GRTA DRI REVIEW PACKAGE, DRI No. 1275

for

ATLANTA GLOBAL STATION

Mixed-Use Site

GWINNETT COUNTY, GEORGIA

Site Plan Elements
Traffic Impact Analysis
Facility Needs Analysis
Area of Influence Analysis
Air Quality Benchmark Statement
DRI Review Criteria

Prepared for:

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January 2007

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This report presents a variety of analyses and documentation for submittal as the major portion of the GRTA DRI Review Package. This study presents an analysis of the traffic impact expected to result from the re-development of an existing commercial site into a proposed mixed-use site, called Atlanta Global Station.

The subject site is located in Gwinnett County, bounded on the north by Old Norcross Road, on the southeast by Satellite Boulevard, on the southwest by Pleasant Hill Road. The site is presently a retail strip center with some retail space occupied and some retail space unoccupied/vacant. A Kroger Supermarket fronting Pleasant Hill Road was one of the most recent retail tenants to vacate.

Atlanta Global Station will revitalize the site and surrounding area through a development plan that will consist of the following land uses: 974 high-rise condominiums, 200 loft condos, a combined total of 723,784 square feet of office, a 320-room hotel, a combined total of 551,188 square feet of shopping center/retail, and a multi-use convention center with a seating capacity of 6,000. There will be one (1) access point on Old Norcross Road, which will be located at the intersection of Old Norcross Road and Davenport Road. There is an existing traffic signal at the intersection. There will be four (4) access points on Pleasant Hill Road. All four (4) access points exist today; two (2) of which are signalized. There will be three (3) access points on Satellite Boulevard. All three (3) access points exist today; two (2) of which are signalized (Satellite Boulevard at Merchants Way and at Transit Center as of 11/20/2006). A project summary table is shown below. The Site Plan is shown in Figure 2-4.

Project Summary Table

Name and Number of DRI	Atlanta Global Station (DRI #1275)
Jurisdiction	Gwinnett County
Local Approval Sought	MUR
Location	Bounded on the north by Old Norcross Road, on the southeast by Satellite Boulevard, on the southwest by Pleasant Hill Road
Uses and Intensities of Use	974 high-rise condominiums, 200 loft condos, a combined total of 723,784 square feet of office, a 320-room hotel, a combined total of 551,188 square feet of shopping center/retail, and a multi-use convention center with a seating capacity of 6,000
Project Phasing and Build-Out Schedule	Build-Out Year 2012
Gross Trip Generation (Daily/AM Peak/PM Peak/SAT Peak)	37,584 / 2,822 / 4,354 / 4,345

The Site is expected to generate approximately 37,584 new vehicle trips per day (gross, and assuming a full capacity conference center event that begins and ends in the same day), but after internal capture, transit mode reductions, and pass-by trips are considered, it will generate approximately 27,208 new external trips (to/from the site) per day. Without considering the conference center, approximately 1,748 new external trips (1,162 in and 586 out) will be generated during the AM peak hour, approximately 2,465 new external trips (937 in and 1,492 out) will be generated during the PM peak hour, and 2,293 new external trips (1,192 in and 1,101 out) will be generated during the Saturday mid-day peak hour. It is estimated for the peak hours, the conference center will generate either 930 inbound trips or 930 outbound trips, depending on if the event is starting or concluding, respectively.

The agreed upon trip distributions developed for the Site are shown in Figure 3-1.

The Site is located within an Area of Influence with housing opportunities such that approximately 100% of the persons who are reasonably anticipated to work on the Site will have an opportunity to find housing within the Area of Influence.

The existing zoning of the site is C-2 Commercial. The proposed new zoning is MUR (Mixed-Use Re-Development Overlay District), which is intended to promote the redevelopment of industrial properties or highway corridors which are experiencing economic or physical decline. MUR sites are intended to integrate commercial and/or office with residential land uses, promote pedestrian accessibility, reduce automobile trips, and stimulate the value and improve the visual appeal of the surrounding community.

The subject site is NOT located in an area where the anticipated level of development and availability of infrastructure within the study network is such that the Site is reasonably anticipated to result in unplanned and poorly served development. As shown in the traffic impact analysis, the intersections serving the Site can be reasonably expected to operate at adequate Levels of Service, and/or may be mitigated and improved readily so that they will operate at adequate LOS.

Based on the data and information presented in this study, it is concluded that the site layout for Atlanta Global Station coincides with the air quality guidelines set out by the ARC. The residential linkages from the proposed residential areas to the proposed on-site retail, offices, hotel, and conference center are expected to substantially reduce the overall VMT for the site and accelerate air quality improvements. Furthermore, the non-vehicular connectivity proposed with the extensive on-site sidewalk system will serve as an attractive travel alternative for local residents. VMT Credits for Atlanta Global Station are at least 23% (a minimum of 15% is desired).

For Existing conditions, the following improvements are required to improve peak hour traffic operations at the following intersections up to *Level of Service standard "D":*

- Pleasant Hill Road at Satellite Boulevard (ID #1) – Add (2) through lanes on the eastbound and westbound approaches on Pleasant Hill Road along with receiving

lanes / Add (1) through lane on the northbound and southbound approaches on Satellite Boulevard along with receiving lanes / Add (1) right-turn lane on the eastbound and southbound approaches / Optimize the traffic signal timing splits, while maintaining signal coordination with other traffic signals in the transportation network.

- Pleasant Hill Road at Old Norcross Road (ID #6) – Add (2) through lanes on the eastbound and westbound approaches on Pleasant Hill Road along with receiving lanes (it is important to note that (1) through lane on the eastbound and westbound approaches on Pleasant Hill Road is scheduled for construction in the Year 2008 per the TIP GW-271) / Add (1) southbound left-turn lane on Old Norcross Road / Optimize the traffic signal timing splits, while maintaining signal coordination with other traffic signals in the transportation network.

- Satellite Boulevard at Old Norcross Road (ID #10) – Add (1) eastbound left-turn lane on Old Norcross Road / Add (1) southbound through lane on Satellite Boulevard along with a receiving lane / Optimize the traffic signal timing splits, while maintaining signal coordination with other traffic signals in the transportation network.

For **Existing Build (assuming inbound conference traffic) conditions** (note: the Existing Build Scenario is a Gwinnett County study requirement), the following improvements are required to improve peak hour traffic operations at the following intersections up to the *Calculated Level of Service Standards (based on GRTA's requirements)*:

- Pleasant Hill Road at Satellite Boulevard (ID #1) – Add (2) through lanes on the eastbound and westbound approaches on Pleasant Hill Road along with receiving lanes / Add (1) through lane on the northbound and southbound approaches on Satellite Boulevard along with receiving lanes / Add (1) right-turn lane on the eastbound and southbound approaches / Optimize the traffic signal timing splits, while maintaining signal coordination with other traffic signals in the transportation network.

- Pleasant Hill Road at Site Access (across from "Einstein's Driveway") (ID #3) – Add (1) westbound right-turn lane on Pleasant Hill Road / Add (1) southbound left-turn lane on the Site Access / Optimize the traffic signal timing splits, while maintaining signal coordination with other traffic signals in the transportation network.

- Pleasant Hill Road at Old Norcross Road (ID #6) – Add (1) through lane on the eastbound and westbound approaches on Pleasant Hill Road along with receiving lanes (it is important to note that (1) through lane on the eastbound and westbound approaches on Pleasant Hill Road is scheduled for construction in the Year 2008 per the TIP GW-271) / Optimize the traffic signal timing splits, while maintaining signal coordination with other traffic signals in the transportation network.

- Pleasant Hill Road at Site Access (across from "Davenport Road") (ID #7) – Add (1) northbound left-turn lane, (1) northbound through lane, and (1) northbound right-turn lane on the Site Access / Add (1) eastbound right-turn lane on Old Norcross Road / Re-stripe the exclusive right turn lane on the southbound approach on Davenport Road from a right-turn lane to a shared through-right lane / Re-stripe the center lane on Old Norcross Road to a westbound left-turn lane / Optimize the traffic signal timing splits, while maintaining signal coordination with other traffic signals in the transportation network.

- Satellite Boulevard at Old Norcross Road (ID #10) – Optimize the traffic signal timing splits, while maintaining signal coordination with other traffic signals in the transportation network.

- Satellite Boulevard at Merchants Way (ID #12) – Optimize the traffic signal timing splits, while maintaining signal coordination with other traffic signals in the transportation network.

For **Existing Build (assuming outbound conference traffic) conditions** (note: the Existing Build Scenario is a Gwinnett County study requirement), the following improvements are required to improve peak hour traffic operations at the following intersections up to the *Calculated Level of Service Standards (based on GRTA's requirements)*:

- Pleasant Hill Road at Satellite Boulevard (ID #1) – Add (2) through lanes on the eastbound and westbound approaches on Pleasant Hill Road along with receiving lanes / Add (1) through lane on the northbound and southbound approaches on Satellite Boulevard along with receiving lanes / Add (1) right-turn lane on the eastbound and southbound approaches / Optimize the traffic signal timing splits, while maintaining signal coordination with other traffic signals in the transportation network.

- Pleasant Hill Road at Site Access (across from "Einstein's Driveway") (ID #3) – Add (1) westbound right-turn lane on Pleasant Hill Road / Add (2) southbound left-turn lanes on the Site Access with Protected signal phasing / Optimize the traffic signal timing splits, while maintaining signal coordination with other traffic signals in the transportation network.

- Pleasant Hill Road at Old Norcross Road (ID #6) – Add (1) through lane on the eastbound and westbound approaches on Pleasant Hill Road along with receiving lanes (it is important to note that (1) through lane on the eastbound and westbound approaches on Pleasant Hill Road is scheduled for construction in the Year 2008 per the TIP GW-271) / Optimize the traffic signal timing splits, while maintaining signal coordination with other traffic signals in the transportation network.

- Pleasant Hill Road at Site Access (across from "Davenport Road") (ID #7) – Add (1) northbound left-turn lane, (1) northbound through lane, and (1) northbound right-

turn lane on the Site Access / Add (1) eastbound right-turn lane on Old Norcross Road / Re-stripe the exclusive right turn lane on the southbound approach on Davenport Road from a right-turn lane to a shared through-right lane / Re-stripe the center lane on Old Norcross Road to a westbound left-turn lane / Optimize the traffic signal timing splits, while maintaining signal coordination with other traffic signals in the transportation network.

- Satellite Boulevard at Old Norcross Road (ID #10) – Optimize the traffic signal timing splits, while maintaining signal coordination with other traffic signals in the transportation network.

- Satellite Boulevard at Merchants Way (ID #12) – Optimize the traffic signal timing splits, while maintaining signal coordination with other traffic signals in the transportation network.

For Future No-build conditions, the following improvements are required to improve peak hour traffic operations at the following intersections up to the *Calculated Level of Service Standards (based on GRTA's requirements)*:

- Pleasant Hill Road at Satellite Boulevard (ID #1) – Add (1) through lane on the eastbound and westbound approaches on Pleasant Hill Road along with receiving lanes / Add (1) right-turn lane on the eastbound and southbound approaches / Optimize the traffic signal timing splits, while maintaining signal coordination with other traffic signals in the transportation network.

- Pleasant Hill Road at Old Norcross Road (ID #6) – Add (1) through lane on the eastbound and westbound approaches on Pleasant Hill Road along with receiving lanes (it is important to note that (1) through lane on the eastbound and westbound approaches on Pleasant Hill Road is scheduled for construction in the Year 2008 per the TIP GW-271) / Optimize the traffic signal timing splits, while maintaining signal coordination with other traffic signals in the transportation network.

For **Future Build (assuming inbound conference traffic) conditions**, the following improvements are required to improve peak hour traffic operations at the following intersections up to the *Calculated Level of Service Standards (based on GRTA's requirements)*:

- Pleasant Hill Road at Satellite Boulevard (ID #1) – Add (2) through lanes on the eastbound and westbound approaches on Pleasant Hill Road along with receiving lanes / Add (1) through lane on the northbound and southbound approaches on Satellite Boulevard along with receiving lanes / Add (1) right-turn lane on the eastbound and southbound approaches / Optimize the traffic signal timing splits, while maintaining signal coordination with other traffic signals in the transportation network.

- Pleasant Hill Road at Site Access (across from "Einstein's Driveway") (ID #3) – Add (1) westbound right-turn lane on Pleasant Hill Road / Add (1) southbound left-turn lane on the Site Access / Optimize the traffic signal timing splits, while maintaining signal coordination with other traffic signals in the transportation network.

- Pleasant Hill Road at Old Norcross Road (ID #6) – Add (1) through lane on the eastbound and westbound approaches on Pleasant Hill Road along with receiving lanes (it is important to note that (1) through lane on the eastbound and westbound approaches on Pleasant Hill Road is scheduled for construction in the Year 2008 per the TIP GW-271) / Optimize the traffic signal timing splits, while maintaining signal coordination with other traffic signals in the transportation network.

- Pleasant Hill Road at Site Access (across from "Davenport Road") (ID #7) – Add (1) northbound left-turn lane, (1) northbound through lane, and (1) northbound right-turn lane on the Site Access / Add (1) eastbound right-turn lane on Old Norcross Road / Re-stripe the exclusive right turn lane on the southbound approach on Davenport Road from a right-turn lane to a shared through-right lane / Re-stripe the center lane on Old Norcross Road to a westbound left-turn lane / Optimize the traffic signal timing splits, while maintaining signal coordination with other traffic signals in the transportation network.

- Satellite Boulevard at Old Norcross Road (ID #10) – Optimize the traffic signal timing splits, while maintaining signal coordination with other traffic signals in the transportation network.

- Satellite Boulevard at Merchants Way (ID #12) – Optimize the traffic signal timing splits, while maintaining signal coordination with other traffic signals in the transportation network.

For **Future Build (assuming outbound conference traffic) conditions**, the following improvements are required to improve peak hour traffic operations at the following intersections up to the *Calculated Level of Service Standards (based on GRTA's requirements)*:

- Pleasant Hill Road at Satellite Boulevard (ID #1) – Add (2) through lanes on the eastbound and westbound approaches on Pleasant Hill Road along with receiving lanes / Add (1) through lane on the northbound and southbound approaches on Satellite Boulevard along with receiving lanes / Add (1) right-turn lane on the eastbound and southbound approaches / Optimize the traffic signal timing splits, while maintaining signal coordination with other traffic signals in the transportation network.

- Pleasant Hill Road at Site Access (across from "Einstein's Driveway") (ID #3) – Add (1) westbound right-turn lane on Pleasant Hill Road / Add (2) southbound left-turn lanes

on the Site Access with Protected signal phasing / Optimize the traffic signal timing splits, while maintaining signal coordination with other traffic signals in the transportation network.

- Pleasant Hill Road at Old Norcross Road (ID #6) – Add (1) through lane on the eastbound and westbound approaches on Pleasant Hill Road along with receiving lanes (it is important to note that (1) through lane on the eastbound and westbound approaches on Pleasant Hill Road is scheduled for construction in the Year 2008 per the TIP GW-271) / Optimize the traffic signal timing splits, while maintaining signal coordination with other traffic signals in the transportation network.

- Pleasant Hill Road at Site Access (across from "Davenport Road") (ID #7) – Add (1) northbound left-turn lane, (1) northbound through lane, and (1) northbound right-turn lane on the Site Access / Add (1) eastbound right-turn lane on Old Norcross Road / Re-stripe the exclusive right turn lane on the southbound approach on Davenport Road from a right-turn lane to a shared through-right lane / Re-stripe the center lane on Old Norcross Road to a westbound left-turn lane / Optimize the traffic signal timing splits, while maintaining signal coordination with other traffic signals in the transportation network.

- Satellite Boulevard at Old Norcross Road (ID #10) – Optimize the traffic signal timing splits, while maintaining signal coordination with other traffic signals in the transportation network.

- Satellite Boulevard at Merchants Way (ID #12) – Re-stripe the eastbound shared through-right turn lane on Merchants Way to an exclusive right-turn lane / Re-stripe the eastbound left-turn lane on Merchants Way to a shared through-left lane / Optimize the traffic signal timing splits, while maintaining signal coordination with other traffic signals in the transportation network.

Summary of Required Transportation Improvements

Although various transportation improvements have been identified in the intersection capacity analyses shown in this study, it is very important to note that the majority of intersection improvements required to meet specific LOS thresholds are due to traffic conditions that have nothing to do with the development plan for Atlanta Global Station. The majority of the improvements identified in the study are due to existing transportation deficiencies already observed in the transportation network. As expected, the transportation improvements shown at the access driveways serving the subject site are indeed attributed to the subject site. However, improvements shown for external intersections off-site have been shown to be attributed to existing deficiencies in the transportation system.

1. INTRODUCTION

General Introduction

This report presents a variety of analyses and documentation for submittal as the major portion of the GRTA DRI Review Package. It focuses on the major elements that the Georgia Regional Transportation Authority (GRTA) requires as part of their Development of Regional Impact (DRI) Review Package. This report is composed of the following primary elements and/or documents: (1) Site Plan Elements; (2) a Traffic Impact Analysis; (3) a Facility Needs Assessment; (4) an Area of Influence Analysis; (5) an Air Quality Benchmark Statement; and, (6) a Summary of the DRI Review Criteria. There are other elements that are submitted with this report, including the GRTA Review Package Checklist, and electronic copies of these and other documentation are part of the total GRTA DRI Review Package.

These analyses have been initiated in response to an overlay request from C-2 Commercial to MUR (a Mixed-Use Re-Development Overlay District). The overlay is required to make possible the re-development of the site. Due to the size and characteristics of the Site, it qualifies for a Development of Regional Impact (DRI) level of review and analysis per rules and guidelines established by GRTA, the Atlanta Regional Commission (ARC), and the Georgia Department of Community Affairs (DCA). This is a rigorous, multi-step process, involving close coordination with GRTA, ARC, and Gwinnett County. The Applicant has elicited to undertake the GRTA review via the Non-Expedited Review Process.

The Site Plan Elements, in both text and drawing form (in both hard copy and electronic format), are a description of the locations, types, characteristics, and amounts of land uses on the Site, and their inter-relationships. The Site Plan Elements also include a description of all access points (for both motorized and non-motorized users), including location, character, lane use, and traffic control. Site circulation characteristics, and the inter-relationships of the various pods, sections, or phases are also a required part of the Site Plan Elements. Another required feature of the Site Plan are the numbers, locations, and types of parking spaces provided, and their inter-relationship with the proposed land uses and access points. All of these items are discussed and/or analyzed below.

The Traffic Impact Analysis (Sections 3 through 5) presents an analysis of the traffic impact expected to result from the Site. This analysis establishes the existing traffic conditions in the vicinity of the Site, determines the effects of background traffic growth upon the study area, and assesses the impacts of the Site upon the vicinity intersections. The analysis of traffic operations is described for Existing conditions, Existing Build conditions, Future No-build conditions, and Future Build conditions. If negative impacts are identified, appropriate mitigation is identified. This analysis is a requirement of GRTA, and is performed to GRTA study standards.

The Facility Needs Assessment (Section 6) is essentially a summary of the traffic impact analysis, providing in text and tabular form all of the required improvements under the

various study scenarios, both with and without the Site. Thus it includes required improvements for Existing conditions, Existing Build conditions, Future No-Build conditions, and Future Build conditions.

The Area of Influence Analysis (Section 7) involves an analysis of the opportunities for the workforce from the site to establish residence within the Area of Influence. It is an effort intended to confirm that the site is so well designed and located as to reduce overall Vehicle Miles of Travel to less than typical developments of its size and type. This analysis is also a requirement of GRTA, and is also prepared according to GRTA study standards.

The Air Quality Benchmark Statement (Section 8) is a requirement of ARC. This evaluation also attempts to establish, following a different approach than GRTA, that the site is so well designed and located as to reduce overall Vehicle Miles of Travel to less than typical developments of its size and type, and thus benefit regional air quality.

The GRTA DRI Review Criteria for Non-Expedited Review are contained in Sections 3-101 and 3-103(A) of the *Procedures and Principles for GRTA Development of Regional Impact Review*, January 14, 2002. Section 9 of the report focuses on Section 3-103(A), and addresses each criterion specifically, even though many of the criteria are also addressed elsewhere in the report.

Introduction to the Study Process

This study includes the following steps to determine the various impacts and needs of the Site:

- Attendance at one Methodology Meeting with the Georgia Regional Transportation Authority (GRTA), Atlanta Regional Commission (ARC), and Gwinnett County;
- Attendance at one Pre-Application Conference with ARC, GRTA, and Gwinnett County;
- Inventory of the existing roadway network;
- Collection of existing traffic data;
- Identification of planned improvements to the road network;
- Identification of a background growth rate which will contribute traffic to the road network;
- Identification of other approved developments in the area which will contribute traffic to the road network;
- Detailed Site definition, including type, size and location of each land use, location and configuration of all external access points (both vehicular and pedestrian), location and configuration of all internal intersections and driveways (and pedestrian crossing points), internal circulation characteristics, parking requirements and number and location of parking spaces provided, transit interface, if any, etc.;
- Determination of the number of trips generated by the site;
- Distribution and assignment of the new traffic onto the roadway network;

- Analysis of conditions of the road network for Existing conditions, Existing Build conditions, Future No-build conditions, and Future Build conditions
- Acquisition of various socio-economic information about both the site and the Area of Influence;
- Definition of population and employment characteristics of both the site and the Area of Influence, and comparison with GRTA's criteria;
- Identification of Site elements that address ARC's air quality assessment;
- Reporting of results and conclusions, along with recommendations to mitigate any identified deficiencies; and,
- Summarization of the data and information that address GRTA's DRI Review Criteria.

In the following sections, the analysis of traffic operations is described for Existing conditions, Existing Build conditions, Future No-build conditions, and Future Build conditions. The Area of Influence analysis is described, including study parameters, and site and area analyses. ARC's air quality issues are addressed in relation to how the site helps achieve ARC's regional goals. Finally, findings, conclusions, and recommendations are presented.

Site Description

This study presents an analysis of the traffic impact expected to result from the re-development of a deteriorating existing commercial site into a mixed-use site known as Atlanta Global Station. Figure 2-1 shows the Area Map. Figure 2-2 provides a more detailed Site Location Map. Figure 2-3 shows an aerial photograph of the near vicinity of the Site.

Types and Amounts of Development

Atlanta Global Station will revitalize the site and surrounding area through a development plan that will consist of the following land uses: 974 high-rise condominiums, 200 loft condos, a combined total of 723,784 square feet of office, a 320-room hotel, a combined total of 551,188 square feet of shopping center/retail, and a multi-use convention center with a seating capacity of 6,000. There will be one (1) access point on Old Norcross Road, which will be located at the intersection of Old Norcross Road and Davenport Road. There is an existing traffic signal at the intersection. There will be four (4) access points on Pleasant Hill Road. All four (4) access points exist today; two (2) of which are signalized. There will be three (3) access points on Satellite Boulevard. All three (3) access points exist today; two (2) of which are signalized (Satellite Boulevard at Merchants Way and at Transit Center as of 11/20/2006). The Site Plan is shown in Figure 2-4.

Site Parking Requirements

The minimum parking requirements for Atlanta Global Station have been estimated per "*Article X, Off-Street Automobile Parking and Loading and Unloading Spaces"* of *Gwinnett County's 1985 Zoning Resolution*, under the Department of Planning and Development Planning Division. The results are shown in Table 2-1.

Table 2-1. Minimum Parking Requirements

Land Use	Min. Parking Rates	Gwinnett Land Use Category	Parking Spaces
Residential	1.5 spaces per unit	Residences (multifamily)	1,761
Retail	1 space per 500 sf	Retail use, shopping center, or regional shopping mall	1,102
Office	1 space per 500 sf	Office; business or professional	1,448
Convention Center	1 space per 4 seats	Public Assembly (with fixed seating)	1,500
Hotel	1 per unit	Hotel/motel	320
Total Parking Spaces			***6,131***

As shown in Table 2-1, the minimum parking requirement for the entire site is approximately 6,100 spaces, per Gwinnett County off-street parking ordinances.

The number of parking spaces required to adequately serve Atlanta Global Station was analyzed using different sources of data and through different methodologies, including the shared parking concept. A letter was prepared for the Client in October 2006, and is included in the attachments. The letter indicates that between 6,000 and 7,500 parking spaces are required to adequately support the site.

According to the *MUD Concept Parking Plan*, dated 14 November 2006, approximately 7,770 underground parking spaces will be provided, of which 6,230 of those spaces will be shared parking between the complementary land uses on site.

Site Access Points and Driveways

Gwinnett County is the permitting agencies for driveway access. There will be one (1) access point on Old Norcross Road, which will be located at the intersection of Old Norcross Road and Davenport Road. There is an existing traffic signal at the intersection. There will be four (4) access points on Pleasant Hill Road. All four (4) access points exist today; two (2) of which are signalized. There will be three (3) access points on Satellite Boulevard. All three (3) access points exist today; two (2) of which are signalized (Satellite Boulevard at Merchants Way and at Transit Center as of 11/20/2006).

Figure 2-1. Area Map

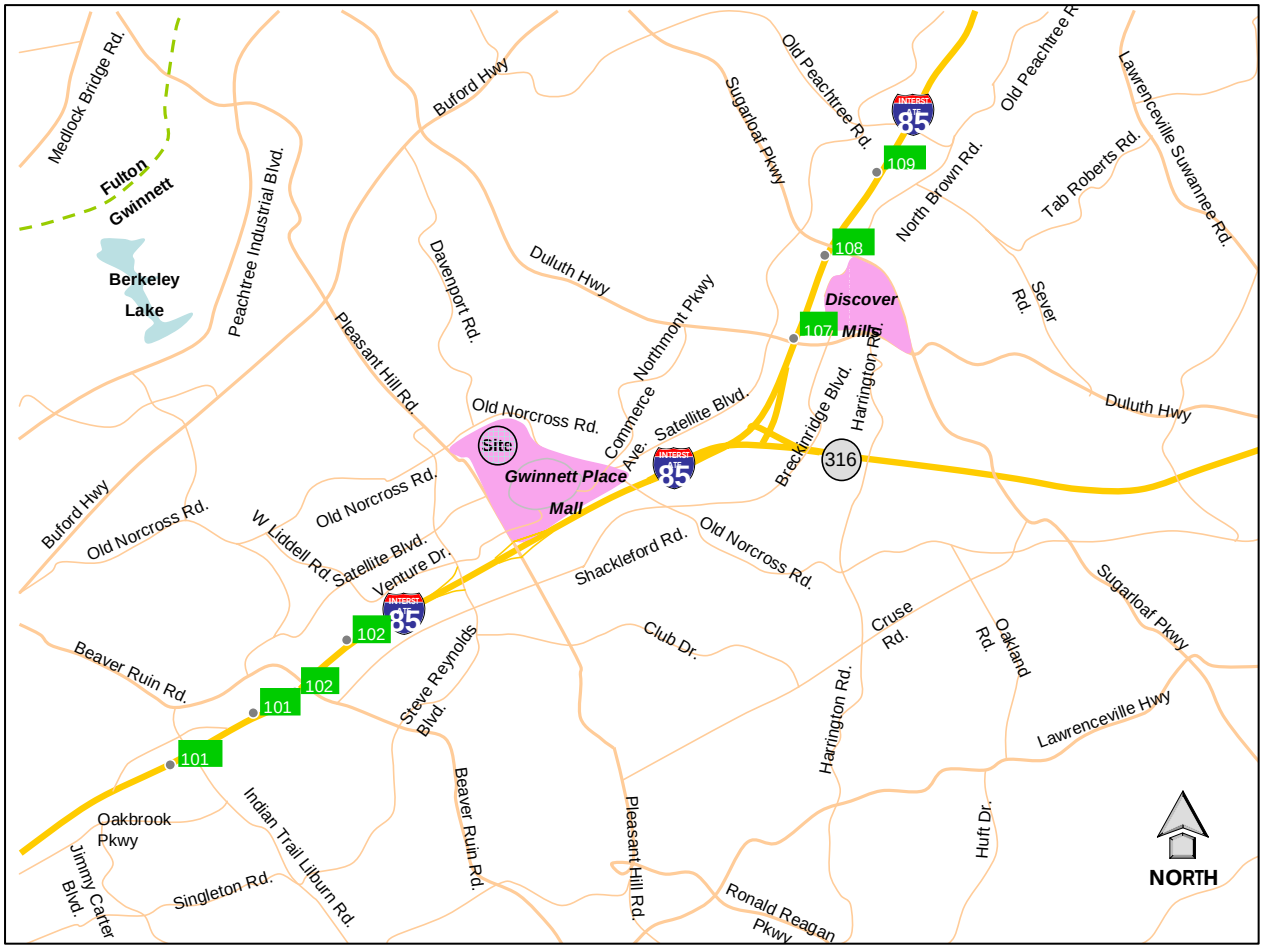


Figure 2-2. Site Location

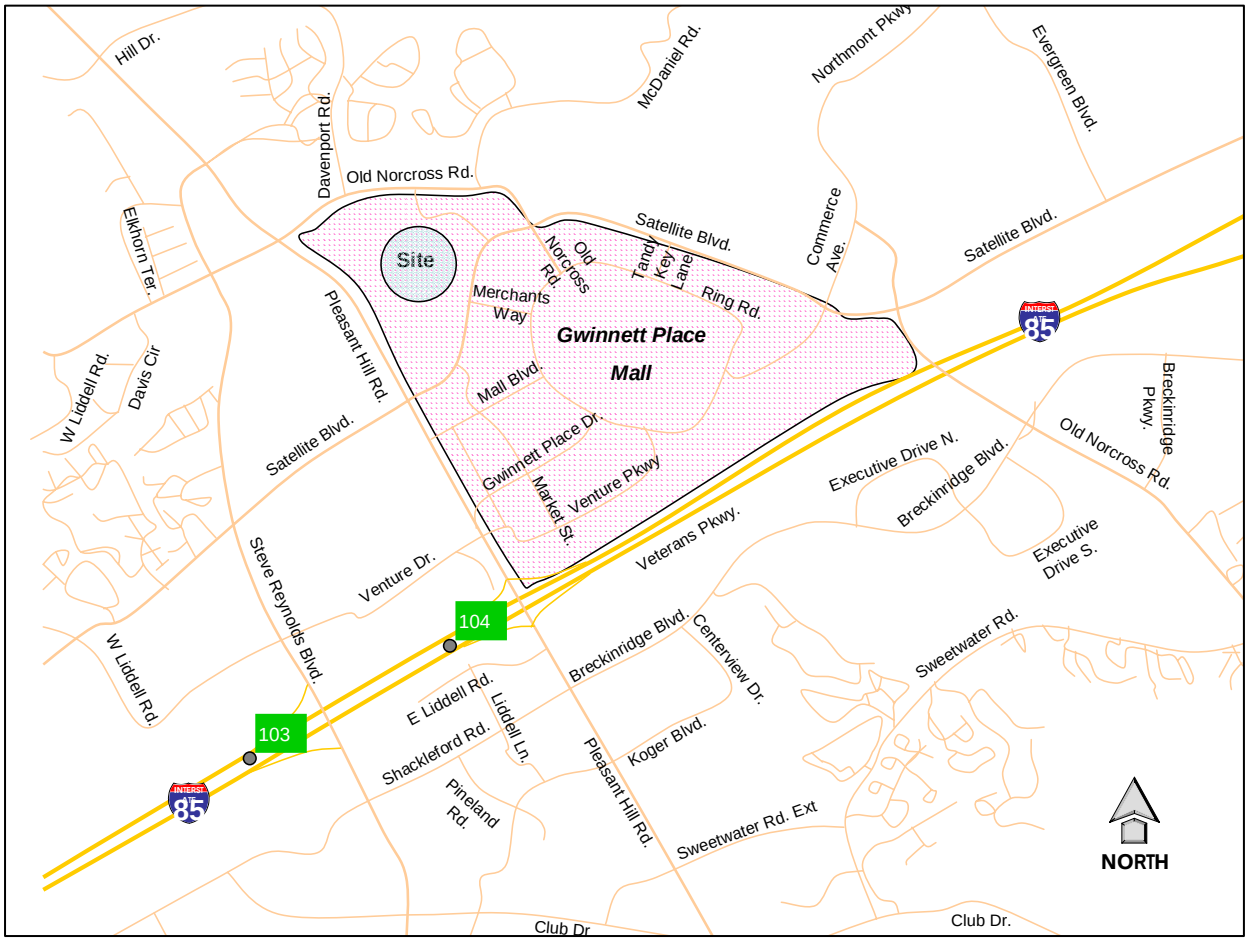


Figure 2-3. Site Aerial

Figure 2-4. Site Plan

Local Plan Summary

The subject site is bounded on the north by Old Norcross Road, on the southeast by Satellite Boulevard, on the southwest by Pleasant Hill Road. North of the site (that is, north of Old Norcross Road), there is a residential subdivision, McDaniel Farm Park, commercial/retail, and a car dealership. The existing Gwinnett County Land Use Plan shows this area designated as commercial/retail and public park. The 2020 Gwinnett County Land Use Plan shows this area designated as commercial/retail, public park, and medium density residential.

Southeast of the site (that is, southeast of Satellite Boulevard), is Gwinnett Place Mall. This coincides with the local land use plan. The Gwinnett County Land Use Plan shows this area designated as commercial/retail with small portions designated as office/professional. The 2020 Gwinnett County Land Use Plan shows this area designated as commercial/retail.

Southwest of the site (that is, southwest of Pleasant Hill Road), is commercial/retail. This land use appears to coincide with the local land use plan. The existing and 2020 Gwinnett County Land Use Plans show this area designated as commercial/retail.

Per Gwinnett County's *Existing Land Use Map*, the subject site is currently situated on land predominantly designated as "Commercial/Retail", with a portion of the site designated as "Office/Professional." The land use designations appear to conform with the existing land uses on the subject site today. According to Gwinnett County's *2020 Land Use Plan Map*, *2005 Update*, the subject site is shown to be entirely "Commercial/Retail".

See Figure 2-5, Excerpt from Gwinnett County Existing Land Use Map, and Figure 2-6, Excerpt from Gwinnett County 2020 Land Use Map.

Pedestrian and Transit Facilities

External to the Site, there are existing sidewalks within the vicinity of the subject site. The developer is proposing to implement a series of sidewalks bordering the site that will tie into the extensive on-site sidewalk system. These will include sidewalks along Pleasant Hill Road, Old Norcross Road, and Satellite Boulevard.

Since the development is proposed to have a very urban-like setting, there will be sidewalks along virtually every block face on-site, providing sidewalks on both sides of virtually every street within the project. There will also be sidewalks internal to most blocks on site. The proposed sidewalk network can perhaps be best understood by an examination of the Site Plan, shown in Figure 2-4, and also provided on a full size plan sheet as part of the GRTA DRI Review Package.

Gwinnett Place Mall is located across the street from the subject site and has a Gwinnett County Transit Hub. Gwinnett County Transit began operations in 2000 and currently operates six regular transit routes plus paratransit (demand-response) vans. Over the past three years,

transit ridership has increased from 228 average daily boardings in November of 2002 to a high of 5,164 daily boardings in September of 2005. The following bus routes originate from Gwinnett Place Mall:

- Route 10 to Doraville;
- Route 20 to southern I-85 corridor;
- Route 30 to Norcross/Technology Park area;
- Route 40 to Lawrenceville;
- Route 50 to Buford Mall of Georgia; and
- Express Route 102A Gwinnett Place Mall.

Site Plan Elements

As can be seen on the Site Plan (Figure 2-4), there are a number of enhancements that were included to provide for more efficient vehicle movements. These include (but are not limited to):

- Provision of eight (8) access driveways serving the site to separate and distribute traffic to the different buildings and parking facilities more efficiently;
- Five (5) traffic signals at access points serving the site to effectively facilitate large volumes of inbound and outbound site traffic;
- An efficient on-site/underground parking circulation system that provides multiple vehicular paths to all access points, and to all blocks and sections of the Site;
- An on-site street network to significantly reduce unnecessary off-site movements and to provide options for ingress to/egress from the Site;
- Design of access points, in combination with parcel design, to minimize queuing problems for on-site intersections; and,
- Multiple access points to every parking facility.

The Site Plan also shows a number of enhancements to provide for more efficient pedestrian movements. These include (but are not limited to):

- An on-site pedestrian system that connects every building and every parking facility;
- An on-site pedestrian system that connects every block and section within the Site;
- Pedestrian facilities concurrent with all vehicular access points to the Site;
- Crosswalks at all vehicular/pedestrian crossing points;
- Connection of the on-site pedestrian system, as directly as is practical, to the off-site pedestrian systems of adjacent roadways and developments;
- Connection of the on-site pedestrian system to off-site bus stops; and,
- Connections of the on-site pedestrian system to the off-site sidewalks.

Figure 2-5. Excerpt from Gwinnett County Existing Land Use Map

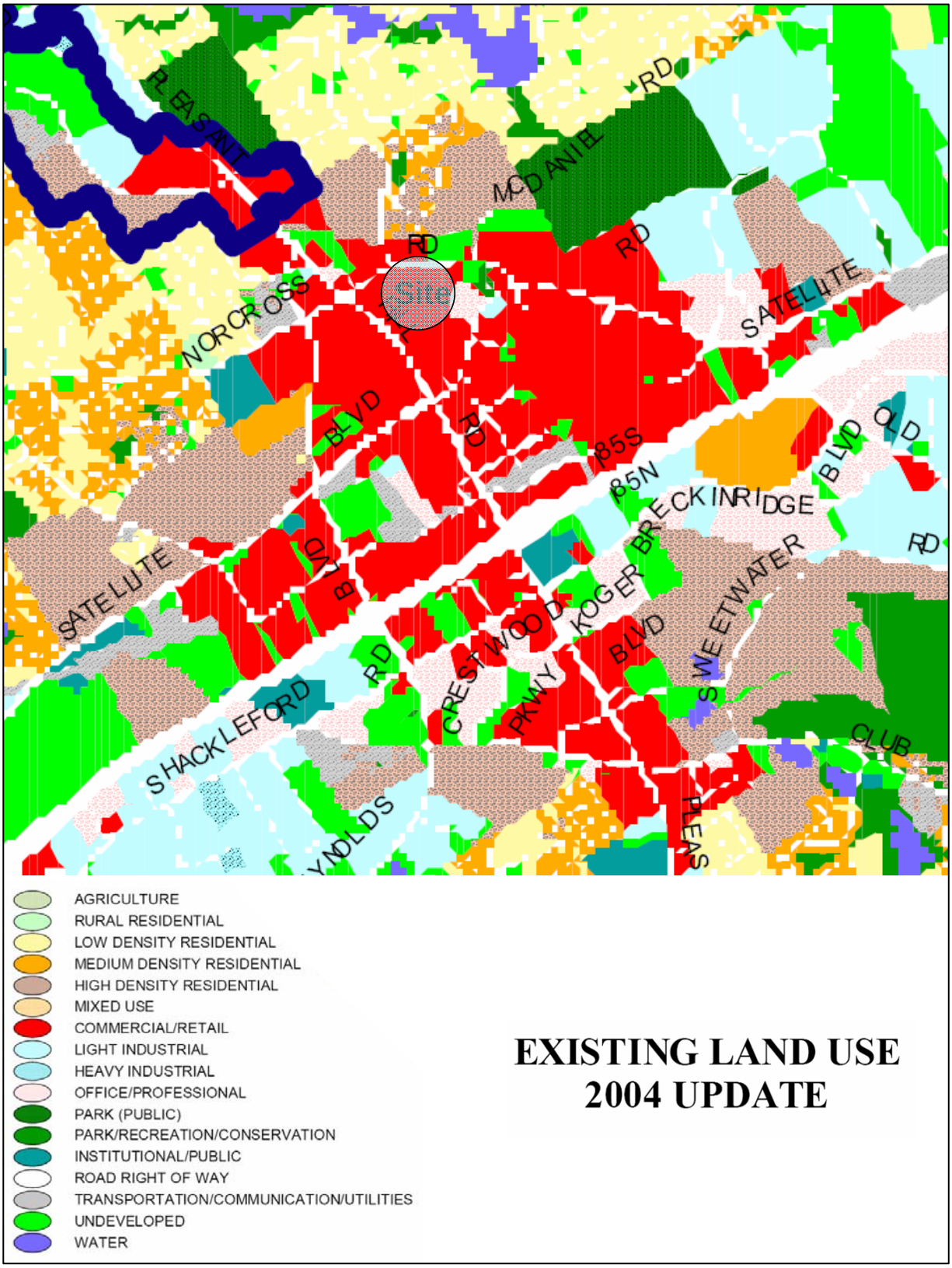
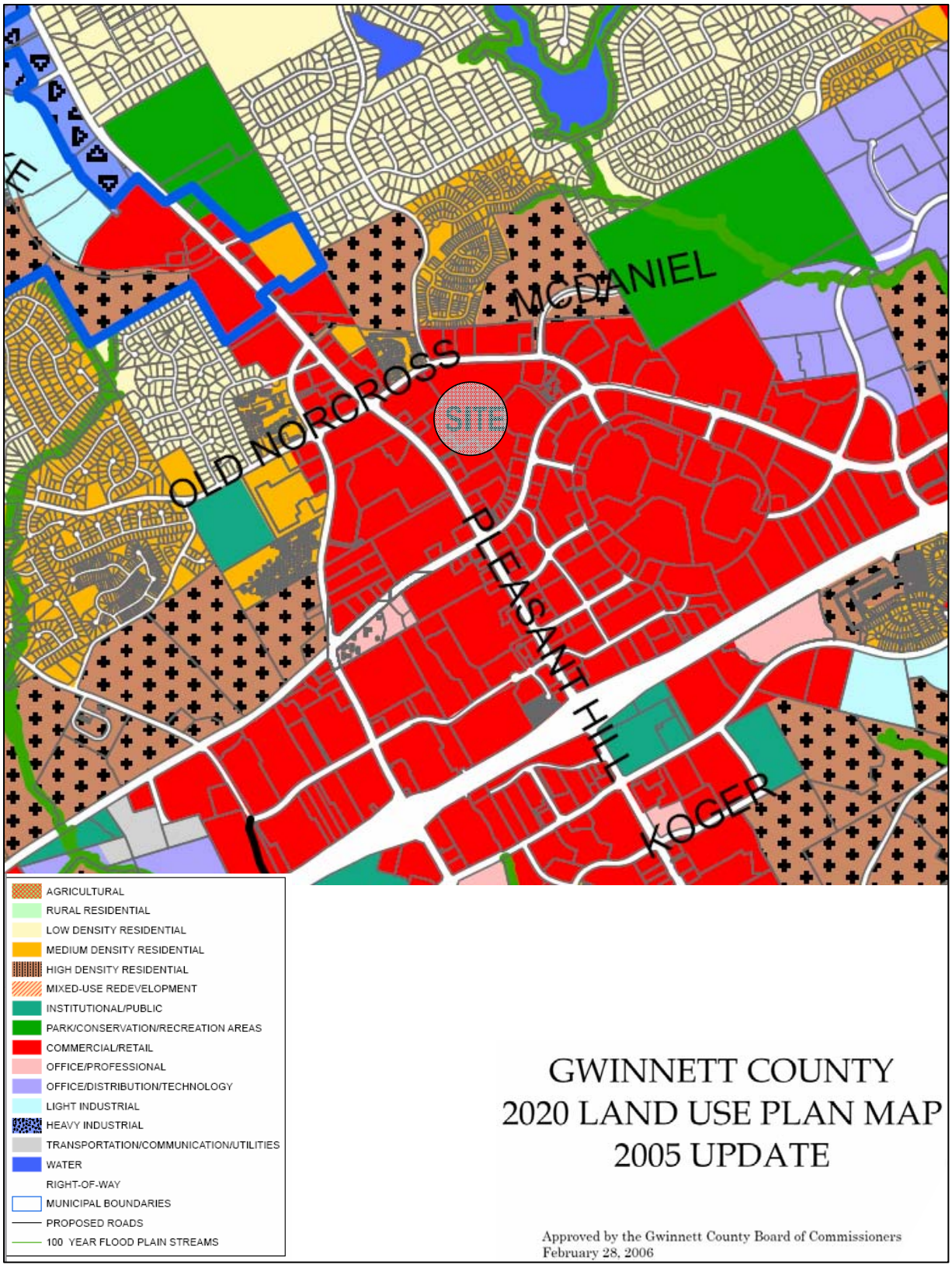


Figure 2-6. Excerpt from Gwinnett County 2020 Land Use Map



Trip Generation

As noted above, Atlanta Global Station will consist of: 974 high-rise condominiums, 200 loft condos, a combined total of 723,784 square feet of office, a 320-room hotel, a combined total of 551,188 square feet of shopping center/retail, and a multi-use convention center with a seating capacity of 6,000.

The number of vehicle trips expected from the site was estimated. The trip generation was based on the Site Plan and information provided by the developer's site civil engineer and land planner.

The typical procedure for determining the traffic generated by a new development is to apply the rates or equations developed by the Institute of Transportation Engineers (ITE) as published in *Trip Generation, 7th Edition*, 2003, an ITE Informational Report, and related information in the *Trip Generation Handbook*, an ITE Recommended Practice, June 2004. The rates and equations in these documents are calculated from nationally collected data. The rates and equations were used to estimate the number of trips expected for the Site. The ITE Land Use Codes used in the analyses are shown in Table 3-1.

Internal capture rates, published in ITE's *Trip Generation Handbook*, June 2004, between retail and the other Site land uses were used to reduce trips based on the mixed-use nature of the Site.

Pass-by trips were also reduced from the trip generation for the retail component of Atlanta Global Station. The pass-by rate was calculated using ITE's *Trip Generation Handbook*, June 2004. The pass-by rate was found to be 24%. GRTA caps pass-by trips at 10% of the average daily traffic (ADT) on the adjacent roadway. The limits test was performed to determine whether the pass-by trips that would be expected based on the rates given in ITE's *Trip Generation Handbook* would be more than 10% of the ADT for the adjacent roadway. It was determined that the pass-by trips were expected to be less than 10% of the Year 2012 projected ADT for the adjacent roadways. Thus, pass-by trips did NOT have to be adjusted.

A 5% transit mode split reduction was assumed in the trip generation per the discussion held on the topic during the Pre-Application Conference at ARC.

Trip Generation has been determined for build-out for the site, estimated to occur in the Year 2012. The results are shown in Table 3-1 (excluding estimated conference center trips).

Table 3-1. Trip Generation

Land Use (ITE Code)	Intensity		Daily In	Daily Out	A.M. Peak Hour In	A.M. Peak Hour Out	P.M. Peak Hour In	P.M. Peak Hour Out	Sat Peak Hour In	Sat Peak Hour Out
High-Rise Condominium (232)	1,174	units	2,325	2,325	70	299	257	158	164	217
Internal[d]			938	728	9	10	93	65	59	89
External			1,387	1,597	61	289	164	93	105	128
Transit Mode Split[e]	5%		69	80	3	14	8	5	5	6
Net External			1,318	1,517	58	275	156	88	99	121
Shopping Center (820)	551	k.s.f.	10,298	10,298	266	170	927	1,004	1,365	1,260
Internal[d]			1,339	1,442	24	17	102	141	150	177
External			8,959	8,856	242	153	825	863	1,215	1,083
Passby	24%		2,150	2,125	n/a	n/a	198	207	292	260
New External			6,809	6,731	242	153	627	656	923	823
Hotel (310)	320	units	1,246	1,246	106	67	100	89	126	99
Internal[d]			256	199	3	3	25	18	32	20
External			990	1,047	103	64	75	71	95	79
Office (710)	724	k.s.f.	3,063	3,062	804	110	151	738	99	85
Internal[d]			309	473	5	11	30	26	20	3
External			2,754	2,589	799	99	121	712	79	82
Transit Mode Split[e]	5%		138	129	40	5	6	36	4	4
Net External			2,616	2,460	759	94	115	676	75	78
Total Gross Trips			**16,932**	**16,931**	**1,246**	**646**	**1,435**	**1,989**	**1,754**	**1,661**
Total Internal Trips			2,842	2,842	41	41	250	250	261	289
Total External Trips			14,090	14,089	1,205	605	1,185	1,739	1,493	1,372
Total Passby Trips			2,150	2,125	n/a	n/a	198	207	292	260
Transit Mode Split[e]			207	209	43	19	14	40	9	10
Total New External Trips			**11,733**	**11,755**	**1,162**	**586**	**973**	**1,492**	**1,192**	**1,101**

[d] For Saturday peak hour, internal trips were calculated using internal-gross trip ratios from the PM peak hour.

[e] Based on transit mode split agreed upon at Pre-Application meeting.

Multi-use Conference Center Trip Generation

ITE's *Parking Generation*, 3rd Edition, was used to estimate trips for the multi-use conference center. Conference center trip generation data is not found in ITE's *Trip Generation*, 7th Edition. The results of the trip generation analyses are shown in Table 3-2.

Table 3-2. Conference Center - Trip Generation

Land Use (ITE Code)	Intensity		Full Capacity Event (In and Out)[a]	A.M. Peak Hour In	A.M. Peak Hour Out[b]	P.M. Peak Hour[c] In	P.M. Peak Hour[c] Out	Sat Peak Hour In	Sat Peak Hour Out
Conference Center (595)	6,000	seats	3,720	930	n/a	930	930	930	930

[a] This is the total vehicular activity in and out, which spans over several hours before the event, and several hours after the event.

[b] Typical conference events do not end during the AM peak hour. Thus, little to no outbound trips are expected.

[c] Both cases were looked at, whether the event begins or ends during the PM peak hour. Thus, both in and out are not expected to occur simulataneously.

[u] For Saturday peak hour, internal trips were calculated using internal-gross trip ratios from the PM peak hour.

[e] Based on transit mode split agreed upon at Pre-Application meeting.

Under the "Full Capacity Event" column, the total vehicular trips (i.e., 3,720) assume that the conference type event begins and ends in one day, and that the event operates at

full capacity (i.e., seating 6,000).

Under the "AM Peak Hour" columns, no outbound trips are shown since typical conference events do not end or conclude during the AM peak hour.

Under the "PM Peak Hour" and "Saturday Peak Hour" columns, the inbound and outbound trips are not likely to occur concurrently. In other words, a weekday PM peak hour may coincide with the start of a conference type event, OR the conclusion of a conference type event -- NOT both. The same can be said of the Saturday peak hour. These exclusive scenarios were fully investigated in the proposed detailed intersection analysis that follows in this report.

Distribution and Assignment

The distribution of the trips generated by a development is determined by both the distribution of population (and residences, that is where people live) within the area, for employment and retail types of development, and the distribution of employment locations within the area for residential types of development. The distribution of the trips is to a lesser extent determined by the surrounding road system (which more directly affects traffic assignment). For the purposes of developing trip distribution, a radius of fifteen miles is used for both residential and employment types of land uses (with the assumption that the vast majority of home to work trips will be satisfied within that fifteen mile radius). Generally a five mile radius is used for retail related trips (for both neighborhood and community types of retail centers).

Census data with the GIS software *Maptitude* was used to develop the trip distribution for the Site. Population data within a 15-mile radius was used to determine the spatial distribution of office trips coming to and from the Site. Employment data within a 15-mile radius was used to determine the spatial distribution of residential and hotel/conference center trips coming to and from the Site. Population data within a 5-mile radius was used to determine the spatial distribution of retail/entertainment trips coming to and from the site. Due to the diversity of land uses in the general area of the site, the results of the trip distribution analysis for each land use within the DRI were found to be similar, and thus for simplicity, one trip distribution plan was assumed for the entire site. The trip distribution was slightly adjusted based Gwinnett DOT staff and on local knowledge of the area.

The trip distributions developed for the site are shown in Figure 3-1.

The appropriate distribution percentages as shown in Figure 3-1 were applied to the trips generated by the Site as shown in Tables 3-1 and 3-2. The weekday AM, weekday PM, and Saturday peak hour turning volumes expected at the study intersections from the Site are shown in Figure 3-2 for the site assuming inbound conference center traffic and in Figure 3-3 for the site assuming outbound conference center traffic.

Figure 3-1. Site Trip Distribution

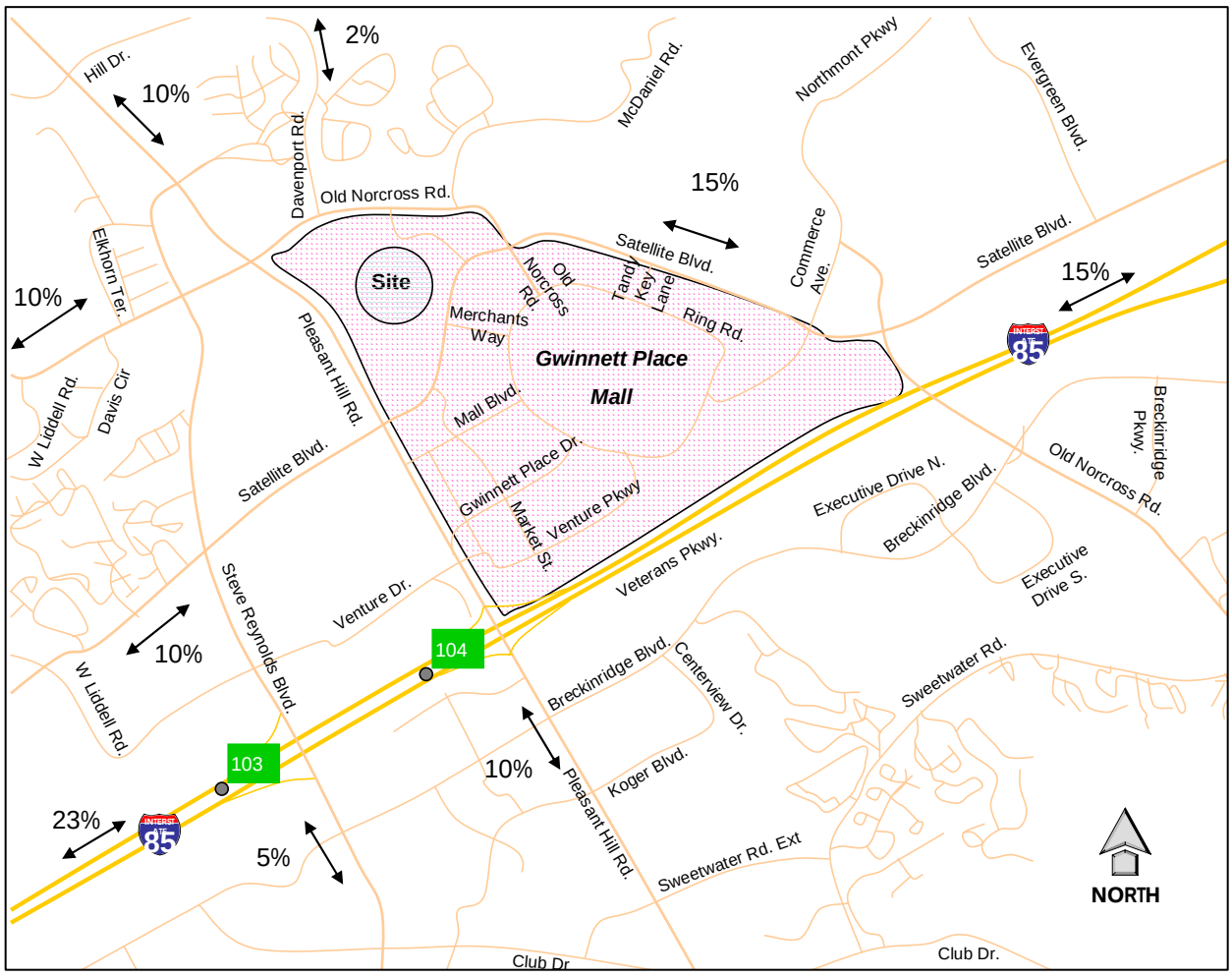


Figure 3-2. Site Traffic Volumes with Inbound Conference Trips

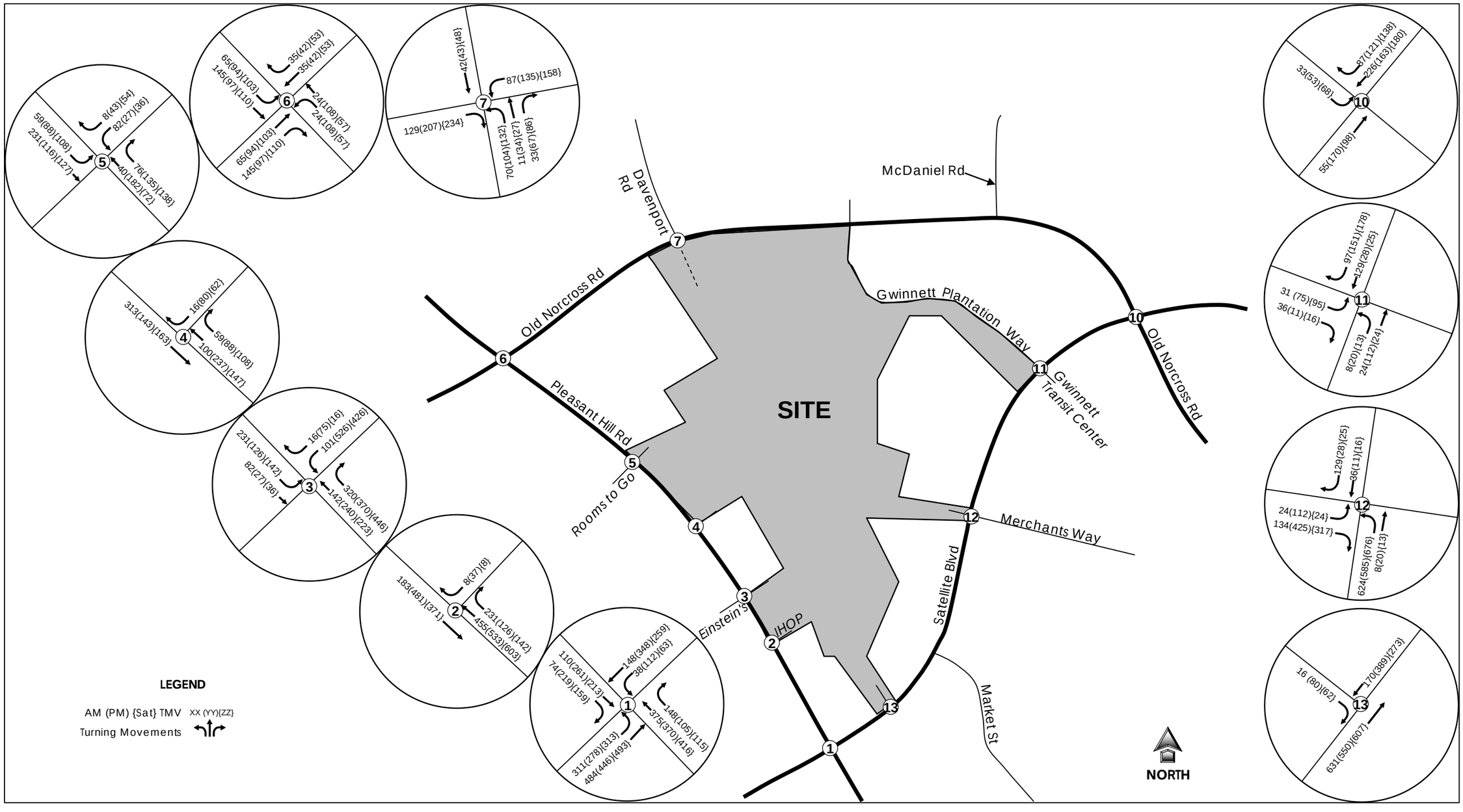
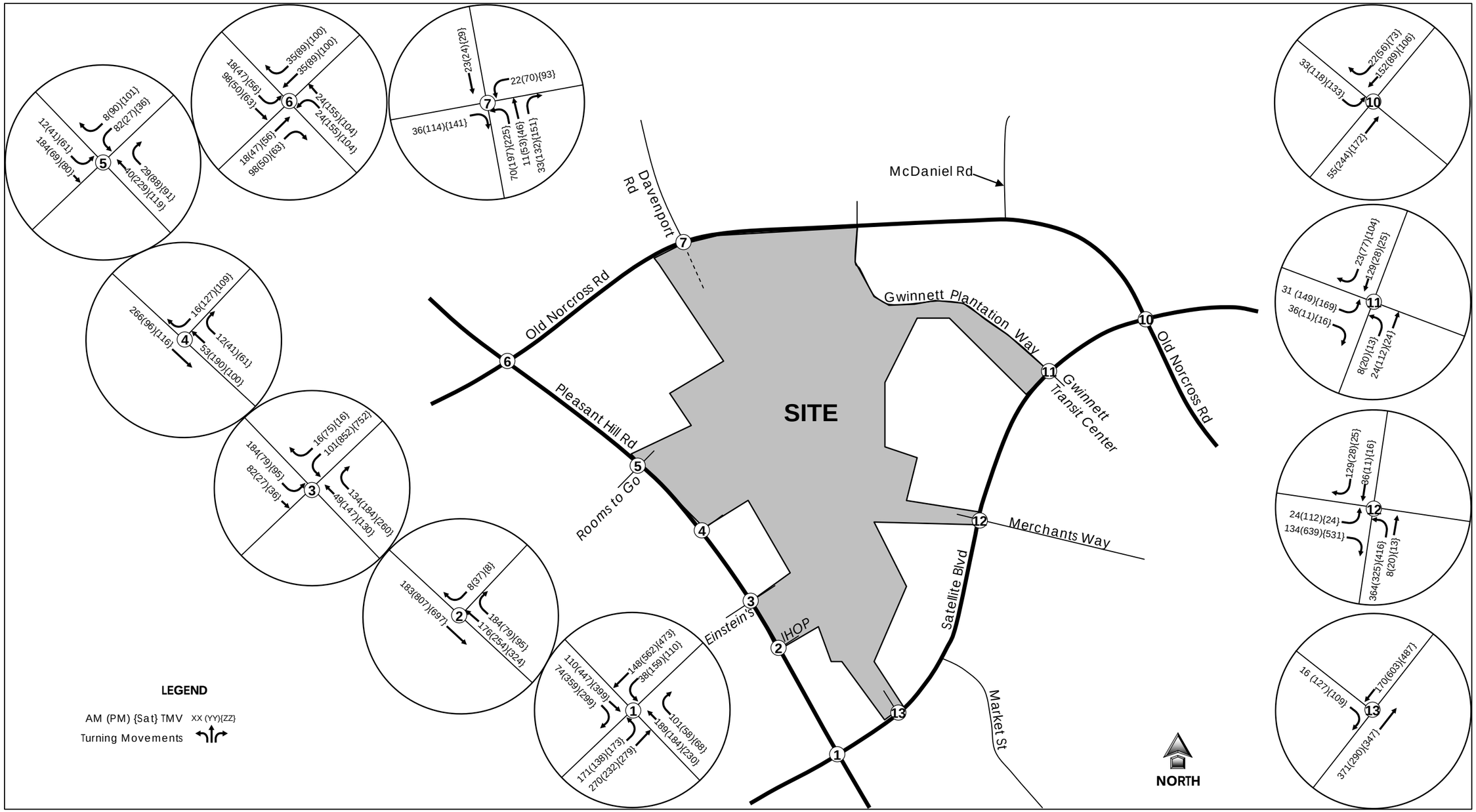


Figure 3-3. Site Traffic Volumes with Outbound Conference Trips



Identification of the Study Network

An early step in the development of a study and report for the GRTA DRI Non-Expedited Review Process is the determination of the Study Network utilizing the 7% Rule. The 7% Rule requires study of each roadway segment that is impacted to determine if traffic from the Site consumes 7% or more of the Service Volume (volume at a specific Level of Service (LOS), usually "D") of that roadway segment. The LOS Standards are intended to be established by each jurisdiction, although many have not yet officially done so, thus LOS D is generally used as a default value (and LOS C may be used as a default in more rural areas). The LOS standard for Gwinnett County is assumed to be LOS D.

This effort, to determine how much of the Service Volume on all roadway segments within several miles of the Site is consumed by the Site, requires a potentially extensive roadway and traffic control inventory. The inventory provides information for each roadway segment within a reasonable distance from the Site. This information is presented to GRTA at the Methodology Meeting on either a map and/or a spreadsheet. The information that GRTA wishes to see includes: the portion of the gross 24-hour two-way Site traffic assigned to each roadway segment (this requires that trip generation, trip distribution and traffic assignment be performed in advance); a description of each roadway segment (numbers of lanes, existence of a median, amount and types of traffic control, existence of left turn lanes, functional classification of the roadway, jurisdictional control of the roadway (State or Non-state), etc.); the Level of Service standard for each roadway segment; the Service Volume threshold for each roadway segment; the number of trips and percent of total trip generation from the Site assigned to each roadway segment; and the percent of Service Volume consumed by the Site on each roadway segment.

The generalized Annual Average Daily Traffic volumes adopted by GRTA are used for the roadway service volumes. Where the daily trips generated by the Site exceed 7% of the two-way daily roadway service volumes at the appropriate Level of Service standard, the roadway segment is included in the Study Network. In addition to specific roadway segments being identified, the level of analysis (detailed level or planning level) is also established. Finally, the study intersections to be analyzed are also identified.

Figure 3-4 presents a graphic of the overall Study Area identified by the 7% Rule. Table 3-3 shows the roadway segments that were assessed and presented for the GRTA Methodology Meeting.

Figure 3-4. Study Area Identified by the 7% Rule

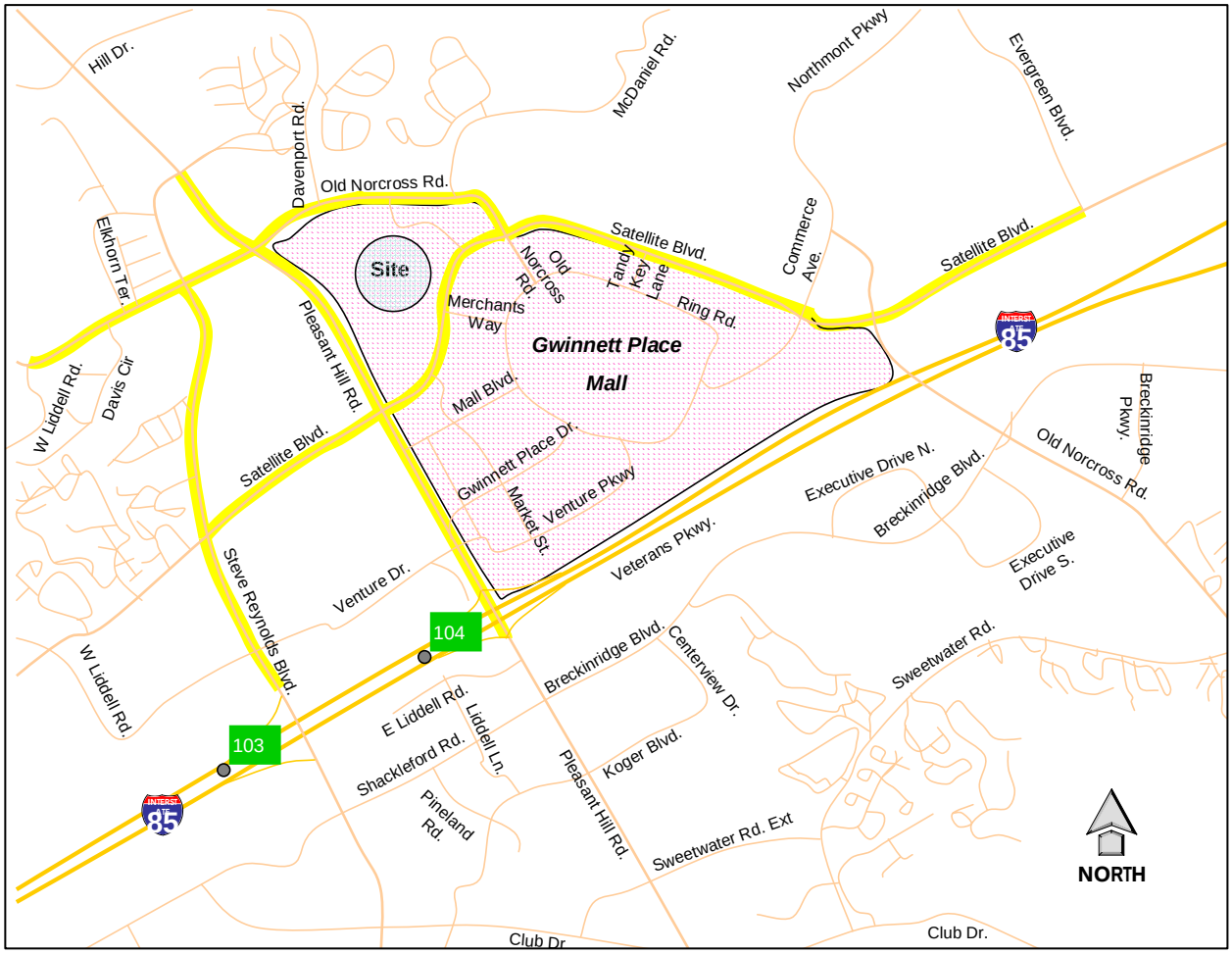


Table 3-3. Study Segment Evaluation

Roadway Segment	Roadway Segment		Adjusted LOS "D" Daily Capacity	% of Daily Trips Assigned	Daily Project Trips	% of Project Trips with respect to the adjusted LOS "D" daily capacity	Are the project trips greater than 7% of the adjusted LOS "D" daily capacity?
	Start	End					
Pleasant Hill Road	Site	Old Norcross Rd	46,800	20%	7,517	16.1%	**Yes**
Pleasant Hill Road	Old Norcross Rd	Steve Reynolds Blvd	31,100	10%	3,758	12.1%	**Yes**
Pleasant Hill Road	Steve Reynolds Blvd	Hill Dr	29,545	5%	1,879	6.4%	**No**
Pleasant Hill Road	Site	Satellite Blvd	46,800	58%	21,798	46.6%	**Yes**
Pleasant Hill Road	Satellite Blvd	Mall Blvd	46,800	31%	11,651	24.9%	**Yes**
Pleasant Hill Road	Mall Blvd	Gwinnett Place Dr	46,800	31%	11,651	24.9%	**Yes**
Pleasant Hill Road	Gwinnett Place Dr	Venture Dr	46,800	31%	11,651	24.9%	**Yes**
Pleasant Hill Road	Venture Dr	I-85 SB Ramp	46,800	31%	11,651	24.9%	**Yes**
Pleasant Hill Road	I-85 SB Ramp	I-85 NB Ramp	31,100	20%	7,517	24.2%	**Yes**
Pleasant Hill Road	I-85 NB Ramp	Breckinridge Blvd	46,800	5%	1,879	4.0%	**No**
Old Norcross Rd	Site	Pleasant Hill Rd	29,545	20%	7,517	25.4%	**Yes**
Old Norcross Rd	Pleasant Hill Rd	Steve Reynolds Blvd	29,545	10%	3,758	12.7%	**Yes**
Old Norcross Rd	Steve Reynolds Blvd	Davis Cir	11,680	10%	3,758	32.2%	**Yes**
Old Norcross Rd	Davis Cir	West Liddell Rd	15,330	5%	1,879	12.3%	**Yes**
Old Norcross Rd	West Liddell Rd	Hopkins Mill Rd	15,330	3%	940	6.1%	**No**
Old Norcross Rd	Site	Satellite Blvd	29,545	20%	7,517	25.4%	**Yes**
Satellite Blvd	Site	Pleasant Hill Rd	29,545	41%	15,409	52.2%	**Yes**
Satellite Blvd	Pleasant Hill Rd	Steve Reynolds Blvd	29,545	10%	3,758	12.7%	**Yes**
Satellite Blvd	Steve Reynolds Blvd	West Liddell Rd	29,545	5%	1,879	6.4%	**No**
Satellite Blvd	Site	Old Norcross Rd	29,545	20%	7,517	25.4%	**Yes**
Satellite Blvd	Old Norcross Rd	Commerce Ave	46,800	20%	7,517	16.1%	**Yes**
Satellite Blvd	Commerce Ave	Old Norcross Rd (N)	46,800	15%	5,637	12.0%	**Yes**
Satellite Blvd	Old Norcross Rd (N)	Evergreen Blvd	29,545	10%	3,758	12.7%	**Yes**
Satellite Blvd	Evergreen Blvd	Boggs Rd	29,545	5%	1,879	6.4%	**No**
Davenport Rd	Old Norcross Rd	Hill Dr	11,680	2%	752	6.4%	**No**
Commerce Ave	Satellite Blvd	SR 120	29,545	5%	1,879	6.4%	**No**
Steve Reynolds Blvd	Old Norcross Rd	Satellite Blvd	29,545	17%	6,389	21.6%	**Yes**
Steve Reynolds Blvd	Satellite Blvd	Venture Dr	29,545	17%	6,389	21.6%	**Yes**
Steve Reynolds Blvd	Venture Dr	I-85 SB Ramp	29,545	17%	6,389	21.6%	**Yes**
Steve Reynolds Blvd	I-85 SB Ramp	I-85 NB Ramp	29,545	5%	1,879	6.4%	**No**

Note: Trip generation used in the analysis are Gross Trips (i.e. no pass-by, no internal capture, no transit mode split reductions.

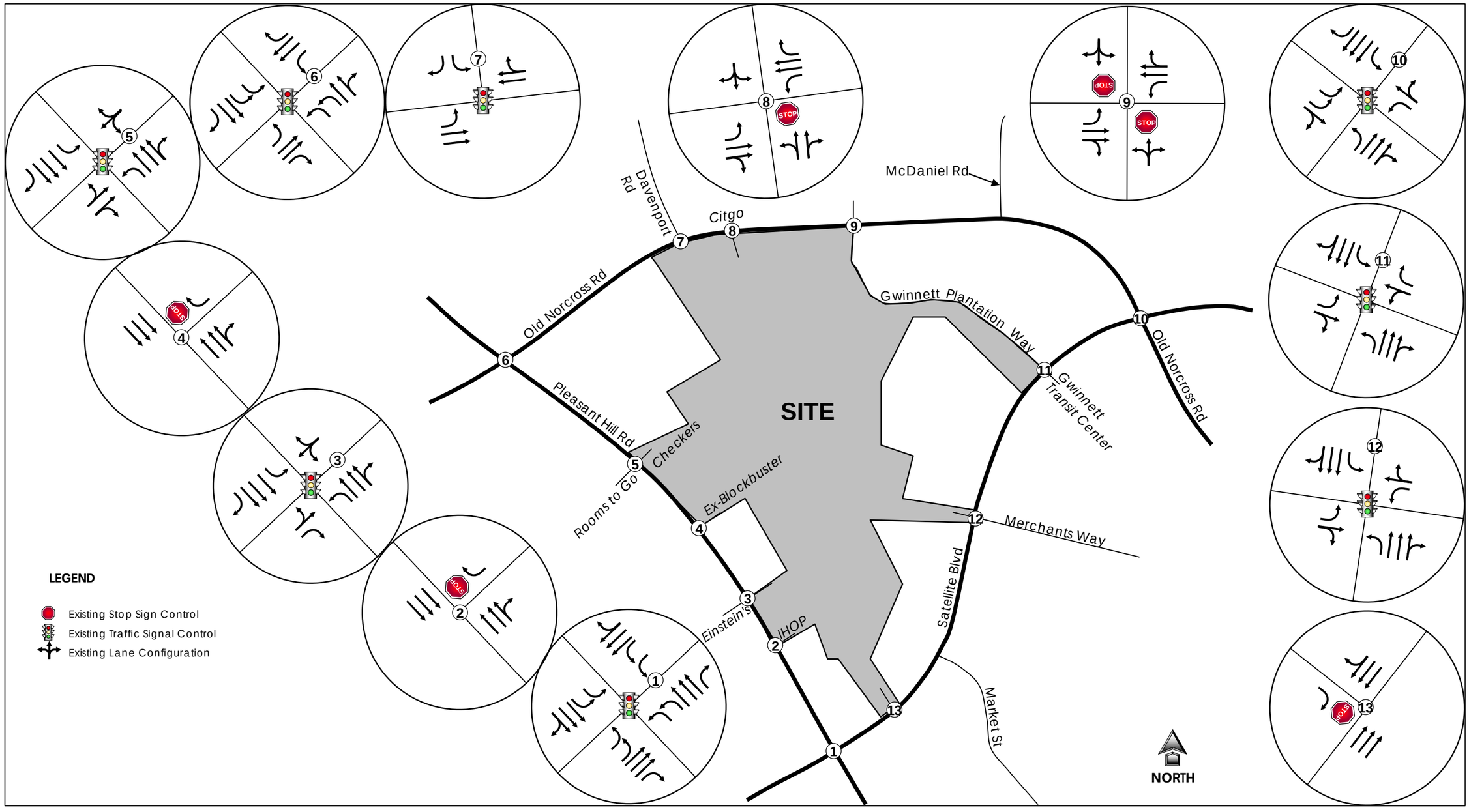
After consultation with GRTA and Gwinnett County, the following intersections were agreed upon for investigation as part of the Traffic Impact Analysis.

- Pleasant Hill Road and Satellite Boulevard (signalized);
- Pleasant Hill Road and IHOP driveway (RIRO);
- Pleasant Hill Road and Einstein's driveway (signalized);
- Pleasant Hill Road and Ex-Blockbuster driveway (RIRO);
- Pleasant Hill Road and Rooms-to-go (signalized);
- Pleasant Hill Road and Old Norcross Road (signalized);
- Old Norcross Road and Davenport Road (signalized);
- Old Norcross Road and Citgo driveway;
- Old Norcross Road and Bally's driveway;
- Satellite Boulevard and Old Norcross Road (signalized);
- Satellite Boulevard and Transit Center (signalized);
- Satellite Boulevard and Merchant's Way (signalized); and
- Satellite Boulevard and Gwinnett Station driveway (RIRO).

After consultation with GRTA and Gwinnett County, it was agreed that no roadway segments would be analyzed.

Figure 3-5 shows the location of the study intersections, and their existing traffic controls and lane configurations.

Figure 3-5. Existing Traffic Controls and Lane Configurations



Existing Roadway Facilities

To determine existing traffic conditions of the identified study roadway segments and study intersections in the area, an inventory was made of the major roads surrounding the Site. For the purposes of this study, Pleasant Hill Road was assumed to run east-west, Satellite Boulevard was assumed to run north-south, and Old Norcross Road was assumed to north-south at Pleasant Hill Road and east-west at Davenport Road and at Satellite Boulevard. The physical and traffic control elements of each of the roadways, as well as other important elements for the study roadways, follows:

- **Pleasant Hill Road** is a six-lane median divided roadway in the vicinity of the site. It serves as an Urban Principal Arterial in the study area, running northwest to Peachtree Industrial Boulevard (and turns into State Bridge Road), and southeast through to US 29 (and turns into Lester Road). Pleasant Hill Road has an interchange with I-85. In the vicinity of the Site, the land uses along Pleasant Hill Road are primarily major commercial (i.e., Gwinnett Place Mall) and retail with some car dealerships in the area.

- **Satellite Boulevard** is a six-lane median divided roadway in the vicinity of the site. It serves as an Urban Collector Street in the study area, running northeast to Lawrenceville-Suwanee Road and beyond, and southwest to Beaver Ruin Road. In the vicinity of the site, the land uses along Satellite Boulevard are primarily major commercial (i.e., Gwinnett Place Mall) and retail and office with some car dealerships in the area.

- **Old Norcross Road** is a five-lane roadway with a two-way left-turn lane in the vicinity of the site. It serves as an Urban Minor Arterial in the study area, running east to Pike Street in Lawrenceville, and west to Buford Highway. In the vicinity of the site, the land uses along Old Norcross Road are major commercial (i.e., Gwinnett Place Mall) and retail, residential subdivisions, office, McDaniel Farm Park, and some car dealerships.

Existing Traffic Volumes

After consultation with GRTA, ARC, and Gwinnett County, it was determined that capacity analyses would be performed for the weekday AM peak hour, the weekday PM peak hour, and the Saturday mid-day peak hour. For these three peak periods, turning movement counts were collected on November 1, 2006 (Wednesday) and November 4, 2006 (Saturday) at the following intersections:

- Pleasant Hill Road and Satellite Boulevard (signalized);
- Pleasant Hill Road and IHOP driveway (RIRO);
- Pleasant Hill Road and Einstein's driveway (signalized);
- Pleasant Hill Road and Ex-Blockbuster driveway (RIRO);
- Pleasant Hill Road and Rooms-to-go (signalized);
- Pleasant Hill Road and Old Norcross Road (signalized);
- Old Norcross Road and Davenport Road (signalized);
- Old Norcross Road and Citgo driveway;
- Old Norcross Road and Bally's driveway;
- Satellite Boulevard and Old Norcross Road (signalized);
- Satellite Boulevard and Transit Center (signalized);
- Satellite Boulevard and Merchant's Way (signalized); and
- Satellite Boulevard and Gwinnett Station driveway (RIRO).

Figure 4-1 shows the existing volumes at the study intersections for the weekday AM peak hour, the weekday PM peak hour, and the Saturday mid-day peak hour.

Programmed Improvements

The local Transportation Improvement Program, the State Transportation Improvement Program, the Regional Transportation Plan, and the Georgia Department of Transportation's Construction Work Program have been researched to determine if there are any proposed transportation improvements, either programmed or planned, that would impact the Site. For identified projects, the opening-to-traffic dates, sponsors, costs of projects, funding sources, and logical termini are usually also identified.

In order to keep up with the increased demand, transportation improvements are continuously being made. As one of Georgia's fastest growing counties, Gwinnett sees many of these improvement projects. One major project that is currently underway is the reconstruction of the interchange of I-85 and State Route 316. The reconstruction will move the SR 316 and I-85 southbound merge from the left side of I-85 across to a collector-distributor system on the right side of I-85 southbound. The primary impact of this project on the study area is that southbound traffic on I-85 bound for the site via Pleasant Hill Road will get off of I-85 in the vicinity of Boggs Road onto the collector-distributor.

In conjunction with local governments, such as Gwinnett County, ARC manages the program of regional transportation improvements in the Atlanta area. Transportation improvements in the vicinity of the site are shown in Figures 4-2 to 4-4.

It should be noted that per discussions with Gwinnett County DOT staff, for Project GW-271, widening of Pleasant Hill Road from four lanes to six lanes will begin in the Year 2008 between Old Norcross Road and US 23, and the segment from US 23 to the Chattahoochee River will occur in the Long Range.

Figure 4-1. Traffic Volumes: Existing

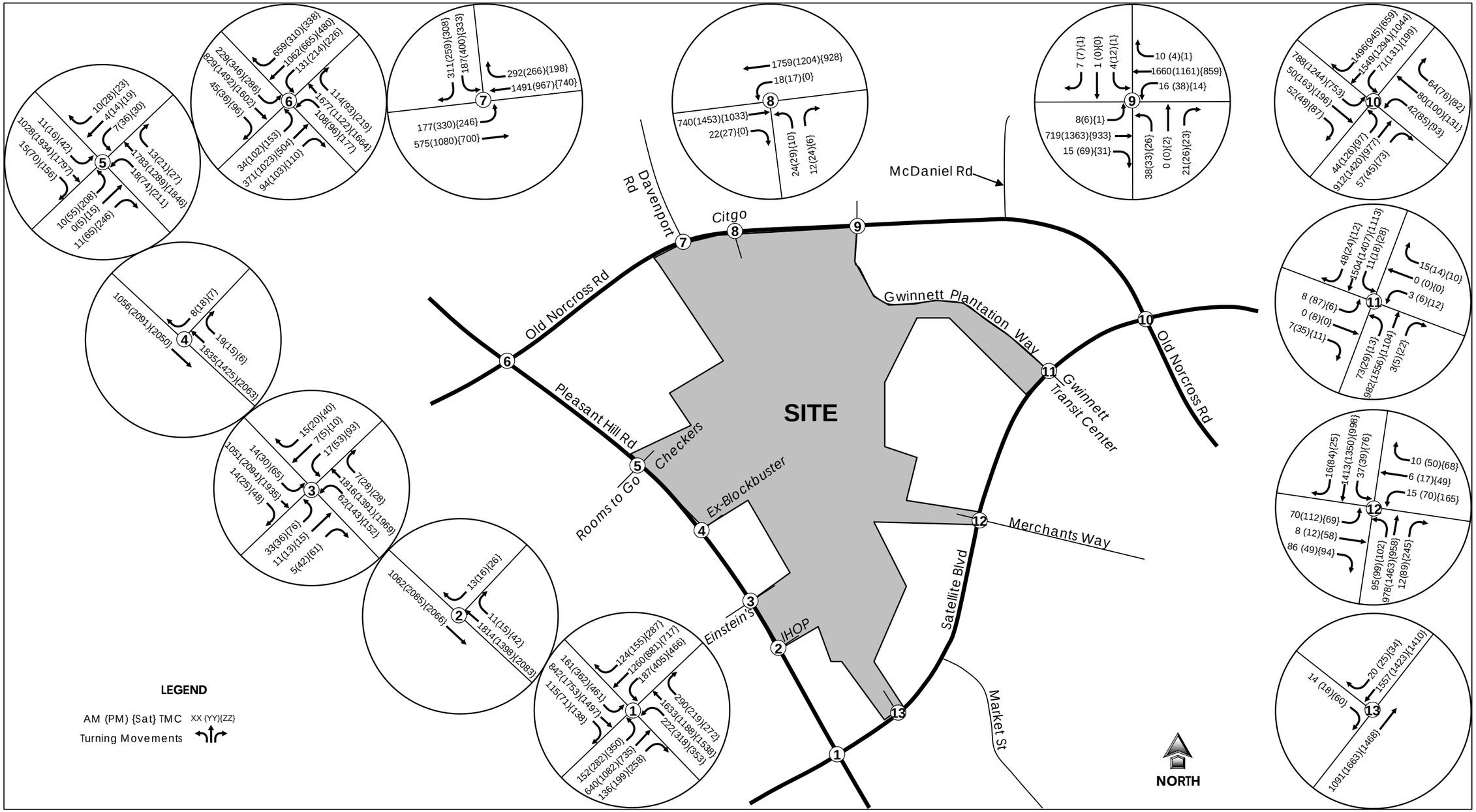


Figure 4-2. RTP GW-271 (Pleasant Hill Road)

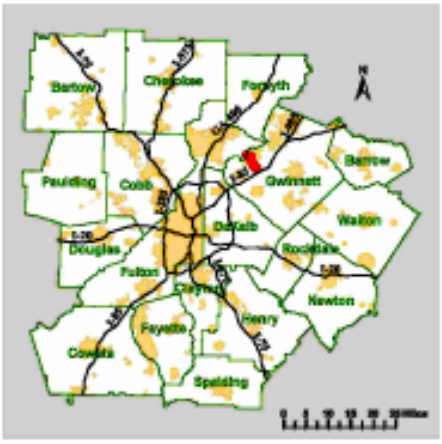
GW-271

Atlanta Region - Mobility 2030 Regional Transportation Plan

PROJECT FACT SHEET

PROJECT DEFINITION

Short Title	PLEASANT HILL ROAD FROM OLD NORCROSS ROAD TO CHATTAHOOCHEE RIVER
GDOT Project No.	0006922
Status	Programmed
Detailed Description and Justification	This project consists of widening 3.6 miles of Pleasant Hill Road from Old Norcross Road to Chattahoochee River from a 5 lane road to a 6 lane divided highway with raised median and turn lanes. The project will include pedstrain facilities and multi use path. It will also include intersection improvements at Old Norcross, Steve Reynolds, North Berkerly Lake Rd, McClure Bridge Road, and Peachtree Industrial Blvd.
Service Type	Roadway Capacity
Sponsor	Gwinnett County
Jurisdiction	Gwinnett County
Completion Date	2026
Existing Thru Lane	4 *(applicable for roadway projects only)*
Planned Thru Lane	6 *(applicable for roadway projects only)*
Corridor Length	3.57 miles *(not applicable for all project types)*
Network Year	2030 *(required if modeled for conformity)*
Analysis Level	In the Region's Air Quality Conformity Analysis



PLANNING AND IMPLEMENTATION DETAILS

Total Funding Commitment	$26,000,000
Funded in Current TIP	$26,000,000 *(see table below for details)*
Primary Funding Source	FEDAID - 2011-2030

Phase Status and Funding Information for 05-10 TIP

	FISCAL YEAR	TOTAL PHASE COST	BREAKDOWN OF TOTAL PHASE COST BY FUNDING SOURCE			
			FEDERAL	STATE	BOND	LOCAL/OTHER
Preliminary Engineering / Design / Study (Year 1)	2005	$1,500,000	$0	$0	$0	$1,500,000
Preliminary Engineering / Design / Study (Year 2)		$0	$0	$0	$0	$0
Preliminary Engineering / Design / Study (Year 3)		$0	$0	$0	$0	$0
Right-of-way Acquisition	LR 2011-2020	$3,500,000	$2,800,000	$0	$0	$700,000
Construction / Implementation (Year 1)	LR 2021-2030	$21,000,000	$16,800,000	$0	$0	$4,200,000
Construction / Implementation (Year 2)		$0	$0	$0	$0	$0
Construction / Implementation (Year 3)		$0	$0	$0	$0	$0

? All projects listed are contained in the Mobility 2030 Regional Transportation Plan. Some or all may also be included in the FY 2005-2010 Transportation Improvement Program. For additional information about this project, please visit the Atlanta Regional Commission at www.atlantaregional.com or call (404) 463-3100.

ARC

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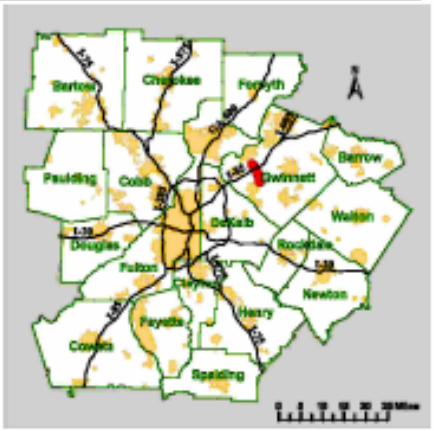
Figure 4-3 RTP GW-302 (Pleasant Hill Road)

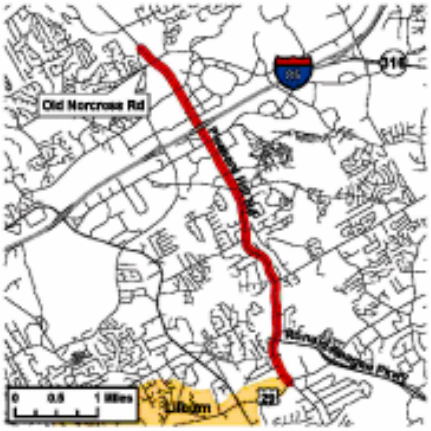
GW-302 — Atlanta Region - Mobility 2030 Regional Transportation Plan

PROJECT FACT SHEET

PROJECT DEFINITION

Short Title	PLEASANT HILL ROAD ATMS FROM US 29 (LAWRENCEVILLE HIGHWAY) TO STEVE REYNOLDS BOULVARD
GDOT Project No.	0006827
Status	Programmed
Detailed Description and Justification	The proposed project is the expansion of Gwinnett County's ITS/ATMS infrastructure on Pleasant Hill Rd. The project will consist of installing new fiber optic cable along the corridor from Steve Reynolds Blvd. northwest to Fulton County Line. This will connect with existing fiber optic cable trunk line from Gwinnett Place Mall area to US 29 (Lawrenceville Hwy).
Service Type	ITS-Smart Corridor
Sponsor	Gwinnett County
Jurisdiction	Gwinnett County
Completion Date	2011
Existing Thru Lane	N/A *(applicable for roadway projects only)*
Planned Thru Lane	N/A *(applicable for roadway projects only)*
Corridor Length	5 miles *(not applicable for all project types)*
Network Year	2015 *(required if modeled for conformity)*
Analysis Level	Exempt from Air Quality Analysis (40 CFR 93)





PLANNING AND IMPLEMENTATION DETAILS

Total Funding Commitment	$498,750
Funded in Current TIP	$498,750 *(see table below for details)*
Primary Funding Source	Q23 - Surface Transportation Program

Phase Status and Funding Information for 05-10 TIP

	FISCAL YEAR	TOTAL PHASE COST	BREAKDOWN OF TOTAL PHASE COST BY FUNDING SOURCE: FEDERAL	STATE	BOND	LOCAL/OTHER
Preliminary Engineering / Design / Study (Year 1)	2009	$78,750	$0	$0	$0	$78,750
Preliminary Engineering / Design / Study (Year 2)		$0	$0	$0	$0	$0
Preliminary Engineering / Design / Study (Year 3)		$0	$0	$0	$0	$0
Right-of-way Acquisition		$0	$0	$0	$0	$0
Construction / Implementation (Year 1)	2010	$420,000	$336,000	$0	$0	$84,000
Construction / Implementation (Year 2)		$0	$0	$0	$0	$0
Construction / Implementation (Year 3)		$0	$0	$0	$0	$0

? All projects listed are contained in the Mobility 2030 Regional Transportation Plan. Some or all may also be included in the FY 2006-2010 Transportation Improvement Program. For additional information about this project, please visit the Atlanta Regional Commission at www.atlantaregional.com or call (404) 463-3100.

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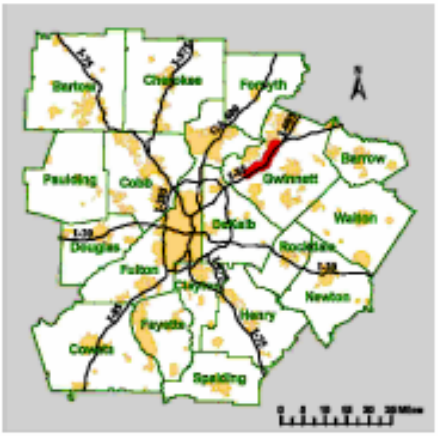
Figure 4-4. RTP GW-303 (Satellite Boulevard)

GW-303 — Atlanta Region - Mobility 2030 Regional Transportation Plan

PROJECT FACT SHEET

PROJECT DEFINITION

Short Title	SATELLITE BOULEVARD ATMS FROM SR 378 (BEAVER RUIN ROAD) TO SR 317 (LAWRENCEVILLE SUWANEE ROAD)
GDOT Project No.	0006828
Status	Programmed
Detailed Description and Justification	The proposed project is the expansion of Gwinnett County's ITS/ATMS infrastructure on Sattelite Bvld. The project will consist of installing new fiber optic cable along the corridor from SR 378 (Beaver Ruin Rd.) to SR 317 (Lawrenceville-Suwanee Road). This will connect with proposed fiber optic cable trunk line to the south along Beaver Ruin Rd. (SR 378) and north along Lawrenceville-Suwanee Rd. (SR 317).



Service Type	ITS-Smart Corridor	
Sponsor	Gwinnett County	
Jurisdiction	Gwinnett County	
Completion Date	2009	
Existing Thru Lane	N/A	*(applicable for roadway projects only)*
Planned Thru Lane	N/A	*(applicable for roadway projects only)*
Corridor Length	10	miles *(not applicable for all project types)*
Network Year	2010	*(required if modeled for conformity)*
Analysis Level	Exempt from Air Quality Analysis (40 CFR 93)	

PLANNING AND IMPLEMENTATION DETAILS

Total Funding Commitment	$2,734,350
Funded in Current TIP	$2,734,350 *(see table below for details)*
Primary Funding Source	Q23 - Surface Transportation Program

Phase Status and Funding Information for 05-10 TIP

	FISCAL YEAR	TOTAL PHASE COST	BREAKDOWN OF TOTAL PHASE COST BY FUNDING SOURCE: FEDERAL	STATE	BOND	LOCAL/OTHER
Preliminary Engineering / Design / Study (Year 1)	2006	$166,350	$0	$0	$0	$166,350
Preliminary Engineering / Design / Study (Year 2)		$0	$0	$0	$0	$0
Preliminary Engineering / Design / Study (Year 3)		$0	$0	$0	$0	$0
Right-of-way Acquisition		$0	$0	$0	$0	$0
Construction / Implementation (Year 1)	2008	$2,568,000	$2,054,400	$0	$0	$513,600
Construction / Implementation (Year 2)		$0	$0	$0	$0	$0
Construction / Implementation (Year 3)		$0	$0	$0	$0	$0

? All projects listed are contained in the Mobility 2030 Regional Transportation Plan. Some or all may also be included in the FY 2006-2010 Transportation Improvement Program. For additional information about this project, please visit the Atlanta Regional Commission at www.atlantaregional.com or call (404) 463-3100.

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It is important at this juncture to distinguish between "required" improvements, and "programmed" improvements. "Required" improvements are those that are necessary to support the Existing or Future conditions. That is, they are improvements required to improve the projected Level of Service back to (or better than) the LOS Standard. "Programmed" improvements are those improvements that have been proposed, planned for, and programmed for implementation (most often by a governmental agency). "Programmed" improvements generally already have an identified sponsoring agency, a funding source, a programmed amount of funds for implementation, and a scheduled or projected date for construction and opening to traffic. "Required" improvements and "programmed" improvements may be very similar, or very different.

Capacity Analysis Methodology

Level of Service Standards

Operating conditions at intersections are evaluated in terms of Levels of Service (LOS).

Levels of Service A through E are generally considered to be adequate peak hour operations. LOS F is generally considered an inadequate peak hour condition. However, for the GRTA DRI process, Gwinnett County's LOS Standards for the roadways in the Study Area are assumed to be LOS D. That is, LOS D is the Standard for Arterial Thoroughfares, Major and Minor Thoroughfares, and Collectors (this is an unofficial standard, or default standard, as Gwinnett County has not yet officially adopted LOS Standards for the GRTA Review Process). This Standard means that it is desirable, after new development has been put in place, that no less than a LOS D be maintained. However, GRTA accepts exceptions to this guideline. For example, if the LOS at a specific location degrades to LOS E when existing traffic is considered, then GRTA finds as acceptable, after background traffic, and again after the Site's traffic has also been added to the specific location, a return to LOS E.

Intersection Capacity Analysis Methodology

Capacity analyses of the study intersections were completed using procedures in the *Highway Capacity Manual (HCM), Millennium Edition*. This is the usual methodology for the analysis of traffic conditions. The software program *Synchro 6* (a nationally recognized computer software package for analyzing capacities and Levels of Service) was used to perform the capacity analyses for the study intersections.

Levels of Service for signalized intersections are reported in composite fashion, i.e., one LOS for the entire intersection, and are presented in terms of average control delay. Individual turning movements at signalized intersections may experience inadequate LOS, particularly where those volumes are relatively low, while the intersection as a whole has an adequate LOS. This is because the major movements on the major roadway are given priority in assigning signal green time.

Traffic conditions at unsignalized intersections, with stop sign control on the minor street only, are evaluated for the minor street approach(es) and for the left turns from the major street. This is because the major street traffic is assumed to have no delay since there is no control (no stop sign). Inadequate Levels of Service for minor street approaches to unsignalized intersections are not uncommon, as the continuous flow traffic will always get the priority.

Levels of Service for all-way STOP controlled intersections are reported both for study intersection movements, and in composite fashion, i.e., one LOS for the entire intersection, and are based on average control delay.

The *Highway Capacity Manual* Level of Service criteria for signalized and unsignalized intersections are shown in Table 4-1A.

Table 4-1a. Highway Capacity Manual Intersection LOS Criteria

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

Source: Highway Capacity Manual, Millennium Edition.

For two-way stop controlled intersections, the *Highway Capacity Manual* does not calculate a composite Level of Service for the entire intersection. For this reason, the Intersection Capacity Utilization (ICU) method was used to show the intersection LOS. The ICU output is analogous to the intersection volume to capacity ratio. This is different from the methodology used for HCM LOS. The ICU LOS provides a valuable measure of the difference in LOS expected under different traffic volume and lane configuration scenarios for the entire intersection under unsignalized conditions. The ICU LOS criteria for the overall intersection for two-way stop controlled intersections are shown in Table 4-1B.

Table 4-1b. Intersection Capacity Utilization LOS Criteria

Level of Service	Intersection Capacity Utilization
A	0% to 55%
B	>55% to 64%
C	>64% to 73%
D	>73% to 82%
E	>82% to 91%
F	>91%

Source: based upon Synchro 6.

The Intersection Capacity Utilization Level of Service was reported for only the overall intersection LOS for two-way stop controlled intersections. The *Highway Capacity Manual* LOS is reported for the individual movements for two-way stop controlled intersections. All other LOS reported in this study are the HCM LOS.

Intersection Capacity Analysis – Existing Conditions

Using the methodologies previously described, intersection Levels of Service were determined for the study intersections for Existing conditions. It should be noted that the following parameters were incorporated into the analysis, where applicable: existing signal timings; peak hour factors; heavy vehicle percentages; approach grade; bus blockages; pedestrian traffic; and, lane widths.

Existing Traffic Controls & Lane Configurations

Table 4-2 presents the results of the intersection capacity analysis for Existing conditions. Printouts of these analyses are included in the Appendix.

As can be seen from Table 4-2, all of the movements, and all of the overall intersection operations, function at adequate Levels of Service of "D" or better for Existing conditions, except at the following locations:

- Pleasant Hill Road at Satellite Boulevard;
- Pleasant Hill Road at Old Norcross Road; and
- Old Norcross Road at Satellite Boulevard.

It should be noted that the unsignalized driveways of Citgo (ID#8) and Bally's (ID#9) on Old Norcross Road likely operate better than their indicated Levels of Service. There are traffic signals located upstream and downstream on Old Norcross Road which help to create gaps in the mainline traffic. Further, there are minimal volumes on the minor street during the peak hours of traffic. Moreover, these driveways on the subject site will be removed

upon approval and construction of Atlanta Global Station.

Required Improvements – Existing Conditions

Table 4-2 identifies deficiencies that already exist at the study intersections. Improvements have been identified, that if implemented immediately, could correct the Existing deficiencies and achieve LOS "D". Their impacts on the Existing deficiencies are also shown in Table 4-2.

Table 4-2. Intersection LOS: Existing Conditions

ID	Intersection	Improvement	Control	Movement	Weekday AM Peak Hr LOS	Weekday AM Peak Hr Delay (s)	Weekday PM Peak Hr LOS	Weekday PM Peak Hr Delay (s)	Weekend Saturday Peak Hr LOS	Weekend Saturday Peak Hr Delay (s)
1	Pleasant Hill Rd @ Satellite Blvd	n/a	Signal	n/a	D	49.9	E	76.2	E	70.2
		Optimize Splits / Add 2 x "T" for EB & WB / Add "T" for NB & SB / Add EB & SB "R"	Signal	n/a	D	50.4	D	53.0	D	54.8
2	Pleasant Hill Rd @ IHOP Dwy	n/a	Stop Sign	SB R	B	13.8	B	12.1	C	16.3
				Overall*	A	N/A	A	N/A	A	N/A
3	Pleasant Hill Rd @ Einsteins Dwy	n/a	Signal	n/a	A	8.1	B	16.0	C	25.0
4	Pleasant Hill Rd @ Ex-Blockbuster Dwy	n/a	Stop Sign	SB R	B	14.0	B	12.6	C	15.1
				Overall*	A	N/A	A	N/A	A	N/A
5	Pleasant Hill Rd @ Rooms-to-go Dwy	n/a	Signal	n/a	A	9.1	B	16.0	C	33.9
6	Pleasant Hill Rd @ Old Norcross Rd	n/a	Signal	n/a	F	126.0	F	105.7	F	102.9
		Optimize Splits / Add 2x EB "T" & 2x WB "T" / Add SB "L"	Signal	n/a	D	42.8	D	54.8	D	54.8
7	Old Norcross Rd @ Davenport Rd	n/a	Signal	n/a	C	30.9	D	45.4	D	44.1
8	Old Norcross Rd @ Citgo Dwy**	n/a	Stop Sign	NB	E	42.3	F	52.7	A	0.0
				SB	A	0.0	A	0.0	C	20.7
				EB L	A	0.0	A	0.0	A	0.0
				WB L	B	10.1	C	15.7	A	0.0
				Overall*	B	N/A	A	N/A	A	N/A
9	Old Norcross Rd @ Bally's Dwy**	n/a	Stop Sign	NB	D	31.2	F	62.1	C	21.0
				SB	E	42.4	E	35.0	C	17.3
				EB L	C	16.6	B	11.5	A	9.8
				WB L	A	9.5	C	15.3	B	10.5
				Overall*	B	N/A	A	N/A	A	N/A
10	Old Norcross Rd @ Satellite Blvd	n/a	Signal	n/a	E	60.5	E	64.7	C	31.7
		Optimize Splits / Add EB "L" / Add SB "T"	Signal	n/a	D	54.7	C	32.9	C	26.2
11	Satellite Blvd @ Transit Center	n/a	Signal	n/a	A	5.1	A	5.4	A	2.2
12	Satellite Blvd @ Merchants Way	n/a	Signal	n/a	A	6.2	B	16.5	C	22.0
13	Satellite Blvd @ Gwinnett Station	n/a	Stop Sign	EB R	B	13.4	B	12.8	B	13.2
				Overall*	A	N/A	A	N/A	A	N/A

*ICU LOS

**These driveways likely operate better than shown due to upstream and downstream signals. Also, these driveways will be closed considering the Site Plan.

As can be seen from Table 4-2, the following required improvements are expected to bring the intersections up to Levels of Service "D" for Existing conditions. Figure 4-5 also shows the lane configurations and traffic control that would be required to mitigate the Existing deficiencies.

- Pleasant Hill Road at Satellite Boulevard (ID #1) – Add (2) through lanes on the eastbound and westbound approaches on Pleasant Hill Road along with receiving lanes / Add (1) through lane on the northbound and southbound approaches on Satellite Boulevard along with receiving lanes / Add (1) right-turn lane on the eastbound and southbound approaches / Optimize the traffic signal timing splits, while maintaining signal coordination with other traffic signals in the transportation

network.

- Pleasant Hill Road at Old Norcross Road (ID #6) – Add (2) through lanes on the eastbound and westbound approaches on Pleasant Hill Road along with receiving lanes (it is important to note that (1) through lane on the eastbound and westbound approaches on Pleasant Hill Road is scheduled for construction in the Year 2008 per the TIP GW-271) / Add (1) southbound left-turn lane on Old Norcross Road / Optimize the traffic signal timing splits, while maintaining signal coordination with other traffic signals in the transportation network.

- Satellite Boulevard at Old Norcross Road (ID #10) – Add (1) eastbound left-turn lane on Old Norcross Road / Add (1) southbound through lane on Satellite Boulevard along with a receiving lane / Optimize the traffic signal timing splits, while maintaining signal coordination with other traffic signals in the transportation network.

Calculated Level of Service Standards

Based upon the results of the analysis of the Existing conditions, Table 4-3 presents the calculated Level of Service Standards, per GRTA requirements, for intersections that must be met when considering Existing Build, Future No-Build, and Future Build conditions.

Table 4-3. Calculated Intersection LOS Standards

ID	Intersection	Control	Movement	Weekday		Weekend
				AM Peak Hr LOS	PM Peak Hr LOS	Saturday Peak Hr LOS
1	Pleasant Hill Rd @ Satellite Blvd	Signal	n/a	D	E	E
2	Pleasant Hill Rd @ IHOP Dwy	Stop Sign	SB R	D	D	D
			Overall*	D	D	D
3	Pleasant Hill Rd @ Einsteins Dwy	Signal	n/a	D	D	D
4	Pleasant Hill Rd @ Ex-Blockbuster Dwy	Stop Sign	SB R	D	D	D
			Overall*	D	D	D
5	Pleasant Hill Rd @ Rooms-to-go Dwy	Signal	n/a	D	D	D
6	Pleasant Hill Rd @ Old Norcross Rd	Signal	n/a	E	E	E
7	Old Norcorss Rd @ Davenport Rd	Signal	n/a	D	D	D
8	Old Norcross Rd @ Citgo Dwy	Stop Sign	NB	E	E	D
			SB	D	D	D
			EB L	D	D	D
			WB L	D	D	D
			Overall*	D	D	D
9	Old Norcross Rd @ Bally's Dwy	Stop Sign	NB	D	E	D
			SB	E	E	D
			EB L	D	D	D
			WB L	D	D	D
			Overall*	D	D	D
10	Old Norcorss Rd @ Satellite Blvd	Signal	n/a	E	E	D
11	Satellite Blvd @ Transit Center	Signal	n/a	D	D	D
12	Satellite Blvd @ Merchants Way	Signal	n/a	D	D	D
13	Satellite Blvd @ Gwinnett Station	Stop Sign	EB R	D	D	D
			Overall*	D	D	D

*ICU LOS

Intersection Capacity Analysis – Existing Build Conditions

The projected site volumes were added to the existing volumes to develop Existing Build Volumes (per Gwinnett DOT requirements). These volumes are shown in Figures 4-6a and 4-6b.

Using the methodologies previously described, intersection Levels of Service were determined for the study intersections for Existing Build traffic conditions (per Gwinnett County requirements). The study intersections were analyzed against the Levels of Service thresholds show in Table 4-3. It should be noted that the following parameters were incorporated into the analysis where applicable: existing signal timings; peak hour factors; heavy vehicle percentages; approach grade; bus blockages; pedestrian traffic; and lane widths.

Existing Traffic Controls & Lane Configurations – Existing Build Conditions

Tables 4-4a and 4-4b presents the results of the intersection capacity analysis for Existing Build conditions assuming inbound conference center traffic and Existing Build conditions assuming outbound conference center traffic, respectively. Printouts of these analyses are included in the Appendix.

Table 4-4a. Intersection LOS: Existing Build (with inbound Conference traffic)

ID	Intersection	Improvement	Control	Movement	Weekday				Weekend	
					AM Peak Hr		PM Peak Hr		Saturday Peak Hr	
					LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)
1	Pleasant Hill Rd @ Satellite Blvd	n/a	Signal	n/a	F	99.7	F	139.7	F	138.0
		Optimize Splits / Add 2 x "T" for EB & WB / Add "T" for NB & SB / Add EB & SB "R"	Signal	n/a	D	55.0	E	71.6	E	70.1
2	Pleasant Hill Rd @ IHOP Dwy	n/a	Stop Sign	SB R	C	17.9	C	15.7	C	20.3
				Overall*	B	N/A	B	N/A	C	N/A
3	Pleasant Hill Rd @ Einsteins Dwy	n/a	Signal	n/a	B	16.7	F	146.3	E	70.7
		Optimize Splits / Add SB "L" / Add WB "R"	Signal	n/a	B	12.5	D	54.8	D	51.7
4	Pleasant Hill Rd @ Ex-Blockbuster Dwy	n/a	Stop Sign	SB R	B	14.9	C	16.6	C	19.2
				Overall*	A	N/A	A	N/A	B	N/A
5	Pleasant Hill Rd @ Rooms-to-go Dwy	n/a	Signal	n/a	C	20.3	B	16.4	C	31.1
6	Pleasant Hill Rd @ Old Norcross Rd	n/a	Signal	n/a	F	128.7	F	122.0	F	123.6
		Optimize Splits / Add EB & WB "T"	Signal	n/a	E	68.1	E	71.8	E	68.5
7	Old Norcross Rd @ Davenport Rd	Optimize Splits / Add new NB Approach	Signal	n/a	D	51.8	D	50.8	D	50.6
10	Old Norcross Rd @ Satellite Blvd	n/a	Signal	n/a	E	71.6	F	127.1	C	33.4
		Optimize Splits	Signal	n/a	E	71.6	E	66.4	D	37.4
11	Satellite Blvd @ Transit Center	n/a	Signal	n/a	A	8.7	A	3.8	A	5.7
12	Satellite Blvd @ Merchants Way	n/a	Signal	n/a	C	30.1	F	136.6	F	89.0
		Optimize Splits	Signal	n/a	C	32.2	C	24.0	C	31.3
13	Satellite Blvd @ Gwinnett Station	n/a	Stop Sign	EB R	B	13.7	C	15.8	B	13.8
				Overall*	A	N/A	A	N/A	A	N/A

*ICU LOS

Figure 4-5. Required Improvements: Existing Conditions

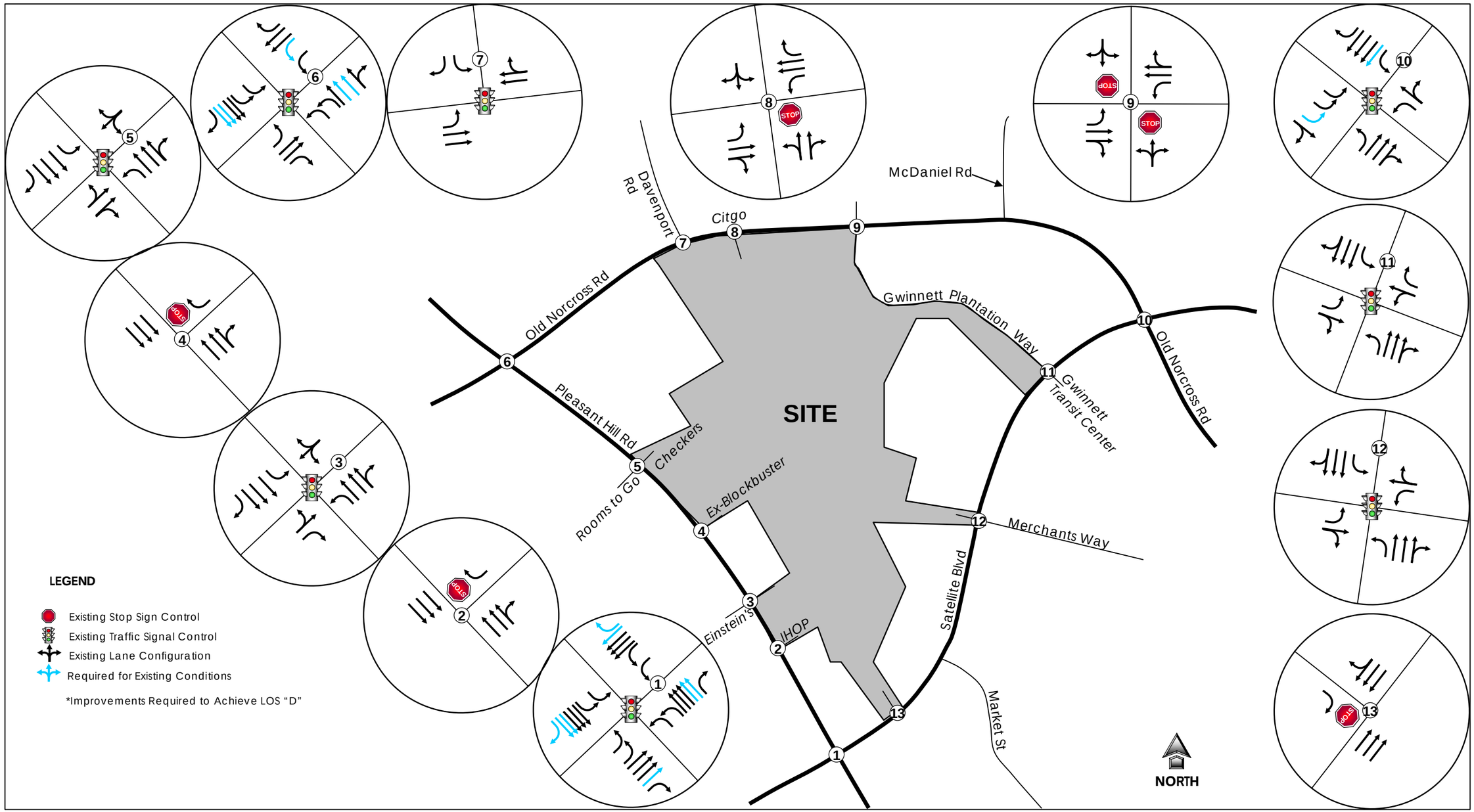


Figure 4-6a. Existing Build Volumes with Inbound Conference Traffic

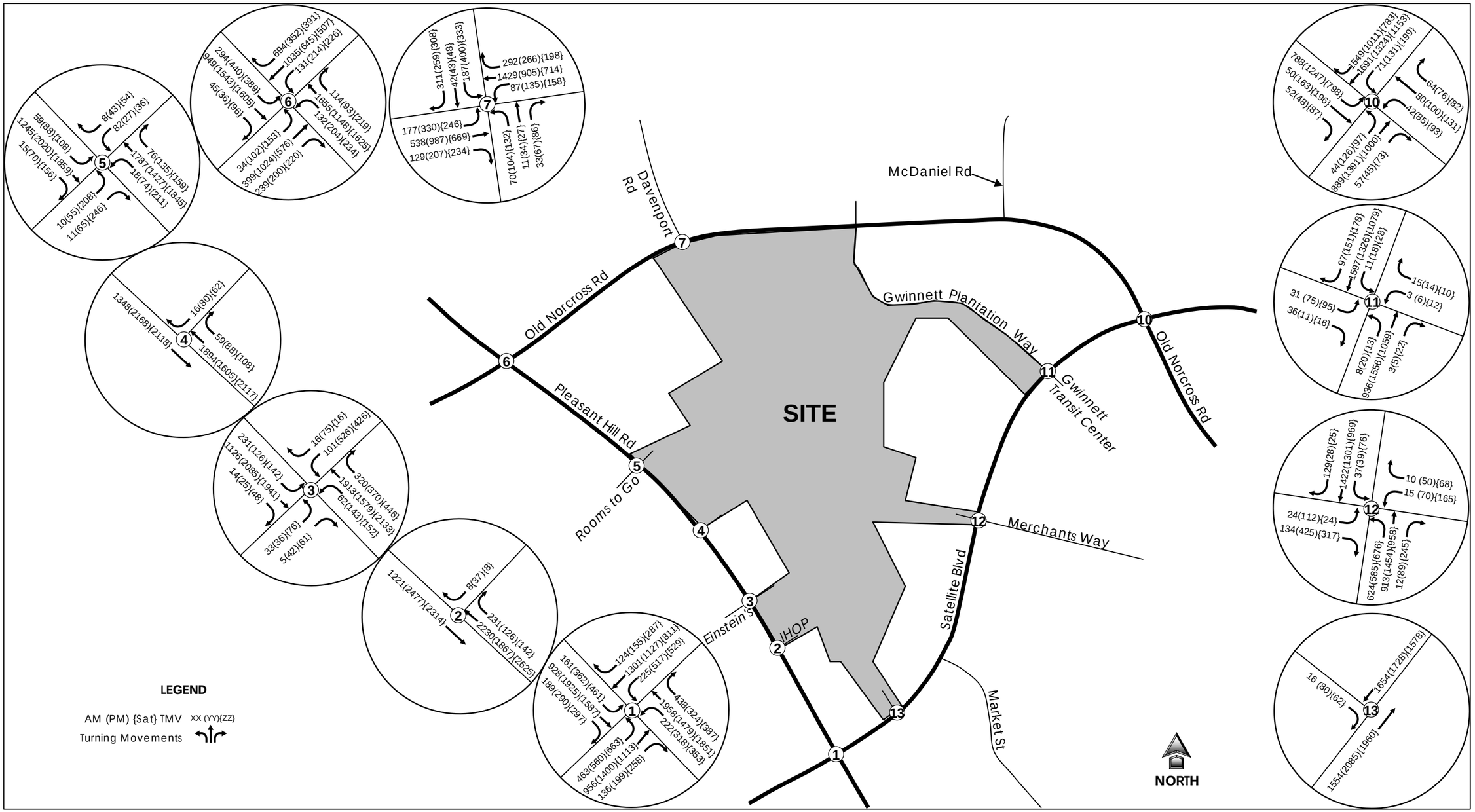


Figure 4-6b. Existing Build Volumes with Outbound Conference Traffic

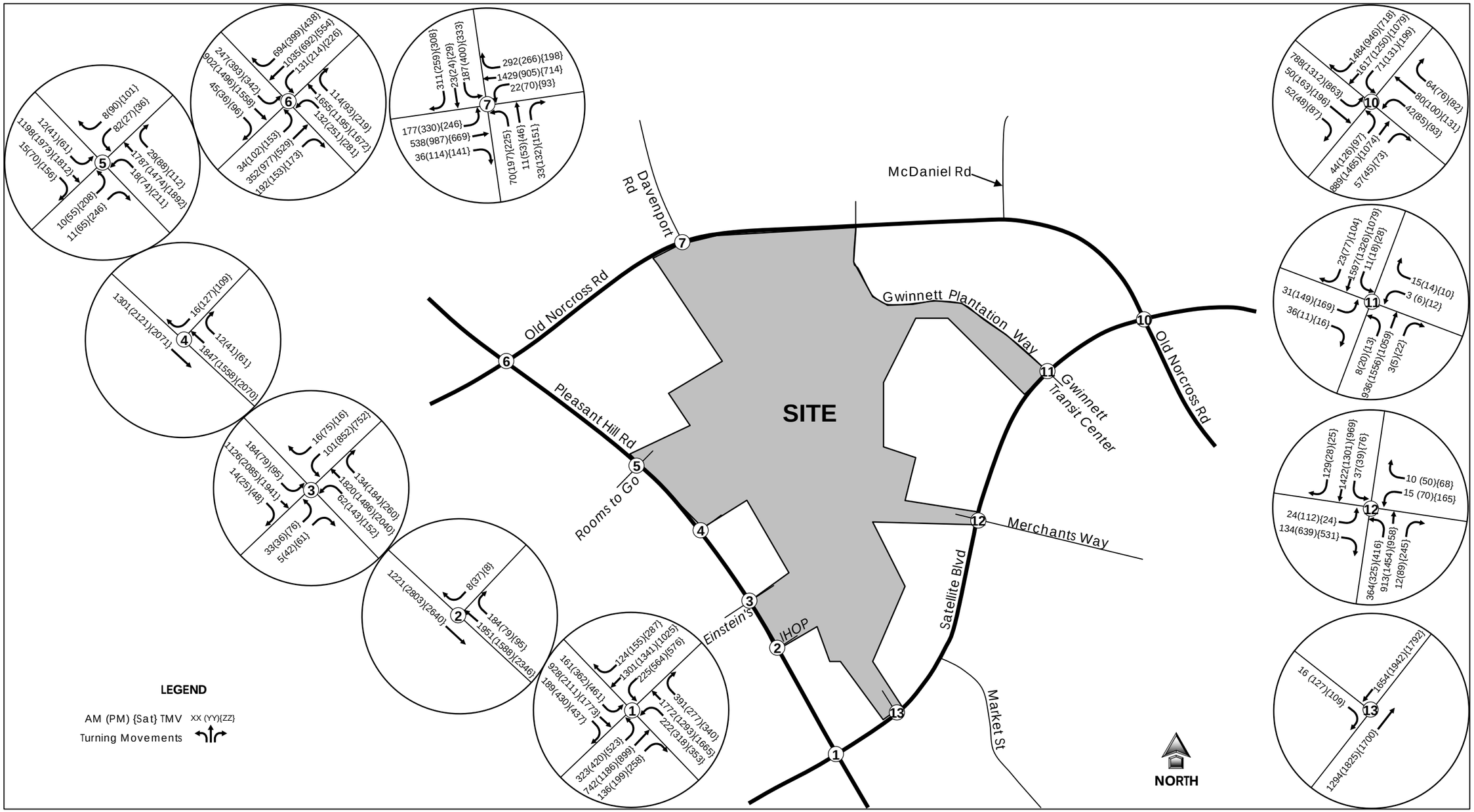


Table 4-4b. Intersection LOS: Existing Build (with outbound Conference traffic)

ID	Intersection	Improvement	Control	Movement	Weekday AM Peak Hr LOS	Weekday AM Peak Hr Delay (s)	Weekday PM Peak Hr LOS	Weekday PM Peak Hr Delay (s)	Weekend Saturday Peak Hr LOS	Weekend Saturday Peak Hr Delay (s)
1	Pleasant Hill Rd @ Satellite Blvd	n/a	Signal	n/a	E	72.9	F	165.5	F	136.4
		Optimize Splits / Add 2 x "T" for EB & WB / Add "T" for NB & SB / Add EB & SB "R"	Signal	n/a	D	46.3	E	74.4	E	70.7
2	Pleasant Hill Rd @ IHOP Dwy	n/a	Stop Sign	SB R	C	15.7	B	13.7	C	17.6
				Overall*	A	N/A	C	N/A	B	N/A
3	Pleasant Hill Rd @ Einsteins Dwy	n/a	Signal	n/a	B	13.9	F	356.7	F	142.7
		Optimize Splits / Add 2 x SB "L" / Add WB "R"	Signal	n/a	B	16.3	D	54.3	D	54.6
4	Pleasant Hill Rd @ Ex-Blockbuster Dwy	n/a	Stop Sign	SB R	B	14.3	C	18.4	C	21.4
				Overall*	A	N/A	A	N/A	B	N/A
5	Pleasant Hill Rd @ Rooms-to-go Dwy	n/a	Signal	n/a	B	19.1	B	17.0	C	34.3
6	Pleasant Hill Rd @ Old Norcross Rd	n/a	Signal	n/a	F	126.6	F	118.9	F	130.7
		Optimize Splits / Add EB & WB "T"	Signal	n/a	E	62.0	E	68.0	D	54.9
7	Old Norcross Rd @ Davenport Rd	Optimize Splits / Add new NB Approach	Signal	n/a	D	48.8	D	54.0	D	50.5
10	Old Norcross Rd @ Satellite Blvd	n/a	Signal	n/a	E	61.9	F	142.5	D	50.2
		Optimize Splits	Signal	n/a	E	61.5	E	72.5	D	39.0
11	Satellite Blvd @ Transit Center	n/a	Signal	n/a	A	7.6	A	8.3	A	8.9
12	Satellite Blvd @ Merchants Way	n/a	Signal	n/a	B	19.8	F	100.3	E	67.7
		Optimize Splits	Signal	n/a	C	20.5	D	53.1	C	34.2
13	Satellite Blvd @ Gwinnett Station	n/a	Stop Sign	EB R	B	13.7	C	20.0	C	16.6
				Overall*	A	N/A	A	N/A	A	N/A

*ICU LOS

As can be seen from Tables 4-4a and 4-4b, all of the movements, and all of the overall intersection operations, function at or better than the Calculated Levels of Service Standards (see Table 4-3) for Existing Build conditions, except at the following locations:

- Pleasant Hill Road at Satellite Boulevard;
- Pleasant Hill Road at Site Access/Einstein's Driveway;
- Pleasant Hill Road at Old Norcross Road;
- Old Norcross Road at Site Access/Davenport Road;
- Old Norcross Road at Satellite Boulevard; and
- Satellite Boulevard at Merchants Way.

Required Improvements – Existing Build Conditions

Tables 4-4a and 4-4b identifies deficiencies that would exist at the study intersections under Existing Build traffic conditions. Improvements have been identified, that if implemented, could correct the Existing Build deficiencies.

As can be seen from Tables 4-4a and 4-4b, the following required improvements are expected to bring the intersections back into adequacy for Existing Build traffic conditions (note that the only difference between the inbound and outbound conference center traffic scenarios is the dual southbound left-turns required at Site Access/Einstein's and Pleasant Hill Road (ID#3) for the outbound conference center traffic scenario):

- Pleasant Hill Road at Satellite Boulevard (ID #1) – Add (2) through lanes on the eastbound and westbound approaches on Pleasant Hill Road along with receiving lanes / Add (1) through lane on the northbound and southbound approaches on Satellite Boulevard along with receiving lanes / Add (1) right-turn lane on the eastbound and southbound approaches / Optimize the traffic signal timing splits, while maintaining signal coordination with other traffic signals in the transportation network.

- Pleasant Hill Road at Site Access (across from "Einstein's Driveway") (ID #3) – Add (1) westbound right-turn lane on Pleasant Hill Road / Add (2) southbound left-turn lanes on the Site Access with Protected signal phasing / Optimize the traffic signal timing splits, while maintaining signal coordination with other traffic signals in the transportation network.

- Pleasant Hill Road at Old Norcross Road (ID #6) – Add (1) through lane on the eastbound and westbound approaches on Pleasant Hill Road along with receiving lanes (it is important to note that (1) through lane on the eastbound and westbound approaches on Pleasant Hill Road is scheduled for construction in the Year 2008 per the TIP GW-271) / Optimize the traffic signal timing splits, while maintaining signal coordination with other traffic signals in the transportation network.

- Pleasant Hill Road at Site Access (across from "Davenport Road") (ID #7) – Add (1) northbound left-turn lane, (1) northbound through lane, and (1) northbound right-turn lane on the Site Access / Add (1) eastbound right-turn lane on Old Norcross Road / Re-stripe the exclusive right turn lane on the southbound approach on Davenport Road from a right-turn lane to a shared through-right lane / Re-stripe the center lane on Old Norcross Road to a westbound left-turn lane / Optimize the traffic signal timing splits, while maintaining signal coordination with other traffic signals in the transportation network.

- Satellite Boulevard at Old Norcross Road (ID #10) – Optimize the traffic signal timing splits, while maintaining signal coordination with other traffic signals in the transportation network.

- Satellite Boulevard at Merchants Way (ID #12) – Optimize the traffic signal timing splits, while maintaining signal coordination with other traffic signals in the transportation network.

Figures 4-7a and 4-7b shows the lane configurations and traffic control that would be required to mitigate the Existing Build (with inbound conference center traffic) and Existing Build (with outbound conference center traffic) deficiencies, respectively.

Figure 4-7a. Required Improvements: Existing Build Conditions (with inbound conference center traffic)

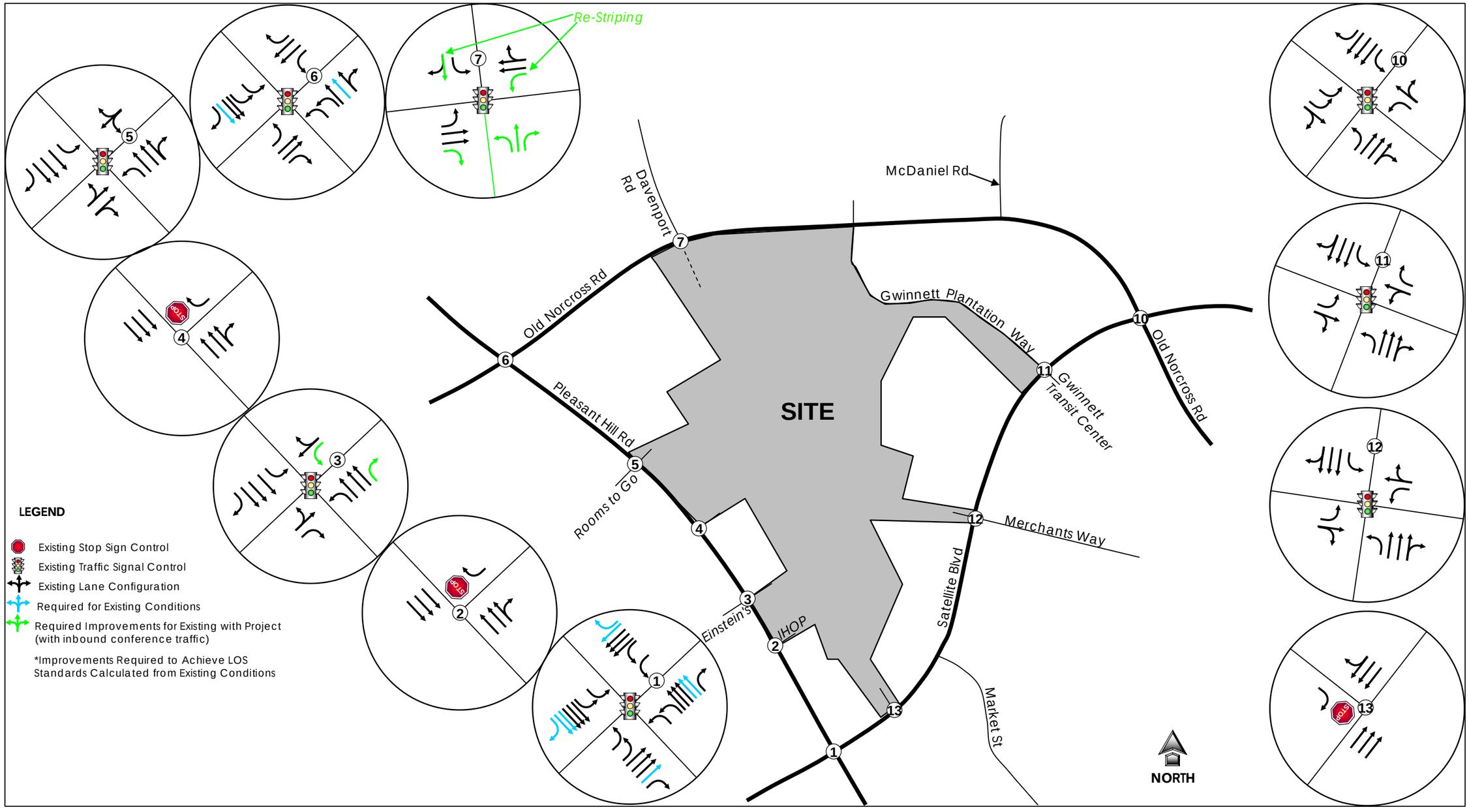
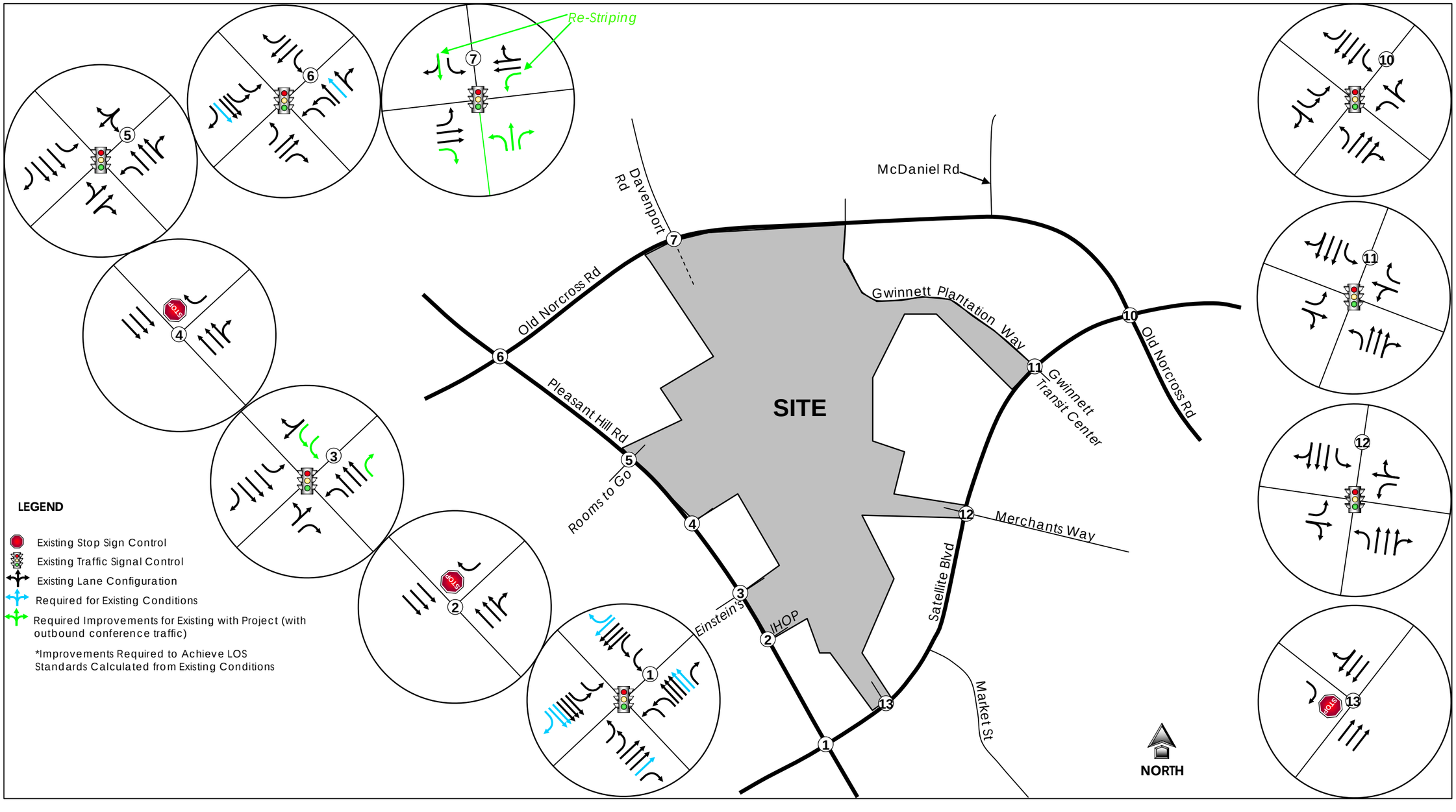


Figure 4-7b. Required Improvements: Existing Build Conditions (with outbound conference center traffic)



Year 2012 Future No-build

Between the time this study is performed and the site is built in Year 2012, the traffic volumes on the adjacent roadways are expected to increase. This is due to other development which will take place both in the study area by the Year 2012, as well as growth outside of it, whether or not the site being studied is built. This growth is called background traffic growth. There are generally two components to background traffic growth:

(a) growth close to the Site due to specific, identified developments already in the "pipeline" (that is, actual nearby developments already approved, or further along in the approval process, that can reasonably be expected to be built before or at the same time as the Site), sometimes called "background development"; and

(b) general traffic growth along major roadways due to the expanding nature of the region, and to other non-specific development further from the Site, often simply referred to as "background growth".

No specific background developments were identified during the GRTA Methodology Meeting and/or Pre-Application Conference, that are to be established either before or in the same time frame as the Site.

Traffic volumes are expected to increase due to other developments that are not in the immediate vicinity, but that will contribute traffic to the road network ("background growth"). Growth of this nature can generally be determined by examining historic trends in the vicinity of the Site, and by applying those trends to the appropriate roadways.

Historical traffic volume trends on the study network were taken into account. Where available, the last six years (1999 – 2004) of historical Annual Average Daily Traffic (AADT) collected by GDOT and Gwinnett DOT was used to help develop traffic volume trends on the study area roadways.

Based upon this historical data, there are two different methodologies for projecting future year traffic volumes (either directly for roadways with the historical data, or indirectly for similar types of roadways in the study area). The first methodology is to calculate the average annual growth, and apply that growth, including compounding as appropriate, to project traffic volumes.

The second methodology is to use linear regression, and the "Forecast" tool within MS Excel, to smooth out the annual rises and dips and project future growth. The "Forecast" tool calculates, or predicts, a future value by using existing values. The predicted value is a y-value for a given x-value. The known values are existing y-values (the traffic volumes for

the years 1999 through 2004) and the known x-values (the years 1999 through 2004). Linear regression, using the "Forecast" tool within MS Excel, was used in this analysis. Table 5-1 shows the historical data, as well as the future projections based upon the linear regression methodology.

Table 5-1. Percentage Growth of Study Network Segments

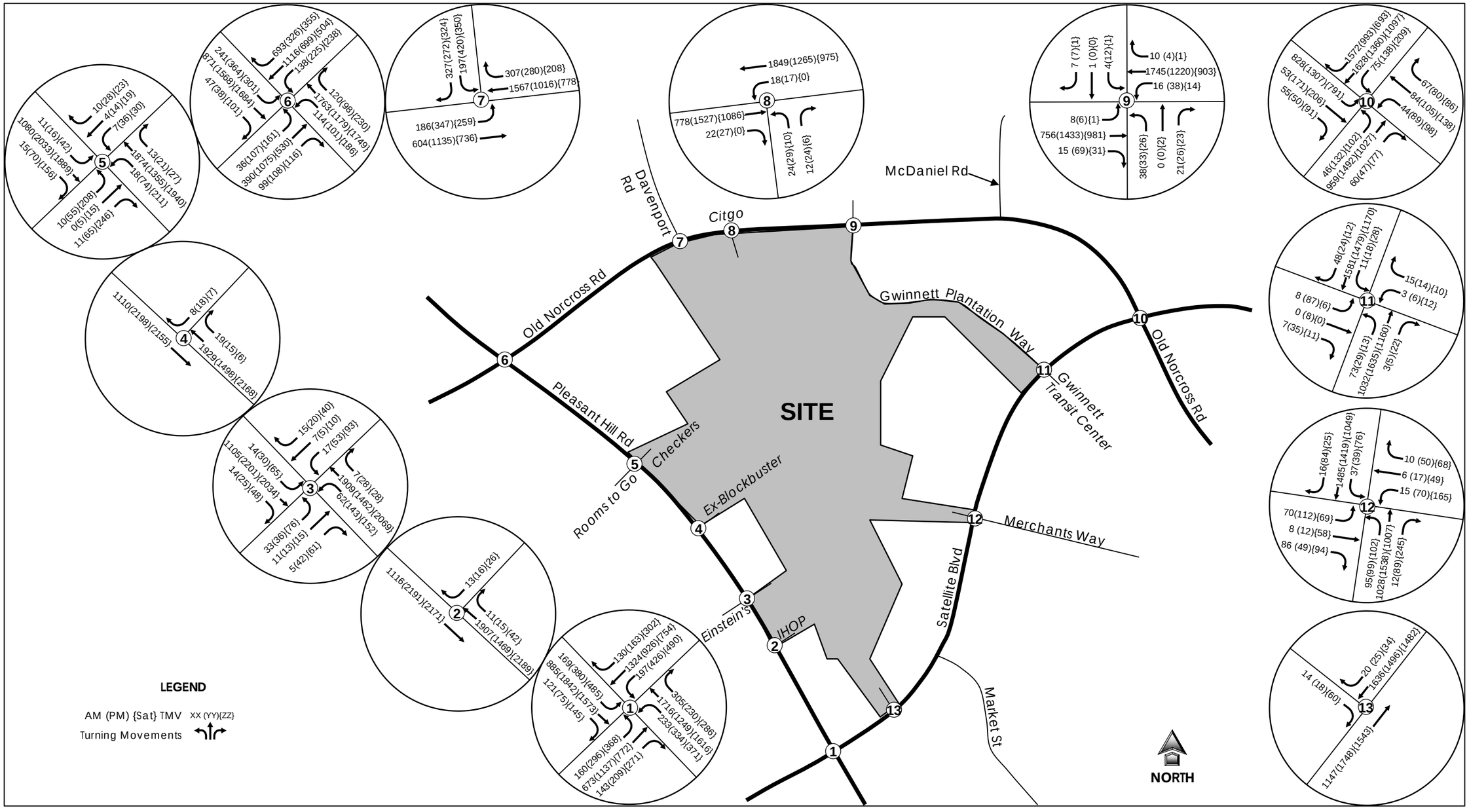
Road	Description	TC ID	2000	2001	2002	2003	2004	2012
Breckenridge Blvd	Between Pleasant Hill Rd and Old Norcross Rd	GwinDOT	25,858	-	23,614	-	20,801	10,782
Crestwood Pkwy	Between Pleasant Hill Rd and Club Dr	GwinDOT	3,460	-	3,513	3,828	-	4,887
I-85	South of Steve Reynolds Blvd	294	228,731	236,700	241,434	266,270	247,550	94,901
I-85	North of Steve Reynolds Blvd	295	190,279	197,000	200,940	236,710	211,760	*211,760*
I-85	Just north of Pleasant Hill Rd	296	192,535	199,200	203,184	241,030	206,700	*206,700*
I-85	Just north of Pleasant Hill Rd	GwinDOT	194,460	201,192	205,216	-	-	167,776
I-85	Between Steve Reynolds Blvd and Pleasant Hill Rd	GwinDOT	192,182	198,970	202,949	-	-	*202,949*
Old Norcross Rd	Between Pleasant Hill Rd and Satellite Blvd	582	21,940	22,195	22,326	22,380	22,780	15,261
Old Norcross Rd	Between Breckenridge Blvd and Satellite Blvd	GwinDOT	27,767	-	26,327	24,566	-	118,728
Old Norcross Rd	Between Pleasant Hill Rd and Satellite Blvd	GwinDOT	-	25,216	22,549	26,058	24,519	47,967
Pleasant Hill Rd	Between Breckenridge Rd and Club Dr	408	58,714	59,900	59,990	55,190	50,210	78,557
Pleasant Hill Rd	Between I-85 and Gwinnett Prado	414	46,600	45,193	46,572	49,820	52,480	86,297
Pleasant Hill Rd	West of Old Norcross Rd	416	44,100	38,094	39,093	38,130	38,820	49,547
Pleasant Hill Rd	Between Breckenridge Rd and Club Dr	GwinDOT	-	60,499	60,590	54,114	56,791	*56,791*
Pleasant Hill Rd	West of Old Norcross Rd	GwinDOT	-	41,974	39,484	56,273	53,046	190,652
Pleasant Hill Rd	Between I-85 and Breckinridge Rd	GwinDOT	65,641	-	52,759	59,722	60,972	42,657
Pleasant Hill Rd	Between Old Norcross Rd and Satellite Blvd	GwinDOT	41,840	-	-	41,504	-	40,004
Pleasant Hill Rd	Between I-85 and Satellite Blvd	GwinDOT	-	-	47,038	53,899	55,487	*55,487*
Satellite Blvd	Between Old Norcross Rd and Commerce Ave	581	32,460	-	-	-	-	*n/a*
Satellite Blvd	Old Norcross Rd and Pleasant Hill Rd	GwinDOT	-	-	-	31,779	33,079	*33,079*
Satellite Blvd	Steve Reynolds Rd and Pleasant Hill Rd	GwinDOT	31,047	-	-	26,569	28,067	*28,067*
Satellite Blvd	Steve Reynolds Rd and West Liddell Rd	GwinDOT	27,218	-	-	24,261	-	8,419
Shackleford Rd	Between Pleasant Hill Rd and Steve Reynolds Blvd	GwinDOT	24,868	-	17,406	17,079	-	*17,079*
Shackleford Rd	Between Club Dr and Steve Reynolds Blvd	GwinDOT	8,174	-	5,332	5,003	-	*5,003*
Steve Reynolds Blvd	Between Old Norcross Rd and Pleasant Hill Rd	683	31,000	-	-	-	-	*n/a*
Steve Reynolds Blvd	Between Breckenridge Rd and Club Dr	8117	-	32,995	33,938	34,237	37,689	*37,689*
Steve Reynolds Blvd	Between I-85 and Shackleford Rd	GwinDOT	-	-	-	42,012	44,089	30,131
Steve Reynolds Blvd	Between Pleasant Hill Rd and Old Norcross Rd	GwinDOT	-	-	-	16,703	18,308	*18,308*
Steve Reynolds Blvd	Between Old Norcross Rd and Satellite Blvd	GwinDOT	-	-	31,285	25,027	26,217	16,022
Steve Reynolds Blvd	Between I-85 and Satellite Blvd	GwinDOT	37,311	-	-	31,313	37,446	*37,446*
Venture Dr	Between Steve Reynolds Blvd and Pleasant Hill Rd	GwinDOT	12,822	-	-	11,127	-	3,571
Venture Dr	Between Steve Reynolds Blvd and West Liddell Rd	GwinDOT	-	-	-	13,359	14,132	*14,132*

Note: Forecast Year 2012 volumes that are italicized are based on limited data.

Based on the historical traffic volumes collected in the vicinity of the site and after discussions with GRTA and Gwinnett County staff, a 1% annual traffic growth percentage was used.

The Year 2012 Future No-build traffic volumes were developed by adding the background growth out to the Year 2012 to existing traffic. The Year 2012 Future No-build traffic volumes are shown in Figure 5-1.

Figure 5-1. Traffic Volumes: Year 2012 Future No-build



Intersection Capacity Analysis

Existing Traffic Controls and Lane Configurations

Using the methodologies previously described, intersection Levels of Service were determined for the study intersections for Year 2012 Future No-build conditions. It should be noted that the following parameters were incorporated into the analysis where applicable: existing signal timings; peak hour factors; heavy vehicle percentages; approach grade; bus blockages; pedestrian traffic; and lane widths. Table 5-2 presents the results of the intersection capacity analyses for Year 2012 Future No-build traffic conditions, but with existing traffic controls and land configurations. As can be seen from Table 5-2, all of the movements, and all of the overall intersection operations, are expected to function at or better than the calculated Levels of Services standards for Year 2012 Future No-build conditions, except at the following locations:

- Pleasant Hill Road at Satellite Boulevard; and
- Pleasant Hill Road at Old Norcross Road.

It should be noted that the unsignalized driveways of Citgo (ID#8) and Bally's (ID#9) on Old Norcross Road will likely operate better than their indicated Levels of Service. There are traffic signals located upstream and downstream on Old Norcross Road which help to create gaps in the mainline traffic. Further, there are minimal volumes on the minor street during the peak hours of traffic. Moreover, these driveways on the subject site will be removed upon approval and construction of Atlanta Global Station.

Required Improvements

Table 5-2 identifies deficiencies that are expected to exist at the study intersections for Year 2012 Future No-build conditions. Improvements have been identified that would be expected to correct the Year 2012 Future No-build deficiencies. Their impacts on the Year 2012 Future No-build deficiencies are also shown in Table 5-2. As can be seen from Table 5-2, the following required improvements would be expected to bring the intersections back into adequacy for Year 2012 Future No-build conditions:

- Pleasant Hill Road at Satellite Boulevard (ID #1) – Add (1) through lane on the eastbound and westbound approaches on Pleasant Hill Road along with receiving lanes / Add (1) right-turn lane on the eastbound and southbound approaches / Optimize the traffic signal timing splits, while maintaining signal coordination with other traffic signals in the transportation network.

- Pleasant Hill Road at Old Norcross Road (ID #6) – Add (1) through lane on the eastbound and westbound approaches on Pleasant Hill Road along with receiving lanes (it is important to note that (1) through lane on the eastbound and westbound approaches on Pleasant Hill Road is scheduled for construction in the Year 2008 per the TIP GW-271) / Optimize the traffic signal timing splits, while maintaining signal

coordination with other traffic signals in the transportation network.

Figure 5-2 shows the lane configurations and traffic control that would be required to mitigate the Year 2012 Future No-build deficiencies.

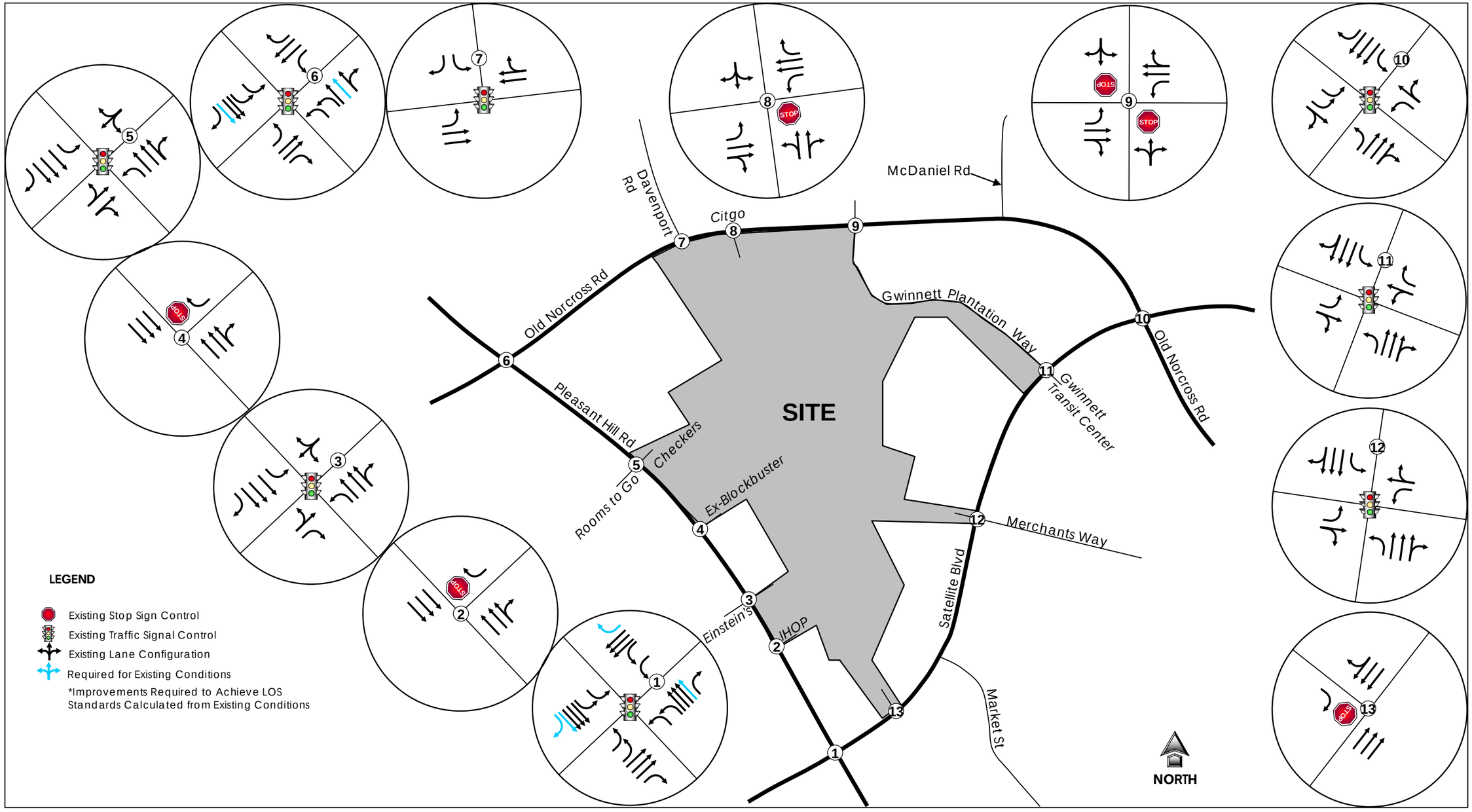
Table 5-2. Intersection LOS: Year 2012 Future No-build

ID	Intersection	Improvement	Control	Movement	Weekday AM Peak Hr LOS	Weekday AM Peak Hr Delay (s)	Weekday PM Peak Hr LOS	Weekday PM Peak Hr Delay (s)	Weekend Saturday Peak Hr LOS	Weekend Saturday Peak Hr Delay (s)
1	Pleasant Hill Rd @ Satellite Blvd	n/a	Signal	n/a	E	58.9	F	86.5	F	81.6
		Optimize Splits / Add "T" for EB & WB / Add EB & SB "R"	Signal	n/a	D	51.9	E	79.7	E	73.2
2	Pleasant Hill Rd @ IHOP Dwy	n/a	Stop Sign	SB R	B	14.3	B	12.4	C	17.0
				Overall*	A	N/A	A	N/A	A	N/A
3	Pleasant Hill Rd @ Einsteins Dwy	n/a	Signal	n/a	A	8.3	B	17.1	C	25.5
4	Pleasant Hill Rd @ Ex-Blockbuster Dwy	n/a	Stop Sign	SB R	B	14.5	B	12.9	C	15.7
				Overall*	A	N/A	A	N/A	A	N/A
5	Pleasant Hill Rd @ Rooms-to-go Dwy	n/a	Signal	n/a	A	9.3	B	16.3	C	34.4
6	Pleasant Hill Rd @ Old Norcross Rd	n/a	Signal	n/a	F	140.2	F	122.6	F	139.6
		Optimize Splits / Add EB & WB "T"	Signal	n/a	E	55.8	E	67.1	E	60.1
7	Old Norcross Rd @ Davenport Rd	n/a	Signal	n/a	D	35.6	D	51.8	D	45.3
8	Old Norcross Rd @ Citgo Dwy**	n/a	Stop Sign	NB	E	47.6	F	63.5	C	22.2
				SB	A	0.0	A	0.0	A	0.0
				EB L	A	0.0	A	0.0	A	0.0
				WB L	B	10.3	C	16.7	A	0.0
				Overall*	B	N/A	A	N/A	A	N/A
9	Old Norcross Rd @ Bally's Dwy**	n/a	Stop Sign	NB	D	34.2	F	76.1	C	22.4
				SB	E	48.0	E	38.6	C	18.1
				EB L	C	17.7	B	11.9	B	10.0
				WB L	A	9.7	C	16.3	B	10.8
				Overall*	B	N/A	A	N/A	A	N/A
10	Old Norcross Rd @ Satellite Blvd	n/a	Signal	n/a	E	72.6	E	78.6	D	36.1
11	Satellite Blvd @ Transit Center	n/a	Signal	n/a	A	6.1	A	5.2	A	2.2
12	Satellite Blvd @ Merchants Way	n/a	Signal	n/a	A	6.2	B	17.2	C	21.8
13	Satellite Blvd @ Gwinnett Station	n/a	Stop Sign	EB R	B	13.7	B	13.1	B	13.5
				Overall*	A	N/A	A	N/A	A	N/A

*ICU LOS

**These driveways likely operate better than shown due to upstream and downstream signals. Also, these driveways will be closed considering the Site Plan.

Figure 5-2. Required Improvements: Year 2012 Future No-build



Year 2012 Future Build

The projected volumes for the Site were added to the Year 2012 Future No-build traffic volumes to represent the total traffic expected in the area when the Site is complete. The Year 2012 Future Build traffic volumes are shown in Figures 5-3a and 5-3b.

Intersection Capacity Analysis

Using the methodologies previously described, intersection Levels of Service were determined for the study intersections for Year 2012 Future Build conditions.

Existing Traffic Controls and Lane Configurations

Table 5-3 presents the results of the intersection capacity analysis for Year 2012 Future Build conditions, but still assuming existing traffic controls and lane configurations. It should be noted that the following parameters were incorporated into the analysis where applicable: existing signal timings; peak hour factors; heavy vehicle percentages; approach grade; bus blockages; pedestrian traffic; and, lane widths.

As can be seen from Tables 5-3a and 5-3b, all of the movements, and all of the overall intersection operations, are expected to function at or better than the Calculated Levels of Service for Year 2012 Future Build conditions, except at the following locations:

- Pleasant Hill Road at Satellite Boulevard;
- Pleasant Hill Road at Site Access/Einstein's Driveway;
- Pleasant Hill Road at Old Norcross Road;
- Old Norcross Road at Site Access/Davenport Road;
- Old Norcross Road at Satellite Boulevard; and
- Satellite Boulevard at Merchants Way.

Figure 5-3a. Traffic Volumes: Year 2012 Future Build (with inbound conference center traffic)

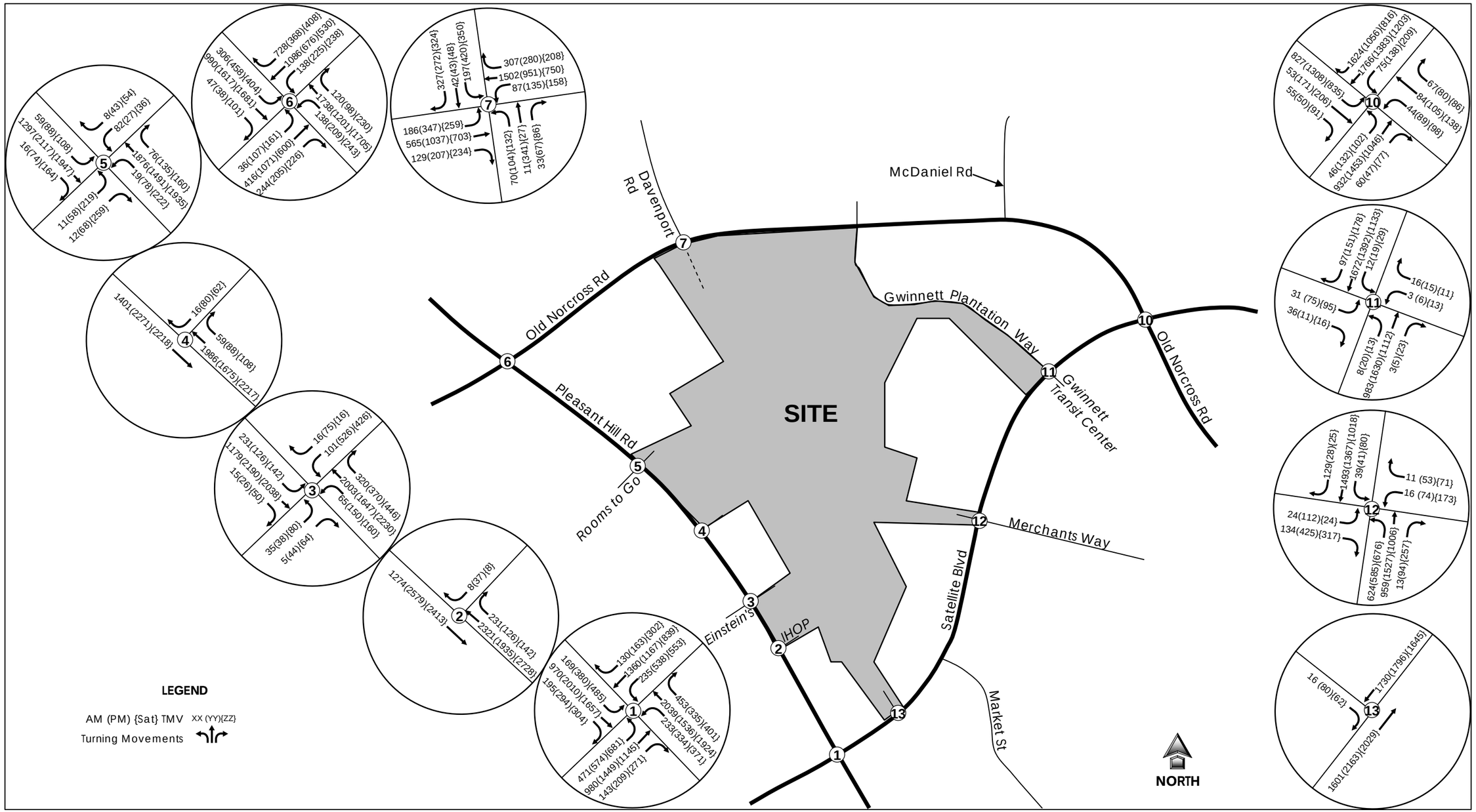


Figure 5-3b. Traffic Volumes: Year 2012 Future Build (with outbound conference center traffic)

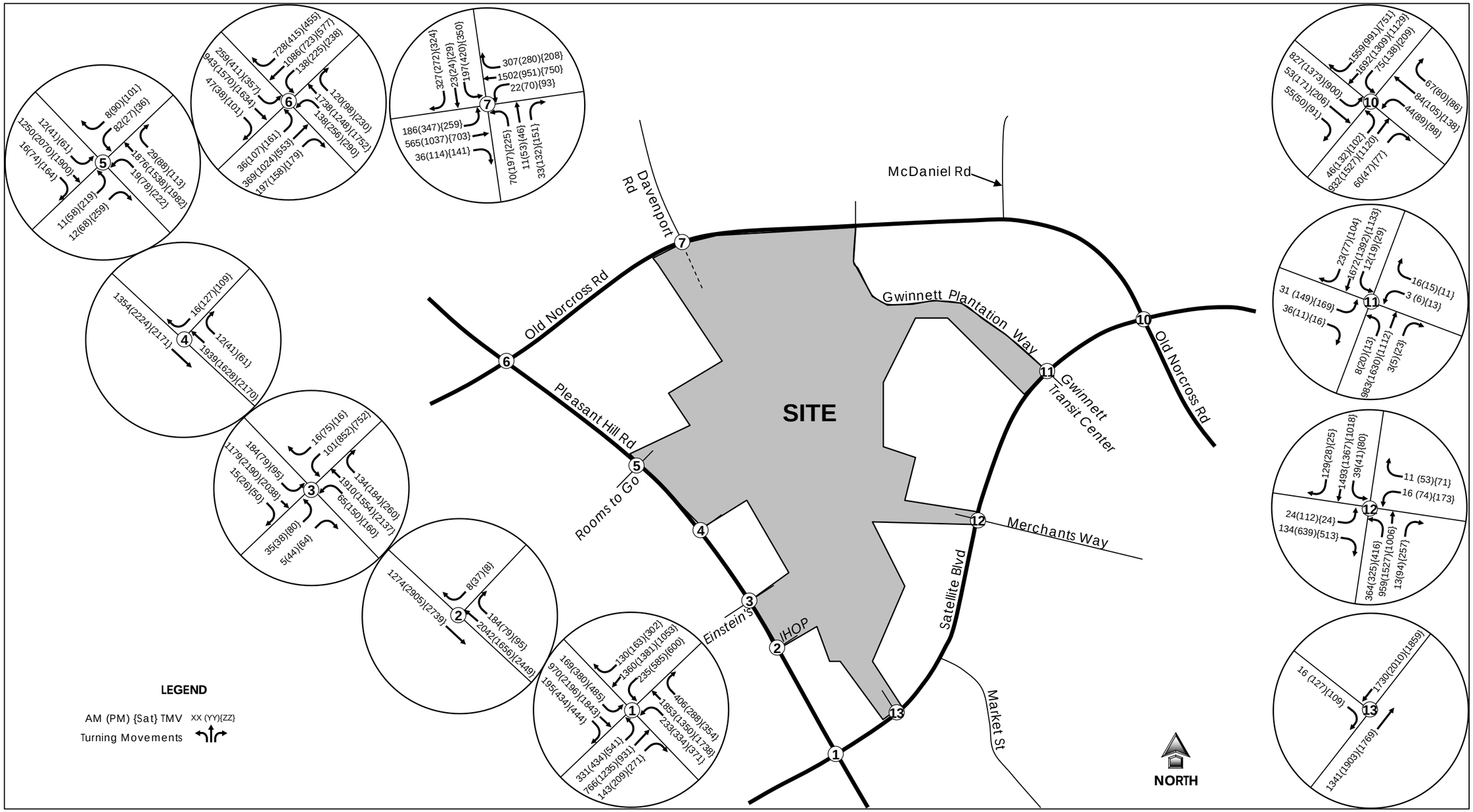


Table 5-3a. Intersection LOS: Year 2012 Future Build (with inbound conference center traffic)

ID	Intersection	Improvement	Control	Movement	Weekday AM Peak Hr LOS	Weekday AM Peak Hr Delay (s)	Weekday PM Peak Hr LOS	Weekday PM Peak Hr Delay (s)	Weekend Saturday Peak Hr LOS	Weekend Saturday Peak Hr Delay (s)
1	Pleasant Hill Rd @ Satellite Blvd	n/a	Signal	n/a	F	110.2	F	154.2	F	152.2
		Optimize Splits / Add 2 x "T" for EB & WB / Add "T" for NB & SB / Add EB & SB "R"	Signal	n/a	D	50.0	E	77.7	E	78.0
2	Pleasant Hill Rd @ IHOP Dwy	n/a	Stop Sign	SB R	C	18.6	C	16.1	C	21.2
				Overall*	B	N/A	B	N/A	C	N/A
3	Pleasant Hill Rd @ Einsteins Dwy	n/a	Signal	n/a	B	17.5	F	143.4	F	80.5
		Optimize Splits / Add SB "L" / Add WB "R"	Signal	n/a	B	18.0	D	54.1	D	45.7
4	Pleasant Hill Rd @ Ex-Blockbuster Dwy	n/a	Stop Sign	SB R	C	15.4	C	17.2	C	20.2
				Overall*	A	N/A	A	N/A	B	N/A
5	Pleasant Hill Rd @ Rooms-to-go Dwy	n/a	Signal	n/a	C	20.7	B	17.2	C	34.5
6	Pleasant Hill Rd @ Old Norcross Rd	n/a	Signal	n/a	F	140.6	F	138.3	F	141.1
		Optimize Splits / Add EB & WB "T"	Signal	n/a	E	63.7	E	76.6	E	66.8
7	Old Norcross Rd @ Davenport Rd	Optimize Splits / Add new NB Approach	Signal	n/a	D	54.6	D	54.3	D	51.3
10	Old Norcross Rd @ Satellite Blvd	n/a	Signal	n/a	F	86.1	F	138.0	D	44.1
		Optimize Splits	Signal	n/a	E	79.6	E	75.3	D	39.2
11	Satellite Blvd @ Transit Center	n/a	Signal	n/a	A	9.4	A	3.9	A	5.8
12	Satellite Blvd @ Merchants Way	n/a	Signal	n/a	C	32.4	F	136.1	F	113.1
		Optimize Splits	Signal	n/a	C	33.6	C	30.8	C	31.7
13	Satellite Blvd @ Gwinnett Station	n/a	Stop Sign	EB R	B	14.1	C	16.3	B	14.2
				Overall*	A	N/A	A	N/A	A	N/A

*ICU LOS

Table 5-3b. Intersection LOS: Year 2012 Future Build (with outbound conference center traffic)

ID	Intersection	Improvement	Control	Movement	Weekday AM Peak Hr LOS	Weekday AM Peak Hr Delay (s)	Weekday PM Peak Hr LOS	Weekday PM Peak Hr Delay (s)	Weekend Saturday Peak Hr LOS	Weekend Saturday Peak Hr Delay (s)
1	Pleasant Hill Rd @ Satellite Blvd	n/a	Signal	n/a	F	83.3	F	180.0	F	151.3
		Optimize Splits / Add 2 x "T" for EB & WB / Add "T" for NB & SB / Add EB & SB "R"	Signal	n/a	D	51.6	E	77.4	E	71.2
2	Pleasant Hill Rd @ IHOP Dwy	n/a	Stop Sign	SB R	C	16.3	B	14.1	C	18.4
				Overall*	A	N/A	C	N/A	C	N/A
3	Pleasant Hill Rd @ Einsteins Dwy	n/a	Signal	n/a	B	15.0	F	348.0	F	155.6
		Optimize Splits / Add 2 x SB "L" / Add WB "R"	Signal	n/a	B	14.7	D	54.8	D	54.2
4	Pleasant Hill Rd @ Ex-Blockbuster Dwy	n/a	Stop Sign	SB R	C	14.8	C	19.2	C	22.9
				Overall*	A	N/A	A	N/A	B	N/A
5	Pleasant Hill Rd @ Rooms-to-go Dwy	n/a	Signal	n/a	B	19.4	B	17.8	D	38.6
6	Pleasant Hill Rd @ Old Norcross Rd	n/a	Signal	n/a	F	138.8	F	135.1	F	147.1
		Optimize Splits / Add EB & WB "T"	Signal	n/a	E	58.3	E	73.5	E	68.7
7	Old Norcross Rd @ Davenport Rd	Optimize Splits / Add new NB Approach	Signal	n/a	D	54.9	D	54.6	D	48.6
10	Old Norcross Rd @ Satellite Blvd	n/a	Signal	n/a	E	75.7	F	153.7	E	55.7
		Optimize Splits	Signal	n/a	E	74.9	E	73.8	D	40.6
11	Satellite Blvd @ Transit Center	n/a	Signal	n/a	A	8.3	A	8.1	A	8.7
12	Satellite Blvd @ Merchants Way	n/a	Signal	n/a	C	20.5	F	104.4	E	68.8
		Optimize Splits / Re-stripe for EB "R"	Signal	n/a	B	12.9	C	32.1	C	24.1
13	Satellite Blvd @ Gwinnett Station	n/a	Stop Sign	EB R	B	14.1	C	20.9	C	17.1
				Overall*	A	N/A	A	N/A	A	N/A

*ICU LOS

Required Improvements

Tables 5-3a and 5-3b identifies deficiencies that are expected to exist at the study intersections for Year 2012 Future Build conditions. Improvements have been identified that would be expected to correct the Year 2012 Future Build deficiencies. Their impacts on the Year 2012 Future Build deficiencies are also shown in Tables 5-3a and 5-3b.

As can be seen from Tables 5-3a and 5-3b, the following required improvements are expected to bring the intersections up to or at the Calculated Levels of Service for Year 2012 Future Build conditions (note that the primary difference between the inbound and outbound conference center traffic scenarios is the dual southbound left-turns required at Site Access/Einstein's and Pleasant Hill Road (ID#3) for the outbound conference center traffic scenario):

- Pleasant Hill Road at Satellite Boulevard (ID #1) – Add (2) through lanes on the eastbound and westbound approaches on Pleasant Hill Road along with receiving lanes / Add (1) through lane on the northbound and southbound approaches on Satellite Boulevard along with receiving lanes / Add (1) right-turn lane on the eastbound and southbound approaches / Optimize the traffic signal timing splits, while maintaining signal coordination with other traffic signals in the transportation network.

- Pleasant Hill Road at Site Access (across from "Einstein's Driveway") (ID #3) – Add (1) westbound right-turn lane on Pleasant Hill Road / Add (2) southbound left-turn lanes on the Site Access with Protected signal phasing / Optimize the traffic signal timing splits, while maintaining signal coordination with other traffic signals in the transportation network.

- Pleasant Hill Road at Old Norcross Road (ID #6) – Add (1) through lane on the eastbound and westbound approaches on Pleasant Hill Road along with receiving lanes (it is important to note that (1) through lane on the eastbound and westbound approaches on Pleasant Hill Road is scheduled for construction in the Year 2008 per the TIP GW-271) / Optimize the traffic signal timing splits, while maintaining signal coordination with other traffic signals in the transportation network.

- Pleasant Hill Road at Site Access (across from "Davenport Road") (ID #7) – Add (1) northbound left-turn lane, (1) northbound through lane, and (1) northbound right-turn lane on the Site Access / Add (1) eastbound right-turn lane on Old Norcross Road / Re-stripe the exclusive right turn lane on the southbound approach on Davenport Road from a right-turn lane to a shared through-right lane / Re-stripe the center lane on Old Norcross Road to a westbound left-turn lane / Optimize the traffic signal timing splits, while maintaining signal coordination with other traffic signals in the transportation network.

- Satellite Boulevard at Old Norcross Road (ID #10) – Optimize the traffic signal timing splits, while maintaining signal coordination with other traffic signals in the transportation network.

- Satellite Boulevard at Merchants Way (ID #12) – Re-stripe the eastbound shared through-right turn lane on Merchants Way to an exclusive right-turn lane / Re-stripe the eastbound left-turn lane on Merchants Way to a shared through-left lane / Optimize the traffic signal timing splits, while maintaining signal coordination with other traffic signals in the transportation network.

Figures 5-4a and 5-4b show the lane configurations and traffic control that would be required to mitigate the Year 2012 Future Build deficiencies with inbound conference center traffic and outbound conference center traffic, respectively.

Figure 5-4a. Required Improvements: Year 2012 Future Build (with inbound conference center traffic)

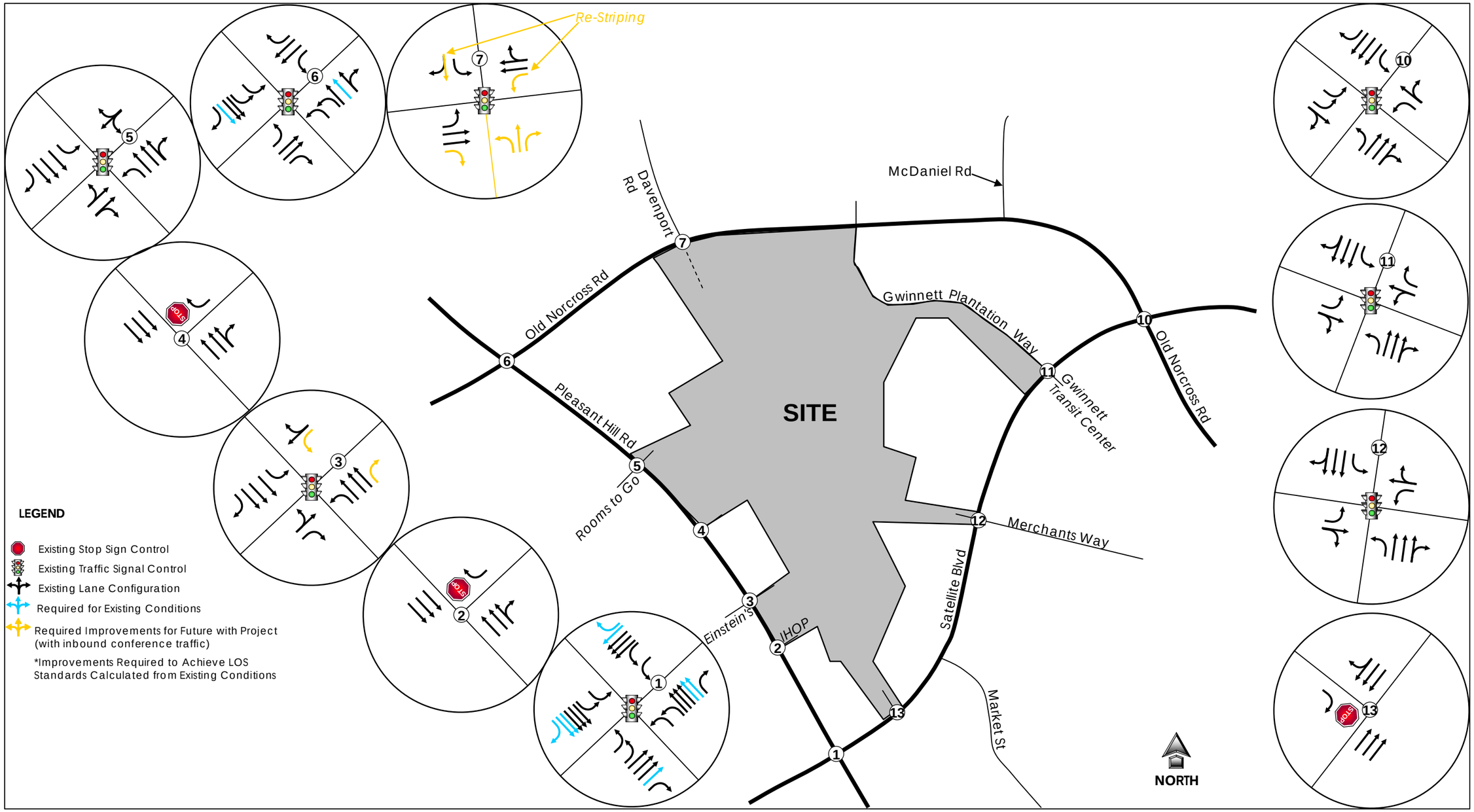
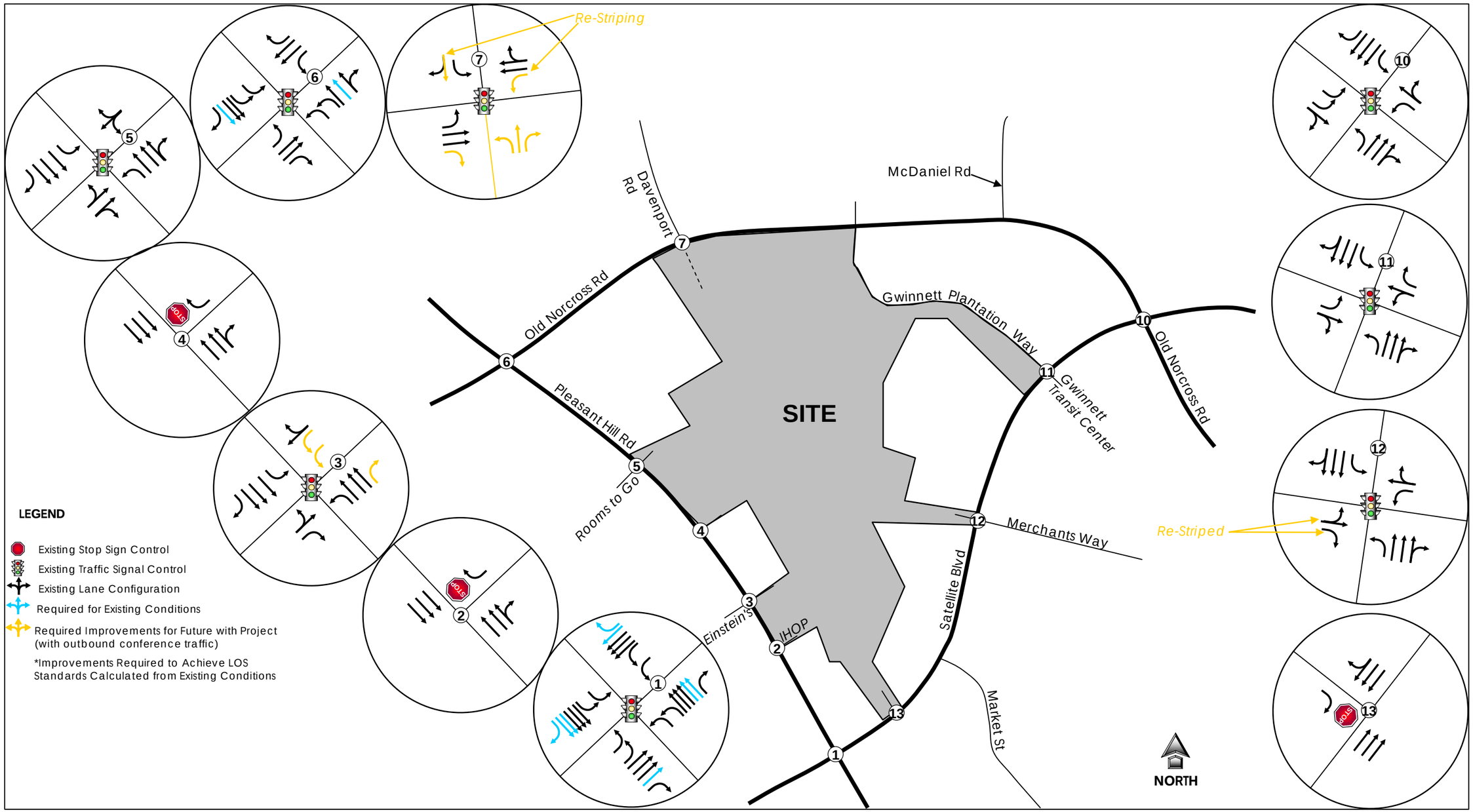


Figure 5-4b. Required Improvements: Year 2012 Future Build (with outbound conference center traffic)



Introduction

This section of the study presents a summary of the findings of the foregoing traffic impact analyses. The findings that are summarized include the various scenarios studied: Existing conditions, Existing Build conditions (per Gwinnett DOT requirements), Future No-build conditions, and Future Build conditions. A summary is also provided of the required transportation improvements, for each traffic scenario studied. A summary of all programmed transportation improvements that affect the Site is also provided for informational purposes.

Programmed Improvements

The County Transportation Improvement Program (TIP), State Transportation Improvement Program (STIP), Regional Transportation Plan (RTP), and the Georgia Department of Transportation's (GDOT's) Construction Work Program were researched to determine the opening-to-traffic dates, sponsors, costs of projects, funding sources, and logical termini of all projects in the study network. There are a number of transportation improvements that are programmed within the area.

In order to keep up with the increased demand, transportation improvements are continuously being made. As one of Georgia's fastest growing counties, Gwinnett sees many of these improvement projects. One major project that is currently underway is the reconstruction of the interchange of I-85 and State Route 316. The reconstruction will move the SR 316 and I-85 southbound merge from the left side of I-85 across to a collector-distributor system on the right side of I-85 southbound. The primary impact of this project on the study area is that southbound traffic on I-85 bound for the site via Pleasant Hill Road will get off of I-85 in the vicinity of Boggs Road onto the collector-distributor.

In conjunction with local governments, such as Gwinnett County, ARC manages the program of regional transportation improvements in the Atlanta area. Transportation improvements in the vicinity of the site are shown in Figures 4-2 to 4-4.

It should be noted that per discussions with Gwinnett County DOT staff, for Project GW-271, widening of Pleasant Hill Road from four lanes to six lanes will begin in the Year 2008 between Old Norcross Road and US 23, and the segment from US 23 to the Chattahoochee River will occur in the Long Range.

Existing Conditions Needs

Table 6-1 presents a summary of the improvements required for Existing conditions. (See also Table 4-2.)

Table 6-1. Required Improvements: Existing

ID	Intersection	Remedy	Agency Responsible	Cost[1]
1	Pleasant Hill Rd @ Satellite Blvd	Optimize Splits / Add 2 x "T" for EB & WB / Add "T" for NB & SB / Add EB & SB "R"	Gwinnett Co.	$933,000
6	Pleasant Hill Rd @ Old Norcross Rd	Optimize Splits / Add 2x EB "T" & 2x WB "T" / Add SB "L"	Gwinnett Co.	$600,000
10	Old Norcross Rd @ Satellite Blvd	Optimize Splits / Add EB "L" / Add SB "T"	Gwinnett Co.	$208,500

[1]Estimates do not include ROW costs, utility re-location costs, or special feature costs.
Splits were optimized; Cycle length fixed to sustain coordination to the fullest extent.

As can be seen from Table 6-1, the following required improvements are expected to bring the intersections up to or better than Level of Service "D" for Existing conditions. Figure 4-5 shows the lane configurations and traffic control that would be required to mitigate the Existing deficiencies.

- Pleasant Hill Road at Satellite Boulevard (ID #1) – Add (2) through lanes on the eastbound and westbound approaches on Pleasant Hill Road along with receiving lanes / Add (1) through lane on the northbound and southbound approaches on Satellite Boulevard along with receiving lanes / Add (1) right-turn lane on the eastbound and southbound approaches / Optimize the traffic signal timing splits, while maintaining signal coordination with other traffic signals in the transportation network.

- Pleasant Hill Road at Old Norcross Road (ID #6) – Add (2) through lanes on the eastbound and westbound approaches on Pleasant Hill Road along with receiving lanes (it is important to note that (1) through lane on the eastbound and westbound approaches on Pleasant Hill Road is scheduled for construction in the Year 2008 per the TIP GW-271) / Add (1) southbound left-turn lane on Old Norcross Road / Optimize the traffic signal timing splits, while maintaining signal coordination with other traffic signals in the transportation network.

- Satellite Boulevard at Old Norcross Road (ID #10) – Add (1) eastbound left-turn lane on Old Norcross Road / Add (1) southbound through lane on Satellite Boulevard along with a receiving lane / Optimize the traffic signal timing splits, while maintaining signal coordination with other traffic signals in the transportation network.

Existing Build Conditions Needs

Tables 6-2a and 6-2b present summaries of the improvements required for Existing Build conditions. (See also Tables 4-4a and 4-4b and Figures 4-7a 4-7b.)

Table 6-2a. Required Improvements: Existing Build (with inbound conference traffic)

ID	Intersection	Remedy	Agency Responsible	Cost[1]
1	Pleasant Hill Rd @ Satellite Blvd	Optimize Splits / Add 2 x "T" for EB & WB / Add "T" for NB & SB / Add EB & SB "R"	Gwinnett Co.	$933,000
3	Pleasant Hill Rd @ Einsteins Dwy	Optimize Splits / Add SB "L" / Add WB "R"	Developer / Gwinnett Co.	$150,000
6	Pleasant Hill Rd @ Old Norcross Rd	Optimize Splits / Add EB & WB "T"	Gwinnett Co.	$267,000
7	Old Norcross Rd @ Davenport Road	Optimize Splits / Add 3 outbound lanes / Add EB "R" / Add WB "L"	Developer / Gwinnett Co.	$366,000
10	Old Norcross Rd @ Satellite Blvd	Optimize Splits	Gwinnett Co.	$6,000
12	Satellite Blvd @ Merchants Way	Optimize Splits	Developer / Gwinnett Co.	$6,000

[1]Estimates do not include ROW costs, utility re-location costs, or special feature costs.
Splits were optimized; Cycle length fixed to sustain coordination to the fullest extent.

Table 6-2b. Required Improvements: Existing Build (with outbound conference traffic)

ID	Intersection	Remedy	Agency Responsible	Cost[1]
1	Pleasant Hill Rd @ Satellite Blvd	Optimize Splits / Add 2 x "T" for EB & WB / Add "T" for NB & SB / Add EB & SB "R"	Gwinnett Co.	$933,000
3	Pleasant Hill Rd @ Einsteins Dwy	Optimize Splits / Add 2x SB "L" / Add WB "R"	Developer / Gwinnett Co.	$222,000
6	Pleasant Hill Rd @ Old Norcross Rd	Optimize Splits / Add EB & WB "T"	Gwinnett Co.	$267,000
7	Old Norcross Rd @ Davenport Road	Optimize Splits / Add 3 outbound lanes / Add EB "R" / Add WB "L"	Developer / Gwinnett Co.	$366,000
10	Old Norcross Rd @ Satellite Blvd	Optimize Splits	Gwinnett Co.	$6,000
12	Satellite Blvd @ Merchants Way	Optimize Splits	Developer / Gwinnett Co.	$6,000

[1]Estimates do not include ROW costs, utility re-location costs, or special feature costs.
Splits were optimized; Cycle length fixed to sustain coordination to the fullest extent.

As can be seen from Tables 6-2a and 6-2b, the following required improvements are expected to bring the intersections up to or better than the Calculated Levels of Service (Table 4-3) for Existing Build traffic conditions (note that the only difference between the inbound and outbound conference center traffic scenarios is the dual southbound left-turns required at Site Access/Einstein's and Pleasant Hill Road (ID#3) for the outbound conference center traffic scenario):

- Pleasant Hill Road at Satellite Boulevard (ID #1) – Add (2) through lanes on the eastbound and westbound approaches on Pleasant Hill Road along with receiving lanes / Add (1) through lane on the northbound and southbound approaches on Satellite Boulevard along with receiving lanes / Add (1) right-turn lane on the eastbound and southbound approaches / Optimize the traffic signal timing splits, while maintaining signal coordination with other traffic signals in the transportation network.

- Pleasant Hill Road at Site Access (across from "Einstein's Driveway") (ID #3) – Add (1) westbound right-turn lane on Pleasant Hill Road / Add (2) southbound left-turn lanes on the Site Access with Protected signal phasing / Optimize the traffic signal timing splits, while maintaining signal coordination with other traffic signals in the transportation network.

- Pleasant Hill Road at Old Norcross Road (ID #6) – Add (1) through lane on the eastbound and westbound approaches on Pleasant Hill Road along with receiving lanes (it is important to note that (1) through lane on the eastbound and westbound approaches on Pleasant Hill Road is scheduled for construction in the Year 2008 per the TIP GW-271) / Optimize the traffic signal timing splits, while maintaining signal coordination with other traffic signals in the transportation network.

- Pleasant Hill Road at Site Access (across from "Davenport Road") (ID #7) – Add (1) northbound left-turn lane, (1) northbound through lane, and (1) northbound right-turn lane on the Site Access / Add (1) eastbound right-turn lane on Old Norcross Road / Re-stripe the exclusive right turn lane on the southbound approach on Davenport Road from a right-turn lane to a shared through-right lane / Re-stripe the center lane on Old Norcross Road to a westbound left-turn lane / Optimize the traffic signal timing splits, while maintaining signal coordination with other traffic signals in the transportation network.

- Satellite Boulevard at Old Norcross Road (ID #10) – Optimize the traffic signal timing splits, while maintaining signal coordination with other traffic signals in the transportation network.

- Satellite Boulevard at Merchants Way (ID #12) – Optimize the traffic signal timing splits, while maintaining signal coordination with other traffic signals in the transportation network.

Figures 4-7a and 4-7b shows the lane configurations and traffic control that would be

required to mitigate the Existing Build deficiencies.

Future Conditions Needs

Year 2012 Future No-build

Table 6-3 presents a summary of the improvements required for Year 2012 Future No-build conditions. (See also Table 5-2 and Figure 5-2.)

Table 6-3. Required Improvements: Year 2012 Future No-build

ID	Intersection	Remedy	Agency Responsible	Cost[1]
1	Pleasant Hill Rd @ Satellite Blvd	Optimize Splits / Add "T" for EB & WB / Add EB & SB "R"	Gwinnett Co.	$411,000
6	Pleasant Hill Rd @ Old Norcross Rd	Optimize Splits / Add EB & WB "T"	Gwinnett Co.	$267,000

[1]Estimates do not include ROW costs, utility re-location costs, or special feature costs.
Splits were optimized; Cycle length fixed to sustain coordination to the fullest extent.

As can be seen from Table 6-3, the following required improvements would be expected to bring the intersections back into adequacy for Year 2012 Future No-build conditions:

- Pleasant Hill Road at Satellite Boulevard (ID #1) – Add (1) through lane on the eastbound and westbound approaches on Pleasant Hill Road along with receiving lanes / Add (1) right-turn lane on the eastbound and southbound approaches / Optimize the traffic signal timing splits, while maintaining signal coordination with other traffic signals in the transportation network.

- Pleasant Hill Road at Old Norcross Road (ID #6) – Add (1) through lane on the eastbound and westbound approaches on Pleasant Hill Road along with receiving lanes (it is important to note that (1) through lane on the eastbound and westbound approaches on Pleasant Hill Road is scheduled for construction in the Year 2008 per the TIP GW-271) / Optimize the traffic signal timing splits, while maintaining signal coordination with other traffic signals in the transportation network.

Figure 5-2 shows the lane configurations and traffic control that would be required to mitigate the Year 2012 Future No-build deficiencies.

Year 2012 Future Build

Tables 6-4a and 6-4b present summaries of the improvements required for Year 2012 Future Build conditions. (See also Tables 5-3a and 5-3b and Figures 5-4a and 5-4b.)

Table 6-4a. Required Improvements: Year 2012 Future Build (with inbound conference traffic)

ID	Intersection	Remedy	Agency Responsible	Cost[1]
1	Pleasant Hill Rd @ Satellite Blvd	Optimize Splits / Add 2 x "T" for EB & WB / Add "T" for NB & SB / Add EB & SB "R"	Gwinnett Co.	$933,000
3	Pleasant Hill Rd @ Einsteins Dwy	Optimize Splits / Add SB "L" / Add WB "R"	Developer / Gwinnett Co.	$150,000
6	Pleasant Hill Rd @ Old Norcross Rd	Optimize Splits / Add EB & WB "T"	Gwinnett Co.	$267,000
7	Old Norcross Rd @ Davenport Road	Optimize Splits / Add 3 outbound lanes / Add EB "R" / Add WB "L"	Developer / Gwinnett Co.	$366,000
10	Old Norcross Rd @ Satellite Blvd	Optimize Splits	Gwinnett Co.	$6,000
12	Satellite Blvd @ Merchants Way	Optimize Splits	Developer / Gwinnett Co.	$6,000

[1]Estimates do not include ROW costs, utility re-location costs, or special feature costs.
Splits were optimized; Cycle length fixed to sustain coordination to the fullest extent.

Table 6-4b. Required Improvements: Year 2012 Future Build (with outbound conference traffic)

ID	Intersection	Remedy	Agency Responsible	Cost[1]
1	Pleasant Hill Rd @ Satellite Blvd	Optimize Splits / Add 2 x "T" for EB & WB / Add "T" for NB & SB / Add EB & SB "R"	Gwinnett Co.	$933,000
3	Pleasant Hill Rd @ Einsteins Dwy	Optimize Splits / Add 2x SB "L" / Add WB "R"	Developer / Gwinnett Co.	$222,000
6	Pleasant Hill Rd @ Old Norcross Rd	Optimize Splits / Add EB & WB "T"	Gwinnett Co.	$267,000
7	Old Norcross Rd @ Davenport Road	Optimize Splits / Add 3 outbound lanes / Add EB "R" / Add WB "L"	Developer / Gwinnett Co.	$366,000
10	Old Norcross Rd @ Satellite Blvd	Optimize Splits	Gwinnett Co.	$6,000
12	Satellite Blvd @ Merchants Way	Optimize Splits / Re-stripe for EB "R"	Developer / Gwinnett Co.	$7,500

[1]Estimates do not include ROW costs, utility re-location costs, or special feature costs.
Splits were optimized; Cycle length fixed to sustain coordination to the fullest extent.

As can be seen from Tables 6-4a and 6-4b, the following required improvements are expected to bring the intersections back into adequacy for Year 2012 Future Build conditions: (note that the primary difference between the inbound and outbound conference center traffic scenarios is the dual southbound left-turns required at Site Access/Einstein's and Pleasant Hill Road (ID#3) for the outbound conference center traffic scenario):

- Pleasant Hill Road at Satellite Boulevard (ID #1) – Add (2) through lanes on the

eastbound and westbound approaches on Pleasant Hill Road along with receiving lanes / Add (1) through lane on the northbound and southbound approaches on Satellite Boulevard along with receiving lanes / Add (1) right-turn lane on the eastbound and southbound approaches / Optimize the traffic signal timing splits, while maintaining signal coordination with other traffic signals in the transportation network.

- Pleasant Hill Road at Site Access (across from "Einstein's Driveway") (ID #3) – Add (1) westbound right-turn lane on Pleasant Hill Road / Add (2) southbound left-turn lanes on the Site Access with Protected signal phasing / Optimize the traffic signal timing splits, while maintaining signal coordination with other traffic signals in the transportation network.

- Pleasant Hill Road at Old Norcross Road (ID #6) – Add (1) through lane on the eastbound and westbound approaches on Pleasant Hill Road along with receiving lanes (it is important to note that (1) through lane on the eastbound and westbound approaches on Pleasant Hill Road is scheduled for construction in the Year 2008 per the TIP GW-271) / Optimize the traffic signal timing splits, while maintaining signal coordination with other traffic signals in the transportation network.

- Pleasant Hill Road at Site Access (across from "Davenport Road") (ID #7) – Add (1) northbound left-turn lane, (1) northbound through lane, and (1) northbound right-turn lane on the Site Access / Add (1) eastbound right-turn lane on Old Norcross Road / Re-stripe the exclusive right turn lane on the southbound approach on Davenport Road from a right-turn lane to a shared through-right lane / Re-stripe the center lane on Old Norcross Road to a westbound left-turn lane / Optimize the traffic signal timing splits, while maintaining signal coordination with other traffic signals in the transportation network.

- Satellite Boulevard at Old Norcross Road (ID #10) – Optimize the traffic signal timing splits, while maintaining signal coordination with other traffic signals in the transportation network.

- Satellite Boulevard at Merchants Way (ID #12) – Re-stripe the eastbound shared through-right turn lane on Merchants Way to an exclusive right-turn lane / Re-stripe the eastbound left-turn lane on Merchants Way to a shared through-left lane / Optimize the traffic signal timing splits, while maintaining signal coordination with other traffic signals in the transportation network.

Figures 5-4a and 5-4b show the lane configurations and traffic control that would be required to mitigate the Year 2012 Future Build deficiencies.

Introduction

This section of the study presents an analysis of the opportunities for the employees of the subject site to find residence in the Area of Influence (AOI). This section will describe the study parameters and methodologies, the sources of data used for the analysis, information concerning the demographics and economic conditions in the site area and the AOI, and the estimate of work-related single-occupant (SOV) vehicle trips that will be satisfied within the AOI. The following sections of the report will address Criterion 7b of Section 3-103 of GRTA's Development of Regional Impact (DRI) requirements. Criterion 7b states:

7. The proposed DRI:

   (B) Is located in an Area of Influence where the proposed DRI is reasonably anticipated to contribute to a balancing of land uses within the Area of Influence such that twenty-five percent (25%) of the persons who are reasonably anticipated to be employed in the proposed DRI have the opportunity to live within the Area of Influence.

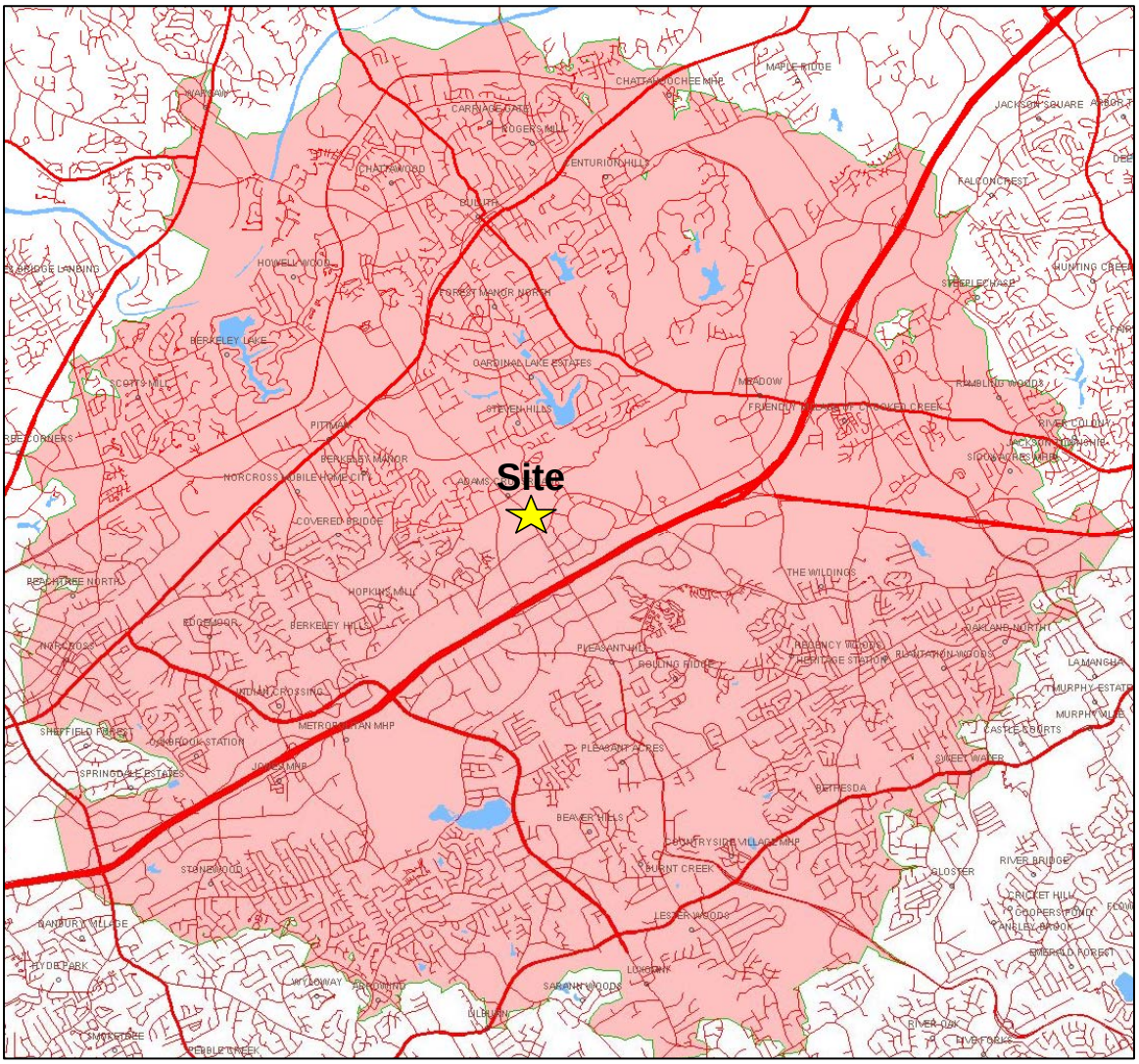
The following sections will more fully describe:

- The type of DRI land uses and jobs anticipated to be found within the project;
- The wage levels of the jobs found in the project's AOI area;
- Types and costs of AOI housing choices;
- Housing affordability within the AOI; and
- Findings related to meeting GRTA's Evaluation Criterion.

Study Parameters and Methodology

This analysis required the identification of an Area of Influence (AOI) for the project. The project's AOI was determined using Caliper Corporation's *TransCAD* software to map six road miles from the site. *TransCAD* uses the TIGER road files developed by the U.S. Bureau of the Census. The intersection closest to the site was identified (Pleasant Hill Road at Satellite Boulevard). *TransCAD* was used to measure six road miles from the nearest intersection in all directions to obtain the AOI boundaries. A map of the AOI area is provided in Figure 7-1.

Figure 7-1. Area Of Influence



In order to identify the population, housing, household and other data for the AOI, the boundaries were created in a GIS format and were placed over a GIS layer of the census tracts containing the applicable data from the 2000 U.S. Decennial Census. Census tracts located within or intersecting with the AOI were identified from the region's total census tracts. Where U.S. Census data were not available, the analysis incorporated data from other sources, including the Atlanta Regional Commission (ARC), U.S. Bureau of Labor Statistics, Ginnie Mae, and ESRI. The sources and methodologies for obtaining data for various elements of the AOI analysis have been referenced throughout the document.

Project Employment Analysis

The employment component of the site is planned for approximately 724,000 square feet of office, 550,000 square feet of retail, and 320 units/rooms of hotel. The following employee rates per square foot of building space (or per hotel room) were assumed:

- Office - (1) worker for every 300 square feet of space.
- Retail - (1) worker for every 500 square feet of space.
- Hotel – (1) worker for every 1.8 hotel rooms.

The rates for the office and retail are regional averages provided by the Atlanta Regional Commission (ARC). The hotel estimate was derived from hotel data in Gwinnett County, which came out to be 0.55 employees per hotel room. Based on the anticipated square footages (and rooms) of the land uses within the DRI and the assumed employee rates, the number of employees was calculated. Table 7-1 shows the results of the analysis.

Table 7-1. DRI Employment

Land Use	Intensity (KSF/Units)	Employee per SF or per Room	Number of Employees
Office	724	300	2,413
Retail	551	500	1,102
Hotel	320	0.55	176
TOTAL			**3,691**

The job types expected to be generated from the development were identified from the U.S. Department of Bureau of Labor Statistics (BLS). The employment and salary of each job type in the vicinity of the site was then estimated based on US BLS "Quarterly Census of Employment and Wages" data. Tables 7-2 through 7-4 show the estimated number of site employees and their associated average annual incomes for the area.

Table 7-2. Anticipated Office Employment

Occupation Title	Number of Employees	Annual Salary
Management/Business/Financial		
Finance & Insurance	472	$57,845
Real Estate & Rental & Leasing	146	$39,786
Management of companies & enterprises	170	$72,905
Professional	701	$55,091
Sales	506	$33,460
Adminstrative	418	$27,682
Total	**2,413**	

Source: Bureau of Labor Statistics, http://www.bls.gov (2003 Data)

Table 7-3. Anticipated Retail Employment

Occupation Title	Number of Employees	Annual Salary
Retail Trade	1,102	$27,096

Source: Bureau of Labor Statistics, http://www.bls.gov (2003 Data)

Table 7-4. Anticipated Hotel Employment

Occupation Title	Number of Employees	Annual Salary
Hotel Trade	176	$17,708

Source: Bureau of Labor Statistics, http://www.bls.gov (2003 Data)

Area of Influence Housing Analysis

Housing information for the AOI area was obtained for the purpose of estimating the availability and affordability of housing to DRI employees. Data was obtained from *ESRI Business Information Solutions* for the housing (owner and rental) occupancy and vacancy in the AOI. Table 7-5 shows the number of all housing in the AOI projected for 2012.

Table 7-5. Housing Units in AOI

2012 Housing Units*	% of Total Housing Units in AOI	# of Units
Owner Occupied Housing Units	61.4%	80,185
Renter Occupied Housing Units	35.1%	45,838
Vacant Housing	3.5%	4,571
Total		**130,594**

Source: ESRI BIS

*Estimated, based on 2011 ESRI forecast

Owner occupied housing values were obtained for each of the Census Block Groups within the AOI. Table 7-6 presents the data for owner occupied units in the AOI.

Table 7-6. Value of Owner Occupied Housing Units in the AOI

Housing Value Range	%*	Total Number in AOI
< $50,000	2.5%	2,005
$50,000 - 99,999	13.1%	10,504
$100,000 - 149,999	41.8%	33,517
$150,000 - 199,999	19.8%	15,877
$200,000 - 299,999	13.6%	10,905
$300,000 - 499,999	6.4%	5,132
$500,000 - 999,999	2.4%	1,924
$1,000,000+	0.4%	321
Total**	**100.0%**	**80,185**

*Based on 2000 Data from ESRI

**Estimated 2012 HU in AOI

Source: ESRI BIS

Monthly housing costs for owner occupied units were determined using the Ginnie Mae Affordability Calculator. The Government National Mortgage Association (Ginnie Mae) uses this tool to assess an individual's or family's ability to afford an owner occupied unit depending on the cost of the home, its geographic location, and the market rates for mortgage loans. The numbers of rental units within monthly payment ranges were obtained from the *American FactFinder* for the census block groups within the AOI. Table 7-7 demonstrates the monthly housing costs of all occupied housing in the AOI projected for 2012.

Table 7-7. Monthly Housing Costs for AOI Housing

Monthly Payment	Owner Units in AOI	Renter Units in AOI	Total Units in AOI
< $499	1810	2632	4,442
$500 - $599	72	4023	4,095
$600 - $699	146	10765	10,911
$700 - $799	131	14453	14,584
$800 - $899	99	6916	7,015
$900 - $999	150	3827	3,977
$1,000 - $1,249	203	2605	2,808
$1,250 - $1,499	422	401	823
$1,500 - $1,999	919	135	1,054
$2,000+	76234	81	76,315
Total	**80,185**	**45,838**	**126,023**

Source: American FactFinder, http://www.factfinder.census.gov

National Mortgage Association, http://www.ginniemae.gov

ESRI BIS

Affordability Analysis

Data collected from the 2000 U.S. Decennial Census for census tracts in the AOI were used to approximate the number of workers per household who would be contributing towards housing costs. Table 7-8 demonstrates the distribution of workers per household in the AOI area. For Criterion 7 evaluation, it is assumed that a third worker in a household would not likely contribute to housing costs and is included as a two-person household.

Table 7-8. Workers per Household

Workers per Household	Number of Households	Percent
Zero	4,990	4%
One	34,669	28%
Two	67,734	54%
More than Two	18,630	15%
Total	126,023	100%

Source: www.factfinder.census.gov

To determine an individual's or family's ability to afford the monthly housing costs of the AOI's owner or rental housing, the recommended ratio of monthly housing costs to monthly household income (30%) was applied to yield minimum annual household income requirements.

To provide a conservative analysis of the split in income contributions to housing costs, the salary requirements were analyzed to determine how a one or two-person household would split the housing costs under various conditions. The first condition demonstrates the housing affordability for a single-income household. The second condition is where two earners contribute equally to meeting the minimum requirements (50%/50% ratio). Finally, the third condition assumes that in a two-earner household, one worker in the household earns substantially more income than the second worker (a 65%/35% split). The splits of income contributions to meet the minimum requirements under these situations are shown in Table 7-9.

Criterion 7 Evaluation

Based on the distribution of jobs and their associated salaries in the proposed DRI, economics of the housing costs in the AOI, and the demographics of the area (household size, etc.), the number of individuals with reasonable opportunity to work in the DRI and live in the AOI area has been estimated.

AOI housing units in each monthly cost range were divided to demonstrate the distribution of units by the anticipated workers per household. The salaries of the estimated DRI jobs previously have been compared to minimum worker income requirements. Table 7-9 shows that one hundred percent (100%) of the workers reasonably anticipated to be employed in the DRI will have the opportunity to reside in the AOI. **The proposed project meets GRTA's evaluation Criterion 7b.**

Table 7-9. Reasonable Opportunity of Workers in the DRI to Live in the AOI

Monthly Cost	Housing Units in the AOI	Split for One or Two Workers	MIN Monthly Contribution $	MAX Monthly Contribution $	MIN Annual Income Req. $	MAX Annual Income Req. $	Number of DRI Employees who Meet Income Requirements $
< $499	1,222	100%	-	499	-	19,960	
	2,387	50%	-	250	-	10,000	
		65%	-	324	-	12,960	
		35%	-	175	-	7,000	
$500 - $599	1,127	100%	500	599	20,000	23,960	
	2,201	50%	250	300	10,000	12,000	
		65%	325	389	13,000	15,560	
		35%	175	210	7,000	8,400	
$600 - $699	3,002	100%	600	699	24,000	27,960	1,102
	5,864	50%	300	350	12,000	14,000	
		65%	390	454	15,600	18,160	
		35%	210	245	8,400	9,800	
$700 - $799	4,012	100%	700	799	28,000	31,960	
	7,838	50%	350	400	14,000	16,000	
		65%	455	519	18,200	20,760	
		35%	245	280	9,800	11,200	
$800 - $899	1,930	100%	800	899	32,000	35,960	
	3,770	50%	400	450	16,000	18,000	176
		65%	520	584	20,800	23,360	
		35%	280	315	11,200	12,600	
$900 - $999	1,094	100%	900	999	36,000	39,960	
	2,138	50%	450	500	18,000	20,000	
		65%	585	649	23,400	25,960	
		35%	315	350	12,600	14,000	
$1,000 - $1,249	772	100%	1,000	1,249	40,000	49,960	
	1,509	50%	500	625	20,000	25,000	
		65%	650	812	26,000	32,480	
		35%	350	437	14,000	17,480	
$1,250 - $1,499	226	100%	1,250	1,449	50,000	57,960	
	442	50%	625	725	25,000	29,000	418
		65%	813	942	32,520	37,680	
		35%	438	507	17,520	20,280	
$1,500 - $1,999	290	100%	1,500	1,999	60,000	79,960	170
	566	50%	750	1,000	30,000	40,000	146
		65%	975	1,299	39,000	51,960	
		35%	525	700	21,000	28,000	
More than $2,000	20,994	100%	2,000	-	80,000	-	
	41,017	50%	1,000	-	40,000	-	1,172
		65%	1,300	-	52,000	-	
		35%	700	-	28,000	-	506
Total DRI Employees who can be housed with AOI							3,691
Total DRI Employees							3,691
Percentage of DRI Employees who can afford housing within the AOI							**100%**

Source: 2004 ESRI BIS, www.ginniemae.gov

Introduction

This section of the study presents an analysis of the site layout for the Site in relation to its compliance with the air quality guidelines established by the Atlanta Regional Commission (ARC). The ARC procedure for reviewing and approving Developments of Regional Impact (DRI) requires the establishment of Air Quality "Performance Benchmarks." These benchmarks are necessary for the region to identify air quality progress in accordance with federal air quality regulations.

ARC Specifications

ARC guidelines indicate that a reduction in emissions from 250 to 214 tons per day is needed to bring the region into compliance with the National Ambient Air Quality Standards (NAAQS). This desired reduction applies to developments reviewed by the ARC. Each development must incorporate transportation-related measures that contribute to a 15% reduction in vehicle miles traveled (VMT), which are directly linked to improvements in air quality. Roadway infrastructure and non-vehicular connectivity features such as walking trails, bike lanes, sidewalks, and public transit concepts are a few proactive solutions that would induce VMT reductions.

Atlanta Global Station boasts incredible density, consisting of seven (7) distinctive different types of land uses: residential high-rise condos, mixed-use residential lofts, office and retail, an office tower, a hotel, and a multi-purpose conference center. The Residential is the predominant use, with office and retail the second most predominant uses. The Benchmark criteria used in this assessment were No. 1B, No. 2C, No. 4, and No. 6E. These criteria are described as follows:

1. **Projects that meet the relevant density target levels will receive the following VMT credits:**

   B. For projects where Residential is the dominant use:

   Between 10 and 15 dwelling units/acre (-4%)
   Greater than 15 dwelling units/acre (-6%)

2. **Projects that contain a 'mix' of uses will receive the following VMT credits:**

   C. For projects where Residential is the dominant use*:

   If at least 10% of gross floor area is retail space (-4%)
   If at least 10% of gross floor area is office (-4%)
   If Both target levels are met (-9%)

4. Proximity to Public Transportation

For all project types:
If the project is located within 1/4 mile of a bus stop (MARTA, CCT, Other) (-3%)

6. Projects that contain bicycle or pedestrian facilities within the site receive the following VMT credits*:

(Select one of A through E)

E. Bike/ped networks in developments that meet one Density or Mixed Use 'target' and connect to adjoining uses (-5)

Evaluation

Benchmark 1 requires that certain density thresholds be met to qualify for VMT credits. For sites that are predominantly residential in nature, one density threshold is met if the dwelling units per acre achieve between 10 and 15, and a second threshold is met if the dwelling units per acre exceed 15. Over 25 units per acre will be provided on-site. **Thus, Atlanta Global Station qualifies for a (-6%) reduction.**

Benchmark 2 requires that the site meet certain mixed-use thresholds. For mixed-use sites that are predominantly residential in nature, VMT credits are achieved if the secondary land use, either retail or office, exceeds 10% of gross floor area (GFA). Additional VMT credits are achieved if the tertiary land use, either retail or office, also exceeds 10% of GFA. At least 10% of the site is retail, and at least 10% of the site is office use. **Therefore, Atlanta Global Station qualifies for a (-9%) reduction.**

Benchmark 4 requires that certain proximity to public transit thresholds be met for VMT credits. If the project is located within ¼ mile of a bus stop, the threshold is met. The Gwinnett County Transit Center is located across the street from Atlanta Global Station. **Therefore, Atlanta Global Station qualifies for a (-3%) reduction.**

Benchmark 6 requires that certain bicycle and/or pedestrian amenities be provided to not only achieve VMT credits here, but are a secondary requirement to receive VMT credits for Benchmark 2. If bicycle and/or pedestrian facilities connect all internal uses, and connect to adjoining uses (with facilities along the border of the property or off-site), and if at least one density threshold is met (Criterion 6E), then VMT credits are achieved. The subject site meets Benchmark 2, and the proposed development will have an extensive internal bicycle and/or pedestrian system on-site. **Therefore, Atlanta Global Station qualifies for a (-5%) reduction.**

Conclusion

Based on the data and information presented in this study, it is concluded that the site layout for Atlanta Global Station coincides with the air quality guidelines set out by the ARC. The residential linkages from the proposed residential areas to the proposed on-site retail, offices, hotel, and conference center are expected to substantially reduce the overall VMT for the site and accelerate air quality improvements. Furthermore, the non-vehicular connectivity proposed with the extensive on-site sidewalk system will serve as an attractive travel alternative for local residents. **VMT Credits for Atlanta Global Station are at least 23% (a minimum of 15% is desired).**

Introduction

This section of the report presents a summary of the data and information that address the GRTA DRI Review Criteria that are contained in Section 3-103(A) of the *Procedures and Principles for GRTA Development of Regional Impact Review*, January 14, 2002.

Section 3-103(A) Review Criteria

1. *Indicate whether or not the proposed DRI is likely to promote improved regional mobility in terms of the quality, character, convenience and flexibility of transportation options.* The Site will promote improved regional mobility in terms of the quality, character, convenience, and flexibility of transportation options that exist at this time. The Site is located in an area where there are some practical transportation options other than the personal vehicle at this time. The Gwinnett County Transit Center is located across the street from the Site. Further, the Site is proposed to have an extensive internal sidewalk system, with external connections provided by the developer to provide effective pedestrian mobility off of and onto the Site.

2. *Indicate whether or not the proposed DRI is likely to promote improved regional mobility by reducing Vehicle Miles of Travel.* The Site is likely to promote improved regional mobility by reducing Vehicle Miles of Travel (VMT) because 100% of the persons who are reasonably anticipated to work on the Site have an opportunity to find housing within the Area of Influence (in addition to the housing opportunities that will also exist on the Site itself), thus potentially reducing the VMT for work. In addition, due to the mixed-use nature of the Site, there will be external trip reductions due to internal capture. Further, a significant percentage of the external trips will be "pass-by" retail trips, further reducing the net new external trips. Moreover, the Gwinnett County Transit Center is located across from the site. A 5% transit mode split reduction was assumed in the Study. (See Table 3-1 for specific numbers involved.)

3. *Indicate whether or not the proposed DRI is likely to promote improved regional mobility because it is located in an urban core, town center, an activity center previously designated by an RDC, a rail/transit station development or is part of a publicly sponsored redevelopment or infill initiative.* The Site is located in the Gwinnett Place Community Improvement District (CID) and is adjacent to the Gwinnett County Transit Center at Gwinnett Place Mall. The Site is a re-development initiative.

4. *Indicate whether or not the proposed DRI is located sufficiently close to existing or planned transit facilities to indicate a likelihood of significant use of transit by residents, employees and visitors of the proposed DRI.* There are currently existing transit facilities within 1/2 mile of the Site. A 5% transit mode split was assumed in the Study (see Table 3-1) considering the sites proximity to the Gwinnett County Transit Center.

5. *Indicate whether or not the proposed DRI is located within an established Transportation Management Area which creates a likelihood that the proposed DRI is reasonably anticipated to result in improved regional mobility as a result of the Transportation Management Area.* The Site is not located within an established Transportation Management Area per se (at least not yet). However, the Site is located in a CID (Community Investment District), which it will contribute to. Thus there is some likelihood that this will ultimately contribute to improved regional mobility.

6. *Indicate whether or not off-site trip generation from the proposed DRI is reduced by at least fifteen percent (15%), or, in the event that a proposed DRI is unable to satisfy the trip reduction standard established in this subsection because of other conditions which are beyond the control of the developer or the affected local government, the proposed DRI implements all available trip reduction techniques which are reasonably practical.* Off-site trip production from the Site is reduced by at least 15%, (calculated to be approximately 30%; see Table 3-1).

7. *Indicate whether or not the proposed DRI:*
   (a) Contains a mix of uses which are reasonably anticipated to contribute to a balancing of land uses such that it would be affordable for at least ten percent (10%) of the persons who are reasonably anticipated to be employed in the proposed DRI are reasonably anticipated to have an opportunity reside within the DRI; or,
   (b) Is located in an Area of Influence where the proposed DRI is reasonably anticipated to contribute to a balancing of land uses within the Area of Influence such that twenty-five percent (25%) of the persons who are reasonably anticipated to be employed in the proposed DRI have the opportunity to live within the Area of Influence; or,
   (c) Is located in an Area of Influence with employment opportunities which are such that at least twenty-five percent (25%) of the persons who are reasonably anticipated to live in the proposed DRI and are reasonably expected to be employed will have an opportunity to find employment appropriate to such persons' qualifications and experience within the Area of Influence.

   The Site is located within an Area of Influence with housing opportunities such that approximately 100% of the persons who are reasonably anticipated to work on the Site will have an opportunity to find housing within the Area of Influence (not to mention the housing opportunities that will also be provided on-site).

8. *Indicate whether or not the proposed DRI is located in an area where the existing level of development and availability of infrastructure within the Area of Influence of the proposed DRI is such that the proposed DRI is reasonably anticipated to result in unplanned and poorly served development which would not otherwise occur until well-planned growth and development and adequate public facilities are available.*
   The Site is NOT located in an area where the anticipated level of development and availability of infrastructure within the study network is such that the Site is reasonably anticipated to result in unplanned and poorly served development. As shown in the traffic impact analysis, the intersections serving the Site can be reasonably expected to operate at adequate Levels of Service, and/or may be mitigated and improved readily so that they will operate at adequate LOS.

Site Description

This study presents an analysis of the traffic impact expected to result from the re-development of a deteriorating existing commercial site into a mixed-use site known as Atlanta Global Station. Figure 2-1 shows the Area Map. Figure 2-2 provides a more detailed Site Location Map. Figure 2-3 shows an aerial photograph of the near vicinity of the Site.

Types and Amounts of Development

Atlanta Global Station will revitalize the site and surrounding area through a development plan that will consist of the following land uses: 974 high-rise condominiums, 200 loft condos, a combined total of 723,784 square feet of office, a 320-room hotel, a combined total of 551,188 square feet of shopping center/retail, and a multi-use convention center with a seating capacity of 6,000. There will be one (1) access point on Old Norcross Road, which will be located at the intersection of Old Norcross Road and Davenport Road. There is an existing traffic signal at the intersection. There will be four (4) access points on Pleasant Hill Road. All four (4) access points exist today; two (2) of which are signalized. There will be three (3) access points on Satellite Boulevard. All three (3) access points exist today; two (2) of which are signalized (Satellite Boulevard at Merchants Way and at Transit Center as of 11/20/2006). The Site Plan is shown in Figure 2-4.

The Site is expected to generate approximately 37,584 new vehicle trips per day (gross, and assuming a full capacity conference center event that begins and ends in the same day), but after internal capture, transit mode reductions, and pass-by trips are considered, it will generate approximately 27,208 new external trips (to/from the site) per day. Without considering the conference center, approximately 1,748 new external trips (1,162 in and 586 out) will be generated during the AM peak hour, approximately 2,465 new external trips (937 in and 1,492 out) will be generated during the PM peak hour, and 2,293 new external trips (1,192 in and 1,101 out) will be generated during the Saturday mid-day peak hour. It is estimated for the peak hours, the conference center will generate either 930 inbound trips or 930 outbound trips, depending on if the event is starting or concluding, respectively.

The agreed upon trip distributions developed for the Site are shown in Figure 3-1.

The existing zoning of the site is C-2 Commercial. The proposed new zoning is MUR (Mixed-Use Re-Development Overlay District), which is intended to promote the redevelopment of industrial properties or highway corridors which are experiencing economic or physical decline. MUR sites are intended to integrate commercial and/or office with residential land uses, promote pedestrian accessibility, reduce automobile trips, and stimulate the

value and improve the visual appeal of the surrounding community.

After consultation with GRTA and Gwinnett County, the following intersections were agreed upon for investigation as part of the Traffic Impact Analysis.

- Pleasant Hill Road and Satellite Boulevard (signalized);
- Pleasant Hill Road and IHOP driveway (RIRO);
- Pleasant Hill Road and Einstein's driveway (signalized);
- Pleasant Hill Road and Ex-Blockbuster driveway (RIRO);
- Pleasant Hill Road and Rooms-to-go (signalized);
- Pleasant Hill Road and Old Norcross Road (signalized);
- Old Norcross Road and Davenport Road (signalized);
- Old Norcross Road and Citgo driveway;
- Old Norcross Road and Bally's driveway;
- Satellite Boulevard and Old Norcross Road (signalized);
- Satellite Boulevard and Transit Center (signalized);
- Satellite Boulevard and Merchant's Way (signalized); and
- Satellite Boulevard and Gwinnett Station driveway (RIRO).

After consultation with GRTA and Gwinnett County, it was agreed that no roadway segments would be analyzed.

Intersection Capacity Analysis

The study intersections are expected to operate at a wide range of Levels of Service for Existing, Existing Build, Future No-build, and Future Build conditions. Table 10-1 summarizes the expected LOS for the study intersections. The required transportation improvements have been summarized previously, in Section 7.

Table 10-1a. Intersection LOS: Summary (1)

Existing

ID	Intersection	Improvement	Control	Movement	Weekday AM Peak Hr LOS	Weekday AM Peak Hr Delay (s)	Weekday PM Peak Hr LOS	Weekday PM Peak Hr Delay (s)	Weekend Saturday Peak Hr LOS	Weekend Saturday Peak Hr Delay (s)
1	Pleasant Hill Rd @ Satellite Blvd	n/a	Signal	n/a	D	49.9	E	76.2	E	70.2
		Optimize Splits / Add 2 x "T" for EB & WB / Add "T" for NB & SB / Add EB & SB "R"	Signal	n/a	D	50.4	D	53.0	D	54.8
2	Pleasant Hill Rd @ IHOP Dwy	n/a	Stop Sign	SB R	B	13.8	B	12.1	C	16.3
				Overall*	A	N/A	A	N/A	A	N/A
3	Pleasant Hill Rd @ Einsteins Dwy	n/a	Signal	n/a	A	8.1	B	16.0	C	25.0
4	Pleasant Hill Rd @ Ex-Blockbuster Dwy	n/a	Stop Sign	SB R	B	14.0	B	12.6	C	15.1
				Overall*	A	N/A	A	N/A	A	N/A
5	Pleasant Hill Rd @ Rooms-to-go Dwy	n/a	Signal	n/a	A	9.1	B	16.0	C	33.9
6	Pleasant Hill Rd @ Old Norcross Rd	n/a	Signal	n/a	F	126.0	F	105.7	F	102.9
		Optimize Splits / Add 2x EB "T" & 2x WB "T" / Add SB "L"	Signal	n/a	D	42.8	D	54.8	D	54.8
7	Old Norcross Rd @ Davenport Rd	n/a	Signal	n/a	C	30.9	D	45.4	D	44.1
8	Old Norcross Rd @ Citgo Dwy**	n/a	Stop Sign	NB	E	42.3	F	52.7	A	0.0
				SB	A	0.0	A	0.0	C	20.7
				EB L	A	0.0	A	0.0	A	0.0
				WB L	B	10.1	C	15.7	A	0.0
				Overall*	B	N/A	A	N/A	A	N/A
9	Old Norcross Rd @ Bally's Dwy**	n/a	Stop Sign	NB	D	31.2	F	62.1	C	21.0
				SB	E	42.4	E	35.0	C	17.3
				EB L	C	16.6	B	11.5	A	9.8
				WB L	A	9.5	C	15.3	B	10.5
				Overall*	B	N/A	A	N/A	A	N/A
10	Old Norcross Rd @ Satellite Blvd	n/a	Signal	n/a	E	60.5	E	64.7	C	31.7
		Optimize Splits / Add EB "L" / Add SB "T"	Signal	n/a	D	54.7	C	32.9	C	26.2
11	Satellite Blvd @ Transit Center	n/a	Signal	n/a	A	5.1	A	5.4	A	2.2
12	Satellite Blvd @ Merchants Way	n/a	Signal	n/a	A	6.2	B	16.5	C	22.0
13	Satellite Blvd @ Gwinnett Station	n/a	Stop Sign	EB R	B	13.4	B	12.8	B	13.2
				Overall*	A	N/A	A	N/A	A	N/A

*ICU LOS
**These driveways likely operate better than shown due to upstream and downstream signals. Also, these driveways will be closed considering the Site Plan.

Future No-build

ID	Intersection	Improvement	Control	Movement	Weekday AM Peak Hr LOS	Weekday AM Peak Hr Delay (s)	Weekday PM Peak Hr LOS	Weekday PM Peak Hr Delay (s)	Weekend Saturday Peak Hr LOS	Weekend Saturday Peak Hr Delay (s)
1	Pleasant Hill Rd @ Satellite Blvd	n/a	Signal	n/a	E	58.9	F	86.5	F	81.6
		Optimize Splits / Add "T" for EB & WB / Add EB & SB "R"	Signal	n/a	D	51.9	E	79.7	E	73.2
2	Pleasant Hill Rd @ IHOP Dwy	n/a	Stop Sign	SB R	B	14.3	B	12.4	C	17.0
				Overall*	A	N/A	A	N/A	A	N/A
3	Pleasant Hill Rd @ Einsteins Dwy	n/a	Signal	n/a	A	8.3	B	17.1	C	25.5
4	Pleasant Hill Rd @ Ex-Blockbuster Dwy	n/a	Stop Sign	SB R	B	14.5	B	12.9	C	15.7
				Overall*	A	N/A	A	N/A	A	N/A
5	Pleasant Hill Rd @ Rooms-to-go Dwy	n/a	Signal	n/a	A	9.3	B	16.3	C	34.4
6	Pleasant Hill Rd @ Old Norcross Rd	n/a	Signal	n/a	F	140.2	F	122.6	F	139.6
		Optimize Splits / Add EB & WB "T"	Signal	n/a	E	55.8	E	67.1	E	60.1
7	Old Norcross Rd @ Davenport Rd	n/a	Signal	n/a	D	35.6	D	51.8	D	45.3
8	Old Norcross Rd @ Citgo Dwy**	n/a	Stop Sign	NB	E	47.6	F	63.5	C	22.2
				SB	A	0.0	A	0.0	A	0.0
				EB L	A	0.0	A	0.0	A	0.0
				WB L	B	10.3	C	16.7	A	0.0
				Overall*	B	N/A	A	N/A	A	N/A
9	Old Norcross Rd @ Bally's Dwy**	n/a	Stop Sign	NB	D	34.2	F	76.1	C	22.4
				SB	E	48.0	E	38.6	C	18.1
				EB L	C	17.7	B	11.9	B	10.0
				WB L	A	9.7	C	16.3	B	10.8
				Overall*	B	N/A	A	N/A	A	N/A
10	Old Norcross Rd @ Satellite Blvd	n/a	Signal	n/a	E	72.6	E	78.6	D	36.1
11	Satellite Blvd @ Transit Center	n/a	Signal	n/a	A	6.1	A	5.2	A	2.2
12	Satellite Blvd @ Merchants Way	n/a	Signal	n/a	A	6.2	B	17.2	C	21.8
13	Satellite Blvd @ Gwinnett Station	n/a	Stop Sign	EB R	B	13.7	B	13.1	B	13.5
				Overall*	A	N/A	A	N/A	A	N/A

*ICU LOS
**These driveways likely operate better than shown due to upstream and downstream signals. Also, these driveways will be closed considering the Site Plan.

Table 10-1b. Intersection LOS: Summary (2)

Existing Build (Inbound Conference Traffic)

ID	Intersection	Improvement	Control	Movement	Weekday AM Peak Hr LOS	Weekday AM Peak Hr Delay (s)	Weekday PM Peak Hr LOS	Weekday PM Peak Hr Delay (s)	Weekend Saturday Peak Hr LOS	Weekend Saturday Peak Hr Delay (s)
1	Pleasant Hill Rd @ Satellite Blvd	n/a	Signal	n/a	F	99.7	F	139.7	F	138.0
		Optimize Splits / Add 2 x "T" for EB & WB / Add "T" for NB & SB / Add EB & SB "R"	Signal	n/a	D	55.0	E	71.6	E	70.1
2	Pleasant Hill Rd @ IHOP Dwy	n/a	Stop Sign	SB R	C	17.9	C	15.7	C	20.3
				Overall*	B	N/A	B	N/A	C	N/A
3	Pleasant Hill Rd @ Einsteins Dwy	n/a	Signal	n/a	B	16.7	F	146.3	E	70.7
		Optimize Splits / Add SB "L" / Add WB "R"	Signal	n/a	B	12.5	D	54.8	D	51.7
4	Pleasant Hill Rd @ Ex-Blockbuster Dwy	n/a	Stop Sign	SB R	B	14.9	C	16.6	C	19.2
				Overall*	A	N/A	A	N/A	B	N/A
5	Pleasant Hill Rd @ Rooms-to-go Dwy	n/a	Signal	n/a	C	20.3	B	16.4	C	31.1
6	Pleasant Hill Rd @ Old Norcross Rd	n/a	Signal	n/a	F	128.7	F	122.0	F	123.6
		Optimize Splits / Add EB & WB "T"	Signal	n/a	E	68.1	E	71.8	E	68.5
7	Old Norcross Rd @ Davenport Rd	Optimize Splits / Add new NB Approach	Signal	n/a	D	51.8	D	50.8	D	50.6
10	Old Norcross Rd @ Satellite Blvd	n/a	Signal	n/a	E	71.6	F	127.1	C	33.4
		Optimize Splits	Signal	n/a	E	71.6	E	66.4	D	37.4
11	Satellite Blvd @ Transit Center	n/a	Signal	n/a	A	8.7	A	3.8	A	5.7
12	Satellite Blvd @ Merchants Way	n/a	Signal	n/a	C	30.1	F	136.6	F	89.0
		Optimize Splits	Signal	n/a	C	32.2	C	24.0	C	31.3
13	Satellite Blvd @ Gwinnett Station	n/a	Stop Sign	EB R	B	13.7	C	15.8	B	13.8
				Overall*	A	N/A	A	N/A	A	N/A

*ICU LOS

Existing Build (Outbound Conference Traffic)

ID	Intersection	Improvement	Control	Movement	Weekday AM Peak Hr LOS	Weekday AM Peak Hr Delay (s)	Weekday PM Peak Hr LOS	Weekday PM Peak Hr Delay (s)	Weekend Saturday Peak Hr LOS	Weekend Saturday Peak Hr Delay (s)
1	Pleasant Hill Rd @ Satellite Blvd	n/a	Signal	n/a	E	72.9	F	165.5	F	136.4
		Optimize Splits / Add 2 x "T" for EB & WB / Add "T" for NB & SB / Add EB & SB "R"	Signal	n/a	D	46.3	E	74.4	E	70.7
2	Pleasant Hill Rd @ IHOP Dwy	n/a	Stop Sign	SB R	C	15.7	B	13.7	C	17.6
				Overall*	A	N/A	C	N/A	B	N/A
3	Pleasant Hill Rd @ Einsteins Dwy	n/a	Signal	n/a	B	13.9	F	356.7	F	142.7
		Optimize Splits / Add 2 x SB "L" / Add WB "R"	Signal	n/a	B	16.3	D	54.3	D	54.6
4	Pleasant Hill Rd @ Ex-Blockbuster Dwy	n/a	Stop Sign	SB R	B	14.3	C	18.4	C	21.4
				Overall*	A	N/A	A	N/A	B	N/A
5	Pleasant Hill Rd @ Rooms-to-go Dwy	n/a	Signal	n/a	B	19.1	B	17.0	C	34.3
6	Pleasant Hill Rd @ Old Norcross Rd	n/a	Signal	n/a	F	126.6	F	118.9	F	130.7
		Optimize Splits / Add EB & WB "T"	Signal	n/a	E	62.0	E	68.0	D	54.9
7	Old Norcross Rd @ Davenport Rd	Optimize Splits / Add new NB Approach	Signal	n/a	D	48.8	D	54.0	D	50.5
10	Old Norcross Rd @ Satellite Blvd	n/a	Signal	n/a	E	61.9	F	142.5	D	50.2
		Optimize Splits	Signal	n/a	E	61.5	E	72.5	D	39.0
11	Satellite Blvd @ Transit Center	n/a	Signal	n/a	A	7.6	A	8.3	A	8.9
12	Satellite Blvd @ Merchants Way	n/a	Signal	n/a	B	19.8	F	100.3	E	67.7
		Optimize Splits	Signal	n/a	C	20.5	D	53.1	C	34.2
13	Satellite Blvd @ Gwinnett Station	n/a	Stop Sign	EB R	B	13.7	C	20.0	C	16.6
				Overall*	A	N/A	A	N/A	A	N/A

*ICU LOS

Table 10-1c. Intersection LOS: Summary (3)

Future Build (Inbound Conference Traffic)

ID	Intersection	Improvement	Control	Movement	Weekday AM Peak Hr LOS	Weekday AM Peak Hr Delay (s)	Weekday PM Peak Hr LOS	Weekday PM Peak Hr Delay (s)	Weekend Saturday Peak Hr LOS	Weekend Saturday Peak Hr Delay (s)
1	Pleasant Hill Rd @ Satellite Blvd	n/a	Signal	n/a	F	110.2	F	154.2	F	152.2
		Optimize Splits / Add 2 x "T" for EB & WB / Add "T" for NB & SB / Add EB & SB "R"	Signal	n/a	D	50.0	E	77.7	E	78.0
2	Pleasant Hill Rd @ IHOP Dwy	n/a	Stop Sign	SB R	C	18.6	C	16.1	C	21.2
				Overall*	B	N/A	B	N/A	C	N/A
3	Pleasant Hill Rd @ Einsteins Dwy	n/a	Signal	n/a	B	17.5	F	143.4	F	80.5
		Optimize Splits / Add SB "L" / Add WB "R"	Signal	n/a	B	18.0	D	54.1	D	45.7
4	Pleasant Hill Rd @ Ex-Blockbuster Dwy	n/a	Stop Sign	SB R	C	15.4	C	17.2	C	20.2
				Overall*	A	N/A	A	N/A	B	N/A
5	Pleasant Hill Rd @ Rooms-to-go Dwy	n/a	Signal	n/a	C	20.7	B	17.2	C	34.5
6	Pleasant Hill Rd @ Old Norcross Rd	n/a	Signal	n/a	F	140.6	F	138.3	F	141.1
		Optimize Splits / Add EB & WB "T"	Signal	n/a	E	63.7	E	76.6	E	66.8
7	Old Norcross Rd @ Davenport Rd	Optimize Splits / Add new NB Approach	Signal	n/a	D	54.6	D	54.3	D	51.3
10	Old Norcross Rd @ Satellite Blvd	n/a	Signal	n/a	F	86.1	F	138.0	D	44.1
		Optimize Splits	Signal	n/a	E	79.6	E	75.3	D	39.2
11	Satellite Blvd @ Transit Center	n/a	Signal	n/a	A	9.4	A	3.9	A	5.8
12	Satellite Blvd @ Merchants Way	n/a	Signal	n/a	C	32.4	F	136.1	F	113.1
		Optimize Splits	Signal	n/a	C	33.6	C	30.8	C	31.7
13	Satellite Blvd @ Gwinnett Station	n/a	Stop Sign	EB R	B	14.1	C	16.3	B	14.2
				Overall*	A	N/A	A	N/A	A	N/A

*ICU LOS

Future Build (Outbound Conference Traffic)

ID	Intersection	Improvement	Control	Movement	Weekday AM Peak Hr LOS	Weekday AM Peak Hr Delay (s)	Weekday PM Peak Hr LOS	Weekday PM Peak Hr Delay (s)	Weekend Saturday Peak Hr LOS	Weekend Saturday Peak Hr Delay (s)
1	Pleasant Hill Rd @ Satellite Blvd	n/a	Signal	n/a	F	83.3	F	180.0	F	151.3
		Optimize Splits / Add 2 x "T" for EB & WB / Add "T" for NB & SB / Add EB & SB "R"	Signal	n/a	D	51.6	E	77.4	E	71.2
2	Pleasant Hill Rd @ IHOP Dwy	n/a	Stop Sign	SB R	C	16.3	B	14.1	C	18.4
				Overall*	A	N/A	C	N/A	C	N/A
3	Pleasant Hill Rd @ Einsteins Dwy	n/a	Signal	n/a	B	15.0	F	348.0	F	155.6
		Optimize Splits / Add 2 x SB "L" / Add WB "R"	Signal	n/a	B	14.7	D	54.8	D	54.2
4	Pleasant Hill Rd @ Ex-Blockbuster Dwy	n/a	Stop Sign	SB R	C	14.8	C	19.2	C	22.9
				Overall*	A	N/A	A	N/A	B	N/A
5	Pleasant Hill Rd @ Rooms-to-go Dwy	n/a	Signal	n/a	B	19.4	B	17.8	D	38.6
6	Pleasant Hill Rd @ Old Norcross Rd	n/a	Signal	n/a	F	138.8	F	135.1	F	147.1
		Optimize Splits / Add EB & WB "T"	Signal	n/a	E	58.3	E	73.5	E	68.7
7	Old Norcross Rd @ Davenport Rd	Optimize Splits / Add new NB Approach	Signal	n/a	D	54.9	D	54.6	D	48.6
10	Old Norcross Rd @ Satellite Blvd	n/a	Signal	n/a	E	75.7	F	153.7	E	55.7
		Optimize Splits	Signal	n/a	E	74.9	E	73.8	D	40.6
11	Satellite Blvd @ Transit Center	n/a	Signal	n/a	A	8.3	A	8.1	A	8.7
12	Satellite Blvd @ Merchants Way	n/a	Signal	n/a	C	20.5	F	104.4	E	68.8
		Optimize Splits / Re-stripe for EB "R"	Signal	n/a	B	12.9	C	32.1	C	24.1
13	Satellite Blvd @ Gwinnett Station	n/a	Stop Sign	EB R	B	14.1	C	20.9	C	17.1
				Overall*	A	N/A	A	N/A	A	N/A

*ICU LOS

Area of Influence Analysis

The Site is located in an Area of Influence with housing opportunities that are such that approximately 100% of the persons who are reasonably anticipated to work on the Site will have an opportunity to find housing within the AOI. The Site meets GRTA's evaluation Criterion 7b.

Air Quality Benchmark Statement

Based on the data and information presented in this study, it is concluded that the site layout for Atlanta Global Station coincides with the air quality guidelines set out by the ARC. The residential linkages from the proposed residential areas to the proposed on-site retail, offices, hotel, and conference center are expected to substantially reduce the overall VMT for the site and accelerate air quality improvements. Furthermore, the non-vehicular connectivity proposed with the extensive on-site sidewalk system will serve as an attractive travel alternative for local residents. VMT Credits for Atlanta Global Station are at least 23% (a minimum of 15% is desired).

Conclusion

In summary, it has been shown that traffic operations in the vicinity of the Site are in some cases less than optimal. However, some of these deficiencies have been recognized by both the County and the State, and some appropriate transportation improvements have already been programmed for construction, such as the widening of Pleasant Hill Road from four lanes to six lanes from Old Norcross Road to US 23. After the completion of these improvements, along with a number of required improvements identified in this study, all studied intersections are expected operate up to or better than the Level of Service thresholds they were required to meet. Further, the study intersections are expected continue to operate adequately when traffic from the site is added.

Although various transportation improvements have been identified in the intersection capacity analyses shown in this study, it is very important to note that the majority of intersection improvements required is due to traffic conditions that have nothing to do with the development plan for Atlanta Global Station. The majority of improvements identified in the study are due to existing transportation deficiencies already observed in the transportation network. As expected, the transportation improvements shown at the access driveways serving the subject site are indeed attributed to the subject site. However, the improvements shown for external intersections off-site have been shown to be attributed to existing deficiencies in the transportation system.

TRIP GENERATION WORK SHEETS

and

INTERNAL CAPTURE WORK SHEETS

and

INTERSECTION CAPACITY ANALYSIS WORK SHEETS

and

TURNING MOVEMENT COUNTS