:

- ☑ Serves Growth in Travel Demand
- ☑ Enhance Access to Transit

Project Costs

Engineering Year	Engineering Costs	ROW Year	ROW Costs	Construction Year	Construction Costs	Contingency Costs	Total Project Costs
2020	**$10,400**	**NA**	**$0**	**2020**	**$51,800**	**$5,200**	**$67,400**

Pedestrian Crossing Safety Modifications Along Breckinridge Boulevard

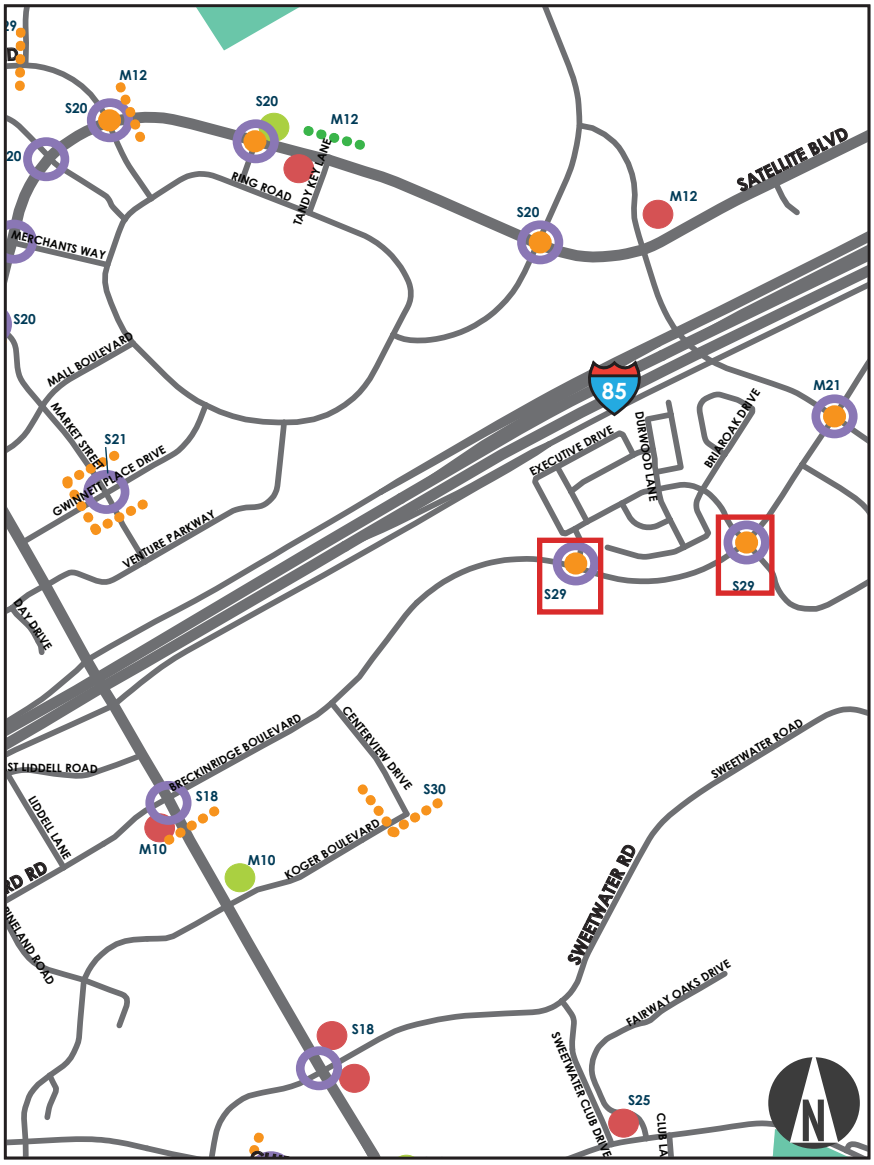
Ref. No.
S-29

Project Description

- Executive Drive (East) - Move crosswalks and pedestrian signals to existing concrete islands; expand island in northeast corner as necessary; upgrade pedestrian signals to countdown timers
- Executive Drive (West) - Expand concrete islands, move crosswalks and pedestrian signals to notheast and southeast islands, straighten western segment of southern crosswalk; upgrade pedestrian signals to countdown timers

Justification

Improves pedestrian crossing safety along Breckingridge Boulevard.



Selected Project

New Project

Jurisdiction

Gwinnett County

Service Type

Pedestrian

Project Source

- ☑ Livable Centers Initiative
- ☑ GPCID Traffic Studies
- ☐ Gwinnett County CTP
- ☐ ACTivate Gwinnett

LCI Project Ref. n/a

Implementation Short-term

Goals Addressed by Improvement:

- ☑ Improve Pedestrian Crossing Safety
- ☑ Sidewalk/Bike Connections to Activity Areas

Project Costs

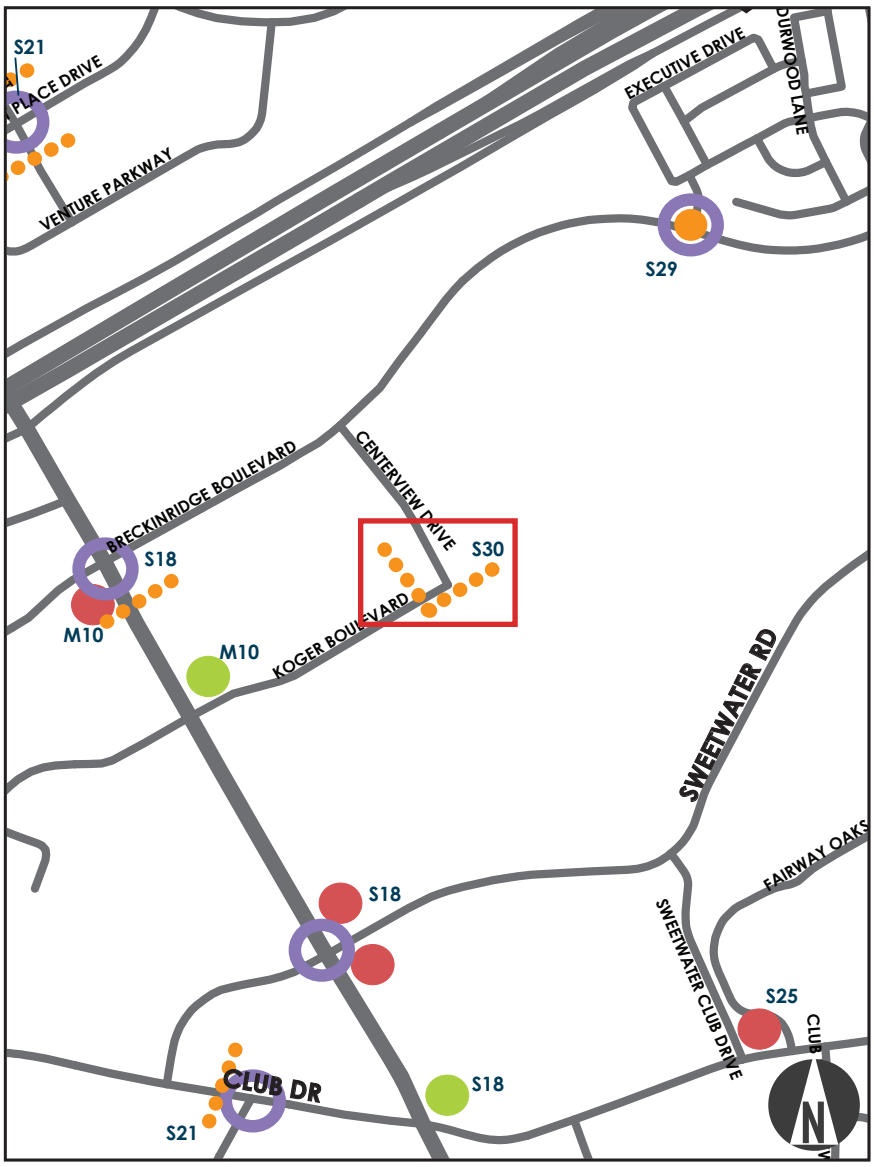
Engineering Year	Engineering Costs	ROW Year	ROW Costs	Construction Year	Construction Costs	Contingency Costs	Total Project Costs
2017	**$7,600**	**NA**	**$0**	**2018**	**$37,900**	**$7,600**	**$53,100**

Pedestrian Crossing Safety Modifications At Koger Boulevard and Centerview Drive

Ref. No.
S-30

Project Description

Add crosswalk to the southern and western legs of the intersection of Koger Boulevard and Centerview Drive.



Selected Project

New Project

Justification

Improves pedestrian crossing safety.

Jurisdiction

Gwinnett County

Service Type

Pedestrian

Project Source

- ☐ Livable Centers Initiative
- ☑ GPCID Traffic Studies
- ☐ Gwinnett County CTP
- ☐ ACTivate Gwinnett

LCI Project Ref. n/a

Implementation Short-term

Goals Addressed by Improvement:

- ☑ Improve Pedestrian Crossing Safety
- ☑ Sidewalk/Bike Connections to Activity Areas

Project Costs

Engineering Year	Engineering Costs	ROW Year	ROW Costs	Construction Year	Construction Costs	Contingency Costs	Total Project Costs
2017	**$1,000**	**NA**	**$0**	**2018**	**$3,800**	**$1,000**	**$5,800**

Steve Reynolds Boulevard Sidewalk

Ref. No.
S-31

Project Description

Install 5' sidewalk along Steve Reynolds Boulevard from Venture Drive to Shackleford Road

Justification

Improves pedestrian connectivity over I-85, and increases pedestrian access to Radloff Middle School.

Jurisdiction

Gwinnett County

Service Type

Sidewalk

Project Source

- ☐ Livable Centers Initiative
- ☑ GPCID Traffic Studies
- ☐ Gwinnett County CTP
- ☐ ACTivate Gwinnett

LCI Project Ref. n/a

Implementation Short-term

Goals Addressed by Improvement:

- ☑ Improve Pedestrian Crossing Safety
- ☑ Sidewalk/Bike Connections to Activity Areas

Project Costs

Engineering Year	Engineering Costs	ROW Year	ROW Costs	Construction Year	Construction Costs	Contingency Costs	Total Project Costs
2017	**$33,300**	**2017**	**$33,300**	**2018**	**$166,700**	**$33,300**	**$266,600**

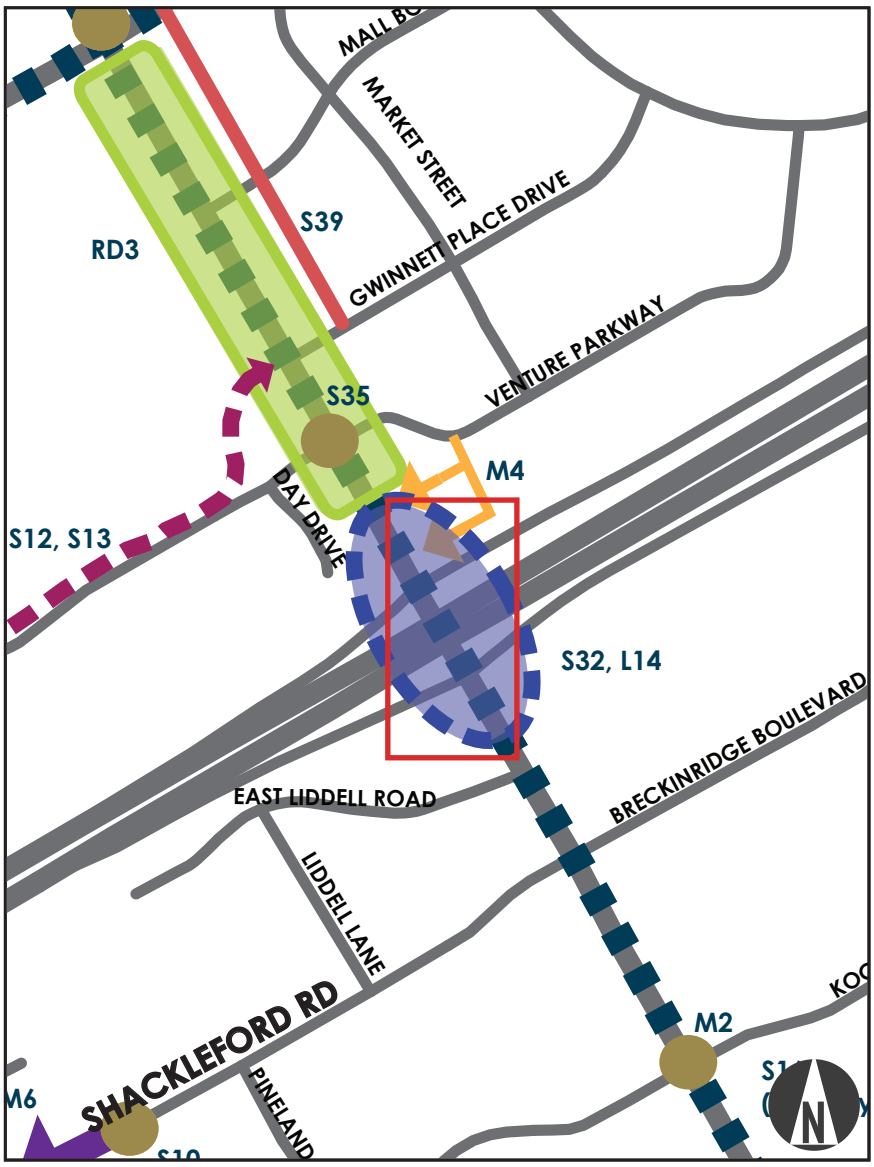
Pleasant Hill Road Interchange Safety Improvements

Keystone Project

Ref. No.
S-32

Project Description

- Widen southeasbound left turn radius and move guardrail back from curb
- Move (or investigate possibility of removing) pedestrian push buttons



Selected Project

New Project

Justification

Provides safety improvements for pedestrians and vehicular travel.

Jurisdiction

Gwinnett County

Service Type

Interchange

Project Source

- ☐ Livable Centers Initiative
- ☑ GPCID Traffic Studies
- ☐ Gwinnett County CTP
- ☐ ACTivate Gwinnett

LCI Project Ref.

n/a

Implementation

Short-term

Goals Addressed by Improvement:

- ☑ Reduce Congestion/Improve Operations
- ☑ Serve Growth in Travel Demand
- ☑ Improve Traffic Safety
- ☑ Improve Pedestrian Crossing Safety

Project Costs

Engineering Year	Engineering Costs	ROW Year	ROW Costs	Construction Year	Construction Costs	Contingency Costs	Total Project Costs
2017	**$21,400**	**NA**	**$0**	**2017**	**$107,200**	**$21,400**	**$150,000**

Streetscape Improvements

Ref. No.
S-34

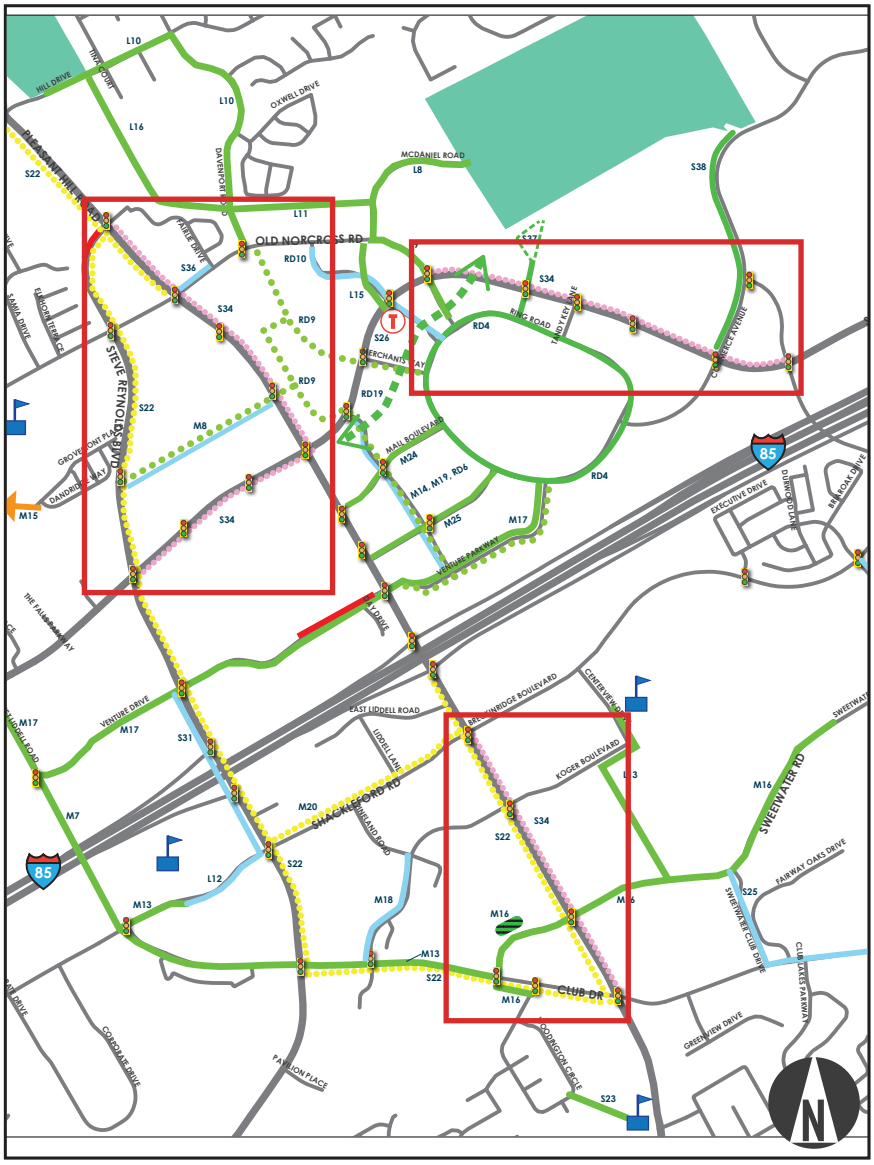
Project Description

Improve sidewalks by widening with brick aesthetic, add addtional plantings. Includes:

- Pleasant Hill Road from Steve Reynolds boulevard to Satellite Boulevard, and from Breckinridge Boulevard/Shackleford Road to Club Drive
- Satellite Boulevard from Steve Reynolds Boulevard to Pleasant Hill Road and Old Norcross Road (West) to Old Norcross Road (East)

Justification

Improves pedestrian conditions in major areas.



Selected Project

New Project

Jurisdiction

Gwinnett County

Service Type

Sidewalk

Project Source

- ☐ Livable Centers Initiative
- ☑ GPCID Traffic Studies
- ☐ Gwinnett County CTP
- ☐ ACTivate Gwinnett

LCI Project Ref. n/a

Implementation Short-term

Goals Addressed by Improvement:

- ☑ Sidewalk/Bike Connections to Activity Areas
- ☑ Enhance Access to Transit

Project Costs

Engineering Year	Engineering Costs	ROW Year	ROW Costs	Construction Year	Construction Costs	Contingency Costs	Total Project Costs
NA	**$0**	**NA**	**$0**	**2020**	**$5,374,700**	**$537,500**	**$6,449,700**

Pleasant Hill Road at Venture Drive/Venture Parkway - Safety Improvements

Ref. No.
S-35

Project Description

- Change signal phasing to remove northbound left permissive phase
- Add shared protected northbound left and eastbound right turn phase
- Add pedestrian crossing to north leg and add crossing phase

Justification

Provides safety for both motorists and pedestrians

Jurisdiction

Gwinnett County

Service Type

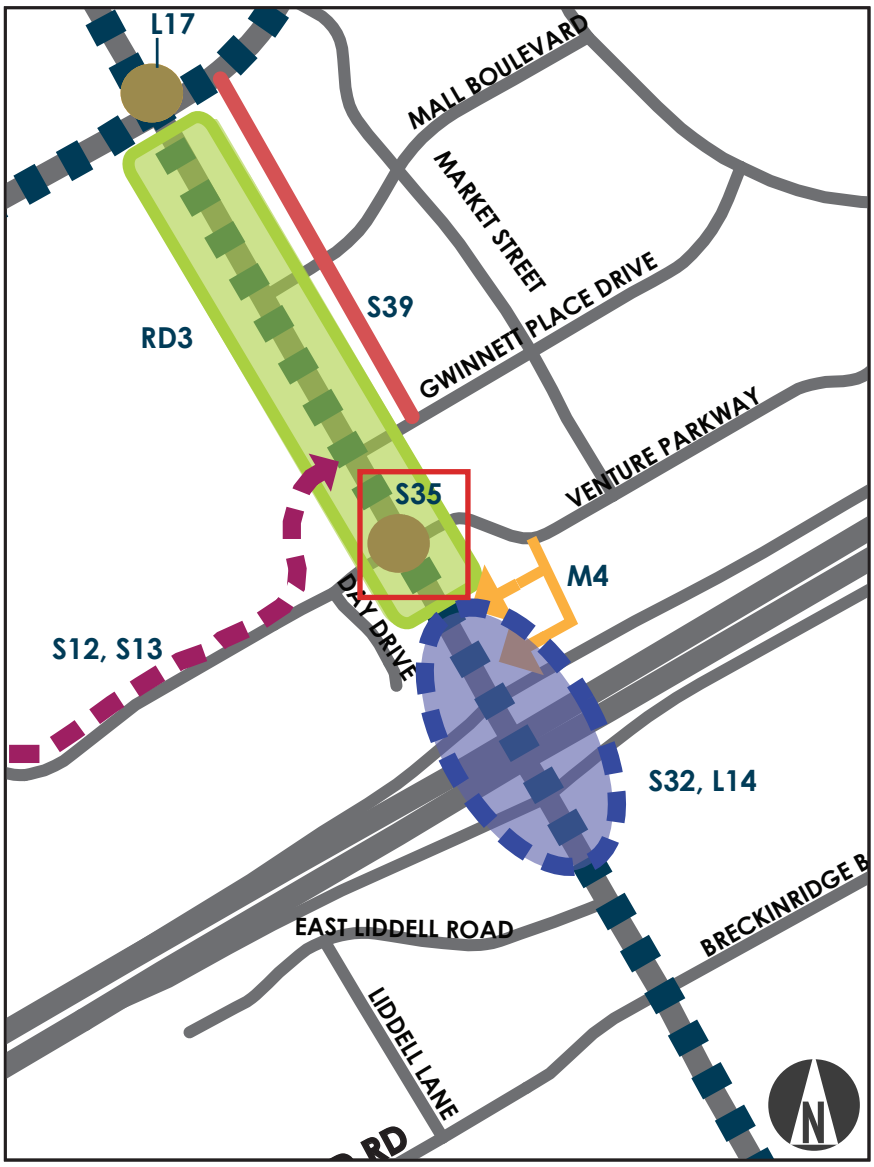
Intersection

Project Source

- ☐ Livable Centers Initiative
- ☑ GPCID Traffic Studies
- ☐ Gwinnett County CTP
- ☐ ACTivate Gwinnett

LCI Project Ref. n/a

Implementation Short-term



Goals Addressed by Improvement:

- ☑ Improve Traffic Safety
- ☑ Improve Pedestrian Crossing Safety

Project Costs

Engineering Year	Engineering Costs	ROW Year	ROW Costs	Construction Year	Construction Costs	Contingency Costs	Total Project Costs
2017	**$10,000**	**NA**	**$0**	**2017**	**$50,000**	**$10,000**	**$70,000**

Old Norcross Road Sidewalk

Ref. No.
S-36

Project Description

Install 5' sidewalk along north side of Old Norcross Raod from Pleasant Hill road to existing sidewalk at Farlie Drive

Justification

Fixes small sidewalk gap, linking long stretches of

Jurisdiction

Gwinnett County

Service Type

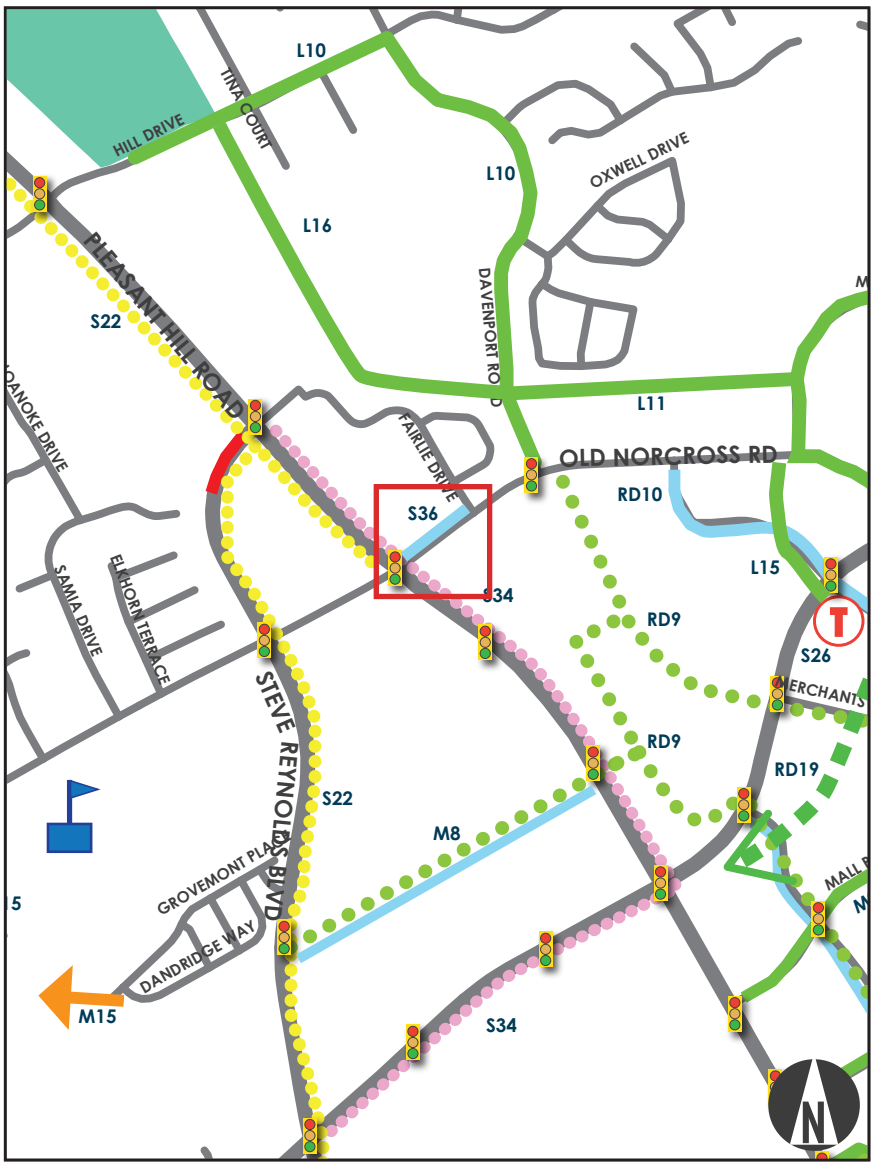
Sidewalk

Project Source

- ☐ Livable Centers Initiative
- ☑ GPCID Traffic Studies
- ☐ Gwinnett County CTP
- ☐ ACTivate Gwinnett

LCI Project Ref. n/a

Implementation Short-term



Selected Project

New Project

Goals Addressed by Improvement:

- ☑ Sidewalk/Bike Connections to Activity Areas

Project Costs

Engineering Year	Engineering Costs	ROW Year	ROW Costs	Construction Year	Construction Costs	Contingency Costs	Total Project Costs
2017	**$3,400**	**2017**	**$3,400**	**2017**	**$17,000**	**$3,400**	**$27,200**

Grade-Separated McDaniel Farm Connection

Keystone Project

Ref. No.
S-37

Project Description

Construct trail connecting southern side of Satellite Bouelvard to McDaniel Farm Park with grade separation at Satelite Boulevard

Justification

Provides safe, direct connection between mall and McDaniel Farm Park.

Jurisdiction

Gwinnett County

Service Type

Multi-Use Path

Project Source

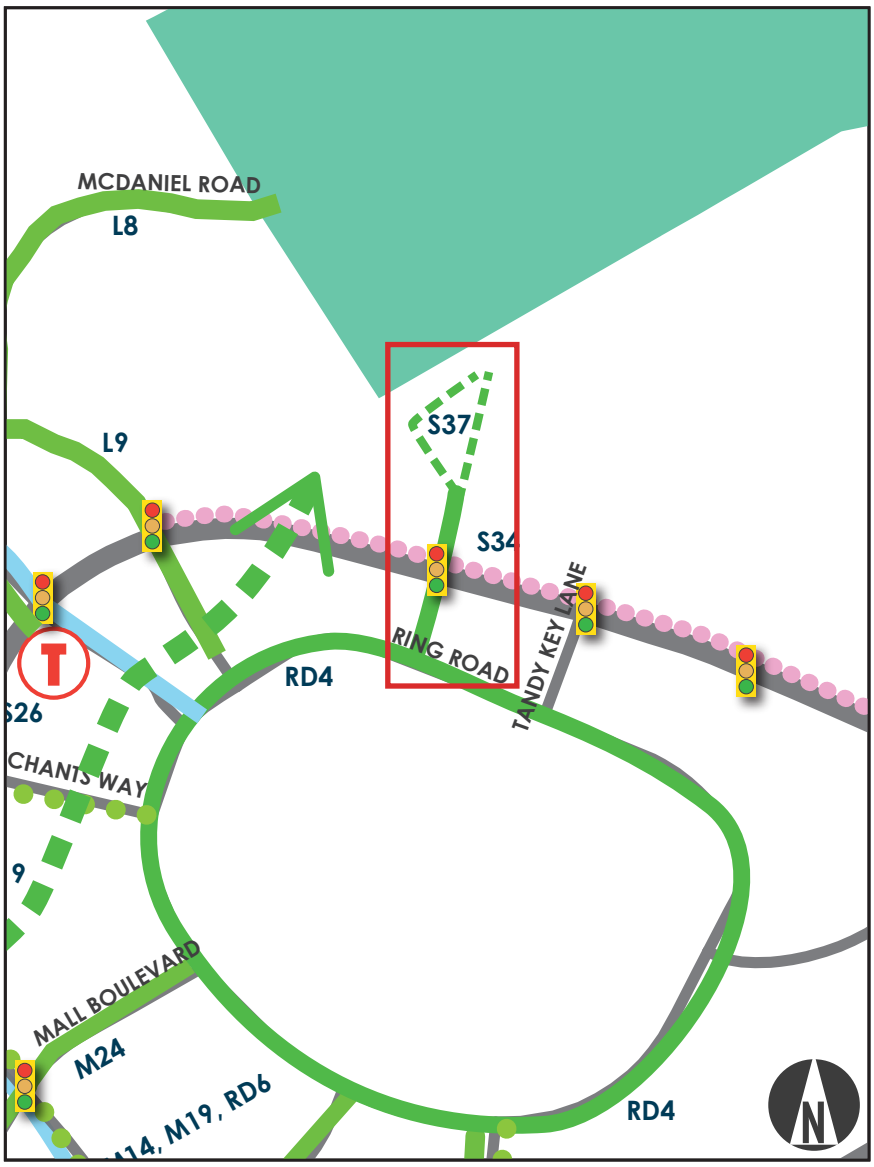
- ☐ Livable Centers Initiative
- ☑ GPCID Traffic Studies
- ☐ Gwinnett County CTP
- ☑ ACTivate Gwinnett

LCI Project Ref.

n/a

Implementation

Short-term



Selected Project

New Project

Goals Addressed by Improvement:

- ☑ Increase System Connectivity
- ☑ Improve Pedestrian Crossing Safety
- ☑ Sidewalk/Bike Connections to Activity Areas

Project Costs

Engineering Year	Engineering Costs	ROW Year	ROW Costs	Construction Year	Construction Costs	Contingency Costs	Total Project Costs
2017	**$57,000-$59,000**	**2018**	**$150,500-$180,870**	**2018**	**$540,000-$560,000**	**$0-$3,000**	**$750,000-$800,000**

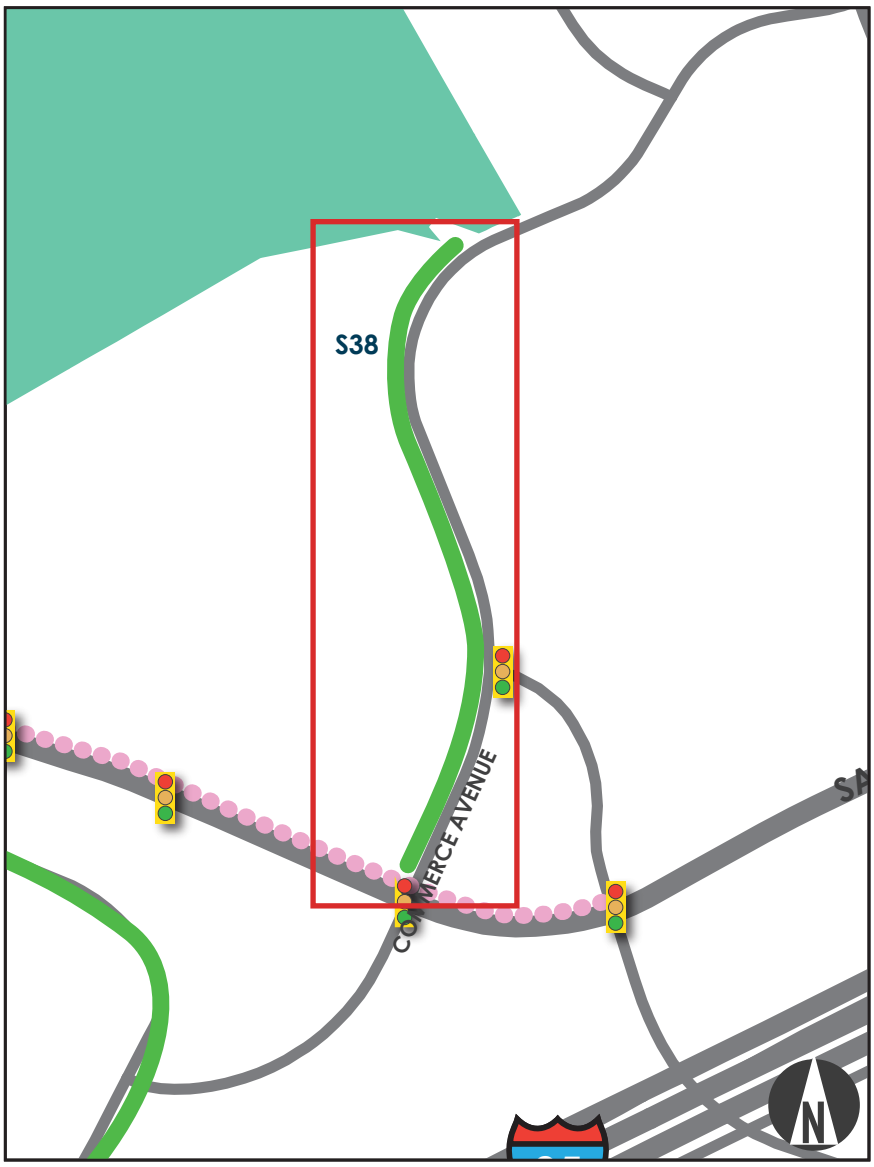
Note: This connection is currently being studied in detail and costs may change.

Commerce Avenue Multi-Use Path

Ref. No.
S-38

Project Description

Add multi-use path on west side of Commerce Avenue from Satellite Boulevard to McDaniel Farm Park access.



Selected Project

New Project

Justification

Provides connection between mall and McDaniel Farm Park.

Jurisdiction

Gwinnett County

Service Type

Multi-Use Path

Project Source

- ☐ Livable Centers Initiative
- ☑ GPCID Traffic Studies
- ☐ Gwinnett County CTP
- ☑ ACTivate Gwinnett

LCI Project Ref.

n/a

Implementation

Short-term

Goals Addressed by Improvement:

- ☑ Sidewalk/Bike Connections to Activity Areas

Project Costs

Engineering Year	Engineering Costs	ROW Year	ROW Costs	Construction Year	Construction Costs	Contingency Costs	Total Project Costs
2017	**$80,000**	**NA**	**$0**	**2020**	**$670,000**	**$134,000**	**$884,000**

Note: This connection is currently being studied in detail and costs may change.

Gwinnett Place Drive - Satellite Boulevard Connector

Ref. No.
S-39

Project Description

Convert existing interparcel access road to full public road including enhancing crossing access at Mall Boulevard, striping, bike, and pedestrian facilities.

Justification

Increases connectivity for all users, with emphasis on cyclists and pedestrians.

Jurisdiction

Gwinnett County

Service Type

Complete Street

Project Source

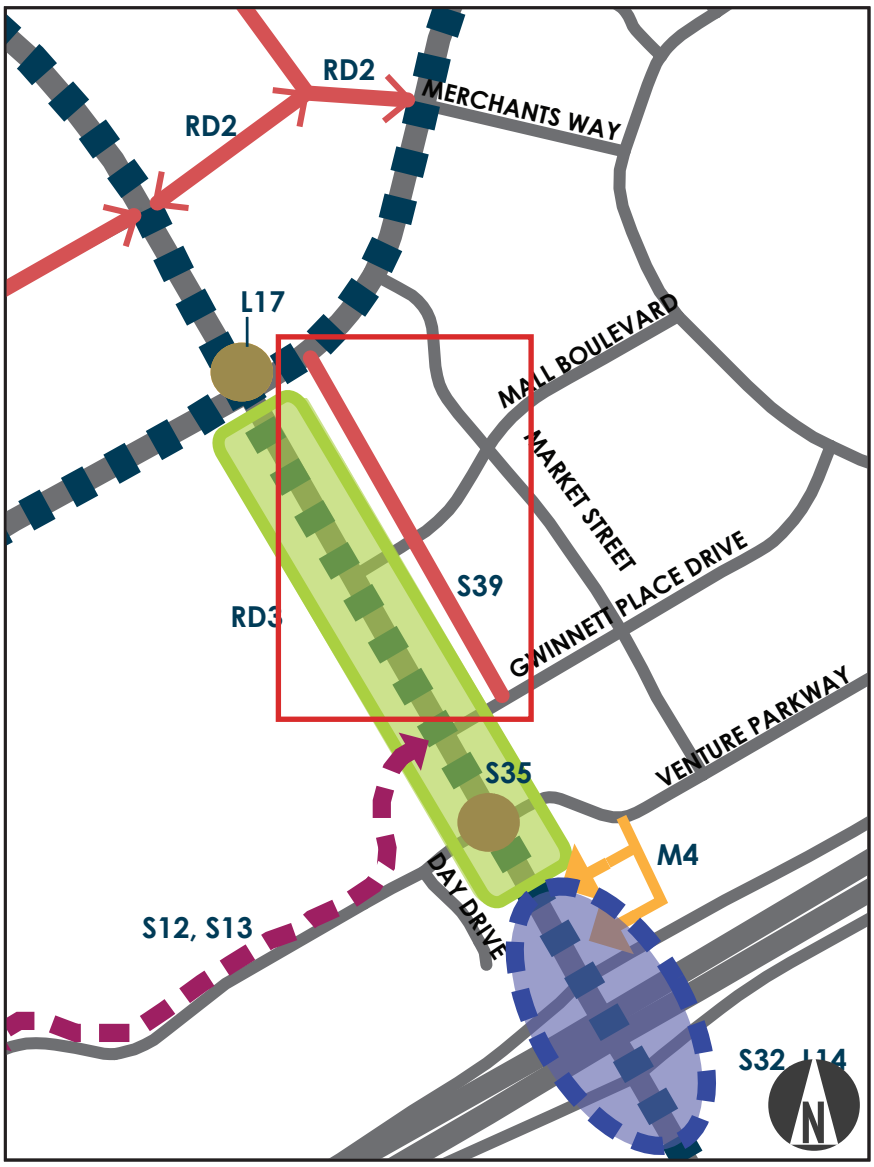
- ☐ Livable Centers Initiative
- ☑ GPCID Traffic Studies
- ☐ Gwinnett County CTP
- ☐ ACTivate Gwinnett

LCI Project Ref.

n/a

Implementation

Short-term



Goals Addressed by Improvement:

- ☑ Reduce Congestion/Improve Operations
- ☑ Increase System Connectivity
- ☑ Serves Growth in Travel Demand
- ☑ Improve Pedestrian Crossing Safety
- ☑ Sikewalk/Bike Connections to Activity Areas

Project Costs

Engineering Year	Engineering Costs	ROW Year	ROW Costs	Construction Year	Construction Costs	Contingency Costs	Total Project Costs
2018	**$667,200**	**2019**	**$344,400**	**2020**	**$2,223,900**	**$444,800**	**$3,680,300**

Note: The cost of converting a private roadways to public ownership and maintenance can vary significantly depending on current conditions and negotiations with current owners.

Pleasant Hill Rd at Crestwood Pkwy/Koger Blvd - Right Turn Lane

Ref. No.
M-2

Project Description

Add a right turn lane on the northbound approach.

Justification

Improves traffic operations at the intersection. Improves pedestrian crossing safety.

Jurisdiction

Gwinnett County

Service Type

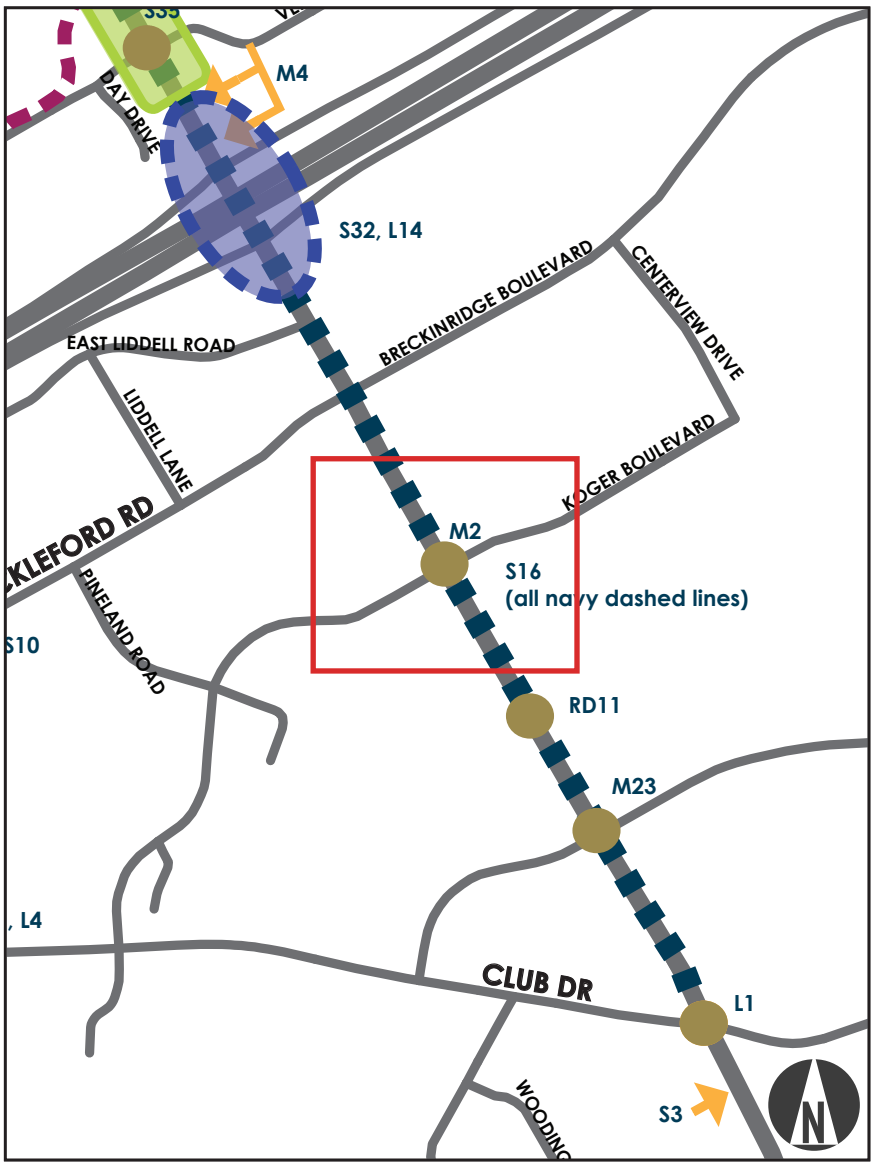
Intersection

Project Source

- ☐ Livable Centers Initiative
- ☑ GPCID Traffic Studies
- ☐ Gwinnett County CTP
- ☐ ACTivate Gwinnett

LCI Project Ref. n/a

Implementation Mid-range



Goals Addressed by Improvement:

- ☑ Serves Growth in Travel Demand

Project Costs

Engineering Year	Engineering Costs	ROW Year	ROW Costs	Construction Year	Construction Costs	Contingency Costs	Total Project Costs
2021-2025	**$9,500**	**2021-2025**	**$7,100**	**2021-2025**	**$47,600**	**$9,500**	**$73,700**

Pleasant Hill Rd at Venture Parkway Access Road

Ref. No.
M-4

Project Description

Construct 2-lane access road from Venture Parkway east of Pleasant Hill Road extending south towards I-85. This access road will provide backside access to parcels adjacent to Pleasant Hill Road.

Justification

Improves access to properties adjacent to I-85 interchange.

Jurisdiction

Gwinnett County

Service Type

Access Management

Project Source

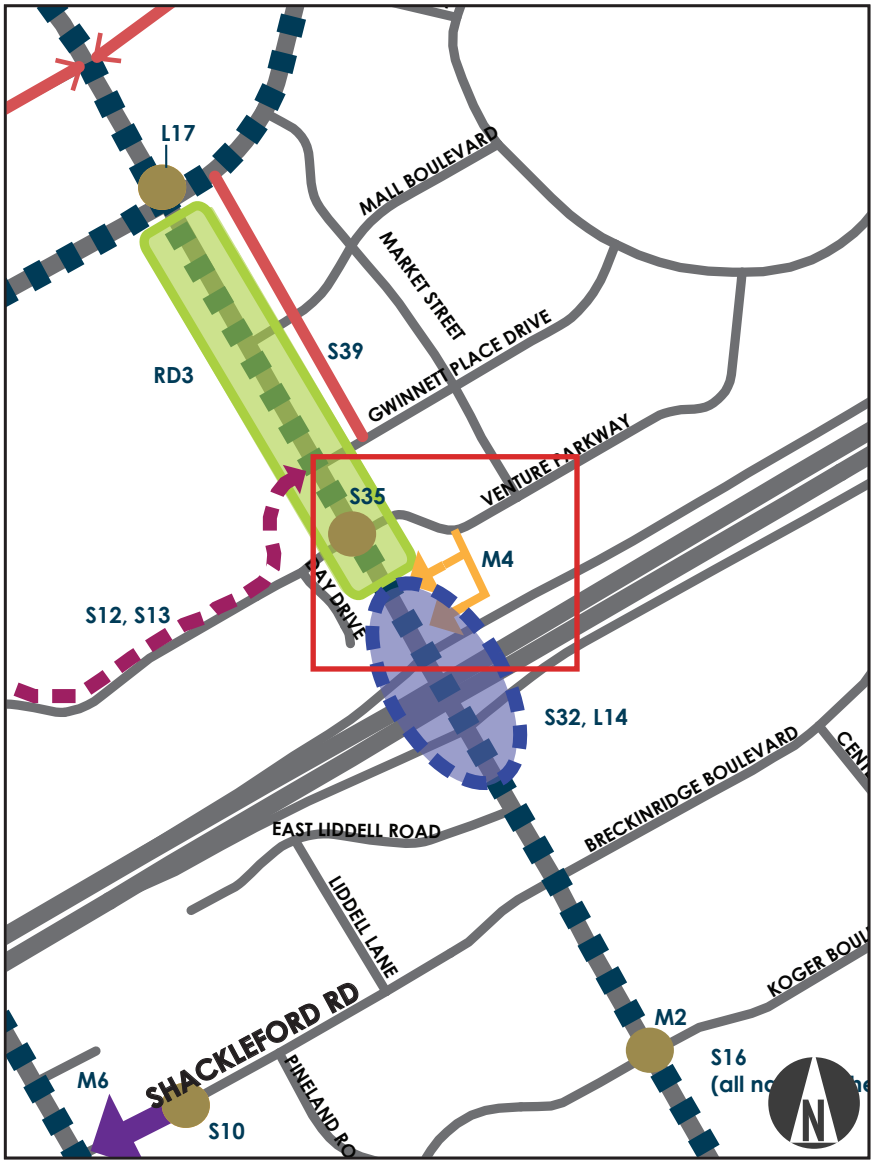
- ☐ Livable Centers Initiative
- ☑ GPCID Traffic Studies
- ☐ Gwinnett County CTP
- ☐ ACTivate Gwinnett

LCI Project Ref.

n/a

Implementation

Mid-range



Goals Addressed by Improvement:

- ☑ Reduce Congestion/Improve Operations
- ☑ Increase System Connectivity

Project Costs

Engineering Year	Engineering Costs	ROW Year	ROW Costs	Construction Year	Construction Costs	Contingency Costs	Total Project Costs
2021-2025	**$144,900**	**2021-2025**	**$108,700**	**2021-2025**	**$724,500**	**$144,900**	**$1,123,000**

Venture Dr at Steve Reynolds Blvd - Dual Left Turns

Ref. No.
M-5

Project Description

Install NB, SB, and EB dual left turns. Extend NB right turn lane and install SB right turn lane. (PE included in S-7).

Justification

Improves intersection operations at bottleneck location by increasing intersection capacity. Facilitates the increased use of the Steve Reynolds Blvd corridor as an alternative to Pleasant Hill Road.

Jurisdiction

Gwinnett County

Service Type

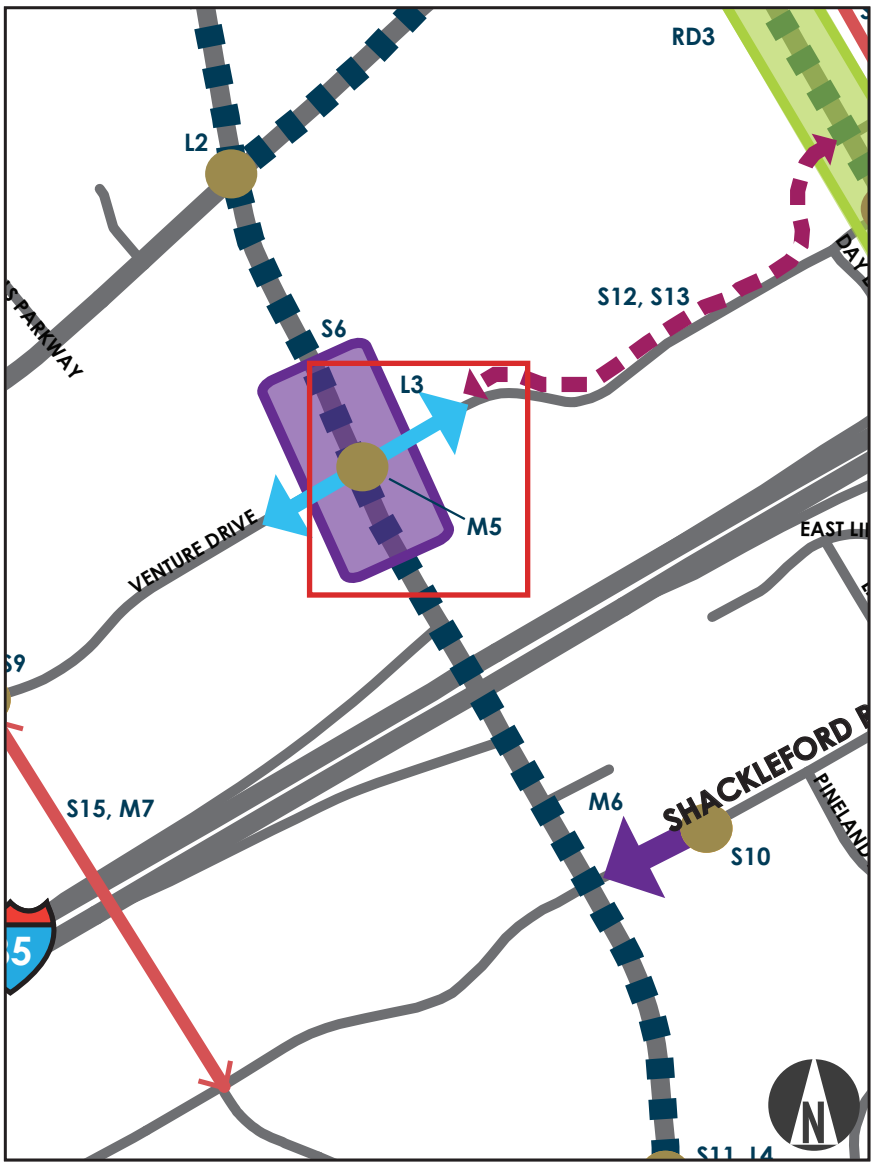
Intersection

Project Source

- ☑ Livable Centers Initiative
- ☑ GPCID Traffic Studies
- ☐ Gwinnett County CTP
- ☐ ACTivate Gwinnett

LCI Project Ref. O-4

Implementation Short- to mid-term



Goals Addressed by Improvement:

- ☑ Reduce Congestion/Improve Operations
- ☑ Serves Growth in Travel Demand
- ☑ Increase Utilization of Steve Reynolds
- ☑ Improve Traffic Safety
- ☑ Improve Pedestrian Crossing Safety
- ☑

Project Costs

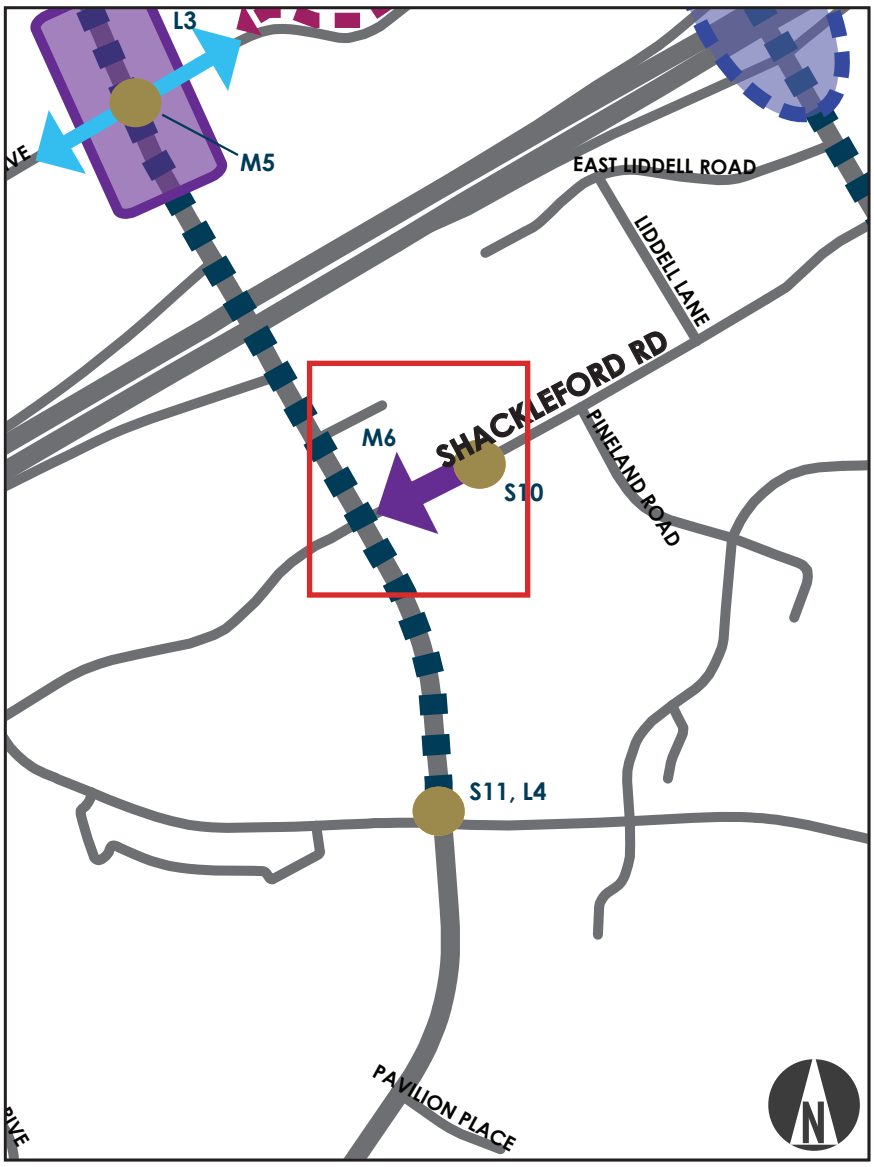
Engineering Year	Engineering Costs	ROW Year	ROW Costs	Construction Year	Construction Costs	Contingency Costs	Total Project Costs
NA	**$0**	**2021-2025**	**$55,400**	**2021-2025**	**$308,000**	**$61,600**	**$425,000**

Steve Reynolds Boulevard at Shackleford Road Intersection Improvement

Ref. No.
M-6

Project Description

Extend westbound right turn lane. Replace striped island with concrete island with ADA ramps and pedestrian crossing indications on NE corner



Selected Project

Justification

Improves traffic operations at the intersection. Improves pedestrian crossing safety.

Jurisdiction

Gwinnett County

Service Type

Intersection

Project Source

- ☐ Livable Centers Initiative
- ☑ GPCID Traffic Studies
- ☐ Gwinnett County CTP
- ☐ ACTivate Gwinnett

LCI Project Ref. n/a

Implementation Mid-range

Goals Addressed by Improvement:

- ☑ Reduce Congestion/Improve Operations

Project Costs

Engineering Year	Engineering Costs	ROW Year	ROW Costs	Construction Year	Construction Costs	Contingency Costs	Total Project Costs
2021-2025	**$24,400**	**2021-2025**	**$18,300**	**2021-2025**	**$122,000**	**$24,400**	**$189,100**

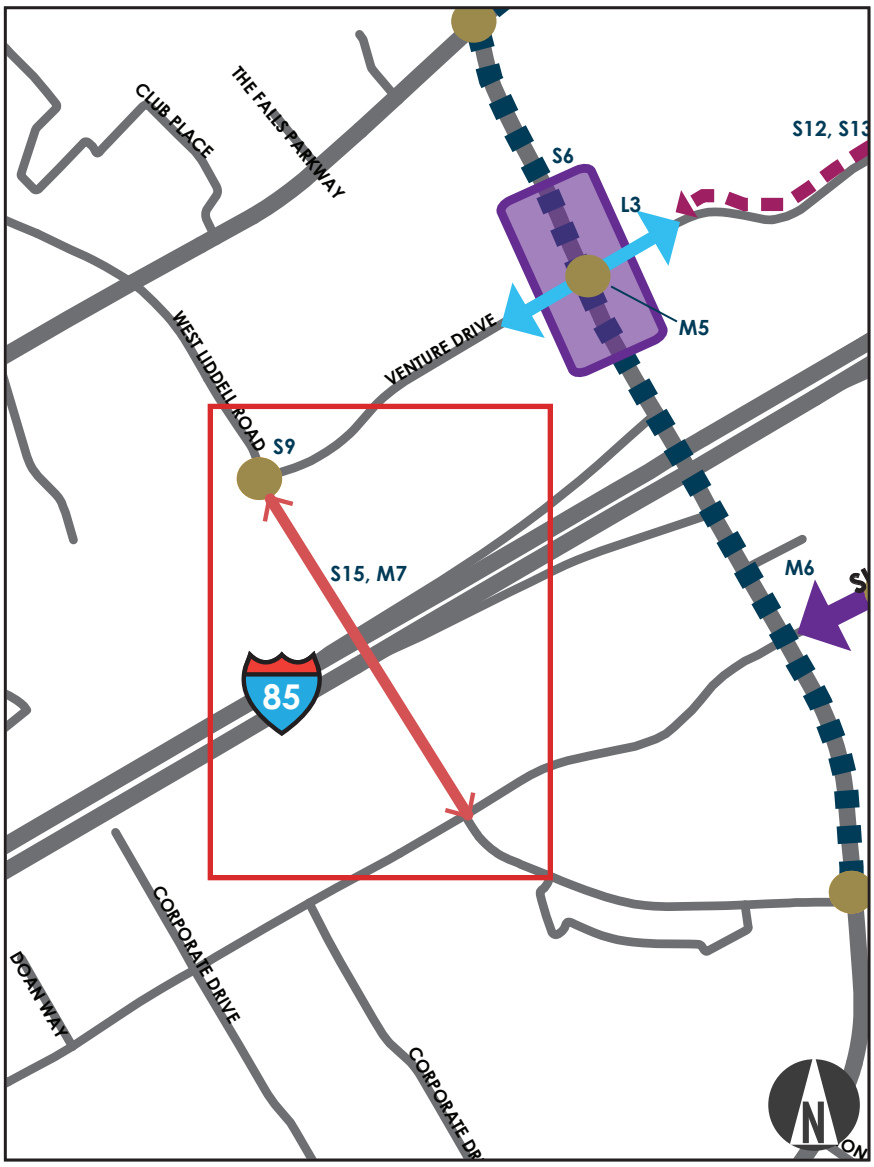
West Liddell Rd to Club Dr Connector

Keystone Project

Ref. No.
M-7

Project Description

New 4-lane roadway with 10' Multi-use path on one side and 5' sidewalk on the other side from Club Dr to Venture Drive including and overpass at I-85. (PE costs included in S-15)



Selected Project

Justification

Provides regional roadway connection across I-85 to reduce traffic on Steve Reynolds Boulevard and Pleasant Hill Road to accommodate current traffic and future growth. Provides pedestrian and bicycle connections across I-85.

Jurisdiction

Gwinnett County

Service Type

Major Roadway

Project Source

- ☑ Livable Centers Initiative
- ☑ GPCID Traffic Studies
- ☐ Gwinnett County CTP
- ☐ ACTivate Gwinnett

LCI Project Ref.

R-9

Implementation

Short- to mid-term

Goals Addressed by Improvement:

- ☑ Reduce Congestion/Improve Operations
- ☑ Increase System Connectivity
- ☑ Serves Growth in Travel Demand

Project Costs

Engineering Year	Engineering Costs	ROW Year	ROW Costs	Construction Year	Construction Costs	Contingency Costs	Total Project Costs
NA	**$0**	**2021-2022**	**$9,630,900**	**2023-2024**	**$24,077,300**	**$4,815,500**	**$21,579,800**

Chesden Road Improvement

Ref. No.
M-8

Project Description

Upgrade existing interparcel road to meet current roadway standard with proper pavement markings, curb and gutter, sidewalks, and sharrow markings or bike lanes.

Justification

Provides a roadway connection between Pleasant Hill Road and Steve Reynolds Boulevard. Provides pedestrian and bicycle connections between Pleasant Hill Road and Steve Reynolds Boulevard.

Jurisdiction

Gwinnett County

Service Type

Complete Street

Project Source

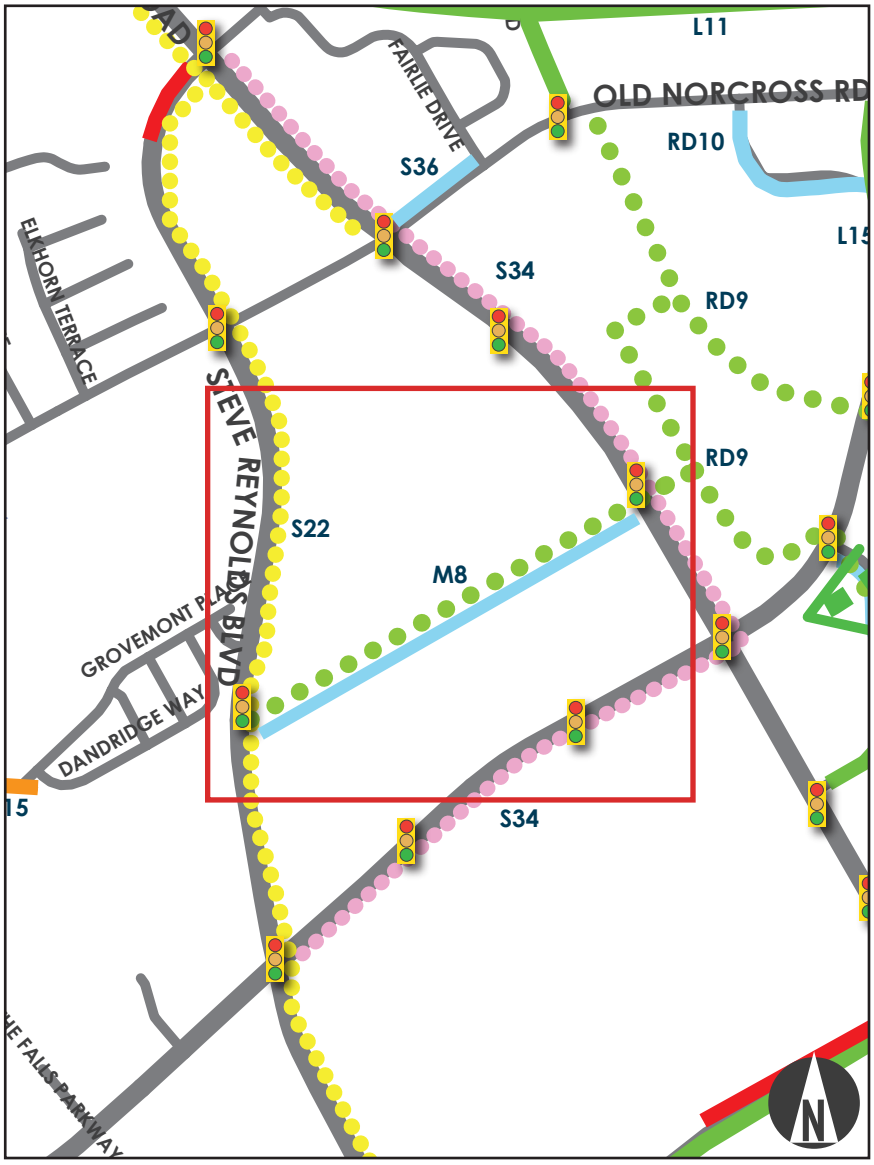
- ☐ Livable Centers Initiative
- ☑ GPCID Traffic Studies
- ☐ Gwinnett County CTP
- ☐ ACTivate Gwinnett

LCI Project Ref.

n/a

Implementation

Mid-range



Selected Project

Goals Addressed by Improvement:

- ☑ Increase System Connectivity
- ☑ Sidewalk/Bike Connections to Activity Areas

Project Costs

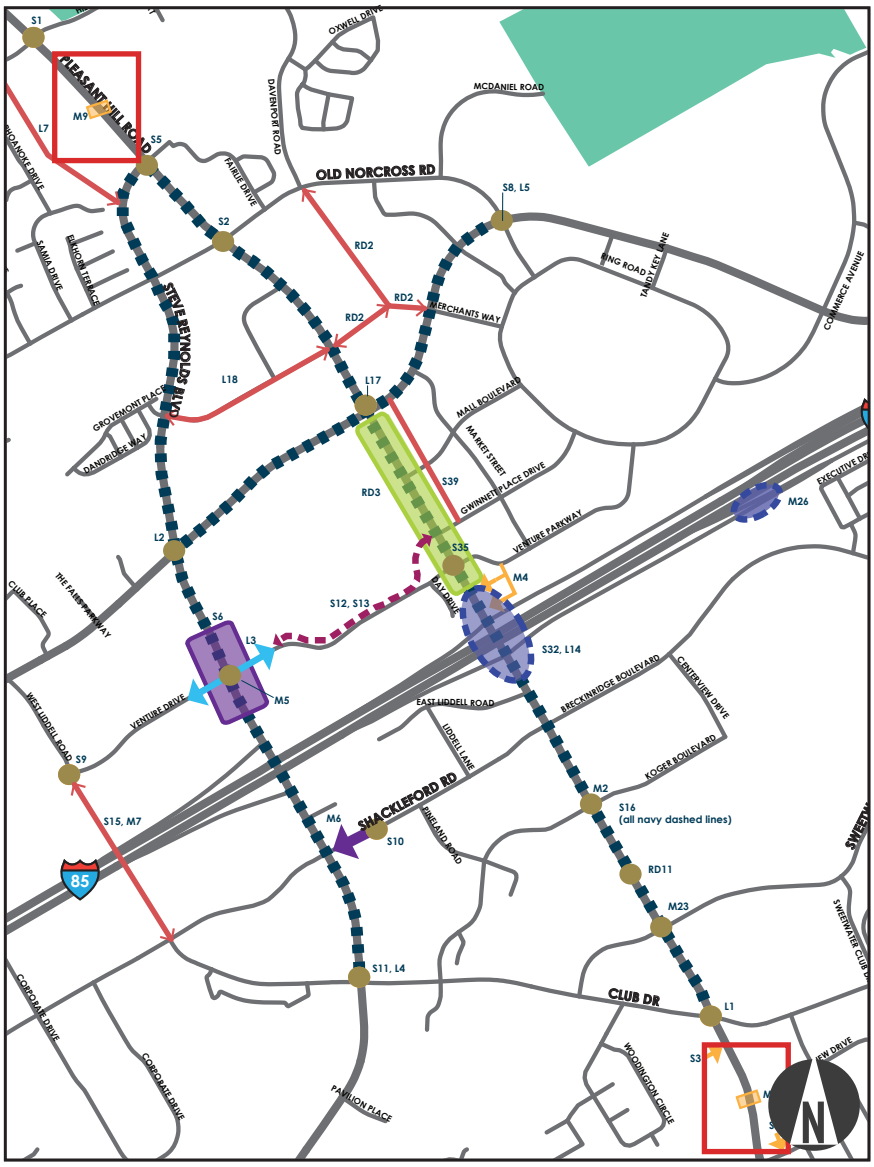
Engineering Year	Engineering Costs	ROW Year	ROW Costs	Construction Year	Construction Costs	Contingency Costs	Total Project Costs
2021-2025	**$56,100**	**2021-2025**	**$42,000**	**2021-2025**	**$208,300**	**$56,100**	**$434,500**

Changeable Message Signs Along Pleasant Hill Road

Ref. No.
M-9

Project Description

Install Changeable Message Signs along Pleasant Hill Rd with travel information for through vehicles - North of Steve Reynolds Blvd for SB traffic and south of Club Drive for NB traffic (4 signs total)



Selected Project

Justification

Provides driver information to address corridor congestion by balancing traffic demand between Pleasant Hill Road and Steve Reynolds Boulevard.

Jurisdiction

Gwinnett County

Service Type

ITS

Project Source

- ☐ Livable Centers Initiative
- ☑ GPCID Traffic Studies
- ☐ Gwinnett County CTP
- ☐ ACTivate Gwinnett

LCI Project Ref. n/a

Implementation Mid-range

Goals Addressed by Improvement:

- ☑ Reduce Congestion/Improve Operations
- ☑ Increase Utilization of Steve Reynolds

Project Costs

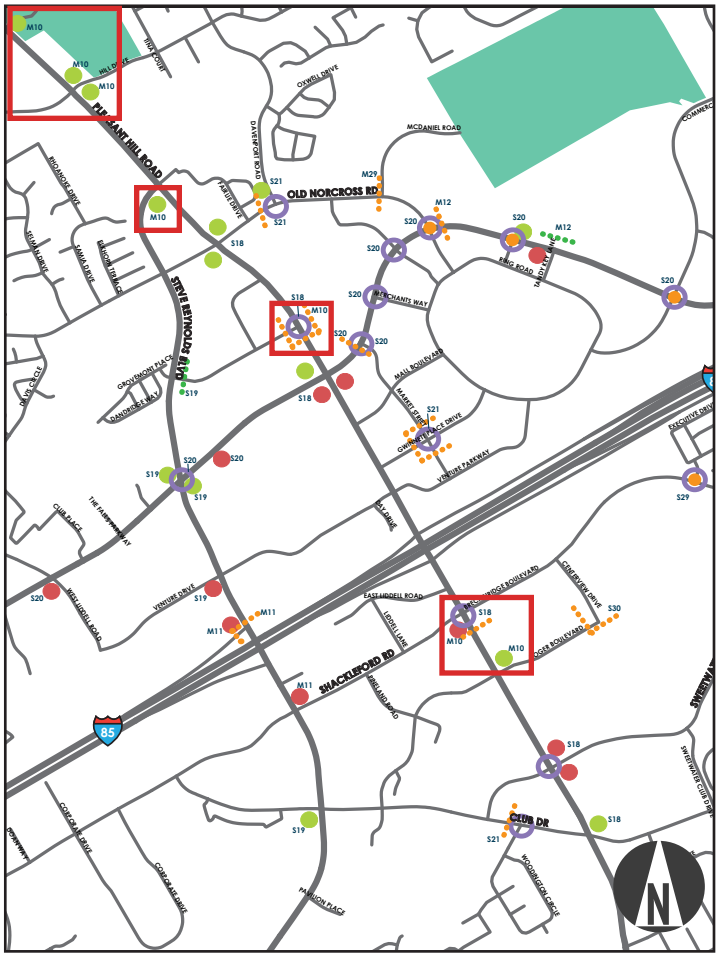
Engineering Year	Engineering Costs	ROW Year	ROW Costs	Construction Year	Construction Costs	Contingency Costs	Total Project Costs
2021-2025	**$33,100**	**2021-2025**	**#33,100**	**2021-2025**	**$331,200**	**$66,200**	**$463,600**

Pedestrian Crossing Safety Modifications Along Pleasant Hill Road

Ref. No.
M-10

Project Description

- Shorty Howell Park - Remove right turn island striping on SE corner and install stop bar.
- North Berkley Lake Rd/Hill Dr - Replace striped island with concrete island with ADA ramps and pedestrian crossing indications on NE corner. Remove striped islands on NE and SE corners and install stop bar at NE corner.
- Steve Reynolds Blvd - Remove right turn island striping on SW corner and install stop bar.
- Gwinnett Station (Commercial Access North of Satellite Blvd) - Install crosswalks with pedestrian crossing indications for east, west, and south sides of the intersection.
- Breckinridge Blvd - Replace striped island with concrete island with ADA ramps and pedestrian crossing indications on SW corner.
- Koger Blvd - Remove right turn island striping on NE corner and modify curbing to reduce right turn radius and increase sidewalk area.



Selected Project

Justification

Improves pedestrian crossing safety along Pleasant Hill Road.

Jurisdiction

Gwinnett County

Service Type

Pedestrian

Project Source

- ☑ Livable Centers Initiative
- ☑ GPCID Traffic Studies
- ☐ Gwinnett County CTP
- ☐ ACTivate Gwinnett

LCI Project Ref. C-6

Implementation Mid-range

Modified Project

Goals Addressed by Improvement:

- ☑ Improve Pedestrian Crossing Safety
- ☑ Sidewalk/Bike Connections to Activity Areas
- ☑ Enhance Access to Transit

Project Costs

Engineering Year	Engineering Costs	ROW Year	ROW Costs	Construction Year	Construction Costs	Contingency Costs	Total Project Costs
2021-2025	**$10,000**	**NA**	**$0**	**2021-2025**	**$49,900**	**$10,000**	**$69,900**

Pedestrian Crossing Safety Modifications Along Steve Reynolds Boulevard

Ref. No.
M-11

Project Description

- I-85 SB - Add crosswalk and pedestrian crossing signal for movements crossing Steve Reynolds Boulevard and add a concrete channelization island in the northwest corner.
- Shackleford Road - Replace northern painted island with concrete island; move croswalks and pedestrian signals to island

Justification

Improves pedestrian crossing safety along Steve Reynolds Boulevard.

Jurisdiction

Gwinnett County

Service Type

Pedestrian

Project Source

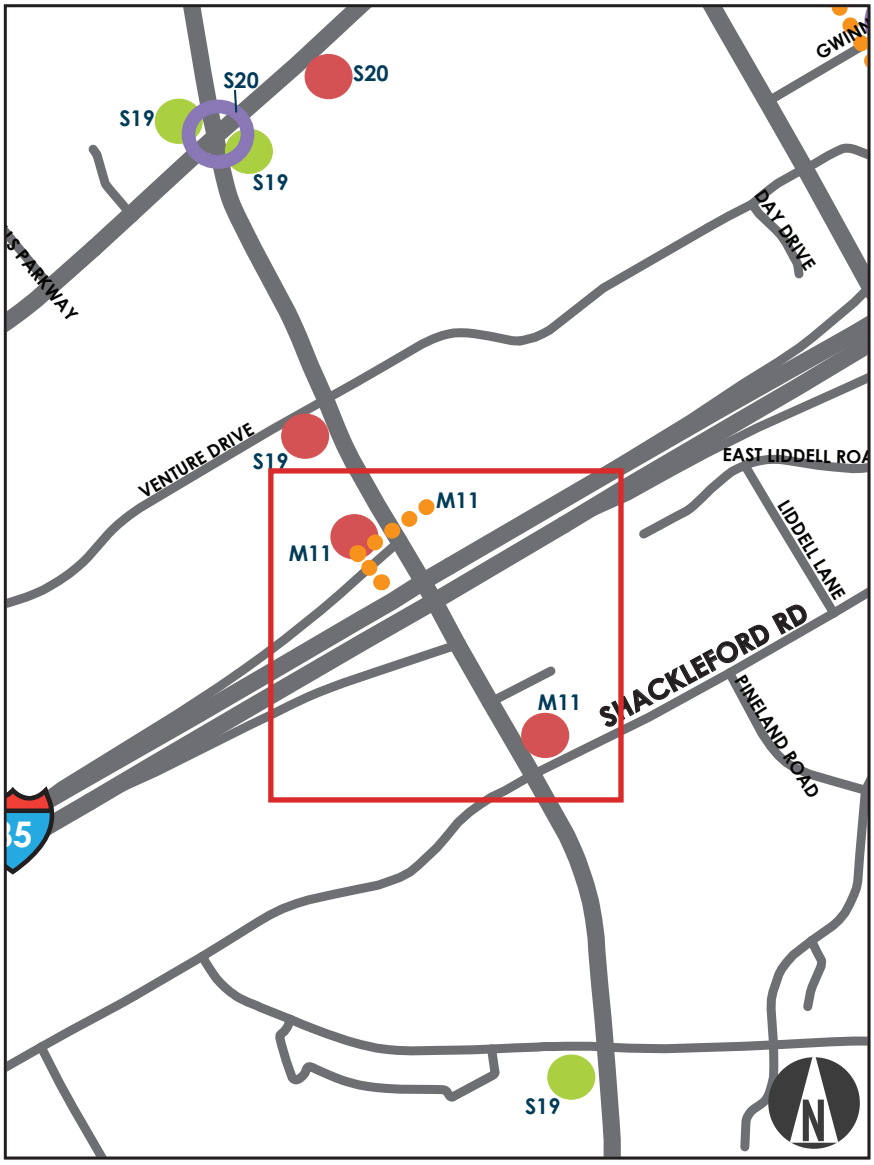
- ☐ Livable Centers Initiative
- ☑ GPCID Traffic Studies
- ☐ Gwinnett County CTP
- ☐ ACTivate Gwinnett

LCI Project Ref.

n/a

Implementation

Mid-range



Selected Project

Modified Project

Goals Addressed by Improvement:

- ☑ Improve Traffic Safety
- ☑ Improve Pedestrian Crossing Safety
- ☑ Sidewalk/Bike Connections to Activity Areas

Project Costs

Engineering Year	Engineering Costs	ROW Year	ROW Costs	Construction Year	Construction Costs	Contingency Costs	Total Project Costs
2021-2025	**$3,500**	**NA**	**$0**	**2021-2025**	**$17,600**	**$3,500**	**$24,600**

Pedestrian Crossing Safety Modifications Along Satellite Boulevard

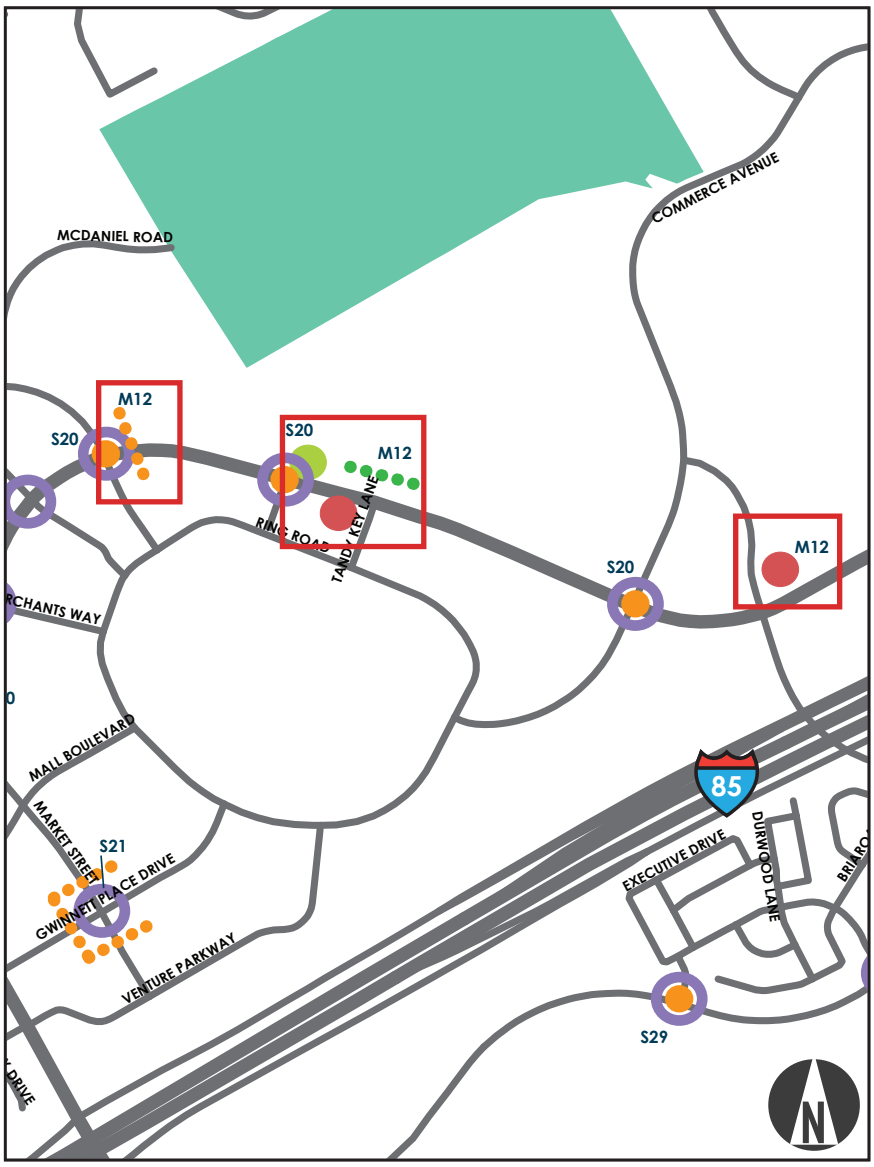
Ref. No.
M-12

Project Description

- Old Norcross Rd (east)- Replace striped island with concrete island with ADA ramps and pedestrian crossing indications on NE corner.
- Tandy Key Ln - Realign crosswalk and install ADA ramps on north side of intersection. Replace striped island with concrete island w/ ADA ramps & pedestrian crossing indications on SW corner.
- Old Norcross Rd (west) - Install crosswalk with pedestrian signal heads on east side of intersection

Justification

Improves pedestrian crossing safety along Satellite Boulevard.



Selected Project

Jurisdiction

Gwinnett County

Service Type

Pedestrian

Project Source

- ☐ Livable Centers Initiative
- ☑ GPCID Traffic Studies
- ☐ Gwinnett County CTP
- ☐ ACTivate Gwinnett

LCI Project Ref. n/a

Implementation Mid-range

Goals Addressed by Improvement:

- ☑ Improve Pedestrian Crossing Safety
- ☑ Sidewalk/Bike Connections to Activity Areas
- ☑ Enhance Access to Transit

Project Costs

Engineering Year	Engineering Costs	ROW Year	ROW Costs	Construction Year	Construction Costs	Contingency Costs	Total Project Costs
2021-2025	**$9,900**	**2021-2025**	**$2,800**	**2021-2025**	**$49,700**	**$9,900**	**$72,300**

Club Drive Sidewalk and Multi-use Path with Connection to Louise Radloff Middle School

Ref. No.
M-13

Project Description

Install 5' sidewalk along north side of Club Drive from Steve Reynolds Blvd to Shackleford Road and install 10' Multi-use path along south side of Club Drive from Shackleford Road to Sweetwater Road. Install a 10' Multi-use path along the north side of Shakleford Road from Club Drive to Louise Radloff Middle School.

Justification

Provides pedestrian and bicycle connection between commercial center and residential areas. Provides pedestrian and bicycle connection between Middle School and residential areas.

Jurisdiction

Gwinnett County

Service Type

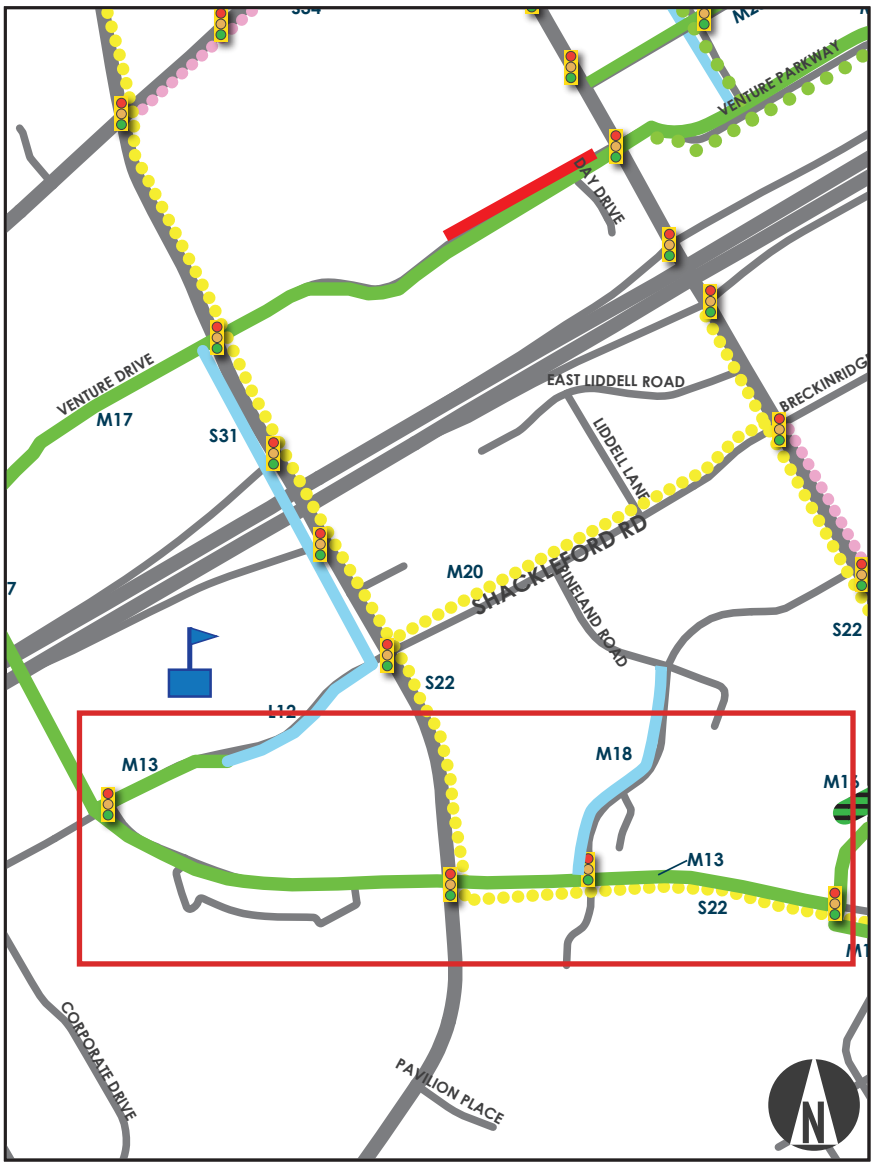
Multi-use Path

Project Source

- ☐ Livable Centers Initiative
- ☑ GPCID Traffic Studies
- ☐ Gwinnett County CTP
- ☐ ACTivate Gwinnett

LCI Project Ref. C-18

Implementation Mid-range



Selected Project

Goals Addressed by Improvement:

- ☑ Sidewalk/Bike Connections to Activity Areas

Project Costs

Engineering Year	Engineering Costs	ROW Year	ROW Costs	Construction Year	Construction Costs	Contingency Costs	Total Project Costs
2021-2025	**$203,000**	**2021-2025**	**$152,300**	**2021-2025**	**$1,015,100**	**$203,000**	**$1,573,400**

Gwinnett Place "Sharrow" Pavement Markings (shared bicycle and automobile use)

Keystone Project

Ref. No.
M-14

Project Description

Implement "sharrow" pavement markings to indicate shared bicycle and automobile use along Market Street from Venture Drive to Satellite Boulevard

Justification

Provides bicycle connection and route around Gwinnett Place Mall.

Jurisdiction

Gwinnett County

Service Type

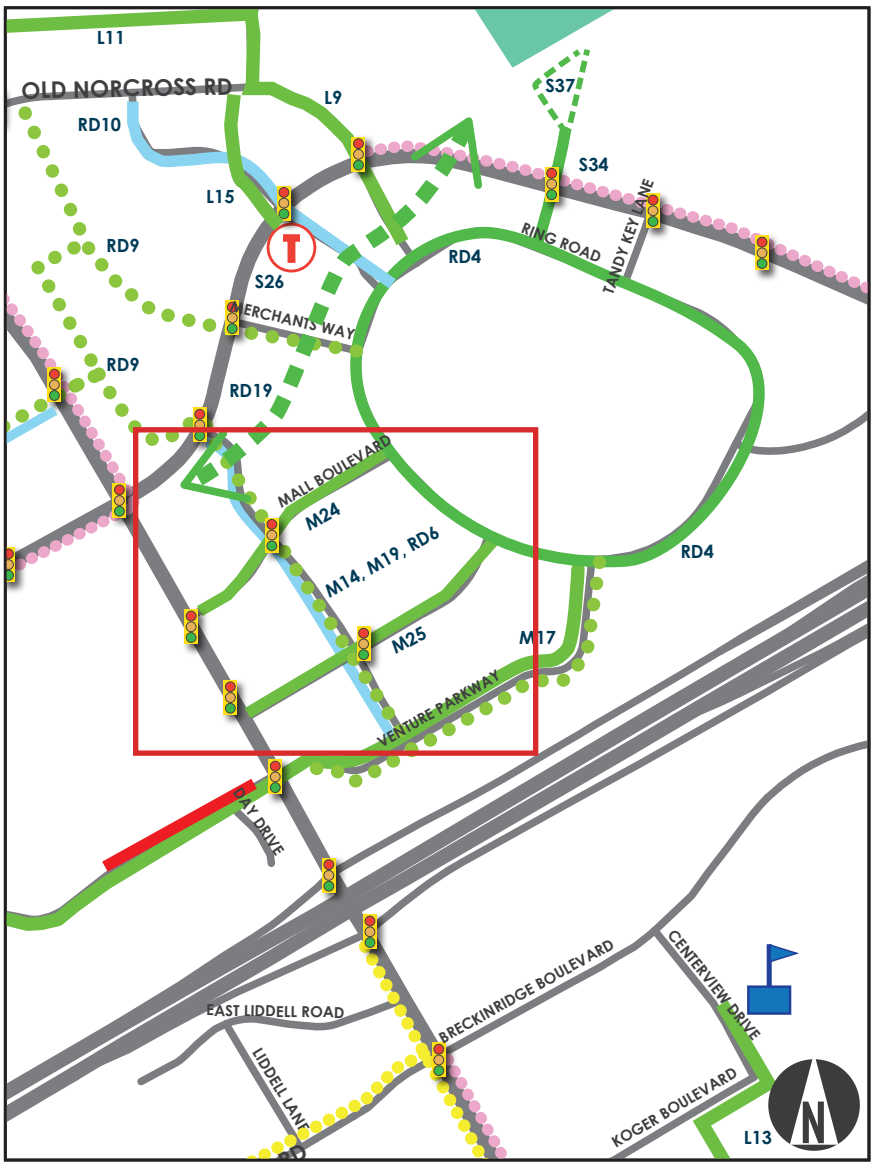
Shared Lane Markings

Project Source

- ☑ Livable Centers Initiative
- ☑ GPCID Traffic Studies
- ☐ Gwinnett County CTP
- ☑ ACTivate Gwinnett

LCI Project Ref. C-1/C-3/C-4

Implementation Mid-range



Selected Project

Modified Project

Goals Addressed by Improvement:

- ☑ Serves Growth in Travel Demand
- ☑ Sidewalk/Bike Connections to Activity Areas

Project Costs

Engineering Year	Engineering Costs	ROW Year	ROW Costs	Construction Year	Construction Costs	Contingency Costs	Total Project Costs
2021-2025	**$1,100**	**NA**	**$0**	**2021-2025**	**$11,200**	**$2,200**	**$14,500**

Davis Circle Multi-use Path Connection to Charles Brant Chesney Elementary School

Ref. No.
M-15

Project Description

Install 10' multi-use path along Davis Circle from west Liddell Road to Old Norcross Road with a connection to Charles Brant Chesney Elementary School. Provide multi-use path connections to Club Place and Falls Parkway.

Justification

Provides pedestrian and bicycle connection between Elementary School and residential areas.

Jurisdiction

Gwinnett County

Service Type

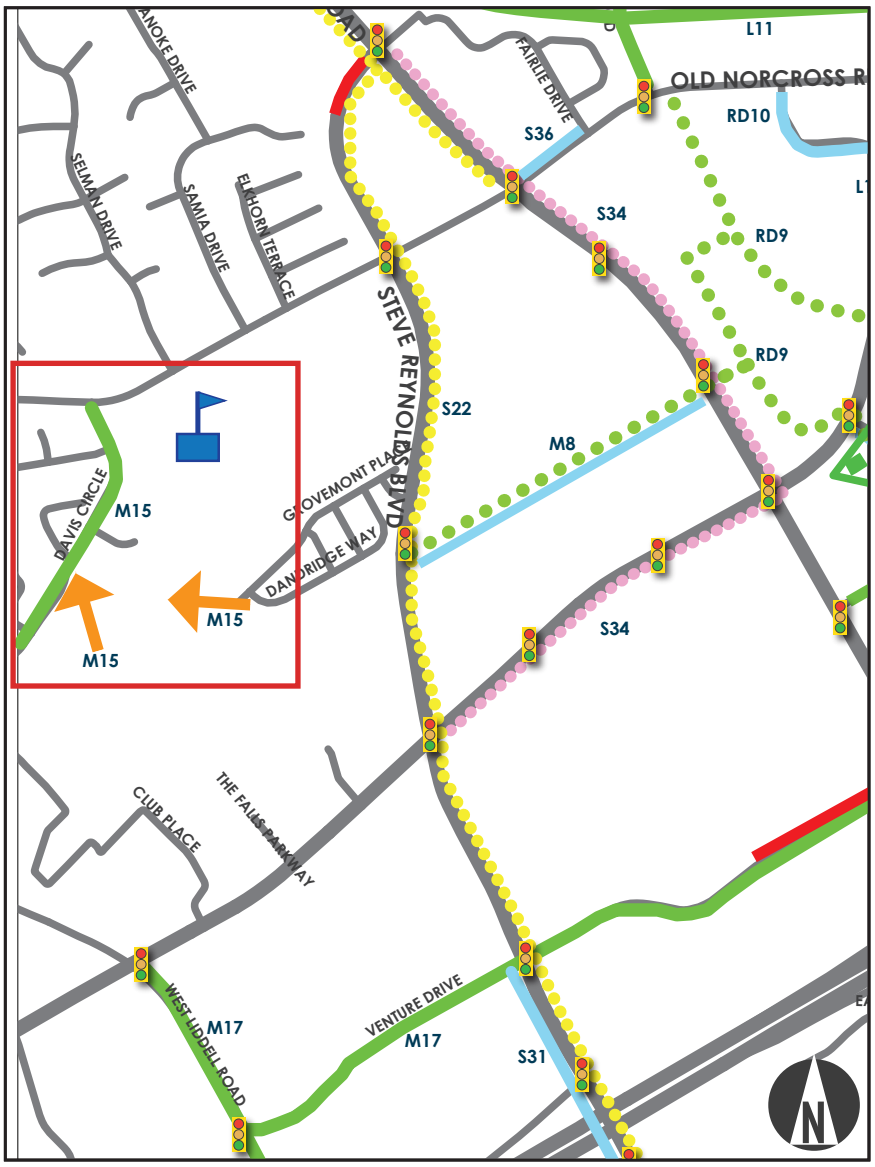
Multi-Use Path

Project Source

- ☐ Livable Centers Initiative
- ☑ GPCID Traffic Studies
- ☐ Gwinnett County CTP
- ☐ ACTivate Gwinnett

LCI Project Ref. n/a

Implementation Mid-range



Selected Project

Goals Addressed by Improvement:

- ☑ Sidewalk/Bike Connections to Activity Areas

Project Costs

Engineering Year	Engineering Costs	ROW Year	ROW Costs	Construction Year	Construction Costs	Contingency Costs	Total Project Costs
2021-2025	**$111,800**	**2021-2025**	**$83,900**	**2021-2025**	**$559,100**	**$111,800**	**$866,600**

Sweetwater Road Multi-use Path

Ref. No.
M-16

Project Description

Install 10' multi-use path along north side of Sweetwater Rd from Club Drive to Wesley Place. Install 10' multi-use path along south side of Club Drive from Sweetwater Road to Woodington Circle. Provide greenspace park adjacent to streetscape area in commercial parking lot on north side of Sweetwater Road

Justification

Provides pedestrian and bicycle connection between commercial center and residential areas. Provides greenspace/park to enhance use of pedestrian and bicycle facilities.

Jurisdiction

Gwinnett County

Service Type

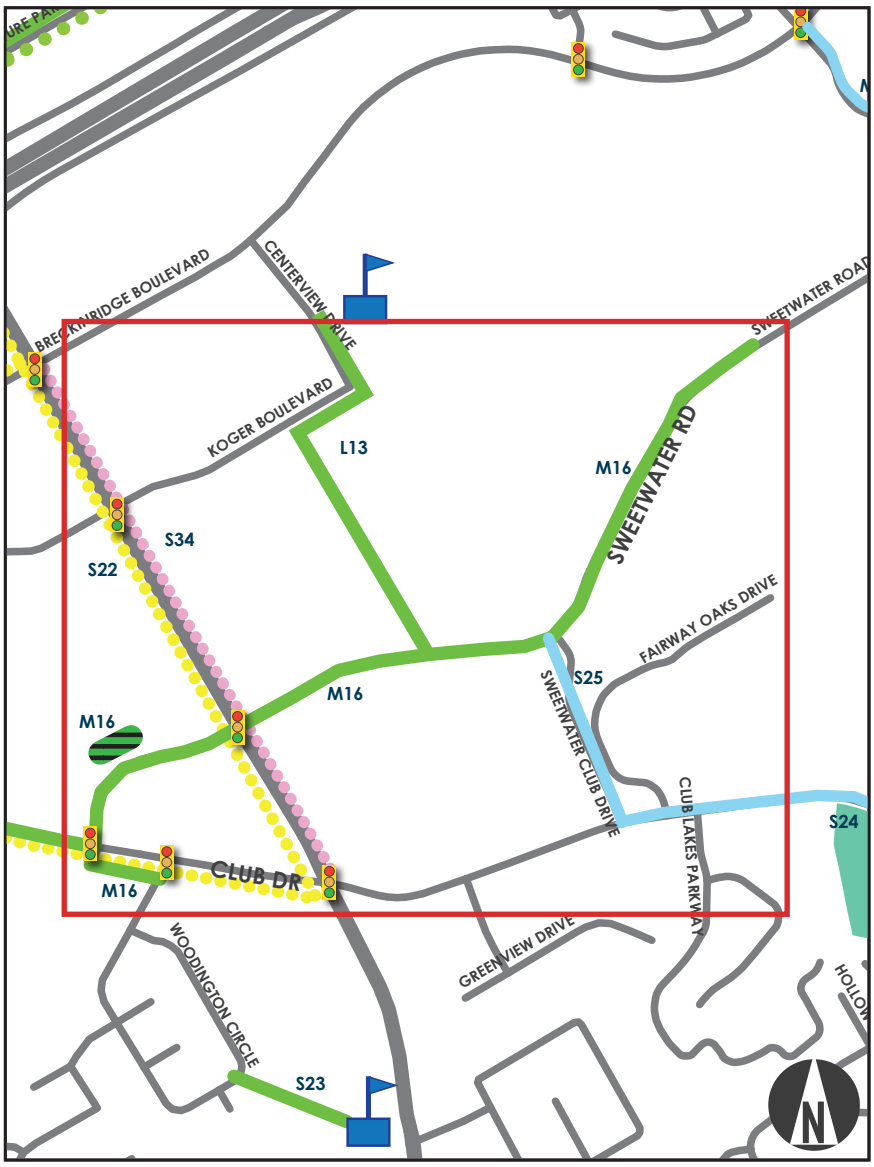
Multi-Use Path

Project Source

- ☑ Livable Centers Initiative
- ☑ GPCID Traffic Studies
- ☐ Gwinnett County CTP
- ☐ ACTivate Gwinnett

LCI Project Ref. C-19

Implementation Mid-range



Selected Project

Goals Addressed by Improvement:

- ☑ Sidewalk/Bike Connections to Activity Areas

Project Costs

Engineering Year	Engineering Costs	ROW Year	ROW Costs	Construction Year	Construction Costs	Contingency Costs	Total Project Costs
2021-2025	**$199,000**	**2021-2025**	**$304,600**	**2021-2025**	**$995,000**	**$199,000**	**$1,697,600**

Venture Dr/West Liddell Dr Multi-use Path

Keystone Project

Ref. No.
M-17

Project Description

Install 10' multi-use path along Venture Dr/ West Liddell Dr connecting from Satellite Blvd to Ring Road; part of Bromolow Greenway from Gwinnett Greenway Plan; segment between Pleasant Hill road and Ring road coulb e built in conjunctino with regional retention pond improvements in ACTivate Gwinnett Place.

Justification

Provides pedestrian and bicycle connection between Satellite Boulevard and Steve Reynolds Boulevard through commercial center.

Jurisdiction

Gwinnett County

Service Type

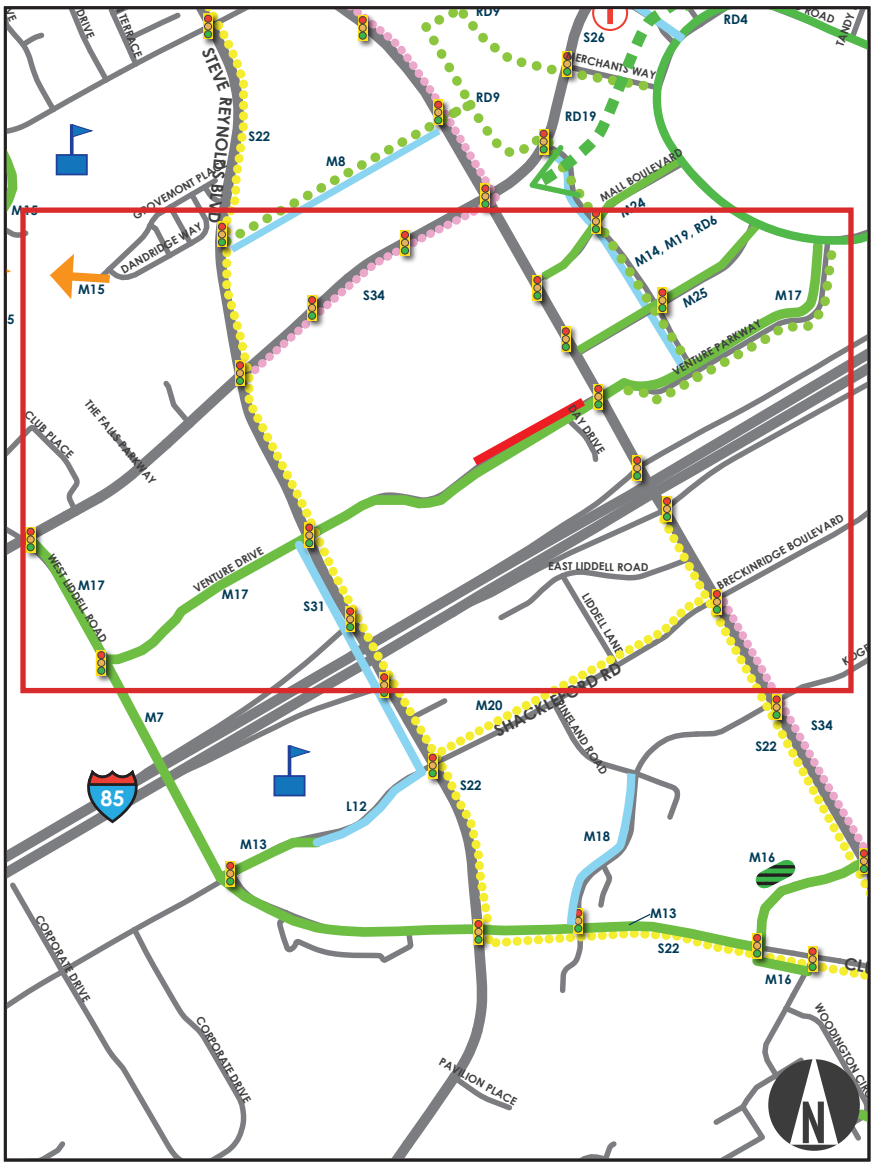
Multi-Use Path

Project Source

- ☐ Livable Centers Initiative
- ☑ GPCID Traffic Studies
- ☐ Gwinnett County CTP
- ☐ ACTivate Gwinnett

LCI Project Ref. n/a

Implementation Mid-range



Selected Project

Modified Project

Goals Addressed by Improvement:

- ☑ Sidewalk/Bike Connections to Activity Areas

Project Costs

Engineering Year	Engineering Costs	ROW Year	ROW Costs	Construction Year	Construction Costs	Contingency Costs	Total Project Costs
2021-2025	**$187,200**	**2021-2025**	**$140,400**	**2021-2025**	**$936,000**	**$187,200**	**$1,450,800**

Crestwood Parkway Sidewalk

Ref. No.
M-18

Project Description

Install 5' sidewalk along Crestwood Parkway from Pineland Road to Club Drive

Justification

Completes connection along Crestwood Parkway/Pineland Road between Shackleford road and Club Drive.

Jurisdiction

Gwinnett County

Service Type

Sidewalk

Project Source

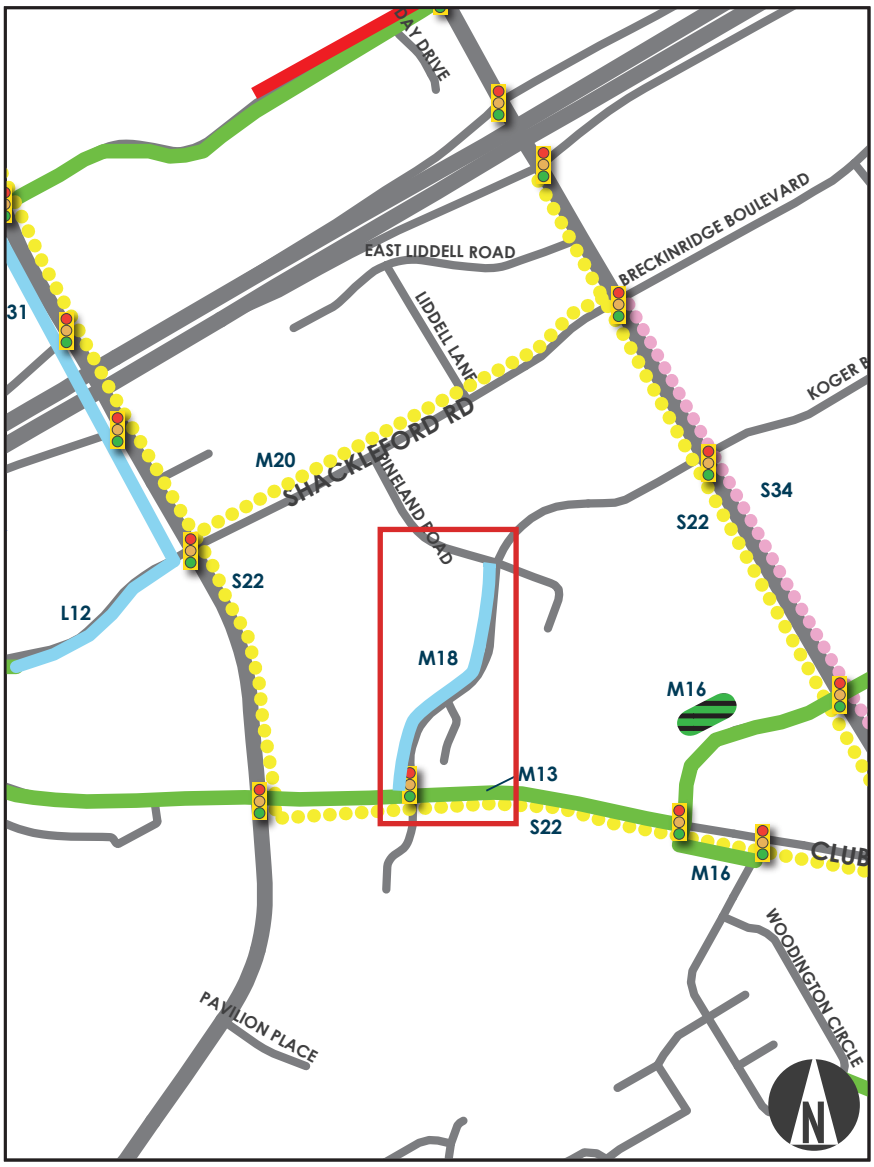
- ☐ Livable Centers Initiative
- ☑ GPCID Traffic Studies
- ☐ Gwinnett County CTP
- ☐ ACTivate Gwinnett

LCI Project Ref.

n/a

Implementation

Mid-range



Goals Addressed by Improvement:

- ☑ Sidewalk/Bike Connections to Activity Areas

Project Costs

Engineering Year	Engineering Costs	ROW Year	ROW Costs	Construction Year	Construction Costs	Contingency Costs	Total Project Costs
2021-2025	**$22,700**	**2021-2025**	**$17,000**	**2021-2025**	**$113,600**	**$22,700**	**$176,000**

Market Street Sidewalk

Keystone Project

Ref. No.
M-19

Project Description

Install 5' sidewalk along western side of Market Street from Satellite Boulevard to Gwinnett Place Drive.

Justification

Improves pedestrian connectivity in core of CID area.

Jurisdiction

Gwinnett County

Service Type

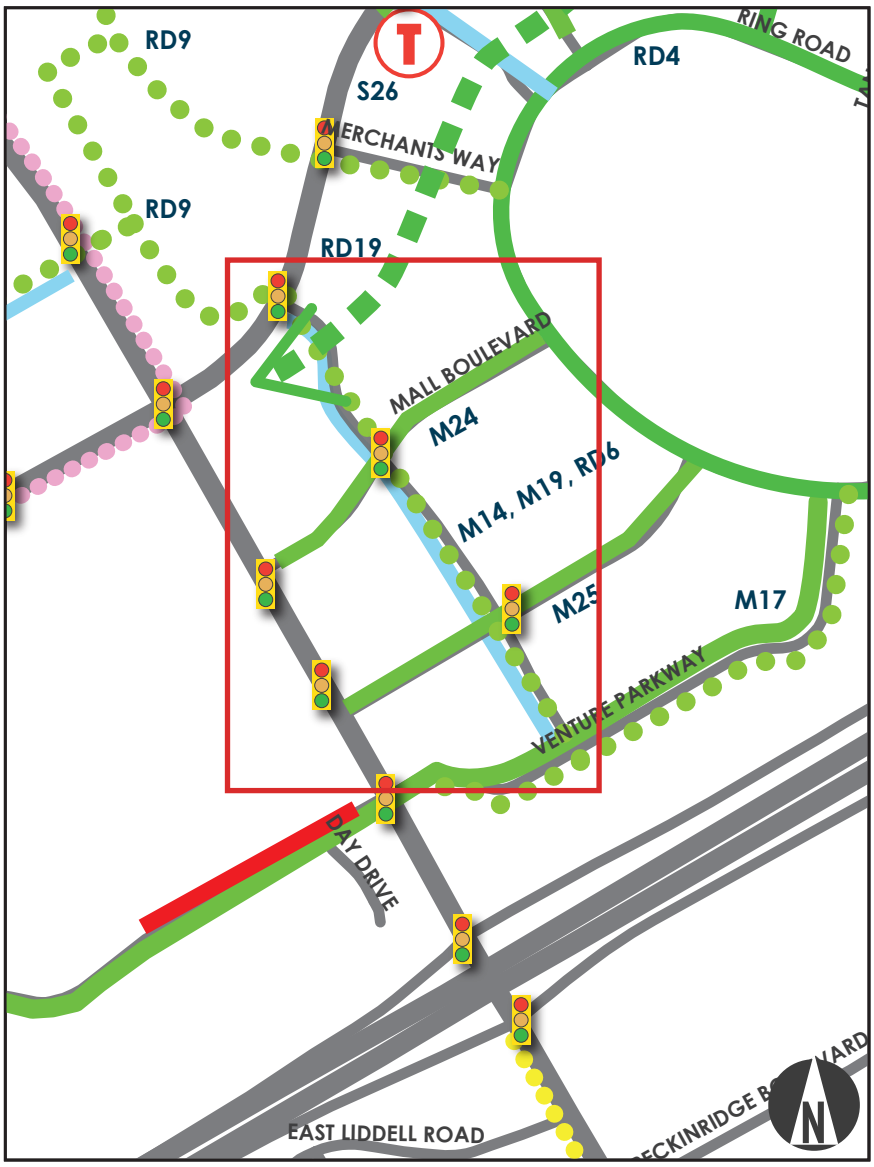
Sidewalk

Project Source

- ☐ Livable Centers Initiative
- ☑ GPCID Traffic Studies
- ☐ Gwinnett County CTP
- ☑ ACTivate Gwinnett

LCI Project Ref. n/a

Implementation Mid-range



Selected Project

New Project

Goals Addressed by Improvement:

- ☑ Sidewalk/Bike Connections to Activity Areas

Project Costs

Engineering Year	Engineering Costs	ROW Year	ROW Costs	Construction Year	Construction Costs	Contingency Costs	Total Project Costs
2021-2025	**$25,800**	**2021-2025**	**$19,300**	**2021-2025**	**$128,800**	**$25,800**	**$199,700**

Pedestrian Crossing Safety Improvements at Old Norcross Road and Breckinridge Boulevard

Ref. No.
M-21

Project Description

Bring all pedestrian ramps to ADA standard as part of the next milling/ resurfacing project; upgrade all pedestrian signals to countdown timers

Justification

Improves pedestrian safety and accessibility.

Jurisdiction

Gwinnett County

Service Type

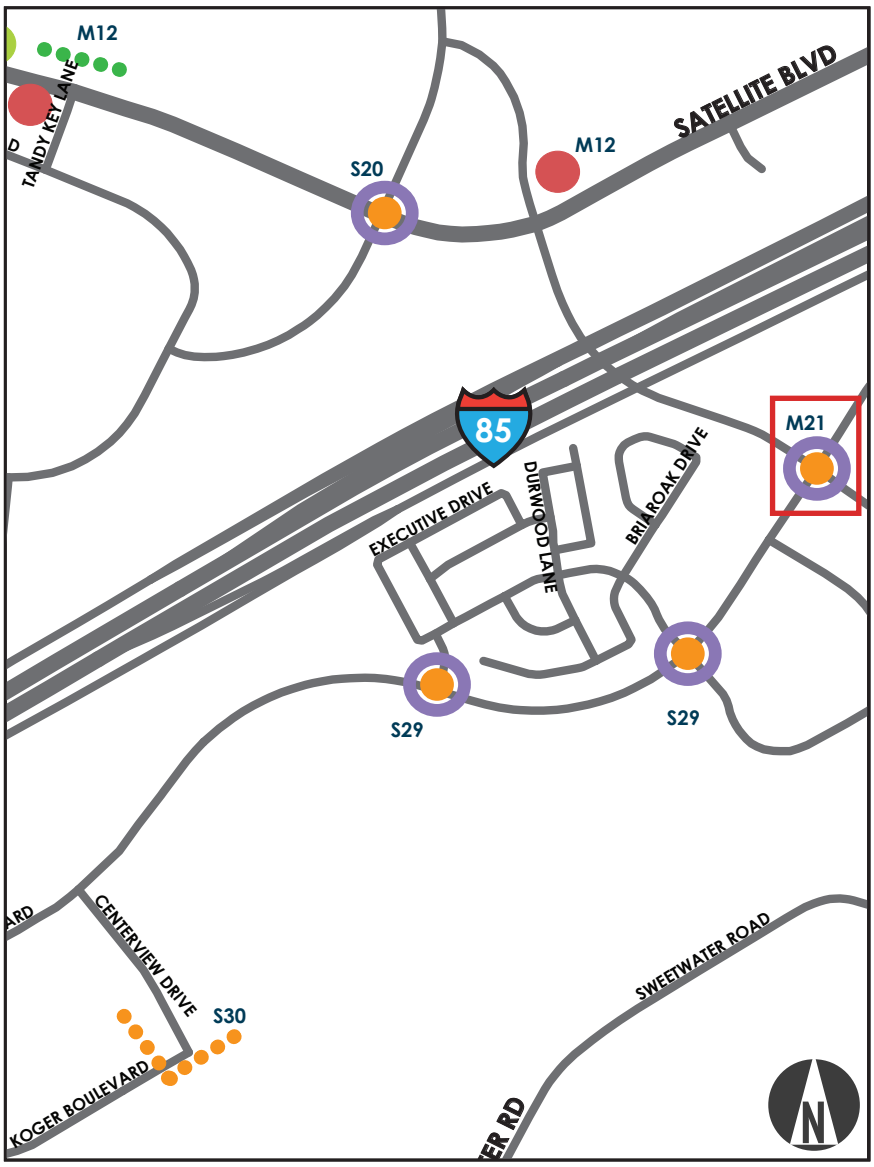
Pedestrian

Project Source

- ☐ Livable Centers Initiative
- ☑ GPCID Traffic Studies
- ☐ Gwinnett County CTP
- ☐ ACTivate Gwinnett

LCI Project Ref. n/a

Implementation Mid-range



☐ Selected Project

New Project

Goals Addressed by Improvement:

- ☑ Improve Pedestrian Crossing Safety

Project Costs

Engineering Year	Engineering Costs	ROW Year	ROW Costs	Construction Year	Construction Costs	Contingency Costs	Total Project Costs
2021-2025	**$3,800**	**NA**	**$0**	**2021-2025**	**$19,200**	**$3,800**	**$26,800**

Old Norcross Road at Breckinridge Boulevard

Ref. No.
M-22

Project Description

Extend southeastbound right turn lane and add second northeastbound left turn lane while maintaining southwestern median. Shift the northeastbound through lane to the southeast, either in existing pavement or by narrowing concrete islands as necessary.

Justification

Provides improved vehicular capacity and safety by keeping through lanes clear of left-turning vehicles waiting for a turning phase.

Jurisdiction

Gwinnett County

Service Type

Intersection

Project Source

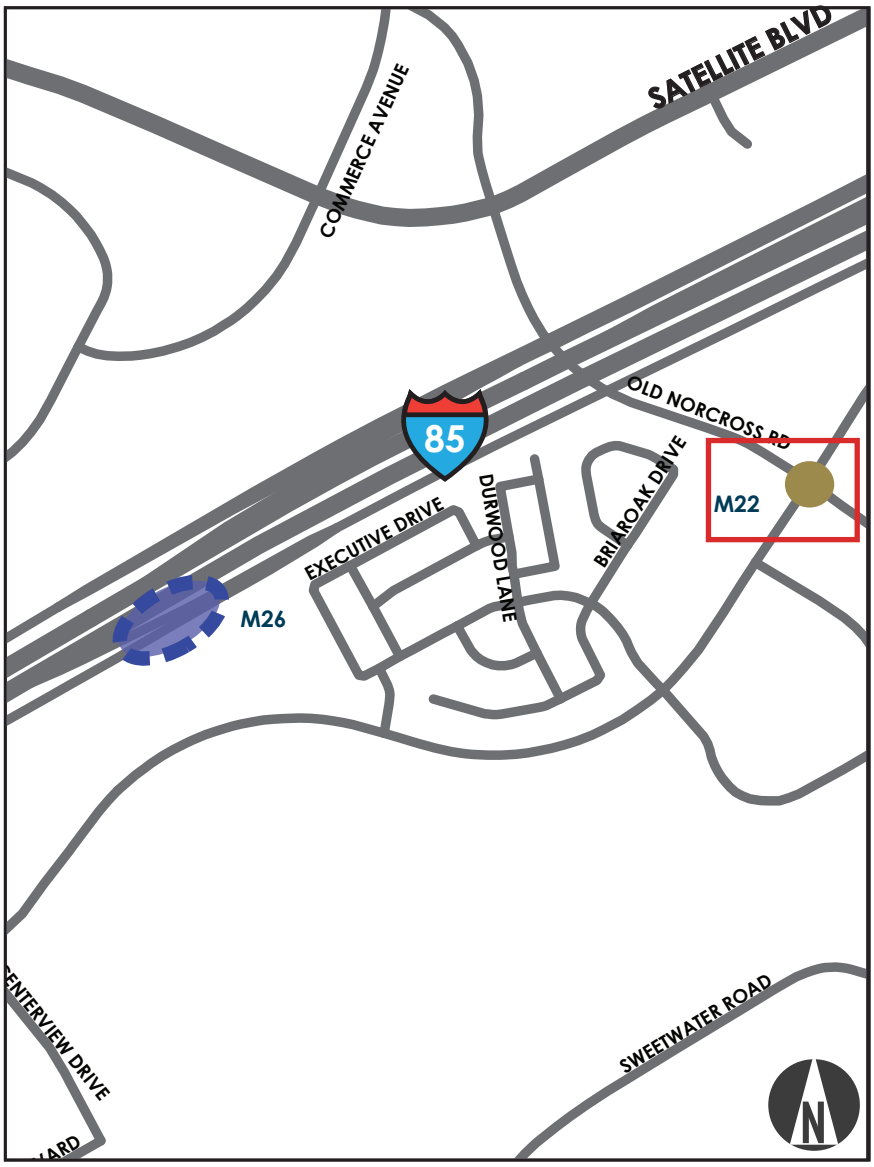
- ☐ Livable Centers Initiative
- ☑ GPCID Traffic Studies
- ☑ Gwinnett County CTP
- ☐ ACTivate Gwinnett

LCI Project Ref.

n/a

Implementation

Mid-range



Selected Project

New Project

Goals Addressed by Improvement:

- ☑ Reduce Congestion/Improve Operations
- ☑ Serves Growth in Travel Demand
- ☑ Improve Traffic Safety

Project Costs

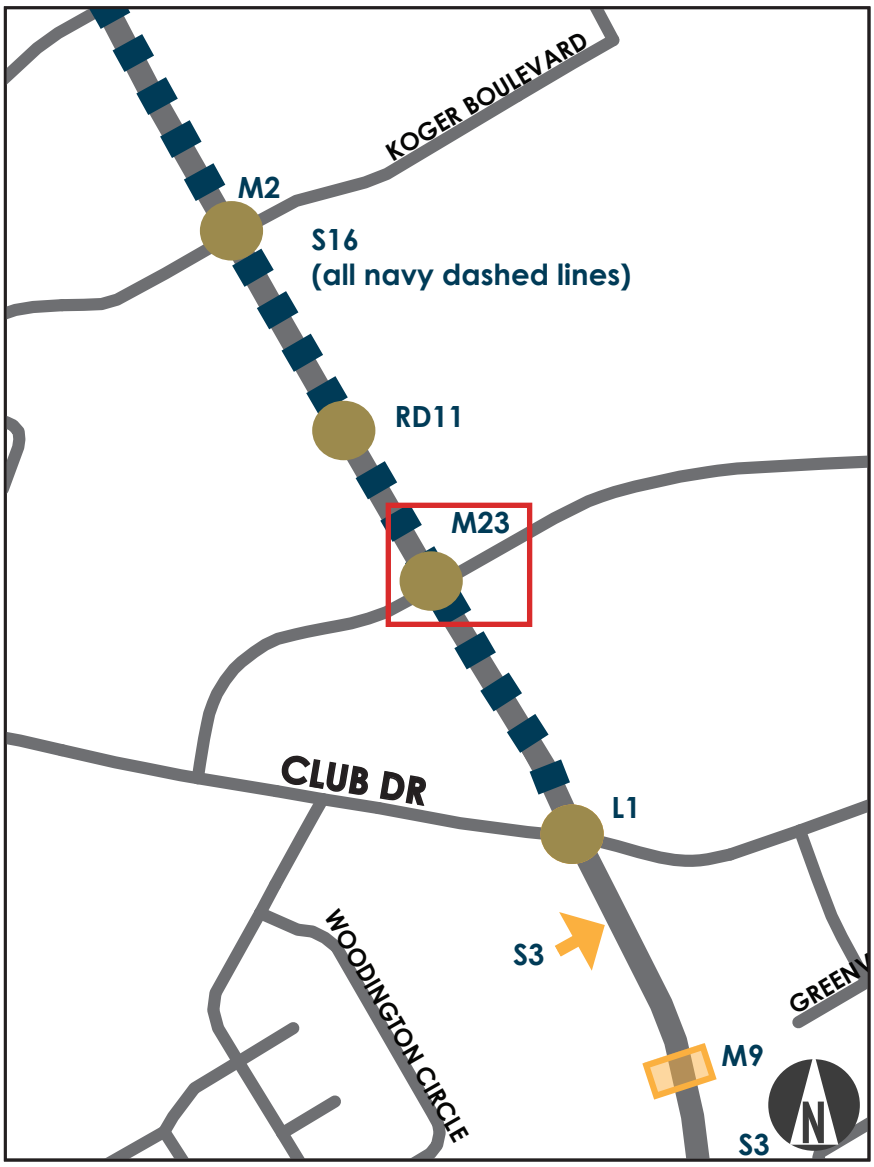
Engineering Year	Engineering Costs	ROW Year	ROW Costs	Construction Year	Construction Costs	Contingency Costs	Total Project Costs
2021-2025	**$28,000**	**2021-2025**	**$21,000**	**2021-2025**	**$140,000**	**$28,000**	**$217,000**

Pleasant Hill at Sweetwater Road

Ref. No.
M-23

Project Description

Extend all left turn lanes on all four approaches



Selected Project

New Project

Justification

Provides improved vehicular capacity and safety by keeping through lanes clear of left-turning vehicles waiting for a turning phase.

Jurisdiction

Gwinnett County

Service Type

Intersection

Project Source

- ☐ Livable Centers Initiative
- ☑ GPCID Traffic Studies
- ☐ Gwinnett County CTP
- ☐ ACTivate Gwinnett

LCI Project Ref. n/a

Implementation Mid-range

Goals Addressed by Improvement:

- ☑ Reduce Congestion/Improve Operations
- ☑ Serves Growth in Travel Demand
- ☑ Improve Traffic Safety

Project Costs

Engineering Year	Engineering Costs	ROW Year	ROW Costs	Construction Year	Construction Costs	Contingency Costs	Total Project Costs
2021-2025	**$149,000**	**2021-2025**	**$149,000**	**2021-2025**	**$745,200**	**$149,000**	**$1,192,200**

Mall Boulevard Bike/Pedestrian Improvements

Keystone Project

Ref. No.
M-24

Project Description

Implement "Complete Streets" principles with sidewalk and bike lanes on Mall Boulevard from Pleasant Hill Road to Ring Road.

Justification

Improves bike and pedestrian connectivity in core of CID area.

Jurisdiction

Gwinnett County

Service Type

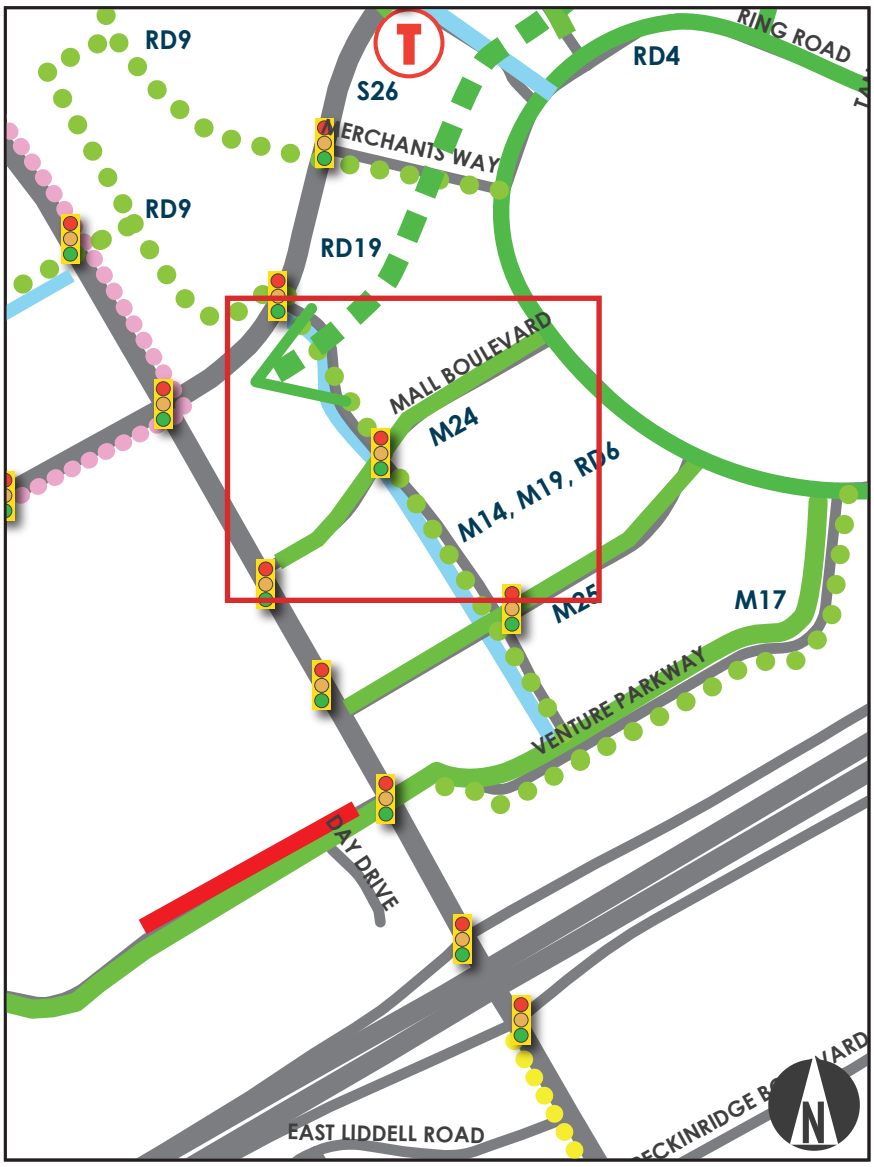
Complete Street

Project Source

- ☑ Livable Centers Initiative
- ☑ GPCID Traffic Studies
- ☐ Gwinnett County CTP
- ☑ ACTivate Gwinnett

LCI Project Ref. C-3

Implementation Mid-range



Selected Project

Modified Project

Goals Addressed by Improvement:

- ☑ Sidewalk/Bike Connections to Activity Areas

Project Costs

Engineering Year	Engineering Costs	ROW Year	ROW Costs	Construction Year	Construction Costs	Contingency Costs	Total Project Costs
NA	**$0**	**NA**	**$0**	**2021-2025**	**$1,099,900**	**$132,000**	**$1,231,900**

Gwinnett Place Drive Bike/Pedestrian Improvements

Keystone Project

Ref. No.
M-25

Project Description

Implement "Complete Streets" principles with sidewalk and bike lanes on Gwinnett Place Drive from Pleasant Hill Road to Ring Road.

Justification

Improves bike and pedestrian connectivity in core of CID area.

Jurisdiction

Gwinnett County

Service Type

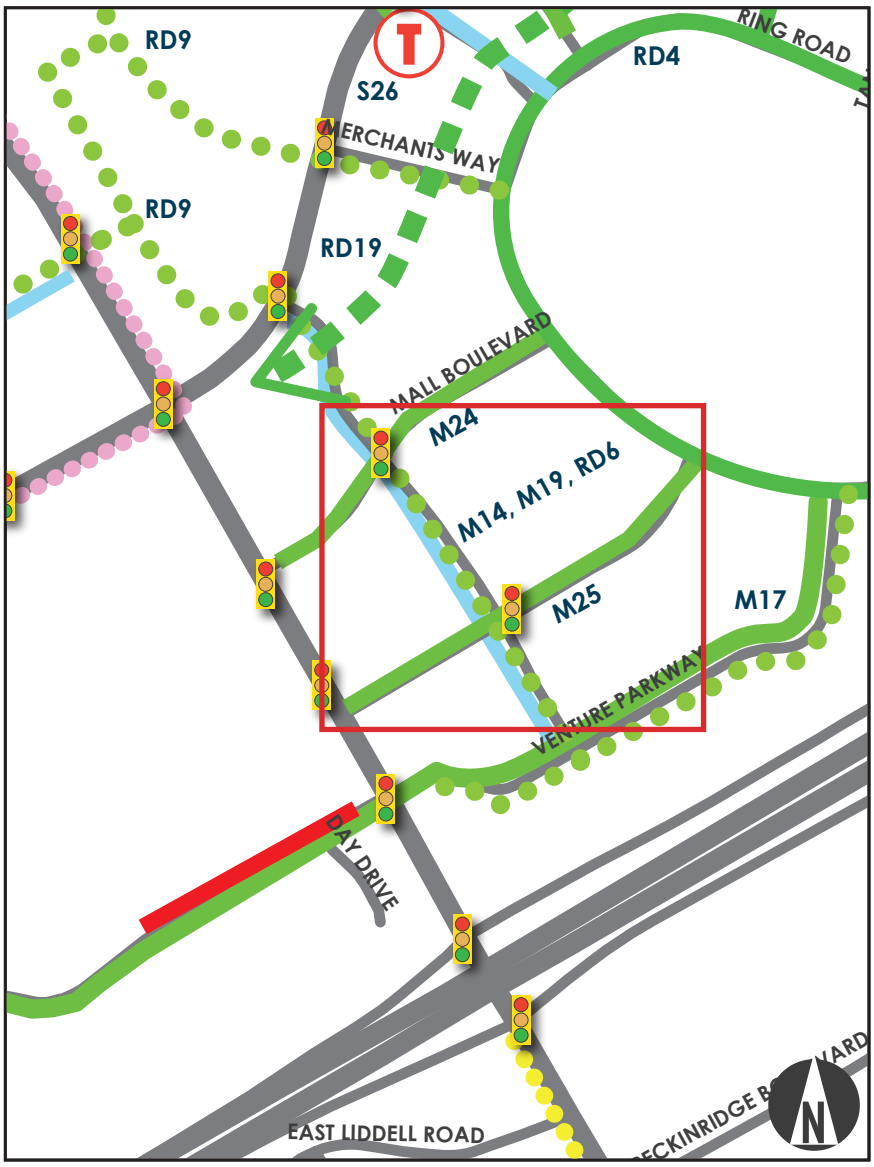
Complete Street

Project Source

- ☑ Livable Centers Initiative
- ☑ GPCID Traffic Studies
- ☐ Gwinnett County CTP
- ☑ ACTivate Gwinnett

LCI Project Ref. C-4

Implementation Mid-range



Selected Project

Modified Project

Goals Addressed by Improvement:

- ☑ Sidewalk/Bike Connections to Activity Areas

Project Costs

Engineering Year	Engineering Costs	ROW Year	ROW Costs	Construction Year	Construction Costs	Contingency Costs	Total Project Costs
NA	**$0**	**NA**	**$0**	**2021-2025**	**$1,344,400**	**$161,300**	**$1,505,700**

Pleasant Hill Road/I-85/SR 316 Collector-Distributor System Improvements Study

Keystone Project

Ref. No.
M-26

Project Description

Perform detailed study to identify ramp operations in the Collector-Distributor (CD) system, with possible alternatives to include:

- Move merge point further down ramp
- Add signage to encourage drivers to maintain speed through ramp
- Explore reconfiguring this section of CD system to allow for two lanes from Pleasant Hill Road without merging and reducing ramp from I-85 northbound from two lanes to one

Justification

Investigation would eventually identify ways to reduce congestion getting onto I-85 from Pleasant Hill Road.

Jurisdiction

Gwinnett County

Service Type

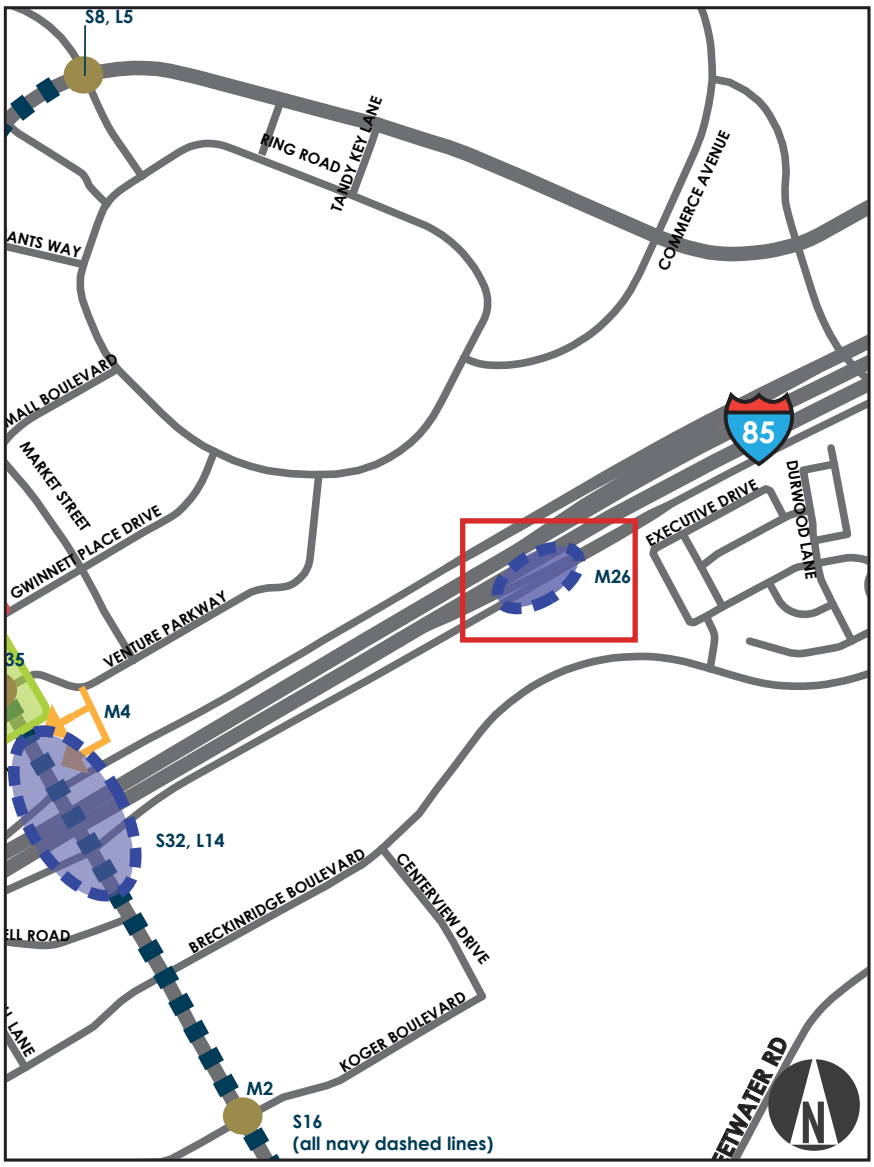
Interchange

Project Source

- ☐ Livable Centers Initiative
- ☑ GPCID Traffic Studies
- ☐ Gwinnett County CTP
- ☐ ACTivate Gwinnett

LCI Project Ref. n/a

Implementation Mid-range



Selected Project

New Project

Goals Addressed by Improvement:

- ☑ Reduce Congestion/Improve Operations
- ☑ Serves Growth in Travel Demand
- ☑ Improve Traffic Safety

Project Costs

Engineering Year	Engineering Costs	ROW Year	ROW Costs	Construction Year	Construction Costs	Contingency Costs	Total Project Costs
2021-2025	**$200,000**	**NA**	**$0**	**NA**	**$0**	**$0**	**$200,000**

Executive Drive S Sidewalk

Ref. No.
M-28

Project Description

Install 5' sidewalk along outside of Executive Drive S loop from Breckinridge Boulevard to existing sidewalk south of Eldridge Road; connect existing sidewalk sections on inside of Executive Drive S loop.

Justification

Improves pedestrian connectivity.

Jurisdiction

Gwinnett County

Service Type

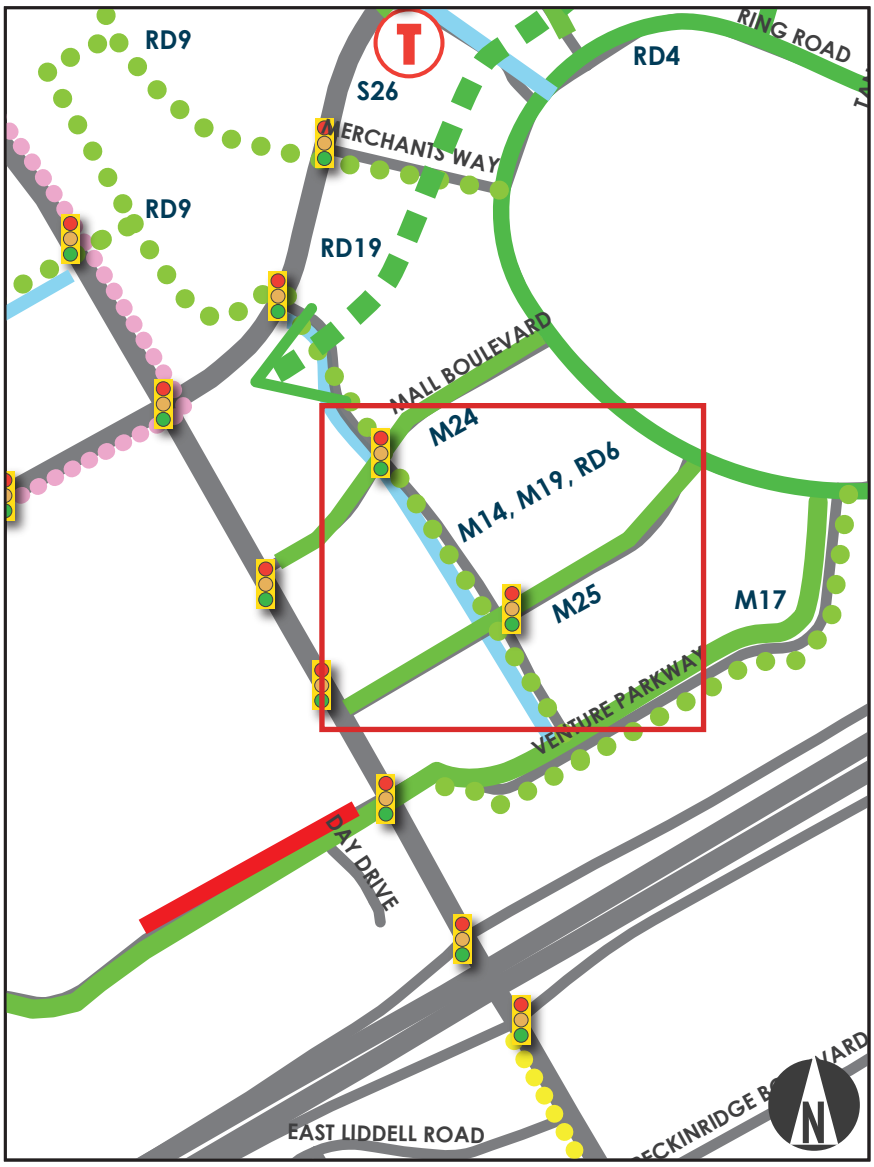
Sidewalk

Project Source

- ☐ Livable Centers Initiative
- ☑ GPCID Traffic Studies
- ☐ Gwinnett County CTP
- ☐ ACTivate Gwinnett

LCI Project Ref. n/a

Implementation Mid-range



Goals Addressed by Improvement:

- ☑ Sidewalk/Bike Connections to Activity Areas

Project Costs

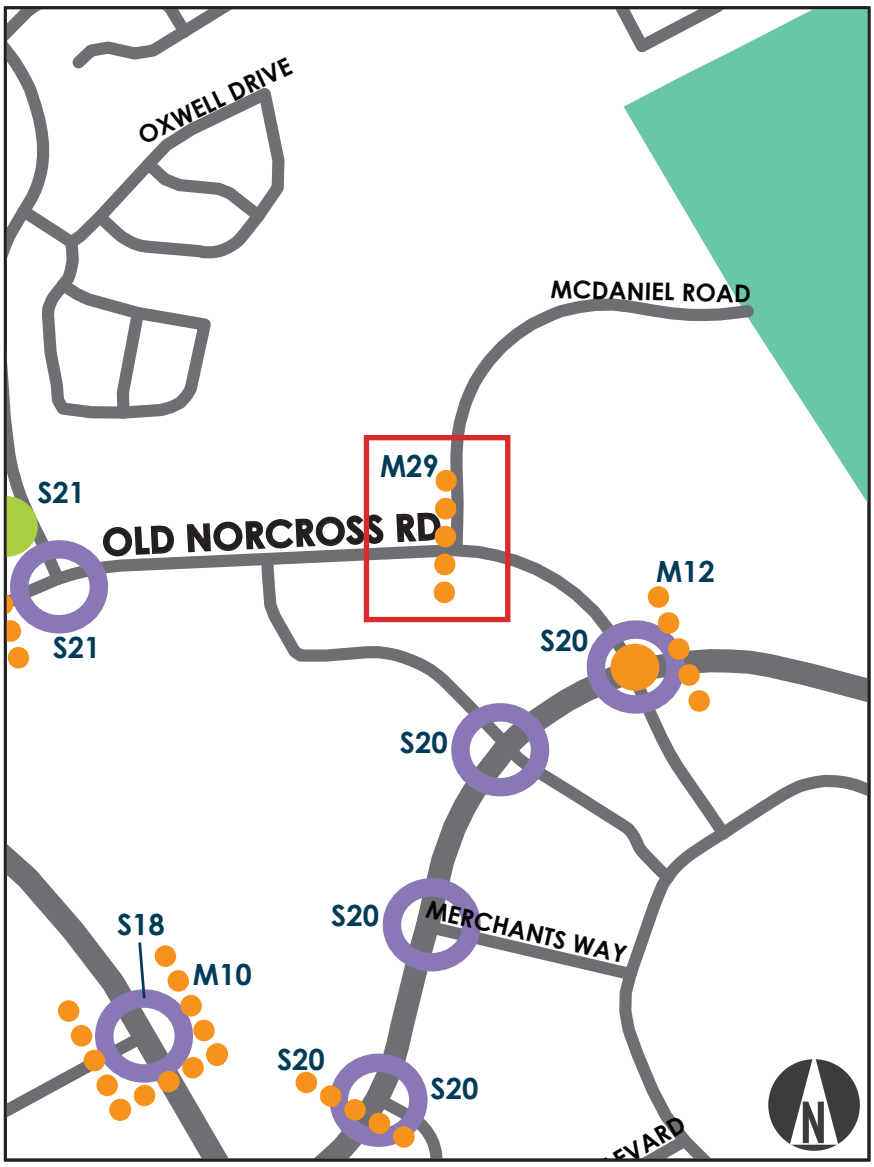
Engineering Year	Engineering Costs	ROW Year	ROW Costs	Construction Year	Construction Costs	Contingency Costs	Total Project Costs
2021-2025	**$39,100**	**2021-2025**	**$39,100**	**2021-2025**	**$195,700**	**$39,100**	**$313,000**

Pedestrian Crossing Safety Improvement at Old Norcross Road and McDaniel Road

Ref. No.
M-29

Project Description

Add pedestrian crossing of Old Norcross Road at McDaniel Road



Justification

Improves pedestrian connectivity and safety and strengthens pedestrian connection between McDaniel Farm Park and rest of area.

Jurisdiction

Gwinnett County

Service Type

Pedestrian

Project Source

- ☐ Livable Centers Initiative
- ☑ GPCID Traffic Studies
- ☐ Gwinnett County CTP
- ☐ ACTivate Gwinnett

LCI Project Ref. n/a

Implementation Mid-range

Goals Addressed by Improvement:

- ☑ Reduce Congestion/Improve Operations
- ☑ Serves Growth in Travel Demand
- ☑ Improve Traffic Safety

Project Costs

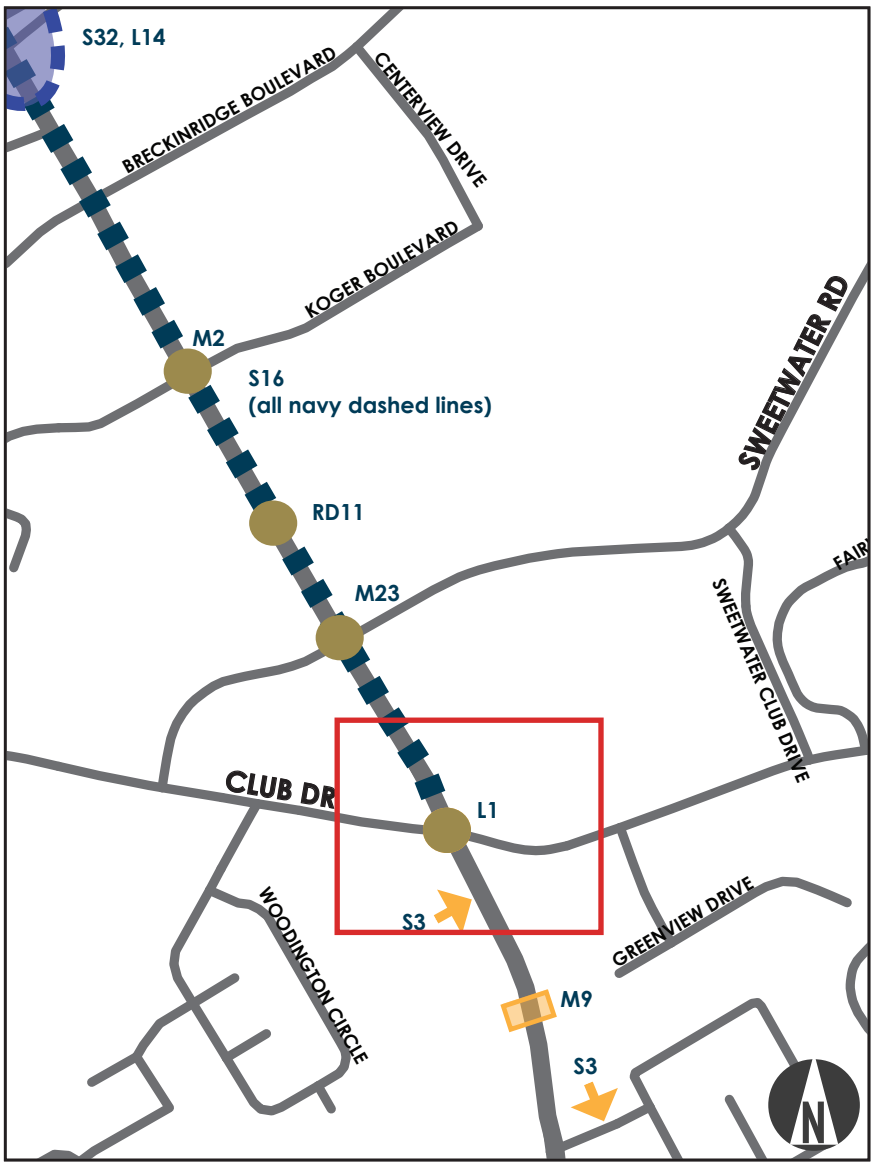
Engineering Year	Engineering Costs	ROW Year	ROW Costs	Construction Year	Construction Costs	Contingency Costs	Total Project Costs
2021-2025	**$1,000**	**NA**	**$0**	**2021-2025**	**$2,500**	**$1,000**	**$4,500**

Pleasant Hill Rd at Club Drive - Major Intersection Capacity Improvement

Ref. No.
L-1

Project Description

Provide major capacity improvement (flyover for NB left turn lanes, Left Turn Overpass, or Continuous Flow Intersection[CFI]).



Justification

Increases intersection capacity at bottleneck location to accommodate current deficiencies and anticipated growth. Facilitates the increased use of the Steve Reynolds Blvd corridor as an alternative to Pleasant Hill Road.

Jurisdiction

Gwinnett County

Service Type

Major Intersection

Project Source

- ☐ Livable Centers Initiative
- ☑ GPCID Traffic Studies
- ☑ Gwinnett County CTP
- ☐ ACTivate Gwinnett

LCI Project Ref. n/a

Implementation Long-term

Goals Addressed by Improvement:

- ☑ Reduce Congestion/Improve Operations
- ☑ Serves Growth in Travel Demand
- ☑ Increase Utilization of Steve Reynolds
- ☑ Improve Traffic Safety

Project Costs

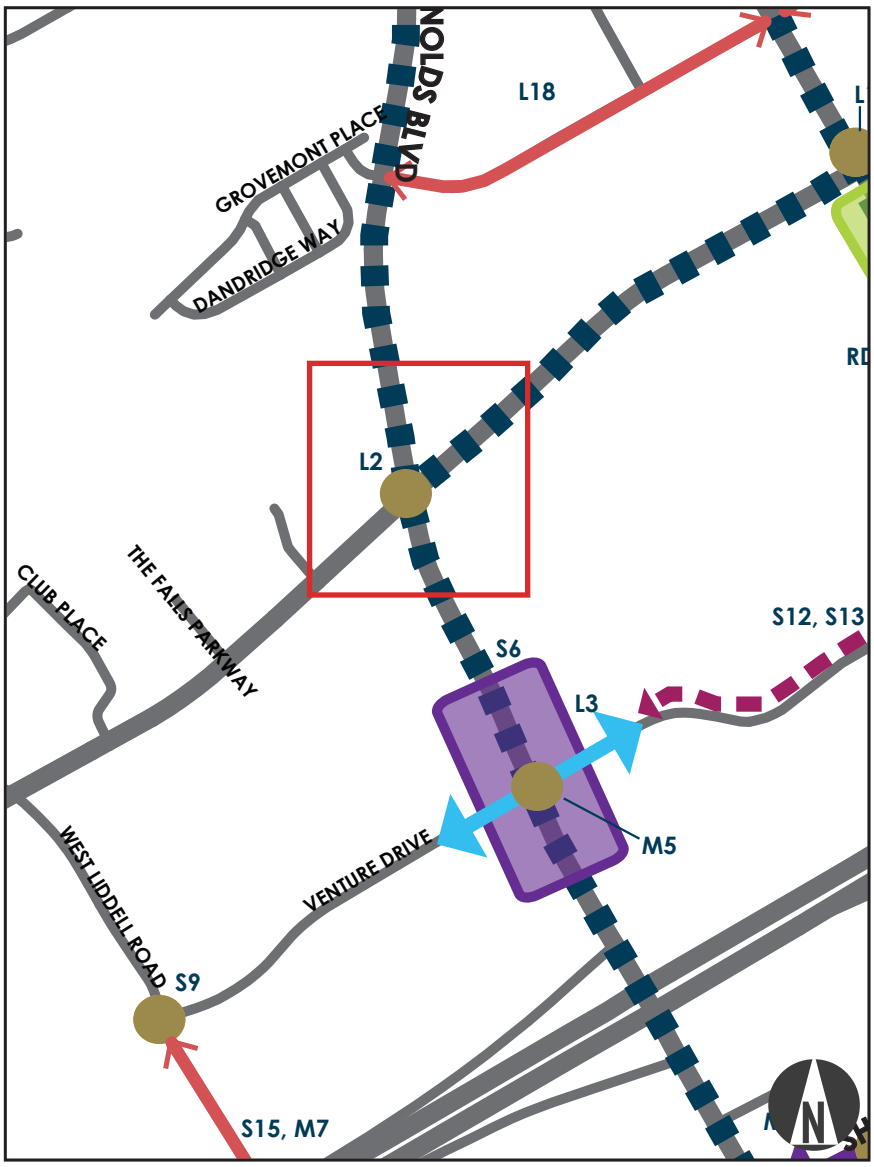
Engineering Year	Engineering Costs	ROW Year	ROW Costs	Construction Year	Construction Costs	Contingency Costs	Total Project Costs
2026-2045	**$3,005,100**	**2026-2045**	**$2,253,800**	**2026-2045**	**$15,025,400**	**$3,005,100**	**$23,289,400**

Steve Reynolds Blvd at Satellite Blvd - Major Intersection Capacity Improvement

Ref. No.
L-2

Project Description

Provide 3rd Through Lane Northbound and Southbound through intersection.



Selected Project

Justification

Improves intersection operations by increasing intersection capacity. Facilitates the increased use of the Steve Reynolds Blvd corridor as an alternative to Pleasant Hill Road.

Jurisdiction

Gwinnett County

Service Type

Major Intersection

Project Source

- ☐ Livable Centers Initiative
- ☑ GPCID Traffic Studies
- ☐ Gwinnett County CTP
- ☐ ACTivate Gwinnett

LCI Project Ref. n/a

Implementation Long-term

Goals Addressed by Improvement:

- ☑ Reduce Congestion/Improve Operations
- ☑ Serves Growth in Travel Demand
- ☑ Increase Utilization of Steve Reynolds

Project Costs

Engineering Year	Engineering Costs	ROW Year	ROW Costs	Construction Year	Construction Costs	Contingency Costs	Total Project Costs
2026-2045	**$81,900**	**2026-2045**	**$61,400**	**2026-2045**	**$409,300**	**$81,900**	**$634,500**

Venture Dr at Steve Reynolds Blvd - Underpass

Ref. No.
L-3

Project Description

Provide underpass for Venture Dr through lanes.

Justification

Increases intersection capacity at bottleneck location to accommodate current deficiencies and anticipated growth. Facilitates the increased use of the Steve Reynolds Blvd corridor as an alternative to Pleasant Hill Road.

Jurisdiction

Gwinnett County

Service Type

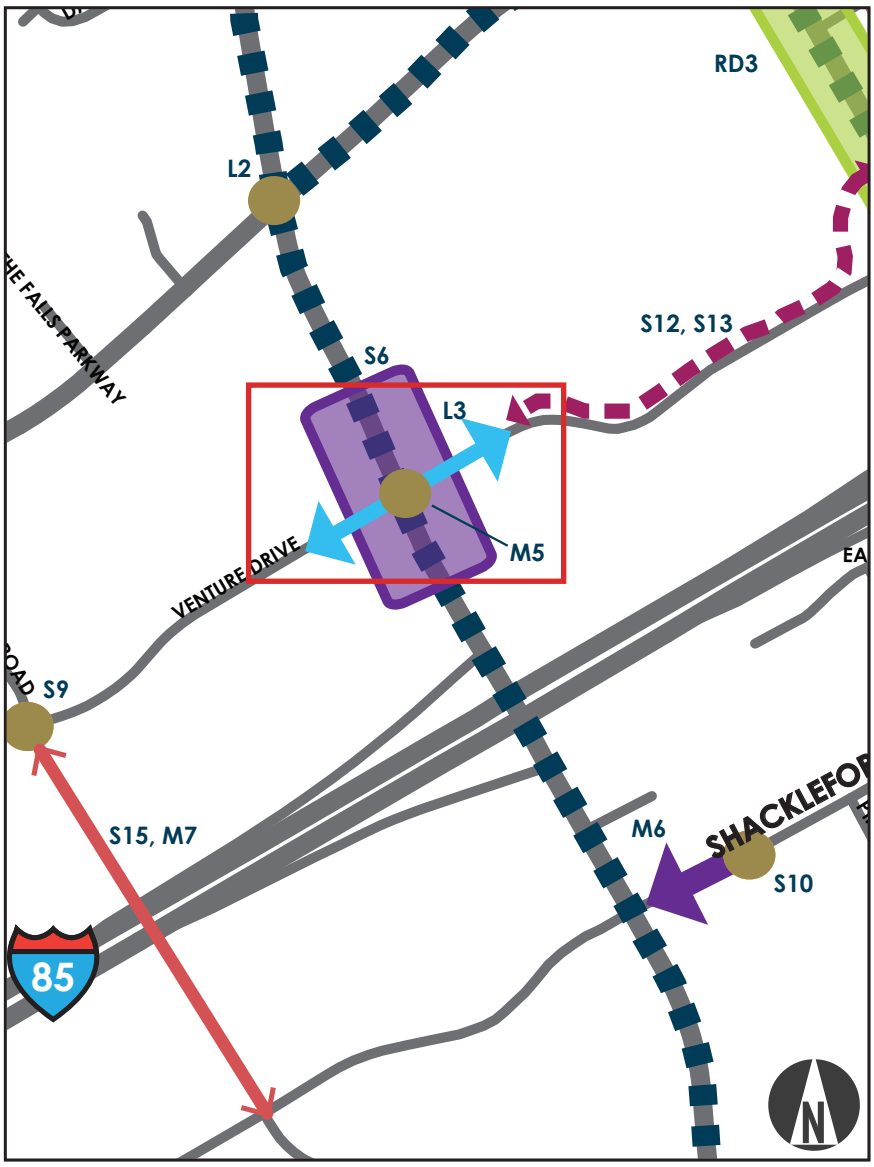
Major Intersection

Project Source

- ☐ Livable Centers Initiative
- ☑ GPCID Traffic Studies
- ☐ Gwinnett County CTP
- ☐ ACTivate Gwinnett

LCI Project Ref. n/a

Implementation Long-term



Goals Addressed by Improvement:

- ☑ Reduce Congestion/Improve Operations
- ☑ Increase System Connectivity
- ☑ Serves Growth in Travel Demand
- ☑ Increase Utilization of Steve Reynolds
- ☑ Improve Traffic Safety
- ☑ Improve Pedestrian Crossing Safety

Project Costs

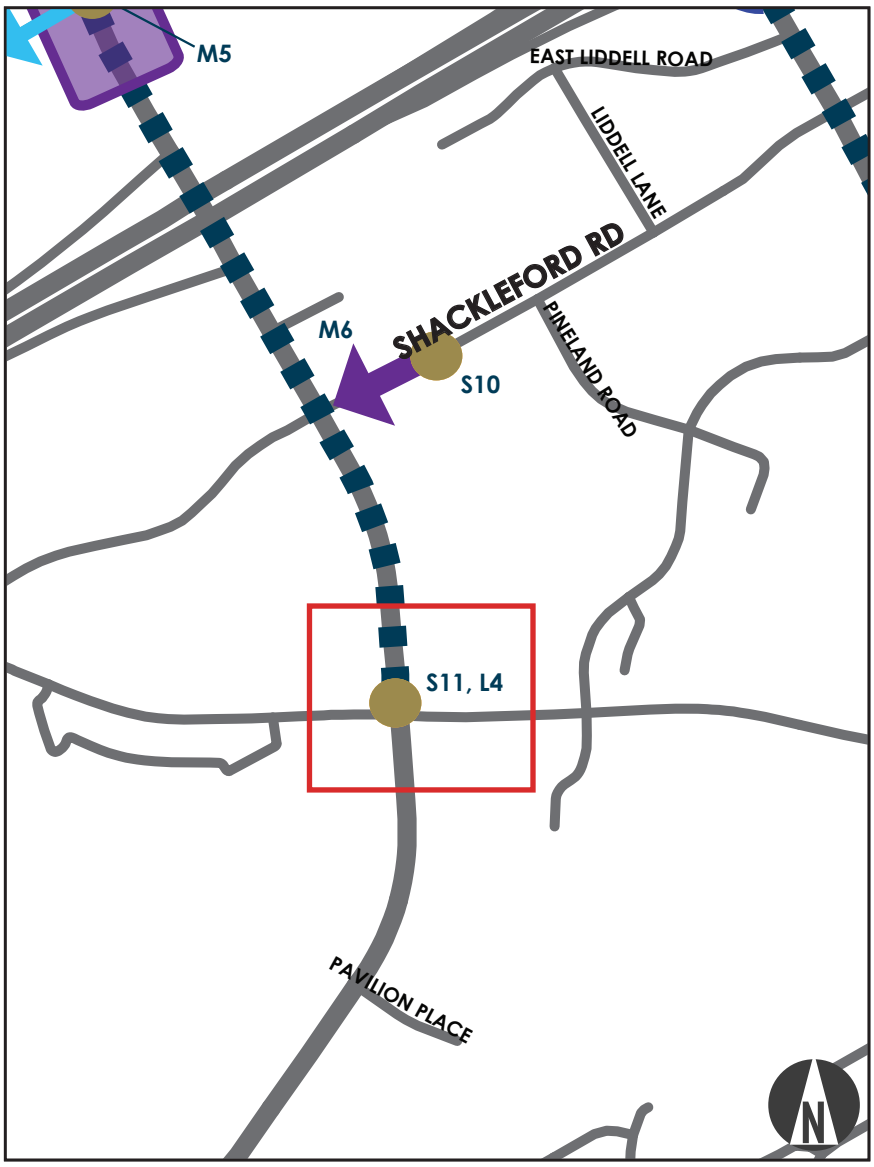
Engineering Year	Engineering Costs	ROW Year	ROW Costs	Construction Year	Construction Costs	Contingency Costs	Total Project Costs
2026-2045	**$3,005,100**	**2026-2045**	**$2,253,800**	**2026-2045**	**$15,025,400**	**$3,005,100**	**$23,289,400**

Club Dr at Steve Reynolds Blvd - Left Turn Lane Modification

Ref. No.
L-4

Project Description

Provide triple left turn lanes southbound.



Selected Project

Justification

Increases intersection capacity . Facilitates the increased use of the Steve Reynolds Blvd corridor as an alternative to Pleasant Hill Road.

Jurisdiction

Gwinnett County

Service Type

Intersection

Project Source

- ☐ Livable Centers Initiative
- ☑ GPCID Traffic Studies
- ☐ Gwinnett County CTP
- ☐ ACTivate Gwinnett

LCI Project Ref. n/a

Implementation Long-term

Goals Addressed by Improvement:

- ☑ Reduce Congestion/Improve Operations
- ☑ Serves Growth in Travel Demand
- ☑ Increase Utilization of Steve Reynolds

Project Costs

Engineering Year	Engineering Costs	ROW Year	ROW Costs	Construction Year	Construction Costs	Contingency Costs	Total Project Costs
2026-2045	**$40,500**	**2026-2045**	**$30,300**	**2026-2045**	**$202,300**	**$40,500**	**$313,600**

Satellite Blvd at Old Norcross Road (west) - Left Turn Modifications

Ref. No.
L-5

Project Description
Provide Southbound triple left turn.

Justification
Improves intersection operations by increasing intersection capacity.

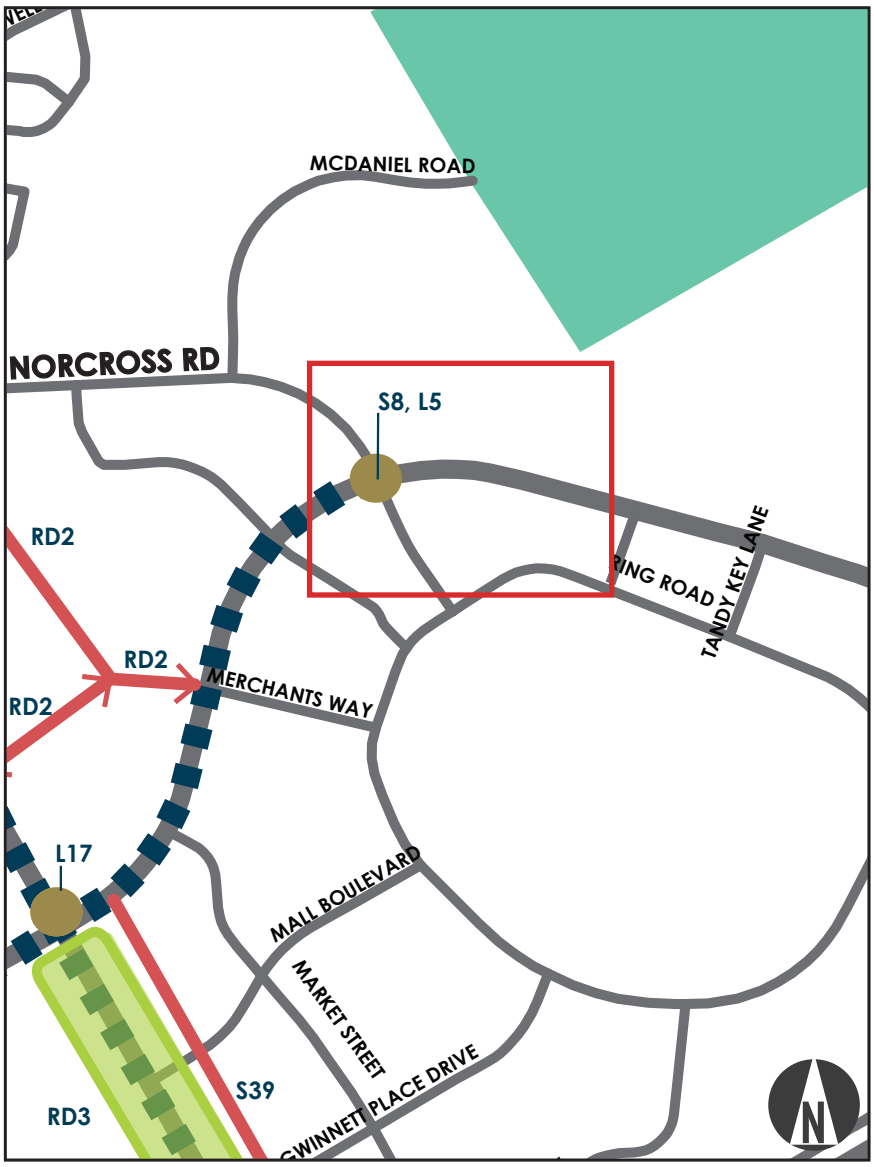
Jurisdiction
Gwinnett County

Service Type
Minor Roadway

Project Source
- ☐ Livable Centers Initiative
- ☑ GPCID Traffic Studies
- ☐ Gwinnett County CTP
- ☐ ACTivate Gwinnett

LCI Project Ref. n/a

Implementation Long-term



Goals Addressed by Improvement:
- ☑ Reduce Congestion/Improve Operations
- ☑ Serves Growth in Travel Demand

Project Costs

Engineering Year	Engineering Costs	ROW Year	ROW Costs	Construction Year	Construction Costs	Contingency Costs	Total Project Costs
2026-2045	**$18,800**	**2026-2045**	**$14,100**	**2026-2045**	**$94,100**	**$18,800**	**$145,800**

North Berkley Lake Road Extension

Ref. No.
L-7

Project Description

Extend North Berkley Lake Rd south to Steve Reynolds Boulevard on the west side of the commercial property (3 lanes with 5' sidewalk on one side); prohibit the southbound left-turn movement at the new intersection with Steve Reynolds Blvd.

Justification

Provides a roadway connection between North Berkley Lake Road and Steve Reynolds Boulevard parallel to Pleasant Hill Road.

Jurisdiction

Gwinnett County

Service Type

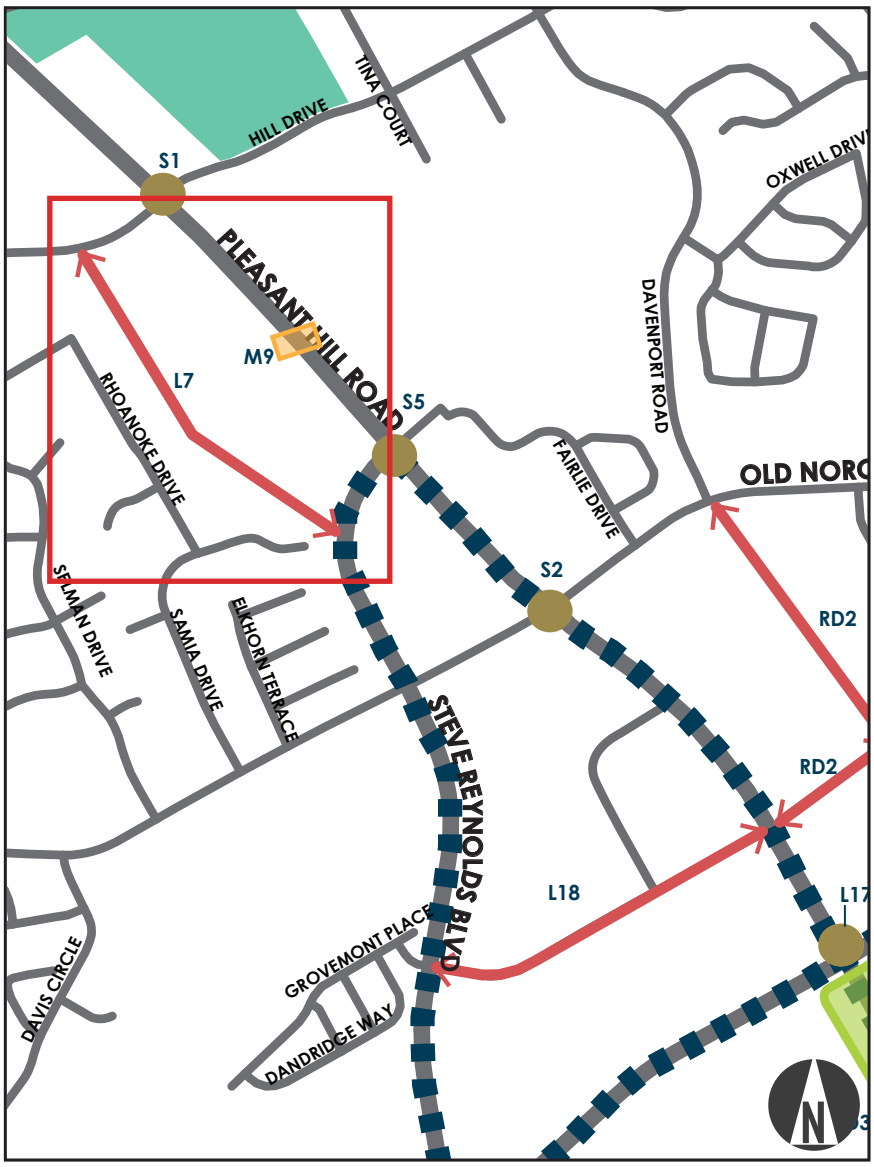
Major Roadway

Project Source

- ☐ Livable Centers Initiative
- ☑ GPCID Traffic Studies
- ☐ Gwinnett County CTP
- ☐ ACTivate Gwinnett

LCI Project Ref. n/a

Implementation Long-term



Selected Project

Goals Addressed by Improvement:

- ☑ Reduce Congestion/Improve Operations
- ☑ Increase System Connectivity
- ☑ Serves Growth in Travel Demand
- ☑ Increase Utilization of Steve Reynolds

Project Costs

Engineering Year	Engineering Costs	ROW Year	ROW Costs	Construction Year	Construction Costs	Contingency Costs	Total Project Costs
2026-2045	**$266,900**	**2026-2045**	**$200,100**	**2026-2045**	**$1,334,300**	**$266,900**	**$2,068,200**

McDaniel Road Multi-use Path

Ref. No.
L-8

Project Description

Install 10' multi-use path along McDaniel Road from Old Norcross Road to McDaniel Farm Park and along McDaniel Road from Duluth Highway (SR 120 to McDaniel Farm Park).

Justification

Provides pedestrian and bicycle connection between Old Norcross Road and McDaniel Farm Park.

Jurisdiction

Gwinnett County

Service Type

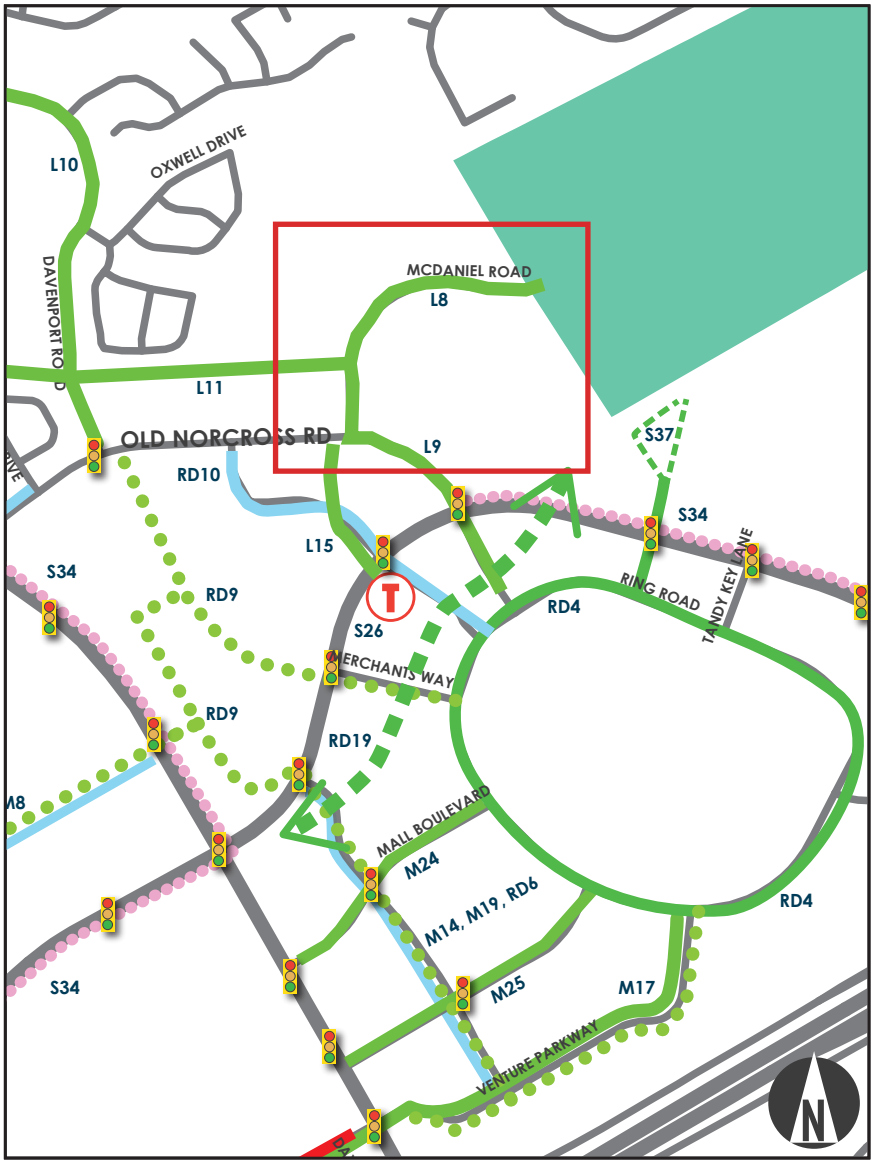
Multi-Use Path

Project Source

- ☑ Livable Centers Initiative
- ☑ GPCID Traffic Studies
- ☐ Gwinnett County CTP
- ☐ ACTivate Gwinnett

LCI Project Ref. C-9

Implementation Long-term



Selected Project

Goals Addressed by Improvement:

- ☑ Sidewalk/Bike Connections to Activity Areas

Project Costs

Engineering Year	Engineering Costs	ROW Year	ROW Costs	Construction Year	Construction Costs	Contingency Costs	Total Project Costs
2026-2045	**$160,900**	**2026-2045**	**$120,700**	**2026-2045**	**$804,500**	**$160,900**	**$1,247,000**

Old Norcross Road Multi-use Path

Ref. No.
L-9

Project Description

Install 10' multi-use path along northwest side of Old Norcross Road from McDaniel Road to Mall Ring Road.

Justification

Provides pedestrian and bicycle connection between Gwinnett Place Mall and McDaniel Farm Park.

Jurisdiction

Gwinnett County

Service Type

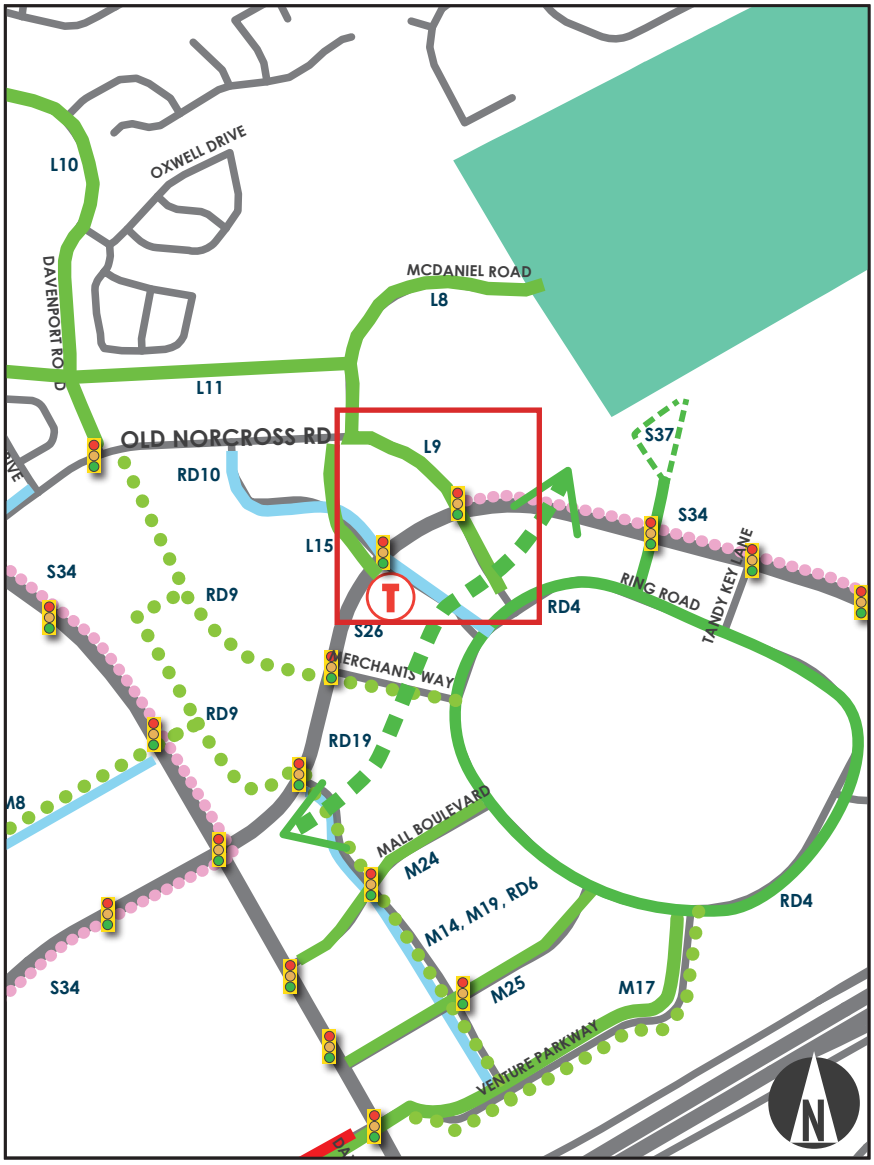
Multi-Use Path

Project Source

- ☑ Livable Centers Initiative
- ☑ GPCID Traffic Studies
- ☐ Gwinnett County CTP
- ☐ ACTivate Gwinnett

LCI Project Ref. C-14

Implementation Long-term



Selected Project

Goals Addressed by Improvement:

- ☑ Sidewalk/Bike Connections to Activity Areas

Project Costs

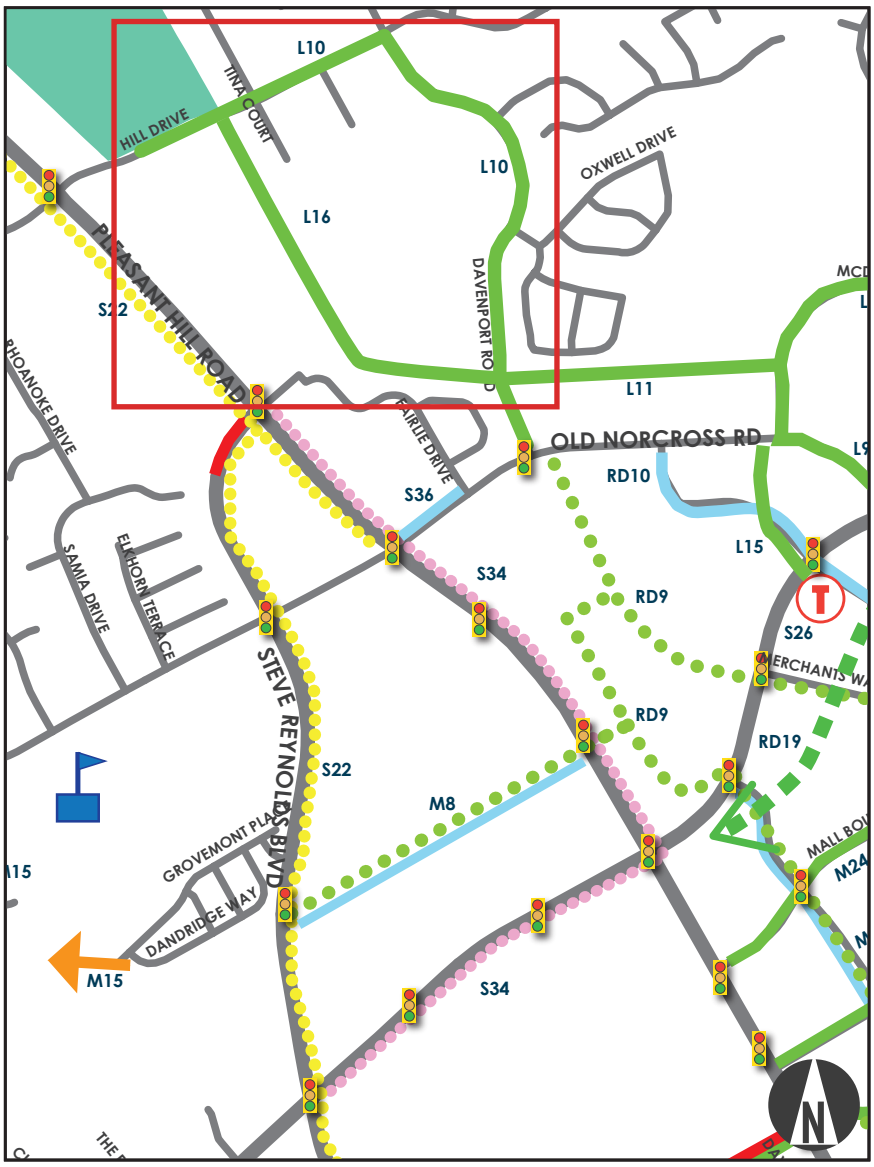
Engineering Year	Engineering Costs	ROW Year	ROW Costs	Construction Year	Construction Costs	Contingency Costs	Total Project Costs
2026-2045	**$47,700**	**2026-2045**	**$35,800**	**2026-2045**	**$238,400**	**$47,700**	**$369,600**

Davenport Road Multi-use Path

Ref. No.
L-10

Project Description

Install 10' multi-use Path along Davenport Rd from Old Norcross Rd to Hill Road and along Hill Road to Pleasant Hill Road.



Selected Project

Justification

Provides pedestrian and bicycle connection between Old Norcross Road and Pleasant Hill Road, connecting a commercial center, residential neighborhoods, and shorty Howell Park.

Jurisdiction

Gwinnett County

Service Type

Multi-Use Path

Project Source

- ☑ Livable Centers Initiative
- ☑ GPCID Traffic Studies
- ☐ Gwinnett County CTP
- ☐ ACTivate Gwinnett

LCI Project Ref. n/a

Implementation Long-term

Goals Addressed by Improvement:

- ☑ Sidewalk/Bike Connections to Activity Areas

Project Costs

Engineering Year	Engineering Costs	ROW Year	ROW Costs	Construction Year	Construction Costs	Contingency Costs	Total Project Costs
2026-2045	**$160,700**	**2026-2045**	**$120,600**	**2026-2045**	**$803,700**	**$160,700**	**$1,245,700**

Davenport-McDaniel Multi-use Path Connection

Ref. No.
L-11

Project Description

Install multi-use Path along Utility Easement from Davenport Rd to McDaniel Rd.

Justification

Provides pedestrian and bicycle connection between Davenport Road residential neighborhoods and McDaniel Farm Park.

Jurisdiction

Gwinnett County

Service Type

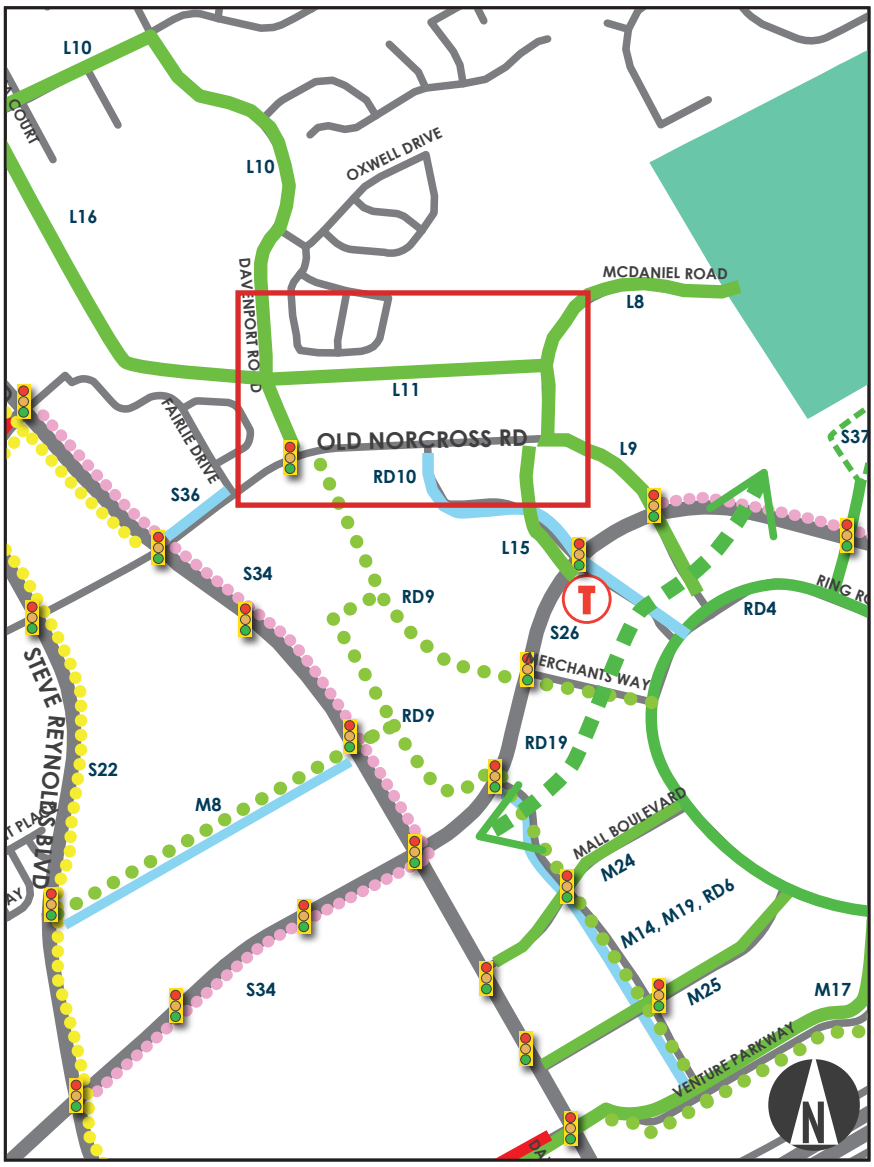
Multi-Use Path

Project Source

- ☐ Livable Centers Initiative
- ☑ GPCID Traffic Studies
- ☐ Gwinnett County CTP
- ☐ ACTivate Gwinnett

LCI Project Ref. n/a

Implementation Long-term



☐ Selected Project

Goals Addressed by Improvement:

☑ Sidewalk/Bike Connections to Activity Areas

Project Costs

Engineering Year	Engineering Costs	ROW Year	ROW Costs	Construction Year	Construction Costs	Contingency Costs	Total Project Costs
2026-2045	**$52,700**	**2026-2045**	**$39,500**	**2026-2045**	**$26,500**	**$52,700**	**$408,400**

Shackleford Rd and Steve Reynolds Blvd Sidewalk Connection to Louise Radloff Middle School

Ref. No.
L-12

Project Description

Install 5' Sidewalk along Shackleford Rd from Louise Radloff Middle School to Steve Reynolds Blvd.

Justification

Provides pedestrian connection between Steve Reynolds Boulevard and Radloff Middle school.

Jurisdiction

Gwinnett County

Service Type

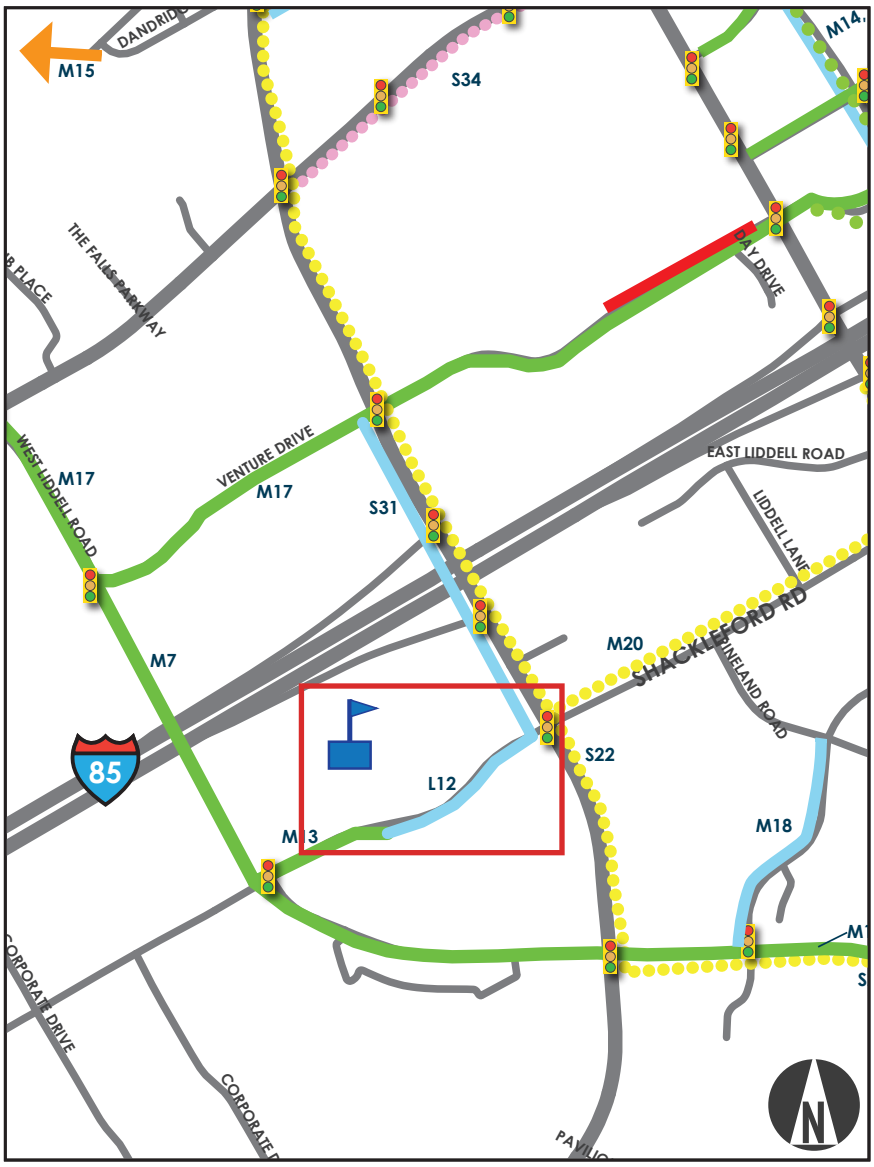
Sidewalk

Project Source

- ☐ Livable Centers Initiative
- ☑ GPCID Traffic Studies
- ☐ Gwinnett County CTP
- ☐ ACTivate Gwinnett

LCI Project Ref. n/a

Implementation Long-term



Selected Project

Modified Project

Goals Addressed by Improvement:

- ☑ Sidewalk/Bike Connections to Activity Areas

Project Costs

Engineering Year	Engineering Costs	ROW Year	ROW Costs	Construction Year	Construction Costs	Contingency Costs	Total Project Costs
2026-2045	**$9,900**	**2026-2045**	**$9,900**	**2026-2045**	**$49,300**	**$9,900**	**$79,000**

Ferguson Elementary School/Sweetwater Road Multi-use Path

Ref. No.
L-13

Project Description

Ferguson Elementary School/Sweetwater Rd Multi-use Path - Install 10' multi-use path connecting Ferguson Elementary School to Sweetwater Rd along Centerview Drive, Koger Blvd, and behind Pleasant Hill Plaza.

Justification

Provides pedestrian and bicycle connection between Sweetwater Road residential neighborhoods and Ferguson Elementary School.

Jurisdiction

Gwinnett County

Service Type

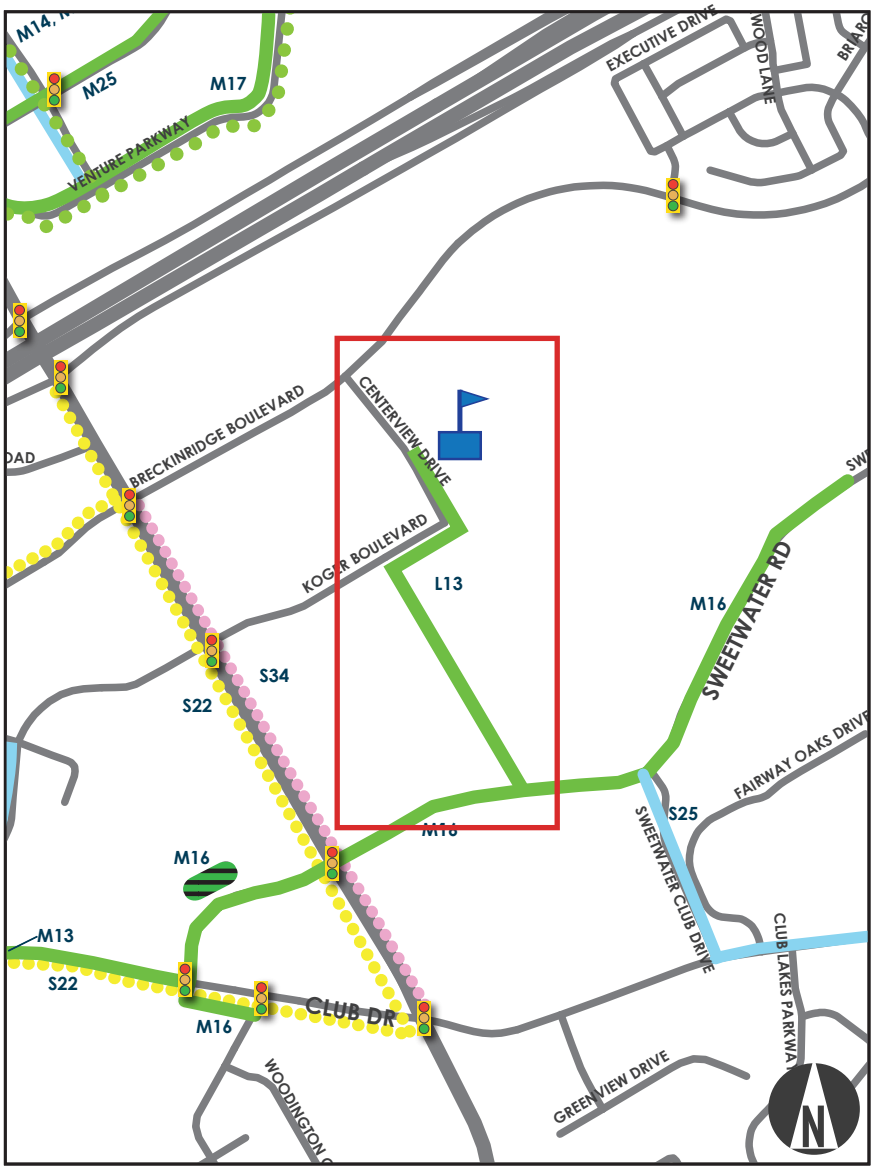
Multi-Use Path

Project Source

- ☑ Livable Centers Initiative
- ☑ GPCID Traffic Studies
- ☐ Gwinnett County CTP
- ☐ ACTivate Gwinnett

LCI Project Ref. C-18

Implementation Long-term



Selected Project

Goals Addressed by Improvement:

- ☑ Sidewalk/Bike Connections to Activity Areas

Project Costs

Engineering Year	Engineering Costs	ROW Year	ROW Costs	Construction Year	Construction Costs	Contingency Costs	Total Project Costs
2026-2045	**$80,000**	**2026-2045**	**$120,000**	**2026-2045**	**$399,900**	**$80,000**	**$679,900**

Pleasant Hill Road Interchange - Major Improvement Study

Keystone Project

Ref. No.
L-14

Project Description

Perform study to determine long-term improvement for interchange with I-85 (SPUI, etc.)

Justification

Maintains preparation for future travel demand in area at critical interchange

Jurisdiction

Gwinnett County

Service Type

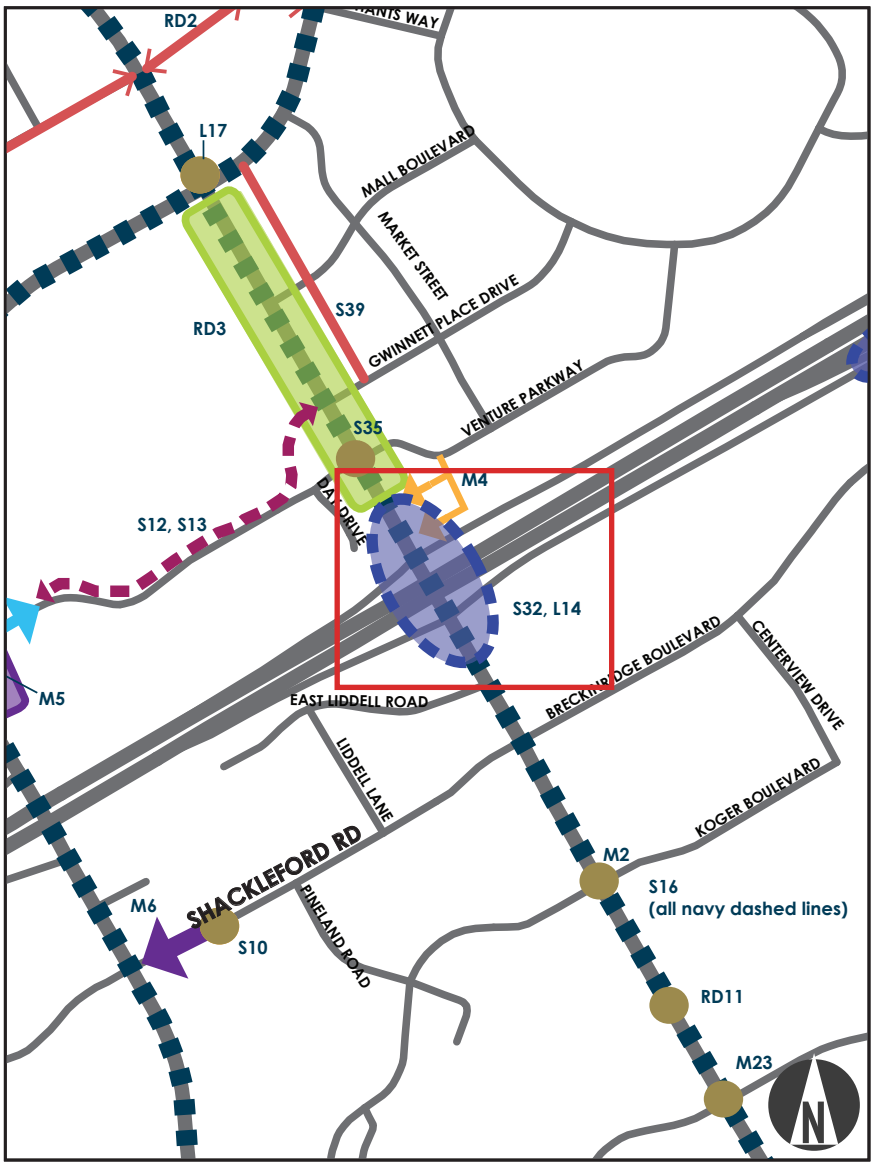
Interchange

Project Source

- ☐ Livable Centers Initiative
- ☑ GPCID Traffic Studies
- ☐ Gwinnett County CTP
- ☐ ACTivate Gwinnett

LCI Project Ref. n/a

Implementation Long-term



Goals Addressed by Improvement:

- ☑ Reduce Congestion/Improve Operations
- ☑ Serves Growth in Travel Demand
- ☑ Improve Traffic Safety

Project Costs

Engineering Year	Engineering Costs	ROW Year	ROW Costs	Construction Year	Construction Costs	Contingency Costs	Total Project Costs
2026-2045	**$150,000**	**NA**	**$0**	**NA**	**$0**	**$0**	**$150,000**

Transit Center - Gwinnett Plantation Way Pedestrian Overpass

Ref. No.
L-15

Project Description

Build bike and pedestrian overpass of Satellite boulevard from Gwinnett County Transit Center, eventually running just west of Gwinnett Place Way; provide connection across Gwinnett Plantation Way and then to Old Norcross Road; from McDaniel Farm Connectivity Study

Justification

Works to better connect McDaniel Farm Park to the core of the CID area with a fully separated crossing of Satellite Boulevard.

Jurisdiction

Gwinnett County

Service Type

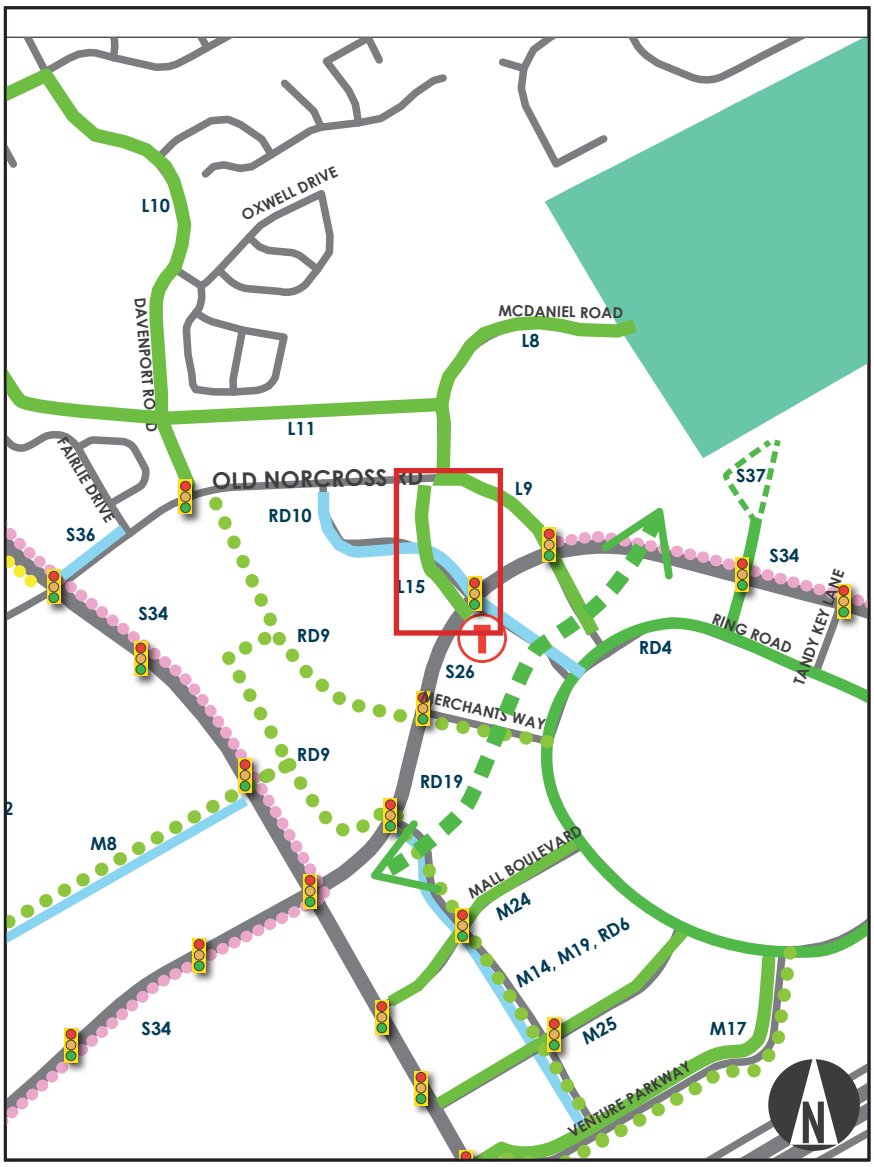
Multi-Use Path

Project Source

- ☐ Livable Centers Initiative
- ☑ GPCID Traffic Studies
- ☐ Gwinnett County CTP
- ☐ ACTivate Gwinnett

LCI Project Ref. n/a

Implementation Long-term



Selected Project

New Project

Goals Addressed by Improvement:

- ☑ Improve Pedestrian Crossing Safety
- ☑ Sidewalk/Bike Connections to Activity Areas
- ☑ Enhance Access to Transit

Project Costs

Engineering Year	Engineering Costs	ROW Year	ROW Costs	Construction Year	Construction Costs	Contingency Costs	Total Project Costs

Potential costs vary, please see ongoing study for latest cost estimate

Sweetwater Creek Greenway - Shorty Howell Park to Davenport road

Ref. No.
L-16

Project Description

Build portion of Sweetwwater Creek Greenway from Gwinnett County Greenway Plan linking Shorty Howell PArk to Davenport Road just north of Old Norcross Road.

Justification

Works to better connect Shorty Howell Park to the CID area.

Jurisdiction

Gwinnett County

Service Type

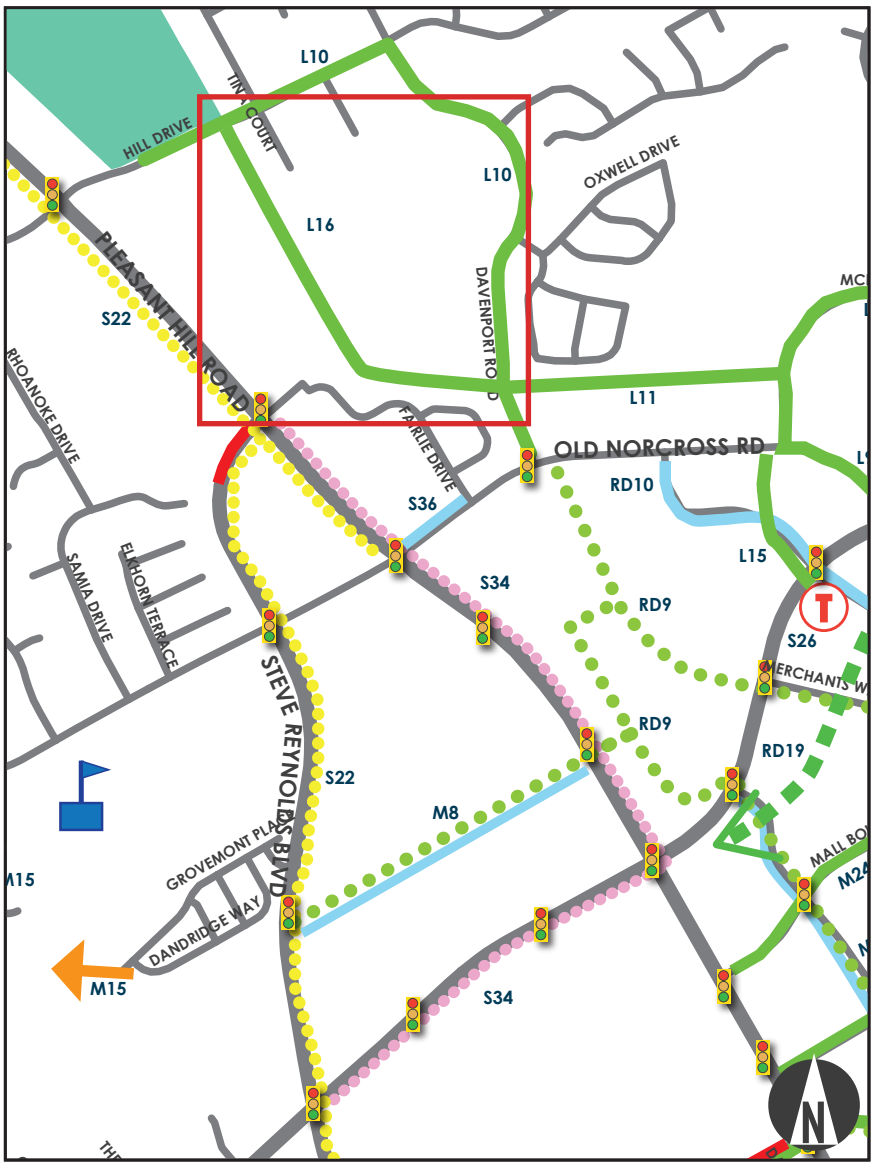
Multi-Use Path

Project Source

- ☐ Livable Centers Initiative
- ☑ GPCID Traffic Studies
- ☐ Gwinnett County CTP
- ☐ ACTivate Gwinnett

LCI Project Ref. n/a

Implementation Long-term



Selected Project

New Project

Goals Addressed by Improvement:

- ☑ Increase System Connectivity
- ☑ Sidewalk/Bike Connections to Activity Areas
- ☑ Enhance Access to Transit

Project Costs

Engineering Year	Engineering Costs	ROW Year	ROW Costs	Construction Year	Construction Costs	Contingency Costs	Total Project Costs
2026-2045	**$72,900**	**2026-2045**	**$72,900**	**2026-2045**	**$364,400**	**$72,900**	**$583,100**

Pleasant Hill Road at Satellite Boulevard - Major Capacity Improvement

Keystone Project

Ref. No.
L-17

Project Description

Provide major intersection capacity improvement

Justification

Maintains preparation for future travel demand at central intersection of CID area

Jurisdiction

Gwinnett County

Service Type

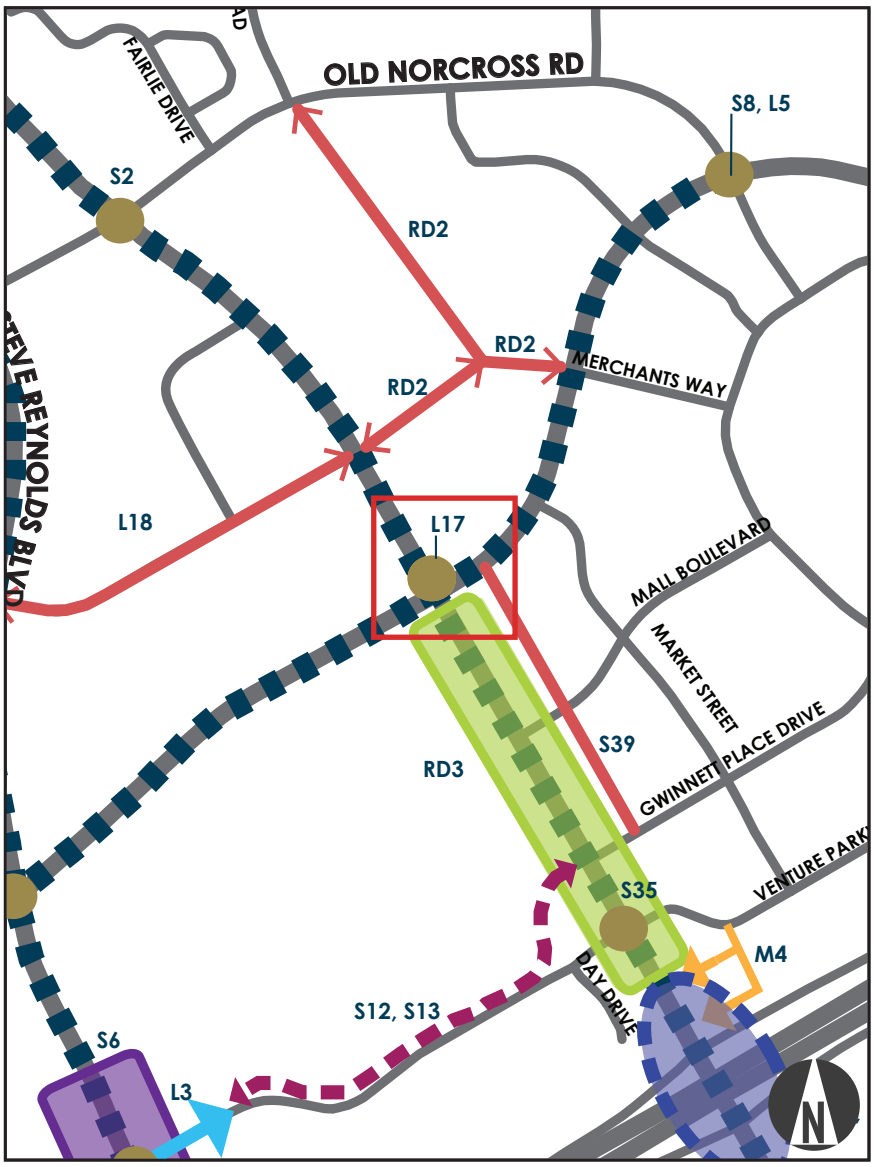
Intersection

Project Source

- ☐ Livable Centers Initiative
- ☑ GPCID Traffic Studies
- ☐ Gwinnett County CTP
- ☑ ACTivate Gwinnett

LCI Project Ref. n/a

Implementation Long-term



Selected Project

Modified Project

Goals Addressed by Improvement:

- ☑ Reduce Congestion/Improve Operations
- ☑ Serves Growth in Travel Demand
- ☑ Improve Traffic Safety

Project Costs

Engineering Year	Engineering Costs	ROW Year	ROW Costs	Construction Year	Construction Costs	Contingency Costs	Total Project Costs

Potential costs vary, please see ongoing study for latest cost estimate

Steve Reynolds - Pleasant Hill Connector

Ref. No.
L-18

Project Description

Convert existing shopping center access to full public road including striping and bike and pedestrian facilities.

Justification

Increase connectivity between Steve Reynolds Boulevard and Pleasant Hill Road for motorists, pedestrians, and cyclists.

Jurisdiction

Gwinnett County

Service Type

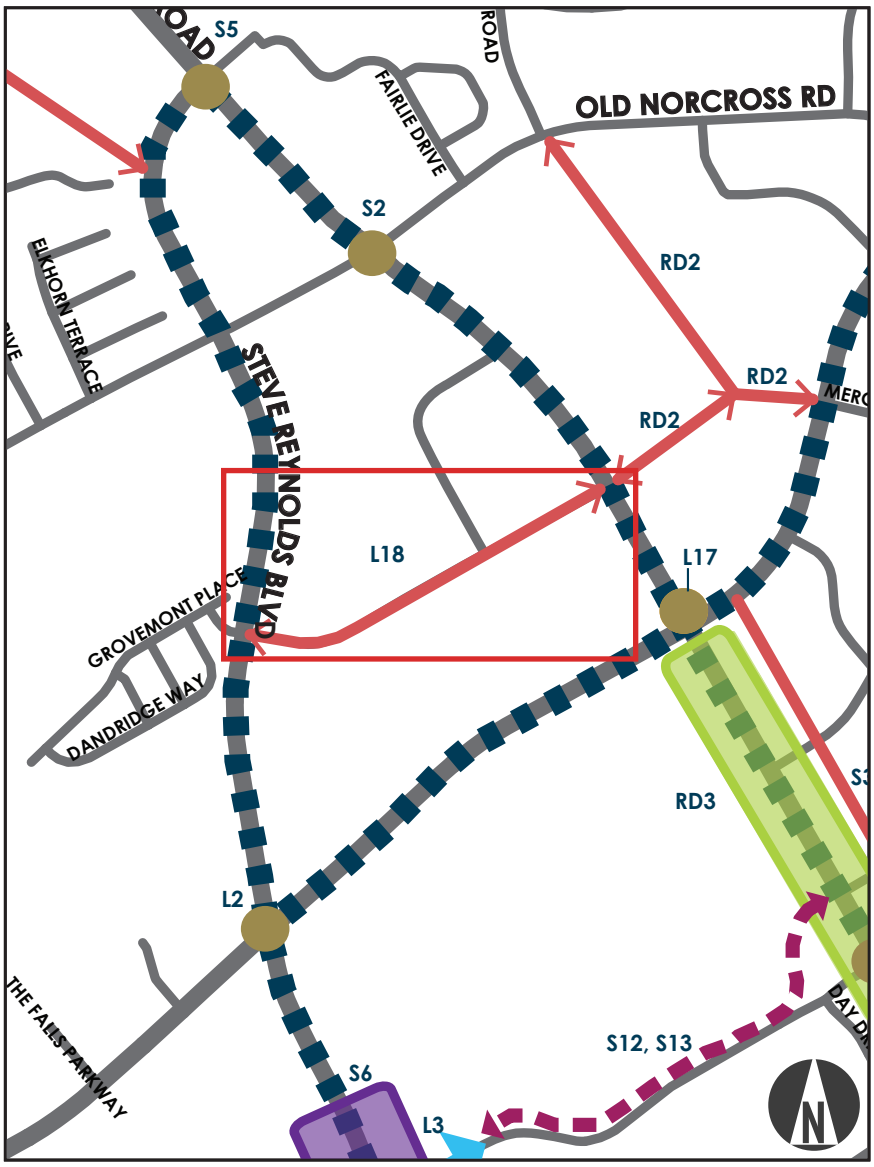
Complete Street

Project Source

- ☐ Livable Centers Initiative
- ☑ GPCID Traffic Studies
- ☐ Gwinnett County CTP
- ☐ ACTivate Gwinnett

LCI Project Ref. n/a

Implementation Long-term



Goals Addressed by Improvement:

- ☑ Reduce Congestion/Improve Operations
- ☑ Increase System Connectivity
- ☑ Serves Growth in Travel Demand
- ☑ Increase Utilization of Steve Reynolds Boulevard

Project Costs

Engineering Year	Engineering Costs	ROW Year	ROW Costs	Construction Year	Construction Costs	Contingency Costs	Total Project Costs
2026-2045	**$889,600**	**2026-2045**	**$459,100**	**2026-2045**	**$2,965,200**	**$593,000**	**$4,906,900**

Note: The cost of converting a private roadways to public ownership and maintenance can vary significantly depending on current conditions and negotiations with current owners.

Appendix B: Complete Project Table

Gwinnett Place CID - Intersection Improvement Traffic Studies Update - Preliminary List of Improvements DRAFT

(Short Term - 2016-2020 / Mid-Term 2021-2025 / Long-Term-Beyond 2025 / RD- with Redevelopment)

New Projects
Modified Projects
~~Accomplished Projects~~

Ref No.	Name	Type	Project Description	Keystone Projects	LCI Project Ref	Goals								Estimated Costs							
						Reduce Congestion /Improve Operations	Increase System Connectivity	Serves Growth in Travel Demand	Increase Utilization of Steve Reynolds	Improve Traffic Safety	Improve Pedestrian Crossing Safety	Sidewalk /Bike Connections to Activity Areas	Enhance Access to Transit	Engineering Year	Engineering Costs	ROW Year	ROW Costs	Construction Year	Construction Costs	Contingency Costs	Total Project Costs
Improve Congested Intersections and Roadway Segments - Pleasant Hill Road																					
S-1	Pleasant Hill Rd at North Berkeley Lake Rd - Median Nose Improvement	Minor Roadway	Increase radius of NB dual left turn by pulling back median nose on west side of intersection. Lengthen receiving area for dual left turns to extend past shopping center entrance.			✔		✔						2017	$19,000	NA	$0	2017	$95,200	$19,000	$133,200
S-2	Pleasant Hill Rd at Old Norcross Rd - Right Turn Lane Modification	Intersection	Remove channelization and yield sign for the WB right turn movement and install right turn overlap indication for the EB and WB right turn movements.		O-2	✔		✔			✔			2017	$3,100	NA	$0	2017	$6,200	$1,200	$10,500
S-3	Pleasant Hill Road at Club Drive - Access Modification to Remove U-Turn Conflict	Minor Roadway	Remove NB U-turn Conflict - Provide left turn into development on southwest quadrant, connect parcels east of Pleasant Hill Rd to Corely Pl, and prohibit NB U-turn from Pleasant Hill Rd at Club Dr.		O-2	✔			✔	✔				2017	$24,800	2017	$22,400	2018	$124,200	$24,800	$196,200
~~S-4~~	~~Pleasant Hill Road at Club Drive - Intersection Modifications (PE Only)~~	~~Intersection~~	~~Pleasant Hill Rd at Club Dr - Provide triple left turn NB and channelized dual right turn EB. Add a third through lane EB and WB on Club Drive.~~		~~O-2~~	✔		✔	✔												
S-32	Pleasant Hill Road Interchange Safety Improvements	Interchange	Widen SEB left turn radius, move guardrail back from curb; move (or investigate possibility or removing) pedestrian push buttons.	✘		✔		✔		✔	✔			2017	$21,400	NA	$0	2017	$107,200	$21,400	$150,000
S-35	Pleasant Hill Road at Venture Drive/Parkway - Safety Improvements	Intersection	Remove northbound left permissive phase, and add shared protected northbound left and eastbound right turn phase; add pedestrian crossing to north leg and add crossing phase							✔	✔			2017	$10,000	NA	$0	2017	$50,000	$10,000	$70,000
~~M-1~~	~~Pleasant Hill Road at Club Drive - Intersection Modifications~~	~~Intersection~~	~~Pleasant Hill Rd at Club Dr - Add a third through lane EB and WB on Club Drive.~~		~~O-2~~	✔		✔	✔												
M-2	Pleasant Hill Rd at Crestwood Pkwy/Koger Blvd - Right Turn Lane	Intersection	Add a right turn lane on the northbound approach.					✔						2021-2025	$9,500	2021-2025	$7,100	2021-2025	$47,600	$9,500	$73,700
~~M-3~~	~~Pleasant Hill Rd at Breckinridge Road Intersection Improvement~~	~~Intersection~~	~~Pleasant Hill Rd at Breckinridge Rd - Provide westbound dual left turns and add a southbound right turn lane.~~			✔		✔													
M-4	Pleasant Hill Rd at Venture Parkway Access Road	Access Management	Construct 2-lane access road from Venture Parkway east of Pleasant Hill Road extending south towards I-85. This access road will provide backside access to parcels adjacent to Pleasant Hill Road.			✔	✔							2021-2025	$144,900	2021-2025	$108,700	2021-2025	$724,500	$144,900	$1,123,000
M-23	Pleasant Hill Road at Sweetwater Road	Intersection	Extend all left turn lanes on all four approaches			✔		✔		✔				2021-2025	$149,000	2021-2025	$149,000	2021-2025	$745,200	$149,000	$1,192,200
M-26	Pleasant Hill Road/I-85/SR 316 C-D System Improvements Study	Interchange	Perform detailed study to identify ramp operations in the Collector-Distributor (C-D) system, with possible alternatives to include: move merge point further down ramp; add signage to encourage drivers to maintain speed through ramp; explore reconfiguring section of CD system to allow for two lanes from Pleasant Hill Road without merging and reducing ramp from I-85 northbound from two lanes to one	✘		✔		✔		✔				2021-2025	$200,000	NA	$0	NA	$0	$0	$200,000
L-1	Pleasant Hill Rd at Club Drive - Major Intersection Capacity Improvement	Major Intersection	Provide major capacity improvement (flyover for NB left turn lanes, Left Turn Overpass, or Continuous Flow Intersection[CFI]).			✔		✔	✔	✔				2026-2045	$3,005,100	2026-2045	$2,253,800	2026-2045	$15,025,400	$3,005,100	$23,289,400
L-14	Pleasant Hill Road Interchange - Major Improvement Study	Interchange	Perform study to determine long-term improvement for interchange with I-85 (SPUI, etc.)	✘		✔		✔		✔				2026-2045	$150,000	NA	$0	NA	$0	$0	$150,000
L-17	Pleasant Hill Rd at Satellite Blvd - Major Intersection Capacity Improvement	Major Intersection	Provide major intersection capacity improvement	✘		✔		✔		✔				Potential costs vary, please see ongoing study for latest cost estimate							
RD-11	New Intersection along Pleasant Hill Road	Intersection	Create new signalized intersection on Pleasant Hill Road between Sweetwater Road and Koger Boulevard at driveways to Pleasant Hill Plaza and Promenade at Pleasant Hill shopping centers					✔		✔	✔	✔	✔	2026-2045	$40,000	2026-2045	$40,000	2026-2045	$200,000	$40,000	$320,000
Improve Congested Intersections and Roadway Segments - Steve Reynolds Boulevard																					
S-5	Steve Reynolds Blvd at Pleasant Hill Rd - Median Nose Modification	Minor Roadway	Increase radius of EB triple left turn by pulling back median nose on north side of intersection.			✔		✔	✔	✔				2017	$2,100	NA	$0	2017	$6,200	$1,200	$9,500
S-6	Venture Dr at Steve Reynolds Blvd - Lane Alignment Changes	Pavement Marking	Restripe northbound approach to align left lane departing the I-85 NB intersection with left most through lane for Venture Drive and right lane departing the I-85 NB intersection with center through lane for Venture Drive. Replace striped island with concrete island with ADA ramps and pedestrian crossing indications on SW corner.		O-4	✔			✔	✔				2017	$5,200	NA	$0	2017	$16,600	$3,300	$25,100
S-7	Venture Dr at Steve Reynolds Blvd - Dual Left Turns (PE Only)	Intersection	Install NB, SB, and EB dual left turns. Extend NB right turn lane and install SB right turn lane. (PE Only)		O-4	✔		✔	✔	✔	✔			2017	$118,200	NA	$0	NA	$0	$0	$118,200
M-5	Venture Dr at Steve Reynolds Blvd - Dual Left Turns	Intersection	Install NB, SB, and EB dual left turns. Extend NB right turn lane and install SB right turn lane. (Construction costs)		O-4	✔		✔	✔	✔	✔			NA	$0	2021-2025	$55,400	2021-2025	$308,000	$61,600	$425,000
M-6	Steve Reynolds Boulevard at Shackleford Road Intersection Improvement	Intersection	Extend westbound right turn lane. Replace striped island with concrete island with ADA ramps and pedestrian crossing indications on NE corner.			✔								2021-2025	$24,400	2021-2025	$18,300	2021-2025	$122,000	$24,400	$189,100

Gwinnett Place CID - Intersection Improvement Traffic Studies Update - Preliminary List of Improvements DRAFT

(Short Term - 2016-2020 / Mid-Term 2021-2025 / Long-Term-Beyond 2025 / RD- with Redevelopment)

New Projects
Modified Projects
~~Accomplished Projects~~

Ref No.	Name	Type	Project Description	Keystone Projects	LCI Project Ref	Goals								Estimated Costs							
						Reduce Congestion /Improve Operations	Increase System Connectivity	Serves Growth in Travel Demand	Increase Utilization of Steve Reynolds	Improve Traffic Safety	Improve Pedestrian Crossing Safety	Sidewalk /Bike Connections to Activity Areas	Enhance Access to Transit	Engineering Year	Engineering Costs	ROW Year	ROW Costs	Construction Year	Construction Costs	Contingency Costs	Total Project Costs
L-2	Steve Reynolds Blvd at Satellite Blvd - Major Intersection Capacity Improvement	Major Intersection	Provide 3rd Through Lane Northbound and Southbound through intersection.			✔		✔	✔					2026-2045	$81,900	2026-2045	$61,400	2026-2045	$409,300	$81,900	$634,500
L-3	Venture Dr at Steve Reynolds Blvd - Underpass	Major Intersection	Provide underpass for Venture Dr through lanes.			✔	✔	✔	✔	✔	✔			2026-2045	$3,005,100	2026-2045	$2,253,800	2026-2045	$15,025,400	$3,005,100	$23,289,400
L-4	Club Dr at Steve Reynolds Blvd - Left Turn Lane Modification	Intersection	Provide triple left turn lanes southbound.			✔		✔	✔					2026-2045	$40,500	2026-2045	$30,300	2026-2045	$202,300	$40,500	$313,600
Improve Congested Intersections and Roadway Segments - Other Locations																					
S-8	Satellite Blvd at Old Norcross Road (west) - Right Turn Lane Modification	Minor Roadway	Extend WB right turn lane to upstream signal by connecting right turn deceleration lanes. Install pedestrian and vehicle signals on free-flow right turn lane to provide signalized pedestrian crossing. Install Pedestrian crossing signals and crosswalk on east side of intersection.		C-15	✔		✔		✔	✔	✔	✔	2017	$14,200	2018	$26,600	2019	$80,700	$16,100	$137,600
S-9	Venture Dr at West Liddell Dr - Intersection Restriping	Intersection	Improve unsignalized intersection (Restripe to provide single lane approaches at multiway stop with channelized WB right turn and crosswalks).			✔				✔	✔			2017	$2,600	NA	$0	2017	$8,300	$1,700	$12,600
S-10	Shackleford Road at Medical Center - Modification to Site Access	Signal / Driveway	Modify access to Medical Center and Farmers Market to reduce conflicts (Signalize or relocate Farmers Market Driveway to west).			✔				✔				2017	$20,200	NA	$0	2018	$134,600	$26,900	$181,700
S-11	Club Dr at Steve Reynolds Blvd - Widen Median for U-Turns.	Intersection	Widen median area to allow U-turns for southbound direction.			✔		✔	✔	✔				2017	$23,800	2018	$21,400	2019	$119,000	$23,800	$188,000
M-22	Old Norcross Road at Breckinridge Boulevard	Intersection	Extend southeastbound right turn lane and add second northeastbound left turn lane while maintaining southwestern median; shift the northeastbound through lanes to the southeast, in existing pavement or by narrowing concrete islands as necessary			✔		✔		✔				2021-2025	$28,000	2021-2025	$21,000	2021-2025	$140,000	$28,000	$217,000
L-5	Satellite Blvd at Old Norcross Road (west) - Left Turn Modifications	Minor Roadway	Provide Southbound triple left turn.			✔		✔						2026-2045	$18,800	2026-2045	$14,100	2026-2045	$94,100	$18,800	$145,800
~~L-6~~	~~Old Norcross Road - Median Installation~~	~~Median~~	~~Install a raised, landscaped median along Old Norcross Road from Satellite Blvd to west of Steve Reynolds Blvd (widen median from 12' to 20').~~			~~✔~~		~~✔~~		~~✔~~											
Provide Roadway Connections to Facilitate Effective Movement																					
S-12	Venture Drive - Widening from Steve Reynolds Blvd to Day Drive	Major Roadway	Widen Venture Drive to 4-lanes from Steve Reynolds Blvd to Day Drive and realign to tie in with current Venture Drive at Gwinnett Place Drive intersection improvement project. Include 10' Multi-use path on south side of Venture Drive.		R-8 / C-19	✔	✔	✔		✔		✔		2017	$192,700	2018	$318,000	2019-2020	$963,600	$192,700	$1,667,000
S-13	Venture Drive Connector	Major Roadway	Construct 4-lane Venture Drive Connector from Day Drive to Gwinnett Place Drive.		R-8	✔	✔	✔	✔					2017	$200,800	2018	$1,795,700	2019-2020	$1,173,700	$234,700	$3,404,900
S-14	Interparcel Connections	Minor Roadway	Provide interparcel connections to facilitate local traffic circulation - South of Venture Drive between Signature Furniture and Studio Movie Grill - North side of Venture Drive between Target shopping center and Ashley Furniture Shopping center - Market Place Development and Sweetwater Road - East of Pleasant Hill Road between Golden House Restaurant and Pleasant Hill Plaza - East side of Pleasant Hill Road from Fairlie Drive to Park Village Shopping Center.		R-4		✔	✔		✔				Coordination by Gwinnett Place CID for Interparcel Connections by Property Owners							
S-15	West Liddell Rd to Club Dr Connector (PE Only)	Major Roadway	New 4-lane roadway with 10' Multi-use path on one side and 5' sidewalk on the other side from Club Dr to Venture Drive including and overpass at I-85. (PE ONLY - This cost is for the planning and engineering of improvements. The total construction cost is estimated at $20 million).	✘	R-9	✔	✔	✔						2017-2018	$776,300	NA	$0	NA	$0	$0	$776,300
S-39	Gwinnett Place Drive - Satellite Boulevard Connector	Complete Street	Convert existing interparcel access road to full public road including enhancing crossing access at Mall Boulevard, striping, bike and pedestrian facilities				✔	✔			✔	✔		2018	$667,200	2019	$344,400	2020	$2,223,900	$444,800	$3,680,300
M-7	West Liddell Rd to Club Dr Connector	Major Roadway	New 4-lane roadway with 10' Multi-use path on one side and 5' sidewalk on the other side from Club Dr to Venture Drive including and overpass at I-85.	✘	R-9	✔	✔	✔						NA	$0	2021-2022	$9,268,200	2023-2024	$23,170,600	$4,634,100	$37,072,900
M-8	Chesden Road Improvement	Complete Street	Upgrade existing interparcel road to meet current roadway standard with proper pavement markings, curb and gutter, sidewalks, and sharrow markings or bike lanes.				✔					✔		2021-2025	$56,100	2021-2025	$42,000	2021-2025	$280,300	$56,100	$434,500
L-7	North Berkley Lake Road Extension	Major Roadway	Extend North Berkley Lake Rd south to Steve Reynolds Boulevard on the west side of the commercial property (3 lanes with 5' sidewalk on one side); prohibit the southbound left-turn movement at the new intersection with Steve Reynolds Blvd.			✔	✔	✔	✔					2026-2045	$266,900	2026-2045	$200,100	2026-2045	$1,334,300	$266,900	$2,068,200

Gwinnett Place CID - Intersection Improvement Traffic Studies Update - Preliminary List of Improvements DRAFT

(Short Term - 2016-2020 / Mid-Term 2021-2025 / Long-Term-Beyond 2025 / RD- with Redevelopment)

New Projects
Modified Projects
~~Accomplished Projects~~

Ref No.	Name	Type	Project Description	Keystone Projects	LCI Project Ref	Goals								Estimated Costs							
						Reduce Congestion /Improve Operations	Increase System Connectivity	Serves Growth in Travel Demand	Increase Utilization of Steve Reynolds	Improve Traffic Safety	Improve Pedestrian Crossing Safety	Sidewalk /Bike Connections to Activity Areas	Enhance Access to Transit	Engineering Year	Engineering Costs	ROW Year	ROW Costs	Construction Year	Construction Costs	Contingency Costs	Total Project Costs
L-18	Steve Reynolds - Pleasant Hill Connector	Complete Street	Convert existing shopping center access to full public road including striping and bike and pedestrian facilities.				✔	✔	✔					2026-2045	$889,600	2026-2045	$459,100	2026-2045	$2,965,200	$593,000	$4,906,900
RD-2	Davenport / Merchants way Connector	Complete Street	Connect Davenport Rd to Merchants Way through commercial area with redevelopment - Construct as a complete street with two through lanes, bike lanes, and sidewalk. Connect this road to Pleasant Hill Road. Construct bike lanes on Merchants Way from Satellite Blvd to Ring		R-11		✔					✔	✔								
RD-3	Pleasant Hill Road Reconstruction	Complete Street	Reconstruct Pleasant Hill Road from Venture Dr to North of Satellite Blvd to provide a Complete Street Six lane Road including wide median, buffered multi-use path and sidewalk - Coordinate with redevelopment of LCI target area.					✔				✔									
ITS and Signal Timing Upgrades																					
S-16	Travel Time Data Monitoring	ITS	Install System to Gather Travel Time Data from Blue Tooth Devices along the following corridors (includes five years monitoring cost): Pleasant Hill Rd from Club Drive to Steve Reynolds Blvd (4 stations) Satellite Blvd from Steve Reynolds Blvd to Old Norcross Rd (3 stations) Steve Reynolds Blvd from Pleasant Hill Rd to Club Drive (3 stations)		O-1	✔								2019	$20,200	NA	$0	2019	$134,600	$26,900	$181,700
~~S-17~~	~~Traffic Responsive Signal Timing~~	~~ITS~~	~~Install traffic responsive signal timing along Pleasant Hill Rd from Club Drive to Steve Reynolds Blvd, along Steve Reynolds Boulevard from Club Drive to Pleasant Hill Road, and along Satellite Boulevard from Old Norcross Road to Steve Reynolds Boulevard.~~		~~O-1~~	~~✔~~				~~✔~~										
M-9	Changeable Message Signs along Pleasant Hill Road	ITS	Install Changeable Message Signs along Pleasant Hill Rd with travel information for through vehicles - North of Steve Reynolds Blvd for SB traffic and south of Club Drive for NB traffic (4 signs total).			✔			✔					2021-2025	$33,100	2021-2025	$33,100	2021-2025	$331,200	$66,200	$463,600
Pedestrian Crossing Safety and Visibility																					
S-18	Pedestrian Crossing Safety Modifications along Pleasant Hill Road:	Pedestrian	Pedestrian Crossing Safety Modifications along Pleasant Hill Road: Old Norcross - Remove right turn island striping on NE and SW corners and install stop bars. Satellite Blvd - Replace striped islands with concrete islands with ADA ramps and pedestrian crossing indications on SE and SW corners. Remove striped island on NW corner. Sweetwater Road - Replace striped islands with concrete islands with ADA ramps and pedestrian crossing indications on NE and SE corners. Club Drive - Remove right turn island striping on NE corner and install stop bar. Breckinridge Blvd - Add crosswalk across southern leg of Pleasant Hill Road Install pedestrian signal heads with countdown timers at the intersections of Pleasant Hill Road at Sweetwater Road, Breckinridge Boulevard, and Gwinnett Station.		C-6 / O-2						✔	✔	✔	2017	$16,100	NA	$0	2018	$80,700	$16,100	$112,900
S-19	Pedestrian Crossing Safety Modifications along Steve Reynolds Boulevard	Pedestrian	Pedestrian Crossing Safety Modifications along Steve Reynolds Boulevard Satellite Blvd - Remove striped islands on NW and SE corners and install stop bars. Chesden Dr - Install crosswalk on east side of intersection. Venture Drive - Replace striped island with concrete island with ADA ramps and pedestrian crossing indications on SW corner. Club Drive - Remove right turn island striping on SW corner and install stop bar.		C-16 / O-3 / O-4						✔	✔		2017	$5,800	NA	$0	2018	$29,000	$5,800	$40,600
S-20	Pedestrian Crossing Safety Modifications along Satellite Boulevard	Pedestrian	Pedestrian Crossing Safety Modifications along Satellite Boulevard Mall Access Rd - Remove striped islands on NW corner and install stop bar. Market St - Install pedestrian signal heads and crosswalk on west side of intersection. In-Town Suites - Replace striped island with concrete island with ADA ramps and pedestrian crossing indications on SE corner. West Liddell - Replace striped island on SW corner with concrete island. Old Norcross Road (West) - Widen western median and provide pedestrian median refuge Gwinnett Place Honda/Pars Car Sales Driveway - add pedestrian countdown signals to southern crosswalk, upgrade all pedestrian signals to countdown timers; widen medians at intersection by narrowing lanes, provide pedestrian median refuge on eastern crosswalk		C-16 / O-3						✔	✔	✔	2018	$5,400	NA	$0	2019	$85,700	$17,100	$108,200

Gwinnett Place CID - Intersection Improvement Traffic Studies Update - Preliminary List of Improvements DRAFT

(Short Term - 2016-2020 / Mid-Term 2021-2025 / Long-Term-Beyond 2025 / RD- with Redevelopment)

New Projects
Modified Projects
~~Accomplished Projects~~

Ref No.	Name	Type	Project Description	Keystone Projects	LCI Project Ref	Goals								Estimated Costs							
						Reduce Congestion /Improve Operations	Increase System Connectivity	Serves Growth in Travel Demand	Increase Utilization of Steve Reynolds	Improve Traffic Safety	Improve Pedestrian Crossing Safety	Sidewalk /Bike Connections to Activity Areas	Enhance Access to Transit	Engineering Year	Engineering Costs	ROW Year	ROW Costs	Construction Year	Construction Costs	Contingency Costs	Total Project Costs
			Commerce Drive - widen medians and narrow lanes along Satellite Boulevard at intersection; potentially add pedestrian median refuge on western crosswalk																		
			Install pedestrian signal heads with countdown timers at intersections with Steve Reynolds Boulevard, Market St, Merchants Way, Gwinnett Plantation Way, Old Norcross Road, and Commerce Avenue																		
S-21	Pedestrian Crossing Safety Modifications - Various Locations	Pedestrian	Pedestrian Crossing Safety Modifications - Various Locations		C-15 / C-16						✔	✔	✔	2018	$9,300	NA	$0	2019	$46,300	$9,300	$64,900
			Club Drive at Woodington Circle - Install pedestrian signal heads with countdown timers on all legs and install a crosswalk on the west side of the intersection.																		
			Gwinnett Place Drive at Market Street - Install pedestrian signal heads with countdown timers, brick paver crosswalks, and ADA ramps for the north, south and west sides of the intersection																		
			Old Norcross Road at Davenport Road - Install crosswalks on the southern and western legs. Upgrade to pedestrian signal heads with countdown timers at this intersection. Remove striped island on SB approach an install stop bar.																		
S-22	Streetlights along Pleasant Hill Road, Club Drive, Steve Reynolds Boulevard, and Shackleford Road	Pedestrian	Streetlight Installation - Install streetlights along Pleasant Hill Road from Shorty Howell Park to Old Norcross Road (20), on Pleasant Hill Road from I-85 to Club Drive (20), on Club Drive from Pleasant Hill Road to Steve Reynolds Boulevard (15), on Steve Reynolds Boulevard from Club Drive to Pleasant Hill Road. (40), and on Shackleford Road from Steve Reynolds Boulevard to Pleasant Hill Road (12)		C-11/ C-12						✔	✔	✔	2018	$28,400	NA	$0	2019	$354,800	$71,000	$454,200
S-29	Pedestrian Crossing Safety Modifications along Breckinridge Boulevard	Pedestrian	Executive Drive (East) - Move crosswalks and pedestrian signals to existing concrete islands; expand island in northeast corner as necessary; upgrade pedestrian signals to countdown timers								✔	✔		2017	$7,600	NA	$0	2018	$37,900	$7,600	$53,100
			Executive Drive (West) - Expand concrete islands, move crosswalks and pedestrian signals to northeast and southeast islands, straighten western segment of southern crosswalk; upgrade pedestrian signals to countdown timers																		
S-30	Pedestrian Crossing Safety Modifications at Koger Boulevard and Centerview Drive	Pedestrian	Add crosswalks across the southern and western legs of intersection of Koger Boulevard and Centerview Drive							✔	✔			2017	$1,000	NA	$0	2018	$3,800	$1,000	$5,800
M-10	Pedestrian Crossing Safety Modifications along Pleasant Hill Road:	Pedestrian	Pedestrian Crossing Safety Modifications along Pleasant Hill Road		C-6						✔	✔	✔	2021-2025	$10,000	NA	$0	2021-2025	$49,900	$10,000	$69,900
			Shorty Howell Park - Remove right turn island striping on SE corner and install stop bar.																		
			North Berkley Lake Rd/Hill Dr - Replace striped island with concrete island with ADA ramps and pedestrian crossing indications on NE corner. Remove striped islands on NE and SE corners and install stop bar at NE corner.																		
			Steve Reynolds Blvd - Remove right turn island striping on SW corner and install stop bar.																		
			Gwinnett Station (Commercial Access North of Satellite Blvd) - Install crosswalks with pedestrian crossing indications for east, west, and south sides of the intersection.																		
			Breckinridge Blvd - Replace striped island with concrete island with ADA ramps and pedestrian crossing indications on SW corner.																		
			Koger Blvd - Remove right turn island striping on NE corner and modify curbing to reduce right turn radius and increase sidewalk area.																		
M-11	Pedestrian Crossing Safety Modifications along Steve Reynolds Boulevard	Pedestrian	Pedestrian Crossing Safety Modifications along Steve Reynolds Boulevard							✔	✔	✔		2021-2025	$3,500	NA	$0	2021-2025	$17,600	$3,500	$24,600
			I-85 SB - Add crosswalk and pedestrian crossing signal for movements crossing Steve Reynolds Boulevard and add a concrete channelization island in the northwest corner.																		
			Shackleford Road - Replace northern painted island with concrete island; move crosswalks and pedestrian signals to island																		
M-12	Pedestrian Crossing Safety Modifications along Satellite Boulevard	Pedestrian	Pedestrian Crossing Safety Modifications along Satellite Boulevard								✔	✔	✔	2021-2025	$9,900	2021-2025	$2,800	2021-2025	$49,700	$9,900	$72,300
			Old Norcross Rd (east)- Replace striped island with concrete island with ADA ramps and pedestrian crossing indications on NE corner.																		
			Tandy Key Lane - Realign crosswalk and install ADA ramps on north side of intersection. Replace striped island with concrete island with ADA ramps and pedestrian crossing indications on SW corner.																		
			Old Norcross Rd (west) - Install crosswalk with pedestrian signal heads on east side of the intersection																		

Gwinnett Place CID - Intersection Improvement Traffic Studies Update - Preliminary List of Improvements DRAFT

(Short Term - 2016-2020 / Mid-Term 2021-2025 / Long-Term-Beyond 2025 / RD- with Redevelopment)

New Projects
Modified Projects
~~Accomplished Projects~~

Ref No.	Name	Type	Project Description	Keystone Projects	LCI Project Ref	Goals								Estimated Costs							
						Reduce Congestion /Improve Operations	Increase System Connectivity	Serves Growth in Travel Demand	Increase Utilization of Steve Reynolds	Improve Traffic Safety	Improve Pedestrian Crossing Safety	Sidewalk /Bike Connections to Activity Areas	Enhance Access to Transit	Engineering Year	Engineering Costs	ROW Year	ROW Costs	Construction Year	Construction Costs	Contingency Costs	Total Project Costs
M-21	Pedestrian Crossing Safety Improvements at Old Norcross Road and Breckinridge Boulevard	Pedestrian	Bring all pedestrian ramps to ADA standard as part of the next milling/resurfacing project; upgrade all pedestrian signals to countdown timers								✔			2021-2025	$3,800	NA	$0	2021-2025	$19,200	$3,800	$26,800
M-29	Pedestrian Crossing Safety Improvement at Old Norcross Road and McDaniel Road	Pedestrian	Add pedestrian crossing of Old Norcross Road at McDaniel Road								✔	✔	✔	2021-2025	$1,000	NA	$0	2021-2025	$2,500	$1,000	$4,500
Multimodal Connectivity																					
S-23	Woodington Circle Multi-use Path Connection to Corley Elementary School	Multi-use Path	Woodington Circle Multi-use Path Connection to Corley Elementary School. Path goes around existing greenspace area.									✔		2017	$18,800	2018	$62,200	2019	$188,400	$37,700	$307,100
S-24	Club Drive Sidewalk	Sidewalk	Install sidewalk along both sides of Club Drive from Sweetwater Club Drive to existing sidewalk at Club Drive Park.									✔	✔	2017	$40,300	2018	$72,500	2018	$402,500	$80,500	$595,800
S-25	Sweetwater Club Drive sidewalk	Sidewalk	Install sidewalk along the west side of Sweetwater Club Drive from Sweetwater Rd to Club Dr. At the intersection of Sweetwater Club Dr at Club Dr, replace striped islands with concrete islands with ADA ramps on the NE and NW corners									✔	✔	2017	$12,300	2018	$35,200	2018	$123,100	$12,300	$182,900
S-26	Gwinnett County Transit Gwinnett Place Mall Transit Center Upgrade	Transit Center	GCT Gwinnett Place Mall Transit Center Upgrade Transit Center Design - Upgrade existing transit center design with improved passenger amenities that include an enclosed/covered waiting area with benches, trash receptacles, bike parking facilities, vending machines, restrooms, and transit kiosk. Transit Center Access - Extend the curbs on the south leg of the intersection of Satellite Blvd at Gwinnett Plantation Way to reduce the roadway width to 36 ft. Stripe the south leg with three total lanes, a left-turn lane and a shared through/right-turn lane on the northbound approach and one southbound receiving lane. Transit Center Access - Modify access to traffic circulation for the transit center from Gwinnett Plantation Way to move the access point further from Satellite Boulevard. Transit Center Access - Create a new taxi stand close to the buses to prevent the need for pedestrians to cross Gwinnett Plantation Way to access taxis or improve the pedestrian crossing to the existing parking lot/informal taxi stand area.	✘	T-1 / O-3			✔				✔	✔	2017	$89,000	2018	$150,000	2018	$651,000	$130,200	$1,020,200
S-27	Gwinnett County Transit Bus Route Modification	Transit	Change Bus Route 10 or 30 to provide transit access to Pleasant Hill Road north of I-85. Utilize Breckinridge Road west from Old Norcross Road to Pleasant Hill Road, then Pleasant Hill Road north to Satellite Boulevard, then east to the transit center. Install four bus shelters along Pleasant Hill Road. Consider increased bus frequency for routes 10 and 40. (cost includes changes to signage and bus shelters only - no transit operational costs.		T-2			✔					✔	2020	$10,400	NA	$0	2020	$51,800	$5,200	$67,400
S-28	Support for Regional Travel Demand Management	Travel Demand Management	Coordination between GPCID, ARC, Clean Air Campaign, Gwinnett County, and local businesses to support regional travel demand management programs such as carpool, vanpool, and teleworking.			✔		✔					✔	Ongoing Coordination between Agencies to Facilitate Travel Demand Management							
S-31	Steve Reynolds Boulevard Sidewalk	Sidewalk	Install 5' sidewalk along Steve Reynolds Boulevard from Venture Drive to Shackleford Road								✔	✔		2017	$33,300	2017	$33,300	2018	$166,700	$33,300	$266,600
S-34	Streetscape Improvements	Sidewalk	Improve existing sidewalks. Widen with brick aesthetic, and additional plantings. Includes: Pleasant Hill Road from Steve Reynolds Boulevard to Satellite Boulevard and from Breckinridge Boulevard/Shackleford Road to Club Drive; Satellite Boulevard from Steve Reynolds Boulevard to Pleasant Hill Road and Old Norcross Road (west) to Old Norcross Road									✔	✔	N/A	$0	NA	$0	2020	$5,374,700	$537,500	$5,912,200
S-36	Old Norcross Road Sidewalk	Sidewalk	Install 5' sidewalk along north side of Old Norcross Road from Pleasant Hill Road to existing sidewalk at Fairlie Drive									✔		2017	$3,400	2017	$3,400	2017	$17,000	$3,400	$27,200
S-37	Grade-Separated McDaniel Farm Connection	Multi-Use Path	Construct trail connecting southern side of Satellite Boulevard to McDaniel Farm Park with grade-separation at Satellite Boulevard	✘			✔				✔	✔		2017	$57,000	2018	$150,500	2018	$540,000	$3,000	$750,500
S-38	Commerce Avenue Multi-Use Path	Multi-Use Path	Add multi-use path on west side of Commerce Avenue from Satellite Boulevard to McDaniel Farm Park access									✔		2017	$80,000	NA	$0	2020	$670,000	$134,000	$884,000
M-13	Club Drive Sidewalk and Multi-use Path with Connection to Louise Radloff Middle School	Multi-use Path	Install 5' sidewalk along north side of Club Drive from Steve Reynolds Blvd to Shackleford Road and install 10' Multi-use path along south side of Club Drive from Shackleford Road to Sweetwater Road. Install a 10' Multi-use path along the north side of Shackleford Road from Club Drive to Louise Radloff Middle School.		C-18							✔		2021-2025	$203,000	2021-2025	$152,300	2021-2025	$1,015,100	$203,000	$1,573,400
M-14	Market Street "Sharrow" Pavement Markings (shared bicycle and automobile use)	Shared Lane Markings	Gwinnett Place "Sharrow" Pavement Markings - Implement "sharrow" pavement markings to indicate shared bicycle and automobile use along the following roadways: Market Street from Venture Drive to Satellite Boulevard	✘	C-1 / C-3 / C-4			✔				✔		2021-2025	$1,100	NA	$0	2021-2025	$11,200	$2,200	$14,500

Gwinnett Place CID - Intersection Improvement Traffic Studies Update - Preliminary List of Improvements DRAFT

(Short Term - 2016-2020 / Mid-Term 2021-2025 / Long-Term-Beyond 2025 / RD- with Redevelopment)

New Projects
Modified Projects
~~Accomplished Projects~~

Ref No.	Name	Type	Project Description	Keystone Projects	LCI Project Ref	Goals								Estimated Costs							
						Reduce Congestion /Improve Operations	Increase System Connectivity	Serves Growth in Travel Demand	Increase Utilization of Steve Reynolds	Improve Traffic Safety	Improve Pedestrian Crossing Safety	Sidewalk /Bike Connections to Activity Areas	Enhance Access to Transit	Engineering Year	Engineering Costs	ROW Year	ROW Costs	Construction Year	Construction Costs	Contingency Costs	Total Project Costs
M-15	Davis Circle Multi-use Path Connection to Charles Brant Chesney Elementary School	Multi-Use Path	Install 10' multi-use path along Davis Circle from west Liddell Road to Old Norcross Road with a connection to Charles Brant Chesney Elementary School. Provide multi-use path connections to Club Place and Falls Parkway.									✔		2021-2025	$111,800	2021-2025	$83,900	2021-2025	$559,100	$111,800	$866,600
M-16	Sweetwater Road Multi-use Path	Multi-Use Path	Install 10' multi-use path along north side of Sweetwater Rd from Club Drive to Wesley Place. Install 10' multi-use path along south side of Club Drive from Sweetwater Road to Woodington Circle. Provide greenspace park adjacent to streetscape area in commercial parking lot on north side of Sweetwater Road		C-19							✔		2021-2025	$199,000	2021-2025	$304,600	2021-2025	$995,000	$199,000	$1,697,600
M-17	Venture Dr/West Liddell Dr Multi-use Path	Multi-Use Path	Install 10' multi-use path along Venture Dr/West Liddell Dr connecting from Satellite Blvd to Ring Road; part of Bromolow Greenway from Gwinnett Greenway Plan; segment between Pleasant Hill Road and Ring Road could be built in conjunction with regional retention pond improvements in ACTivate Gwinnett Place	✘								✔		2021-2025	$187,200	2021-2025	$140,400	2021-2025	$936,000	$187,200	$1,450,800
M-18	Crestwood Parkway Sidewalk	Sidewalk	Install 5' sidewalk along Crestwood Parkway from Pineland Road to Club Drive									✔		2021-2025	$22,700	2021-2025	$17,000	2021-2025	$113,600	$22,700	$176,000
M-19	Market Street Sidewalk	Sidewalk	Install 5' sidewalk along western side of Market Street from Satellite Boulevard to Gwinnett Place Drive	✘								✔		2021-2025	$25,800	2021-2025	$19,300	2021-2025	$128,800	$25,800	$199,700
M-24	Mall Boulevard Bike/Pedestrian Improvements	Complete Street	Implement 'Complete Streets' principle with sidewalks and bike lanes on Mall Boulevard from Pleasant Hill Road to Ring Road. (formerly RD7)	✘	C-3							✔		NA	$0	NA	$0	2021-2025	$1,099,900	$132,000	$1,231,900
M-25	Gwinnett Place Drive Bike/Pedestrian Improvements	Complete Street	Implement 'Complete Streets' principle with sidewalks and bike lanes on Gwinnett Place Drive from Pleasant Hill Road to Ring Road. (formerly RD8)	✘	C-4							✔		NA	$0	NA	$0	2021-2025	$1,344,400	$161,300	$1,505,700
M-28	Executive Drive S Sidewalk	Sidewalk	Install 5' sidewalk along ouside of Executive Drive S loop from Breckinridge Boulevard to existing sidewalk south of Eldridge Road; connect existing sidewalk sections on inside of Executive Drive S loop									✔		2021-2025	$39,100	2021-2025	$39,100	2021-2025	$195,700	$39,100	$313,000
L-8	McDaniel Road Multi-use Path	Multi-Use Path	Install 10' multi-use path along McDaniel Road from Old Norcross Road to McDaniel Farm Park and along McDaniel Road from Duluth Highway (SR 120 to McDaniel Farm Park).		C-9							✔		2026-2045	$160,900	2026-2045	$120,700	2026-2045	$804,500	$160,900	$1,247,000
L-9	Old Norcross Road Multi-use Path	Multi-Use Path	Install 10' multi-use path along northwest side of Old Norcross Road from McDaniel Road to Mall Ring Road.		C-14							✔		2026-2045	$47,700	2026-2045	$35,800	2026-2045	$238,400	$47,700	$369,600
L-10	Davenport Road Multi-use Path	Multi-Use Path	Install 10' multi-use Path along Davenport Rd from Old Norcross Rd to Hill Road and along Hill Road to Pleasant Hill Road.									✔		2026-2045	$160,700	2026-2045	$120,600	2026-2045	$803,700	$160,700	$1,245,700
L-11	Davenport-McDaniel Multi-use Path Connection	Multi-Use Path	Install multi-use Path along Utility Easement from Davenport Rd to McDaniel Rd.									✔		2026-2045	$52,700	2026-2045	$39,500	2026-2045	$263,500	$52,700	$408,400
L-12	Shackleford Rd and Steve Reynolds Blvd Sidewalk Connection to Louise Radloff Middle School	Sidewalk	Install 5' Sidewalk along Shackleford Rd from Louise Radloff Middle School to Steve Reynolds Blvd									✔		2026-2045	$9,900	2026-2045	$9,900	2026-2045	$49,300	$9,900	$79,000
L-13	Ferguson Elementary School/Sweetwater Rd Multi-use Path	Multi-Use Path	Install 10' multi-use path connecting Ferguson Elementary School to Sweetwater Rd along Centerview Drive, Kroger Blvd, and behind Pleasant Hill Plaza.		C-18							✔		2026-2045	$80,000	2026-2045	$120,000	2026-2045	$399,900	$80,000	$679,900
L-15	Transit Center - Gwinnett Plantation Way Pedestrian Overpass	Multi-Use Path/ Crossing	Build bike and pedestrian overpass of Satellite Boulevard from Gwinnett County Transit Center, eventually running just west of Gwinnett Place Way; provide connection across Gwinnett Plantation Way and then to Old Norcross Road; from McDaniel Farm Connectivity Study								✔	✔	✔	Potential costs vary, please see ongoing study for latest cost estimate							
L-16	Sweetwater Creek Greenway - Shorty Howell Park to Davenport Road	Multi-Use Path/ Crossing	Build portion of Sweetwater Creek Greenway from Gwinnett County Greenway linking Shorty Howell Park to Davenport Road just north of Old Norcross Road				✔					✔	✔	2026-2045	$72,900	2026-2045	$72,900	2026-2045	$364,400	$72,900	$583,100
RD-4	Ring Road Multi-use Path	Multi-Use Path	Implement a Road Diet along Ring Road and use the available ROW to install a 10' multi-use path. Install crosswalks at the following intersections: Commerce Avenue, Venture Parkway, Gwinnett Place Drive, Mall Boulevard, Merchants Way, Old Norcross Road, and Tandy Key		C-5 / C-7			✔				✔									
~~RD-5~~	~~Pedestrian Bridge/Greenway Crossing on Pleasant Hill Rd~~	~~Multi-Use Path/ Crossing~~	~~Pedestrian Bridge/Greenway Crossing on Pleasant Hill Rd - Implement a pedestrian bridge over Pleasant Hill Road as part of the greenway extension from Gwinnett Place Mall west to the proposed park on Steve Reynolds Boulevard. The overpass would be designed with long and gradual sloping ramps on both sides for easy access. Features of the overpass include a multi-use path for pedestrians and bicyclists with amenities such as adequate lighting, greenspace, signage, etc. Combine with construction of local street grid east and west of Pleasant Hill Road. Grid roads include connecting road between Mall Boulevard and Gwinnett Place Drive and between Satellite Boulevard and Ring Road.~~		~~C-17 / R-2 / R-3 / R-5 /R-6~~						✔	✔	✔								
RD-6	Market Street Bike/Pedestrian Improvements	Complete Street	With redevelopment, implement 'Complete Streets' principle with sidewalks and bike lanes on Market Street from Venture Drive to Satellite Boulevard.	✘	C-1							✔	✔								

Gwinnett Place CID - Intersection Improvement Traffic Studies Update - Preliminary List of Improvements DRAFT

(Short Term - 2016-2020 / Mid-Term 2021-2025 / Long-Term-Beyond 2025 / RD- with Redevelopment)

New Projects
Modified Projects
~~Accomplished Projects~~

Ref No.	Name	Type	Project Description	Keystone Projects	LCI Project Ref	Goals								Estimated Costs							
						Reduce Congestion /Improve Operations	Increase System Connectivity	Serves Growth in Travel Demand	Increase Utilization of Steve Reynolds	Improve Traffic Safety	Improve Pedestrian Crossing Safety	Sidewalk /Bike Connections to Activity Areas	Enhance Access to Transit	Engineering Year	Engineering Costs	ROW Year	ROW Costs	Construction Year	Construction Costs	Contingency Costs	Total Project Costs
RD-9	Gwinnett Station Shopping Center Area Bike/Pedestrian Improvements	Complete Street	With redevelopment, implement 'Complete Streets' principle with sidewalks and bike lanes in the Gwinnett Station Shopping Center Area.		R-11						✔	✔	✔								
RD-10	Gwinnett Plantation Way Sidewalk	Sidewalk	Install sidewalk along Gwinnett Plantation Way for access between transit transfer center and neighborhoods north of Old Norcross Rd.									✔	✔								
RD-13	Multi-Modal "Green Corridor"	Multi-Use Path	Create a "green corridor" from the McDaniel Farm, past the transit center, to the south, providing a bike- and pedestrian-friendly connection between retail, transit, and park space	✖			✔				✔	✔	✔								
Total Cost for Short Term Improvements															$1,872,700		$2,691,200		$46,040,600	$8,548,400	$59,152,900
Total Cost for Mid Term Improvements															$1,469,800		$10,469,100		$32,441,800	$6,293,000	$50,673,700
Total Cost for Long Term Improvements															$7,153,100		$5,332,900		$35,014,500	$7,003,100	$54,503,600
Total Cost for ALL Improvements															$10,495,600		$18,493,200		$113,496,900	$21,844,500	$164,330,200

Pond

Appendix C: Pedestrian Counts

Pleasant Hill South of Koger Blvd				Pleasant Hi	
7:00	0	13:00	2	7:00	0
7:15	0	13:15	1	7:15	0
7:30	1	13:30	3	7:30	0
7:45	1	13:45	2	7:45	0
8:00	2	14:00	0	8:00	0
8:15	1	14:15	0	8:15	1
8:30	0	14:30	1	8:30	0
8:45	0	14:45	2	8:45	0
9:00	0	15:00	0	9:00	0
9:15	0	15:15	2	9:15	0
9:30	1	15:30	4	9:30	1
9:45	0	15:45	0	9:45	0
10:00	1	16:00	2	10:00	0
10:15	2	16:15	1	10:15	0
10:30	4	16:30	0	10:30	2
10:45	0	16:45	3	10:45	0
11:00	1	17:00	2	11:00	1
11:15	0	17:15	2	11:15	3
11:30	1	17:30	1	11:30	0
11:45	0	17:45	0	11:45	1
12:00	0	18:00	0	12:00	2
12:15	1	18:15	1	12:15	0
12:30	1	18:30	0	12:30	2
12:45	2	18:45	0	12:45	0

ll North of I-85

13:00	1
13:15	2
13:30	0
13:45	0
14:00	1
14:15	0
14:30	0
14:45	0
15:00	2
15:15	1
15:30	0
15:45	0
16:00	2
16:15	1
16:30	0
16:45	0
17:00	1
17:15	0
17:30	0
17:45	2
18:00	1
18:15	0
18:30	0
18:45	0

Appendix D: Traffic Counts

All Traffic Data Services, Inc

1336 Farmer Road
Conyers, GA 30012
alltrafficdata.net

Site Code: 1
Station ID: 1
PLEASANT HILL RD SOUTH OF CRESTWOOD PKWY

Latitude: 0' 0.0000 Undefined

Start Time	19-Mar-16 Sat	NB Morning	NB Afternoon	Hour Totals Morning	Hour Totals Afternoon
12:00		126	484		
12:15		143	435		
12:30		112	442		
12:45		90	498	471	1859
01:00		98	452		
01:15		80	418		
01:30		60	492		
01:45		57	454	295	1816
02:00		52	404		
02:15		42	449		
02:30		53	479		
02:45		52	447	199	1779
03:00		48	450		
03:15		41	487		
03:30		56	502		
03:45		36	433	181	1872
04:00		41	450		
04:15		62	434		
04:30		60	419		
04:45		54	437	217	1740
05:00		55	460		
05:15		112	426		
05:30		128	457		
05:45		146	406	441	1749
06:00		136	414		
06:15		169	432		
06:30		181	434		
06:45		214	424	700	1704
07:00		211	407		
07:15		234	442		
07:30		267	410		
07:45		298	384	1010	1643
08:00		314	411		
08:15		352	224		
08:30		388	348		
08:45		420	346	1474	1329
09:00		388	342		
09:15		468	322		
09:30		464	344		
09:45		446	346	1766	1354
10:00		438	275		
10:15		402	264		
10:30		438	252		
10:45		453	248	1731	1039
11:00		438	256		
11:15		460	232		
11:30		474	202		
11:45		444	174	1816	864
Total		10301	18748		
Percent		35.5%	64.5%		

All Traffic Data Services, Inc

1336 Farmer Road
Conyers, GA 30012
alltrafficdata.net

Site Code: 1
Station ID: 1
PLEASANT HILL RD SOUTH OF CRESTWOOD PKWY

Latitude: 0' 0.0000 Undefined

Start Time	20-Mar-16 Sun	NB Morning	NB Afternoon	Hour Totals Morning	Hour Totals Afternoon
12:00		175	408		
12:15		140	467		
12:30		145	443		
12:45		114	455	574	1773
01:00		112	430		
01:15		100	461		
01:30		80	436		
01:45		80	463	372	1790
02:00		79	445		
02:15		75	435		
02:30		54	446		
02:45		40	390	248	1716
03:00		57	422		
03:15		44	422		
03:30		61	385		
03:45		50	446	212	1675
04:00		46	431		
04:15		46	412		
04:30		66	426		
04:45		58	440	216	1709
05:00		33	433		
05:15		68	421		
05:30		81	440		
05:45		72	412	254	1706
06:00		68	378		
06:15		76	378		
06:30		90	394		
06:45		73	363	307	1513
07:00		106	378		
07:15		110	356		
07:30		139	346		
07:45		165	390	520	1470
08:00		156	360		
08:15		190	359		
08:30		226	300		
08:45		232	312	804	1331
09:00		223	259		
09:15		288	264		
09:30		294	208		
09:45		338	208	1143	939
10:00		330	194		
10:15		391	184		
10:30		390	138		
10:45		388	128	1499	644
11:00		414	117		
11:15		414	124		
11:30		432	84		
11:45		434	84	1694	409
Total		7843	16675		
Percent		32.0%	68.0%		

All Traffic Data Services, Inc

1336 Farmer Road
Conyers, GA 30012
alltrafficdata.net

Site Code: 1
Station ID: 1
PLEASANT HILL RD SOUTH OF CRESTWOOD PKWY

Latitude: 0' 0.0000 Undefined

Start Time	21-Mar-16 Mon	NB Morning	NB Afternoon	Hour Totals Morning	Hour Totals Afternoon
12:00		84	392		
12:15		55	432		
12:30		50	442		
12:45		55	414	244	1680
01:00		45	420		
01:15		28	396		
01:30		28	474		
01:45		19	421	120	1711
02:00		27	382		
02:15		19	427		
02:30		22	396		
02:45		26	426	94	1631
03:00		17	430		
03:15		30	371		
03:30		42	370		
03:45		43	384	132	1555
04:00		44	368		
04:15		88	398		
04:30		118	398		
04:45		128	328	378	1492
05:00		148	355		
05:15		240	356		
05:30		328	328		
05:45		373	364	1089	1403
06:00		478	330		
06:15		543	324		
06:30		570	328		
06:45		613	360	2204	1342
07:00		602	294		
07:15		606	310		
07:30		604	332		
07:45		618	323	2430	1259
08:00		638	322		
08:15		582	276		
08:30		566	287		
08:45		526	242	2312	1127
09:00		461	280		
09:15		470	250		
09:30		410	242		
09:45		408	192	1749	964
10:00		377	191		
10:15		344	180		
10:30		402	148		
10:45		353	124	1476	643
11:00		334	134		
11:15		366	81		
11:30		379	72		
11:45		422	64	1501	351
Total		13729	15158		
Percent		47.5%	52.5%		

All Traffic Data Services, Inc
1336 Farmer Road
Conyers, GA 30012
alltrafficdata.net

Site Code: 1
Station ID: 1
PLEASANT HILL RD SOUTH OF CRESTWOOD PKWY

Latitude: 0' 0.0000 Undefined

Start Time	22-Mar-16 Tue	NB Morning	NB Afternoon	Hour Totals Morning	Hour Totals Afternoon
12:00		80	412		
12:15		54	424		
12:30		52	451		
12:45		27	446	213	1733
01:00		36	427		
01:15		26	420		
01:30		24	452		
01:45		24	430	110	1729
02:00		18	386		
02:15		20	421		
02:30		34	405		
02:45		24	409	96	1621
03:00		21	379		
03:15		32	352		
03:30		35	372		
03:45		26	380	114	1483
04:00		46	324		
04:15		80	408		
04:30		116	362		
04:45		130	366	372	1460
05:00		134	385		
05:15		217	355		
05:30		332	352		
05:45		392	352	1075	1444
06:00		435	303		
06:15		604	350		
06:30		578	356		
06:45		612	348	2229	1357
07:00		577	302		
07:15		633	316		
07:30		583	372		
07:45		617	296	2410	1286
08:00		624	332		
08:15		567	344		
08:30		576	330		
08:45		586	274	2353	1280
09:00		514	263		
09:15		430	223		
09:30		412	242		
09:45		388	236	1744	964
10:00		393	194		
10:15		375	170		
10:30		382	176		
10:45		366	143	1516	683
11:00		370	127		
11:15		366	98		
11:30		347	102		
11:45		392	62	1475	389
Total		13707	15429		
Percent		47.0%	53.0%		
Grand Total		45580	66010		
Percent		40.8%	59.2%		
ADT		ADT 27,898		AADT 27,898	

All Traffic Data Services, Inc

1336 Farmer Road
Conyers, GA 30012
alltrafficdata.net

Site Code: 1.5
Station ID: 1.5
PLEASANT HILL RD SOUTH OF CRESTWOOD PKWY

Latitude: 0' 0.0000 Undefined

Start Time	19-Mar-16 Sat	SB Morning	SB Afternoon	Hour Totals Morning	Hour Totals Afternoon
12:00		204	428		
12:15		200	434		
12:30		192	482		
12:45		148	474	744	1818
01:00		122	444		
01:15		104	482		
01:30		104	486		
01:45		89	445	419	1857
02:00		89	510		
02:15		94	482		
02:30		86	465		
02:45		81	488	350	1945
03:00		59	482		
03:15		71	552		
03:30		57	458		
03:45		45	505	232	1997
04:00		38	508		
04:15		44	480		
04:30		36	504		
04:45		38	504	156	1996
05:00		31	502		
05:15		36	540		
05:30		59	504		
05:45		47	500	173	2046
06:00		57	491		
06:15		72	496		
06:30		68	472		
06:45		108	502	305	1961
07:00		136	490		
07:15		164	463		
07:30		173	472		
07:45		204	448	677	1873
08:00		226	446		
08:15		251	450		
08:30		270	432		
08:45		254	454	1001	1782
09:00		240	460		
09:15		247	388		
09:30		275	349		
09:45		306	345	1068	1542
10:00		280	321		
10:15		346	319		
10:30		334	346		
10:45		398	328	1358	1314
11:00		372	338		
11:15		370	236		
11:30		432	283		
11:45		396	214	1570	1071
Total		8053	21202		
Percent		27.5%	72.5%		

All Traffic Data Services, Inc
1336 Farmer Road
Conyers, GA 30012
alltrafficdata.net

Site Code: 1.5
Station ID: 1.5
PLEASANT HILL RD SOUTH OF CRESTWOOD PKWY

Latitude: 0' 0.0000 Undefined

Start Time	20-Mar-16 Sun	SB Morning	SB Afternoon	Hour Totals Morning	Hour Totals Afternoon
12:00		206	356		
12:15		196	325		
12:30		188	413		
12:45		155	397	745	1491
01:00		153	400		
01:15		151	445		
01:30		118	400		
01:45		102	428	524	1673
02:00		118	446		
02:15		108	410		
02:30		103	372		
02:45		88	470	417	1698
03:00		84	427		
03:15		74	430		
03:30		52	438		
03:45		70	400	280	1695
04:00		76	382		
04:15		50	470		
04:30		58	430		
04:45		45	446	229	1728
05:00		33	454		
05:15		34	432		
05:30		30	409		
05:45		27	446	124	1741
06:00		32	486		
06:15		54	484		
06:30		36	472		
06:45		78	474	200	1916
07:00		58	486		
07:15		80	473		
07:30		92	428		
07:45		80	406	310	1793
08:00		100	385		
08:15		112	405		
08:30		120	360		
08:45		143	321	475	1471
09:00		126	292		
09:15		160	314		
09:30		173	264		
09:45		233	240	692	1110
10:00		226	212		
10:15		246	192		
10:30		277	168		
10:45		301	128	1050	700
11:00		317	151		
11:15		312	120		
11:30		329	124		
11:45		308	92	1266	487
Total		6312	17503		
Percent		26.5%	73.5%		

All Traffic Data Services, Inc

1336 Farmer Road
Conyers, GA 30012
alltrafficdata.net

Site Code: 1.5
Station ID: 1.5
PLEASANT HILL RD SOUTH OF CRESTWOOD PKWY

Latitude: 0' 0.0000 Undefined

Start Time	21-Mar-16 Mon	SB Morning	SB Afternoon	Hour Totals Morning	Hour Totals Afternoon
12:00		96	397		
12:15		79	414		
12:30		78	431		
12:45		64	390	317	1632
01:00		48	392		
01:15		46	412		
01:30		36	426		
01:45		28	412	158	1642
02:00		34	406		
02:15		46	424		
02:30		21	432		
02:45		24	455	125	1717
03:00		20	464		
03:15		26	514		
03:30		23	580		
03:45		20	530	89	2088
04:00		32	603		
04:15		34	571		
04:30		35	594		
04:45		42	605	143	2373
05:00		52	584		
05:15		60	540		
05:30		71	555		
05:45		76	542	259	2221
06:00		114	579		
06:15		168	596		
06:30		150	616		
06:45		156	521	588	2312
07:00		220	498		
07:15		234	522		
07:30		242	492		
07:45		254	419	950	1931
08:00		230	420		
08:15		244	444		
08:30		213	424		
08:45		258	401	945	1689
09:00		233	390		
09:15		226	384		
09:30		290	343		
09:45		258	272	1007	1389
10:00		297	256		
10:15		267	212		
10:30		272	187		
10:45		272	187	1108	842
11:00		262	160		
11:15		314	137		
11:30		361	151		
11:45		352	132	1289	580
Total		6978	20416		
Percent		25.5%	74.5%		

All Traffic Data Services, Inc
1336 Farmer Road
Conyers, GA 30012
alltrafficdata.net

Site Code: 1.5
Station ID: 1.5
PLEASANT HILL RD SOUTH OF CRESTWOOD PKWY

Latitude: 0' 0.0000 Undefined

Start Time	22-Mar-16 Tue	SB Morning	SB Afternoon	Hour Totals Morning	Hour Totals Afternoon
12:00		106	405		
12:15		102	425		
12:30		74	418		
12:45		61	420	343	1668
01:00		48	438		
01:15		41	393		
01:30		33	410		
01:45		34	426	156	1667
02:00		32	407		
02:15		30	435		
02:30		28	424		
02:45		29	452	119	1718
03:00		26	434		
03:15		24	520		
03:30		26	542		
03:45		24	548	100	2044
04:00		25	650		
04:15		31	610		
04:30		29	586		
04:45		45	590	130	2436
05:00		42	580		
05:15		51	496		
05:30		68	524		
05:45		72	540	233	2140
06:00		110	588		
06:15		164	544		
06:30		174	604		
06:45		169	584	617	2320
07:00		223	600		
07:15		247	510		
07:30		236	534		
07:45		242	506	948	2150
08:00		251	475		
08:15		244	474		
08:30		256	442		
08:45		238	439	989	1830
09:00		242	402		
09:15		268	357		
09:30		266	338		
09:45		269	305	1045	1402
10:00		264	302		
10:15		260	258		
10:30		286	199		
10:45		303	197	1113	956
11:00		289	164		
11:15		304	164		
11:30		342	124		
11:45		368	114	1303	566
Total		7096	20897		
Percent		25.3%	74.7%		
Grand Total		28439	80018		
Percent		26.2%	73.8%		
ADT		ADT 27,114		AADT 27,114	

All Traffic Data Services, Inc

1336 Farmer Road
Conyers, GA 30012
alltrafficdata.net

Site Code: 2
Station ID: 2
STEVE REYNOLDS BLVD NORTH OF I-85

Latitude: 0' 0.0000 Undefined

Start Time	19-Mar-16 Sat	NB Morning	NB Afternoon	Hour Totals Morning	Hour Totals Afternoon
12:00		89	470		
12:15		96	512		
12:30		62	524		
12:45		62	500	309	2006
01:00		58	510		
01:15		50	530		
01:30		41	540		
01:45		58	517	207	2097
02:00		51	533		
02:15		29	442		
02:30		27	478		
02:45		26	496	133	1949
03:00		28	485		
03:15		33	484		
03:30		30	479		
03:45		40	485	131	1933
04:00		23	466		
04:15		16	478		
04:30		24	472		
04:45		32	484	95	1900
05:00		22	442		
05:15		22	418		
05:30		52	464		
05:45		56	446	152	1770
06:00		36	430		
06:15		53	450		
06:30		70	473		
06:45		104	449	263	1802
07:00		68	410		
07:15		111	394		
07:30		130	427		
07:45		172	386	481	1617
08:00		152	374		
08:15		150	360		
08:30		220	372		
08:45		277	312	799	1418
09:00		282	281		
09:15		298	284		
09:30		294	263		
09:45		327	266	1201	1094
10:00		370	274		
10:15		312	300		
10:30		343	265		
10:45		415	231	1440	1070
11:00		412	185		
11:15		424	148		
11:30		422	116		
11:45		490	127	1748	576
Total		6959	19232		
Percent		26.6%	73.4%		

All Traffic Data Services, Inc

1336 Farmer Road
Conyers, GA 30012
alltrafficdata.net

Site Code: 2
Station ID: 2
STEVE REYNOLDS BLVD NORTH OF I-85

Latitude: 0' 0.0000 Undefined

Start Time	20-Mar-16 Sun	NB Morning	NB Afternoon	Hour Totals Morning	Hour Totals Afternoon
12:00		94	395		
12:15		100	409		
12:30		86	403		
12:45		60	446	340	1653
01:00		77	456		
01:15		62	472		
01:30		47	478		
01:45		40	481	226	1887
02:00		28	454		
02:15		48	504		
02:30		37	488		
02:45		34	484	147	1930
03:00		42	468		
03:15		52	479		
03:30		41	460		
03:45		27	470	162	1877
04:00		27	420		
04:15		26	437		
04:30		22	379		
04:45		27	374	102	1610
05:00		20	380		
05:15		14	379		
05:30		25	430		
05:45		26	372	85	1561
06:00		17	390		
06:15		30	346		
06:30		36	366		
06:45		48	360	131	1462
07:00		37	326		
07:15		50	326		
07:30		66	290		
07:45		70	299	223	1241
08:00		50	255		
08:15		74	228		
08:30		94	214		
08:45		120	193	338	890
09:00		132	171		
09:15		154	176		
09:30		180	144		
09:45		212	153	678	644
10:00		251	134		
10:15		236	114		
10:30		251	119		
10:45		308	92	1046	459
11:00		310	62		
11:15		349	72		
11:30		327	54		
11:45		396	63	1382	251
Total		4860	15465		
Percent		23.9%	76.1%		

All Traffic Data Services, Inc

1336 Farmer Road
Conyers, GA 30012
alltrafficdata.net

Site Code: 2
Station ID: 2
STEVE REYNOLDS BLVD NORTH OF I-85

Latitude: 0' 0.0000 Undefined

Start Time	21-Mar-16 Mon	NB Morning	NB Afternoon	Hour Totals Morning	Hour Totals Afternoon
12:00		43	404		
12:15		45	451		
12:30		36	419		
12:45		32	408	156	1682
01:00		26	388		
01:15		17	359		
01:30		24	378		
01:45		20	418	87	1543
02:00		18	371		
02:15		18	384		
02:30		15	376		
02:45		12	386	63	1517
03:00		16	413		
03:15		26	355		
03:30		17	378		
03:45		9	359	68	1505
04:00		11	414		
04:15		24	366		
04:30		30	388		
04:45		46	391	111	1559
05:00		42	400		
05:15		63	400		
05:30		80	391		
05:45		106	344	291	1535
06:00		120	366		
06:15		192	400		
06:30		225	360		
06:45		245	362	782	1488
07:00		276	356		
07:15		308	318		
07:30		320	346		
07:45		326	318	1230	1338
08:00		326	336		
08:15		310	252		
08:30		355	263		
08:45		320	211	1311	1062
09:00		302	203		
09:15		286	165		
09:30		272	192		
09:45		334	148	1194	708
10:00		266	138		
10:15		280	126		
10:30		303	113		
10:45		312	104	1161	481
11:00		309	86		
11:15		314	73		
11:30		366	50		
11:45		402	58	1391	267
Total		7845	14685		
Percent		34.8%	65.2%		

All Traffic Data Services, Inc

1336 Farmer Road
Conyers, GA 30012
alltrafficdata.net

Site Code: 2
Station ID: 2
STEVE REYNOLDS BLVD NORTH OF I-85

Latitude: 0' 0.0000 Undefined

Start Time	22-Mar-16 Tue	NB Morning	NB Afternoon	Hour Totals Morning	Hour Totals Afternoon
12:00		46	414		
12:15		48	338		
12:30		30	402		
12:45		30	404	154	1558
01:00		21	442		
01:15		29	410		
01:30		25	334		
01:45		9	358	84	1544
02:00		19	349		
02:15		13	364		
02:30		13	330		
02:45		7	398	52	1441
03:00		14	376		
03:15		10	370		
03:30		24	330		
03:45		20	362	68	1438
04:00		10	372		
04:15		23	352		
04:30		30	404		
04:45		41	392	104	1520
05:00		44	395		
05:15		62	367		
05:30		75	396		
05:45		98	352	279	1510
06:00		119	342		
06:15		193	412		
06:30		228	354		
06:45		256	354	796	1462
07:00		286	346		
07:15		314	365		
07:30		322	302		
07:45		326	319	1248	1332
08:00		333	286		
08:15		343	286		
08:30		346	276		
08:45		372	248	1394	1096
09:00		305	212		
09:15		288	169		
09:30		292	172		
09:45		314	172	1199	725
10:00		310	134		
10:15		280	148		
10:30		284	130		
10:45		328	107	1202	519
11:00		302	107		
11:15		314	69		
11:30		342	70		
11:45		398	48	1356	294
Total		7936	14439		
Percent		35.5%	64.5%		
Grand Total		27600	63821		
Percent		30.2%	69.8%		
ADT		ADT 22,855		AADT 22,855	

All Traffic Data Services, Inc

1336 Farmer Road
Conyers, GA 30012
alltrafficdata.net

Site Code: 2.5
Station ID: 2.5
STEVE REYNOLDS BLVD NORTH OF I-85

Latitude: 0' 0.0000 Undefined

Start Time	19-Mar-16 Sat	SB Morning	SB Afternoon	Hour Totals Morning	Hour Totals Afternoon
12:00		154	414		
12:15		156	398		
12:30		103	433		
12:45		76	434	489	1679
01:00		86	434		
01:15		72	452		
01:30		45	442		
01:45		43	468	246	1796
02:00		44	468		
02:15		42	500		
02:30		30	502		
02:45		26	494	142	1964
03:00		30	544		
03:15		35	504		
03:30		28	473		
03:45		32	514	125	2035
04:00		23	516		
04:15		14	531		
04:30		20	518		
04:45		16	518	73	2083
05:00		17	460		
05:15		36	497		
05:30		38	436		
05:45		40	500	131	1893
06:00		44	488		
06:15		62	442		
06:30		60	408		
06:45		82	400	248	1738
07:00		94	412		
07:15		92	452		
07:30		109	410		
07:45		136	392	431	1666
08:00		135	389		
08:15		158	398		
08:30		189	332		
08:45		190	330	672	1449
09:00		256	330		
09:15		242	324		
09:30		252	260		
09:45		278	228	1028	1142
10:00		246	286		
10:15		302	205		
10:30		313	222		
10:45		344	206	1205	919
11:00		310	200		
11:15		321	198		
11:30		310	188		
11:45		388	165	1329	751
Total		6119	19115		
Percent		24.2%	75.8%		

All Traffic Data Services, Inc

1336 Farmer Road
Conyers, GA 30012
alltrafficdata.net

Site Code: 2.5
Station ID: 2.5
STEVE REYNOLDS BLVD NORTH OF I-85

Latitude: 0' 0.0000 Undefined

Start Time	20-Mar-16 Sun	SB Morning	SB Afternoon	Hour Totals Morning	Hour Totals Afternoon
12:00		158	289		
12:15		119	324		
12:30		108	310		
12:45		74	370	459	1293
01:00		118	410		
01:15		55	458		
01:30		58	422		
01:45		60	400	291	1690
02:00		43	418		
02:15		56	460		
02:30		66	418		
02:45		50	412	215	1708
03:00		17	418		
03:15		25	464		
03:30		28	459		
03:45		24	460	94	1801
04:00		26	435		
04:15		13	426		
04:30		16	438		
04:45		22	432	77	1731
05:00		16	448		
05:15		25	395		
05:30		30	423		
05:45		22	432	93	1698
06:00		30	472		
06:15		44	460		
06:30		34	369		
06:45		41	378	149	1679
07:00		40	344		
07:15		67	314		
07:30		62	307		
07:45		84	282	253	1247
08:00		97	266		
08:15		95	282		
08:30		112	226		
08:45		114	210	418	984
09:00		156	240		
09:15		140	190		
09:30		171	140		
09:45		192	176	659	746
10:00		217	166		
10:15		236	120		
10:30		292	116		
10:45		252	94	997	496
11:00		286	78		
11:15		270	80		
11:30		297	72		
11:45		292	78	1145	308
Total		4850	15381		
Percent		24.0%	76.0%		

All Traffic Data Services, Inc

1336 Farmer Road
Conyers, GA 30012
alltrafficdata.net

Site Code: 2.5
Station ID: 2.5
STEVE REYNOLDS BLVD NORTH OF I-85

Latitude: 0' 0.0000 Undefined

Start Time	21-Mar-16 Mon	SB Morning	SB Afternoon	Hour Totals Morning	Hour Totals Afternoon
12:00		92	316		
12:15		65	355		
12:30		48	365		
12:45		28	387	233	1423
01:00		26	375		
01:15		21	371		
01:30		20	383		
01:45		22	379	89	1508
02:00		18	506		
02:15		16	390		
02:30		14	365		
02:45		6	430	54	1691
03:00		5	432		
03:15		18	441		
03:30		18	412		
03:45		17	444	58	1729
04:00		20	420		
04:15		30	448		
04:30		30	489		
04:45		38	547	118	1904
05:00		40	514		
05:15		66	528		
05:30		78	608		
05:45		106	536	290	2186
06:00		138	517		
06:15		180	542		
06:30		201	499		
06:45		231	456	750	2014
07:00		254	406		
07:15		286	412		
07:30		291	352		
07:45		306	330	1137	1500
08:00		304	339		
08:15		303	333		
08:30		271	274		
08:45		278	308	1156	1254
09:00		318	223		
09:15		240	198		
09:30		268	168		
09:45		242	162	1068	751
10:00		312	137		
10:15		290	133		
10:30		306	106		
10:45		284	116	1192	492
11:00		259	144		
11:15		284	81		
11:30		300	74		
11:45		314	64	1157	363
Total		7302	16815		
Percent		30.3%	69.7%		

All Traffic Data Services, Inc
1336 Farmer Road
Conyers, GA 30012
alltrafficdata.net

Site Code: 2.5
Station ID: 2.5
STEVE REYNOLDS BLVD NORTH OF I-85

Latitude: 0' 0.0000 Undefined

Start Time	22-Mar-16 Tue	SB Morning	SB Afternoon	Hour Totals Morning	Hour Totals Afternoon
12:00		51	344		
12:15		50	346		
12:30		45	396		
12:45		36	358	182	1444
01:00		28	395		
01:15		20	374		
01:30		14	368		
01:45		16	370	78	1507
02:00		22	466		
02:15		17	363		
02:30		19	366		
02:45		10	400	68	1595
03:00		8	378		
03:15		18	418		
03:30		18	414		
03:45		16	458	60	1668
04:00		20	454		
04:15		22	438		
04:30		35	466		
04:45		32	521	109	1879
05:00		34	566		
05:15		56	604		
05:30		74	602		
05:45		96	606	260	2378
06:00		115	506		
06:15		171	559		
06:30		210	520		
06:45		225	466	721	2051
07:00		219	440		
07:15		240	432		
07:30		334	376		
07:45		406	356	1199	1604
08:00		300	363		
08:15		336	314		
08:30		311	328		
08:45		319	274	1266	1279
09:00		285	265		
09:15		250	220		
09:30		244	198		
09:45		272	152	1051	835
10:00		244	162		
10:15		284	138		
10:30		258	108		
10:45		266	166	1052	574
11:00		272	150		
11:15		296	74		
11:30		308	86		
11:45		311	71	1187	381
Total		7233	17195		
Percent		29.6%	70.4%		
Grand Total		25504	68506		
Percent		27.1%	72.9%		
ADT		ADT 23,502		AADT 23,502	

All Traffic Data Services, Inc

1336 Farmer Road
Conyers, GA 30012
alltrafficdata.net

Site Code: 3
Station ID: 3
STEVE REYNOLDS BLVD SOUTH OF I-85

Latitude: 0' 0.0000 Undefined

Start Time	19-Mar-16 Sat	NB Morning	NB Afternoon	Hour Totals Morning	Hour Totals Afternoon
12:00		68	396		
12:15		69	424		
12:30		50	481		
12:45		44	428	231	1729
01:00		42	472		
01:15		28	436		
01:30		26	440		
01:45		34	419	130	1767
02:00		38	410		
02:15		18	408		
02:30		13	402		
02:45		11	378	80	1598
03:00		13	418		
03:15		16	423		
03:30		32	366		
03:45		25	414	86	1621
04:00		10	378		
04:15		14	374		
04:30		20	414		
04:45		24	421	68	1587
05:00		26	380		
05:15		37	380		
05:30		52	385		
05:45		68	386	183	1531
06:00		66	350		
06:15		80	379		
06:30		123	381		
06:45		125	356	394	1466
07:00		106	326		
07:15		154	304		
07:30		158	338		
07:45		207	316	625	1284
08:00		186	289		
08:15		205	322		
08:30		267	332		
08:45		274	247	932	1190
09:00		300	196		
09:15		306	202		
09:30		356	216		
09:45		326	200	1288	814
10:00		350	186		
10:15		316	214		
10:30		324	185		
10:45		354	124	1344	709
11:00		352	134		
11:15		382	102		
11:30		394	96		
11:45		378	84	1506	416
Total		6867	15712		
Percent		30.4%	69.6%		

All Traffic Data Services, Inc

1336 Farmer Road
Conyers, GA 30012
alltrafficdata.net

Site Code: 3
Station ID: 3
STEVE REYNOLDS BLVD SOUTH OF I-85

Latitude: 0' 0.0000 Undefined

Start Time	20-Mar-16 Sun	NB Morning	NB Afternoon	Hour Totals Morning	Hour Totals Afternoon
12:00		74	374		
12:15		75	374		
12:30		66	364		
12:45		62	386	277	1498
01:00		50	420		
01:15		40	428		
01:30		43	432		
01:45		28	416	161	1696
02:00		26	406		
02:15		24	448		
02:30		32	443		
02:45		27	428	109	1725
03:00		25	415		
03:15		24	408		
03:30		20	388		
03:45		20	422	89	1633
04:00		20	401		
04:15		19	428		
04:30		22	382		
04:45		25	362	86	1573
05:00		22	344		
05:15		27	347		
05:30		26	374		
05:45		33	302	108	1367
06:00		33	352		
06:15		50	291		
06:30		60	269		
06:45		45	284	188	1196
07:00		47	258		
07:15		61	270		
07:30		60	241		
07:45		86	220	254	989
08:00		68	243		
08:15		98	190		
08:30		138	184		
08:45		130	163	434	780
09:00		147	138		
09:15		186	148		
09:30		220	122		
09:45		234	113	787	521
10:00		263	102		
10:15		261	100		
10:30		280	74		
10:45		306	72	1110	348
11:00		335	48		
11:15		327	52		
11:30		315	44		
11:45		382	45	1359	189
Total		4962	13515		
Percent		26.9%	73.1%		

All Traffic Data Services, Inc

1336 Farmer Road
Conyers, GA 30012
alltrafficdata.net

Site Code: 3
Station ID: 3
STEVE REYNOLDS BLVD SOUTH OF I-85

Latitude: 0' 0.0000 Undefined

Start Time	21-Mar-16 Mon	NB Morning	NB Afternoon	Hour Totals Morning	Hour Totals Afternoon
12:00		31	360		
12:15		29	396		
12:30		22	375		
12:45		20	364	102	1495
01:00		10	344		
01:15		14	318		
01:30		18	328		
01:45		11	332	53	1322
02:00		8	317		
02:15		13	346		
02:30		13	325		
02:45		11	325	45	1313
03:00		20	322		
03:15		20	302		
03:30		20	302		
03:45		23	320	83	1246
04:00		12	382		
04:15		23	328		
04:30		40	362		
04:45		50	394	125	1466
05:00		60	395		
05:15		97	390		
05:30		146	390		
05:45		198	322	501	1497
06:00		252	329		
06:15		384	344		
06:30		415	344		
06:45		474	304	1525	1321
07:00		492	310		
07:15		490	302		
07:30		459	284		
07:45		436	221	1877	1117
08:00		417	264		
08:15		372	197		
08:30		426	188		
08:45		361	176	1576	825
09:00		340	176		
09:15		314	153		
09:30		268	148		
09:45		328	102	1250	579
10:00		304	108		
10:15		290	98		
10:30		282	81		
10:45		296	85	1172	372
11:00		286	56		
11:15		282	47		
11:30		326	39		
11:45		377	30	1271	172
Total		9580	12725		
Percent		43.0%	57.0%		

All Traffic Data Services, Inc

1336 Farmer Road
Conyers, GA 30012
alltrafficdata.net

Site Code: 3
Station ID: 3
STEVE REYNOLDS BLVD SOUTH OF I-85

Latitude: 0' 0.0000 Undefined

Start Time	22-Mar-16 Tue	NB Morning	NB Afternoon	Hour Totals Morning	Hour Totals Afternoon
12:00		33	360		
12:15		22	346		
12:30		23	340		
12:45		12	330	90	1376
01:00		18	359		
01:15		25	370		
01:30		20	266		
01:45		8	278	71	1273
02:00		16	304		
02:15		13	312		
02:30		12	282		
02:45		2	334	43	1232
03:00		14	321		
03:15		13	300		
03:30		18	262		
03:45		20	318	65	1201
04:00		14	337		
04:15		16	332		
04:30		36	367		
04:45		46	370	112	1406
05:00		48	378		
05:15		100	368		
05:30		149	388		
05:45		166	360	463	1494
06:00		256	312		
06:15		380	355		
06:30		456	308		
06:45		454	275	1546	1250
07:00		486	301		
07:15		470	308		
07:30		466	236		
07:45		444	259	1866	1104
08:00		456	252		
08:15		418	236		
08:30		412	228		
08:45		430	194	1716	910
09:00		360	168		
09:15		324	157		
09:30		302	158		
09:45		332	147	1318	630
10:00		320	111		
10:15		274	93		
10:30		259	106		
10:45		296	68	1149	378
11:00		300	75		
11:15		256	43		
11:30		354	46		
11:45		360	34	1270	198
Total		9709	12452		
Percent		43.8%	56.2%		
Grand Total		31118	54404		
Percent		36.4%	63.6%		
ADT		ADT 21,380		AADT 21,380	

All Traffic Data Services, Inc

1336 Farmer Road
Conyers, GA 30012
alltrafficdata.net

Site Code: 3.5
Station ID: 3.5
STEVE REYNOLDS BLVD. SOUTH OF I-85

Latitude: 0' 0.0000 Undefined

Start Time	19-Mar-16 Sat	SB Morning	SB Afternoon	Hour Totals Morning	Hour Totals Afternoon
12:00		115	378		
12:15		141	388		
12:30		115	414		
12:45		83	380	454	1560
01:00		88	367		
01:15		66	427		
01:30		54	388		
01:45		50	393	258	1575
02:00		46	406		
02:15		50	437		
02:30		43	410		
02:45		46	450	185	1703
03:00		41	446		
03:15		54	425		
03:30		35	414		
03:45		40	472	170	1757
04:00		33	434		
04:15		37	452		
04:30		26	444		
04:45		21	457	117	1787
05:00		21	411		
05:15		24	419		
05:30		16	406		
05:45		32	408	93	1644
06:00		20	412		
06:15		36	432		
06:30		43	387		
06:45		56	358	155	1589
07:00		62	341		
07:15		78	385		
07:30		87	364		
07:45		120	369	347	1459
08:00		108	362		
08:15		110	368		
08:30		136	316		
08:45		173	325	527	1371
09:00		206	290		
09:15		208	290		
09:30		194	229		
09:45		262	229	870	1038
10:00		219	254		
10:15		244	232		
10:30		244	250		
10:45		277	194	984	930
11:00		293	186		
11:15		275	198		
11:30		306	172		
11:45		322	151	1196	707
Total		5356	17120		
Percent		23.8%	76.2%		

All Traffic Data Services, Inc

1336 Farmer Road
Conyers, GA 30012
alltrafficdata.net

Site Code: 3.5
Station ID: 3.5
STEVE REYNOLDS BLVD. SOUTH OF I-85

Latitude: 0' 0.0000 Undefined

Start Time	20-Mar-16 Sun	SB Morning	SB Afternoon	Hour Totals Morning	Hour Totals Afternoon
12:00		144	270		
12:15		108	267		
12:30		93	276		
12:45		91	339	436	1152
01:00		123	346		
01:15		61	394		
01:30		71	368		
01:45		72	376	327	1484
02:00		52	374		
02:15		66	409		
02:30		50	378		
02:45		63	362	231	1523
03:00		46	365		
03:15		54	425		
03:30		60	395		
03:45		38	376	198	1561
04:00		46	351		
04:15		30	350		
04:30		22	318		
04:45		32	346	130	1365
05:00		19	338		
05:15		25	348		
05:30		30	366		
05:45		18	396	92	1448
06:00		14	402		
06:15		22	402		
06:30		32	358		
06:45		34	392	102	1554
07:00		35	346		
07:15		48	340		
07:30		52	331		
07:45		56	252	191	1269
08:00		84	242		
08:15		67	268		
08:30		92	206		
08:45		117	224	360	940
09:00		134	223		
09:15		111	174		
09:30		156	164		
09:45		167	162	568	723
10:00		168	167		
10:15		184	134		
10:30		244	130		
10:45		243	112	839	543
11:00		265	96		
11:15		270	86		
11:30		263	74		
11:45		243	80	1041	336
Total		4515	13898		
Percent		24.5%	75.5%		

All Traffic Data Services, Inc

1336 Farmer Road
Conyers, GA 30012
alltrafficdata.net

Site Code: 3.5
Station ID: 3.5
STEVE REYNOLDS BLVD. SOUTH OF I-85

Latitude: 0' 0.0000 Undefined

Start Time	21-Mar-16 Mon	SB Morning	SB Afternoon	Hour Totals Morning	Hour Totals Afternoon
12:00		62	288		
12:15		62	320		
12:30		45	349		
12:45		40	356	209	1313
01:00		32	352		
01:15		22	356		
01:30		34	350		
01:45		23	348	111	1406
02:00		14	400		
02:15		22	380		
02:30		11	355		
02:45		14	404	61	1539
03:00		8	403		
03:15		17	424		
03:30		24	396		
03:45		14	451	63	1674
04:00		16	452		
04:15		17	448		
04:30		25	490		
04:45		16	543	74	1933
05:00		25	536		
05:15		33	526		
05:30		51	598		
05:45		55	551	164	2211
06:00		72	488		
06:15		110	535		
06:30		118	502		
06:45		182	465	482	1990
07:00		196	438		
07:15		238	426		
07:30		308	390		
07:45		338	369	1080	1623
08:00		308	399		
08:15		325	360		
08:30		302	304		
08:45		284	322	1219	1385
09:00		310	256		
09:15		232	210		
09:30		232	208		
09:45		218	158	992	832
10:00		228	150		
10:15		229	141		
10:30		234	109		
10:45		267	118	958	518
11:00		219	104		
11:15		252	112		
11:30		276	94		
11:45		268	81	1015	391
Total		6428	16815		
Percent		27.7%	72.3%		

All Traffic Data Services, Inc

1336 Farmer Road
Conyers, GA 30012
alltrafficdata.net

Site Code: 3.5
Station ID: 3.5
STEVE REYNOLDS BLVD. SOUTH OF I-85

Latitude: 0' 0.0000 Undefined

Start Time	22-Mar-16 Tue	SB Morning	SB Afternoon	Hour Totals Morning	Hour Totals Afternoon
12:00		67	286		
12:15		42	302		
12:30		36	355		
12:45		38	342	183	1285
01:00		38	348		
01:15		28	347		
01:30		19	345		
01:45		15	333	100	1373
02:00		28	370		
02:15		20	362		
02:30		15	342		
02:45		19	416	82	1490
03:00		4	364		
03:15		11	415		
03:30		12	428		
03:45		20	464	47	1671
04:00		16	480		
04:15		10	446		
04:30		13	472		
04:45		20	536	59	1934
05:00		18	584		
05:15		34	598		
05:30		36	631		
05:45		48	626	136	2439
06:00		62	564		
06:15		114	568		
06:30		132	598		
06:45		166	516	474	2246
07:00		194	495		
07:15		258	476		
07:30		352	423		
07:45		346	388	1150	1782
08:00		289	388		
08:15		310	362		
08:30		324	343		
08:45		304	303	1227	1396
09:00		286	284		
09:15		215	255		
09:30		228	233		
09:45		240	186	969	958
10:00		236	172		
10:15		236	154		
10:30		206	138		
10:45		236	131	914	595
11:00		238	113		
11:15		244	100		
11:30		247	98		
11:45		269	84	998	395
Total		6339	17564		
Percent		26.5%	73.5%		
Grand Total		22638	65397		
Percent		25.7%	74.3%		
ADT		ADT 22,009		AADT 22,009	

All Traffic Data Services, Inc

1336 Farmer Road
Conyers, GA 30012
alltrafficdata.net

Site Code: 4
Station ID: 4
SATELLITE BLVD. EAST OF PLEASANT HILL RD

Latitude: 0' 0.0000 Undefined

Start Time	19-Mar-16 Sat	EB Morning	EB Afternoon	Hour Totals Morning	Hour Totals Afternoon
12:00		56	248		
12:15		50	272		
12:30		27	280		
12:45		32	230	165	1030
01:00		34	275		
01:15		24	244		
01:30		22	266		
01:45		21	255	101	1040
02:00		14	287		
02:15		20	246		
02:30		14	267		
02:45		12	254	60	1054
03:00		10	274		
03:15		15	250		
03:30		6	252		
03:45		9	285	40	1061
04:00		14	223		
04:15		4	230		
04:30		10	270		
04:45		9	216	37	939
05:00		7	236		
05:15		8	236		
05:30		14	214		
05:45		23	224	52	910
06:00		10	230		
06:15		9	240		
06:30		19	208		
06:45		40	172	78	850
07:00		30	187		
07:15		44	186		
07:30		53	194		
07:45		98	208	225	775
08:00		76	186		
08:15		108	182		
08:30		100	152		
08:45		142	156	426	676
09:00		114	144		
09:15		126	118		
09:30		152	114		
09:45		185	114	577	490
10:00		164	98		
10:15		162	108		
10:30		178	116		
10:45		223	120	727	442
11:00		203	84		
11:15		228	60		
11:30		228	60		
11:45		254	43	913	247
Total		3401	9514		
Percent		26.3%	73.7%		

All Traffic Data Services, Inc
1336 Farmer Road
Conyers, GA 30012
alltrafficdata.net

Site Code: 4
Station ID: 4
SATELLITE BLVD. EAST OF PLEASANT HILL RD

Latitude: 0' 0.0000 Undefined

Start Time	20-Mar-16 Sun	EB Morning	EB Afternoon	Hour Totals Morning	Hour Totals Afternoon
12:00		46	154		
12:15		41	152		
12:30		26	174		
12:45		35	190	148	670
01:00		34	203		
01:15		26	201		
01:30		28	212		
01:45		22	216	110	832
02:00		15	218		
02:15		28	240		
02:30		34	186		
02:45		11	210	88	854
03:00		19	220		
03:15		17	245		
03:30		5	228		
03:45		8	216	49	909
04:00		11	178		
04:15		10	195		
04:30		10	212		
04:45		11	187	42	772
05:00		7	196		
05:15		4	192		
05:30		8	186		
05:45		11	183	30	757
06:00		8	166		
06:15		4	194		
06:30		4	163		
06:45		13	168	29	691
07:00		8	170		
07:15		17	142		
07:30		20	118		
07:45		26	96	71	526
08:00		24	92		
08:15		15	97		
08:30		44	85		
08:45		42	81	125	355
09:00		50	87		
09:15		48	73		
09:30		62	56		
09:45		64	56	224	272
10:00		70	48		
10:15		86	30		
10:30		73	34		
10:45		110	48	339	160
11:00		104	25		
11:15		104	32		
11:30		132	31		
11:45		162	19	502	107
Total		1757	6905		
Percent		20.3%	79.7%		

All Traffic Data Services, Inc

1336 Farmer Road
Conyers, GA 30012
alltrafficdata.net

Site Code: 4
Station ID: 4
SATELLITE BLVD. EAST OF PLEASANT HILL RD

Latitude: 0' 0.0000 Undefined

Start Time	21-Mar-16 Mon	EB Morning	EB Afternoon	Hour Totals Morning	Hour Totals Afternoon
12:00		19	250		
12:15		21	275		
12:30		14	258		
12:45		19	268	73	1051
01:00		10	262		
01:15		10	242		
01:30		12	240		
01:45		10	249	42	993
02:00		14	229		
02:15		15	212		
02:30		5	241		
02:45		6	203	40	885
03:00		2	206		
03:15		3	220		
03:30		8	237		
03:45		12	206	25	869
04:00		4	226		
04:15		12	234		
04:30		17	218		
04:45		20	230	53	908
05:00		10	238		
05:15		23	238		
05:30		34	220		
05:45		47	270	114	966
06:00		44	258		
06:15		52	249		
06:30		52	210		
06:45		88	192	236	909
07:00		92	180		
07:15		110	188		
07:30		156	162		
07:45		154	159	512	689
08:00		149	140		
08:15		164	144		
08:30		182	117		
08:45		180	98	675	499
09:00		144	89		
09:15		149	76		
09:30		163	61		
09:45		148	75	604	301
10:00		154	66		
10:15		154	44		
10:30		173	48		
10:45		204	50	685	208
11:00		180	36		
11:15		182	23		
11:30		178	21		
11:45		216	18	756	98
Total		3815	8376		
Percent		31.3%	68.7%		

All Traffic Data Services, Inc

1336 Farmer Road
Conyers, GA 30012
alltrafficdata.net

Site Code: 4
Station ID: 4
SATELLITE BLVD. EAST OF PLEASANT HILL RD

Latitude: 0' 0.0000 Undefined

Start Time	22-Mar-16 Tue	EB Morning	EB Afternoon	Hour Totals Morning	Hour Totals Afternoon
12:00		18	236		
12:15		20	244		
12:30		16	254		
12:45		18	296	72	1030
01:00		11	292		
01:15		8	258		
01:30		8	234		
01:45		5	232	32	1016
02:00		4	232		
02:15		6	230		
02:30		5	228		
02:45		6	202	21	892
03:00		6	220		
03:15		6	213		
03:30		14	248		
03:45		6	214	32	895
04:00		3	200		
04:15		10	236		
04:30		20	204		
04:45		24	256	57	896
05:00		14	236		
05:15		25	257		
05:30		37	256		
05:45		41	222	117	971
06:00		51	278		
06:15		60	234		
06:30		68	208		
06:45		101	198	280	918
07:00		84	240		
07:15		91	190		
07:30		132	178		
07:45		171	183	478	791
08:00		153	158		
08:15		163	134		
08:30		152	124		
08:45		180	108	648	524
09:00		166	101		
09:15		154	85		
09:30		142	78		
09:45		177	66	639	330
10:00		162	54		
10:15		176	66		
10:30		142	54		
10:45		167	52	647	226
11:00		186	61		
11:15		196	34		
11:30		184	24		
11:45		236	34	802	153
Total		3825	8642		
Percent		30.7%	69.3%		
Grand Total		12798	33437		
Percent		27.7%	72.3%		
ADT		ADT 11,559		AADT 11,559	

All Traffic Data Services, Inc

1336 Farmer Road
Conyers, GA 30012
alltrafficdata.net

Site Code: 4.5
Station ID: 4.5
SATELLITE BLVD. EAST OF PLEASANT HILL RD

Latitude: 0' 0.0000 Undefined

Start Time	19-Mar-16 Sat	WB Morning	WB Afternoon	Hour Totals Morning	Hour Totals Afternoon
12:00		86	230		
12:15		84	269		
12:30		30	203		
12:45		33	234	233	936
01:00		23	220		
01:15		21	254		
01:30		12	254		
01:45		12	227	68	955
02:00		18	235		
02:15		14	195		
02:30		18	205		
02:45		11	208	61	843
03:00		15	236		
03:15		6	187		
03:30		8	213		
03:45		5	200	34	836
04:00		6	219		
04:15		6	198		
04:30		7	203		
04:45		7	182	26	802
05:00		8	194		
05:15		8	204		
05:30		10	200		
05:45		17	196	43	794
06:00		12	195		
06:15		21	207		
06:30		19	171		
06:45		25	184	77	757
07:00		26	161		
07:15		32	160		
07:30		40	142		
07:45		60	132	158	595
08:00		58	144		
08:15		72	134		
08:30		76	159		
08:45		90	118	296	555
09:00		94	110		
09:15		132	116		
09:30		138	106		
09:45		166	112	530	444
10:00		152	109		
10:15		178	73		
10:30		156	76		
10:45		188	68	674	326
11:00		173	50		
11:15		204	50		
11:30		211	36		
11:45		213	44	801	180
Total		3001	8023		
Percent		27.2%	72.8%		

All Traffic Data Services, Inc

1336 Farmer Road
Conyers, GA 30012
alltrafficdata.net

Site Code: 4.5
Station ID: 4.5
SATELLITE BLVD. EAST OF PLEASANT HILL RD

Latitude: 0' 0.0000 Undefined

Start Time	20-Mar-16 Sun	WB Morning	WB Afternoon	Hour Totals Morning	Hour Totals Afternoon
12:00		32	132		
12:15		16	140		
12:30		25	148		
12:45		34	160	107	580
01:00		32	166		
01:15		32	195		
01:30		22	182		
01:45		44	169	130	712
02:00		40	182		
02:15		44	180		
02:30		119	172		
02:45		30	179	233	713
03:00		22	169		
03:15		16	178		
03:30		12	166		
03:45		8	156	58	669
04:00		10	188		
04:15		6	164		
04:30		6	160		
04:45		11	174	33	686
05:00		3	199		
05:15		7	174		
05:30		3	164		
05:45		7	155	20	692
06:00		7	148		
06:15		7	138		
06:30		8	136		
06:45		14	130	36	552
07:00		14	140		
07:15		20	132		
07:30		18	104		
07:45		14	112	66	488
08:00		19	104		
08:15		25	77		
08:30		34	73		
08:45		50	81	128	335
09:00		34	76		
09:15		55	69		
09:30		62	48		
09:45		76	36	227	229
10:00		73	44		
10:15		77	36		
10:30		91	35		
10:45		88	26	329	141
11:00		110	29		
11:15		126	21		
11:30		142	14		
11:45		126	14	504	78
Total		1871	5875		
Percent		24.2%	75.8%		

All Traffic Data Services, Inc

1336 Farmer Road
Conyers, GA 30012
alltrafficdata.net

Site Code: 4.5
Station ID: 4.5
SATELLITE BLVD. EAST OF PLEASANT HILL RD

Latitude: 0' 0.0000 Undefined

Start Time	21-Mar-16 Mon	WB Morning	WB Afternoon	Hour Totals Morning	Hour Totals Afternoon
12:00		16	248		
12:15		8	255		
12:30		20	236		
12:45		12	223	56	962
01:00		9	233		
01:15		5	248		
01:30		8	212		
01:45		10	256	32	949
02:00		14	196		
02:15		4	178		
02:30		7	191		
02:45		7	210	32	775
03:00		3	214		
03:15		5	232		
03:30		8	176		
03:45		13	216	29	838
04:00		11	196		
04:15		9	200		
04:30		15	222		
04:45		14	162	49	780
05:00		18	258		
05:15		12	236		
05:30		28	251		
05:45		40	192	98	937
06:00		53	255		
06:15		131	200		
06:30		196	162		
06:45		265	162	645	779
07:00		311	187		
07:15		317	138		
07:30		305	128		
07:45		232	133	1165	586
08:00		226	107		
08:15		255	96		
08:30		230	97		
08:45		230	88	941	388
09:00		220	88		
09:15		225	66		
09:30		214	52		
09:45		196	40	855	246
10:00		208	50		
10:15		166	37		
10:30		147	52		
10:45		164	46	685	185
11:00		177	28		
11:15		162	28		
11:30		200	18		
11:45		235	20	774	94
Total		5361	7519		
Percent		41.6%	58.4%		

All Traffic Data Services, Inc

1336 Farmer Road
Conyers, GA 30012
alltrafficdata.net

Site Code: 4.5
Station ID: 4.5
SATELLITE BLVD. EAST OF PLEASANT HILL RD

Latitude: 0' 0.0000 Undefined

Start Time	22-Mar-16 Tue	WB Morning	WB Afternoon	Hour Totals Morning	Hour Totals Afternoon
12:00		18	248		
12:15		11	234		
12:30		19	234		
12:45		14	244	62	960
01:00		8	272		
01:15		6	222		
01:30		10	227		
01:45		16	214	40	935
02:00		12	182		
02:15		10	231		
02:30		5	203		
02:45		5	217	32	833
03:00		6	198		
03:15		8	200		
03:30		18	192		
03:45		8	193	40	783
04:00		4	192		
04:15		8	180		
04:30		8	240		
04:45		18	207	38	819
05:00		18	250		
05:15		11	207		
05:30		18	229		
05:45		42	212	89	898
06:00		56	208		
06:15		100	219		
06:30		168	158		
06:45		272	158	596	743
07:00		317	149		
07:15		364	142		
07:30		295	132		
07:45		283	149	1259	572
08:00		278	134		
08:15		285	142		
08:30		264	96		
08:45		264	120	1091	492
09:00		234	92		
09:15		233	90		
09:30		192	84		
09:45		173	53	832	319
10:00		173	68		
10:15		155	56		
10:30		146	51		
10:45		138	36	612	211
11:00		182	48		
11:15		158	33		
11:30		205	20		
11:45		195	28	740	129
Total		5431	7694		
Percent		41.4%	58.6%		
Grand Total		15664	29111		
Percent		35.0%	65.0%		
ADT		ADT 11,194		AADT 11,194	

All Traffic Data Services, Inc

1336 Farmer Road
Conyers, GA 30012
alltrafficdata.net

Site Code: 5
Station ID: 5
SATELLITE BLVD WEST OF PLEASANT HILL RD

Latitude: 0' 0.0000 Undefined

Start Time	19-Mar-16 Sat	EB Morning	EB Afternoon	Hour Totals Morning	Hour Totals Afternoon
12:00		58	217		
12:15		39	232		
12:30		42	241		
12:45		34	212	173	902
01:00		32	234		
01:15		30	208		
01:30		33	246		
01:45		22	250	117	938
02:00		13	249		
02:15		16	229		
02:30		15	212		
02:45		18	186	62	876
03:00		9	245		
03:15		8	196		
03:30		12	226		
03:45		6	244	35	911
04:00		8	224		
04:15		5	216		
04:30		20	239		
04:45		13	212	46	891
05:00		9	216		
05:15		14	209		
05:30		17	181		
05:45		18	212	58	818
06:00		14	228		
06:15		14	214		
06:30		17	187		
06:45		27	170	72	799
07:00		24	220		
07:15		34	173		
07:30		40	180		
07:45		74	200	172	773
08:00		55	167		
08:15		62	187		
08:30		74	162		
08:45		92	154	283	670
09:00		104	132		
09:15		100	120		
09:30		130	122		
09:45		134	132	468	506
10:00		138	118		
10:15		132	128		
10:30		146	126		
10:45		173	115	589	487
11:00		170	94		
11:15		170	62		
11:30		212	54		
11:45		222	54	774	264
Total		2849	8835		
Percent		24.4%	75.6%		

All Traffic Data Services, Inc
1336 Farmer Road
Conyers, GA 30012
alltrafficdata.net

Site Code: 5
Station ID: 5
SATELLITE BLVD WEST OF PLEASANT HILL RD

Latitude: 0' 0.0000 Undefined

Start Time	20-Mar-16 Sun	EB Morning	EB Afternoon	Hour Totals Morning	Hour Totals Afternoon
12:00		60	137		
12:15		68	130		
12:30		31	162		
12:45		38	178	197	607
01:00		36	190		
01:15		40	184		
01:30		20	202		
01:45		23	223	119	799
02:00		16	212		
02:15		29	236		
02:30		25	205		
02:45		17	226	87	879
03:00		19	184		
03:15		4	220		
03:30		15	203		
03:45		6	224	44	831
04:00		9	184		
04:15		14	216		
04:30		14	194		
04:45		6	208	43	802
05:00		9	188		
05:15		6	184		
05:30		11	204		
05:45		10	188	36	764
06:00		8	158		
06:15		10	202		
06:30		10	156		
06:45		12	158	40	674
07:00		12	137		
07:15		18	129		
07:30		21	106		
07:45		23	111	74	483
08:00		30	114		
08:15		16	104		
08:30		29	100		
08:45		43	101	118	419
09:00		41	96		
09:15		42	67		
09:30		56	68		
09:45		72	60	211	291
10:00		76	44		
10:15		83	40		
10:30		88	30		
10:45		106	32	353	146
11:00		110	32		
11:15		117	32		
11:30		142	36		
11:45		169	21	538	121
Total		1860	6816		
Percent		21.4%	78.6%		

All Traffic Data Services, Inc

1336 Farmer Road
Conyers, GA 30012
alltrafficdata.net

Site Code: 5
Station ID: 5
SATELLITE BLVD WEST OF PLEASANT HILL RD

Latitude: 0' 0.0000 Undefined

Start Time	21-Mar-16 Mon	EB Morning	EB Afternoon	Hour Totals Morning	Hour Totals Afternoon
12:00		26	184		
12:15		23	190		
12:30		19	178		
12:45		12	216	80	768
01:00		20	216		
01:15		12	212		
01:30		8	170		
01:45		10	192	50	790
02:00		14	177		
02:15		10	180		
02:30		6	186		
02:45		2	182	32	725
03:00		3	163		
03:15		7	188		
03:30		8	196		
03:45		5	204	23	751
04:00		5	216		
04:15		11	197		
04:30		18	188		
04:45		14	197	48	798
05:00		14	218		
05:15		18	212		
05:30		32	210		
05:45		31	234	95	874
06:00		31	222		
06:15		41	216		
06:30		56	161		
06:45		60	208	188	807
07:00		64	184		
07:15		79	180		
07:30		126	148		
07:45		110	153	379	665
08:00		90	144		
08:15		117	130		
08:30		112	108		
08:45		120	91	439	473
09:00		88	92		
09:15		88	83		
09:30		122	66		
09:45		116	74	414	315
10:00		96	76		
10:15		105	46		
10:30		105	61		
10:45		138	40	444	223
11:00		114	46		
11:15		140	29		
11:30		116	28		
11:45		148	15	518	118
Total		2710	7307		
Percent		27.1%	72.9%		

All Traffic Data Services, Inc

1336 Farmer Road
Conyers, GA 30012
alltrafficdata.net

Site Code: 5
Station ID: 5
SATELLITE BLVD WEST OF PLEASANT HILL RD

Latitude: 0' 0.0000 Undefined

Start Time	22-Mar-16 Tue	EB Morning	EB Afternoon	Hour Totals Morning	Hour Totals Afternoon
12:00		22	194		
12:15		20	184		
12:30		21	202		
12:45		12	210	75	790
01:00		16	204		
01:15		12	200		
01:30		8	176		
01:45		8	168	44	748
02:00		3	199		
02:15		7	158		
02:30		5	171		
02:45		2	168	17	696
03:00		1	196		
03:15		5	164		
03:30		13	228		
03:45		4	164	23	752
04:00		3	182		
04:15		12	203		
04:30		13	196		
04:45		12	214	40	795
05:00		16	234		
05:15		24	226		
05:30		31	230		
05:45		32	235	103	925
06:00		28	252		
06:15		56	214		
06:30		58	196		
06:45		67	191	209	853
07:00		66	224		
07:15		76	182		
07:30		122	183		
07:45		112	180	376	769
08:00		95	163		
08:15		117	154		
08:30		114	106		
08:45		128	122	454	545
09:00		114	104		
09:15		106	97		
09:30		106	100		
09:45		136	63	462	364
10:00		110	64		
10:15		126	64		
10:30		114	54		
10:45		133	62	483	244
11:00		142	59		
11:15		166	38		
11:30		140	30		
11:45		182	33	630	160
Total		2916	7641		
Percent		27.6%	72.4%		
Grand Total		10335	30599		
Percent		25.2%	74.8%		
ADT		ADT 10,234		AADT 10,234	

All Traffic Data Services, Inc

1336 Farmer Road
Conyers, GA 30012
alltrafficdata.net

Site Code: 5.5
Station ID: 5.5
SATELLITE BLVD WEST OF PLEASANT HILL RD

Latitude: 0' 0.0000 Undefined

Start Time	19-Mar-16 Sat	WB Morning	WB Afternoon	Hour Totals Morning	Hour Totals Afternoon
12:00		55	202		
12:15		51	256		
12:30		30	256		
12:45		36	226	172	940
01:00		26	224		
01:15		23	269		
01:30		28	250		
01:45		17	224	94	967
02:00		15	230		
02:15		23	196		
02:30		22	238		
02:45		16	218	76	882
03:00		12	263		
03:15		15	214		
03:30		20	214		
03:45		10	249	57	940
04:00		10	235		
04:15		6	209		
04:30		8	228		
04:45		8	230	32	902
05:00		8	219		
05:15		10	206		
05:30		9	218		
05:45		8	220	35	863
06:00		18	222		
06:15		19	223		
06:30		15	215		
06:45		29	208	81	868
07:00		22	184		
07:15		35	202		
07:30		38	178		
07:45		58	166	153	730
08:00		54	160		
08:15		76	184		
08:30		66	176		
08:45		110	172	306	692
09:00		98	140		
09:15		119	131		
09:30		133	116		
09:45		146	111	496	498
10:00		180	76		
10:15		178	72		
10:30		158	76		
10:45		186	94	702	318
11:00		196	76		
11:15		208	52		
11:30		224	54		
11:45		228	52	856	234
Total		3060	8834		
Percent		25.7%	74.3%		

All Traffic Data Services, Inc
1336 Farmer Road
Conyers, GA 30012
alltrafficdata.net

Site Code: 5.5
Station ID: 5.5
SATELLITE BLVD WEST OF PLEASANT HILL RD

Latitude: 0' 0.0000 Undefined

Start Time	20-Mar-16 Sun	WB Morning	WB Afternoon	Hour Totals Morning	Hour Totals Afternoon
12:00		38	138		
12:15		30	140		
12:30		36	158		
12:45		34	165	138	601
01:00		30	184		
01:15		44	202		
01:30		28	200		
01:45		29	198	131	784
02:00		32	192		
02:15		30	206		
02:30		84	186		
02:45		26	190	172	774
03:00		17	181		
03:15		12	196		
03:30		15	202		
03:45		5	170	49	749
04:00		14	184		
04:15		6	196		
04:30		12	202		
04:45		5	208	37	790
05:00		5	214		
05:15		6	170		
05:30		2	191		
05:45		3	184	16	759
06:00		10	184		
06:15		9	198		
06:30		6	200		
06:45		12	162	37	744
07:00		16	178		
07:15		16	176		
07:30		12	136		
07:45		20	136	64	626
08:00		29	113		
08:15		22	98		
08:30		29	98		
08:45		38	97	118	406
09:00		34	88		
09:15		56	74		
09:30		43	50		
09:45		86	50	219	262
10:00		70	55		
10:15		95	58		
10:30		110	51		
10:45		118	50	393	214
11:00		148	30		
11:15		138	27		
11:30		143	23		
11:45		131	19	560	99
Total		1934	6808		
Percent		22.1%	77.9%		

All Traffic Data Services, Inc
1336 Farmer Road
Conyers, GA 30012
alltrafficdata.net

Site Code: 5.5
Station ID: 5.5
SATELLITE BLVD WEST OF PLEASANT HILL RD

Latitude: 0' 0.0000 Undefined

Start Time	21-Mar-16 Mon	WB Morning	WB Afternoon	Hour Totals Morning	Hour Totals Afternoon
12:00		26	210		
12:15		18	219		
12:30		22	204		
12:45		18	206	84	839
01:00		13	208		
01:15		14	212		
01:30		9	180		
01:45		7	224	43	824
02:00		13	205		
02:15		8	175		
02:30		4	184		
02:45		11	206	36	770
03:00		4	210		
03:15		5	216		
03:30		8	174		
03:45		6	200	23	800
04:00		8	168		
04:15		4	200		
04:30		11	214		
04:45		10	182	33	764
05:00		18	220		
05:15		6	218		
05:30		33	240		
05:45		35	192	92	870
06:00		62	206		
06:15		140	226		
06:30		216	201		
06:45		276	178	694	811
07:00		336	175		
07:15		334	167		
07:30		292	136		
07:45		262	153	1224	631
08:00		230	128		
08:15		273	131		
08:30		259	114		
08:45		248	98	1010	471
09:00		250	84		
09:15		249	86		
09:30		235	70		
09:45		226	62	960	302
10:00		206	72		
10:15		180	56		
10:30		146	47		
10:45		174	52	706	227
11:00		134	42		
11:15		170	41		
11:30		174	26		
11:45		207	30	685	139
Total		5590	7448		
Percent		42.9%	57.1%		

All Traffic Data Services, Inc

1336 Farmer Road
Conyers, GA 30012
alltrafficdata.net

Site Code: 5.5
Station ID: 5.5
SATELLITE BLVD WEST OF PLEASANT HILL RD

Latitude: 0' 0.0000 Undefined

Start Time	22-Mar-16 Tue	WB Morning	WB Afternoon	Hour Totals Morning	Hour Totals Afternoon
12:00		26	225		
12:15		19	217		
12:30		14	216		
12:45		15	202	74	860
01:00		14	234		
01:15		11	198		
01:30		10	216		
01:45		16	178	51	826
02:00		6	162		
02:15		8	200		
02:30		12	196		
02:45		3	202	29	760
03:00		4	182		
03:15		6	186		
03:30		18	192		
03:45		10	201	38	761
04:00		4	194		
04:15		12	192		
04:30		6	218		
04:45		8	231	30	835
05:00		14	220		
05:15		13	222		
05:30		16	236		
05:45		40	212	83	890
06:00		53	215		
06:15		124	211		
06:30		198	206		
06:45		304	179	679	811
07:00		366	190		
07:15		364	164		
07:30		313	146		
07:45		288	150	1331	650
08:00		297	155		
08:15		280	148		
08:30		276	120		
08:45		312	135	1165	558
09:00		258	102		
09:15		242	89		
09:30		215	82		
09:45		188	78	903	351
10:00		166	72		
10:15		164	54		
10:30		184	55		
10:45		165	42	679	223
11:00		172	46		
11:15		178	39		
11:30		208	22		
11:45		211	30	769	137
Total		5831	7662		
Percent		43.2%	56.8%		
Grand Total		16415	30752		
Percent		34.8%	65.2%		
ADT		ADT 11,792		AADT 11,792	

All Traffic Data Services, Inc

1336 Farmer Road
Conyers, GA 30012
alltrafficdata.net

Site Code: 6
Station ID: 6
BRECKINRIDGE BLVD EAST OF PLEASANT HILL

Latitude: 0' 0.0000 Undefined

Start Time	19-Mar-16 Sat	EB Morning	EB Afternoon	Hour Totals Morning	Hour Totals Afternoon
12:00		52	110		
12:15		44	107		
12:30		46	111		
12:45		33	118	175	446
01:00		26	114		
01:15		22	112		
01:30		32	94		
01:45		20	116	100	436
02:00		22	100		
02:15		18	92		
02:30		16	114		
02:45		18	120	74	426
03:00		10	104		
03:15		16	119		
03:30		13	114		
03:45		14	105	53	442
04:00		10	96		
04:15		13	124		
04:30		12	114		
04:45		14	110	49	444
05:00		13	118		
05:15		16	110		
05:30		10	120		
05:45		16	104	55	452
06:00		8	114		
06:15		14	106		
06:30		16	112		
06:45		14	111	52	443
07:00		12	110		
07:15		41	125		
07:30		36	114		
07:45		52	114	141	463
08:00		41	103		
08:15		32	118		
08:30		40	92		
08:45		56	104	169	417
09:00		40	99		
09:15		62	109		
09:30		65	90		
09:45		76	83	243	381
10:00		80	76		
10:15		73	73		
10:30		80	83		
10:45		104	82	337	314
11:00		90	62		
11:15		66	70		
11:30		68	52		
11:45		100	44	324	228
Total		1772	4892		
Percent		26.6%	73.4%		

All Traffic Data Services, Inc
1336 Farmer Road
Conyers, GA 30012
alltrafficdata.net

Site Code: 6
Station ID: 6
BRECKINRIDGE BLVD EAST OF PLEASANT HILL

Latitude: 0' 0.0000 Undefined

Start Time	20-Mar-16 Sun	EB Morning	EB Afternoon	Hour Totals Morning	Hour Totals Afternoon
12:00		61	81		
12:15		52	76		
12:30		33	75		
12:45		48	94	194	326
01:00		30	90		
01:15		26	94		
01:30		30	102		
01:45		22	97	108	383
02:00		18	108		
02:15		12	94		
02:30		14	124		
02:45		29	135	73	461
03:00		18	132		
03:15		18	92		
03:30		10	128		
03:45		15	96	61	448
04:00		12	92		
04:15		13	110		
04:30		12	94		
04:45		10	82	47	378
05:00		7	108		
05:15		4	120		
05:30		6	94		
05:45		16	98	33	420
06:00		13	105		
06:15		8	107		
06:30		12	100		
06:45		13	102	46	414
07:00		12	86		
07:15		13	94		
07:30		18	80		
07:45		20	86	63	346
08:00		21	102		
08:15		12	89		
08:30		24	85		
08:45		37	73	94	349
09:00		51	55		
09:15		36	70		
09:30		38	46		
09:45		64	64	189	235
10:00		54	66		
10:15		53	46		
10:30		80	46		
10:45		103	40	290	198
11:00		80	47		
11:15		72	36		
11:30		83	38		
11:45		86	30	321	151
Total		1519	4109		
Percent		27.0%	73.0%		

All Traffic Data Services, Inc

1336 Farmer Road
Conyers, GA 30012
alltrafficdata.net

Site Code: 6
Station ID: 6
BRECKINRIDGE BLVD EAST OF PLEASANT HILL

Latitude: 0' 0.0000 Undefined

Start Time	21-Mar-16 Mon	EB Morning	EB Afternoon	Hour Totals Morning	Hour Totals Afternoon
12:00		24	118		
12:15		30	128		
12:30		18	110		
12:45		26	112	98	468
01:00		10	117		
01:15		12	128		
01:30		8	108		
01:45		4	95	34	448
02:00		13	126		
02:15		9	110		
02:30		2	96		
02:45		10	148	34	480
03:00		2	101		
03:15		7	126		
03:30		10	126		
03:45		7	123	26	476
04:00		10	126		
04:15		11	163		
04:30		13	136		
04:45		16	134	50	559
05:00		16	182		
05:15		14	190		
05:30		24	154		
05:45		22	136	76	662
06:00		26	156		
06:15		36	145		
06:30		42	125		
06:45		56	160	160	586
07:00		64	134		
07:15		68	112		
07:30		92	136		
07:45		118	114	342	496
08:00		114	101		
08:15		124	106		
08:30		122	84		
08:45		116	100	476	391
09:00		116	82		
09:15		98	80		
09:30		104	73		
09:45		79	78	397	313
10:00		86	67		
10:15		70	50		
10:30		71	56		
10:45		106	50	333	223
11:00		78	48		
11:15		104	30		
11:30		76	34		
11:45		116	28	374	140
Total		2400	5242		
Percent		31.4%	68.6%		

All Traffic Data Services, Inc

1336 Farmer Road
Conyers, GA 30012
alltrafficdata.net

Site Code: 6
Station ID: 6
BRECKINRIDGE BLVD EAST OF PLEASANT HILL

Latitude: 0' 0.0000 Undefined

Start Time	22-Mar-16 Tue	EB Morning	EB Afternoon	Hour Totals Morning	Hour Totals Afternoon
12:00		31	106		
12:15		28	102		
12:30		10	120		
12:45		15	130	84	458
01:00		12	136		
01:15		10	120		
01:30		6	128		
01:45		8	152	36	536
02:00		6	120		
02:15		9	96		
02:30		8	118		
02:45		6	156	29	490
03:00		8	128		
03:15		6	140		
03:30		10	132		
03:45		6	112	30	512
04:00		6	110		
04:15		2	142		
04:30		10	136		
04:45		14	130	32	518
05:00		10	168		
05:15		6	200		
05:30		19	158		
05:45		36	153	71	679
06:00		22	150		
06:15		40	126		
06:30		44	130		
06:45		62	152	168	558
07:00		64	144		
07:15		82	119		
07:30		98	128		
07:45		142	109	386	500
08:00		104	97		
08:15		110	118		
08:30		126	122		
08:45		122	93	462	430
09:00		114	88		
09:15		82	81		
09:30		76	90		
09:45		90	86	362	345
10:00		84	76		
10:15		97	55		
10:30		72	54		
10:45		84	60	337	245
11:00		119	58		
11:15		81	38		
11:30		66	30		
11:45		94	21	360	147
Total		2357	5418		
Percent		30.3%	69.7%		
Grand Total		8048	19661		
Percent		29.0%	71.0%		
ADT		ADT 6,927		AADT 6,927	

All Traffic Data Services, Inc

1336 Farmer Road
Conyers, GA 30012
alltrafficdata.net

Site Code: 6.5
Station ID: 6.5
BRECKINRIDGE BLVD EAST OF PLEASANT HILL

Latitude: 0' 0.0000 Undefined

Start Time	19-Mar-16 Sat	WB Morning	WB Afternoon	Hour Totals Morning	Hour Totals Afternoon
12:00		37	134		
12:15		36	116		
12:30		21	120		
12:45		17	140	111	510
01:00		19	154		
01:15		22	132		
01:30		24	117		
01:45		29	124	94	527
02:00		26	145		
02:15		11	123		
02:30		14	113		
02:45		16	120	67	501
03:00		6	154		
03:15		18	128		
03:30		8	128		
03:45		8	131	40	541
04:00		7	102		
04:15		10	104		
04:30		12	124		
04:45		16	132	45	462
05:00		10	134		
05:15		15	110		
05:30		26	92		
05:45		21	109	72	445
06:00		31	114		
06:15		36	112		
06:30		32	126		
06:45		38	105	137	457
07:00		52	121		
07:15		48	97		
07:30		67	112		
07:45		42	102	209	432
08:00		58	90		
08:15		71	106		
08:30		84	87		
08:45		92	85	305	368
09:00		82	85		
09:15		101	86		
09:30		118	82		
09:45		124	84	425	337
10:00		112	92		
10:15		86	67		
10:30		102	68		
10:45		120	62	420	289
11:00		121	52		
11:15		116	40		
11:30		112	30		
11:45		116	28	465	150
Total		2390	5019		
Percent		32.3%	67.7%		

All Traffic Data Services, Inc
1336 Farmer Road
Conyers, GA 30012
alltrafficdata.net

Site Code: 6.5
Station ID: 6.5
BRECKINRIDGE BLVD EAST OF PLEASANT HILL

Latitude: 0' 0.0000 Undefined

Start Time	20-Mar-16 Sun	WB Morning	WB Afternoon	Hour Totals Morning	Hour Totals Afternoon
12:00		39	144		
12:15		31	80		
12:30		30	119		
12:45		29	126	129	469
01:00		29	138		
01:15		12	108		
01:30		17	102		
01:45		21	124	79	472
02:00		22	110		
02:15		10	108		
02:30		13	112		
02:45		11	130	56	460
03:00		12	117		
03:15		6	115		
03:30		14	99		
03:45		9	120	41	451
04:00		7	124		
04:15		6	113		
04:30		13	98		
04:45		8	99	34	434
05:00		12	113		
05:15		12	108		
05:30		11	99		
05:45		15	88	50	408
06:00		13	112		
06:15		9	98		
06:30		12	102		
06:45		22	86	56	398
07:00		14	74		
07:15		27	82		
07:30		30	65		
07:45		34	66	105	287
08:00		34	58		
08:15		34	65		
08:30		55	75		
08:45		69	52	192	250
09:00		78	47		
09:15		82	36		
09:30		66	38		
09:45		96	35	322	156
10:00		86	41		
10:15		91	32		
10:30		94	26		
10:45		106	21	377	120
11:00		160	24		
11:15		90	18		
11:30		98	17		
11:45		98	16	446	75
Total		1887	3980		
Percent		32.2%	67.8%		

All Traffic Data Services, Inc
1336 Farmer Road
Conyers, GA 30012
alltrafficdata.net

Site Code: 6.5
Station ID: 6.5
BRECKINRIDGE BLVD EAST OF PLEASANT HILL

Latitude: 0' 0.0000 Undefined

Start Time	21-Mar-16 Mon	WB Morning	WB Afternoon	Hour Totals Morning	Hour Totals Afternoon
12:00		15	160		
12:15		18	122		
12:30		13	136		
12:45		11	118	57	536
01:00		7	160		
01:15		14	122		
01:30		7	108		
01:45		9	125	37	515
02:00		5	99		
02:15		5	117		
02:30		3	107		
02:45		7	116	20	439
03:00		6	142		
03:15		7	167		
03:30		8	134		
03:45		10	126	31	569
04:00		12	146		
04:15		16	122		
04:30		17	172		
04:45		25	130	70	570
05:00		27	224		
05:15		34	177		
05:30		44	197		
05:45		66	163	171	761
06:00		104	160		
06:15		139	150		
06:30		248	123		
06:45		236	113	727	546
07:00		264	142		
07:15		238	85		
07:30		222	84		
07:45		230	92	954	403
08:00		210	74		
08:15		218	66		
08:30		232	82		
08:45		188	74	848	296
09:00		170	55		
09:15		160	75		
09:30		154	60		
09:45		143	76	627	266
10:00		133	52		
10:15		114	44		
10:30		88	51		
10:45		122	45	457	192
11:00		112	29		
11:15		124	23		
11:30		107	20		
11:45		128	16	471	88
Total		4470	5181		
Percent		46.3%	53.7%		

All Traffic Data Services, Inc

1336 Farmer Road
Conyers, GA 30012
alltrafficdata.net

Site Code: 6.5
Station ID: 6.5
BRECKINRIDGE BLVD EAST OF PLEASANT HILL

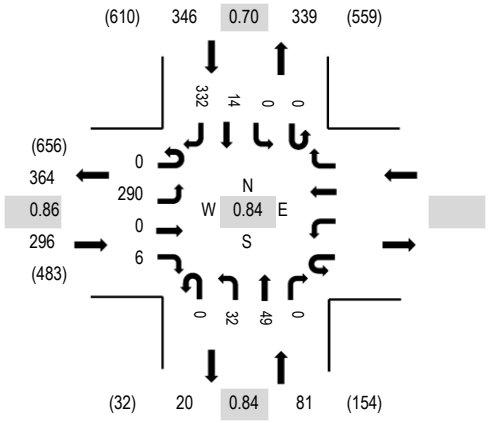
Latitude: 0' 0.0000 Undefined

Start Time	22-Mar-16 Tue	WB Morning	WB Afternoon	Hour Totals Morning	Hour Totals Afternoon
12:00		13	168		
12:15		15	137		
12:30		14	135		
12:45		12	122	54	562
01:00		5	153		
01:15		9	124		
01:30		8	116		
01:45		3	130	25	523
02:00		7	136		
02:15		3	104		
02:30		4	130		
02:45		5	122	19	492
03:00		5	164		
03:15		12	122		
03:30		6	139		
03:45		8	152	31	577
04:00		5	152		
04:15		16	121		
04:30		16	172		
04:45		20	163	57	608
05:00		32	237		
05:15		32	211		
05:30		56	183		
05:45		69	190	189	821
06:00		91	142		
06:15		156	158		
06:30		208	132		
06:45		242	133	697	565
07:00		244	110		
07:15		236	106		
07:30		201	96		
07:45		206	102	887	414
08:00		244	90		
08:15		226	86		
08:30		210	93		
08:45		220	60	900	329
09:00		176	79		
09:15		168	74		
09:30		166	39		
09:45		125	54	635	246
10:00		132	48		
10:15		102	37		
10:30		102	50		
10:45		127	41	463	176
11:00		87	33		
11:15		87	32		
11:30		118	25		
11:45		147	10	439	100
Total		4396	5413		
Percent		44.8%	55.2%		
Grand Total		13143	19593		
Percent		40.1%	59.9%		
ADT		ADT 8,184		AADT 8,184	

All Traffic Data
Services Inc.
(303) 216-2439
www.alltrafficdata.net

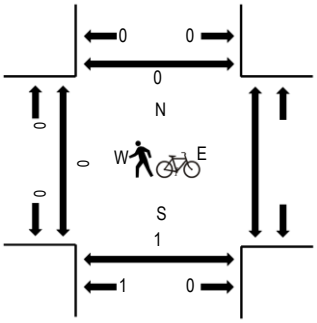
Location: #1 Centerview Drive & Kroger Blvd AM
Date and Start Time: Tuesday, March 22, 2016
Peak Hour: 07:45 AM - 08:45 AM
Peak 15-Minutes: 07:45 AM - 08:00 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	Kroger Blvd Eastbound				Westbound				Centerview Drive Northbound				Centerview Drive Southbound				Total	Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00:00 AM	0	28	0	0					0	9	10	0	0	0	0	38	85	610	0		0	0
7:15:00 AM	0	45	0	0					0	12	5	0	0	0	2	68	132	662	0		0	0
7:30:00 AM	0	50	0	0					0	12	12	0	0	0	2	103	179	716	0		0	0
7:45:00 AM	0	65	0	1					0	9	15	0	0	0	2	122	214	723	0		0	0
8:00:00 AM	0	57	0	4					0	6	5	0	0	0	4	61	137	637	0		1	0
8:15:00 AM	0	83	0	0					0	6	16	0	0	0	3	78	186		0		0	0
8:30:00 AM	0	85	0	1					0	11	13	0	0	0	5	71	186		0		0	0
8:45:00 AM	0	61	0	3					0	4	9	0	0	0	5	46	128		0		2	0

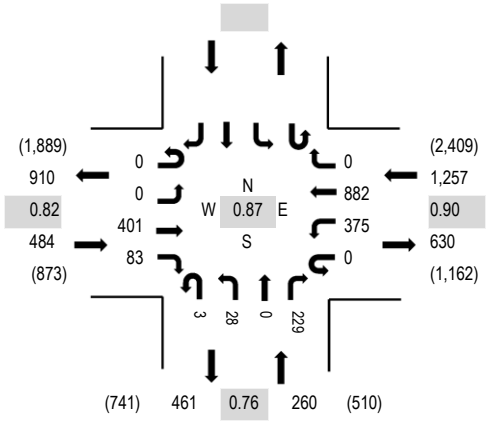
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0					0	0	0	0	0	0	0	0	0
Lights	0	274	0	6					0	32	49	0	0	0	14	310	685
Mediums	0	16	0	0					0	0	0	0	0	0	0	22	38
Total	0	290	0	6					0	32	49	0	0	0	14	332	723

All Traffic Data Services Inc.
(303) 216-2439
www.alltrafficdata.net

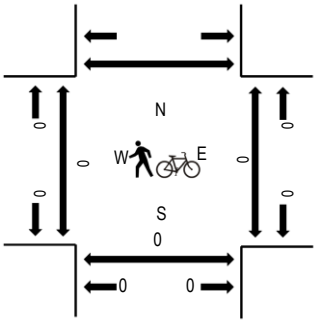
Location: #2 Centerview Drive & Breckingridge Blvd AM
Date and Start Time: Tuesday, March 22, 2016
Peak Hour: 07:30 AM - 08:30 AM
Peak 15-Minutes: 07:45 AM - 08:00 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	Breckingridge Blvd Eastbound				Breckingridge Blvd Westbound				Centerview Drive Northbound				Southbound				Total	Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00:00 AM	0	0	55	6	0	45	265	0	0	4	0	34					409	1,936	1	0	1	
7:15:00 AM	0	0	62	18	0	91	241	0	0	5	0	32					449	1,974	0	0	0	
7:30:00 AM	0	0	86	23	0	103	241	0	2	5	0	43					503	2,001	0	0	0	
7:45:00 AM	0	0	130	18	0	128	223	0	0	3	0	73					575	1,981	0	0	0	
8:00:00 AM	0	0	91	16	0	77	214	0	1	3	0	45					447	1,856	0	0	0	
8:15:00 AM	0	0	94	26	0	67	204	0	0	17	0	68					476		0	0	0	
8:30:00 AM	0	0	100	22	0	46	213	0	0	28	0	74					483		0	0	0	
8:45:00 AM	0	0	114	12	0	40	211	0	0	12	0	61					450		0	0	0	

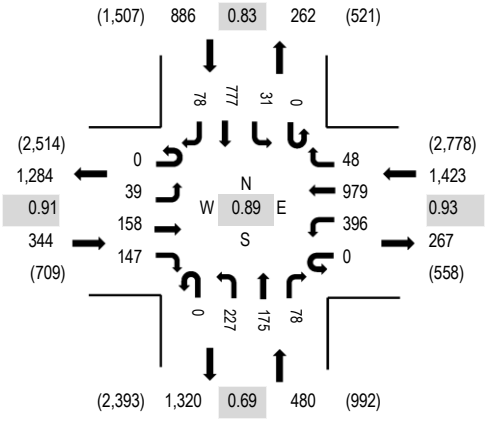
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	2	0	0	0	7	0	0	0	0	0					9
Lights	0	0	387	73	0	366	852	0	3	26	0	226					1,933
Mediums	0	0	12	10	0	9	23	0	0	2	0	3					59
Total	0	0	401	83	0	375	882	0	3	28	0	229					2,001

All Traffic Data Services Inc.
(303) 216-2439
www.alltrafficdata.net

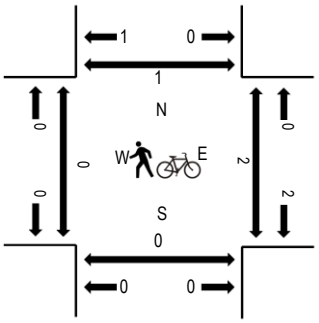
Location: #3 Breckingridge Blvd & Old Norcross Road AM
Date and Start Time: Tuesday, March 22, 2016
Peak Hour: 07:15 AM - 08:15 AM
Peak 15-Minutes: 07:45 AM - 08:00 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	Old Norcross Road Eastbound				Old Norcross Road Westbound				Breckingridge Blvd Northbound				Breckingridge Blvd Southbound				Total	Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00:00 AM	0	12	32	28	0	124	253	6	0	36	21	16	0	4	144	14	690	3,096	0	0	0	0
7:15:00 AM	0	5	35	32	0	114	222	8	0	36	31	21	0	4	184	17	709	3,133	0	0	0	0
7:30:00 AM	0	9	42	40	0	113	252	18	0	59	41	22	0	7	193	16	812	3,129	0	0	0	0
7:45:00 AM	0	17	37	33	0	92	251	14	0	79	69	25	0	15	225	28	885	3,060	0	0	0	0
8:00:00 AM	0	8	44	42	0	77	254	8	0	53	34	10	0	5	175	17	727	2,890	0	2	0	1
8:15:00 AM	0	15	49	35	0	90	199	6	0	74	43	37	0	2	137	18	705		0	0	0	0
8:30:00 AM	0	21	50	40	0	116	229	11	0	56	48	25	0	7	121	19	743		0	0	0	0
8:45:00 AM	0	13	40	30	0	78	232	11	0	79	52	25	0	4	130	21	715		1	0	0	0

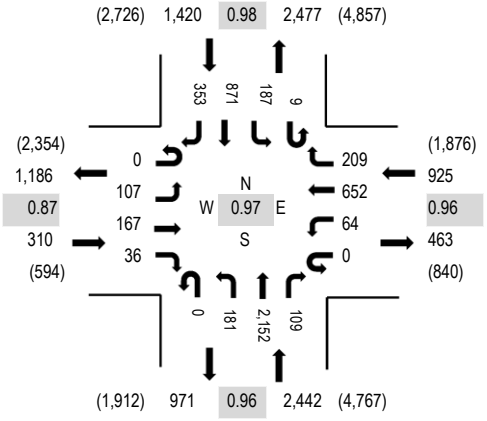
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	3	1	0	3	1	0	0	0	1	2	0	0	3	0	14
Lights	0	38	149	141	0	377	965	46	0	223	169	72	0	28	762	77	3,047
Mediums	0	1	6	5	0	16	13	2	0	4	5	4	0	3	12	1	72
Total	0	39	158	147	0	396	979	48	0	227	175	78	0	31	777	78	3,133

All Traffic Data Services Inc.
(303) 216-2439
www.alltrafficdata.net

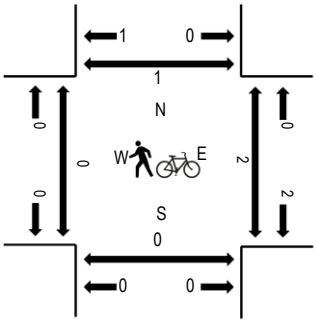
Location: #4 Pleasant Hill Road & Breckingridge Blvd AM
Date and Start Time: Tuesday, March 22, 2016
Peak Hour: 07:30 AM - 08:30 AM
Peak 15-Minutes: 07:45 AM - 08:00 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	Breckingridge Blvd Eastbound				Breckingridge Blvd Westbound				Pleasant Hill Road Northbound				Pleasant Hill Road Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00:00 AM	0	13	15	8	0	16	182	55	0	42	543	13	2	33	175	77	1,174	4,942	0	0	0	0
7:15:00 AM	0	20	20	15	0	12	174	51	0	56	514	24	5	33	185	84	1,193	5,031	0	0	0	0
7:30:00 AM	0	25	36	9	0	4	171	34	0	42	571	17	2	44	213	97	1,265	5,097	0	0	0	1
7:45:00 AM	0	28	44	7	0	17	167	53	0	49	546	42	2	60	196	99	1,310	5,081	0	0	0	0
8:00:00 AM	0	23	38	11	0	16	157	65	0	44	542	23	1	50	223	70	1,263	5,021	0	2	0	0
8:15:00 AM	0	31	49	9	0	27	157	57	0	46	493	27	4	33	239	87	1,259		0	0	0	0
8:30:00 AM	1	30	36	20	0	22	152	49	0	28	527	27	2	51	227	77	1,249		0	2	0	0
8:45:00 AM	0	44	40	22	0	34	156	48	0	53	475	23	2	62	205	86	1,250		0	0	0	0

Peak Rolling Hour Flow Rates

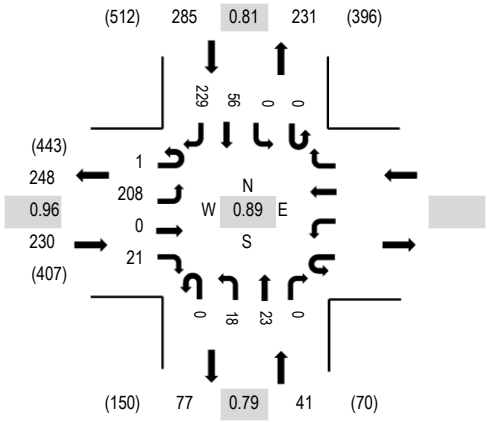
Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	4	0	0	0	0	6	2	0	0	4	2	0	1	9	2	30
Lights	0	97	152	32	0	61	626	203	0	176	2,118	106	9	180	831	341	4,932
Mediums	0	6	15	4	0	3	20	4	0	5	30	1	0	6	31	10	135
Total	0	107	167	36	0	64	652	209	0	181	2,152	109	9	187	871	353	5,097

All Traffic Data Services Inc.

(303) 216-2439
www.alltrafficdata.net

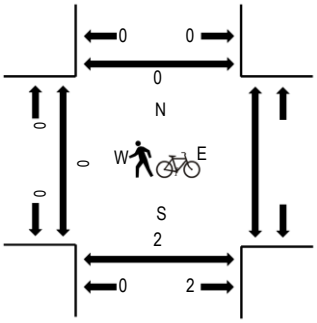
Location: #1 Centerview Drive & Kroger Blvd PM
Date and Start Time: Tuesday, March 22, 2016
Peak Hour: 04:45 PM - 05:45 PM
Peak 15-Minutes: 05:30 PM - 05:45 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	Kroger Blvd Eastbound				Westbound				Centerview Drive Northbound				Centerview Drive Southbound				Total	Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:00:00 PM	0	39	0	4					0	3	2	0	0	0	11	61	120	440	0		2	0
4:15:00 PM	0	31	0	10					0	4	5	0	0	0	9	36	95	454	1		1	0
4:30:00 PM	0	32	0	5					0	2	5	0	0	0	11	39	94	494	0		0	0
4:45:00 PM	0	53	0	7					0	2	4	0	0	0	12	53	131	556	0		0	0
5:00:00 PM	0	51	0	3					0	6	7	0	0	0	13	54	134	549	0		0	0
5:15:00 PM	0	52	0	6					0	6	6	0	0	0	11	54	135		0		0	0
5:30:00 PM	1	52	0	5					0	4	6	0	0	0	20	68	156		0		2	0
5:45:00 PM	0	47	0	9					0	4	4	0	0	0	14	46	124		0		1	0

Peak Rolling Hour Flow Rates

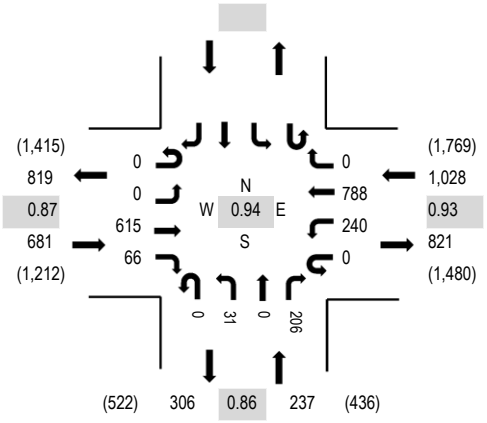
Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0					0	0	0	0	0	0	0	1	1
Lights	1	203	0	21					0	18	23	0	0	0	55	225	546
Mediums	0	5	0	0					0	0	0	0	0	0	1	3	9
Total	1	208	0	21					0	18	23	0	0	0	56	229	556

All Traffic Data Services Inc.

(303) 216-2439
www.alltrafficdata.net

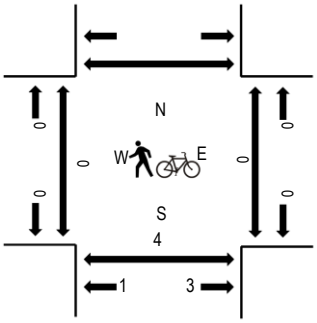
Location: #2 Centerview Drive & Breckingridge Blvd PM
Date and Start Time: Tuesday, March 22, 2016
Peak Hour: 05:00 PM - 06:00 PM
Peak 15-Minutes: 05:15 PM - 05:30 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	Breckingridge Blvd Eastbound				Breckingridge Blvd Westbound				Centerview Drive Northbound				Southbound				Total	Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:00:00 PM	0	0	110	9	0	52	138	0	0	8	0	43					360	1,471	0	0	0	
4:15:00 PM	0	0	131	8	0	33	103	0	0	12	0	32					319	1,621	0	0	0	
4:30:00 PM	0	0	133	10	0	40	170	0	0	7	0	36					396	1,821	0	0	0	
4:45:00 PM	0	0	122	8	0	56	149	0	0	9	0	52					396	1,901	0	0	0	
5:00:00 PM	0	0	151	14	0	54	222	0	0	11	0	58					510	1,946	0	0	0	
5:15:00 PM	0	0	181	15	0	57	204	0	0	6	0	56					519		0	0	2	
5:30:00 PM	0	0	148	20	0	74	177	0	0	9	0	48					476		0	0	1	
5:45:00 PM	0	0	135	17	0	55	185	0	0	5	0	44					441		0	0	1	

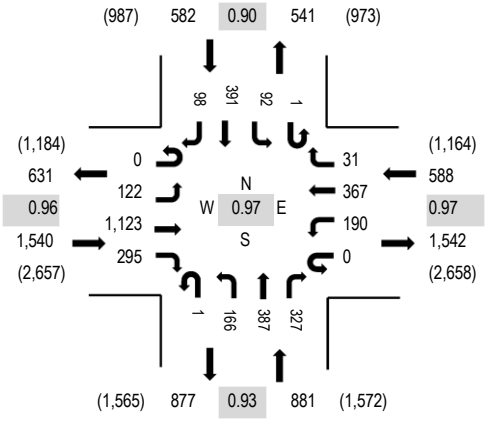
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	6	0	0	0	5	0	0	0	0	0					11
Lights	0	0	601	66	0	236	777	0	0	31	0	204					1,915
Mediums	0	0	8	0	0	4	6	0	0	0	0	2					20
Total	0	0	615	66	0	240	788	0	0	31	0	206					1,946

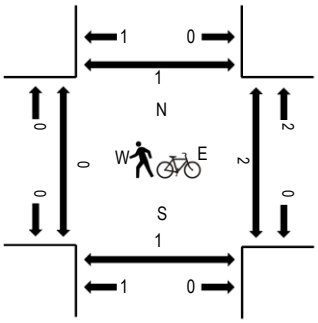
All Traffic Data Services Inc.
(303) 216-2439
www.alltrafficdata.net

Location: #3 Breckingridge Blvd & Old Norcross Road PM
Date and Start Time: Tuesday, March 22, 2016
Peak Hour: 05:00 PM - 06:00 PM
Peak 15-Minutes: 05:30 PM - 05:45 PM

Peak Hour - All Vehicles



Peak Hour - Pedestrians/Bicycles in Crosswalk



Note: Total study counts contained in parentheses.

Traffic Counts

Interval Start Time	Old Norcross Road Eastbound				Old Norcross Road Westbound				Breckingridge Blvd Northbound				Breckingridge Blvd Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00:00 PM	0	19	167	49	0	45	91	8	0	35	63	58	0	10	83	10	638	2,789	0	0	0	1
4:15:00 PM	0	29	199	52	0	40	92	7	0	29	64	65	0	9	59	16	661	3,049	0	0	0	0
4:30:00 PM	1	17	212	58	0	47	89	14	1	29	78	51	0	23	74	16	710	3,316	0	0	1	0
4:45:00 PM	1	19	237	57	0	39	93	11	1	38	103	76	0	9	83	13	780	3,535	0	0	0	0
5:00:00 PM	0	21	259	68	0	55	84	12	0	36	120	82	0	21	111	29	898	3,591	0	2	0	0
5:15:00 PM	0	28	297	78	0	48	94	10	0	54	99	80	1	24	91	24	928		0	0	0	0
5:30:00 PM	0	35	284	79	0	48	98	6	0	41	96	91	0	25	100	26	929		0	0	0	0
5:45:00 PM	0	38	283	70	0	39	91	3	1	35	72	74	0	22	89	19	836		0	0	0	0

Peak Rolling Hour Flow Rates

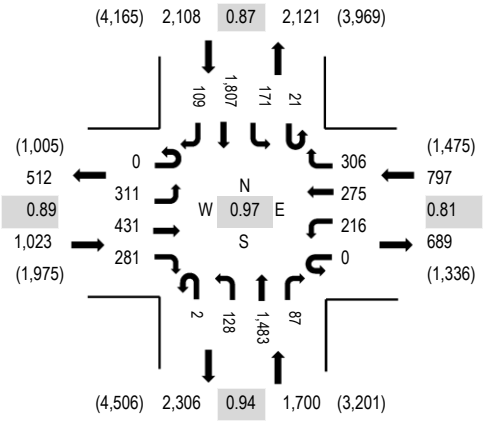
Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	2	0	0	2	1	2	0	1	4	2	0	0	4	1	19
Lights	0	121	1,111	292	0	187	359	29	1	163	380	322	1	92	386	95	3,539
Mediums	0	1	10	3	0	1	7	0	0	2	3	3	0	0	1	2	33
Total	0	122	1,123	295	0	190	367	31	1	166	387	327	1	92	391	98	3,591

All Traffic Data Services Inc.

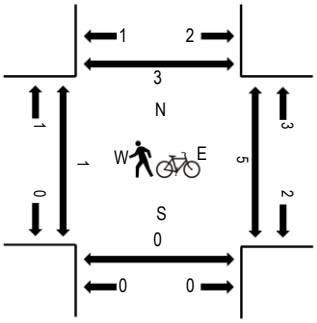
(303) 216-2439
www.alltrafficdata.net

Location: #4 Pleasant Hill Road & Breckingridge Blvd PM
Date and Start Time: Tuesday, March 22, 2016
Peak Hour: 04:30 PM - 05:30 PM
Peak 15-Minutes: 04:30 PM - 04:45 PM

Peak Hour - All Vehicles



Peak Hour - Pedestrians/Bicycles in Crosswalk



Note: Total study counts contained in parentheses.

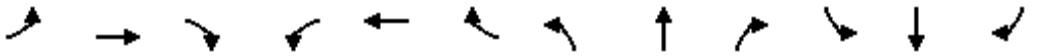
Traffic Counts

Interval Start Time	Breckingridge Blvd Eastbound				Breckingridge Blvd Westbound				Pleasant Hill Road Northbound				Pleasant Hill Road Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00:00 PM	0	85	85	62	0	49	56	62	0	23	300	17	0	44	487	37	1,307	5,449	0	4	0	1
4:15:00 PM	0	57	72	54	0	31	35	50	0	35	353	23	4	49	504	43	1,310	5,541	0	1	0	1
4:30:00 PM	0	73	92	58	0	47	54	67	0	45	390	18	7	40	527	34	1,452	5,628	0	3	0	0
4:45:00 PM	0	86	84	64	0	51	54	73	0	35	351	19	5	47	486	25	1,380	5,431	0	0	0	0
5:00:00 PM	0	67	137	82	0	62	95	89	1	23	350	28	4	35	400	26	1,399	5,367	1	0	0	1
5:15:00 PM	0	85	118	77	0	56	72	77	1	25	392	22	5	49	394	24	1,397		0	1	0	1
5:30:00 PM	0	86	87	87	0	54	71	65	0	40	328	23	7	41	340	26	1,255		0	1	0	0
5:45:00 PM	0	74	119	84	0	57	87	61	0	18	313	28	3	59	391	22	1,316		0	0	0	0

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	2	4	0	0	0	3	2	0	0	4	0	0	1	1	1	18
Lights	0	308	420	280	0	214	265	301	2	127	1,449	87	21	167	1,786	107	5,534
Mediums	0	1	7	1	0	2	7	3	0	1	30	0	0	3	20	1	76
Total	0	311	431	281	0	216	275	306	2	128	1,483	87	21	171	1,807	109	5,628

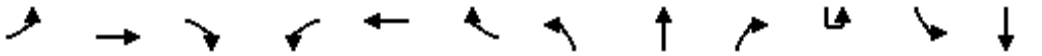
Appendix E: Synchro Output



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	39	158	147	396	979	48	227	178	78	31	777	78
Future Volume (vph)	39	158	147	396	979	48	227	178	78	31	777	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0	6.0	5.0	7.0	6.0	5.0	6.0	6.0	5.0	6.0	6.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.21	1.00	1.00	0.58	1.00	1.00	0.09	1.00	1.00	0.63	1.00	1.00
Satd. Flow (perm)	393	3539	1583	1089	3539	1583	170	3539	1583	1174	3539	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)	42	172	160	430	1064	52	247	193	85	34	845	85
RTOR Reduction (vph)	0	0	111	0	0	29	0	0	56	0	0	61
Lane Group Flow (vph)	42	172	49	430	1064	23	247	193	29	34	845	24
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases	6		6	2		2	8		8	4		4
Actuated Green, G (s)	56.0	49.8	49.8	84.0	72.8	72.8	66.0	54.8	54.8	52.2	46.0	46.0
Effective Green, g (s)	56.0	49.8	49.8	84.0	71.8	72.8	66.0	54.8	54.8	52.2	46.0	46.0
Actuated g/C Ratio	0.35	0.31	0.31	0.52	0.44	0.45	0.41	0.34	0.34	0.32	0.28	0.28
Clearance Time (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	188	1087	486	687	1568	711	217	1197	535	401	1004	449
v/s Ratio Prot	0.01	0.05		c0.11	c0.30		c0.11	0.05		0.00	0.24	
v/s Ratio Perm	0.07		0.03	0.21		0.01	c0.36		0.02	0.02		0.02
v/c Ratio	0.22	0.16	0.10	0.63	0.68	0.03	1.14	0.16	0.05	0.08	0.84	0.05
Uniform Delay, d1	35.9	40.8	40.1	24.9	35.9	24.9	46.2	37.5	36.1	37.9	54.6	42.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	0.3	0.4	1.8	2.4	0.1	103.3	0.3	0.2	0.1	8.5	0.2
Delay (s)	36.5	41.2	40.5	26.7	38.3	25.0	149.6	37.8	36.3	38.0	63.1	42.4
Level of Service	D	D	D	C	D	C	F	D	D	D	E	D
Approach Delay (s)		40.4			34.6			90.1			60.4	
Approach LOS		D			C			F			E	

Intersection Summary			
HCM 2000 Control Delay	51.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	162.0	Sum of lost time (s)	23.0
Intersection Capacity Utilization	84.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	107	167	36	64	652	209	181	2152	109	9	187	871
Future Volume (vph)	107	167	36	64	652	209	181	2152	109	9	187	871
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.2	3.8	3.8	3.0	3.8	3.8	3.1	3.1			3.9	3.1
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91			0.97	0.91
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.98	1.00	1.00			1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99			1.00	0.96
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00			0.95	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1557	3433	5049			3433	4845
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00			0.95	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1557	3433	5049			3433	4845
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.92	0.97	0.97
Adj. Flow (vph)	110	172	37	66	672	215	187	2219	112	10	193	898
RTOR Reduction (vph)	0	0	29	0	0	161	0	3	0	0	0	50
Lane Group Flow (vph)	110	172	8	66	672	54	187	2328	0	0	203	1212
Confl. Peds. (#/hr)				2		2					1	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	Prot	NA
Protected Phases	3	8		7	4		5	2		1	1	6
Permitted Phases			8			4						
Actuated Green, G (s)	9.9	28.4	28.4	7.1	26.0	26.0	18.2	73.1			13.8	68.8
Effective Green, g (s)	13.0	31.8	31.8	10.8	29.4	29.4	21.9	76.8			16.8	72.5
Actuated g/C Ratio	0.09	0.21	0.21	0.07	0.20	0.20	0.15	0.51			0.11	0.48
Clearance Time (s)	6.3	7.2	7.2	6.7	7.2	7.2	6.8	6.8			6.9	6.8
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	297	750	335	247	693	305	501	2585			384	2341
v/s Ratio Prot	c0.03	0.05		0.02	c0.19		0.05	c0.46			0.06	c0.25
v/s Ratio Perm			0.00			0.03						
v/c Ratio	0.37	0.23	0.02	0.27	0.97	0.18	0.37	0.90			0.53	0.52
Uniform Delay, d1	64.6	49.0	46.8	65.9	59.9	50.2	57.9	33.1			62.9	26.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2	0.8	0.2	0.0	0.6	26.5	0.3	0.5	5.6			1.3	0.8
Delay (s)	65.4	49.1	46.8	66.4	86.3	50.5	58.3	38.7			64.2	27.5
Level of Service	E	D	D	E	F	D	E	D			E	C
Approach Delay (s)		54.5			76.9			40.2				32.6
Approach LOS		D			E			D				C

Intersection Summary			
HCM 2000 Control Delay	45.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	84.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

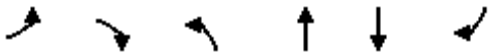
Movement	SBR
Lane Configurations	
Traffic Volume (vph)	353
Future Volume (vph)	353
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frpb, ped/bikes	
Flpb, ped/bikes	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.97
Adj. Flow (vph)	364
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Confl. Peds. (#/hr)	1
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBU	NBL	NBR
Lane Configurations							
Traffic Volume (veh/h)	401	83	375	882	3	28	229
Future Volume (Veh/h)	401	83	375	882	3	28	229
Sign Control	Free			Free		Stop	
Grade	0%			0%		0%	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	461	95	431	1014	0	32	263
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type	None			TWLTL			
Median storage veh)				2			
Upstream signal (ft)							
pX, platoon unblocked					0.00		
vC, conflicting volume			556		0	1878	278
vC1, stage 1 conf vol						508	
vC2, stage 2 conf vol						1369	
vCu, unblocked vol			556		0	1878	278
tC, single (s)			4.1		0.0	6.8	6.9
tC, 2 stage (s)						5.8	
tF (s)			2.2		0.0	3.5	3.3
p0 queue free %			57		0	71	63
cM capacity (veh/h)			1011		0	111	719

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1	NB 2
Volume Total	307	249	431	507	507	32	263
Volume Left	0	0	431	0	0	32	0
Volume Right	0	95	0	0	0	0	263
cSH	1700	1700	1011	1700	1700	111	719
Volume to Capacity	0.18	0.15	0.43	0.30	0.30	0.29	0.37
Queue Length 95th (ft)	0	0	54	0	0	27	42
Control Delay (s)	0.0	0.0	11.2	0.0	0.0	49.9	12.9
Lane LOS			B			E	B
Approach Delay (s)	0.0		3.3			16.9	
Approach LOS						C	

Intersection Summary			
Average Delay	4.3		
Intersection Capacity Utilization	47.8%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	290	6	32	0	14	332
Future Volume (Veh/h)	290	6	32	0	14	332
Sign Control	Free			Stop	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	345	7	38	0	17	395
Pedestrians				1	1	
Lane Width (ft)				12.0	12.0	
Walking Speed (ft/s)				3.5	3.5	
Percent Blockage				0	0	
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1		700	692	692	1
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1		700	692	692	1
tC, single (s)	4.1		7.1	6.5	6.5	6.2
tC, 2 stage (s)						
tF (s)	2.2		3.5	4.0	4.0	3.3
p0 queue free %	79		79	100	94	64
cM capacity (veh/h)	1620		179	289	289	1083

Direction, Lane #	EB 1	EB 2	NB 1	SB 1	SB 2
Volume Total	345	7	38	17	395
Volume Left	345	0	38	0	0
Volume Right	0	7	0	0	395
cSH	1620	1700	179	289	1083
Volume to Capacity	0.21	0.00	0.21	0.06	0.36
Queue Length 95th (ft)	20	0	19	5	42
Control Delay (s)	7.8	0.0	30.4	18.3	10.2
Lane LOS	A		D	C	B
Approach Delay (s)	7.7		30.4	10.6	
Approach LOS			D	B	

Intersection Summary			
Average Delay	10.2		
Intersection Capacity Utilization	31.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	122	1123	295	190	367	31	1	166	387	327	1	92
Future Volume (vph)	122	1123	295	190	367	31	1	166	387	327	1	92
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0	6.0	5.0	7.0	6.0		5.0	6.0	6.0		5.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00	0.95	1.00		1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	1.00	0.85		1.00
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00	1.00		0.95
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583		1770	3539	1583		1770
Flt Permitted	0.53	1.00	1.00	0.06	1.00	1.00		0.39	1.00	1.00		0.44
Satd. Flow (perm)	983	3539	1583	119	3539	1583		732	3539	1583		813
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.92	0.97	0.97	0.97	0.92	0.97
Adj. Flow (vph)	126	1158	304	196	378	32	1	171	399	337	1	95
RTOR Reduction (vph)	0	0	90	0	0	18	0	0	0	237	0	0
Lane Group Flow (vph)	126	1158	214	196	378	14	0	172	399	100	0	96
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	pm+pt	NA	Perm	pm+pt	pm+pt
Protected Phases	1	6		5	2		3	3	8		7	7
Permitted Phases	6		6	2		2	8	8		8	4	4
Actuated Green, G (s)	72.1	62.5	62.5	85.0	70.4	70.4		61.9	48.0	48.0		58.1
Effective Green, g (s)	72.1	62.5	62.5	85.0	69.4	70.4		61.9	48.0	48.0		58.1
Actuated g/C Ratio	0.45	0.39	0.39	0.52	0.43	0.43		0.38	0.30	0.30		0.36
Clearance Time (s)	5.0	6.0	6.0	5.0	6.0	6.0		5.0	6.0	6.0		5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	484	1365	610	240	1516	687		368	1048	469		362
v/s Ratio Prot	0.02	c0.33		c0.09	0.11			c0.04	0.11			0.02
v/s Ratio Perm	0.10		0.13	0.34		0.01		c0.14		0.06		0.08
v/c Ratio	0.26	0.85	0.35	0.82	0.25	0.02		0.47	0.38	0.21		0.27
Uniform Delay, d1	26.9	45.4	35.3	46.9	29.6	26.1		34.7	45.2	42.8		35.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00
Incremental Delay, d2	0.3	6.7	1.6	18.9	0.4	0.1		0.9	1.1	1.0		0.4
Delay (s)	27.1	52.1	36.9	65.9	30.0	26.2		35.7	46.3	43.8		35.8
Level of Service	C	D	D	E	C	C		D	D	D		D
Approach Delay (s)		47.2			41.4				43.4			
Approach LOS		D			D				D			

Intersection Summary			
HCM 2000 Control Delay	44.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	162.0	Sum of lost time (s)	23.0
Intersection Capacity Utilization	80.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	391	98
Future Volume (vph)	391	98
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	6.0	6.0
Lane Util. Factor	0.95	1.00
Frt	1.00	0.85
Flt Protected	1.00	1.00
Satd. Flow (prot)	3539	1583
Flt Permitted	1.00	1.00
Satd. Flow (perm)	3539	1583
Peak-hour factor, PHF	0.97	0.97
Adj. Flow (vph)	403	101
RTOR Reduction (vph)	0	57
Lane Group Flow (vph)	403	44
Turn Type	NA	custom
Protected Phases	4	
Permitted Phases		2
Actuated Green, G (s)	46.1	70.4
Effective Green, g (s)	46.1	70.4
Actuated g/C Ratio	0.28	0.43
Clearance Time (s)	6.0	6.0
Vehicle Extension (s)	3.0	3.0
Lane Grp Cap (vph)	1007	687
v/s Ratio Prot	0.11	
v/s Ratio Perm		0.03
v/c Ratio	0.40	0.06
Uniform Delay, d1	46.8	26.6
Progression Factor	1.00	1.00
Incremental Delay, d2	0.3	0.2
Delay (s)	47.0	26.8
Level of Service	D	C
Approach Delay (s)	41.8	
Approach LOS	D	

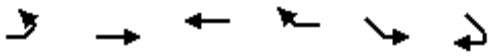
Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	311	431	281	216	275	306	2	128	1483	87	21	171
Future Volume (vph)	311	431	281	216	275	306	2	128	1483	87	21	171
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.2	3.8	3.8	3.0	3.8	3.8		3.1	3.1			3.9
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00		0.97	0.91			0.97
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.98		1.00	1.00			1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00			1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.99			1.00
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00			0.95
Satd. Flow (prot)	3433	3539	1583	3433	3539	1556		3433	5043			3433
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00			0.95
Satd. Flow (perm)	3433	3539	1583	3433	3539	1556		3433	5043			3433
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	321	444	290	223	284	315	2	132	1529	90	22	176
RTOR Reduction (vph)	0	0	126	0	0	165	0	0	3	0	0	0
Lane Group Flow (vph)	321	444	164	223	284	150	0	134	1616	0	0	198
Confl. Peds. (#/hr)				2		2						1
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	Prot	NA		Prot	Prot
Protected Phases	3	8		7	4		5	5	2		1	1
Permitted Phases			8			4						
Actuated Green, G (s)	20.6	28.4	28.4	15.1	23.3	23.3		12.2	85.0			13.9
Effective Green, g (s)	23.7	31.8	31.8	18.8	26.7	26.7		15.9	88.7			16.9
Actuated g/C Ratio	0.14	0.19	0.19	0.11	0.16	0.16		0.09	0.52			0.10
Clearance Time (s)	6.3	7.2	7.2	6.7	7.2	7.2		6.8	6.8			6.9
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0			3.0
Lane Grp Cap (vph)	478	662	296	379	555	244		321	2631			341
v/s Ratio Prot	c0.09	c0.13		0.06	0.08			0.04	c0.32			0.06
v/s Ratio Perm			0.10			0.10						
v/c Ratio	0.67	0.67	0.55	0.59	0.51	0.61		0.42	0.61			0.58
Uniform Delay, d1	69.5	64.2	62.7	71.9	65.7	66.8		72.7	28.6			73.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00			1.00
Incremental Delay, d2	3.7	2.7	2.2	2.3	0.8	4.5		0.9	1.1			2.5
Delay (s)	73.2	66.9	64.9	74.3	66.5	71.4		73.6	29.7			75.7
Level of Service	E	E	E	E	E	E		E	C			E
Approach Delay (s)		68.3			70.5				33.0			
Approach LOS		E			E				C			

Intersection Summary			
HCM 2000 Control Delay	46.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	170.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	77.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	1807	109
Future Volume (vph)	1807	109
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	3.1	
Lane Util. Factor	0.91	
Frpb, ped/bikes	1.00	
Flpb, ped/bikes	1.00	
Frt	0.99	
Flt Protected	1.00	
Satd. Flow (prot)	5038	
Flt Permitted	1.00	
Satd. Flow (perm)	5038	
Peak-hour factor, PHF	0.97	0.97
Adj. Flow (vph)	1863	112
RTOR Reduction (vph)	3	0
Lane Group Flow (vph)	1972	0
Confl. Peds. (#/hr)		1
Turn Type	NA	
Protected Phases	6	
Permitted Phases		
Actuated Green, G (s)	86.8	
Effective Green, g (s)	90.5	
Actuated g/C Ratio	0.53	
Clearance Time (s)	6.8	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	2681	
v/s Ratio Prot	c0.39	
v/s Ratio Perm		
v/c Ratio	0.74	
Uniform Delay, d1	30.5	
Progression Factor	1.00	
Incremental Delay, d2	1.8	
Delay (s)	32.4	
Level of Service	C	
Approach Delay (s)	36.3	
Approach LOS	D	

Intersection Summary



Movement	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations						
Traffic Volume (vph)	0	77	18	23	0	0
Future Volume (vph)	0	77	18	23	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.5	4.5		
Lane Util. Factor		1.00	1.00	1.00		
Frt		1.00	1.00	0.85		
Flt Protected		1.00	1.00	1.00		
Satd. Flow (prot)		1863	1863	1583		
Flt Permitted		1.00	1.00	1.00		
Satd. Flow (perm)		1863	1863	1583		
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	84	20	25	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	84	20	25	0	0
Turn Type		NA	NA	Perm		
Protected Phases		4	8			
Permitted Phases				8		
Actuated Green, G (s)		22.5	22.5	22.5		
Effective Green, g (s)		22.5	22.5	22.5		
Actuated g/C Ratio		1.00	1.00	1.00		
Clearance Time (s)		4.5	4.5	4.5		
Lane Grp Cap (vph)		1863	1863	1583		
v/s Ratio Prot		c0.05	0.01			
v/s Ratio Perm				0.02		
v/c Ratio		0.05	0.01	0.02		
Uniform Delay, d1		0.0	0.0	0.0		
Progression Factor		1.00	1.00	1.00		
Incremental Delay, d2		0.0	0.0	0.0		
Delay (s)		0.0	0.0	0.0		
Level of Service		A	A	A		
Approach Delay (s)		0.0	0.0		0.0	
Approach LOS		A	A		A	

Intersection Summary			
HCM 2000 Control Delay	0.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.06		
Actuated Cycle Length (s)	22.5	Sum of lost time (s)	4.5
Intersection Capacity Utilization	7.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations						
Traffic Volume (vph)	208	0	0	285	0	23
Future Volume (vph)	208	0	0	285	0	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5			4.5		4.5
Lane Util. Factor	1.00			0.95		1.00
Frt	1.00			1.00		0.86
Flt Protected	1.00			1.00		1.00
Satd. Flow (prot)	1863			3539		1611
Flt Permitted	1.00			1.00		1.00
Satd. Flow (perm)	1863			3539		1611
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	226	0	0	310	0	25
RTOR Reduction (vph)	0	0	0	0	0	15
Lane Group Flow (vph)	226	0	0	310	0	10
Turn Type	NA			NA		Perm
Protected Phases	2			6		
Permitted Phases						8
Actuated Green, G (s)	18.0			18.0		18.0
Effective Green, g (s)	18.0			18.0		18.0
Actuated g/C Ratio	0.40			0.40		0.40
Clearance Time (s)	4.5			4.5		4.5
Lane Grp Cap (vph)	745			1415		644
v/s Ratio Prot	c0.12			0.09		
v/s Ratio Perm						c0.01
v/c Ratio	0.30			0.22		0.02
Uniform Delay, d1	9.2			8.9		8.2
Progression Factor	1.00			1.00		1.00
Incremental Delay, d2	1.0			0.4		0.0
Delay (s)	10.3			9.2		8.2
Level of Service	B			A		A
Approach Delay (s)	10.3			9.2	8.2	
Approach LOS	B			A	A	

Intersection Summary			
HCM 2000 Control Delay	9.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.16		
Actuated Cycle Length (s)	45.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	22.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	615	66	240	788	31	206
Future Volume (Veh/h)	615	66	240	788	31	206
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	654	70	255	838	33	219
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			TWLTL		
Median storage veh)				2		
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			724		1618	362
vC1, stage 1 conf vol					689	
vC2, stage 2 conf vol					929	
vCu, unblocked vol			724		1618	362
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)			2.2		3.5	3.3
p0 queue free %			71		85	65
cM capacity (veh/h)			874		217	635

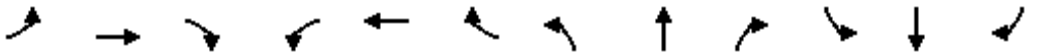
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1	NB 2
Volume Total	436	288	255	419	419	33	219
Volume Left	0	0	255	0	0	33	0
Volume Right	0	70	0	0	0	0	219
cSH	1700	1700	874	1700	1700	217	635
Volume to Capacity	0.26	0.17	0.29	0.25	0.25	0.15	0.35
Queue Length 95th (ft)	0	0	30	0	0	13	38
Control Delay (s)	0.0	0.0	10.8	0.0	0.0	24.5	13.6
Lane LOS			B			C	B
Approach Delay (s)	0.0		2.5			15.1	
Approach LOS						C	

Intersection Summary			
Average Delay	3.2		
Intersection Capacity Utilization	45.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBU	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (veh/h)	1	208	21	18	0	56	229
Future Volume (Veh/h)	1	208	21	18	0	56	229
Sign Control		Free			Stop	Stop	
Grade		0%			0%	0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	0	234	24	20	0	63	257
Pedestrians					1	1	
Lane Width (ft)					12.0	12.0	
Walking Speed (ft/s)					3.5	3.5	
Percent Blockage					0	0	
Right turn flare (veh)							
Median type		None					
Median storage veh)							
Upstream signal (ft)							
pX, platoon unblocked	0.00						
vC, conflicting volume	0	1		500	470	470	1
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	0	1		500	470	470	1
tC, single (s)	0.0	4.1		7.1	6.5	6.5	6.2
tC, 2 stage (s)							
tF (s)	0.0	2.2		3.5	4.0	4.0	3.3
p0 queue free %	0	86		93	100	85	76
cM capacity (veh/h)	0	1620		289	420	420	1083

Direction, Lane #	EB 1	EB 2	NB 1	SB 1	SB 2
Volume Total	234	24	20	63	257
Volume Left	234	0	20	0	0
Volume Right	0	24	0	0	257
cSH	1620	1700	289	420	1083
Volume to Capacity	0.14	0.01	0.07	0.15	0.24
Queue Length 95th (ft)	13	0	6	13	23
Control Delay (s)	7.6	0.0	18.4	15.1	9.4
Lane LOS	A		C	C	A
Approach Delay (s)	6.9		18.4	10.5	
Approach LOS			C	B	

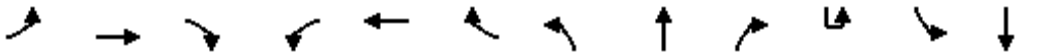
Intersection Summary			
Average Delay	9.2		
Intersection Capacity Utilization	26.0%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	180	167	451	1114	55	258	199	89	35	884	89
Future Volume (vph)	44	180	167	451	1114	55	258	199	89	35	884	89
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0	6.0	5.0	7.0	6.0	5.0	6.0	6.0	5.0	6.0	6.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.15	1.00	1.00	0.56	1.00	1.00	0.08	1.00	1.00	0.62	1.00	1.00
Satd. Flow (perm)	276	3539	1583	1036	3539	1583	146	3539	1583	1149	3539	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)	48	196	182	490	1211	60	280	216	97	38	961	97
RTOR Reduction (vph)	0	0	130	0	0	33	0	0	64	0	0	69
Lane Group Flow (vph)	48	196	52	490	1211	27	280	216	33	38	961	28
Turn Type	pm+pt	NA	custom	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases	6		4	2		2	8		8	4		4
Actuated Green, G (s)	53.5	47.1	46.0	84.0	72.6	72.6	66.0	54.5	54.5	52.5	46.0	46.0
Effective Green, g (s)	53.5	47.1	46.0	84.0	71.6	72.6	66.0	54.5	54.5	52.5	46.0	46.0
Actuated g/C Ratio	0.33	0.29	0.28	0.52	0.44	0.45	0.41	0.34	0.34	0.32	0.28	0.28
Clearance Time (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	150	1028	449	681	1564	709	209	1190	532	397	1004	449
v/s Ratio Prot	0.01	0.06		c0.14	c0.34		c0.12	0.06		0.00	0.27	
v/s Ratio Perm	0.09		0.03	0.23		0.02	c0.42		0.02	0.03		0.02
v/c Ratio	0.32	0.19	0.12	0.72	0.77	0.04	1.34	0.18	0.06	0.10	0.96	0.06
Uniform Delay, d1	38.4	43.1	42.9	26.2	38.3	25.1	50.0	38.0	36.4	37.8	57.0	42.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.2	0.4	0.1	3.7	3.8	0.1	181.5	0.3	0.2	0.1	18.7	0.1
Delay (s)	39.6	43.6	43.0	29.8	42.2	25.2	231.4	38.3	36.6	37.9	75.7	42.3
Level of Service	D	D	D	C	D	C	F	D	D	D	E	D
Approach Delay (s)		42.9			38.1			129.2			71.5	
Approach LOS		D			D			F			E	

Intersection Summary			
HCM 2000 Control Delay	62.0	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.06		
Actuated Cycle Length (s)	162.0	Sum of lost time (s)	23.0
Intersection Capacity Utilization	92.0%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	122	180	41	73	742	238	206	2449	124	10	213	991
Future Volume (vph)	122	180	41	73	742	238	206	2449	124	10	213	991
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.2	3.8	3.8	3.0	3.8	3.8	3.1	3.1			3.9	3.1
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91			0.97	0.91
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.98	1.00	1.00			1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99			1.00	0.96
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00			0.95	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1557	3433	5048			3433	4845
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00			0.95	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1557	3433	5048			3433	4845
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.92	0.97	0.97
Adj. Flow (vph)	126	186	42	75	765	245	212	2525	128	11	220	1022
RTOR Reduction (vph)	0	0	34	0	0	156	0	3	0	0	0	49
Lane Group Flow (vph)	126	186	8	75	765	89	212	2650	0	0	231	1387
Confl. Peds. (#/hr)				2		2					1	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	Prot	NA
Protected Phases	3	8		7	4		5	2		1	1	6
Permitted Phases			8			4						
Actuated Green, G (s)	10.3	25.4	25.4	8.7	24.2	24.2	18.2	73.8			14.5	70.2
Effective Green, g (s)	13.4	28.8	28.8	12.4	27.6	27.6	21.9	77.5			17.5	73.9
Actuated g/C Ratio	0.09	0.19	0.19	0.08	0.18	0.18	0.15	0.52			0.12	0.49
Clearance Time (s)	6.3	7.2	7.2	6.7	7.2	7.2	6.8	6.8			6.9	6.8
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	306	679	303	283	651	286	501	2608			400	2386
v/s Ratio Prot	c0.04	0.05		0.02	c0.22		0.06	c0.52			0.07	c0.29
v/s Ratio Perm			0.01			0.06						
v/c Ratio	0.41	0.27	0.03	0.27	1.18	0.31	0.42	1.02			0.58	0.58
Uniform Delay, d1	64.6	51.7	49.2	64.5	61.2	53.0	58.3	36.2			62.7	27.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2	0.9	0.2	0.0	0.5	94.3	0.6	0.6	21.7			2.0	1.0
Delay (s)	65.5	51.9	49.3	65.0	155.5	53.6	58.9	58.0			64.8	28.1
Level of Service	E	D	D	E	F	D	E	E			E	C
Approach Delay (s)		56.4			126.2			58.0				33.2
Approach LOS		E			F			E				C

Intersection Summary			
HCM 2000 Control Delay	63.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	93.8%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

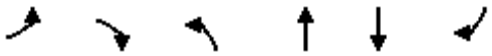
Movement	SBR
Lane Configurations	
Traffic Volume (vph)	402
Future Volume (vph)	402
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frpb, ped/bikes	
Flpb, ped/bikes	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.97
Adj. Flow (vph)	414
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Confl. Peds. (#/hr)	1
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	

Intersection Summary

Movement	NBU	NBL	NBR	NET	NER	SWL	SWT
Lane Configurations							
Traffic Volume (veh/h)	3	32	261	456	94	427	1004
Future Volume (Veh/h)	3	32	261	456	94	427	1004
Sign Control		Stop		Free			Free
Grade		0%		0%			0%
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	0	37	300	524	108	491	1154
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type				None			TWLTL
Median storage veh)							2
Upstream signal (ft)							
pX, platoon unblocked	0.00						
vC, conflicting volume	0	2137	316			632	
vC1, stage 1 conf vol		578					
vC2, stage 2 conf vol		1559					
vCu, unblocked vol	0	2137	316			632	
tC, single (s)	0.0	6.8	6.9			4.1	
tC, 2 stage (s)		5.8					
tF (s)	0.0	3.5	3.3			2.2	
p0 queue free %	0	50	56			48	
cM capacity (veh/h)	0	74	680			947	

Direction, Lane #	NB 1	NB 2	NE 1	NE 2	SW 1	SW 2	SW 3
Volume Total	37	300	349	283	491	577	577
Volume Left	37	0	0	0	491	0	0
Volume Right	0	300	0	108	0	0	0
cSH	74	680	1700	1700	947	1700	1700
Volume to Capacity	0.50	0.44	0.21	0.17	0.52	0.34	0.34
Queue Length 95th (ft)	52	57	0	0	77	0	0
Control Delay (s)	94.7	14.4	0.0	0.0	12.8	0.0	0.0
Lane LOS	F	B			B		
Approach Delay (s)	23.2		0.0		3.8		
Approach LOS	C						

Intersection Summary			
Average Delay	5.4		
Intersection Capacity Utilization	52.6%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	330	7	36	0	16	378
Future Volume (Veh/h)	330	7	36	0	16	378
Sign Control	Free			Stop	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	393	8	43	0	19	450
Pedestrians				1	1	
Lane Width (ft)				12.0	12.0	
Walking Speed (ft/s)				3.5	3.5	
Percent Blockage				0	0	
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1		796	788	788	1
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1		796	788	788	1
tC, single (s)	4.1		7.1	6.5	6.5	6.2
tC, 2 stage (s)						
tF (s)	2.2		3.5	4.0	4.0	3.3
p0 queue free %	76		68	100	92	58
cM capacity (veh/h)	1620		136	244	244	1083

Direction, Lane #	EB 1	EB 2	NB 1	SB 1	SB 2
Volume Total	393	8	43	19	450
Volume Left	393	0	43	0	0
Volume Right	0	8	0	0	450
cSH	1620	1700	136	244	1083
Volume to Capacity	0.24	0.00	0.32	0.08	0.42
Queue Length 95th (ft)	24	0	31	6	52
Control Delay (s)	7.9	0.0	43.2	21.0	10.7
Lane LOS	A		E	C	B
Approach Delay (s)	7.8		43.2	11.1	
Approach LOS			E	B	

Intersection Summary			
Average Delay	11.1		
Intersection Capacity Utilization	33.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	139	1278	336	216	418	35	1	189	440	372	1	105
Future Volume (vph)	139	1278	336	216	418	35	1	189	440	372	1	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0	6.0	5.0	7.0	6.0		5.0	6.0	6.0		5.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00	0.95	1.00		1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	1.00	0.85		1.00
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00	1.00		0.95
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583		1770	3539	1583		1770
Flt Permitted	0.50	1.00	1.00	0.06	1.00	1.00		0.35	1.00	1.00		0.39
Satd. Flow (perm)	933	3539	1583	114	3539	1583		643	3539	1583		718
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.92	0.97	0.97	0.97	0.92	0.97
Adj. Flow (vph)	143	1318	346	223	431	36	1	195	454	384	1	108
RTOR Reduction (vph)	0	0	106	0	0	20	0	0	0	259	0	0
Lane Group Flow (vph)	143	1318	240	223	431	16	0	196	454	125	0	109
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	custom	pm+pt	NA	Perm	custom	pm+pt
Protected Phases	1	6		5	2			3	8			7
Permitted Phases	6		6	2		2	3	8		8	7	4
Actuated Green, G (s)	69.8	60.1	60.1	85.0	70.3	70.3		61.8	47.4	47.4		58.2
Effective Green, g (s)	69.8	60.1	60.1	85.0	69.3	70.3		61.8	47.4	47.4		58.2
Actuated g/C Ratio	0.43	0.37	0.37	0.52	0.43	0.43		0.38	0.29	0.29		0.36
Clearance Time (s)	5.0	6.0	6.0	5.0	6.0	6.0		5.0	6.0	6.0		5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	452	1312	587	263	1513	686		345	1035	463		339
v/s Ratio Prot	0.02	c0.37		c0.10	0.12			c0.05	0.13			0.02
v/s Ratio Perm	0.12		0.15	0.34		0.01		c0.17		0.08		0.09
v/c Ratio	0.32	1.00	0.41	0.85	0.28	0.02		0.57	0.44	0.27		0.32
Uniform Delay, d1	28.5	50.9	37.8	51.3	30.2	26.2		35.6	46.5	44.0		35.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00
Incremental Delay, d2	0.4	26.0	2.1	21.6	0.5	0.1		2.1	1.4	1.4		0.6
Delay (s)	28.9	76.9	39.9	72.9	30.7	26.3		37.7	47.9	45.4		36.3
Level of Service	C	E	D	E	C	C		D	D	D		D
Approach Delay (s)		66.0			44.1				45.0			
Approach LOS		E			D				D			

Intersection Summary			
HCM 2000 Control Delay	54.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	162.0	Sum of lost time (s)	23.0
Intersection Capacity Utilization	88.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

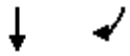
Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	445	112
Future Volume (vph)	445	112
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	6.0	6.0
Lane Util. Factor	0.95	1.00
Frt	1.00	0.85
Flt Protected	1.00	1.00
Satd. Flow (prot)	3539	1583
Flt Permitted	1.00	1.00
Satd. Flow (perm)	3539	1583
Peak-hour factor, PHF	0.97	0.97
Adj. Flow (vph)	459	115
RTOR Reduction (vph)	0	83
Lane Group Flow (vph)	459	32
Turn Type	NA	Perm
Protected Phases	4	
Permitted Phases		4
Actuated Green, G (s)	45.6	45.6
Effective Green, g (s)	45.6	45.6
Actuated g/C Ratio	0.28	0.28
Clearance Time (s)	6.0	6.0
Vehicle Extension (s)	3.0	3.0
Lane Grp Cap (vph)	996	445
v/s Ratio Prot	0.13	
v/s Ratio Perm		0.02
v/c Ratio	0.46	0.07
Uniform Delay, d1	48.1	42.7
Progression Factor	1.00	1.00
Incremental Delay, d2	0.3	0.1
Delay (s)	48.4	42.8
Level of Service	D	D
Approach Delay (s)	45.5	
Approach LOS	D	

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	354	490	320	246	313	348	2	146	1687	99	24	195
Future Volume (vph)	354	490	320	246	313	348	2	146	1687	99	24	195
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.2	3.8	3.8	3.0	3.8	3.8		3.1	3.1			3.9
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00		0.97	0.91			0.97
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.98		1.00	1.00			1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00			1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.99			1.00
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00			0.95
Satd. Flow (prot)	3433	3539	1583	3433	3539	1556		3433	5043			3433
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.25	1.00			0.95
Satd. Flow (perm)	3433	3539	1583	3433	3539	1556		909	5043			3433
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	365	505	330	254	323	359	2	151	1739	102	25	201
RTOR Reduction (vph)	0	0	123	0	0	162	0	0	4	0	0	0
Lane Group Flow (vph)	365	505	207	254	323	197	0	153	1837	0	0	226
Confl. Peds. (#/hr)				2		2						1
Turn Type	Prot	NA	Perm	Prot	NA	Perm	custom	Prot	NA		Prot	Prot
Protected Phases	3	8		7	4			5	2		1	1
Permitted Phases			8			4	5					
Actuated Green, G (s)	21.9	31.8	31.8	15.6	25.9	25.9		12.2	81.1			13.9
Effective Green, g (s)	25.0	35.2	35.2	19.3	29.3	29.3		15.9	84.8			16.9
Actuated g/C Ratio	0.15	0.21	0.21	0.11	0.17	0.17		0.09	0.50			0.10
Clearance Time (s)	6.3	7.2	7.2	6.7	7.2	7.2		6.8	6.8			6.9
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0			3.0
Lane Grp Cap (vph)	504	732	327	389	609	268		85	2515			341
v/s Ratio Prot	c0.11	c0.14		0.07	0.09				0.36			0.07
v/s Ratio Perm			0.13			0.13		c0.17				
v/c Ratio	0.72	0.69	0.63	0.65	0.53	0.73		1.80	0.73			0.66
Uniform Delay, d1	69.2	62.4	61.5	72.1	64.1	66.7		77.0	33.6			73.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00			1.00
Incremental Delay, d2	5.1	2.7	4.0	3.9	0.9	10.0		402.6	1.9			4.8
Delay (s)	74.3	65.1	65.5	76.1	65.0	76.6		479.7	35.5			78.6
Level of Service	E	E	E	E	E	E		F	D			E
Approach Delay (s)		68.0			72.5				69.6			
Approach LOS		E			E				E			

Intersection Summary			
HCM 2000 Control Delay	60.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	170.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	86.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	2056	124
Future Volume (vph)	2056	124
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	3.1	
Lane Util. Factor	0.91	
Frpb, ped/bikes	1.00	
Flpb, ped/bikes	1.00	
Frt	0.99	
Flt Protected	1.00	
Satd. Flow (prot)	5038	
Flt Permitted	1.00	
Satd. Flow (perm)	5038	
Peak-hour factor, PHF	0.97	0.97
Adj. Flow (vph)	2120	128
RTOR Reduction (vph)	3	0
Lane Group Flow (vph)	2245	0
Confl. Peds. (#/hr)		1
Turn Type	NA	
Protected Phases	6	
Permitted Phases		
Actuated Green, G (s)	82.9	
Effective Green, g (s)	86.6	
Actuated g/C Ratio	0.51	
Clearance Time (s)	6.8	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	2566	
v/s Ratio Prot	c0.45	
v/s Ratio Perm		
v/c Ratio	0.87	
Uniform Delay, d1	36.9	
Progression Factor	1.00	
Incremental Delay, d2	4.5	
Delay (s)	41.4	
Level of Service	D	
Approach Delay (s)	44.8	
Approach LOS	D	

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	700	75	273	897	35	234
Future Volume (Veh/h)	700	75	273	897	35	234
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	745	80	290	954	37	249
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			TWLTL		
Median storage veh)				2		
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			825		1842	412
vC1, stage 1 conf vol					785	
vC2, stage 2 conf vol					1057	
vCu, unblocked vol			825		1842	412
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)			2.2		3.5	3.3
p0 queue free %			64		78	58
cM capacity (veh/h)			801		170	589

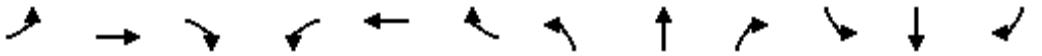
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1	NB 2
Volume Total	497	328	290	477	477	37	249
Volume Left	0	0	290	0	0	37	0
Volume Right	0	80	0	0	0	0	249
cSH	1700	1700	801	1700	1700	170	589
Volume to Capacity	0.29	0.19	0.36	0.28	0.28	0.22	0.42
Queue Length 95th (ft)	0	0	41	0	0	20	52
Control Delay (s)	0.0	0.0	12.0	0.0	0.0	32.1	15.5
Lane LOS			B			D	C
Approach Delay (s)	0.0		2.8			17.7	
Approach LOS						C	

Intersection Summary			
Average Delay	3.6		
Intersection Capacity Utilization	50.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBU	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (veh/h)	1	237	24	20	0	64	261
Future Volume (Veh/h)	1	237	24	20	0	64	261
Sign Control		Free			Stop	Stop	
Grade		0%			0%	0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	0	266	27	22	0	72	293
Pedestrians					1	1	
Lane Width (ft)					12.0	12.0	
Walking Speed (ft/s)					3.5	3.5	
Percent Blockage					0	0	
Right turn flare (veh)							
Median type		None					
Median storage veh)							
Upstream signal (ft)							
pX, platoon unblocked	0.00						
vC, conflicting volume	0	1		569	534	534	1
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	0	1		569	534	534	1
tC, single (s)	0.0	4.1		7.1	6.5	6.5	6.2
tC, 2 stage (s)							
tF (s)	0.0	2.2		3.5	4.0	4.0	3.3
p0 queue free %	0	84		91	100	81	73
cM capacity (veh/h)	0	1620		236	377	377	1083

Direction, Lane #	EB 1	EB 2	NB 1	SB 1	SB 2
Volume Total	266	27	22	72	293
Volume Left	266	0	22	0	0
Volume Right	0	27	0	0	293
cSH	1620	1700	236	377	1083
Volume to Capacity	0.16	0.02	0.09	0.19	0.27
Queue Length 95th (ft)	15	0	8	17	28
Control Delay (s)	7.7	0.0	21.8	16.8	9.6
Lane LOS	A		C	C	A
Approach Delay (s)	7.0		21.8	11.0	
Approach LOS			C	B	

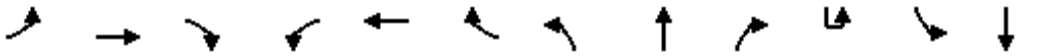
Intersection Summary			
Average Delay	9.6		
Intersection Capacity Utilization	27.6%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	205	190	513	1268	62	294	227	101	40	1006	101
Future Volume (vph)	50	205	190	513	1268	62	294	227	101	40	1006	101
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0	6.0	5.0	7.0	6.0	5.0	6.0	6.0	5.0	6.0	6.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.09	1.00	1.00	0.53	1.00	1.00	0.08	1.00	1.00	0.60	1.00	1.00
Satd. Flow (perm)	165	3539	1583	978	3539	1583	146	3539	1583	1115	3539	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)	54	223	207	558	1378	67	320	247	110	43	1093	110
RTOR Reduction (vph)	0	0	149	0	0	37	0	0	73	0	0	79
Lane Group Flow (vph)	54	223	58	558	1378	30	320	247	37	43	1093	31
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases	6		6	2		2	8		8	4		4
Actuated Green, G (s)	51.9	45.2	45.2	84.0	72.3	72.3	66.0	54.3	54.3	52.7	46.0	46.0
Effective Green, g (s)	51.9	45.2	45.2	84.0	71.3	72.3	66.0	54.3	54.3	52.7	46.0	46.0
Actuated g/C Ratio	0.32	0.28	0.28	0.52	0.44	0.45	0.41	0.34	0.34	0.33	0.28	0.28
Clearance Time (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	119	987	441	672	1557	706	209	1186	530	389	1004	449
v/s Ratio Prot	0.02	0.06		c0.17	c0.39		c0.14	0.07		0.00	0.31	
v/s Ratio Perm	0.13		0.04	0.26		0.02	c0.48		0.02	0.03		0.02
v/c Ratio	0.45	0.23	0.13	0.83	0.89	0.04	1.53	0.21	0.07	0.11	1.09	0.07
Uniform Delay, d1	41.2	44.9	43.7	28.2	41.6	25.3	50.3	38.5	36.7	37.8	58.0	42.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.7	0.5	0.6	8.6	7.7	0.1	261.7	0.4	0.3	0.1	55.7	0.1
Delay (s)	43.9	45.5	44.3	36.7	49.3	25.4	311.9	38.9	36.9	37.9	113.7	42.4
Level of Service	D	D	D	D	D	C	F	D	D	D	F	D
Approach Delay (s)		44.8			45.0			167.6			104.8	
Approach LOS		D			D			F			F	

Intersection Summary			
HCM 2000 Control Delay	80.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.21		
Actuated Cycle Length (s)	162.0	Sum of lost time (s)	23.0
Intersection Capacity Utilization	101.6%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	139	216	47	83	844	271	234	2786	141	12	242	1128
Future Volume (vph)	139	216	47	83	844	271	234	2786	141	12	242	1128
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.2	3.8	3.8	3.0	3.8	3.8	3.1	3.1			3.9	3.1
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91			0.97	0.91
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.98	1.00	1.00			1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99			1.00	0.96
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00			0.95	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1557	3433	5049			3433	4845
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00			0.95	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1557	3433	5049			3433	4845
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.92	0.97	0.97
Adj. Flow (vph)	143	223	48	86	870	279	241	2872	145	13	249	1163
RTOR Reduction (vph)	0	0	39	0	0	149	0	3	0	0	0	49
Lane Group Flow (vph)	143	223	9	86	870	130	241	3014	0	0	262	1585
Confl. Peds. (#/hr)				2		2					1	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	Prot	NA
Protected Phases	3	8		7	4		5	2		1	1	6
Permitted Phases			8			4						
Actuated Green, G (s)	10.7	25.0	25.0	9.1	23.8	23.8	18.2	73.2			15.1	70.2
Effective Green, g (s)	13.8	28.4	28.4	12.8	27.2	27.2	21.9	76.9			18.1	73.9
Actuated g/C Ratio	0.09	0.19	0.19	0.09	0.18	0.18	0.15	0.51			0.12	0.49
Clearance Time (s)	6.3	7.2	7.2	6.7	7.2	7.2	6.8	6.8			6.9	6.8
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	315	670	299	292	641	282	501	2588			414	2386
v/s Ratio Prot	c0.04	0.06		0.03	c0.25		0.07	c0.60			0.08	c0.33
v/s Ratio Perm			0.01			0.08						
v/c Ratio	0.45	0.33	0.03	0.29	1.36	0.46	0.48	1.16			0.63	0.66
Uniform Delay, d1	64.5	52.6	49.6	64.4	61.4	54.9	58.8	36.5			62.8	28.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2	1.0	0.3	0.0	0.6	170.8	1.2	0.7	78.6			3.1	1.5
Delay (s)	65.6	52.9	49.6	64.9	232.2	56.0	59.6	115.2			65.9	30.2
Level of Service	E	D	D	E	F	E	E	F			E	C
Approach Delay (s)		56.9			180.8			111.1				35.1
Approach LOS		E			F			F				D

Intersection Summary			
HCM 2000 Control Delay	99.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.09		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	104.8%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

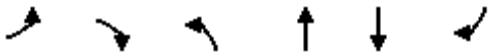
Movement	SBR
Lane Configurations	
Traffic Volume (vph)	457
Future Volume (vph)	457
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frpb, ped/bikes	
Flpb, ped/bikes	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.97
Adj. Flow (vph)	471
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Confl. Peds. (#/hr)	1
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBU	NBL	NBR
Lane Configurations							
Traffic Volume (veh/h)	519	107	486	1142	4	36	296
Future Volume (Veh/h)	519	107	486	1142	4	36	296
Sign Control	Free			Free		Stop	
Grade	0%			0%		0%	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	597	123	559	1313	0	41	340
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type	None			TWLTL			
Median storage veh)				2			
Upstream signal (ft)							
pX, platoon unblocked					0.00		
vC, conflicting volume			720		0	2433	360
vC1, stage 1 conf vol						658	
vC2, stage 2 conf vol						1774	
vCu, unblocked vol			720		0	2433	360
tC, single (s)			4.1		0.0	6.8	6.9
tC, 2 stage (s)						5.8	
tF (s)			2.2		0.0	3.5	3.3
p0 queue free %			36		0	4	47
cM capacity (veh/h)			877		0	43	637

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1	NB 2
Volume Total	398	322	559	656	656	41	340
Volume Left	0	0	559	0	0	41	0
Volume Right	0	123	0	0	0	0	340
cSH	1700	1700	877	1700	1700	43	637
Volume to Capacity	0.23	0.19	0.64	0.39	0.39	0.96	0.53
Queue Length 95th (ft)	0	0	118	0	0	95	79
Control Delay (s)	0.0	0.0	16.0	0.0	0.0	271.0	16.9
Lane LOS			C			F	C
Approach Delay (s)	0.0		4.8			44.3	
Approach LOS						E	

Intersection Summary			
Average Delay	8.7		
Intersection Capacity Utilization	58.0%	ICU Level of Service	B
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	375	8	41	0	18	430
Future Volume (Veh/h)	375	8	41	0	18	430
Sign Control	Free			Stop	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	446	10	49	0	21	512
Pedestrians				1	1	
Lane Width (ft)				12.0	12.0	
Walking Speed (ft/s)				3.5	3.5	
Percent Blockage				0	0	
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1		904	894	894	1
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1		904	894	894	1
tC, single (s)	4.1		7.1	6.5	6.5	6.2
tC, 2 stage (s)						
tF (s)	2.2		3.5	4.0	4.0	3.3
p0 queue free %	72		50	100	90	53
cM capacity (veh/h)	1620		99	203	203	1083

Direction, Lane #	EB 1	EB 2	NB 1	SB 1	SB 2
Volume Total	446	10	49	21	512
Volume Left	446	0	49	0	0
Volume Right	0	10	0	0	512
cSH	1620	1700	99	203	1083
Volume to Capacity	0.28	0.01	0.50	0.10	0.47
Queue Length 95th (ft)	28	0	55	9	65
Control Delay (s)	8.1	0.0	73.0	24.8	11.3
Lane LOS	A		F	C	B
Approach Delay (s)	7.9		73.0	11.8	
Approach LOS			F	B	

Intersection Summary			
Average Delay	13.0		
Intersection Capacity Utilization	36.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	158	1454	382	246	475	40	1	215	501	423	1	119
Future Volume (vph)	158	1454	382	246	475	40	1	215	501	423	1	119
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0	6.0	5.0	7.0	6.0		5.0	6.0	6.0		5.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00	0.95	1.00		1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	1.00	0.85		1.00
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00	1.00		0.95
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583		1770	3539	1583		1770
Flt Permitted	0.47	1.00	1.00	0.06	1.00	1.00		0.30	1.00	1.00		0.33
Satd. Flow (perm)	881	3539	1583	120	3539	1583		554	3539	1583		614
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.92	0.97	0.97	0.97	0.92	0.97
Adj. Flow (vph)	163	1499	394	254	490	41	1	222	516	436	1	123
RTOR Reduction (vph)	0	0	109	0	0	23	0	0	0	236	0	0
Lane Group Flow (vph)	163	1499	285	254	490	18	0	223	516	200	0	124
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	custom	pm+pt	NA	custom	custom	pm+pt
Protected Phases	1	6		5	2			3	8			7
Permitted Phases	6		6	2		2	3	8		6	7	4
Actuated Green, G (s)	67.1	57.2	57.2	85.0	70.1	70.1		61.5	46.9	57.2		58.5
Effective Green, g (s)	67.1	57.2	57.2	85.0	69.1	70.1		61.5	46.9	57.2		58.5
Actuated g/C Ratio	0.41	0.35	0.35	0.52	0.43	0.43		0.38	0.29	0.35		0.36
Clearance Time (s)	5.0	6.0	6.0	5.0	6.0	6.0		5.0	6.0	6.0		5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	419	1249	558	295	1509	684		319	1024	558		315
v/s Ratio Prot	0.02	c0.42		c0.12	0.14			c0.06	0.15			0.03
v/s Ratio Perm	0.14		0.18	0.33		0.01		c0.20		0.13		0.11
v/c Ratio	0.39	1.20	0.51	0.86	0.32	0.03		0.70	0.50	0.36		0.39
Uniform Delay, d1	30.6	52.4	41.3	51.7	30.9	26.4		36.8	47.9	38.8		36.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00
Incremental Delay, d2	0.6	98.0	3.3	21.8	0.6	0.1		6.6	1.8	1.8		0.8
Delay (s)	31.2	150.4	44.7	73.5	31.5	26.4		43.4	49.6	40.6		37.0
Level of Service	C	F	D	E	C	C		D	D	D		D
Approach Delay (s)		120.7			44.8				45.1			
Approach LOS		F			D				D			

Intersection Summary			
HCM 2000 Control Delay	77.7	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	162.0	Sum of lost time (s)	23.0
Intersection Capacity Utilization	98.1%	ICU Level of Service	F
Analysis Period (min)	15		

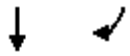
c Critical Lane Group

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	506	127
Future Volume (vph)	506	127
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	6.0	6.0
Lane Util. Factor	0.95	1.00
Frt	1.00	0.85
Flt Protected	1.00	1.00
Satd. Flow (prot)	3539	1583
Flt Permitted	1.00	1.00
Satd. Flow (perm)	3539	1583
Peak-hour factor, PHF	0.97	0.97
Adj. Flow (vph)	522	131
RTOR Reduction (vph)	0	94
Lane Group Flow (vph)	522	37
Turn Type	NA	Perm
Protected Phases	4	
Permitted Phases		4
Actuated Green, G (s)	45.4	45.4
Effective Green, g (s)	45.4	45.4
Actuated g/C Ratio	0.28	0.28
Clearance Time (s)	6.0	6.0
Vehicle Extension (s)	3.0	3.0
Lane Grp Cap (vph)	991	443
v/s Ratio Prot	0.15	
v/s Ratio Perm		0.02
v/c Ratio	0.53	0.08
Uniform Delay, d1	49.2	43.0
Progression Factor	1.00	1.00
Incremental Delay, d2	0.5	0.1
Delay (s)	49.7	43.0
Level of Service	D	D
Approach Delay (s)	46.6	
Approach LOS	D	

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	403	558	364	280	356	396	3	166	1920	113	27	221
Future Volume (vph)	403	558	364	280	356	396	3	166	1920	113	27	221
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.2	3.8	3.8	3.0	3.8	3.8		3.1	3.1			3.9
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00		0.97	0.91			0.97
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.98		1.00	1.00			1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00			1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.99			1.00
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00			0.95
Satd. Flow (prot)	3433	3539	1583	3433	3539	1556		3433	5043			3433
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00			0.95
Satd. Flow (perm)	3433	3539	1583	3433	3539	1556		3433	5043			3433
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	415	575	375	289	367	408	3	171	1979	116	28	228
RTOR Reduction (vph)	0	0	120	0	0	159	0	0	4	0	0	0
Lane Group Flow (vph)	415	575	255	289	367	249	0	174	2091	0	0	256
Confl. Peds. (#/hr)				2		2						1
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	Prot	NA		Prot	Prot
Protected Phases	3	8		7	4		5	5	2		1	1
Permitted Phases			8			4						
Actuated Green, G (s)	22.8	34.9	34.9	16.0	28.5	28.5		12.2	77.7			13.8
Effective Green, g (s)	25.9	38.3	38.3	19.7	31.9	31.9		15.9	81.4			16.8
Actuated g/C Ratio	0.15	0.23	0.23	0.12	0.19	0.19		0.09	0.48			0.10
Clearance Time (s)	6.3	7.2	7.2	6.7	7.2	7.2		6.8	6.8			6.9
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0			3.0
Lane Grp Cap (vph)	523	797	356	397	664	291		321	2414			339
v/s Ratio Prot	c0.12	0.16		0.08	0.10			0.05	c0.41			0.07
v/s Ratio Perm			0.16			c0.16						
v/c Ratio	0.79	0.72	0.72	0.73	0.55	0.85		0.54	0.87			0.76
Uniform Delay, d1	69.5	60.9	60.8	72.6	62.6	66.8		73.6	39.5			74.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00			1.00
Incremental Delay, d2	8.1	3.2	6.7	6.5	1.0	21.0		1.9	4.5			9.2
Delay (s)	77.6	64.2	67.5	79.1	63.6	87.8		75.4	44.0			83.8
Level of Service	E	E	E	E	E	F		E	D			F
Approach Delay (s)		69.2			77.1				46.4			
Approach LOS		E			E				D			

Intersection Summary			
HCM 2000 Control Delay	64.9	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	170.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	97.0%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	2340	141
Future Volume (vph)	2340	141
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	3.1	
Lane Util. Factor	0.91	
Frpb, ped/bikes	1.00	
Flpb, ped/bikes	1.00	
Frt	0.99	
Flt Protected	1.00	
Satd. Flow (prot)	5038	
Flt Permitted	1.00	
Satd. Flow (perm)	5038	
Peak-hour factor, PHF	0.97	0.97
Adj. Flow (vph)	2412	145
RTOR Reduction (vph)	4	0
Lane Group Flow (vph)	2553	0
Confl. Peds. (#/hr)		1
Turn Type	NA	
Protected Phases	6	
Permitted Phases		
Actuated Green, G (s)	79.4	
Effective Green, g (s)	83.1	
Actuated g/C Ratio	0.49	
Clearance Time (s)	6.8	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	2462	
v/s Ratio Prot	c0.51	
v/s Ratio Perm		
v/c Ratio	1.04	
Uniform Delay, d1	43.5	
Progression Factor	1.00	
Incremental Delay, d2	28.6	
Delay (s)	72.1	
Level of Service	E	
Approach Delay (s)	73.1	
Approach LOS	E	

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	796	85	311	1020	40	267
Future Volume (Veh/h)	796	85	311	1020	40	267
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	847	90	331	1085	43	284
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			TWLTL		
Median storage veh)				2		
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			937		2096	468
vC1, stage 1 conf vol					892	
vC2, stage 2 conf vol					1204	
vCu, unblocked vol			937		2096	468
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)			2.2		3.5	3.3
p0 queue free %			54		65	48
cM capacity (veh/h)			727		123	541

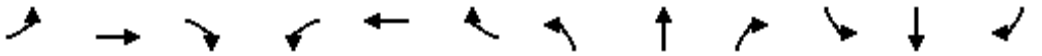
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1	NB 2
Volume Total	565	372	331	542	542	43	284
Volume Left	0	0	331	0	0	43	0
Volume Right	0	90	0	0	0	0	284
cSH	1700	1700	727	1700	1700	123	541
Volume to Capacity	0.33	0.22	0.46	0.32	0.32	0.35	0.52
Queue Length 95th (ft)	0	0	60	0	0	35	76
Control Delay (s)	0.0	0.0	14.0	0.0	0.0	49.2	18.8
Lane LOS			B			E	C
Approach Delay (s)	0.0		3.3			22.8	
Approach LOS						C	

Intersection Summary			
Average Delay	4.5		
Intersection Capacity Utilization	55.3%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBU	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (veh/h)	1	269	27	23	0	73	296
Future Volume (Veh/h)	1	269	27	23	0	73	296
Sign Control		Free			Stop	Stop	
Grade		0%			0%	0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	0	302	30	26	0	82	333
Pedestrians					1	1	
Lane Width (ft)					12.0	12.0	
Walking Speed (ft/s)					3.5	3.5	
Percent Blockage					0	0	
Right turn flare (veh)							
Median type		None					
Median storage veh)							
Upstream signal (ft)							
pX, platoon unblocked	0.00						
vC, conflicting volume	0	1		646	606	606	1
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	0	1		646	606	606	1
tC, single (s)	0.0	4.1		7.1	6.5	6.5	6.2
tC, 2 stage (s)							
tF (s)	0.0	2.2		3.5	4.0	4.0	3.3
p0 queue free %	0	81		86	100	75	69
cM capacity (veh/h)	0	1620		186	334	334	1083

Direction, Lane #	EB 1	EB 2	NB 1	SB 1	SB 2
Volume Total	302	30	26	82	333
Volume Left	302	0	26	0	0
Volume Right	0	30	0	0	333
cSH	1620	1700	186	334	1083
Volume to Capacity	0.19	0.02	0.14	0.25	0.31
Queue Length 95th (ft)	17	0	12	24	33
Control Delay (s)	7.7	0.0	27.5	19.2	9.8
Lane LOS	A		D	C	A
Approach Delay (s)	7.0		27.5	11.7	
Approach LOS			D	B	

Intersection Summary			
Average Delay	10.2		
Intersection Capacity Utilization	29.6%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	39	158	147	396	979	48	227	178	78	31	777	78
Future Volume (vph)	39	158	147	396	979	48	227	178	78	31	777	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0	6.0	5.0	7.0	6.0	5.0	6.0	6.0	5.0	6.0	6.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	3433	3539	1583	1770	3539	1583
Flt Permitted	0.19	1.00	1.00	0.57	1.00	1.00	0.95	1.00	1.00	0.63	1.00	1.00
Satd. Flow (perm)	347	3539	1583	1055	3539	1583	3433	3539	1583	1174	3539	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)	42	172	160	430	1064	52	247	193	85	34	845	85
RTOR Reduction (vph)	0	0	120	0	0	31	0	0	50	0	0	57
Lane Group Flow (vph)	42	172	40	430	1064	21	247	193	35	34	845	28
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases	6		6	2		2			8	4		4
Actuated Green, G (s)	45.3	40.5	40.5	75.0	65.2	65.2	16.1	66.8	66.8	57.1	53.9	53.9
Effective Green, g (s)	45.3	40.5	40.5	75.0	64.2	65.2	16.1	66.8	66.8	57.1	53.9	53.9
Actuated g/C Ratio	0.28	0.25	0.25	0.46	0.40	0.40	0.10	0.41	0.41	0.35	0.33	0.33
Clearance Time (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	139	884	395	618	1402	637	341	1459	652	425	1177	526
v/s Ratio Prot	0.01	0.05		c0.13	c0.30		c0.07	0.05		0.00	c0.24	
v/s Ratio Perm	0.08		0.03	0.20		0.01			0.02	0.03		0.02
v/c Ratio	0.30	0.19	0.10	0.70	0.76	0.03	0.72	0.13	0.05	0.08	0.72	0.05
Uniform Delay, d1	43.6	47.9	46.7	31.0	42.2	29.3	70.8	29.6	28.6	34.6	47.4	36.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.2	0.5	0.5	3.4	3.9	0.1	7.4	0.2	0.2	0.1	3.8	0.2
Delay (s)	44.8	48.4	47.3	34.4	46.1	29.4	78.2	29.8	28.8	34.7	51.2	36.9
Level of Service	D	D	D	C	D	C	E	C	C	C	D	D
Approach Delay (s)		47.5			42.3			52.4			49.3	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	46.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	162.0	Sum of lost time (s)	23.0
Intersection Capacity Utilization	78.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

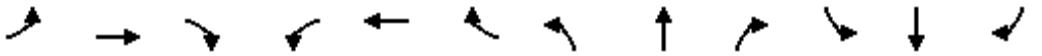
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	122	1123	295	190	367	31	1	166	387	327	1	92
Future Volume (vph)	122	1123	295	190	367	31	1	166	387	327	1	92
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0	6.0	5.0	7.0	6.0		5.0	6.0	6.0		5.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		0.97	0.95	1.00		1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	1.00	0.85		1.00
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00	1.00		0.95
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583		3433	3539	1583		1770
Flt Permitted	0.53	1.00	1.00	0.13	1.00	1.00		0.95	1.00	1.00		0.40
Satd. Flow (perm)	983	3539	1583	239	3539	1583		3433	3539	1583		749
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.92	0.97	0.97	0.97	0.92	0.97
Adj. Flow (vph)	126	1158	304	196	378	32	1	171	399	337	1	95
RTOR Reduction (vph)	0	0	98	0	0	14	0	0	0	197	0	0
Lane Group Flow (vph)	126	1158	206	196	378	18	0	172	399	140	0	96
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	Prot	NA	Perm	pm+pt	pm+pt
Protected Phases	1	6		5	2		3	3	8		7	7
Permitted Phases	6		6	2		2				8	4	4
Actuated Green, G (s)	86.5	80.5	80.5	100.0	89.0	89.0		12.1	36.2	36.2		41.7
Effective Green, g (s)	86.5	80.5	80.5	100.0	88.0	89.0		12.1	36.2	36.2		41.7
Actuated g/C Ratio	0.53	0.50	0.50	0.62	0.54	0.55		0.07	0.22	0.22		0.26
Clearance Time (s)	5.0	6.0	6.0	5.0	6.0	6.0		5.0	6.0	6.0		5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	554	1758	786	284	1922	869		256	790	353		248
v/s Ratio Prot	0.01	0.33		c0.06	0.11			c0.05	c0.11			0.02
v/s Ratio Perm	0.11		0.13	c0.36		0.01				0.09		0.08
v/c Ratio	0.23	0.66	0.26	0.69	0.20	0.02		0.67	0.51	0.40		0.39
Uniform Delay, d1	18.9	30.5	23.6	22.3	18.9	16.6		73.0	55.1	53.6		47.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00
Incremental Delay, d2	0.2	2.0	0.8	7.0	0.2	0.0		6.8	2.3	3.3		1.0
Delay (s)	19.2	32.4	24.4	29.4	19.2	16.7		79.8	57.4	56.9		48.4
Level of Service	B	C	C	C	B	B		E	E	E		D
Approach Delay (s)		29.8			22.3				61.4			
Approach LOS		C			C				E			

Intersection Summary			
HCM 2000 Control Delay	39.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	162.0	Sum of lost time (s)	23.0
Intersection Capacity Utilization	75.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	391	98
Future Volume (vph)	391	98
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	6.0	6.0
Lane Util. Factor	0.95	1.00
Frt	1.00	0.85
Flt Protected	1.00	1.00
Satd. Flow (prot)	3539	1583
Flt Permitted	1.00	1.00
Satd. Flow (perm)	3539	1583
Peak-hour factor, PHF	0.97	0.97
Adj. Flow (vph)	403	101
RTOR Reduction (vph)	0	46
Lane Group Flow (vph)	403	55
Turn Type	NA	custom
Protected Phases	4	
Permitted Phases		2
Actuated Green, G (s)	32.9	89.0
Effective Green, g (s)	32.9	89.0
Actuated g/C Ratio	0.20	0.55
Clearance Time (s)	6.0	6.0
Vehicle Extension (s)	3.0	3.0
Lane Grp Cap (vph)	718	869
v/s Ratio Prot	c0.11	
v/s Ratio Perm		0.04
v/c Ratio	0.56	0.06
Uniform Delay, d1	58.1	17.0
Progression Factor	1.00	1.00
Incremental Delay, d2	1.0	0.1
Delay (s)	59.1	17.2
Level of Service	E	B
Approach Delay (s)	50.3	
Approach LOS	D	

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	180	167	451	1114	55	258	199	89	35	884	89
Future Volume (vph)	44	180	167	451	1114	55	258	199	89	35	884	89
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0	6.0	5.0	7.0	6.0	5.0	6.0	6.0	5.0	6.0	6.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	3433	3539	1583	1770	3539	1583
Flt Permitted	0.14	1.00	1.00	0.52	1.00	1.00	0.95	1.00	1.00	0.62	1.00	1.00
Satd. Flow (perm)	265	3539	1583	970	3539	1583	3433	3539	1583	1149	3539	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)	48	196	182	490	1211	60	280	216	97	38	961	97
RTOR Reduction (vph)	0	0	122	0	0	35	0	0	57	0	0	65
Lane Group Flow (vph)	48	196	60	490	1211	25	280	216	40	38	961	32
Turn Type	pm+pt	NA	custom	pm+pt	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases	6		4	2		2			8	4		4
Actuated Green, G (s)	37.6	34.4	53.1	75.0	66.8	66.8	16.9	66.8	66.8	56.3	53.1	53.1
Effective Green, g (s)	37.6	34.4	53.1	75.0	65.8	66.8	16.9	66.8	66.8	56.3	53.1	53.1
Actuated g/C Ratio	0.23	0.21	0.33	0.46	0.41	0.41	0.10	0.41	0.41	0.35	0.33	0.33
Clearance Time (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	91	751	518	624	1437	652	358	1459	652	411	1160	518
v/s Ratio Prot	0.01	0.06		c0.17	c0.34		c0.08	0.06		0.00	c0.27	
v/s Ratio Perm	0.11		0.04	0.19		0.02			0.03	0.03		0.02
v/c Ratio	0.53	0.26	0.12	0.79	0.84	0.04	0.78	0.15	0.06	0.09	0.83	0.06
Uniform Delay, d1	50.6	53.2	38.0	32.5	43.4	28.4	70.8	29.8	28.7	35.2	50.2	37.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.4	0.8	0.1	6.4	6.2	0.1	10.6	0.2	0.2	0.1	5.0	0.0
Delay (s)	56.1	54.0	38.1	39.0	49.6	28.5	81.4	30.0	28.9	35.3	55.3	37.4
Level of Service	E	D	D	D	D	C	F	C	C	D	E	D
Approach Delay (s)		47.5			45.9			54.1			53.0	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	49.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	162.0	Sum of lost time (s)	23.0
Intersection Capacity Utilization	85.1%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

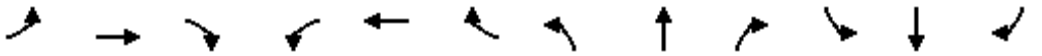
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	139	1278	336	216	418	35	1	189	440	372	1	105
Future Volume (vph)	139	1278	336	216	418	35	1	189	440	372	1	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0	6.0	5.0	7.0	6.0		5.0	6.0	6.0		5.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		0.97	0.95	1.00		1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	1.00	0.85		1.00
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00	1.00		0.95
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583		3433	3539	1583		1770
Flt Permitted	0.50	1.00	1.00	0.08	1.00	1.00		0.95	1.00	1.00		0.37
Satd. Flow (perm)	933	3539	1583	149	3539	1583		3433	3539	1583		693
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.92	0.97	0.97	0.97	0.92	0.97
Adj. Flow (vph)	143	1318	346	223	431	36	1	195	454	384	1	108
RTOR Reduction (vph)	0	0	116	0	0	16	0	0	0	184	0	0
Lane Group Flow (vph)	143	1318	230	223	431	20	0	196	454	200	0	109
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	Prot	NA	Perm	custom	pm+pt
Protected Phases	1	6		5	2		3	3	8			7
Permitted Phases	6		6	2		2				8	7	4
Actuated Green, G (s)	84.4	78.4	78.4	102.0	91.0	91.0		13.1	36.0	36.0		36.9
Effective Green, g (s)	84.4	78.4	78.4	102.0	90.0	91.0		13.1	36.0	36.0		36.9
Actuated g/C Ratio	0.52	0.48	0.48	0.63	0.56	0.56		0.08	0.22	0.22		0.23
Clearance Time (s)	5.0	6.0	6.0	5.0	6.0	6.0		5.0	6.0	6.0		5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	517	1712	766	279	1966	889		277	786	351		204
v/s Ratio Prot	0.01	0.37		c0.09	0.12			c0.06	0.13			0.02
v/s Ratio Perm	0.13		0.15	c0.41		0.01				0.13		0.10
v/c Ratio	0.28	0.77	0.30	0.80	0.22	0.02		0.71	0.58	0.57		0.53
Uniform Delay, d1	20.2	34.4	25.2	40.8	18.2	15.8		72.6	56.2	56.1		52.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00
Incremental Delay, d2	0.3	3.4	1.0	14.7	0.3	0.0		8.0	3.1	6.5		2.7
Delay (s)	20.5	37.8	26.3	55.5	18.5	15.8		80.6	59.3	62.6		55.3
Level of Service	C	D	C	E	B	B		F	E	E		E
Approach Delay (s)		34.2			30.3				64.6			
Approach LOS		C			C				E			

Intersection Summary			
HCM 2000 Control Delay	45.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	162.0	Sum of lost time (s)	23.0
Intersection Capacity Utilization	83.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	445	112
Future Volume (vph)	445	112
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	6.0	6.0
Lane Util. Factor	0.95	1.00
Frt	1.00	0.85
Flt Protected	1.00	1.00
Satd. Flow (prot)	3539	1583
Flt Permitted	1.00	1.00
Satd. Flow (perm)	3539	1583
Peak-hour factor, PHF	0.97	0.97
Adj. Flow (vph)	459	115
RTOR Reduction (vph)	0	94
Lane Group Flow (vph)	459	21
Turn Type	NA	Perm
Protected Phases	4	
Permitted Phases		4
Actuated Green, G (s)	29.9	29.9
Effective Green, g (s)	29.9	29.9
Actuated g/C Ratio	0.18	0.18
Clearance Time (s)	6.0	6.0
Vehicle Extension (s)	3.0	3.0
Lane Grp Cap (vph)	653	292
v/s Ratio Prot	c0.13	
v/s Ratio Perm		0.01
v/c Ratio	0.70	0.07
Uniform Delay, d1	61.9	54.6
Progression Factor	1.00	1.00
Incremental Delay, d2	3.4	0.1
Delay (s)	65.3	54.7
Level of Service	E	D
Approach Delay (s)	61.9	
Approach LOS	E	

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	205	190	513	1268	62	294	227	101	40	1006	101
Future Volume (vph)	50	205	190	513	1268	62	294	227	101	40	1006	101
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0	6.0	5.0	7.0		5.0	6.0	6.0	5.0	6.0	6.0
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95		0.97	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	3433	3515		3433	3539	1583	1770	3539	1583
Flt Permitted	0.11	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.60	1.00	1.00
Satd. Flow (perm)	200	3539	1583	3433	3515		3433	3539	1583	1115	3539	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)	54	223	207	558	1378	67	320	247	110	43	1093	110
RTOR Reduction (vph)	0	0	159	0	2	0	0	0	63	0	0	75
Lane Group Flow (vph)	54	223	48	558	1443	0	320	247	47	43	1093	35
Turn Type	pm+pt	NA	Perm	Prot	NA		Prot	NA	Perm	pm+pt	NA	Perm
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases	6		6						8	4		4
Actuated Green, G (s)	40.4	37.2	37.2	30.8	64.8		19.8	68.8	68.8	55.4	52.2	52.2
Effective Green, g (s)	40.4	37.2	37.2	30.8	63.8		19.8	68.8	68.8	55.4	52.2	52.2
Actuated g/C Ratio	0.25	0.23	0.23	0.19	0.39		0.12	0.42	0.42	0.34	0.32	0.32
Clearance Time (s)	5.0	6.0	6.0	5.0	6.0		5.0	6.0	6.0	5.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	80	812	363	652	1384		419	1502	672	394	1140	510
v/s Ratio Prot	0.01	0.06		c0.16	c0.41		c0.09	0.07		0.00	c0.31	
v/s Ratio Perm	0.15		0.03						0.03	0.04		0.02
v/c Ratio	0.68	0.27	0.13	0.86	1.04		0.76	0.16	0.07	0.11	0.96	0.07
Uniform Delay, d1	54.8	51.3	49.6	63.5	49.1		68.8	28.8	27.6	35.9	53.8	38.1
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	20.2	0.8	0.7	10.7	36.0		8.1	0.2	0.2	0.1	17.4	0.1
Delay (s)	75.0	52.1	50.3	74.1	85.1		76.9	29.1	27.8	36.1	71.3	38.1
Level of Service	E	D	D	E	F		E	C	C	D	E	D
Approach Delay (s)		53.9			82.0			51.5			67.1	
Approach LOS		D			F			D			E	

Intersection Summary			
HCM 2000 Control Delay	70.0	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	162.0	Sum of lost time (s)	23.0
Intersection Capacity Utilization	95.7%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	158	1454	382	246	475	40	1	215	501	423	1	119
Future Volume (vph)	158	1454	382	246	475	40	1	215	501	423	1	119
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0	6.0	5.0	7.0	6.0		5.0	6.0	6.0		5.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		0.97	0.95	1.00		1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	1.00	0.85		1.00
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00	1.00		0.95
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583		3433	3539	1583		1770
Flt Permitted	0.47	1.00	1.00	0.05	1.00	1.00		0.95	1.00	1.00		0.23
Satd. Flow (perm)	881	3539	1583	89	3539	1583		3433	3539	1583		434
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.92	0.97	0.97	0.97	0.92	0.97
Adj. Flow (vph)	163	1499	394	254	490	41	1	222	516	436	1	123
RTOR Reduction (vph)	0	0	105	0	0	17	0	0	0	224	0	0
Lane Group Flow (vph)	163	1499	289	254	490	24	0	223	516	212	0	124
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	Prot	NA	custom	pm+pt	pm+pt
Protected Phases	1	6		5	2		3	3	8		7	7
Permitted Phases	6		6	2		2				6	4	4
Actuated Green, G (s)	85.6	78.6	78.6	105.0	93.0	93.0		12.8	31.0	78.6		36.2
Effective Green, g (s)	85.6	78.6	78.6	105.0	92.0	93.0		12.8	31.0	78.6		36.2
Actuated g/C Ratio	0.53	0.49	0.49	0.65	0.57	0.57		0.08	0.19	0.49		0.22
Clearance Time (s)	5.0	6.0	6.0	5.0	6.0	6.0		5.0	6.0	6.0		5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	503	1717	768	279	2009	908		271	677	768		171
v/s Ratio Prot	0.01	0.42		c0.12	0.14			c0.06	c0.15			0.04
v/s Ratio Perm	0.16		0.18	c0.47		0.01				0.13		0.12
v/c Ratio	0.32	0.87	0.38	0.91	0.24	0.03		0.82	0.76	0.28		0.73
Uniform Delay, d1	19.9	37.2	26.3	55.3	17.6	14.9		73.5	62.0	24.8		53.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00
Incremental Delay, d2	0.4	6.5	1.4	31.5	0.3	0.1		17.9	7.9	0.9		14.2
Delay (s)	20.2	43.7	27.7	86.8	17.8	15.0		91.4	69.9	25.7		68.0
Level of Service	C	D	C	F	B	B		F	E	C		E
Approach Delay (s)		38.8			40.0				57.6			
Approach LOS		D			D				E			

Intersection Summary			
HCM 2000 Control Delay	49.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	162.0	Sum of lost time (s)	23.0
Intersection Capacity Utilization	92.7%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	506	127
Future Volume (vph)	506	127
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	6.0	6.0
Lane Util. Factor	0.95	1.00
Frt	1.00	0.85
Flt Protected	1.00	1.00
Satd. Flow (prot)	3539	1583
Flt Permitted	1.00	1.00
Satd. Flow (perm)	3539	1583
Peak-hour factor, PHF	0.97	0.97
Adj. Flow (vph)	522	131
RTOR Reduction (vph)	0	109
Lane Group Flow (vph)	522	22
Turn Type	NA	Perm
Protected Phases	4	
Permitted Phases		4
Actuated Green, G (s)	27.2	27.2
Effective Green, g (s)	27.2	27.2
Actuated g/C Ratio	0.17	0.17
Clearance Time (s)	6.0	6.0
Vehicle Extension (s)	3.0	3.0
Lane Grp Cap (vph)	594	265
v/s Ratio Prot	c0.15	
v/s Ratio Perm		0.01
v/c Ratio	0.88	0.08
Uniform Delay, d1	65.8	56.9
Progression Factor	1.00	1.00
Incremental Delay, d2	13.9	0.1
Delay (s)	79.7	57.0
Level of Service	E	E
Approach Delay (s)	74.0	
Approach LOS	E	

Intersection Summary