



AGENDA

**Gainesville Planning and Appeals Board
Tuesday, August 14, 2018, 5:30 PM
Gainesville Justice Center**

1. CALL TO ORDER

2. MINUTES

A. July 10, 2018 PAB Meeting Minutes

3. OLD BUSINESS

4. NEW BUSINESS

A. Rezoning Requests

- (1) Request from **LLJ Development, LLC** to rezone a 6.854± acres tract located on the east side of Dawsonville Highway, southeast of Beechwood Boulevard (a/k/a **0 and 1010 Dawsonville Highway**) from Office and Institutional (O-I) and General Business (G-B) to General Business (G-B).

Ward Number: One

Tax Parcel Number(s): 01-115-001-002 and 061

Request: Fitness Center, retail and restaurant

5. MISCELLANEOUS

6. ADJOURNMENT

CITY OF GAINESVILLE

AGENDA REQUEST

Date Submitted: 7/26/2018
Presenter: N/A
Item of Business: July 10, 2018 PAB Meeting Minutes
Meeting Date: 8/14/2018

Purpose of Request:

The purpose of this request is to allow the Planning and Appeals Board to approve the minutes from the referenced meeting.

History/Background:

Facts & Issues for Consideration:

The draft minutes were reviewed by the Planning Manager and Community Development Director.

Department Recommendation:

Approval of the minutes as presented.

Department Director:

Rusty Ligon

If funding is involved, are funds approved within the current budget?

N/A

Amount Requested:

Source of Funds:

Finance Comments:

Administrative Comments:

ATTACHMENTS:

Description	Type
 Draft Minutes	Minutes

GAINESVILLE PLANNING AND APPEALS BOARD
DRAFT MINUTES OF MEETING
JULY 10, 2018

CALL TO ORDER Chairman Carter at 5:30 p.m.

Members Present: Chairman Doug Carter, Vice-Chair Jane Fleming and Board Members Eddie Martin, Sr., Ryan Thompson, Carmen Delgado, Rich White and Kelvin Simmons

Members Absent: None

Staff Present: Community Development Director Rusty Ligon, Planning Manager Matt Tate and Recording Secretary Judy Foster

Others Present: Council Members Barbara Brooks and George Wangemann

MINUTES OF JUNE 12, 2018

There was a motion to approve the minutes as presented.

Motion made by Board Member Thompson
Motion seconded by Board Member Delgado
Vote – 7 favor

NEW BUSINESS

A. Rezoning Request

- 1) Request from **REB Land Development, LLC** to rezone a 2.744± acres tract located on the northwest side of the intersection of Dawsonville Highway and Lakeshore Drive (a/k/a **621 Lakeshore Drive, NW**) from Residential-I (R-I) to General Business (G-B).
Ward Number: One
Tax Parcel Number(s): 01-117-004-025
Request: Multi-tenant retail, office and restaurant

Staff Presentation: Planning Manager Matt Tate gave the following staff presentation:

The applicant is proposing to rezone the subject 2.744± acre property from R-I to G-B for the purpose of constructing a multi-tenant retail/office strip center and restaurant. The property is located within the Gateway Corridor Overlay Zone and is the current site of the 7,200± square foot Gainesville Masonic Lodge built in 1962. The property is partially wooded and contains an access driveway on Lakeshore Drive. The adjacent uses include single-family homes, Shell gas station/retail center, Little & Davenport Funeral Home and Lakeshore Mall. As well, Lake Lanier's Longwood Cove is located within close proximity to the north which is an environmentally sensitive area. The proposal includes demolishing the existing Masonic Lodge building for the redevelopment of a 10,000 square foot multi-tenant building with drive-thru and a 3,500 square foot quick service restaurant building with drive-thru. According to the applicant, most of the site will be graded and lowered to street level which will require a retaining wall to be constructed along the westerly side of the property. A 20-foot wide vegetated buffer is proposed along the north and west property lines adjacent to the residential zoning. In addition, there is an existing 60-foot wide unopened, wooded right-

of-way area located along the north property line boundary that will remain undisturbed. A right-in/right-out access drive is proposed from Dawsonville Highway and a full access drive is proposed off of Lakeshore Drive that would relocate the existing driveway. There is currently a full access, signalized intersection at Lakeshore Drive/Dawsonville Highway.

The Gainesville 2030 Future Development Map for the City of Gainesville places the subject property within the *Mixed Use General* land use category and within the *Longwood Cove* Character Area which includes areas containing or planned for a mixture of land uses including office, neighborhood retail, residential, public /institutional and parks /recreation/conservation.

Based on the proposal, the Public Works Department may require a traffic impact study from the applicant depending on the proposed tenants and projected traffic counts as the actual tenants are unknown at this time. In addition, written confirmation from GDOT shall be provided for the proposed right-in/right-out on SR 53 and any required intersection/signal improvements at the intersection of Lakeshore Drive and SR 53.

Therefore, based on the Comprehensive Plan and the adjacent residential and non-residential land uses, staff is recommending approval of the request with G-B zoning with seven conditions.

Property Owner Presentation: Ron Farmer, 4507 Arlington Court, current President of the Gainesville Masonic Lodge stated it was chartered in 1857 and was relocated to the current location in 1962. Membership had declined over the years and they need to restructure to remain viable in Gainesville. The decision to sell the current property was not made lightly as it had been discussed for many years and to ensure the Gainesville Lodge will continue to be active and serve the community for many generations to come.

Applicant Presentation: Rock Baker, 727 Lindsay Baker Court, managing member of REB Land Development, LLC stated the Masonic Lodge would like to move into a central area and build a new facility, noting the current property would be better utilized for commercial development. Even though the subject property was zoned Residential-I, it was never utilized as residential and has always been the Masonic Lodge. The traffic counts on Dawsonville Highway now exceed over 37,500 cars per day so it truly is a commercial corridor. The Masonic Lodge does not look as good as it once did and with the right redevelopment of the property it could be a big improvement over what is there currently with the right architecture and landscaping. Mr. Taker asked for a tire store to be allowed on the property as he is negotiating with Firestone which would build a very nice structure including stacked stone and brick, with nice awnings and landscaping. A picture of the type of store Firestone would like to construct if rezoning is approved was shown on the Power Point Presentation. Mr. Baker stated he had a neighborhood meeting and complimented those in attendance as they had an open mind to the proposal with no preconceived notions who felt he would do a good job for the neighborhood with the redevelopment.

FAVOR: Pat Horgan, 1004 Lakemont Drive, stated the request was confusing since the Masonic Lodge is located in a commercial building on a residential lot in a residential neighborhood. Most people in the neighborhood do not want rezoning and feel the entrance to a long standing residential subdivision should not be converted to commercial. They also felt the rezoning of existing residential property to commercial was not a good practice. However, he stated the neighborhood understands the Masonic Lodge situation is unique, a residential solution may not be attractive, and that commercial development may be inevitable on the subject property and they would like to have a voice if it does go

commercial. They met with the developer and was impressed with his quality, flexibility and integrity and felt he was an excellent developer. Even so, Mr. Horgan was still concerned about the type of use on the property and the traffic it would bring. He stated there would be dysfunctional traffic access as cars going towards the City making a left hand turn onto Lakeshore Drive and then making another left hand turn into the proposed development may be hindered by Lakeshore Drive traffic waiting at the intersection to turn and inevitably blocking the intersection. This is the same issues happening with drivers trying to turn left into Freddy's and Pueblos at the corner of Ahaluna Drive and it causes traffic to stop in the intersection. Some people may use the main exit from the development directly onto Dawsonville Highway and go about 100 feet and make a U-turn which would keep traffic off Lakeshore Drive but still is not a good plan, noting traffic from the Shell station does this as well if they need to go east on Dawsonville Highway. Adding more right turn traffic at the intersection will exacerbate the problem. Traffic volume will determine if there will be problems at the intersection and traffic volume is influenced by the type of retail tenant. A fast food restaurant with a drive-thru as proposed has the highest traffic volume in retail. Small transactions require high volume and often into late at night and seems like a poor choice to place at a problematic intersection. He felt some good examples for commercial businesses which would generate less traffic would be 9 to 5 offices, banks, medical clinics, and specialty food stores. In conclusion, Mr. Horgan stated that while they wish to preserve the neighborhood, if the City elects to rezone anyway, they favor the proposed developer. He asked the City to address the potential traffic and safety issues and promote high end, low traffic tenants for the area.

Clyde Morris, 2375 Whippoorwill Lane, stated he was representing the Lake Lanier Association (LLA) and was also Chairman of the Sedimentation & Erosion Control Committee whose goals are to find ways to protect Lake Lanier so that it stays clean, safe and full. They are trying to establish a program to get developers in the Lake Lanier area to endorse to help protect Lake Lanier from sedimentation such as was experienced in Longwood Cove many years ago when Lakeshore Mall and other structures were constructed. Several million dollars have been spent during the last decade to dredge out that cove and they want to protect it. Although he does not expect this particular development to create that much sedimentation, any sedimentation or pollutants going into the lake is something they want to avoid. Mr. Morris stated he had a conversation with the developer about these goals in respect to developing the subject property and Mr. Baker gave him authority to disclose his verbal commitment of his intention to sign a written pledge with the LLA for certain specific steps to be taken before any dirt is turned on the property if rezoning is approved. The LLA was not concerned with the use of the property but only wanted to protect the lake and has received verbal assurances from the developer that he has every intention of protecting the lake which will greatly benefit everyone.

OPPOSE: Troy McGraw, 1059 Lakemont Drive, stated he lives in the cul-de-sac and was concerned with the type of tenants in the existing gas station and multi-tenant building at the opposite corner which is also zoned General Business. They have things that are conducive to drug use and was concerned about the element that hangs around that type of business. He found drug paraphernalia in the cul-de-sac with packaging that is displayed in the convenience store. He understood the applicant was not proposing anything like that but he did not want to see any other businesses which would negatively impact the neighborhood and bring that kind of element to the area.

Chairman Carter stated there are proposed conditions of zoning which would prohibit certain uses on the subject property in an effort to discourage the type of concerns Mr. McGraw referenced.

Tom Spraley, 792 Lakeshore Drive, stated the serious problem with traffic on Dawsonville Highway has been reported in the newspaper a number of times and considerations have been made to deal with the traffic. Most of the traffic at the Lakeshore Drive intersection is coming into town from new developments to the west. He agreed with Mr. Horgan that a fast food restaurant with drive-thru would increase traffic and exacerbate the problem. The proposed use of the current driveway at the Masonic Lodge would also create a problem as he currently waits three or four minutes at the intersection before the traffic signal changes. He objects to the type of development that would create a lot more traffic, as well as any access on Lakeshore Drive, noting he would rather see a doctor's office or bank at the location.

Mandy Harris, 1459 Douglas Drive, stated there are six ingress/egress access points from Pearl Nix Parkway to Nix Drive and nine access points from Beechwood Boulevard to McEver Road. The proposed development would add two more access points making it almost the same number of access points as from Beechwood to McEver. There is continuous weaving back and forth with drivers changing lanes along Dawsonville Highway trying to get around while others are just trying to drive straight through. With two proposed fast food restaurants, it would cause the same problem as with the McDonalds access as drivers pull out and block the turn lane waiting until the traffic light changes and someone will let them over to go on into town. She asked the Board to consider that while the picture of the tire store looks nice now, and would be better than a fast food drive-thru, it may not always be there like the Pollo Tropical building on down the road which was only there for about a year and now sits empty.

Michael Proulx, 1260 Lakeshore Circle, appreciated the property owner's situation and what they want to do with the property and he understood that commercial development is part of the City's plan for the corridor. He agreed with Mr. Morris' comments and would like to see a more proactive environmental plan for the development. One and a half years after the development of the Northlake Square, the cove where he lives and the feeder streams are choked with silt, noting there is a houseboat half buried in silt which was not like that a year ago. The silt had to come from new construction and it should be seriously considered and managed. He complained how the green space behind the businesses from the mattress store to Home Depot was buried in trash and the fence was falling in places which he understood was a code enforcement issue. The businesses are also having garbage picked up at 4:00 to 5:00 in the morning so he was concerned with the close proximity of the dumpsters to the existing residential houses as shown on the concept plan. He asked the Board to consider all that has been said as they try to learn how to live in a neighborhood behind commercial businesses and balance that with what the City would like to see along the corridor, noting Gainesville should not try to be like Buford.

Glenda Pierce, 749 Sunset Boulevard, stated all traffic leads to Dawsonville Highway or so it seemed to her. She uses Nix Drive to go west on Dawsonville Highway but Sunset Boulevard and Nix Drive have to get onto the narrow Lakeshore Drive to go to the traffic light in order to turn left on Dawsonville Highway since you can no longer turn left out of Nix Drive. She lives behind Home Depot and hears heavy equipment running all night even though they are not supposed to do any of it in the early morning hours. She stated the traffic light at the Lakeshore Drive intersection has a long wait time and something has to be done about the traffic on Dawsonville Highway.

DeDe Forrester, 998 Lakeshore Drive, stated she has lived in the neighborhood since 6th grade and loved it so much she decided to build her home there. She too hears the trash cans banging and vacuums going through the night but her biggest concern was the

tremendous amount of traffic the proposal would cause, noting the gas station was not as bad since they have an outlet onto the highway and felt if the proposal only had an outlet on the highway it would be a little better. The neighborhood was not as safe as it used to be because of all the developments coming in along the highway because people walk through neighborhood to get to the mall or the convenience store and has become a safety issue. She did not want to add to the existing problems as it is already hard to get in and out of the neighborhood which felt like it was being sucked into the developments all around them.

Planning and Appeals Board Comments: Vice-Chair Fleming asked about the requirement of a traffic impact study as noted in proposed condition 5. Planning Manager Matt Tate stated the Public Works Department would determine whether a traffic study would be required based on the tenant; and out of that study, there may be specific improvements required which would include coordination between the developer, Public Works, and Community Development staff. He stated that would all hinge on what the Georgia Department of Transportation (GDOT) would require as well since they would have to permit access points, deceleration lanes, sidewalks, etc. Mr. Tate stated if the end user turns out not to be a quick service restaurant but an office instead, it may not require a traffic study because it would generally create less traffic.

Board Member Thompson asked about revising proposed condition 2 to include a tire store. Planning Manager Matt Tate stated Mr. Baker had contacted him about allowing a tire store at this location so he crafted some language to add to the condition in case the Board wanted to allow a tire store. The additional language was as follows: "Upon review and approval of the Community Development Department Director, a tire store may be permitted that meets or exceeds the architectural standards shown on the tire store picture provided by the applicant which shall be made a part of this zoning ordinance. No outside storage of tires shall be permitted."

Mr. Tate stated the referenced picture was the one shown on the Power Point Presentation.

There was a motion to recommend conditional approval to rezone the subject property from Residential-I (R-I) to General Business (G-B) for multi-tenant retail, office and restaurant uses with the following conditions, including an amendment to condition 2:

Conditions

- 1. The proposed development shall be generally consistent with the concept plan and architectural elevations provided with this rezoning application and shall meet the Architectural Design Standards within Chapter 9-9-5 of the Unified Land Development Code.**
- 2. Prohibited uses for the subject property shall include motels or hotels, group homes, crisis centers, adult novelty stores, adult entertainment centers, pawn shops, dollar-type stores, massage parlors, tobacco or vaping stores, tire stores, auto parts stores, gas station/convenience store, auto body shops, automobile sales establishments, marine sales or repair stores, automated or non-automated car washes, truck stops, coin-laundry facilities, tattoo parlors, psychics, fortune tellers, clairvoyants and the like. Upon review and approval of the Community Development Department Director, a tire store may be permitted that meets or exceeds the architectural standards shown on the tire store picture provided by the applicant which shall be made a part of this zoning ordinance. No outside storage of tires shall be permitted.**

3. With the exception of relocating the existing Lakeshore Heights subdivision sign, the property shall be limited to one multi-tenant monument style sign along Dawsonville Highway. An LED electronic message board is not permitted. In addition, one non-illuminated directional sign may be permitted at the driveway entrance on Lakeshore Drive not to exceed 4 square feet in size.
4. A minimum 35-foot wide evergreen natural and/or planted buffer shall be provided adjacent to the single-family property to the west. A minimum 20-foot wide evergreen natural and/or planted buffer shall be required adjacent to the unopened right-of-way to the north. The location, spacing, size and type of trees planted shall be subject to Community Development Department Director approval.
5. Prior to a permit being issued for the subject property, a Traffic Impact Study shall be required if determined necessary by the Gainesville Public Works Department Director.
6. All access point design for the subject property shall require review and approval by the Gainesville Public Works Department Director and shall be limited to Dawsonville Highway and Lakeshore Drive. All required access/traffic/sidewalk improvements associated with the proposed development or any additional improvements identified within the Traffic Impact Study, if determined necessary, shall be at the full expense of the developer/property owner.
7. An updated as-built boundary survey/plat of the subject property, indicating all improvements required for the proposed use, shall be recorded prior to obtaining a Certificate of Occupancy.

Motion made by Board Member Martin
Motion seconded by Board Member White
Vote – 7 favor

MISCELLANEOUS

Community Development Director Rusty Ligon introduced Heather Bryan as the new Planner II on staff.

ADJOURNMENT

There was a motion to adjourn the meeting at 6:14 p.m.

Motion made by Board Member White
Motion seconded by Board Member Simmons
Vote – 7 favor

Respectfully submitted,

Doug Carter, Chairman

Judy Foster, Recording Secretary

CITY OF GAINESVILLE

AGENDA REQUEST

Date Submitted: 7/23/2018

Presenter: Matt Tate

Item of Business: Request from **LLJ Development, LLC** to rezone a 6.854± acres tract located on the east side of Dawsonville Highway, southeast of Beechwood Boulevard (a/k/a **0 and 1010 Dawsonville Highway**) from Office and Institutional (O-I) and General Business (G-B) to General Business (G-B).
Ward Number: One
Tax Parcel Number(s): 01-115-001-002 and 061
Request: Fitness Center, retail and restaurant

Meeting Date: 8/14/2018

Purpose of Request:

The applicant is proposing to rezone the subject property for a fitness center, retail and restaurant use. The property contains two lots consisting of 4.594± acres and 2.26± acres. The larger tract is zoned Office and Institutional (O-I) and General Business (G-B) and contains a grassed lot that was previously developed for a nursing home. The smaller tract is already zoned General Business (G-B) and contains a detention pond. The proposed fitness center building is 22,000± square feet in size and the retail/restaurant building is 6,800 square feet. The anticipated hours of operation for the fitness center are 5:00 a.m. to midnight. The applicant intends to utilize City water and sewer services and access is proposed from an existing driveway on Dawsonville Highway in the form of right in/right out and a left in per GDOT approval. The property is located within the Gateway Corridor Overlay Zone and the adjacent uses include the Northlake Square shopping center, Jackson EMC office, various retail strip uses and single-family residential to the rear within the Lakeshore Heights neighborhood.

History/Background:

Facts & Issues for Consideration:

Department Recommendation:

Planning staff recommended conditional approval with 6 conditions. See Staff Recommendation report for details.

Department Director:

Rusty Ligon

If funding is involved, are funds approved within the current budget?

N/A

Amount Requested:

Source of Funds:

Finance Comments:

Administrative Comments:

ATTACHMENTS:

Description	Type
☐ Staff Recommendation Report	Report
☐ Location Maps	Backup Material
☐ Narrative	Backup Material
☐ Survey	Backup Material

- 📁 Concept Plan
- 📁 Elevations
- 📁 Traffic Impact Study

- Backup Material
- Backup Material
- Backup Material

**GAINESVILLE PLANNING and APPEALS BOARD
STAFF RECOMMENDATION**

Applicant LLJ Development, LLC
Property Owner Northeast Georgia Medical Center
Location 0 and 1010 Dawsonville Highway
Request Rezone from O-I and G-B to G-B
Total Acres 6.854[±] acres
Ward One
Proposed Use Fitness center, retail and restaurant
Planning Division Staff Recommendation **Approval, with conditions**
Date August 14, 2018

▪ **Applicant's Proposal and Background Information**

The applicant is proposing to rezone the subject property for a fitness center, retail and restaurant uses. The property is located within the Gateway Corridor Overlay Zone and contains two lots consisting of 4.594[±] acres and 2.26[±] acres. The larger tract is zoned Office and Institutional (O-I) and General Business (G-B) and contains a grassed lot that was previously the location of the New Horizons West Nursing Home that was demolished in 2013. The smaller tract is already zoned General Business (G-B) and contains a detention pond.

The proposed fitness center building is 22,000[±] square feet in size and the retail/restaurant building is 6,800 square feet. The anticipated hours of operation for the fitness center are 5:00 a.m. to 12:00 a.m. Access is proposed from an existing shared driveway on Dawsonville Highway which currently serves the adjacent Jackson EMC gated employee parking lot. The applicant is proposing to maintain the existing right in/right out and a left in access. Per GDOT approval, the proposed improvements include extending the existing northbound right turn lane, as well as, median improvements that will eliminate left turning movements leaving the subject property. City water and sewer services will be utilized which are presently available to the site.

A previous rezoning request from Lidl US Operations, LLC for a 36,000 square foot grocery store on the subject property was approved with conditions by the Planning and Appeals Board but was later withdrawn at the City Council meeting on September 19, 2017.

▪ **Adjacent Land Use and Zoning**

Location	Use	Zoning
North	Northlake Square shopping center; Guilford Clinic; Gateway Thrift Store	General Business (G-B)
South	Jackson EMC office; Undeveloped property	Light Industrial (L-I) Residential-I (R-I)
East	Lakeshore Heights Subdivision	Residential-I (R-I)
West	Trinity Baptist Church; McEver Corners shopping center; retail, and office	Residential-I (R-I) General Business (G-B)

▪ **Other Departmental Comments**

According to the Georgia Department of Transportation (GDOT), any work within the right-of-way will require review and approval from GDOT.

▪ **Traffic Impact Study Summary**

A Traffic Impact Study (TIS) was completed for the proposed development on July 25, 2018, by Wolverton & Associates, Inc. Both A.M. and P.M. peak period turning movement counts were conducted at the following three intersections:

- SR 53/Dawsonville Highway and Commercial Driveways -Olive Garden and Chipotle (signalized)
- SR 53/Dawsonville Highway and Site Driveway (unsignalized)
- SR 53/Dawsonville Highway and SR 53/McEver Road (signalized)

Based on the Institute of Transportation Engineers (ITE), Trip Generation 10th Edition, the estimated trips for the development are provided below.

Land Use	Size (SF)	AM Peak Hour		PM Peak Hour		Weekday Trips
		Enter	Exit	Enter	Exit	
Health & Fitness Club	22,000	15	15	45	30	500
Small Restaurant	3,600	55	35	50	50	1,246
Small Retail Store	3,200	5	5	15	10	203
Totals	28,800	75	55	110	90	1,949

Recommended improvements from the TIS are shown on the concept plan and include the addition of a 300-foot long, northbound right turn lane on SR 53/Dawsonville Highway at the proposed site driveway. As well, the existing intersection would be converted to an RCUT median which will allow for right turns into and out of the site driveway and left turns into the site driveway. As a result, left turning movements would no longer be permitted from the site driveway or from the driveway located on the opposite side of Dawsonville Highway in front of Leslie's Pool Supplies, Danny's Donuts and Batteries + Bulbs. With no left turn from the subject property, vehicles will likely perform a right turn movement from the site driveway and make a U-turn at the next available median opening to the north. Of note, a corridor study from Ahaluna Drive to Shallowford Road conducted by GDOT recommended that the right turn lanes be connected to provide a 6-lane divided highway which is anticipated to be constructed shortly after the construction of the proposed development.

According to this study, with the proposed changes, the level of service for the AM peak hour westbound approach improves from an inadequate Level of Service (LOS F) to an adequate (LOS B). The PM westbound approach would still operate at a (LOS F) but the delay value is reduced by 98%. The site intersection would operate at a (LOS B) in the AM but the site driveway would operate at a (LOS F) in the PM peak hour. However, there would be a 97% reduction in delay due to the combination of the RCUT median and 6-lane widening project.

▪ **Zoning History**

The following zoning actions have taken place in the immediate area during the last ten years:

2018 – A request by REB Land Development, LLC to rezone a 2.744± acres tract located at 621 Lakeshore Drive NW from Residential-I (R-I) to General Business (G-B) zoning for a multi-tenant retail, office and restaurant was withdrawn at the City Council meeting.

2018 – A request by John Harris to rezone a 5.73± acres tract located at 1331 Lanier Valley Drive from Residential-II (R-II) and General Business (G-B) to General Business (G-B) zoning for a non-profit residential facility was approved with conditions.

2018 – A request by Lake 53, LLC to rezone a 6.227± acres tract located at 1995 Dawsonville Highway from General Business (G-B) to Planned Unit Development (P-U-D) zoning for 79 residential condominiums and office space was conditionally approved.

2017 – A request by Lidl US Operations to rezone a 6.854± acres tract (subject property) located at 0 and 1010 Dawsonville Highway from Office and Institutional (O-I) and General Business (G-B) to General Business (G-B) zoning for a grocery store was withdrawn at City Council.

2017 – A request by Oak Hall Companies, LLC to rezone a 157.98± acres tract located at 0, 1264 and 1817 Ahaluna Drive; 1876 Dawsonville Highway; 2208 Karen Lane; 0 and 2029 Strickland Drive; 0 and 1489 West Lake Drive from Residential-I-A (R-I-A), Residential-I (R-I), Planned Unit Development (P-U-D) and Regional Business (R-B) to Planned Unit Development (P-U-D) and General Business (G-B) zoning for a mixed-use, age restricted community was approved with conditions.

2017 – A request by Oak Hall Companies, LLC to annex a 50.81± acres tract with a zoning of Planned Unit Development (P-U-D) and General Business (G-B) located at 0 and 1758 Ahaluna Drive; 1508, 1550, 1740, 1746, 1758, 1760, 1934 and 1982 Dawsonville Highway; 300 and 301 Skyview Drive; 0, 2008 and 2016 Strickland Drive was conditionally approved for a mixed-use, age restricted community.

2017 – A request by Oak Hall Companies, LLC to annex a 26.16 ± acres tract with a zoning of Planned Unit Development (P-U-D) located at 0 and 2209 Karen Lane; 2106, 2234 and 2242 Sportsman Club Road; 2049 Strickland Drive was conditionally approved for an age restricted, active adult community.

2015 – A request by West Ahaluna, LLC to annex an 8.74± acres tract with a zoning of Residential-I-A (R-I-A) located at 0 and 1264 Ahaluna Drive was conditionally approved for no proposed use.

2014 – A request by West Ahaluna, LLC to annex a 70.23± acres tract with a zoning of Planned Unit Development (P-U-D) located at 0 and 1817 Ahaluna Drive; 1982 Dawsonville Highway; 2208 Karen Lane; 2008, 2016 and 2029 Strickland Drive was approved with conditions. In addition, the same applicant requested to rezone a 31.93± acres tract located at 0 Ahaluna Drive NW and 1489 West Lake Drive NW from Residential-I (R-I) to Planned Unit Development (P-U-D) was also approved with conditions for a 199-lot single-family subdivision.

2013 – A request by America's Home Place, Inc. to rezone a 25.11± acres tract located at 0 and 1198 Dawsonville Highway; 1232 Ahaluna Drive and 1162 Lakeshore Circle from Residential-I (R-I), Residential-II (R-II) and Office and Institutional (O-I) to General Business (G-B) zoning for a commercial shopping center was approved with conditions.

2012 – A request by America's Home Place, Inc. to rezone a 4.711± acres tract located at 0, 1122, 1138, 1162 and 1198 Dawsonville Highway from Residential-II (R-II), Office and Institutional (O-I) and General Business (G-B) to General Business (G-B) zoning for retail, restaurant and vehicle service uses was approved with conditions.

2011 – A request by Kauffman Tire Inc. for a special use within Regional Business (R-B) zoning on a 1.19± acres tract located at 801 & 805 Dawsonville Highway was approved with conditions for an automotive tire and service store.

2010 – A request by Bill Dupree to annex a 7.11± acres tract with General Business (G-B) zoning and rezone a 2.44± acres tract from Residential-II (R-II) to General Business (G-B) located at 0, 1293, 1297 and 1139 Dawsonville Highway was approved with conditions for a business center with retail, office and restaurant uses.

▪ **Staff Analysis**

(1) Is the proposed use suitable in view of the zoning and development of adjacent and nearby property?

The subject property has remained undeveloped for approximately five years. During that time, as many numerous commercial buildings have been developed within the immediate area consisting of the Northlake Square shopping center, three retail strip centers, five restaurants and a hotel. The adjacent properties consist of both residential and commercial uses with zonings of Residential-I (R-I), General Business (G-B) and Light Industrial (L-I). The proposed fitness center, retail and restaurant use is consistent with existing and new commercial development located along Dawsonville Highway.

(2) Will the proposed use adversely affect the existing use or usability of adjacent or nearby property?

The Dawsonville Highway corridor will continue to experience increased traffic volumes which are currently strained during the holiday period and certain peak times. The proposed development will add additional turning movements, but in itself should not adversely affect the adjacent or nearby property as the subject property is currently zoned for office and commercial purposes and could be developed as such.

The subject property is close to Lake Lanier which will need to be protected through proper erosion control measures and the utilization of existing storm water infrastructure.

(3) Is the proposed use compatible with the purpose and intent of the Comprehensive Plan?

The proposed use appears to be consistent with the purpose and intent of the Comprehensive Plan.

The subject property is located within two land use categories based on the Future Development Map for the City of Gainesville. The front portion of the subject property is within the *Public/Institutional/Transportation/Communication/Utilities* land use category which includes areas containing or planned for institutional uses including governmental, educational, and medical facilities, houses of worship, and similar institutional facilities; or major transportation, utilities or communication facilities. This was due to the fact that the property was previously a nursing home. The rear portion of the property is located within the *Retail/Commercial* land use category which includes commercial service activities such as grocery stores, banks, restaurants, theatres, hotels, and automotive related businesses. Commercial uses may be located as a single use in one building or grouped together in a shopping center.

The subject property is also located within the *Suburban Commercial* Character Area. This area will continue to grow as a regional retail center for the City and Hall County, but should diversify over time to include multi-family housing and a higher-density mix of retail, office, services and high-quality employment. In addition, expanding premium retail could offer a variety of shopping options that are currently not available elsewhere in the City. The area has become one of the most prominent commercial corridors and gateways into the City, and a thriving economic anchor for the northwest side. When development occurs, adequate buffers should be maintained around development to protect watersheds and sensitive environments. Land uses allowed within the *Suburban Commercial* area include commercial, public / institutional, multi-family residential and mixed use.

(4) Are there substantial reasons why the property cannot or should not be used as currently zoned?

The subject property is zoned Office and Institutional (O-I) and General Business (G-B). The Office and Institutional (O-I) portion of property is larger and could be developed for office, medical and institutional purposes, such as the previous nursing home use. The General Business (G-B) zoned portion could be developed as a commercial outparcel fronting along Dawsonville Highway (S.R.53). As well, the General Business (G-B) rear portion of property contains an existing detention pond that was originally constructed for commercial purposes. Given the adjacent uses and commercial zoning, it appears the proposed rezoning request is reasonable.

(5) Will the proposed use cause an excessive or burdensome use of public facilities or services, including but not limited to streets, schools, water or sewer utilities, and police or fire protection?

The subject property and surrounding development currently utilizes City water and sewer services and there is sufficient capacity to serve the development.

Existing public safety services respond to the adjacent and nearby properties. Gainesville Fire Station #1 is located approximately 2.4 miles from the property. In addition, a future fire station is planned at the entrance to the proposed Oak Hall Companies development located one mile north of the subject property.

No impacts to the school system are expected as the development is for non-residential purposes.

Additional traffic generated by the proposal or any new development will add to the existing peak hour delays experienced along Dawsonville Highway and nearby intersections. The applicant's traffic study proposes a full access driveway to include a 300-foot long right turn lane be added northbound on Dawsonville Highway at the proposed site driveway, and an RCUT median that would result in a $\frac{3}{4}$ access for the site driveway (right in/out and left in). GDOT controls the existing driveway and intersection, and will review the applicant's access plan to determine what will be permissible given planned improvements to the corridor. In addition, staff recommends the developer pursue inter-parcel access with the adjacent properties which may provide connection to the closest signalized intersections located at Academy Sports and Home Depot.

(6) Is the proposed use supported by new or changing conditions not anticipated by the Comprehensive Plan or reflected in the existing zoning on the property or surrounding properties?

The anticipated use for the subject property is for non-residential purposes which is consistent with the Comprehensive Plan and the proposed development.

The property is located between Dawsonville Highway and Lake Lanier, and is within one of Gainesville's most active regional commercial corridors. This area has experienced tremendous growth over the past 20 years, some of which include the Northlake Square shopping center, three retail strip centers, Carrington Park retail center, Village Shoppes of Gainesville, Home Depot, Best Buy, McEver Corners shopping center, Texas Roadhouse, Olive Garden, Cheddar's, Buffalo Wild Wings, Culver's restaurant, child day care facility and a 94-room Holiday Inn Express currently under construction. As well, it is believed the planned 235± acres Oak Hall Companies mixed-use development located north of the site will begin development within a year. The development is anticipated to be built over a 6 to 7 year period to include a total of 860 age-restricted residential units, 56,000 square feet of commercial space and 24,000 square feet of retail/office/restaurant space.

(7) Does the proposed use reflect a reasonable balance between the promotion of the public health, safety, morality, or general welfare and the right to unrestricted use of property?

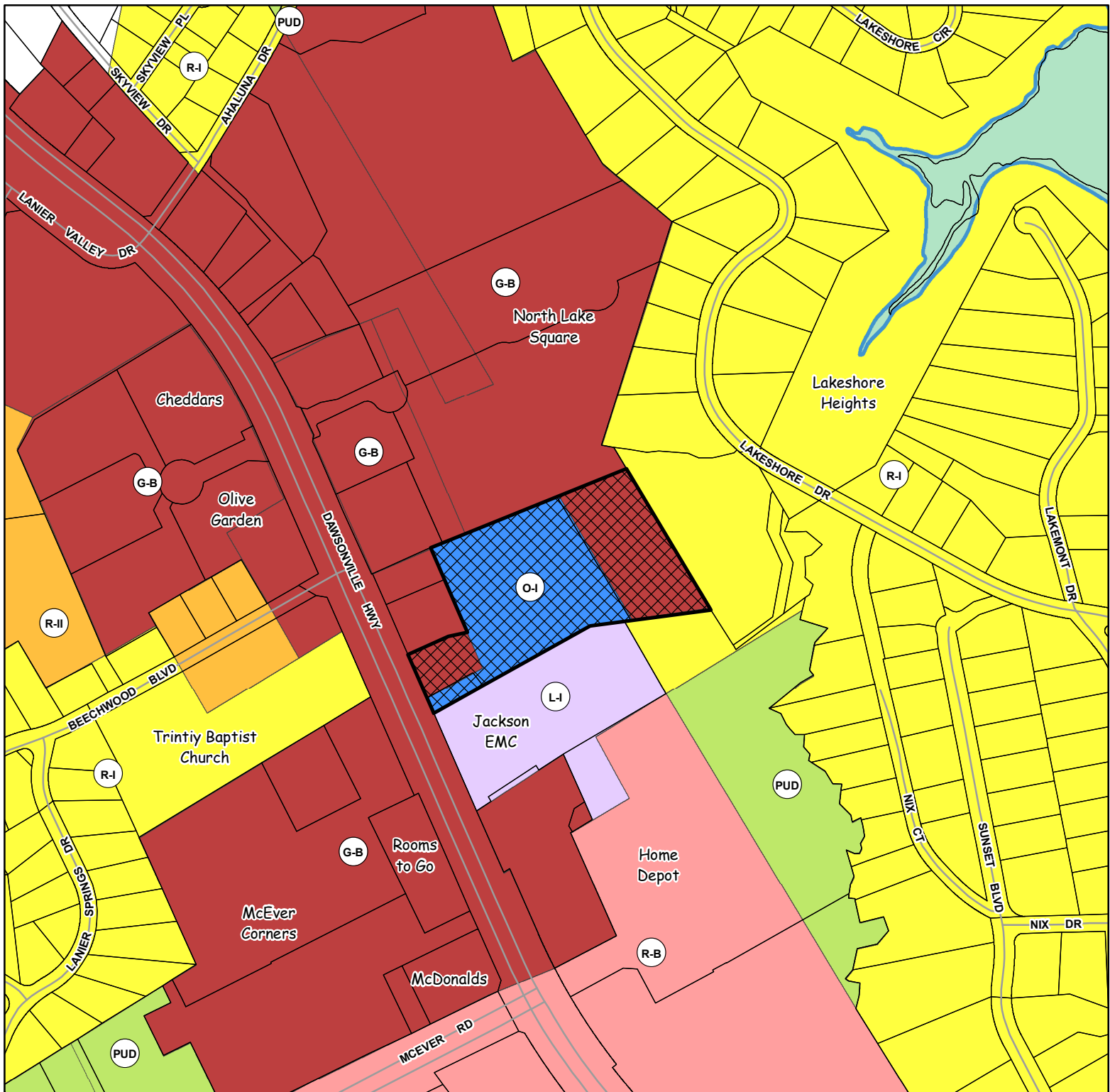
Due to the subject property's proximity to existing commercial uses, and the fact that the property is currently zoned for office and commercial purposes, the proposed fitness center, retail and restaurant use, with the recommended zoning conditions appears to promote a reasonable balance between the interests of the City, the property owner, and neighboring residents and property owners.

▪ **Staff Recommendation**

The Planning Division staff is recommending **conditional approval** of this rezoning request with **G-B zoning**, based on the Comprehensive Plan and the adjacent residential and non-residential land uses.

Conditions

- 1. The proposed buildings shall be generally consistent with the standards depicted on the architectural elevation provided with this rezoning application including exterior materials, roof and wall signs.**
- 2. Prohibited uses for the subject property shall include motels or hotels, group homes, crisis centers, adult novelty stores, adult entertainment centers, pawn shops, dollar-type stores, massage parlors, tobacco or vaping stores, tire stores, auto parts stores, gas station/convenience store, auto body shops, automobile sales establishments, marine sales or repair stores, automated or non-automated car washes, truck stops, coin-laundry facilities, tattoo parlors, psychics, fortune tellers, clairvoyants and the like.**
- 3. The existing vegetated buffer areas adjacent to the Lakeshore Heights Subdivision shall remain undisturbed. Additional evergreen buffer trees shall be planted between the proposed building/parking lot/service areas and the existing detention pond at the top of the slope where needed. The intent of the buffer is to supplement the existing vegetation with buffer trees to provide for an effective buffer. The location, spacing, size and type of trees planted shall be subject to Community Development Department Director approval.**
- 4. Prior to a permit being issued, the developer/property owner shall exhaust all reasonable measures to provide for inter-parcel vehicular access with the adjacent properties located to the north and south as determined by the Gainesville Public Works Director. Documentation shall be provided to the City of Gainesville in this regard.**
- 5. All access point design for the subject property shall be submitted for review by the Georgia Department of Transportation in conjunction with the Gainesville Public Works Director, and approval of said design shall be required prior to issuance of a building permit. All required access/traffic/sidewalk improvements associated with the proposed development shall be at the full expense of the developer/property owner.**
- 6. An updated as-built boundary survey/plat of the subject property, indicating all improvements required for the proposed use, shall be recorded prior to obtaining a Certificate of Occupancy.**



Applicant:

LLJ DEVELOPMENT, LLC

Gainesville Community Development Department

REZONING REQUEST



Request:
Rezone 6.854+/- acre tract from Office and Institutional (O-I) and General Business (G-B) to General Business (G-B) for fitness center/retail/restaurant

Subject Area Address:
0 and 1010 Dawsonville Highway

Meeting: 8/14/2018

Prepared: 7/20/2018

 Subject Area

0 240 480 720 960 Feet



1" = 400'

Tax Parcel: 01-115-001-002, 061

Page 19 of 119



Applicant:

LLJ DEVELOPMENT, LLC

Gainesville Community Development Department

REZONING REQUEST



Subject Area

Aerial from 2015

N



0 240 480 720 960 Feet

1" = 400'



Request:
Rezone 6.854+/- acre tract from Office and Institutional (O-I) and General Business (G-B) to General Business (G-B) for fitness center/retail/restaurant

Subject Area Address:
0 and 1010 Dawsonville Highway

Meeting: 8/14/2018

Prepared: 7/20/2018

Tax Parcel: 01-115-001-002, 061

Gainesville Fitness Center – Project Narrative

The subject property was developed as a medical facility many years ago. The structures on the property have been demolished, and the property is currently vacant.

The property is currently zoned O-I and G-B and consists of 6.854 acres. The applicant requests the zoning be amended to G-B which is compatible with its intended use as a Fitness Center, Retail and Restaurant. Per City Staff recommendations, we have included the O-I parcel along with the G-B parcel will ensure any zoning conditions are assigned to the entire project. The Fitness Center building is 22,000 square feet. The Retail and Restaurant building is 6,800 sf. The total parking provided is 260 spaces. This assumes an administrative variance will be needed to increase the allowable parking. Public gravity sewer and water services are available at the site to serve the project. Stormwater detention and water quality treatment have already been provided within two existing detention ponds in the North Lake Square development to the north and east of the subject property.

The project driveway is an existing public stub street that intersects with Dawsonville Highway. It currently serves as the access point for Jackson EMC located to the south of the subject property. This driveway is full access non-signalized with an existing southbound left turn lane and a small north bound right turn lane. Georgia Department of Transportation (“GDOT”) is currently planning improvements to Dawsonville Highway to restrict access at this existing driveway and expand the through movement from 4 lanes to 6 lanes. The project proposes to eliminate the existing left out movement due to the heavy rush hour traffic. The existing decel lane is also proposed to be lengthened. Ultimately, GDOT will require approval of a driveway permit for the improvements.

Interparcel connectivity will exist with the Jackson EMC site to the south of the proposed site. However, Jackson EMC has its rear parking lot area gated and closed to the general public. Connectivity to the small outparcels in front of the site along Dawsonville Highway is not practical due to their site layout and the finished grade differences. Those parcels are approximately 10 feet higher than the proposed Fitness Center finished grades. Interparcel connectivity with the property to the north and west is also not practical due to the existing detention pond, large slopes, and retaining walls.

It is anticipated that store hours will be from approximately 5:00 a.m. to 12:00 a.m.



TITLE REVIEW

FIRST AMERICAN TITLE INSURANCE COMPANY
COMMITMENT NUMBER: P001188 / HB303.015
DATE EFFECTIVE: APRIL 15, 2017

12 - EASEMENT FROM GEORGE MARTIN, SR. AND MRS. GEORGE LILLIE MARTIN TO THE CITY OF GAINESVILLE, GEORGIA, DATED SEPTEMBER 21, 1964, FILED SEPTEMBER 25, 1964 AND RECORDED IN DEED BOOK 291, PAGE 257, RECORDS OF THE SUPERIOR COURT OF HALL COUNTY, GEORGIA.

SUBJECT DOCUMENT IS ILLEGIBLE, UNABLE TO
DETERMINE RELATIONSHIP TO PROPERTY.

13 - EASEMENT FROM EDWARD O. REED TO THE CITY OF GAINESVILLE, GEORGIA, DATED APRIL 14, 1965, FILED APRIL 15, 1965 AND RECORDED IN DEED BOOK 303, PAGE 223, AFORESAID RECORDS.

SUBJECT DOCUMENT REFERS TO A RECORDED PLAT
THAT IS NOT PROVIDED. SURVEYOR IS UNABLE TO
DETERMINE RELATIONSHIP TO SUBJECT PROPERTY.

14 - EASEMENTS CONTAINED IN THAT CERTAIN WARRANTY DEED FROM MEDICAL INVESTMENTS CORPORATION TO GAINESVILLE HEALTH CARE CENTER, LTD., A GEORGIA LIMITED PARTNERSHIP, DATED MARCH 29, 1976, FILED APRIL 22, 1976 AND RECORDED IN DEED BOOK 597, PAGE 238, AFORESAID RECORDS.

SUBJECT DOCUMENT DESCRIBES TWO SANITARY SEWER
EASEMENTS THAT AFFECT THE SUBJECT PROPERTY AS
SHOWN.

15 - RIGHT-OF-WAY DEED FROM COLUMBUS MEDICAL
NURSING HOME, INC. TO THE GEORGIA DEPARTMENT OF
TRANSPORTATION, DATED FEBRUARY 9, 1991, FILED
APRIL 9, 1993 AND RECORDED IN DEED BOOK 1934,
PAGE 325, AFORESAID RECORDS.

SUBJECT DOCUMENT DESCRIBES THE ACQUISITION OF
RIGHT OF WAY FOR DAWSONVILLE HIGHWAY. DOES NOT
AFFECT THE SUBJECT PROPERTY.

16 - MUTUAL AND RECIPROCAL EASEMENT AGREEMENT
FOR STORM WATER DETENTION FACILITY AND STORM
WATER DRAINAGE PIPELINE BY AND BETWEEN
NORTHEAST GEORGIA MEDICAL CENTER, INC. AND
AMERICA'S HOME PLACE, INC., DATED MARCH 31, 2014
FILED APRIL 21, 2014 AND RECORDED IN DEED BOOK
7354, PAGE 402, AFORESAID RECORDS.

SUBJECT DOCUMENT DESCRIBES MUTUAL AND
RECIPROCAL EASEMENTS FOR STORM WATER DETENTION
AND STORM SEWER PIPING. EXHIBIT A AND EXHIBIT B
FOR SUBJECT DOCUMENT IS ILLEGIBLE. SURVEYOR IS
UNABLE TO DETERMINE RELATIONSHIP TO SUBJECT
PROPERTY.

17 - TEMPORARY CONSTRUCTION EASEMENT
AGREEMENT BETWEEN NORTHEAST GEORGIA MEDICAL
CENTER, INC., A GEORGIA NOT-FOR-PROFIT
CORPORATION, AMERICA'S HOME PLACE, INC. AND
TLPERT-GAINESVILLE, LLC, A TEXAS LIMITED LIABILITY
COMPANY, DATED AS OF DECEMBER 31, 2014, FILED
JANUARY 7, 2015 AND RECORDED IN DEED BOOK 746;
PAGE 646, AFORESAID RECORDS; AS AFFECTED BY
THAT CERTAIN AFFIDAVIT RELATING TO TITLE, DATED
DECEMBER 15, 2015, FILED DECEMBER 17, 2015 AND
RECORDED IN DEED BOOK 7627, PAGE 735, AFORESAID
RECORDS.

SUBJECT DOCUMENT RECORDED AT DEED BOOK 7463, PAGE 646 DESCRIBES A TEMPORARY EASEMENT THAT HAS NOW EXPIRED AND NO LONGER AFFECTS THE SUBJECT PROPERTY. SUBJECT DOCUMENT RECORDED AT DEED BOOK 7627, PAGE 735 DESCRIBES TWO (ITEMS: B & D) TEMPORARY EASEMENT THAT IS NOW EXPIRED AND A PERMANENT EASEMENT AGREEMENT (ITEM C). SUPPORTING DOCUMENT NOT PROVIDED.

18 - ALL MATTERS AFFECTING SUBJECT PROPERTY AS SHOWN ON THE FOLLOWING PLATS:
(A) PLAT BOOK 32, PAGE 116:

(B) PLAT BOOK 249, PAGE 82A;
SUBJECT PLAT DEPICTS A 30 FOOT SANITARY
SEWER EASEMENT THAT AFFECTS THE SUBJECT
PROPERTY AS SHOWN.

(C) PLAT BOOK 869, PAGE 241;
SUBJECT PLAT DEPICTS SEVERAL STORM AND
DRAINAGE EASEMENTS THAT AFFECT THE SUBJECT
PROPERTY, SAID EASEMENTS ON SUBJECT
DOCUMENT ARE TOO VAGUE TO PLOT.

SURVEYOR'S CERTIFICATION

TO: LIDL US PROPERTIES, LLC AND
FIRST AMERICAN TITLE INSURANCE COMPANY:

THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE 2016 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/NPSPLAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NPSPL, AND INCLUDES ITEMS 11-4, 6(B), 7(A), 7(B1), 7(C), 8-9, 11, 13, 14, 16-20(A), AND 21-22 OF TABLE A THEREOF. THE FIELD WORK WAS COMPLETED ON JUNE 7, 2017.



MITCHELL LOWERY GEORGIA RLS# 3109
DATE OF PLAT OR MAP: JUNE 9, 2017

Diagram 1 (Left):

- TOP = 1156.67
- 4.4' (width of the top section)
- 5.4' (width of the bottom section)
- 24" RCP (bottom pipe)
- 8" PVC (wall material)
- INV. OUT = 1149.17
- INV. OUT = 1149.30

Diagram 2 (Right):

- TOP = 1156.67
- TOP = 1155.57
- 1.1' (offset from top edge to wall start)
- 2.0' (width of the top section)
- TOP = 1153.57
- 8" PVC CAPPED (top pipe)
- 8" PVC (wall material)
- INV = 1152.68
- INV = 1151.68
- 5.4' (width of the bottom section)

CITY OF GAINESVILLE PUBLIC UTILITIES
NICK SWAFFORD
757 QUEEN CITY PKWY
GAINESVILLE, GA 30501
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NSWAFFORD@GAINESVILLE.ORG

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175 JOHN W. MORROW JR. PKWY,
GAINESVILLE, GA 30501

COMCAST CATV
BRAD SEARS
770-559-6052

OVERALL LEGAL

COMMENCING AT A CENTERLINE INTERSECTION OF DAWSONVILLE HIGHWAY (STATE ROUTE 53) (BEING A PUBLICLY DEDICATED VARIABLE WIDTH RIGHT OF WAY) AND BEACHWOOD BOULEVARD (BEING A PUBLICLY DEDICATED VARIABLE WIDTH RIGHT OF WAY) THENCE LEAVING SAID INTERSECTION NORTH 71 DEGREES 07 MINUTES 29 SECONDS EAST A DISTANCE OF 459.57 FEET TO A 5/8 INCH CAPPED REBAR SET; SAID REBAR BEING THE TRUE POINT OF BEGINNING;

THENCE NORTH 68 DEGREES 10 MINUTES 01 SECONDS EAST A DISTANCE OF 220.48 FEET TO A 5/8 INCH CAPPED REBAR SET; THENCE SOUTH 30 DEGREES 48 MINUTES 45 SECONDS EAST A DISTANCE OF 483.03 FEET TO A 1/2 INCH REBAR FOUND; THENCE SOUTH 60 DEGREES 23 MINUTES 02 SECONDS WEST A DISTANCE OF 238.36 FEET TO A 1 INCH OPEN TOP PIPE FOUND; THENCE SOUTH 83 DEGREES 17 MINUTES 48 SECONDS WEST A DISTANCE OF 21.78 FEET TO A 3/8 INCH REBAR FOUND; THENCE SOUTH 83 DEGREES 17 MINUTES 48 SECONDS WEST A DISTANCE OF 10.26 FEET TO A 3/8 INCH REBAR FOUND; THENCE SOUTH 60 DEGREES 23 MINUTES 02 SECONDS WEST A DISTANCE OF 361.03 FEET TO A MAG NAIL SET; THENCE NORTH 29 DEGREES 01 MINUTES 03 SECONDS WEST A DISTANCE OF 8.26 FEET TO A 1/2 INCH REBAR FOUND; THENCE NORTH 29 DEGREES 01 MINUTES 03 SECONDS WEST A DISTANCE OF 39.01 FEET TO A 1/2 INCH REBAR FOUND; THENCE SOUTH 61 DEGREES 09 MINUTES 15 SECONDS WEST A DISTANCE OF 153.11 FEET TO A 1/2 INCH REBAR FOUND; ON THE RIGHT SIDE OF THE ROAD, THENCE NORTH 29 DEGREES 01 MINUTES 03 SECONDS WEST A DISTANCE OF 18.18 FEET TO A 1/2 INCH REBAR FOUND; THENCE NORTH 29 DEGREES 01 MINUTES 03 SECONDS WEST A DISTANCE OF 138.40 FEET TO A 1/2 INCH REBAR FOUND; THENCE LEAVING SAID RIGHT OF WAY NORTH 65 DEGREES 40 MINUTES 29 SECONDS EAST A DISTANCE OF 129.37 FEET TO A 5/8 INCH CAPPED REBAR SET; THENCE NORTH 65 DEGREES 40 MINUTES 29 SECONDS EAST A DISTANCE OF 56.96 FEET TO A 5/8 INCH CAPPED REBAR SET; THENCE NORTH 23 DEGREES 52 MINUTES 00 SECONDS WEST A DISTANCE OF 170.65 FEET TO A 5/8 INCH CAPPED REBAR SET; THENCE NORTH 23 DEGREES 52 MINUTES 00 SECONDS WEST A DISTANCE OF 170.65 FEET TO A 5/8 INCH CAPPED REBAR SET; THENCE NORTH 68 DEGREES 10 MINUTES 01 SECONDS EAST A DISTANCE OF 45.62 FEET TO A 5/8 INCH CAPPED REBAR SET; THENCE NORTH 68 DEGREES 10 MINUTES 00 SECONDS EAST A DISTANCE OF 302.83 FEET TO A 5/8 INCH CAPPED REBAR SET; SAID REBAR BEING THE TRUE POINT OF BEGINNING.

SAID TRACT OF LAND CONTAINS 6.854 ACRES (298,543 SQUARE FEET)

PREPARED FOR:
LIDL US PROPERTIES, LLC &
FIRST AMERICAN TITLE INSURANCE COMPANY

ALTA/NSPS LAND TITLE SURVEY OF:
TAX PARCEL # 1115001002
&
TAX PARCEL # 1115001061

STATE: GEORGIA	COUNTY: HALL
AND LOT: 163	DISTRICT: 9TH CITY OF

REVISIONS

[illegible]

every associates
IG, LLC



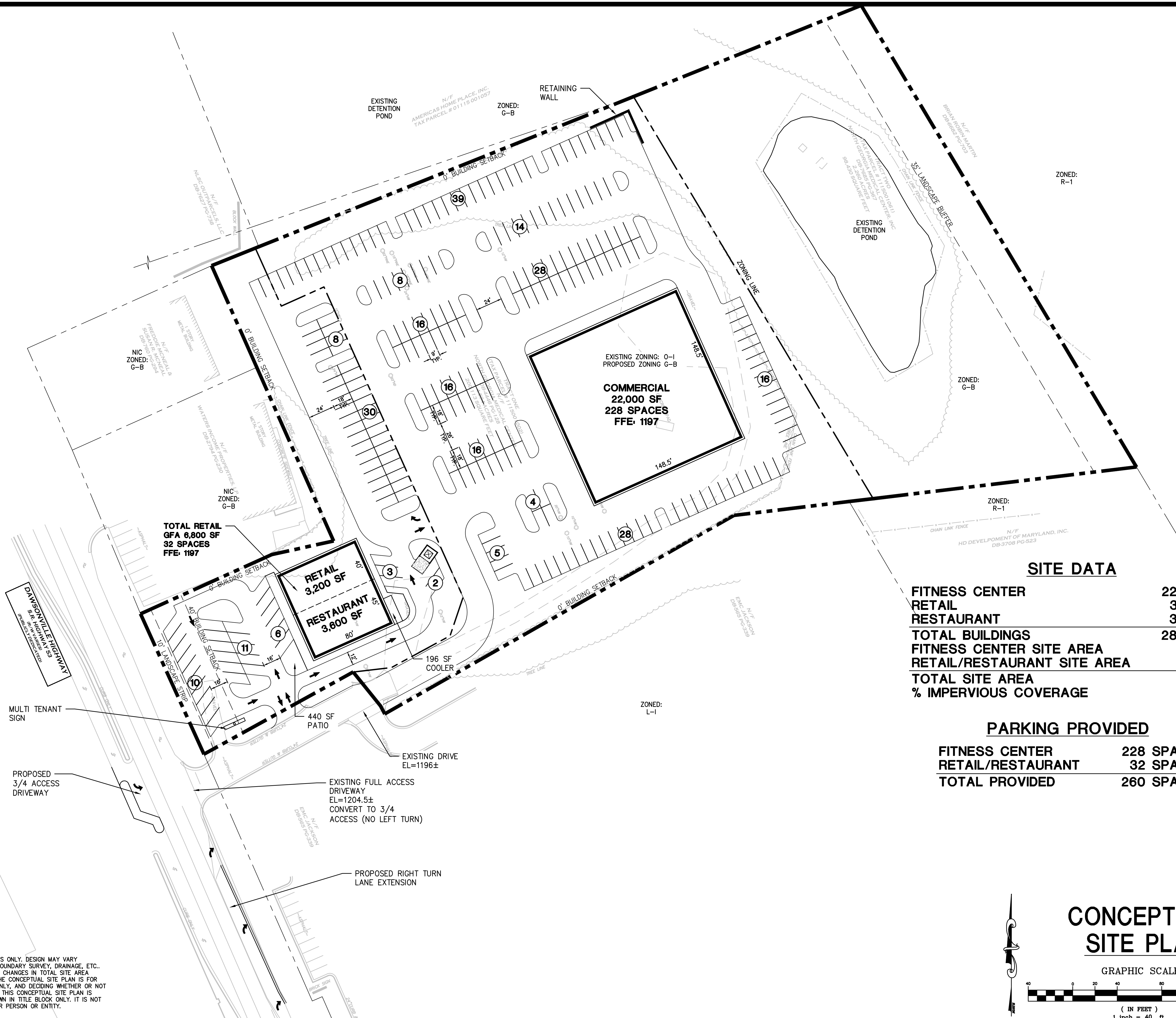
DATE: JUNE 9, 2017
JOB #: 171904

SCALE: 1"=30'

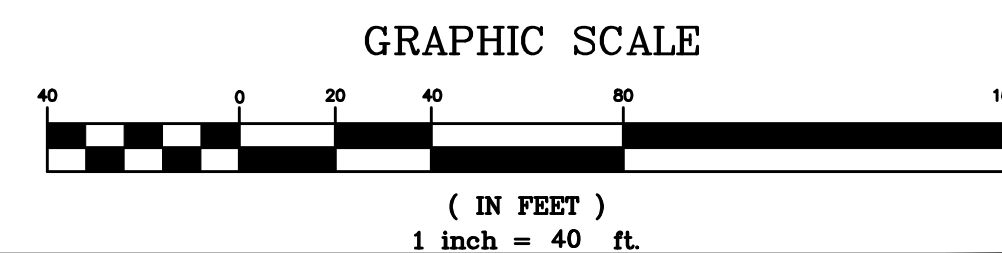
DRAWN BY: J.THREADGILL

USER: dmw - Jun 27, 2018 - 4:37pm
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NOTE:
THIS DRAWING IS FOR CONCEPTUAL PURPOSES ONLY. DESIGN MAY VARY
DEPENDING ON ACTUAL TOPOGRAPHIC AND BOUNDARY SURVEY, DRAINAGE, ETC..
THIS ADDITIONAL INFORMATION COULD CAUSE CHANGES IN TOTAL SITE AREA
REQUIRED DUE TO SLOPES, PARKING, ETC. THE CONCEPTUAL SITE PLAN IS FOR
THE PURPOSE OF DEVELOPING A CONCEPT ONLY, AND DECIDING WHETHER OR NOT
TO CONDUCT MORE DETAILED INVESTIGATION. THIS CONCEPTUAL SITE PLAN IS
PREPARED FOR CLIENT WHOSE NAME IS SHOWN IN TITLE BLOCK ONLY. IT IS NOT
TO BE USED OR RELIED UPON BY ANY OTHER PERSON OR ENTITY.



CONCEPTUAL SITE PLAN



Project Title
**COMMERCIAL DEVELOPMENT
GAINESVILLE, GA**
BY: **LL J DEVELOPMENT, LLC
CORDELE, GA**

REVISIONS	BY

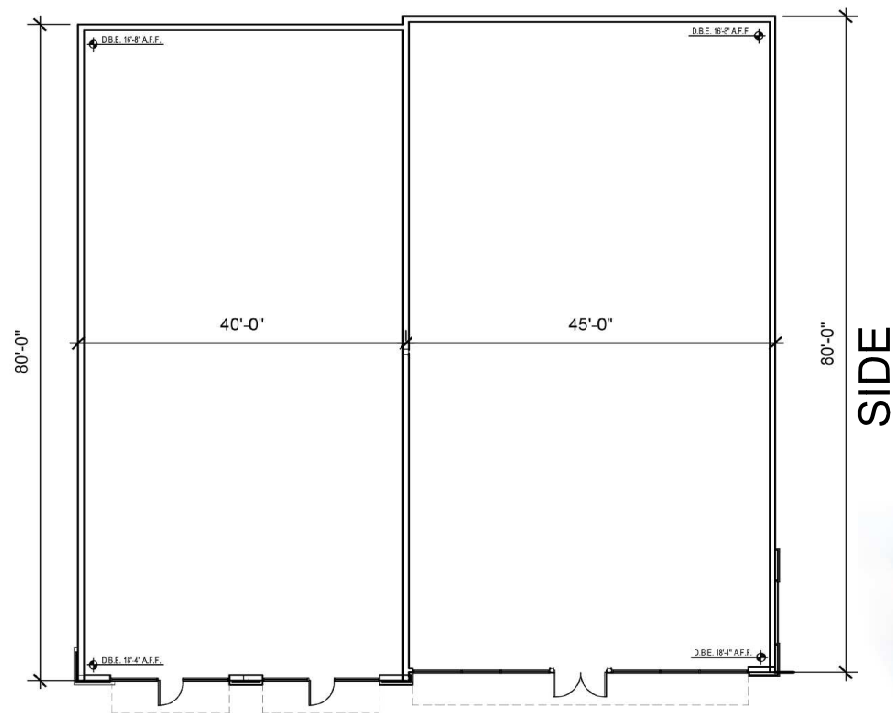
DRAWN BY **DMN**
CHECKED BY **THH**
DATE: **06/28/2018**
SCALE: **1" = 40'**
JOB No. **18-LD-056**
SHEET NUMBER
4.3
OF **4** SHEETS

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FRONT

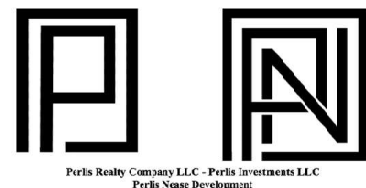
SIDE



FRONT ELEVATION



SIDE ELEVATION



GAINESVILLE SHOPS

GAINESVILLE, GA
SHOPS BUILDINGS CONCEPTUAL ELEVATIONS

Page 28 of 119 JUNE 27, 2018



Traffic Impact Study

Proposed Commercial Development

SR 53/Dawsonville Highway
Gainesville, Georgia

Prepared For: LL J Development, LLC
Cordele, Georgia

Wolverton Project No.

18-LD-056

July 24, 2018



WOLVERTON

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1. INTRODUCTION

1.1. Study Area

This traffic study was conducted to evaluate the traffic impacts of a proposed commercial development consisting of a fitness center, small restaurant and retail store located in Gainesville, Georgia. The proposed site is located to the east of SR 53/Dawsonville Highway, just north of the intersection of SR 53/Dawsonville Highway and SR 53/McEver Road. The proposed lot for the site is currently undeveloped, but the proposed site driveway is existing and currently serves light traffic from Jackson Electric Membership Corporation (Jackson EMC). Figure 1 illustrates the location of the site and identifies the roadway network in the vicinity.

1.2. Proposed Development

The proposed development will consist of a 28,800 square feet of building space. Figure 2 illustrates the proposed site plan. The commercial businesses are expected to be built out in 2019. The site will have $\frac{3}{4}$ access point commonly referred to as a RCUT median. RCUT median openings allow right-turns into and out of the site driveway and also allows left-turns into the site driveway. The only two traffic movements that are not allow are through and left-turn movements from the site driveway. The one driveway to the site will be on SR 53/Dawsonville Highway that is approximately 900 feet north of the intersection of SR 53/Dawsonville Highway and SR 53/McEver Road.

1.3. Planned Transportation Improvements

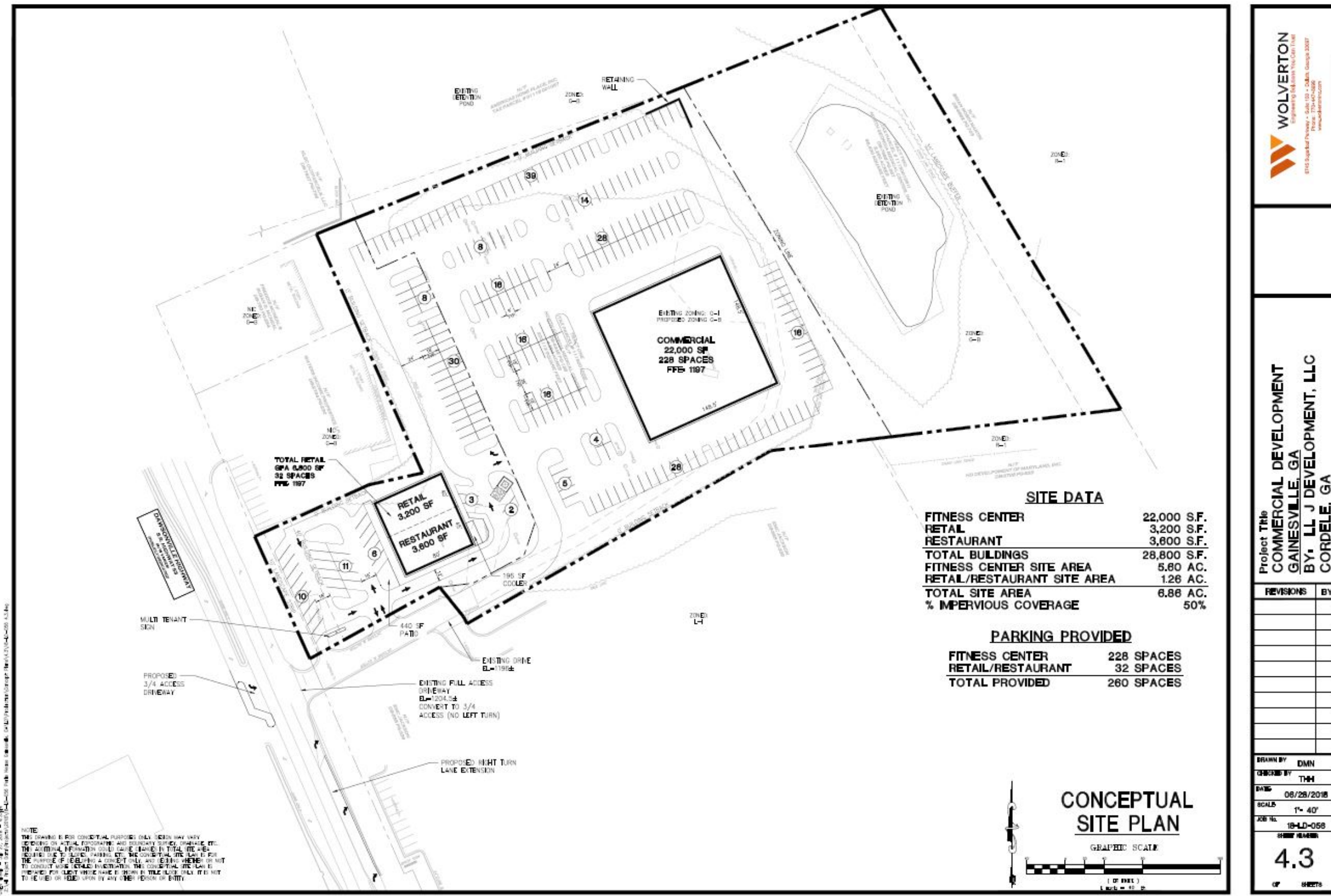
As part of the proposed development, as shown on the site plan, a 300-foot long right-turn lane will be added northbound on SR 53/Dawsonville Highway at the proposed Site Driveway. The length of the right-turn lane exceeds the recommended storage length of 250 feet for 45 mph highways in the design guidelines of the American Association of State Highway and Transportation Officials (AASHTO). There will be no queuing in this lane because the intersection is unsignalized. The site plan along with the planned transportation improvements are shown in Figure 2.

Georgia Department of Transportation (GDOT) had a corridor study conducted on SR 53/Dawsonville Highway from Ahalluna Drive to Shallowford Road. The results of this corridor study recommended that the right-turn lanes in this corridor be connected to provide a six-lane divided highway. This transportation improvement is proposed to be constructed shortly after the construction of the proposed development site plan.

Figure 1 – Vicinity Map



Figure 2 – Proposed Site Plan



2. EXISTING CONDITIONS

2.1. Roadways

SR 53/Dawsonville Highway is a four-lane median divided highway that runs primarily north-south and serves heavy commercial development within the vicinity of the site. SR 53/Dawsonville Highway is classified as an Urban Principal Arterial and has a posted speed limit of 45 mph within the vicinity of the site. SR 53 originates at the Alabama state line and travels primarily east through Georgia's rural and mountainous regions in the northwest and northern portions of the state. SR 53 intersects US 19/SR 400 in Dawsonville and continues east through Forsyth County, before finally entering Hall County, crossing the Chestatee River and making the southwest turn onto McEver Road. SR 53 then proceeds in a southerly and southeasterly direction toward the Athens area, where it terminates at its intersection with SR 15 in downtown Watkinsville. On Dawsonville Highway south of McEver Road, the highway is signed as SR 53 Connector. SR 53 Connector runs east from McEver Road into downtown Gainesville, running in common with SR 60 beginning at its intersection with Jesse Jewell Parkway. SR 53 Connector terminates at its interchange with Interstate 985.

SR 53/McEver Road is a four-lane median divided highway that runs primarily east-west and serves industrial and heavy commercial development within the vicinity of the site. McEver Road is classified as an Urban Principal Arterial and has a posted speed limit of 45 mph. McEver Road originates as Peachtree Industrial Boulevard in Gwinnett County at the intersection with Holcomb Bridge Road, and becomes McEver Road at the Hall County line.

2.2. Intersections

The following three intersections were identified to be studied:

1. SR 53/Dawsonville Highway and Commercial Driveways –Olive Garden and Chipotle (signalized)
2. SR 53/Dawsonville Highway and Site Driveway (unsignalized)
3. SR 53/Dawsonville Highway and SR 53/McEver Road (signalized)

Existing geometry and traffic operation control of the existing intersections were inventoried. Traffic signal timing data for the intersection of SR 53/Dawsonville Highway and SR 53/McEver Road is contained in Appendix B. Figure 3 illustrates the existing geometry and operation control of the studied intersections and the lanes proposed when the GDOT transportation project is constructed along this corridor.

2.3. Existing Traffic Flow Patterns

Existing TMC data was obtained from GDOT for two of the studied intersections: SR 53/Dawsonville Highway at the proposed site driveway and SR 53/Dawsonville Highway at McEver Road. The traffic volumes at these intersections were provided to GDOT by WSP and are contained in Appendix A. The traffic for the intersection of SR 53/Dawsonville Highway at the commercial driveways (Olive Garden & Chipotle), located approximately 900 feet north of the site driveway, was obtained from A&R Engineering (see Appendix A.) The existing 2017 traffic for the commercial driveways is the projected traffic at full build-out of the retail center on the east side of SR 53. Figure 4 illustrates the existing turning movement volumes for the AM and PM peak hours.

Figure 3 – Existing and Proposed Lane Configurations and Traffic Control

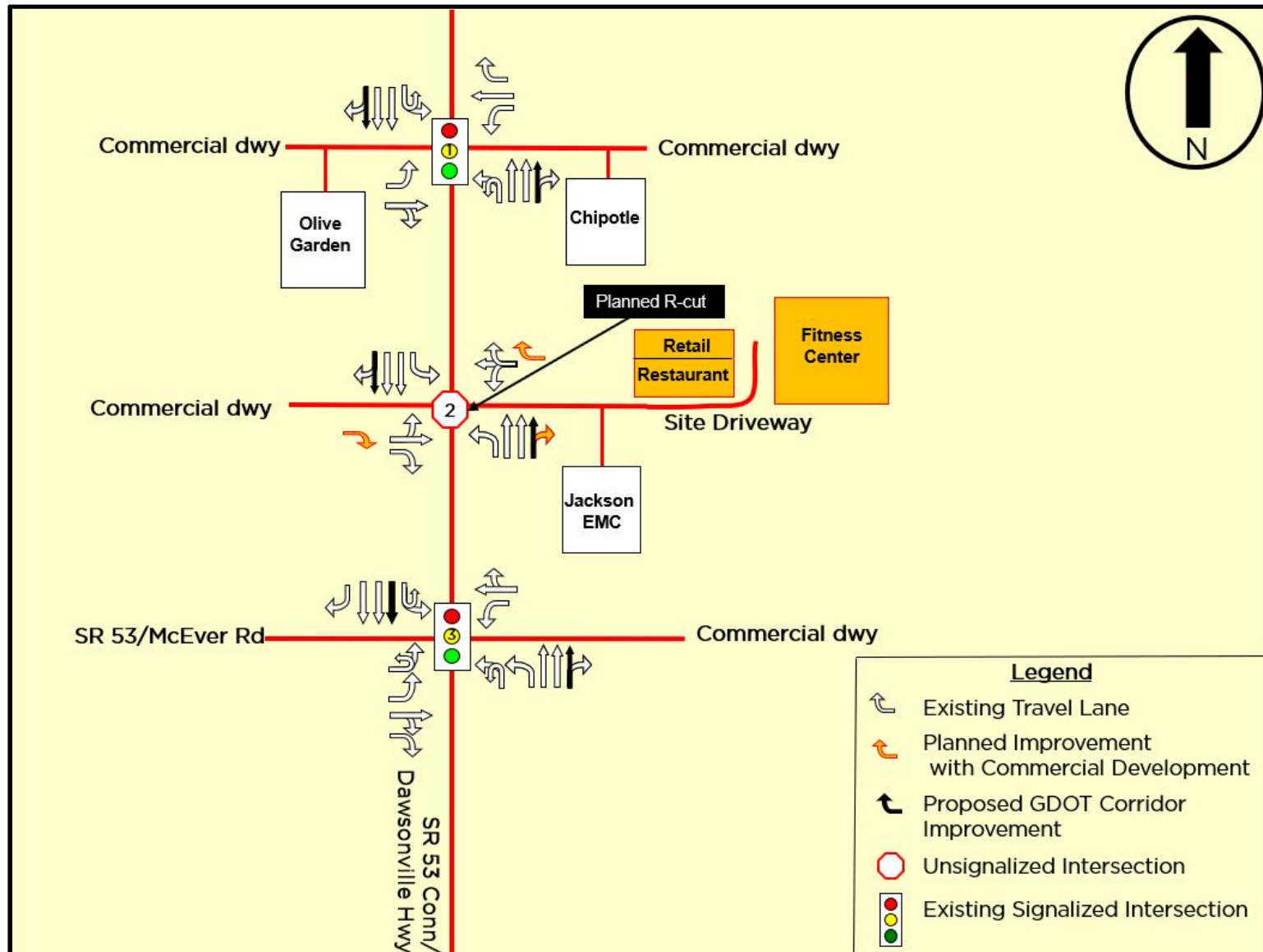
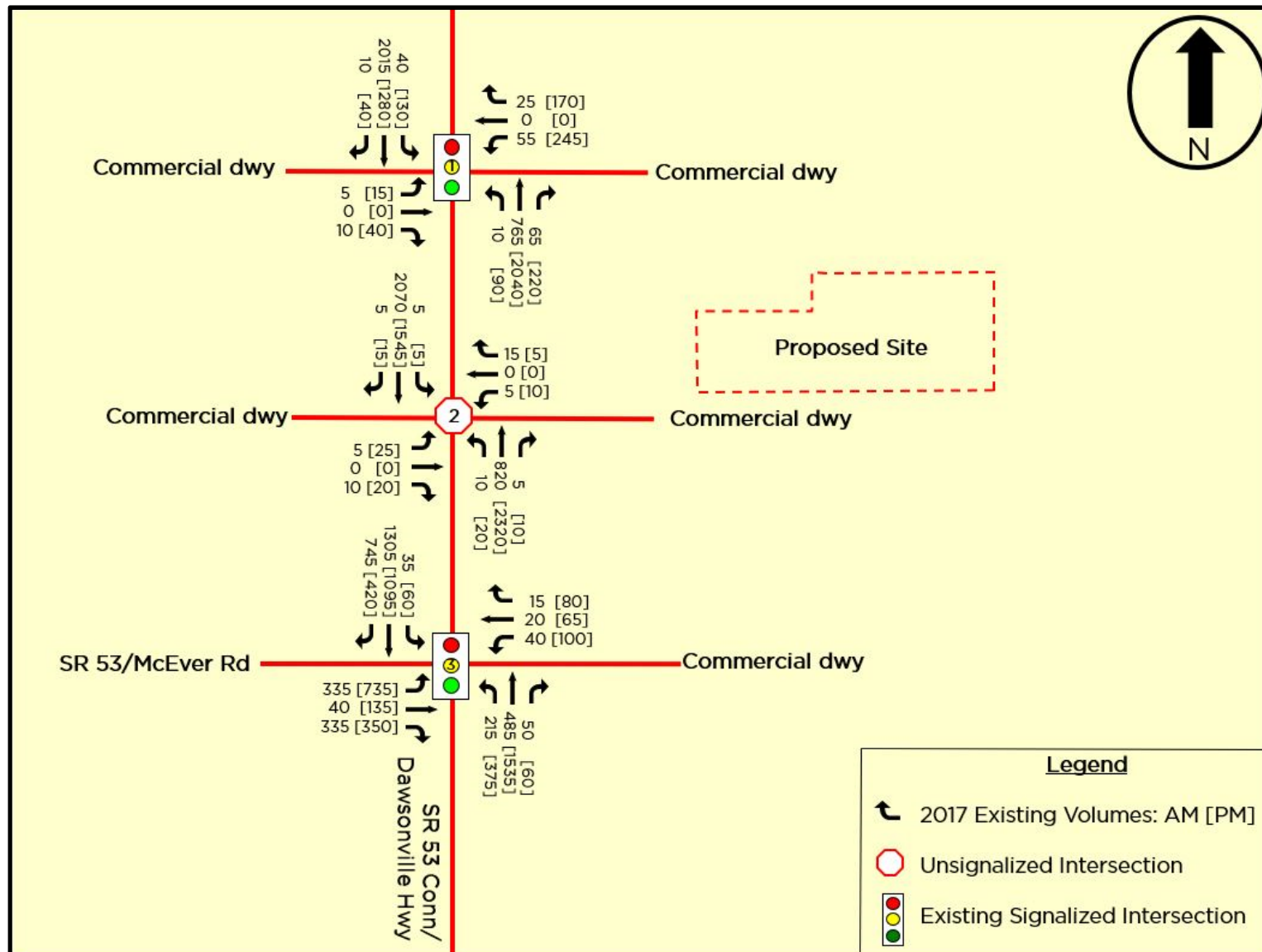


Figure 4 – Existing Peak Hour Volumes



2.4. TRAFFIC PROJECTIONS

Future Background Traffic

The GDOT traffic corridor study prepared contained 2037 traffic for two of the intersections. From this traffic corridor study, it was determined that a 1% per year growth rate was used in the corridor study. Therefore, 1% per year of growth was applied to the existing 2017 traffic to obtain the 2019 build year traffic for the development and the GDOT widening project.

Trip Generation

The amount of traffic to be generated by the proposed development was estimated by using trip rates observed at other similar developments. The widely recognized publication from the Institute of Transportation Engineers (ITE), *Trip Generation 10th Edition* (1), contains trip rates summarized by type of development. The ITE data provide trip rates that can be applied to the size of a development to derive trip generation projections. See the Table 1 for the trip generation of the development.

Table 1 - Trip Generation

Land Use	ITE Code	Size (SF)	AM Peak Hour		PM Peak Hour	
			Enter	Exit	Enter	Exit
Health & Fitness Club	492	22,000	15	15	45	30
Small Restaurant	933	3,600	55	35	50	50
Small Retail Store	814	3,200	5	5	15	10
Totals			75	55	110	90

Trip Distribution for New Trips

After the magnitude of generated trips has been established, it is then necessary to determine the routing of the new trips. The trip distribution for the new trips was based on the existing traffic patterns¹ from the AM and PM peak period counts at the existing site driveway.

The resulting traffic projections for the three intersections were balanced between the intersections. The projected traffic flow diagrams for the year 2019 without the proposed development is shown in Figure 5: Future Year 2019 Peak Hour Volumes Without Proposed Development. Figure 6 contains the future year 2019 peak hour volumes with the GDOT corridor project improvements and Figure 7 contains the future year 2019 peak hour volumes with the proposed development and the GDOT corridor project improvements.

¹ GDOT SR 53/Dawsonville Highway Corridor Study conducted by Arcadis with traffic volumes provided by WSP.

Figure 5 – Future Year 2019 Peak Hour Volumes Without Proposed Development

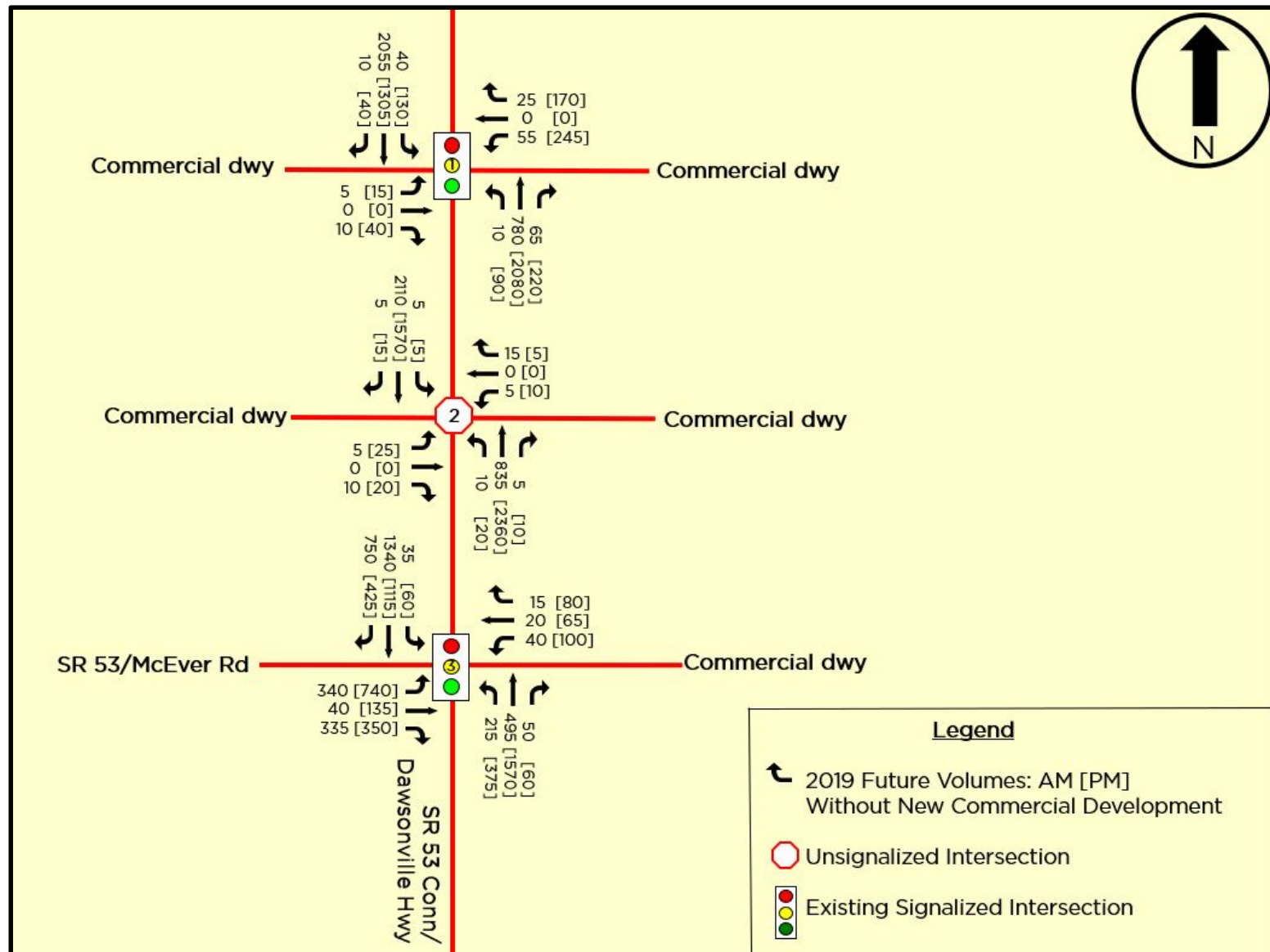


Figure 6 – Future Year 2019 Peak Hour Volumes with GDOT Improvements

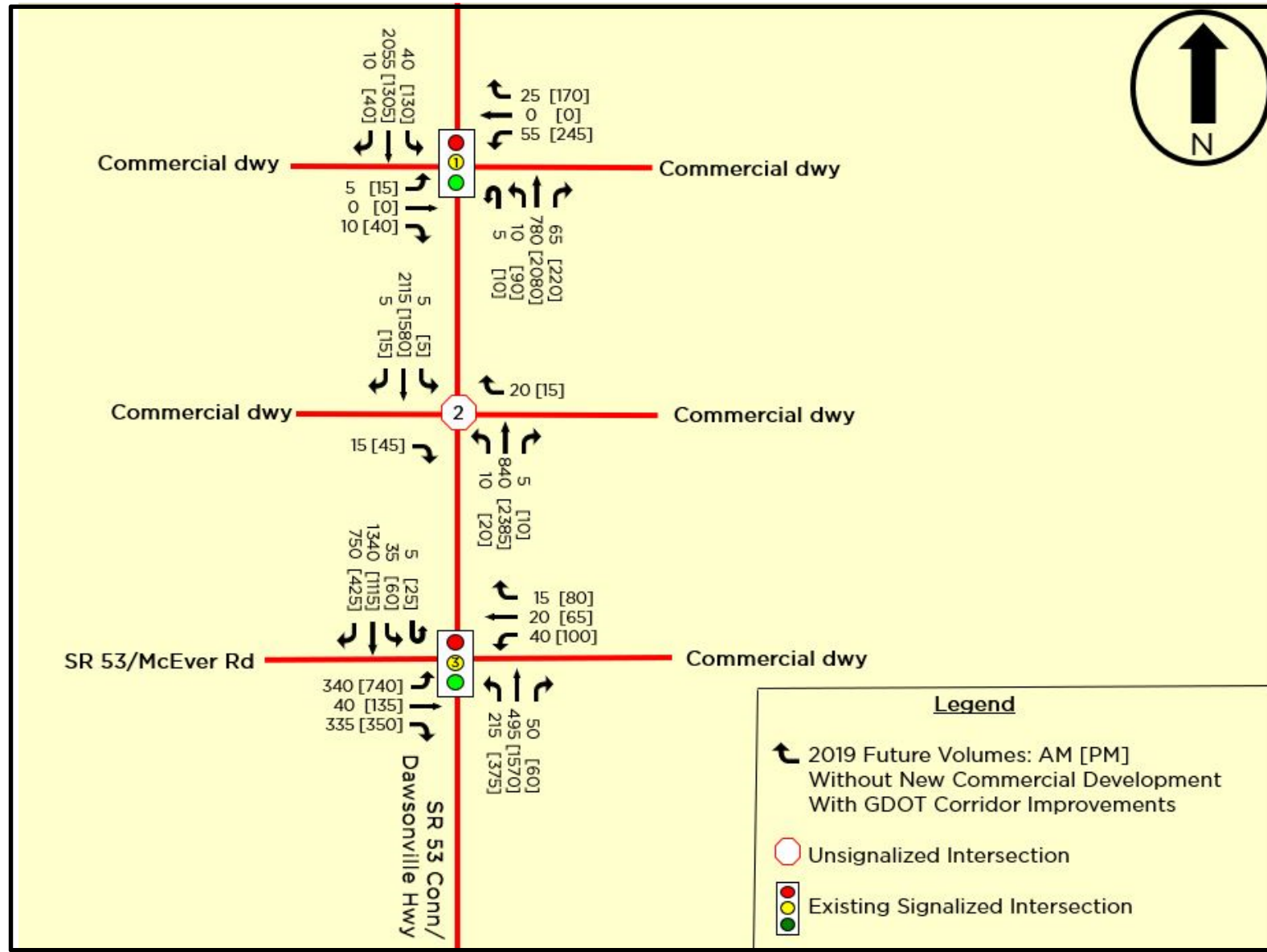
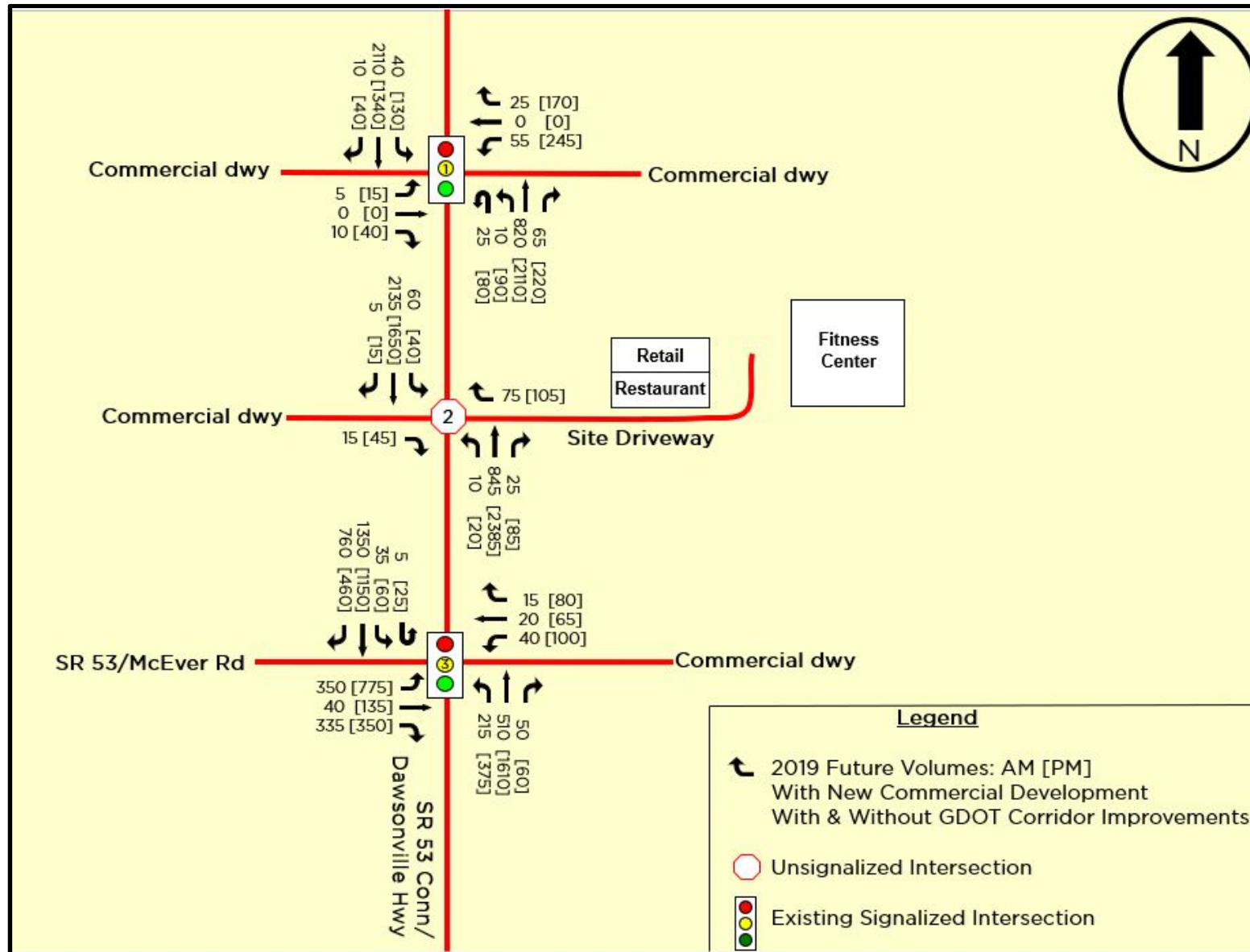


Figure 7 – Future Year 2019 Peak Hour Volumes with Proposed Development & GDOT Improvements



2.5. DATA ANALYSIS

Level of Service Criteria

In order to quantify the impacts of the additional traffic and to determine any needed roadway and/or operational improvements, the existing and projected conditions were evaluated with traffic capacity analysis techniques. *Synchro* (9) was used to conduct capacity analysis. *Synchro* implements the capacity methods of the *Highway Capacity Manual* (HCM) for performing the industry standard evaluation of primarily signalized intersection performance. Delays used in the reports follow the procedure as recommended by the HCM. The HCM defines Level of Service (LOS) in terms of the amount of control delay, including initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. The *Highway Capacity Software, Version 7 (HCS7)* was used to evaluate the unsignalized location because *Synchro* does not handle the capacity and queue lengths at RCUT intersections as well as *HCS7*, which has an RCUT analysis. Therefore, the unsignalized intersection at the site driveway was analyzed with *HCS7*. The methodology matches the capacity methods of HCM for both traditional unsignalized intersections and RCUT intersections.

The LOS definitions for both stop sign controlled intersections and traffic signal-controlled intersections are provided in Table 2.

Table 2 – Level of Service Criteria

LEVEL OF SERVICE	CONTROL DELAY PER VEHICLE (SEC)	
	WITH STOP SIGN	WITH TRAFFIC SIGNAL
A	≤ 10	≤ 10
B	> 10 and ≤ 15	> 10 and ≤ 20
C	> 15 and ≤ 25	> 20 and ≤ 35
D	> 25 and ≤ 35	> 35 and ≤ 55
E	> 35 and ≤ 50	> 55 and ≤ 80
F	> 50	> 80

Source: *Highway Capacity Manual*

GDOT has ranges of adequate LOS based on area classification. Rural, sparsely developed areas have a minimum LOS requirement of C. This is due to the expectancy of rural residents for relatively uncongested conditions and design flexibility related to lower right of way costs. The minimum LOS for urban areas is D. This reflects the greater acceptance of delay and congestion by urban residents. Additionally, the increased density of developments makes right of way costs much higher in urban areas. The Dawsonville Highway project corridor is in the Atlanta metro area and, therefore, has a minimum LOS requirement of D.

Capacity analysis was used to evaluate the Existing Year 2017 and four future 2019 scenarios for the intersections being studied. For Existing Year 2017, the existing lane configurations and traffic control were used. For Future Year 2019, the lane configurations shown on the site plan were used. Table 3 shows the resulting analysis during the AM and PM peak hours. *Synchro* printouts are contained in Appendix C. Table 4 presents the queue lengths for only traffic movements that are impacted by the proposed development.

Table 3 – Results of Capacity Analysis

INT #	INTERSECTION SR 53/ Dawsonville Hwy	CONTROL	AM PEAK HOUR				
			Existing Year 2017	Future Year 2019	Year 2019 with Development	Year 2019 with GDOT Project	Year 2019 with Development & GDOT Project
1	Olive Garden/ Chiptole	Traffic Signal	B (18.2)	B (17.4) ²	B (18.5)	B (12.7)	B (13.2)
2	Jackson EMC & Site Driveway	TWSC*	E (48.0)	F (51.4)	B (12.7)	B (13.1)	B (14.6)
3	SR 53/McEver Road	Traffic Signal	F (86.7)	F (88.9)	F (90.2)	E (64.8)	E (64.0) ²
INT #	INTERSECTION SR 53/ Dawsonville Hwy	CONTROL	PM PEAK HOUR				
			Existing Year 2017	Future Year 2019	Year 2019 with Development	Year 2019 with GDOT Project	Year 2019 with Development & GDOT Project
1	Olive Garden/ Chiptole	Traffic Signal	C (31.8)	C (32.7)	C (33.9)	C (27.5)	C (31.5)
2	Jackson EMC & Site Driveway	TWSC*	F (3612.3)	F (4055.8)	F (78.6)	E (36.9)	F (134.8)
3	SR 53/McEver Road	Traffic Signal	F (167.3)	F (173.1)	F (193.0)	F (88.0)	F (96.2)

*Capacity analysis of the Two-Way Traffic Control (TWTC) represents only the westbound approach of the Site Driveway.

² At signalized intersections, the delay at the intersection is shown to be reduced when there is actually a greater volume of traffic on some traffic movements because more vehicles have to wait less time for the traffic signal to cycle back to the green phase. Consequently, the delay value for the overall intersection will appear to show a slight improvement.

Table 4 – Queue Lengths of Impacted Movements due to the Development

INT #	INTERSECTION SR 53/ Dawsonville Hwy	Traffic Movement	AM PEAK HOUR									
			Existing Year 2017		Future Year 2019		Year 2019 with Development		Year 2019 with GDOT Project		Year 2019 with Development & GDOT Project	
			50th	95th	50th	95th	50th	95th	50th	95th	50th	95th
1	Olive Garden/ Chiptole	NB Left	4	m2	3	m2	12	m7	0	m2	5	m16
2	Jackson EMC & Site Driveway	SB Left	--	0	--	0	--	8	--	0	--	15
		WB LTR	--	18	--	20	--	--	--	--	--	--
		WB Right	--	--	--	--	--	13	--	3	--	15
3	SR 53/McEver Road	SB Left	38	m45	38	m47	43	m52	39	m63	45	m69
INT #	INTERSECTION SR 53/ Dawsonville Hwy	Traffic Movement	PM PEAK HOUR									
			Existing Year 2017		Future Year 2019		Year 2019 with Development		Year 2019 with GDOT Project		Year 2019 with Development & GDOT Project	
			50th	95th	50th	95th	50th	95th	50th	95th	50th	95th
1	Olive Garden/ Chiptole	NB Left	8	m1	8	m1	31	m28	20	m21	89	m95
2	Jackson EMC & Site Driveway	SB Left	--	3	--	3	--	28	--	8	--	85
		WB LTR	--	88	--	85	--	--	--	--	--	--
		WB Right	--	--	--	--	--	115	--	10	--	153
3	SR 53/McEver Road	SB Left	75	m113	74	m112	103	m148	78	m#160	109	m#211

m Volume for 95th percentile queue is metered by upstream signal# 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Intersection Capacity Analysis Results

The results of the three intersections studied along the SR 53/Dawsonville Highway corridor shows that when comparing the year 2019 without and with the proposed site development, the level of service improves with the proposed site development. The site development plans to convert the intersection to a RCUT median and add a 300-foot northbound right-turn lane. The level of service improves from LOS F to LOS B during the AM peak hour and although the westbound approach would still operate at a LOS F, the delay value is reduced by 98% in the PM. This indicates that the site driveway intersection as configured as an RCUT reduces delay and operates better during the AM and PM peak hour. Under future conditions with the proposed site development and the planned GDOT corridor project there is also improvement. The site intersection would operate adequately (LOS B) in the AM and although the site driveway would operate inadequately (LOS F) during the PM peak hour, there would be a 97% reduction in delay due to the combination of the RCUT and 6-lane widening project.

The 50th and 95th percentile queue lengths (the queue would be expected to be this length or shorter 50% and 95% of the time) for each intersection during both peak hours can be seen in Table 4 for those traffic movements impacted by the site development. *Synchro* was used to obtain the queue lengths and the signalized intersections and *HCS7* for the unsignalized site driveway intersection. At the site driveway, during the PM peak hour, the 95th percentile queue length of the westbound right-turn movement (153 feet) is shorter than the length of its storage capacity (250 feet). The storage capacity of the westbound right-turn movement for the site is measured from the stop bar to the main parking lot of the Fitness Center. The design of the site driveway, therefore, will adequately serve traffic queues.

3. CONCLUSIONS

This traffic study was conducted to evaluate the traffic impacts of a proposed commercial development consisting of a fitness center, small restaurant and retail store located in Gainesville, Georgia. The proposed site is located to the east of SR 53/Dawsonville Highway, just north of the intersection of SR 53/Dawsonville Highway and SR 53/McEver Road. The proposed lot for the site is currently undeveloped, but the proposed site driveway is existing and currently serves light traffic from Jackson Electric Membership Corporation (Jackson EMC).

The proposed development will consist of a 28,800 square feet of building space. The commercial businesses are expected to be built out in 2019. The site will have $\frac{3}{4}$ access point commonly referred to as a RCUT median. RCUT median openings allow right-turns into and out of the site driveway and also allows left-turns into the site driveway. The only two traffic movements that are not allow are through and left-turn movements from the site driveway. The one driveway to the site will be on SR 53/Dawsonville Highway just north of the intersection of SR 53/Dawsonville Highway and SR 53/McEver Road.

As part of the proposed development, as shown on the site plan, a 300-foot long right-turn lane will be added northbound on SR 53/Dawsonville Highway at the proposed Site Driveway. The length of the right-turn lane exceeds the recommended storage length of 250 feet for 45 mph highways in the design guidelines of AASHTO. There will be no queuing in this lane because the intersection is unsignalized.

Georgia Department of Transportation had a corridor study conducted on SR 53/Dawsonville Highway from Ahalluna Drive to Shallowford Road. The results of this corridor study recommended that the right-turn lanes in this corridor be connected to provide a six-lane divided highway. This transportation improvement is proposed to be constructed shortly after the construction of the proposed development site plan.

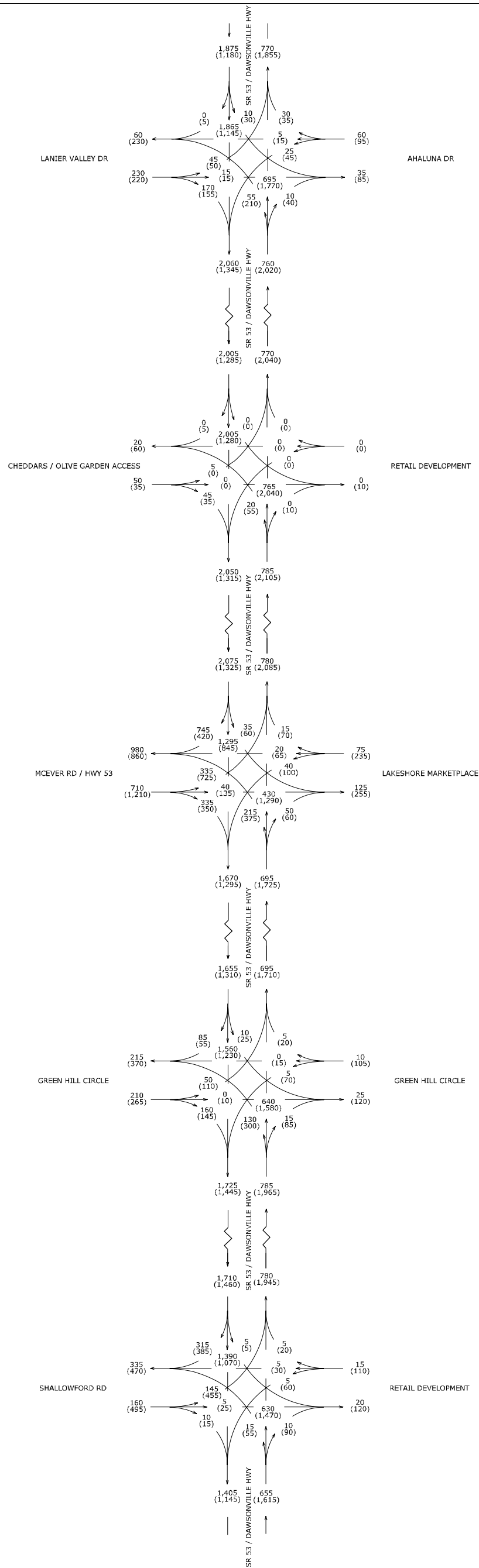
When comparing the year 2019 without and with the proposed site development, the level of service improves with the proposed site development. The site development plans to convert the intersection to a RCUT median and add a 300-foot northbound right-turn lane. The level of service improves from LOS F to LOS B during the AM peak hour and although the westbound approach would still operate at a LOS F, the delay value is reduced by 98% in the PM. This indicates that the site driveway intersection as configured as an RCUT reduces delay and operates better during the AM and PM peak hour. Under future conditions with the proposed site development and the planned GDOT corridor project there is also improvement. The site intersection would operate adequately (LOS B) in the AM and although the site driveway would operate inadequately (LOS F) during the PM peak hour, there would be a 97% reduction in delay due to the combination of the RCUT and 6-lane widening project.

The 50th and 95th percentile queue lengths (the queue would be expected to be this length or shorter 50% and 95% of the time) for each intersection during both peak hours for those traffic movements impacted by the site development. *Synchro* was used to obtain the queue lengths and the signalized intersections and *HCS7* for the unsignalized site driveway intersection. At the site driveway, during the PM peak hour, the 95th percentile queue length of the westbound right-turn movement (153 feet) is shorter than the length of its storage capacity (250 feet). The storage capacity of the westbound right-turn movement for the site is measured from the stop bar to the main parking lot of the Fitness Center. The design of the site driveway, therefore, will adequately serve traffic queues. The queue determination for the southbound left-turn is 85 feet with the proposed development and the implementation of GDOT's widening project. Therefore, a left-turn lane with 335 feet of storage is recommended by the design guidelines of AASHTO.

4. REFERENCES

1. Synchro, Version 9, Trafficware Ltd., Sugar Land, TX, 2015.
2. Highway Capacity Software, Version 7.2.1, McTrans Corporation, May 15, 2017.
3. Highway Capacity Manual, HCM 2000/2010, Transportation Research Board, Washington, DC, 2000/2010.
4. ITE Trip Generation Manual, 10th edition, published by the Institute of Transportation Engineers, September 2017.

APPENDIX A - Traffic Data



STATEWIDE OPERATIONAL IMPROVEMENTS
WORK AUTHORIZATION 10-21
PROJECT ID: 17-023
SR 53 FROM AHALUNA DR TO SHALLOWFORD RD

EXISTING YEAR (2017) DHV
AM PEAK HOUR = XXX
PM PEAK HOUR = (XXX)
PEAK HOUR TRUCK: 2.0%



13-005 SR 53 / Americas Home Place SWA
Traffic Volumes
Future Conditions

A&R Engineering
May 2014

2. SR 53@Main Site Drwy

A.M. Peak Hour

Condition	Northbound					Southbound					Eastbound					Westbound			
	L	T	R	Tot		L	T	R	Tot		L	T	R	Tot		L	T	R	Tot
Existing:	10	550	0	560		0	1310	6	1316		1	0	7	8		0	0	0	0
Growth Factor (%):	1	1	1			1	1	1			1	1	1			1	1	1	
Base Condition:	10	556	0	566		0	1323	6	1329		1	0	7	8		0	0	0	0
Total New Trips	0	0	61	61		37	0	0	37		0	0	0	0		53	0	24	77
Pass-by Trips	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0
Future Traffic Volumes:	10	556	61	627		37	1323	6	1366		1	0	7	8		53	0	24	77

P.M. Peak Hour

Condition	Northbound					Southbound					Eastbound					Westbound			
	L	T	R	Tot		L	T	R	Tot		L	T	R	Tot		L	T	R	Tot
Existing:	85	1660	0	1745		0	909	39	948		13	0	38	51		0	0	0	0
Growth Factor (%):	1	1	1			1	1	1			1	1	1			1	1	1	
Base Condition:	86	1677	0	1762		0	918	39	957		13	0	38	52		0	0	0	0
Total New Trips	0	0	144	144		87	0	0	87		0	0	0	0		200	0	90	290
Pass-by Trips	0	-74	74	0		41	-41	0	0		0	0	0	0		42	0	77	119
Future Traffic Volumes:	86	1603	218	1906		128	877	39	1044		13	0	38	52		242	0	167	409

APPENDIX B - Traffic Signal Timing

SEPAC ECOM All Data

6/19/2017

4:31:00PM

Intersection Name: **G0307 Dawsonville @ McEver**

Intersection Alias: **G0307**

Access Data

1 :1200 Baud
3 :19200 Baud

Access Code: **9999**

Channel:

Address: **1**

Revision: **3.34g**

IP Address: **192.168.34.86**

Phase Initialization Data

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Initial	2-Red	1-Inact	1-Inact	1-Inact	2-Red	1-Inact	1-Inact	1-Inact	0-None	0-None	0-None	0-None	0-None	0-None	0-None	0-None

PHASE DATA

Vehical Basic Timings							Misc Timings				Pedestrian Timings				Alt				Actuated
Min						All	Green	Yellow	Offset	Walk	Walk	Bike	Bike	Ped	Alt	Ped	Flash	Ext	Rest in
Phase	Green	Passage	Max1	Max2	Yellow	Red	Delay	Delay	Time	Mode	Green	Psg	Walk	Clr	Walk	Clr	Walk	Ped Clr	Walk
1	5	4.1	20	45	4.5	3.0	0.0	0.0	0	0-Advance	0	0	0	0	0	0	No	0	No
2	16	5.1	50	90	4.4	2.2	0.0	0.0	0	0-Advance	0	0	4	34	0	0	No	0	No
3	5	3.1	25	45	4.3	3.0	0.0	0.0	0	0-Advance	0	0	0	0	0	0	No	0	No
4	5	3.1	25	35	4.3	3.0	0.0	0.0	0	0-Advance	0	0	4	36	0	0	No	0	No
5	5	3.1	20	35	4.2	3.0	0.0	0.0	0	0-Advance	0	0	0	0	0	0	No	0	No
6	12	5.1	50	90	4.4	2.2	0.0	0.0	0	0-Advance	0	0	4	25	0	0	No	0	No
7	5	3.1	25	45	3.5	3.0	0.0	0.0	0	0-Advance	0	0	0	0	0	0	No	0	No
8	5	3.1	15	20	4.3	3.0	0.0	0.0	0	0-Advance	0	0	4	38	0	0	No	0	No
9	0	0.0	0	0	3.0	0.0	0.0	0.0	0	0-Advance	0	0	0	0	0	0	No	0	No
10	0	0.0	0	0	3.0	0.0	0.0	0.0	0	0-Advance	0	0	0	0	0	0	No	0	No
11	0	0.0	0	0	3.0	0.0	0.0	0.0	0	0-Advance	0	0	0	0	0	0	No	0	No
12	0	0.0	0	0	3.0	0.0	0.0	0.0	0	0-Advance	0	0	0	0	0	0	No	0	No
13	0	0.0	0	0	3.0	0.0	0.0	0.0	0	0-Advance	0	0	0	0	0	0	No	0	No
14	0	0.0	0	0	3.0	0.0	0.0	0.0	0	0-Advance	0	0	0	0	0	0	No	0	No
15	0	0.0	0	0	3.0	0.0	0.0	0.0	0	0-Advance	0	0	0	0	0	0	No	0	No
16	0	0.0	0	0	3.0	0.0	0.0	0.0	0	0-Advance	0	0	0	0	0	0	No	0	No

Vehicle Density Timings							General Control				Miscellaneous				No	Special Sequence		
Ph.	Added	Max	Time	Car	Time	Min	Non-Act	Veh	Ped	Recall	Non	Dual	Last	Condit	Gap	Omit	Minus	Omit
	Initial	Initial	B4	B4	To	Gap	Response	Recall	Recall	Delay	Lock	Entry	Car	Service	Out		Yel	Call
1	0.0	0	0	0	0	0.0	None	None	None	0	Yes	No	No	No	Yes	0	0	0
2	2.0	30	15	0	15	3.0	NonActI	Min	None	0	No	Yes	No	No	No	0	0	0
3	0.0	0	0	0	0	0.0	None	None	None	0	Yes	No	No	No	Yes	0	0	0
4	0.0	0	0	0	0	0.0	None	None	None	0	Yes	Yes	No	No	No	0	0	0
5	0.0	0	0	0	0	0.0	None	None	None	0	Yes	No	No	No	Yes	0	0	0
6	2.0	30	15	0	15	3.0	NonActI	Min	None	0	No	Yes	No	No	No	0	0	0
7	0.0	0	0	0	0	0.0	None	None	None	0	Yes	No	No	No	Yes	8	0	0
8	0.0	0	0	0	0	0.0	None	None	None	0	Yes	Yes	No	No	No	0	0	0
9	0.0	0	0	0	0	0.0	None	None	None	0	No	No	No	No	No	0	0	0
10	0.0	0	0	0	0	0.0	None	None	None	0	No	No	No	No	No	0	0	0
11	0.0	0	0	0	0	0.0	None	None	None	0	No	No	No	No	No	0	0	0
12	0.0	0	0	0	0	0.0	None	None	None	0	No	No	No	No	No	0	0	0
13	0.0	0	0	0	0	0.0	None	None	None	0	No	No	No	No	No	0	0	0
14	0.0	0	0	0	0	0.0	None	None	None	0	No	No	No	No	No	0	0	0
15	0.0	0	0	0	0	0.0	None	None	None	0	No	No	No	No	No	0	0	0

Vehical Detector Phase Assignment						Pedestrian Detector					Special Detector Phase Assignment						
Assign		Switch				Assign		Switch				Assign		Switch			
Phase	Mode	Phase	Extend	Delay		Phase	Mode	Phase	Extend	Delay		Phase	Mode	Phase	Extend	Delay	
Veh Det:3	2	Veh	0	0.0	0	Default Data					Default Data						
Veh Det:4	2	Veh	0	0.0	0												
Veh Det:5	2	Veh	0	0.0	0												
Veh Det:6	2	Veh	0	0.0	0												
Veh Det:7	2	Veh	0	0.0	0												
Veh Det:9	3	Veh	0	0.0	0												
Veh Det:11	4	Veh	0	0.0	0												
Veh Det:12	4	Veh	0	0.0	0												
Veh Det:13	4	Veh	0	0.0	0												
Veh Det:14	4	Veh	0	0.0	0												
Veh Det:15	4	Veh	0	0.0	0												
Veh Det:17	1	Veh	0	0.0	0												
Veh Det:18	3	Veh	0	0.0	0												
Veh Det:19	5	Veh	0	0.0	0												
Veh Det:21	6	Veh	0	0.0	0												
Veh Det:22	6	Veh	0	0.0	0												
Veh Det:23	6	Veh	0	0.0	0												
Veh Det:24	6	Veh	0	0.0	0												
Veh Det:25	6	Veh	0	0.0	0												
Veh Det:29	7	Veh	0	0.0	0												
Veh Det:31	8	Veh	0	0.0	0												
Veh Det:32	8	Veh	0	0.0	0												
Veh Det:33	8	Veh	0	0.0	0												
Veh Det:34	8	Veh	0	0.0	0												
Veh Det:35	8	Veh	0	0.0	0												

Unit Data

General Control

Startup Time:	4 sec		Input	Output
Startup State:	All Red	Ring	Respons	Selection
Red Revert:	50.0 sec	1	Ring 1	Ring 1
Auto Ped Clr:	No	2	Ring 2	Ring 2
Stop T Reset:	No	3	None	None
Alt Sequence:	0	4	None	None
Special Seq:	0-Standard			
I/O Modes:				
ABC Input(Entry) Modes: 0		D Input(Entry) Modes: 0		
ABC Output(O/STS) Modes: 0		D Output(O/STS) Modes: 0		

Remote Flash

Test A = Flash			Default Data - No Flash
Phase	Entry	Exit	
Default Data - No Flash			

Overlaps

Phase(s)	Overlaps															
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Phase(s)	Overlaps															
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Phase(s)	Overlaps															
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Phase(s)	Overlaps															
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Trail Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Trail Yellow	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Trail Red	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
TG Preempt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Yel Phase	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring

			Phase(s)																
Phase	Ring	Next Phase	Concurrent Phases	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	1	2		1	2	3	4	1	1	3	3	9	10	11	12	13	14	15	16
2	1	3		5	5	7	7	2	2	4	4								
3	1	4		6	6	8	8	5	6	7	8								
4	1	1																	
5	2	6																	
6	2	7																	
7	2	8																	
8	2	5																	

Alternate Sequences

	Ph. Pair 1	Ph. Pair 2	Ph. Pair 3	Ph. Pair 4
Alt. Seq. 1	1/2			
Alt. Seq. 2	3/4			
Alt. Seq. 3	1/2	3/4		
Alt. Seq. 4	5/6			
Alt. Seq. 5	1/2	5/6		
Alt. Seq. 6	3/4	5/6		
Alt. Seq. 7	1/2	3/4	5/6	
Alt. Seq. 8	7/8			
Alt. Seq. 9	1/2	7/8		
Alt. Seq. 10	3/4	7/8		
Alt. Seq. 11	1/2	3/4	7/8	
Alt. Seq. 12	5/6	7/8		
Alt. Seq. 13	1/2	5/6	7/8	
Alt. Seq. 14	3/4	5/6	7/8	
Alt. Seq. 15	1/2	3/4	5/6	7/8

Port 1 Data

BIU	Port	Basic	Message
Addr	Status	Det	40

Default Data

Signal Driver Ouput

Channel	Control	Hardware Pins
1	1 - Veh Phase 1	1 - Phase 1 RYG
2	2 - Veh Phase 2	2 - Phase 2 RYG
3	3 - Veh Phase 3	3 - Phase 3 RYG
4	4 - Veh Phase 4	4 - Phase 4 RYG
5	5 - Veh Phase 5	5 - Phase 5 RYG
6	6 - Veh Phase 6	6 - Phase 6 RYG
7	7 - Veh Phase 7	7 - Phase 7 RYG
8	8 - Veh Phase 8	8 - Phase 8 RYG
9	18 - Ped Phase 2	10 - Phase 2 DPW
10	20 - Ped Phase 4	12 - Phase 4 DPW
11	22 - Ped Phase 6	14 - Phase 6 DPW
12	24 - Ped Phase 8	16 - Phase 8 DPW
13	33 - Overlap A	17 - Overlap A RYG
14	34 - Overlap B	18 - Overlap B RYG
15	35 - Overlap C	19 - Overlap C RYG
16	36 - Overlap D	20 - Overlap D RYG
17	17 - Ped Phase 1	9 - Phase 1 DPW
18	19 - Ped Phase 3	11 - Phase 3 DPW
19	21 - Ped Phase 5	13 - Phase 5 DPW
20	23 - Ped Phase 7	15 - Phase 7 DPW

Coordination Data

General Coordination Data

Operation Mode: 1=Auto

Coordination Mode: 0=Permissive

Maximun Mode: 2=Max 2

Correction Mode: 2=Short Way

Offset Mode: 1=End Grn

Force Mode: 0=Plan

Max Dwell Time: 30

Yield Period: 0

Manual Dial: 1

Manual Split: 1

Manual Offset: 1

Dial/Split

Cycle

1/1	150
1/2	140
1/3	130
1/4	150
2/1	160
2/2	140
2/3	140
2/4	160
3/1	160
3/2	130
3/3	160
3/4	160
4/1	160
4/2	160
4/3	160
4/4	160

Split Times and Phase Modes											
Dial 1 / Split 1											
Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode
1	22	0=Actuated	2	57	1=Coordinate	3	28	0=Actuated	4	43	0=Actuated
5	20	0=Actuated	6	59	1=Coordinate	7	16	0=Actuated	8	55	0=Actuated
Dial 1 / Split 2											
Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode
1	35	0=Actuated	2	50	1=Coordinate	3	30	0=Actuated	4	25	0=Actuated
5	20	0=Actuated	6	65	1=Coordinate	7	30	0=Actuated	8	25	0=Actuated
Dial 1 / Split 3											
Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode
1	30	0=Actuated	2	50	1=Coordinate	3	30	0=Actuated	4	20	0=Actuated
5	20	0=Actuated	6	60	1=Coordinate	7	25	0=Actuated	8	25	0=Actuated
Dial 1 / Split 4											
Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode
1	22	0=Actuated	2	57	1=Coordinate	3	28	0=Actuated	4	43	0=Actuated
5	20	0=Actuated	6	59	1=Coordinate	7	16	0=Actuated	8	55	0=Actuated
Dial 2 / Split 1											
Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode
1	35	0=Actuated	2	50	1=Coordinate	3	40	0=Actuated	4	35	0=Actuated
5	20	0=Actuated	6	65	1=Coordinate	7	40	0=Actuated	8	35	0=Actuated
Dial 2 / Split 2											
Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode
1	35	0=Actuated	2	50	1=Coordinate	3	30	0=Actuated	4	25	0=Actuated
5	20	0=Actuated	6	65	1=Coordinate	7	30	0=Actuated	8	25	0=Actuated
Dial 2 / Split 3											
Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode
1	35	0=Actuated	2	50	1=Coordinate	3	30	0=Actuated	4	25	0=Actuated
5	20	0=Actuated	6	65	1=Coordinate	7	30	0=Actuated	8	25	0=Actuated
Dial 2 / Split 4											
Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode
1	33	0=Actuated	2	67	1=Coordinate	3	28	0=Actuated	4	32	0=Actuated
5	25	0=Actuated	6	75	1=Coordinate	7	33	0=Actuated	8	27	0=Actuated
Dial 3 / Split 1											
Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode
1	35	0=Actuated	2	50	1=Coordinate	3	45	0=Actuated	4	30	0=Actuated
5	20	0=Actuated	6	65	1=Coordinate	7	40	0=Actuated	8	35	0=Actuated
Dial 3 / Split 2											
Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode
1	30	0=Actuated	2	50	1=Coordinate	3	30	0=Actuated	4	20	0=Actuated
5	20	0=Actuated	6	60	1=Coordinate	7	25	0=Actuated	8	25	0=Actuated
Dial 3 / Split 3											
Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode
1	35	0=Actuated	2	50	1=Coordinate	3	45	0=Actuated	4	30	0=Actuated
5	20	0=Actuated	6	65	1=Coordinate	7	40	0=Actuated	8	35	0=Actuated
Dial 3 / Split 4											
Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode
1	33	0=Actuated	2	70	1=Coordinate	3	35	0=Actuated	4	22	0=Actuated
5	18	0=Actuated	6	85	1=Coordinate	7	35	0=Actuated	8	22	0=Actuated
Dial 4 / Split 1											
Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode
1	35	0=Actuated	2	50	1=Coordinate	3	40	0=Actuated	4	35	0=Actuated

5	20	0=Actuated	6	65	1=Coordinate	7	40	0=Actuated	8	35	0=Actuated
Dial 4 / Split 2											
Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode
1	35	0=Actuated	2	50	1=Coordinate	3	40	0=Actuated	4	35	0=Actuated
5	25	0=Actuated	6	60	1=Coordinate	7	40	0=Actuated	8	35	0=Actuated
Dial 4 / Split 3											
Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode
1	35	0=Actuated	2	50	1=Coordinate	3	45	0=Actuated	4	30	0=Actuated
5	20	0=Actuated	6	65	1=Coordinate	7	40	0=Actuated	8	35	0=Actuated
Dial 4 / Split 4											
Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode	Ph.	Splits	Ph. Mode
1	35	0=Actuated	2	50	1=Coordinate	3	45	0=Actuated	4	30	0=Actuated
5	20	0=Actuated	6	65	1=Coordinate	7	40	0=Actuated	8	35	0=Actuated

Traffic Plan Data

Plan: 1/1/1	Offset Time: 19 Mode: 0=Normal	Alternat Sequence: 1 Special Function: 0	Rg 2 Lag Time: 0 Correction Mode: 0=No	Rg 3 Lag Time: 0	Rg 4 Lag Time: 0
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Plan: 1/2/1	Offset Time: 120 Mode: 0=Normal	Alternat Sequence: 1 Special Function: 0	Rg 2 Lag Time: 0 Correction Mode: 0=No	Rg 3 Lag Time: 0	Rg 4 Lag Time: 0
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Plan: 1/3/1	Offset Time: 110 Mode: 0=Normal	Alternat Sequence: 1 Special Function: 0	Rg 2 Lag Time: 0 Correction Mode: 0=No	Rg 3 Lag Time: 0	Rg 4 Lag Time: 0
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Plan: 1/4/1	Offset Time: 19 Mode: 0=Normal	Alternat Sequence: 1 Special Function: 0	Rg 2 Lag Time: 0 Correction Mode: 0=No	Rg 3 Lag Time: 0	Rg 4 Lag Time: 0
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Plan: 2/1/1	Offset Time: 80 Mode: 0=Normal	Alternat Sequence: 1 Special Function: 0	Rg 2 Lag Time: 0 Correction Mode: 0=No	Rg 3 Lag Time: 0	Rg 4 Lag Time: 0
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Plan: 2/2/1	Offset Time: 120 Mode: 0=Normal	Alternat Sequence: 1 Special Function: 0	Rg 2 Lag Time: 0 Correction Mode: 0=No	Rg 3 Lag Time: 0	Rg 4 Lag Time: 0
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Plan: 2/3/1	Offset Time: 120 Mode: 0=Normal	Alternat Sequence: 1 Special Function: 0	Rg 2 Lag Time: 0 Correction Mode: 0=No	Rg 3 Lag Time: 0	Rg 4 Lag Time: 0
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Plan: 2/4/1	Offset Time: 105 Mode: 0=Normal	Alternat Sequence: 0 Special Function: 0	Rg 2 Lag Time: 0 Correction Mode: 0=No	Rg 3 Lag Time: 0	Rg 4 Lag Time: 0
Plan: 3/1/1	Offset Time: 40 Mode: 0=Normal	Alternat Sequence: 1 Special Function: 0	Rg 2 Lag Time: 0 Correction Mode: 0=No	Rg 3 Lag Time: 0	Rg 4 Lag Time: 0
Plan: 3/2/1	Offset Time: 110 Mode: 0=Normal	Alternat Sequence: 1 Special Function: 0	Rg 2 Lag Time: 0 Correction Mode: 0=No	Rg 3 Lag Time: 0	Rg 4 Lag Time: 0
Plan: 3/3/1	Offset Time: 52 Mode: 0=Normal	Alternat Sequence: 1 Special Function: 0	Rg 2 Lag Time: 0 Correction Mode: 0=No	Rg 3 Lag Time: 0	Rg 4 Lag Time: 0
Plan: 3/4/1	Offset Time: 88 Mode: 0=Normal	Alternat Sequence: 0 Special Function: 0	Rg 2 Lag Time: 0 Correction Mode: 0=No	Rg 3 Lag Time: 0	Rg 4 Lag Time: 0
Plan: 4/1/1	Offset Time: 80 Mode: 0=Normal	Alternat Sequence: 1 Special Function: 0	Rg 2 Lag Time: 0 Correction Mode: 0=No	Rg 3 Lag Time: 0	Rg 4 Lag Time: 0
Plan: 4/2/1	Offset Time: 80 Mode: 0=Normal	Alternat Sequence: 1 Special Function: 0	Rg 2 Lag Time: 0 Correction Mode: 0=No	Rg 3 Lag Time: 0	Rg 4 Lag Time: 0
Plan: 4/3/1	Offset Time: 52 Mode: 0=Normal	Alternat Sequence: 1 Special Function: 0	Rg 2 Lag Time: 0 Correction Mode: 0=No	Rg 3 Lag Time: 0	Rg 4 Lag Time: 0

Plan: 4/4/1

Offset Time: 52

Alternat Sequence: 1

Rg 2 Lag Time: 0

Rg 3 Lag Time: 0

Rg 4 Lag Time: 0

Mode: 0=Normal

Special Function: 0

Correction Mode: 0=No

Local TBC Data

Start of Daylight Saving

Month: 3

Week: 2

Cycle Zero Reference

Hours: 4

Min: 30

End of Daylight Saving

Month: 11

Week: 1

Source Day	Equate Days						
	1	2	3	4	5	6	7
1	51	0	0	0	0	0	0
2	3	4	5	6	52	0	0
7	57	0	0	0	0	0	0

Traffic Data

Event	Day	Time	D/S/O	flash	PHASE FUNCTION															
					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	1	0:1	0/0/4		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2	1	8:0	1/2/1		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3	1	11:0	2/1/1		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4	1	14:0	2/2/1		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5	1	20:0	0/0/4		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
6	2	0:1	0/0/4		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
7	2	6:0	1/1/1		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
8	2	9:30	1/2/1		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
9	2	11:0	2/1/1		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
10	2	15:0	3/1/1		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
11	2	19:0	3/2/1		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
12	2	21:0	0/0/4		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
13	7	0:1	0/0/4		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
14	7	8:0	1/2/1		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
15	7	10:0	2/1/1		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
16	7	21:0	2/2/1		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
17	7	22:0	0/0/4		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
18	71	0:1	0/0/4		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
19	71	8:0	2/2/1		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
20	71	10:0	2/4/1		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
21	71	21:0	2/2/1		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
22	71	22:0	0/0/4		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
23	72	0:1	0/0/4		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
24	72	6:0	1/1/1		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
25	72	9:30	2/1/1		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
26	72	11:0	2/4/1		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
27	72	15:0	3/4/1		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
28	72	19:0	2/2/1		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
29	72	21:0	0/0/4		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

AUX. Events

Event	Program Day	Hour	Min.	Aux Ouputs			Det.	Det.	Det.	Special Function Outputs								
				1	2	3	Diag.	Rpt.	Mult100	Dimming	1	2	3	4	5	6	7	8
				☐	☐	☐	☐	☐	☐		☐	☐	☐	☐	☐	☐	☐	☐

Event	Month	Day	Year	Special Day	Special Week
1	11	24	16	57	0
2	11	25	16	71	0
3	11	26	16	71	0
4	11	27	16	71	0
5	12	3	16	71	0
6	12	4	16	71	0
7	12	10	16	71	0
8	12	11	16	71	0
9	12	12	16	72	0
10	12	13	16	72	0
11	12	14	16	72	0
12	12	15	16	72	0
13	12	16	16	72	0
14	12	17	16	71	0
15	12	18	16	71	0
16	12	19	16	72	0
17	12	20	16	72	0
18	12	21	16	72	0
19	12	22	16	72	0
20	12	23	16	72	0
21	12	24	16	72	0
22	1	1	100	1	0
23	7	4	100	7	0
24	12	25	100	1	0

Special Functions

Function	SF1	SF2	SF3	SF4	SF5	SF6	SF7	SF8	SF9	SF10	SF11	SF12	SF13	SF14	SF15	SF16
Special Function 1	X															
Special Function 2		X														
Special Function 3			X													
Special Function 4				X												
Special Function 5					X											
Special Function 6						X										
Special Function 7							X									
Special Function 8								X								

Phase Function

	PF1	PF2	PF3	PF4	PF5	PF6	PF7	PF8	PF9	PF10	PF11	PF12	PF13	PF14	PF15	PF16
Phase 1 Max2	X															
Phase 2 Max2		X														
Phase 3 Max2			X													
Phase 4 Max2				X												
Phase 5 Max2					X											
Phase 6 Max2						X										
Phase 7 Max2							X									
Phase 8 Max2								X								

Phase Omit

PF1	PF2	PF3	PF4	PF5	PF6	PF7	PF8	PF9	PF10	PF11	PF12	PF13	PF14	PF15	PF16

<u>Ped Omit</u>	PF1	PF2	PF3	PF4	PF5	PF6	PF7	PF8	PF9	PF10	PF11	PF12	PF13	PF14	PF15	PF16
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

<u>Veh Det Coord ReSvc</u>	PF1	PF2	PF3	PF4	PF5	PF6	PF7	PF8	PF9	PF10	PF11	PF12	PF13	PF14	PF15	PF16
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

<u>Function Phase Recall</u>	PF1	PF2	PF3	PF4	PF5	PF6	PF7	PF8	PF9	PF10	PF11	PF12	PF13	PF14	PF15	PF16
Phase 1 Max Recall	☐	☐	☐	☐	☐	☐	☐	☐	X	☐	☐	☐	☐	☐	☐	☐
Phase 2 Max Recall	☐	☐	☐	☐	☐	☐	☐	☐	☐	X	☐	☐	☐	☐	☐	☐
Phase 3 Max Recall	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	X	☐	☐	☐	☐	☐
Phase 4 Max Recall	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	X	☐	☐	☐	☐
Phase 5 Max Recall	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	X	☐	☐	☐
Phase 6 Max Recall	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	X	☐	☐
Phase 7 Max Recall	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	X	☐
Phase 8 Max Recall	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	X

<u>Phase Min Recall</u>	PF1	PF2	PF3	PF4	PF5	PF6	PF7	PF8	PF9	PF10	PF11	PF12	PF13	PF14	PF15	PF16
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

<u>Veh Det Ped Recall</u>	PF1	PF2	PF3	PF4	PF5	PF6	PF7	PF8	PF9	PF10	PF11	PF12	PF13	PF14	PF15	PF16
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

<u>Veh Det Bike Recall</u>	PF1	PF2	PF3	PF4	PF5	PF6	PF7	PF8	PF9	PF10	PF11	PF12	PF13	PF14	PF15	PF16
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

<u>Vehicle Function</u>																
<u>Veh Det Switch Omit</u>	PF1	PF2	PF3	PF4	PF5	PF6	PF7	PF8	PF9	PF10	PF11	PF12	PF13	PF14	PF15	PF16
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

<u>Veh Det Switch Now</u>	PF1	PF2	PF3	PF4	PF5	PF6	PF7	PF8	PF9	PF10	PF11	PF12	PF13	PF14	PF15	PF16
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

<u>Veh Det Switch Also</u>	PF1	PF2	PF3	PF4	PF5	PF6	PF7	PF8	PF9	PF10	PF11	PF12	PF13	PF14	PF15	PF16
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

<u>Overlap Function</u>																
	PF1	PF2	PF3	PF4	PF5	PF6	PF7	PF8	PF9	PF10	PF11	PF12	PF13	PF14	PF15	PF16
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Dimming Data																
Default Data - No Dimming Programmed																

Lane Definition						
Lanes	Name	Green Inbound	Yellow Inbound	Red Inbound	Green Outbound	Yellow Outbound
Default Data - Lane Definition						

program_day program_hour program_minute LanePhFun

Preemption Data

General Preemption Data

Preempt > Flash Preempt 2 > Preempt 3 Preempt 4 > Preempt 5
Preempt 1 > Preempt 2 Preempt 3 > Preempt 4 Preempt 5 > Preempt 6

Preempt	Preempt Timers											Select			Track				Dwell	Return		
	Non-Locking	Link to Preempt	Delay	Ext end	Dura tion	Max Call	Lock-Out	Min Green	Min Walk	Debo unce	Gate ext end	Ped Clear	Yel	Red	Grn	Ped	Yel	Red	Green	Ped Clear	Yel	Red
1	No	0	0	0	0	0	0	0	0	0	0	8	40	20	10	8	40	20	10	8	40	20
2	No	0	0	0	0	0	0	0	0	0	0	8	40	20	10	8	40	20	10	8	40	20
3	No	0	0	0	0	0	0	0	0	0	0	8	40	20	10	8	40	20	10	8	40	20
4	No	0	0	0	0	0	0	0	0	0	0	8	40	20	10	8	40	20	10	8	40	20
5	No	0	0	0	0	0	0	0	0	0	0	8	40	20	10	8	40	20	10	8	40	20
6	No	0	0	0	0	0	0	0	0	0	0	8	40	20	10	8	40	20	10	8	40	20

Preempt 1			Preempt 2			Preempt 3			Preempt 4			Preempt 5			Preempt 6		
Exit Phase	Exit Phase	Exit Calls	Exit Phase	Exit Phase	Exit Calls	Exit Phase	Exit Phase	Exit Calls	Exit Phase	Exit Phase	Exit Calls	Exit Phase	Exit Phase	Exit Calls	Exit Phase	Exit Phase	Exit Calls

Priority Timers

Prio rity	Non-Locking	Del ay	Ext end	Free Dial	Free Split	Min Green	No Lock out	Lock out A	Lock out B	Max Green	Pre-Green	Recall	Excl-co Phase Svc.	Transit Overlap	
														Signal Type	Blankout

Priority Detector Channels

Priority
Detector

Priority Fixed Phases

Priority

Legend:
CO-PHASE 0 1
 FALSE TRUE
QJ-PHASE

Priority

Priority Bank :

Level

Partial Priority	Full Priority	Recovery
Alt Seq	Freq. Override	Method
Alt Seq Enabled	Ped skip	Return
Min Walk	Force full Priority	PedWait
	Frequency	PedOverride
	Freq. Level	

Codes:	0	X
	FALSE	TRUE

Priority : Priority Bank : Queue Phase Detector Time Default data	Priority : Priority Bank : Queue Phase Detector Time Default data	Priority : Priority Bank : Queue Phase Detector Time Default data
Priority : Priority Bank : Queue Phase Detector Time Default data	Priority : Priority Bank : Queue Phase Detector Time Default data	Priority : Priority Bank : Queue Phase Detector Time Default data

Priority : Bank Detector PE 1A 2A 3A 4A 5A 6A B Default Data	Priority : Bank Detector PE 1A 2A 3A 4A 5A 6A B Default Data
Priority : Bank Detector PE 1A 2A 3A 4A 5A 6A B Default Data	Priority : Bank Detector PE 1A 2A 3A 4A 5A 6A B Default Data
Priority : Bank Detector PE 1A 2A 3A 4A 5A 6A B Default Data	Priority : Bank Detector PE 1A 2A 3A 4A 5A 6A B Default Data

Preempt 1

Vehical Phases			Pedestrian Phases			Overlaps						
Ph.	Track	Dwell	Cycle	Ph	Track	Dwell	Cycle	Ovlp	Track	Dwell	Cycle	Trail Grn

Default Data

Preempt 2

Vehical Phases			Pedestrian Phases			Overlaps						
Ph.	Track	Dwell	Cycle	Ph.	Track	Dwell	Cycle	Ovlp.	Track	Dwell	Cycle	Trail Grn

Default Data

Preempt 3

Vehical Phases			Pedestrian Phases			Overlaps						
Ph.	Track	Dwell	Cycle	Ph.	Track	Dwell	Cycle	Ovlp.	Track	Dwell	Cycle	Trail Grn

Default Data

Preempt 4

Vehical Phases			Pedestrian Phases			Overlaps						
Ph.	Track	Dwell	Cycle	Ph.	Track	Dwell	Cycle	Ovlp.	Track	Dwell	Cycle	Trail Grn

Default Data

Preempt 5

Vehical Phases			Pedestrian Phases			Overlaps						
Ph.	Track	Dwell	Cycle	Ph.	Track	Dwell	Cycle	Ovlp.	Track	Dwell	Cycle	Trail Grn

Default Data

Preempt 6

Vehical Phases			Pedestrian Phases			Overlaps						
Ph.	Track	Dwell	Cycle	Ph.	Track	Dwell	Cycle	Ovlp.	Track	Dwell	Cycle	Trail Grn

Default Data

System/Detectors Data

Local Critical Alarms

Local Free: No

Cycle Failure: Yes

Coord Failure: Yes

Conflict Flash: Yes

Remote Flash: Yes

2nd Phone:

Local Fash: Yes

Cycle Fault: Yes

Coord Fault: Yes

Premption: No

Voltage Monitor: Yes

Special Status 1: No

Special Status 2: No

Special Status 3: No

Special Status 4: No

Special Status 5: No

Special Status 6: No

Traffic Responsive

System	Detector	Veh/	Average	Occupancy	Min	Queue 1	System	Weight	Queue 2	System	Weight	
Detector	Channel	Name	Hr	Time(mins)	Correction/10	Volume %	Detectors	Detectors	Factor	Detectors	Detectors	Factor

Default Data

Sample Interval:

Queue: 1

Input Selection: 0=Average

Detector Failed Level : 0

Queue: 2

Input Selection: 0=Average

Detector Failed Level : 0

Default Data

Vehical Detector

Diagnostic Value 0			
Max	No	Erratic	
Detector	Presence	Activity	Count

Vehical Detector

Diagnostic Value 1			
Max	No	Erratic	
Detector	Presence	Activity	Count

Special Detector

Diagnostic Value 0			
Max	No	Erratic	
Detector	Presence	Activity	Count

Default Data - Diag 0 Values

Default Data - No Diag 1 Values

Default Data - No Diag 0 Valu

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Pedestrian Detector				Pedestrian Detector				Special Detector			
Diagnostic Value 0				Diagnostic Value 1				Diagnostic Value 1			
	Max	No	Erratic		Max	No	Erratic		Max	No	Erratic
Detector	Presence	Activity	Count	Detector	Presence	Activity	Count	Detector	Presence	Activity	Count
Default Data - No Diag 0 Values				Default Data - No Diag 1 Values				Default Data - No Diag 1 Values			
Speed Trap Data								Speed Trap			
Speed Trap:				Dial/Split/Offset				Speed Trap		Speed Trap	
				//				Low Treshold		High Treshold	
Measurement:											
Detector 1	Detector_2	Distance :		Default Data							
Default Data											
Volume Detector Data											
Report Interval											
Volume	Controller										
Detector	Detector										
Number	Channel										
Default Data											

APPENDIX B - SYNCHRO & HCS 7 Analysis Printouts

Queues

2017 Existing AM

1: SR 53/Dawsonville Hwy & Commercial Dwy

07/24/2018



Lane Group	EBL	EBT	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	5	11	60	27	11	832	71	43	2288	11
v/c Ratio	0.03	0.04	0.35	0.06	0.10	0.32	0.06	0.09	0.87	0.01
Control Delay	59.0	0.3	67.1	0.3	5.9	9.5	3.4	3.6	20.3	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.0	0.3	67.1	0.3	5.9	9.5	3.4	3.6	20.3	0.0
Queue Length 50th (ft)	4	0	55	0	4	185	9	7	800	0
Queue Length 95th (ft)	19	0	104	0	m2	m160	m13	15	923	0
Internal Link Dist (ft)		164				848			580	
Turn Bay Length (ft)				135	240		250	235		400
Base Capacity (vph)	172	251	171	441	111	2623	1192	496	2623	1191
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.04	0.35	0.06	0.10	0.32	0.06	0.09	0.87	0.01

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

1: SR 53/Dawsonville Hwy & Commercial Dwy

2017 Existing AM

07/24/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	0	10	55	0	25	10	765	65	40	2105	10
Future Volume (vph)	5	0	10	55	0	25	10	765	65	40	2105	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	1.00		1.00		1.00	1.00	0.95	1.00	1.00	0.95	1.00
Flt	1.00	0.85		1.00		0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	1615		1805		1615	1805	3610	1615	1805	3610	1615
Flt Permitted	0.76	1.00		0.75		1.00	0.04	1.00	1.00	0.32	1.00	1.00
Satd. Flow (perm)	1439	1615		1426		1615	70	3610	1615	601	3610	1615
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	0	11	60	0	27	11	832	71	43	2288	11
RTOR Reduction (vph)	0	10	0	0	0	24	0	0	19	0	0	3
Lane Group Flow (vph)	5	1	0	60	0	3	11	832	52	43	2288	8
Turn Type	Perm	NA		Perm		Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8	2		2	6		6
Actuated Green, G (s)	18.0	18.0		18.0		18.0	114.0	109.0	109.0	114.0	109.0	109.0
Effective Green, g (s)	18.0	18.0		18.0		18.0	114.0	109.0	109.0	114.0	109.0	109.0
Actuated g/C Ratio	0.12	0.12		0.12		0.12	0.76	0.73	0.73	0.76	0.73	0.73
Clearance Time (s)	6.0	6.0		6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Grp Cap (vph)	172	193		171		193	111	2623	1173	496	2623	1173
v/s Ratio Prot		0.00					c0.00	0.23		0.00	c0.63	
v/s Ratio Perm	0.00			c0.04		0.00	0.07		0.03	0.06		0.00
v/c Ratio	0.03	0.01		0.35		0.02	0.10	0.32	0.04	0.09	0.87	0.01
Uniform Delay, d1	58.3	58.1		60.6		58.2	25.0	7.3	5.8	4.6	15.3	5.6
Progression Factor	1.00	1.00		1.00		1.00	1.61	1.28	2.72	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.1		5.6		0.2	0.8	0.1	0.0	0.3	4.4	0.0
Delay (s)	58.6	58.2		66.2		58.4	40.9	9.5	15.8	5.0	19.7	5.6
Level of Service	E	E		E		E	D	A	B	A	B	A
Approach Delay (s)		58.3			63.8			10.3			19.3	
Approach LOS		E			E			B			B	
Intersection Summary												
HCM 2000 Control Delay			18.2									B
HCM 2000 Volume to Capacity ratio			0.77									
Actuated Cycle Length (s)			150.0									18.0
Intersection Capacity Utilization			77.9%									D
Analysis Period (min)			15									
c Critical Lane Group												



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	394	224	217	47	42	253	571	59	41	1535	876
v/c Ratio	1.87	0.80	0.57	0.32	0.20	0.87	0.29	0.06	0.36	0.75	0.71
Control Delay	442.9	49.6	11.1	49.3	37.6	94.8	18.0	0.1	67.0	27.4	12.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	442.9	49.6	11.1	49.3	37.6	94.8	18.0	0.1	67.0	27.4	12.1
Queue Length 50th (ft)	~301	108	0	37	22	128	147	0	38	733	445
Queue Length 95th (ft)	#381	176	47	62	51	#185	221	0	m45	838	610
Internal Link Dist (ft)		546			135		841			829	
Turn Bay Length (ft)	180		475			400		240	250		575
Base Capacity (vph)	211	457	539	269	542	292	1985	1046	163	2037	1238
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.87	0.49	0.40	0.17	0.08	0.87	0.29	0.06	0.25	0.75	0.71

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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

HCM Signalized Intersection Capacity Analysis

2017 Existing AM

3: SR 53/Dawsonville Hwy & SR 53/McEver Rd/Lakeshore Marketplace dwy

07/24/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↔	↔	↔	↔		↔↔	↔↔	↔	↔	↔↔	↔
Traffic Volume (vph)	335	40	335	40	20	15	215	485	50	35	1305	745
Future Volume (vph)	335	40	335	40	20	15	215	485	50	35	1305	745
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			3%			0%			0%	
Total Lost time (s)	6.5	7.3	7.3	7.3	7.3		7.2	6.6	6.6	7.5	6.6	6.6
Lane Util. Factor	0.97	0.95	0.95	1.00	1.00		0.97	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.88	0.85	1.00	0.94		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3335	1543	1519	1693	1666		3433	3282	1609	1687	3574	1563
Flt Permitted	0.95	1.00	1.00	0.25	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3335	1543	1519	443	1666		3433	3282	1609	1687	3574	1563
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	394	47	394	47	24	18	253	571	59	41	1535	876
RTOR Reduction (vph)	0	105	192	0	16	0	0	0	25	0	0	364
Lane Group Flow (vph)	394	119	25	47	26	0	253	571	34	41	1535	512
Confl. Peds. (#/hr)							1					1
Heavy Vehicles (%)	5%	11%	1%	5%	9%	0%	2%	10%	0%	7%	1%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	1	0	0	0
Turn Type	Prot	NA	Perm	pm+pt	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4	8					2			6
Actuated Green, G (s)	9.5	17.1	17.1	23.8	16.1		14.3	87.7	87.7	8.8	82.5	82.5
Effective Green, g (s)	9.5	17.1	17.1	23.8	16.1		14.3	87.7	87.7	8.8	82.5	82.5
Actuated g/C Ratio	0.06	0.11	0.11	0.16	0.11		0.10	0.58	0.58	0.06	0.55	0.55
Clearance Time (s)	6.5	7.3	7.3	7.3	7.3		7.2	6.6	6.6	7.5	6.6	6.6
Vehicle Extension (s)	3.1	3.1	3.1	3.1	3.1		3.1	5.1	5.1	4.1	5.1	5.1
Lane Grp Cap (vph)	211	175	173	134	178		327	1918	940	98	1965	859
v/s Ratio Prot	c0.12	c0.08		0.02	0.02		c0.07	0.17		0.02	c0.43	
v/s Ratio Perm			0.02	0.04					0.02			0.33
v/c Ratio	1.87	0.68	0.14	0.35	0.15		0.77	0.30	0.04	0.42	0.78	0.60
Uniform Delay, d1	70.2	63.8	59.9	55.1	60.7		66.3	15.7	13.2	68.1	26.6	22.6
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	0.93	0.95	3.56
Incremental Delay, d2	407.9	10.0	0.4	1.6	0.4		10.9	0.4	0.1	2.5	1.9	1.8
Delay (s)	478.1	73.8	60.2	56.7	61.1		77.2	16.1	13.3	66.1	27.3	82.2
Level of Service	F	E	E	E	E		E	B	B	E	C	F
Approach Delay (s)		261.1			58.8			33.4			47.5	
Approach LOS		F			E			C			D	

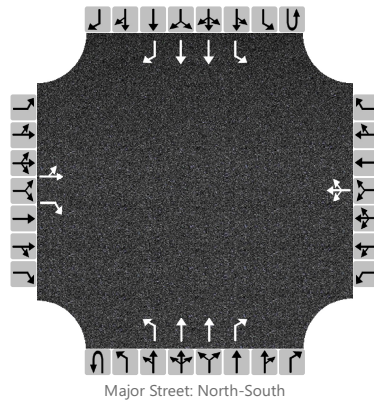
Intersection Summary

HCM 2000 Control Delay	86.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	28.7
Intersection Capacity Utilization	79.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

HCS7 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	Wolverton	Intersection	SR 53 at Site Driveway
Agency/Co.	GDOT	Jurisdiction	City of Gainesville
Date Performed	7/23/2018	East/West Street	Site Driveway
Analysis Year	2017	North/South Street	SR 53/Dawsonville Hwy
Time Analyzed	AM Peak Hour	Peak Hour Factor	0.92
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	Commercial Development on SR 53		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	1		0	1	0	0	1	2	1	0	1	2	1
Configuration		LT		R			LTR			L	T	R		L	T	R
Volume, V (veh/h)		5	0	10		5	0	15		10	820	5		5	2070	5
Percent Heavy Vehicles (%)		3	3	3		3	3	3		3				3		
Proportion Time Blocked																
Percent Grade (%)	0				0											
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		7.5	6.5	6.9		7.5	6.5	6.9		4.1				4.1		
Critical Headway (sec)		7.56	6.56	6.96		7.56	6.56	6.96		4.16				4.16		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.53	4.03	3.33		3.53	4.03	3.33		2.23				2.23		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		5		11			21			11				5		
Capacity, c (veh/h)		9		198			104			221				747		
v/c Ratio		0.56		0.06			0.20			0.05				0.01		
95% Queue Length, Q ₉₅ (veh)		1.1		0.2			0.7			0.2				0.0		
Control Delay (s/veh)		649.1		24.3			48.0			22.1				9.9		
Level of Service, LOS		F		C			E			C				A		
Approach Delay (s/veh)	219.5				48.0				0.3				0.0			
Approach LOS	F				E											

Queues

2017 Existing PM

1: SR 53/Dawsonville Hwy & Commercial Dwy

07/20/2018



Lane Group	EBL	EBT	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	16	43	266	185	98	2217	239	141	1391	43
v/c Ratio	0.06	0.10	1.03	0.50	0.38	0.95	0.22	0.95	0.59	0.04
Control Delay	54.3	0.5	124.8	35.3	4.6	25.6	2.5	102.9	17.2	1.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.3	0.5	124.8	35.3	4.6	25.6	2.5	102.9	17.2	1.1
Queue Length 50th (ft)	14	0	~295	91	8	1282	44	98	414	0
Queue Length 95th (ft)	37	0	#486	176	m1	m632	m18	#246	476	8
Internal Link Dist (ft)		164				848			580	
Turn Bay Length (ft)				135	240		250	235		400
Base Capacity (vph)	269	414	259	373	255	2323	1090	148	2346	1071
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.10	1.03	0.50	0.38	0.95	0.22	0.95	0.59	0.04

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis

1: SR 53/Dawsonville Hwy & Commercial Dwy

2017 Existing PM

07/20/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	0	40	245	0	170	90	2040	220	130	1280	40
Future Volume (vph)	15	0	40	245	0	170	90	2040	220	130	1280	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	1.00		1.00		1.00	1.00	0.95	1.00	1.00	0.95	1.00
Flt	1.00	0.85		1.00		0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	1615		1805		1615	1805	3610	1615	1805	3610	1615
Flt Permitted	0.76	1.00		0.73		1.00	0.13	1.00	1.00	0.04	1.00	1.00
Satd. Flow (perm)	1439	1615		1385		1615	256	3610	1615	73	3610	1615
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	16	0	43	266	0	185	98	2217	239	141	1391	43
RTOR Reduction (vph)	0	35	0	0	0	71	0	0	51	0	0	15
Lane Group Flow (vph)	16	8	0	266	0	114	98	2217	188	141	1391	28
Turn Type	Perm	NA		Perm		Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8	2		2	6		6
Actuated Green, G (s)	30.0	30.0		30.0		30.0	111.0	103.0	103.0	113.0	104.0	104.0
Effective Green, g (s)	30.0	30.0		30.0		30.0	111.0	103.0	103.0	113.0	104.0	104.0
Actuated g/C Ratio	0.19	0.19		0.19		0.19	0.69	0.64	0.64	0.71	0.65	0.65
Clearance Time (s)	6.0	6.0		6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Grp Cap (vph)	269	302		259		302	255	2323	1039	148	2346	1049
v/s Ratio Prot		0.00					0.02	0.61		c0.05	0.39	
v/s Ratio Perm	0.01			c0.19		0.07	0.25		0.12	c0.61		0.02
v/c Ratio	0.06	0.03		1.03		0.38	0.38	0.95	0.18	0.95	0.59	0.03
Uniform Delay, d1	53.4	53.1		65.0		56.8	12.1	26.3	11.5	57.2	15.9	10.0
Progression Factor	1.00	1.00		1.00		1.00	0.67	0.90	0.54	1.00	1.00	1.00
Incremental Delay, d2	0.4	0.2		63.1		3.6	0.4	1.4	0.0	62.3	1.1	0.0
Delay (s)	53.8	53.2		128.1		60.4	8.6	25.2	6.2	119.6	17.1	10.0
Level of Service	D	D		F		E	A	C	A	F	B	B
Approach Delay (s)		53.4			100.3			22.8			26.0	
Approach LOS		D			F			C			C	
Intersection Summary												
HCM 2000 Control Delay			31.8									C
HCM 2000 Volume to Capacity ratio			0.97									
Actuated Cycle Length (s)			160.0							18.0		
Intersection Capacity Utilization			98.8%							F		
Analysis Period (min)			15									
c Critical Lane Group												

Queues

2017 Existing PM

3: SR 53/Dawsonville Hwy & SR 53/McEver Rd/Lakeshore Marketplace dwy

07/20/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	865	299	272	118	170	441	1806	71	71	1288	494
v/c Ratio	1.24	0.66	0.44	0.40	0.60	1.61	1.45	0.10	0.51	0.94	0.55
Control Delay	170.1	55.8	7.1	37.2	59.7	333.2	244.0	0.3	72.5	61.4	13.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	170.1	55.8	7.1	37.2	59.7	333.2	244.0	0.3	72.5	61.4	13.2
Queue Length 50th (ft)	~576	276	0	81	137	~339	~1317	0	75	703	148
Queue Length 95th (ft)	#648	369	58	116	199	#420	#1452	0	m113	m#768	m194
Internal Link Dist (ft)		546			135		841			829	
Turn Bay Length (ft)	180		475			400		240	250		575
Base Capacity (vph)	698	455	618	555	313	274	1244	687	289	1369	903
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.24	0.66	0.44	0.21	0.54	1.61	1.45	0.10	0.25	0.94	0.55

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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

HCM Signalized Intersection Capacity Analysis

2017 Existing PM

3: SR 53/Dawsonville Hwy & SR 53/McEver Rd/Lakeshore Marketplace dwy

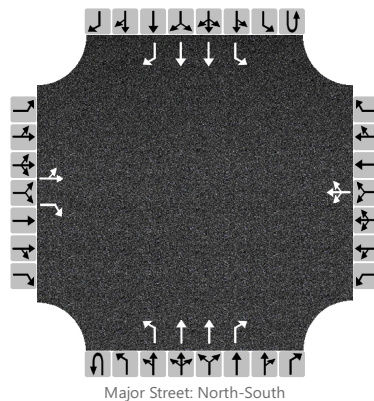
07/20/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	735	135	350	100	65	80	375	1535	60	60	1095	420
Future Volume (vph)	735	135	350	100	65	80	375	1535	60	60	1095	420
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			3%			0%			0%	
Total Lost time (s)	6.5	7.3	7.3	7.3	7.3		7.2	6.6	6.6	7.5	6.6	6.6
Lane Util. Factor	0.97	0.95	0.95	1.00	1.00		0.97	0.95	1.00	1.00	0.95	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.93	0.85	1.00	0.92		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3335	1579	1519	1693	1650		3433	3282	1609	1687	3574	1563
Flt Permitted	0.95	1.00	1.00	0.57	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3335	1579	1519	1015	1650		3433	3282	1609	1687	3574	1563
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	865	159	412	118	76	94	441	1806	71	71	1288	494
RTOR Reduction (vph)	0	17	196	0	29	0	0	0	44	0	0	305
Lane Group Flow (vph)	865	282	76	118	141	0	441	1806	27	71	1288	189
Confl. Peds. (#/hr)							1					1
Heavy Vehicles (%)	5%	11%	1%	5%	9%	0%	2%	10%	0%	7%	1%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	1	0	0	0
Turn Type	Prot	NA	Perm	pm+pt	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4	8					2			6
Actuated Green, G (s)	33.5	44.5	44.5	37.8	24.8		12.8	60.7	60.7	13.1	61.3	61.3
Effective Green, g (s)	33.5	44.5	44.5	37.8	24.8		12.8	60.7	60.7	13.1	61.3	61.3
Actuated g/C Ratio	0.21	0.28	0.28	0.24	0.16		0.08	0.38	0.38	0.08	0.38	0.38
Clearance Time (s)	6.5	7.3	7.3	7.3	7.3		7.2	6.6	6.6	7.5	6.6	6.6
Vehicle Extension (s)	3.1	3.1	3.1	3.1	3.1		3.1	5.1	5.1	4.1	5.1	5.1
Lane Grp Cap (vph)	698	439	422	294	255		274	1245	610	138	1369	598
v/s Ratio Prot	c0.26	c0.18		0.03	0.09		0.13	c0.55		0.04	c0.36	
v/s Ratio Perm			0.05	0.06					0.02			0.12
v/c Ratio	1.24	0.64	0.18	0.40	0.55		1.61	1.45	0.04	0.51	0.94	0.32
Uniform Delay, d1	63.2	50.8	43.9	50.2	62.5		73.6	49.6	31.3	70.4	47.6	34.6
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	0.89	1.05	4.16
Incremental Delay, d2	119.7	3.2	0.2	0.9	2.6		290.6	207.3	0.1	3.6	11.8	1.1
Delay (s)	182.9	54.0	44.1	51.1	65.1		364.2	257.0	31.5	66.3	61.8	145.4
Level of Service	F	D	D	D	E		F	F	C	E	E	F
Approach Delay (s)		129.8			59.4			270.5			84.2	
Approach LOS		F			E			F			F	
Intersection Summary												
HCM 2000 Control Delay			167.3			HCM 2000 Level of Service				F		
HCM 2000 Volume to Capacity ratio			1.25									
Actuated Cycle Length (s)			160.0			Sum of lost time (s)				28.7		
Intersection Capacity Utilization			99.1%			ICU Level of Service				F		
Analysis Period (min)			15									
c Critical Lane Group												

HCS7 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	Wolverton	Intersection	SR 53 at Site Driveway
Agency/Co.	GDOT	Jurisdiction	City of Gainesville
Date Performed	7/23/2018	East/West Street	Site Driveway
Analysis Year	2017	North/South Street	SR 53/Dawsonville Hwy
Time Analyzed	PM Peak Hour	Peak Hour Factor	0.92
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	Commercial Development on SR 53		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	1		0	1	0	0	1	2	1	0	1	2	1
Configuration		LT		R			LTR			L	T	R		L	T	R
Volume, V (veh/h)		25	0	20		10	0	5		20	2320	10		5	1545	15
Percent Heavy Vehicles (%)		3	3	3		3	3	3		3				3		
Proportion Time Blocked																
Percent Grade (%)	0				0											
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		27		22			16			22				5		
Capacity, c (veh/h)		5		307			3			368				171		
v/c Ratio		5.08		0.07			4.71			0.06				0.03		
95% Queue Length, Q ₉₅ (veh)		4.8		0.2			3.4			0.2				0.1		
Control Delay (s/veh)		3143.7		17.6			3612.3			15.4				26.6		
Level of Service, LOS		F		C			F			C				D		
Approach Delay (s/veh)	1740.2				3612.3				0.1				0.1			
Approach LOS	F				F											

Queues

2019 Future without Devel AM

1: SR 53/Dawsonville Hwy & Commercial Dwy

07/24/2018



Lane Group	EBL	EBT	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	5	11	60	27	16	848	71	43	2234	11
v/c Ratio	0.03	0.04	0.35	0.06	0.14	0.32	0.06	0.09	0.85	0.01
Control Delay	59.0	0.3	67.1	0.3	7.9	9.6	3.3	3.6	19.0	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.0	0.3	67.1	0.3	7.9	9.6	3.3	3.6	19.0	0.0
Queue Length 50th (ft)	4	0	55	0	5	190	10	7	751	0
Queue Length 95th (ft)	19	0	104	0	m3	m158	m12	15	866	0
Internal Link Dist (ft)		164				848			580	
Turn Bay Length (ft)				135	240		250	235		400
Base Capacity (vph)	172	251	171	435	111	2623	1192	488	2623	1191
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.04	0.35	0.06	0.14	0.32	0.06	0.09	0.85	0.01

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

1: SR 53/Dawsonville Hwy & Commercial Dwy

2019 Future without Devel AM

07/24/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	0	10	55	0	25	15	780	65	40	2055	10
Future Volume (vph)	5	0	10	55	0	25	15	780	65	40	2055	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	1.00		1.00		1.00	1.00	0.95	1.00	1.00	0.95	1.00
Flt	1.00	0.85		1.00		0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	1615		1805		1615	1805	3610	1615	1805	3610	1615
Flt Permitted	0.76	1.00		0.75		1.00	0.04	1.00	1.00	0.31	1.00	1.00
Satd. Flow (perm)	1439	1615		1426		1615	70	3610	1615	589	3610	1615
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	0	11	60	0	27	16	848	71	43	2234	11
RTOR Reduction (vph)	0	10	0	0	0	24	0	0	19	0	0	3
Lane Group Flow (vph)	5	1	0	60	0	3	16	848	52	43	2234	8
Turn Type	Perm	NA		Perm		Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8	2		2	6		6
Actuated Green, G (s)	18.0	18.0		18.0		18.0	114.0	109.0	109.0	114.0	109.0	109.0
Effective Green, g (s)	18.0	18.0		18.0		18.0	114.0	109.0	109.0	114.0	109.0	109.0
Actuated g/C Ratio	0.12	0.12		0.12		0.12	0.76	0.73	0.73	0.76	0.73	0.73
Clearance Time (s)	6.0	6.0		6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Grp Cap (vph)	172	193		171		193	111	2623	1173	488	2623	1173
v/s Ratio Prot		0.00					c0.00	0.23		0.00	c0.62	
v/s Ratio Perm	0.00			c0.04		0.00	0.11		0.03	0.06		0.00
v/c Ratio	0.03	0.01		0.35		0.02	0.14	0.32	0.04	0.09	0.85	0.01
Uniform Delay, d1	58.3	58.1		60.6		58.2	22.7	7.3	5.8	4.6	14.7	5.6
Progression Factor	1.00	1.00		1.00		1.00	2.06	1.28	2.67	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.1		5.6		0.2	1.1	0.1	0.0	0.4	3.7	0.0
Delay (s)	58.6	58.2		66.2		58.4	48.0	9.5	15.5	5.0	18.4	5.6
Level of Service	E	E		E		E	D	A	B	A	B	A
Approach Delay (s)		58.3			63.8			10.6			18.1	
Approach LOS		E			E			B			B	
Intersection Summary												
HCM 2000 Control Delay			17.4									B
HCM 2000 Volume to Capacity ratio			0.76									
Actuated Cycle Length (s)			150.0									
Intersection Capacity Utilization			76.5%									D
Analysis Period (min)			15									
c Critical Lane Group												

Queues

2019 Future without Devel AM

3: SR 53/Dawsonville Hwy & SR 53/McEver Rd/Lakeshore Marketplace dwy

07/24/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	400	224	217	47	42	253	582	59	41	1576	882
v/c Ratio	1.90	0.80	0.57	0.32	0.20	0.87	0.29	0.06	0.36	0.77	0.71
Control Delay	454.9	49.6	11.1	49.3	37.6	94.8	18.1	0.1	65.9	28.8	13.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	454.9	49.6	11.1	49.3	37.6	94.8	18.1	0.1	65.9	28.8	13.0
Queue Length 50th (ft)	~307	108	0	37	22	128	150	0	38	767	455
Queue Length 95th (ft)	#388	176	47	62	51	#185	226	0	m47	863	625
Internal Link Dist (ft)		546			135		841			829	
Turn Bay Length (ft)	180		475			400		240	250		575
Base Capacity (vph)	211	457	539	269	542	292	1985	1046	163	2037	1238
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.90	0.49	0.40	0.17	0.08	0.87	0.29	0.06	0.25	0.77	0.71

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis

2019 Future without Devel AM

3: SR 53/Dawsonville Hwy & SR 53/McEver Rd/Lakeshore Marketplace dwy

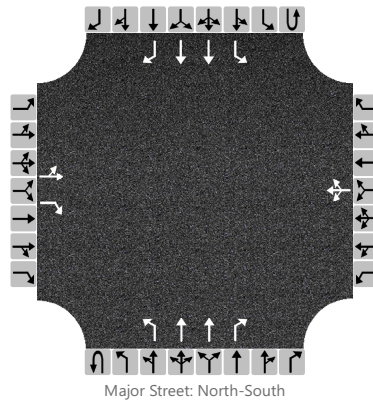
07/24/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	340	40	335	40	20	15	215	495	50	35	1340	750
Future Volume (vph)	340	40	335	40	20	15	215	495	50	35	1340	750
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			3%			0%			0%	
Total Lost time (s)	6.5	7.3	7.3	7.3	7.3		7.2	6.6	6.6	7.5	6.6	6.6
Lane Util. Factor	0.97	0.95	0.95	1.00	1.00		0.97	0.95	1.00	1.00	0.95	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.88	0.85	1.00	0.94		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3335	1543	1519	1693	1666		3433	3282	1609	1687	3574	1563
Flt Permitted	0.95	1.00	1.00	0.25	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3335	1543	1519	443	1666		3433	3282	1609	1687	3574	1563
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	400	47	394	47	24	18	253	582	59	41	1576	882
RTOR Reduction (vph)	0	105	192	0	16	0	0	0	25	0	0	364
Lane Group Flow (vph)	400	119	25	47	26	0	253	582	34	41	1576	518
Confl. Peds. (#/hr)							1					1
Heavy Vehicles (%)	5%	11%	1%	5%	9%	0%	2%	10%	0%	7%	1%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	1	0	0	0
Turn Type	Prot	NA	Perm	pm+pt	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4	8					2			6
Actuated Green, G (s)	9.5	17.1	17.1	23.8	16.1		14.3	87.7	87.7	8.8	82.5	82.5
Effective Green, g (s)	9.5	17.1	17.1	23.8	16.1		14.3	87.7	87.7	8.8	82.5	82.5
Actuated g/C Ratio	0.06	0.11	0.11	0.16	0.11		0.10	0.58	0.58	0.06	0.55	0.55
Clearance Time (s)	6.5	7.3	7.3	7.3	7.3		7.2	6.6	6.6	7.5	6.6	6.6
Vehicle Extension (s)	3.1	3.1	3.1	3.1	3.1		3.1	5.1	5.1	4.1	5.1	5.1
Lane Grp Cap (vph)	211	175	173	134	178		327	1918	940	98	1965	859
v/s Ratio Prot	c0.12	c0.08		0.02	0.02		c0.07	0.18		0.02	c0.44	
v/s Ratio Perm			0.02	0.04					0.02			0.33
v/c Ratio	1.90	0.68	0.14	0.35	0.15		0.77	0.30	0.04	0.42	0.80	0.60
Uniform Delay, d1	70.2	63.8	59.9	55.1	60.7		66.3	15.7	13.2	68.1	27.2	22.7
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	0.91	0.98	3.68
Incremental Delay, d2	420.4	10.0	0.4	1.6	0.4		10.9	0.4	0.1	2.6	2.2	2.0
Delay (s)	490.6	73.8	60.2	56.7	61.1		77.2	16.1	13.3	64.9	28.9	85.6
Level of Service	F	E	E	E	E		E	B	B	E	C	F
Approach Delay (s)		268.6			58.8			33.2			49.5	
Approach LOS		F			E			C			D	
Intersection Summary												
HCM 2000 Control Delay			88.9			HCM 2000 Level of Service				F		
HCM 2000 Volume to Capacity ratio			0.88									
Actuated Cycle Length (s)			150.0			Sum of lost time (s)			28.7			
Intersection Capacity Utilization			80.0%			ICU Level of Service			D			
Analysis Period (min)			15									
c Critical Lane Group												

HCS7 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	Wolverton	Intersection	SR 53 at Site Driveway
Agency/Co.	GDOT	Jurisdiction	City of Gainesville
Date Performed	7/23/2018	East/West Street	Site Driveway
Analysis Year	2019	North/South Street	SR 53/Dawsonville Hwy
Time Analyzed	AM Peak Hour	Peak Hour Factor	0.92
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	Commercial Development on SR 53		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	1		0	1	0	0	1	2	1	0	1	2	1
Configuration		LT		R			LTR			L	T	R		L	T	R
Volume, V (veh/h)		5	0	10		5	0	15		10	835	5		5	2110	5
Percent Heavy Vehicles (%)		3	3	3		3	3	3		3				3		
Proportion Time Blocked																
Percent Grade (%)	0				0											
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		7.5	6.5	6.9		7.5	6.5	6.9		4.1				4.1		
Critical Headway (sec)		7.56	6.56	6.96		7.56	6.56	6.96		4.16				4.16		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.53	4.03	3.33		3.53	4.03	3.33		2.23				2.23		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		5		11			21			11				5		
Capacity, c (veh/h)		8		191			98			213				736		
v/c Ratio		0.62		0.06			0.21			0.05				0.01		
95% Queue Length, Q ₉₅ (veh)		1.2		0.2			0.8			0.2				0.0		
Control Delay (s/veh)		729.1		25.0			51.4			22.8				9.9		
Level of Service, LOS		F		C			F			C				A		
Approach Delay (s/veh)	245.0				51.4				0.3				0.0			
Approach LOS	F				F											

Queues

2019 Future without Devel PM

1: SR 53/Dawsonville Hwy & Commercial Dwy

07/20/2018



Lane Group	EBL	EBT	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	16	43	266	185	98	2261	239	141	1418	43
v/c Ratio	0.06	0.10	1.03	0.50	0.40	0.97	0.22	0.95	0.60	0.04
Control Delay	54.3	0.5	124.8	35.3	5.3	27.3	2.5	102.9	17.5	1.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.3	0.5	124.8	35.3	5.3	27.3	2.5	102.9	17.5	1.1
Queue Length 50th (ft)	14	0	~295	91	8	1315	45	98	427	0
Queue Length 95th (ft)	37	0	#486	176	m1	m637	m18	#246	492	8
Internal Link Dist (ft)		164				848			580	
Turn Bay Length (ft)				135	240		250	235		400
Base Capacity (vph)	269	410	259	373	247	2323	1089	148	2346	1071
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.10	1.03	0.50	0.40	0.97	0.22	0.95	0.60	0.04

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis

1: SR 53/Dawsonville Hwy & Commercial Dwy

2019 Future without Devel PM

07/20/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	0	40	245	0	170	90	2080	220	130	1305	40
Future Volume (vph)	15	0	40	245	0	170	90	2080	220	130	1305	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	1.00		1.00		1.00	1.00	0.95	1.00	1.00	0.95	1.00
Flt	1.00	0.85		1.00		0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	1615		1805		1615	1805	3610	1615	1805	3610	1615
Flt Permitted	0.76	1.00		0.73		1.00	0.13	1.00	1.00	0.04	1.00	1.00
Satd. Flow (perm)	1439	1615		1385		1615	244	3610	1615	73	3610	1615
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	16	0	43	266	0	185	98	2261	239	141	1418	43
RTOR Reduction (vph)	0	35	0	0	0	71	0	0	50	0	0	15
Lane Group Flow (vph)	16	8	0	266	0	114	98	2261	189	141	1418	28
Turn Type	Perm	NA		Perm		Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8	2		2	6		6
Actuated Green, G (s)	30.0	30.0		30.0		30.0	111.0	103.0	103.0	113.0	104.0	104.0
Effective Green, g (s)	30.0	30.0		30.0		30.0	111.0	103.0	103.0	113.0	104.0	104.0
Actuated g/C Ratio	0.19	0.19		0.19		0.19	0.69	0.64	0.64	0.71	0.65	0.65
Clearance Time (s)	6.0	6.0		6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Grp Cap (vph)	269	302		259		302	247	2323	1039	148	2346	1049
v/s Ratio Prot		0.00					0.02	c0.63		c0.05	0.39	
v/s Ratio Perm	0.01			c0.19		0.07	0.25		0.12	0.61		0.02
v/c Ratio	0.06	0.03		1.03		0.38	0.40	0.97	0.18	0.95	0.60	0.03
Uniform Delay, d1	53.4	53.1		65.0		56.8	12.5	27.2	11.5	57.2	16.1	10.0
Progression Factor	1.00	1.00		1.00		1.00	0.78	0.92	0.53	1.00	1.00	1.00
Incremental Delay, d2	0.4	0.2		63.1		3.6	0.4	2.2	0.0	62.3	1.2	0.0
Delay (s)	53.8	53.2		128.1		60.4	10.2	27.1	6.2	119.6	17.3	10.0
Level of Service	D	D		F		E	B	C	A	F	B	B
Approach Delay (s)		53.4			100.3			24.6			26.1	
Approach LOS		D			F			C			C	
Intersection Summary												
HCM 2000 Control Delay			32.7									C
HCM 2000 Volume to Capacity ratio			0.98									
Actuated Cycle Length (s)			160.0									
Intersection Capacity Utilization			99.9%									F
Analysis Period (min)			15									
c Critical Lane Group												

Queues

2019 Future without Devel PM

3: SR 53/Dawsonville Hwy & SR 53/McEver Rd/Lakeshore Marketplace dwy

07/20/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	871	299	272	118	170	441	1847	71	71	1312	500
v/c Ratio	1.25	0.66	0.44	0.40	0.60	1.61	1.48	0.10	0.51	0.96	0.55
Control Delay	173.4	55.8	7.1	37.2	59.7	333.2	257.9	0.3	72.5	63.8	13.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	173.4	55.8	7.1	37.2	59.7	333.2	257.9	0.3	72.5	63.8	13.2
Queue Length 50th (ft)	~582	276	0	81	137	~339	~1364	0	74	718	151
Queue Length 95th (ft)	#655	369	58	116	199	#420	#1495	0	m112	m#795	m199
Internal Link Dist (ft)		546			135		841			829	
Turn Bay Length (ft)	180		475			400		240	250		575
Base Capacity (vph)	698	455	618	555	313	274	1244	687	289	1369	907
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.25	0.66	0.44	0.21	0.54	1.61	1.48	0.10	0.25	0.96	0.55

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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

HCM Signalized Intersection Capacity Analysis

2019 Future without Devel PM

3: SR 53/Dawsonville Hwy & SR 53/McEver Rd/Lakeshore Marketplace dwy

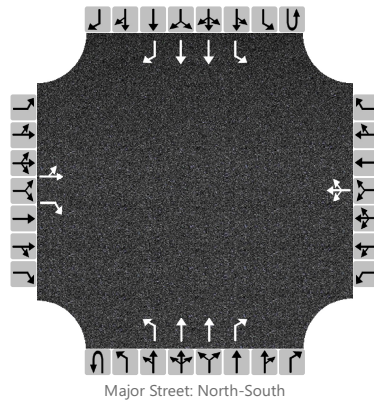
07/20/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	740	135	350	100	65	80	375	1570	60	60	1115	425
Future Volume (vph)	740	135	350	100	65	80	375	1570	60	60	1115	425
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			3%			0%			0%	
Total Lost time (s)	6.5	7.3	7.3	7.3	7.3		7.2	6.6	6.6	7.5	6.6	6.6
Lane Util. Factor	0.97	0.95	0.95	1.00	1.00		0.97	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.93	0.85	1.00	0.92		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3335	1579	1519	1693	1650		3433	3282	1609	1687	3574	1563
Flt Permitted	0.95	1.00	1.00	0.57	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3335	1579	1519	1015	1650		3433	3282	1609	1687	3574	1563
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	871	159	412	118	76	94	441	1847	71	71	1312	500
RTOR Reduction (vph)	0	17	196	0	29	0	0	0	44	0	0	308
Lane Group Flow (vph)	871	282	76	118	141	0	441	1847	27	71	1312	192
Confl. Peds. (#/hr)							1					1
Heavy Vehicles (%)	5%	11%	1%	5%	9%	0%	2%	10%	0%	7%	1%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	1	0	0	0
Turn Type	Prot	NA	Perm	pm+pt	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4	8					2			6
Actuated Green, G (s)	33.5	44.5	44.5	37.8	24.8		12.8	60.7	60.7	13.1	61.3	61.3
Effective Green, g (s)	33.5	44.5	44.5	37.8	24.8		12.8	60.7	60.7	13.1	61.3	61.3
Actuated g/C Ratio	0.21	0.28	0.28	0.24	0.16		0.08	0.38	0.38	0.08	0.38	0.38
Clearance Time (s)	6.5	7.3	7.3	7.3	7.3		7.2	6.6	6.6	7.5	6.6	6.6
Vehicle Extension (s)	3.1	3.1	3.1	3.1	3.1		3.1	5.1	5.1	4.1	5.1	5.1
Lane Grp Cap (vph)	698	439	422	294	255		274	1245	610	138	1369	598
v/s Ratio Prot	c0.26	c0.18		0.03	0.09		0.13	c0.56		0.04	c0.37	
v/s Ratio Perm			0.05	0.06					0.02			0.12
v/c Ratio	1.25	0.64	0.18	0.40	0.55		1.61	1.48	0.04	0.51	0.96	0.32
Uniform Delay, d1	63.2	50.8	43.9	50.2	62.5		73.6	49.6	31.3	70.4	48.1	34.7
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	0.89	1.05	4.15
Incremental Delay, d2	123.3	3.2	0.2	0.9	2.6		290.6	221.9	0.1	3.6	14.0	1.1
Delay (s)	186.5	54.0	44.1	51.1	65.1		364.2	271.6	31.5	66.2	64.3	145.2
Level of Service	F	D	D	D	E		F	F	C	E	E	F
Approach Delay (s)		132.2			59.4			281.7			85.9	
Approach LOS		F			E			F			F	
Intersection Summary												
HCM 2000 Control Delay			173.1			HCM 2000 Level of Service				F		
HCM 2000 Volume to Capacity ratio			1.27									
Actuated Cycle Length (s)			160.0						28.7			
Intersection Capacity Utilization			100.2%						G			
Analysis Period (min)			15									
c Critical Lane Group												

HCS7 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	Wolverton	Intersection	SR 53 at Site Driveway
Agency/Co.	GDOT	Jurisdiction	City of Gainesville
Date Performed	7/23/2018	East/West Street	Site Driveway
Analysis Year	2019	North/South Street	SR 53/Dawsonville Hwy
Time Analyzed	PM Peak Hour	Peak Hour Factor	0.92
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	Commercial Development on SR 53		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	1		0	1	0	0	1	2	1	0	1	2	1
Configuration		LT		R			LTR			L	T	R		L	T	R
Volume, V (veh/h)		25	0	20		10	0	5		20	2360	10		5	1570	15
Percent Heavy Vehicles (%)		3	3	3		3	3	3		3				3		
Proportion Time Blocked																
Percent Grade (%)	0				0											
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		27		22			16			22				5		
Capacity, c (veh/h)		5		300			3			359				165		
v/c Ratio		5.58		0.07			5.24			0.06				0.03		
95% Queue Length, Q ₉₅ (veh)		4.9		0.2			3.4			0.2				0.1		
Control Delay (s/veh)		3489.7		17.9			4055.8			15.7				27.5		
Level of Service, LOS		F		C			F			C				D		
Approach Delay (s/veh)	1931.0				4055.8				0.1				0.1			
Approach LOS	F				F											

Queues

2019 Future with Devel AM

1: SR 53/Dawsonville Hwy & Commercial Dwy

07/20/2018



Lane Group	EBL	EBT	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	5	11	60	27	38	891	71	43	2293	11
v/c Ratio	0.03	0.04	0.35	0.06	0.34	0.34	0.06	0.09	0.87	0.01
Control Delay	59.0	0.3	67.1	0.3	20.3	9.5	3.0	3.6	20.4	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.0	0.3	67.1	0.3	20.3	9.5	3.0	3.6	20.4	0.0
Queue Length 50th (ft)	4	0	55	0	12	198	9	7	804	0
Queue Length 95th (ft)	19	0	104	0	m7	m157	m11	15	929	0
Internal Link Dist (ft)		164				848			580	
Turn Bay Length (ft)				135	240		250	235		400
Base Capacity (vph)	172	251	171	420	111	2623	1192	467	2623	1191
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.04	0.35	0.06	0.34	0.34	0.06	0.09	0.87	0.01

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

1: SR 53/Dawsonville Hwy & Commercial Dwy

2019 Future with Devel AM

07/20/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	0	10	55	0	25	35	820	65	40	2110	10
Future Volume (vph)	5	0	10	55	0	25	35	820	65	40	2110	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	1.00		1.00		1.00	1.00	0.95	1.00	1.00	0.95	1.00
Flt	1.00	0.85		1.00		0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	1615		1805		1615	1805	3610	1615	1805	3610	1615
Flt Permitted	0.76	1.00		0.75		1.00	0.04	1.00	1.00	0.29	1.00	1.00
Satd. Flow (perm)	1439	1615		1426		1615	70	3610	1615	560	3610	1615
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	0	11	60	0	27	38	891	71	43	2293	11
RTOR Reduction (vph)	0	10	0	0	0	24	0	0	19	0	0	3
Lane Group Flow (vph)	5	1	0	60	0	3	38	891	52	43	2293	8
Turn Type	Perm	NA		Perm		Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8	2		2	6		6
Actuated Green, G (s)	18.0	18.0		18.0		18.0	114.0	109.0	109.0	114.0	109.0	109.0
Effective Green, g (s)	18.0	18.0		18.0		18.0	114.0	109.0	109.0	114.0	109.0	109.0
Actuated g/C Ratio	0.12	0.12		0.12		0.12	0.76	0.73	0.73	0.76	0.73	0.73
Clearance Time (s)	6.0	6.0		6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Grp Cap (vph)	172	193		171		193	111	2623	1173	467	2623	1173
v/s Ratio Prot		0.00					c0.01	0.25		0.00	c0.64	
v/s Ratio Perm	0.00			c0.04		0.00	0.25		0.03	0.07		0.00
v/c Ratio	0.03	0.01		0.35		0.02	0.34	0.34	0.04	0.09	0.87	0.01
Uniform Delay, d1	58.3	58.1		60.6		58.2	28.1	7.4	5.8	4.7	15.4	5.6
Progression Factor	1.00	1.00		1.00		1.00	2.10	1.24	2.40	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.1		5.6		0.2	3.7	0.2	0.0	0.4	4.4	0.0
Delay (s)	58.6	58.2		66.2		58.4	62.7	9.4	13.9	5.1	19.8	5.6
Level of Service	E	E		E		E	E	A	B	A	B	A
Approach Delay (s)		58.3			63.8			11.7			19.4	
Approach LOS		E			E			B			B	
Intersection Summary												
HCM 2000 Control Delay			18.5			HCM 2000 Level of Service			B			
HCM 2000 Volume to Capacity ratio			0.78									
Actuated Cycle Length (s)			150.0			Sum of lost time (s)			18.0			
Intersection Capacity Utilization			78.0%			ICU Level of Service			D			
Analysis Period (min)			15									
c Critical Lane Group												

Queues

2019 Future with Devel AM

3: SR 53/Dawsonville Hwy & SR 53/McEver Rd/Lakeshore Marketplace dwy

07/20/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	412	224	217	47	42	253	600	59	47	1588	894
v/c Ratio	1.95	0.80	0.57	0.32	0.20	0.87	0.30	0.06	0.39	0.78	0.72
Control Delay	478.9	49.6	11.1	49.3	37.6	94.8	18.5	0.1	67.4	28.4	12.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	478.9	49.6	11.1	49.3	37.6	94.8	18.5	0.1	67.4	28.4	12.7
Queue Length 50th (ft)	~320	108	0	37	22	128	157	0	43	777	472
Queue Length 95th (ft)	#402	176	47	62	51	#185	236	0	m52	869	633
Internal Link Dist (ft)		546			135		841			829	
Turn Bay Length (ft)	180		475			400		240	250		575
Base Capacity (vph)	211	457	539	269	542	292	1975	1042	163	2037	1238
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.95	0.49	0.40	0.17	0.08	0.87	0.30	0.06	0.29	0.78	0.72

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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

HCM Signalized Intersection Capacity Analysis

2019 Future with Devel AM

3: SR 53/Dawsonville Hwy & SR 53/McEver Rd/Lakeshore Marketplace dwy

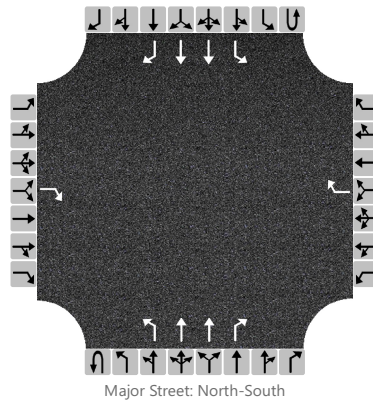
07/20/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	350	40	335	40	20	15	215	510	50	40	1350	760
Future Volume (vph)	350	40	335	40	20	15	215	510	50	40	1350	760
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			3%			0%			0%	
Total Lost time (s)	6.5	7.3	7.3	7.3	7.3		7.2	6.6	6.6	7.5	6.6	6.6
Lane Util. Factor	0.97	0.95	0.95	1.00	1.00		0.97	0.95	1.00	1.00	0.95	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.88	0.85	1.00	0.94		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3335	1543	1519	1693	1666		3433	3282	1609	1687	3574	1563
Flt Permitted	0.95	1.00	1.00	0.25	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3335	1543	1519	443	1666		3433	3282	1609	1687	3574	1563
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	412	47	394	47	24	18	253	600	59	47	1588	894
RTOR Reduction (vph)	0	105	192	0	16	0	0	0	25	0	0	364
Lane Group Flow (vph)	412	119	25	47	26	0	253	600	34	47	1588	530
Confl. Peds. (#/hr)							1					1
Heavy Vehicles (%)	5%	11%	1%	5%	9%	0%	2%	10%	0%	7%	1%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	1	0	0	0
Turn Type	Prot	NA	Perm	pm+pt	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4	8					2			6
Actuated Green, G (s)	9.5	17.1	17.1	23.8	16.1		14.3	87.3	87.3	9.2	82.5	82.5
Effective Green, g (s)	9.5	17.1	17.1	23.8	16.1		14.3	87.3	87.3	9.2	82.5	82.5
Actuated g/C Ratio	0.06	0.11	0.11	0.16	0.11		0.10	0.58	0.58	0.06	0.55	0.55
Clearance Time (s)	6.5	7.3	7.3	7.3	7.3		7.2	6.6	6.6	7.5	6.6	6.6
Vehicle Extension (s)	3.1	3.1	3.1	3.1	3.1		3.1	5.1	5.1	4.1	5.1	5.1
Lane Grp Cap (vph)	211	175	173	134	178		327	1910	936	103	1965	859
v/s Ratio Prot	c0.12	c0.08		0.02	0.02		c0.07	0.18		0.03	c0.44	
v/s Ratio Perm			0.02	0.04					0.02			0.34
v/c Ratio	1.95	0.68	0.14	0.35	0.15		0.77	0.31	0.04	0.46	0.81	0.62
Uniform Delay, d1	70.2	63.8	59.9	55.1	60.7		66.3	16.0	13.4	68.0	27.3	23.0
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	0.93	0.96	3.28
Incremental Delay, d2	445.5	10.0	0.4	1.6	0.4		10.9	0.4	0.1	2.8	2.3	2.0
Delay (s)	515.7	73.8	60.2	56.7	61.1		77.2	16.5	13.5	66.3	28.5	77.5
Level of Service	F	E	E	E	E		E	B	B	E	C	E
Approach Delay (s)		283.8			58.8			33.1			46.5	
Approach LOS		F			E			C			D	
Intersection Summary												
HCM 2000 Control Delay			90.2			HCM 2000 Level of Service				F		
HCM 2000 Volume to Capacity ratio			0.89									
Actuated Cycle Length (s)			150.0			Sum of lost time (s)				28.7		
Intersection Capacity Utilization			80.6%			ICU Level of Service				D		
Analysis Period (min)			15									
c Critical Lane Group												

HCS7 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	Wolverton	Intersection	SR 53 at Site Driveway
Agency/Co.	GDOT	Jurisdiction	City of Gainesville
Date Performed	7/23/2018	East/West Street	Site Driveway
Analysis Year	2019	North/South Street	SR 53/Dawsonville Hwy
Time Analyzed	AM Peak Hour-Development	Peak Hour Factor	0.92
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	Commercial Development on SR 53		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	1		0	0	1	0	1	2	1	0	1	2	1
Configuration				R				R		L	T	R		L	T	R
Volume, V (veh/h)				15				75		10	845	25		60	2135	5
Percent Heavy Vehicles (%)				3				3		3				3		
Proportion Time Blocked																
Percent Grade (%)	0				0											
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)				7.1				7.1		5.3				5.3		
Critical Headway (sec)				7.16				7.16		5.36				5.36		
Base Follow-Up Headway (sec)				3.9				3.9		3.1				3.1		
Follow-Up Headway (sec)				3.93				3.93		3.13				3.13		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)				16				82		11				65		
Capacity, c (veh/h)				187				546		207				716		
v/c Ratio				0.09				0.15		0.05				0.09		
95% Queue Length, Q ₉₅ (veh)				0.3				0.5		0.2				0.3		
Control Delay (s/veh)				26.0				12.7		23.3				10.5		
Level of Service, LOS				D				B		C				B		
Approach Delay (s/veh)	26.0				12.7				0.3				0.3			
Approach LOS	D				B											

Queues

2019 Future with Devel PM

07/20/2018

1: SR 53/Dawsonville Hwy & Commercial Dwy



Lane Group	EBL	EBT	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	16	43	266	185	185	2293	239	141	1457	43
v/c Ratio	0.06	0.11	1.03	0.50	0.78	0.99	0.22	0.95	0.62	0.04
Control Delay	54.3	0.5	124.8	35.6	25.9	28.5	1.9	102.9	17.9	1.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.3	0.5	124.8	35.6	25.9	28.5	1.9	102.9	17.9	1.1
Queue Length 50th (ft)	14	0	~295	92	31	1328	38	98	446	0
Queue Length 95th (ft)	37	0	#486	177	m28	m646	m14	#246	513	8
Internal Link Dist (ft)		164				848			580	
Turn Bay Length (ft)				135	240		250	235		400
Base Capacity (vph)	269	407	259	372	237	2323	1088	148	2346	1071
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.11	1.03	0.50	0.78	0.99	0.22	0.95	0.62	0.04

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis

1: SR 53/Dawsonville Hwy & Commercial Dwy

2019 Future with Devel PM

07/20/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	0	40	245	0	170	170	2110	220	130	1340	40
Future Volume (vph)	15	0	40	245	0	170	170	2110	220	130	1340	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	1.00		1.00		1.00	1.00	0.95	1.00	1.00	0.95	1.00
Flt	1.00	0.85		1.00		0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	1615		1805		1615	1805	3610	1615	1805	3610	1615
Flt Permitted	0.76	1.00		0.73		1.00	0.12	1.00	1.00	0.04	1.00	1.00
Satd. Flow (perm)	1439	1615		1385		1615	229	3610	1615	73	3610	1615
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	16	0	43	266	0	185	185	2293	239	141	1457	43
RTOR Reduction (vph)	0	35	0	0	0	70	0	0	49	0	0	15
Lane Group Flow (vph)	16	8	0	266	0	115	185	2293	190	141	1457	28
Turn Type	Perm	NA		Perm		Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8	2		2	6		6
Actuated Green, G (s)	30.0	30.0		30.0		30.0	111.0	103.0	103.0	113.0	104.0	104.0
Effective Green, g (s)	30.0	30.0		30.0		30.0	111.0	103.0	103.0	113.0	104.0	104.0
Actuated g/C Ratio	0.19	0.19		0.19		0.19	0.69	0.64	0.64	0.71	0.65	0.65
Clearance Time (s)	6.0	6.0		6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Grp Cap (vph)	269	302		259		302	237	2323	1039	148	2346	1049
v/s Ratio Prot		0.00					0.04	c0.64		c0.05	0.40	
v/s Ratio Perm	0.01			c0.19		0.07	0.50		0.12	0.61		0.02
v/c Ratio	0.06	0.03		1.03		0.38	0.78	0.99	0.18	0.95	0.62	0.03
Uniform Delay, d1	53.4	53.1		65.0		56.9	16.4	27.9	11.5	57.2	16.4	10.0
Progression Factor	1.00	1.00		1.00		1.00	2.24	0.90	0.39	1.00	1.00	1.00
Incremental Delay, d2	0.4	0.2		63.1		3.6	2.4	3.4	0.0	62.3	1.2	0.0
Delay (s)	53.8	53.2		128.1		60.5	39.2	28.4	4.5	119.6	17.7	10.0
Level of Service	D	D		F		E	D	C	A	F	B	B
Approach Delay (s)		53.4			100.4			27.0			26.2	
Approach LOS		D			F			C			C	
Intersection Summary												
HCM 2000 Control Delay			33.9			HCM 2000 Level of Service			C			
HCM 2000 Volume to Capacity ratio			0.99									
Actuated Cycle Length (s)			160.0			Sum of lost time (s)			18.0			
Intersection Capacity Utilization			100.8%			ICU Level of Service			G			
Analysis Period (min)			15									
c Critical Lane Group												

Queues

2019 Future with Devel PM

3: SR 53/Dawsonville Hwy & SR 53/McEver Rd/Lakeshore Marketplace dwy

07/20/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	912	299	272	118	170	441	1894	71	100	1353	541
v/c Ratio	1.31	0.66	0.44	0.40	0.60	1.61	1.59	0.11	0.60	0.99	0.58
Control Delay	196.0	55.8	7.1	37.2	59.7	333.2	304.9	0.3	73.5	69.4	12.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	196.0	55.8	7.1	37.2	59.7	333.2	304.9	0.3	73.5	69.4	12.9
Queue Length 50th (ft)	~628	276	0	81	137	~339	~1449	0	103	741	159
Queue Length 95th (ft)	#700	369	58	116	199	#420	#1588	0	m148	m#841	m209
Internal Link Dist (ft)		546			135		841			829	
Turn Bay Length (ft)	180		475			400		240	250		575
Base Capacity (vph)	698	455	618	555	313	274	1189	662	289	1369	932
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.31	0.66	0.44	0.21	0.54	1.61	1.59	0.11	0.35	0.99	0.58

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis

2019 Future with Devel PM

3: SR 53/Dawsonville Hwy & SR 53/McEver Rd/Lakeshore Marketplace dwy

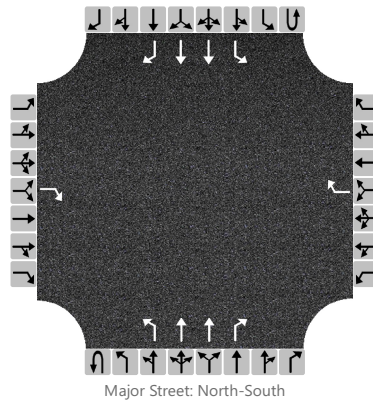
07/20/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	775	135	350	100	65	80	375	1610	60	85	1150	460
Future Volume (vph)	775	135	350	100	65	80	375	1610	60	85	1150	460
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			3%			0%			0%	
Total Lost time (s)	6.5	7.3	7.3	7.3	7.3		7.2	6.6	6.6	7.5	6.6	6.6
Lane Util. Factor	0.97	0.95	0.95	1.00	1.00		0.97	0.95	1.00	1.00	0.95	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.93	0.85	1.00	0.92		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3335	1579	1519	1693	1650		3433	3282	1609	1687	3574	1563
Flt Permitted	0.95	1.00	1.00	0.57	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3335	1579	1519	1015	1650		3433	3282	1609	1687	3574	1563
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	912	159	412	118	76	94	441	1894	71	100	1353	541
RTOR Reduction (vph)	0	17	196	0	29	0	0	0	45	0	0	334
Lane Group Flow (vph)	912	282	76	118	141	0	441	1894	26	100	1353	207
Confl. Peds. (#/hr)							1					1
Heavy Vehicles (%)	5%	11%	1%	5%	9%	0%	2%	10%	0%	7%	1%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	1	0	0	0
Turn Type	Prot	NA	Perm	pm+pt	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4	8					2			6
Actuated Green, G (s)	33.5	44.5	44.5	37.8	24.8		12.8	58.0	58.0	15.8	61.3	61.3
Effective Green, g (s)	33.5	44.5	44.5	37.8	24.8		12.8	58.0	58.0	15.8	61.3	61.3
Actuated g/C Ratio	0.21	0.28	0.28	0.24	0.16		0.08	0.36	0.36	0.10	0.38	0.38
Clearance Time (s)	6.5	7.3	7.3	7.3	7.3		7.2	6.6	6.6	7.5	6.6	6.6
Vehicle Extension (s)	3.1	3.1	3.1	3.1	3.1		3.1	5.1	5.1	4.1	5.1	5.1
Lane Grp Cap (vph)	698	439	422	294	255		274	1189	583	166	1369	598
v/s Ratio Prot	c0.27	c0.18		0.03	0.09		0.13	c0.58		0.06	c0.38	
v/s Ratio Perm			0.05	0.06					0.02			0.13
v/c Ratio	1.31	0.64	0.18	0.40	0.55		1.61	1.59	0.04	0.60	0.99	0.35
Uniform Delay, d1	63.2	50.8	43.9	50.2	62.5		73.6	51.0	33.0	69.1	49.0	35.1
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	0.89	1.04	4.08
Incremental Delay, d2	148.2	3.2	0.2	0.9	2.6		290.6	270.8	0.1	5.9	19.5	1.3
Delay (s)	211.4	54.0	44.1	51.1	65.1		364.2	321.8	33.2	67.7	70.3	144.5
Level of Service	F	D	D	D	E		F	F	C	E	E	F
Approach Delay (s)		149.0			59.4			321.1			90.3	
Approach LOS		F			E			F			F	
Intersection Summary												
HCM 2000 Control Delay			193.0			HCM 2000 Level of Service				F		
HCM 2000 Volume to Capacity ratio			1.33									
Actuated Cycle Length (s)			160.0			Sum of lost time (s)				28.7		
Intersection Capacity Utilization			102.9%			ICU Level of Service				G		
Analysis Period (min)			15									
c Critical Lane Group												

HCS7 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	Wolverton	Intersection	SR 53 at Site Driveway
Agency/Co.	GDOT	Jurisdiction	City of Gainesville
Date Performed	7/23/2018	East/West Street	Site Driveway
Analysis Year	2019	North/South Street	SR 53/Dawsonville Hwy
Time Analyzed	PM Peak-Development	Peak Hour Factor	0.92
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	Commercial Development on SR 53		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	1		0	0	1	0	1	2	1	0	1	2	1
Configuration				R				R		L	T	R		L	T	R
Volume, V (veh/h)				45				105		20	2385	85		40	1650	15
Percent Heavy Vehicles (%)				3				3		3				3		
Proportion Time Blocked																
Percent Grade (%)	0				0											
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)				49				114		22				43		
Capacity, c (veh/h)				281				152		332				149		
v/c Ratio				0.17				0.75		0.07				0.29		
95% Queue Length, Q ₉₅ (veh)				0.6				4.6		0.2				1.1		
Control Delay (s/veh)				20.5				78.6		16.6				38.7		
Level of Service, LOS				C				F		C				E		
Approach Delay (s/veh)	20.5				78.6				0.1				0.9			
Approach LOS	C				F											

Queues

2019 Future GDOT IMP AM

1: SR 53/Dawsonville Hwy & Commercial Dwy

07/24/2018



Lane Group	EBL	EBT	WBL	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	5	11	60	27	11	919	43	2245
v/c Ratio	0.02	0.03	0.28	0.06	0.08	0.26	0.10	0.64
Control Delay	54.6	0.2	60.0	0.2	2.6	3.7	4.8	14.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.6	0.2	60.0	0.2	2.6	3.7	4.8	14.6
Queue Length 50th (ft)	4	0	53	0	0	61	9	423
Queue Length 95th (ft)	18	0	100	0	m1	18	18	464
Internal Link Dist (ft)		164				848		580
Turn Bay Length (ft)				135	240		235	
Base Capacity (vph)	220	316	218	476	146	3491	451	3524
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.03	0.28	0.06	0.08	0.26	0.10	0.64

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

1: SR 53/Dawsonville Hwy & Commercial Dwy

2019 Future GDOT IMP AM

07/24/2018

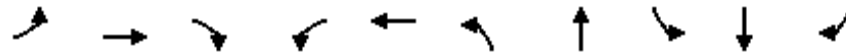
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	0	10	55	0	25	10	780	65	40	2055	10
Future Volume (vph)	5	0	10	55	0	25	10	780	65	40	2055	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0		6.0	6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00		1.00		1.00	1.00	0.91		1.00	0.91	
Flt	1.00	0.85		1.00		0.85	1.00	0.99		1.00	1.00	
Flt Protected	0.95	1.00		0.95		1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	1615		1805		1615	1805	5127		1805	5183	
Flt Permitted	0.76	1.00		0.75		1.00	0.05	1.00		0.28	1.00	
Satd. Flow (perm)	1439	1615		1426		1615	91	5127		539	5183	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	0	11	60	0	27	11	848	71	43	2234	11
RTOR Reduction (vph)	0	9	0	0	0	23	0	6	0	0	0	0
Lane Group Flow (vph)	5	2	0	60	0	4	11	913	0	43	2245	0
Turn Type	Perm	NA		Perm		Perm	pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8	2			6		
Actuated Green, G (s)	23.0	23.0		23.0		23.0	109.0	102.0		109.0	102.0	
Effective Green, g (s)	23.0	23.0		23.0		23.0	109.0	102.0		109.0	102.0	
Actuated g/C Ratio	0.15	0.15		0.15		0.15	0.73	0.68		0.73	0.68	
Clearance Time (s)	6.0	6.0		6.0		6.0	6.0	6.0		6.0	6.0	
Lane Grp Cap (vph)	220	247		218		247	146	3486		450	3524	
v/s Ratio Prot		0.00					0.00	0.18		c0.00	c0.43	
v/s Ratio Perm	0.00			c0.04		0.00	0.05			0.06		
v/c Ratio	0.02	0.01		0.28		0.02	0.08	0.26		0.10	0.64	
Uniform Delay, d1	54.0	53.8		56.1		53.9	9.9	9.3		5.8	13.5	
Progression Factor	1.00	1.00		1.00		1.00	0.39	0.38		1.00	1.00	
Incremental Delay, d2	0.2	0.1		3.1		0.1	0.9	0.2		0.4	0.9	
Delay (s)	54.1	53.9		59.2		54.0	4.8	3.8		6.3	14.4	
Level of Service	D	D		E		D	A	A		A	B	
Approach Delay (s)		54.0			57.6			3.8			14.3	
Approach LOS		D			E			A			B	
Intersection Summary												
HCM 2000 Control Delay			12.7								B	
HCM 2000 Volume to Capacity ratio			0.55									
Actuated Cycle Length (s)			150.0								18.0	
Intersection Capacity Utilization			59.6%								B	
Analysis Period (min)			15									
c Critical Lane Group												

Queues

2019 Future GDOT IMP AM

3: SR 53/Dawsonville Hwy & SR 53/McEver Rd/Lakeshore Marketplace dwy

07/24/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	400	224	217	47	42	253	641	47	1576	882
v/c Ratio	0.84	0.67	0.52	0.41	0.40	0.75	0.23	0.39	0.57	0.77
Control Delay	79.2	38.0	11.1	56.8	54.8	80.1	17.0	62.9	46.1	33.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	79.2	38.0	11.1	56.8	54.8	80.1	17.0	62.9	46.1	33.9
Queue Length 50th (ft)	197	104	0	36	23	126	115	45	572	574
Queue Length 95th (ft)	242	178	62	66	59	165	147	m71	593	638
Internal Link Dist (ft)		546			135		841		829	
Turn Bay Length (ft)	180		475			400		250		575
Base Capacity (vph)	500	440	512	114	215	338	2743	128	2767	1152
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.80	0.51	0.42	0.41	0.20	0.75	0.23	0.37	0.57	0.77

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

2019 Future GDOT IMP AM

3: SR 53/Dawsonville Hwy & SR 53/McEver Rd/Lakeshore Marketplace dwy

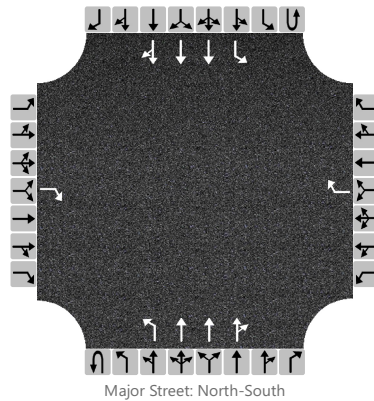
07/24/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	340	40	335	40	20	15	215	495	50	40	1340	750
Future Volume (vph)	340	40	335	40	20	15	215	495	50	40	1340	750
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			3%			0%			0%	
Total Lost time (s)	6.5	7.3	7.3	7.3	7.3		7.2	6.6		7.5	6.6	6.6
Lane Util. Factor	0.97	0.95	0.95	1.00	1.00		0.97	0.91		1.00	0.91	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.88	0.85	1.00	0.94		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3335	1543	1519	1693	1666		3433	4690		1687	5136	1563
Flt Permitted	0.95	1.00	1.00	0.61	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3335	1543	1519	1091	1666		3433	4690		1687	5136	1563
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	400	47	394	47	24	18	253	582	59	47	1576	882
RTOR Reduction (vph)	0	99	184	0	17	0	0	7	0	0	0	324
Lane Group Flow (vph)	400	125	33	47	25	0	253	634	0	47	1576	558
Confl. Peds. (#/hr)							1					1
Heavy Vehicles (%)	5%	11%	1%	5%	9%	0%	2%	10%	0%	7%	1%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	1	0	0	0
Turn Type	Prot	NA	Perm	pm+pt	NA		Prot	NA		Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4	8								6
Actuated Green, G (s)	21.3	22.9	22.9	11.6	7.0		16.3	84.6		9.2	77.8	77.8
Effective Green, g (s)	21.3	22.9	22.9	11.6	7.0		16.3	84.6		9.2	77.8	77.8
Actuated g/C Ratio	0.14	0.15	0.15	0.08	0.05		0.11	0.56		0.06	0.52	0.52
Clearance Time (s)	6.5	7.3	7.3	7.3	7.3		7.2	6.6		7.5	6.6	6.6
Vehicle Extension (s)	3.1	3.1	3.1	3.1	3.1		3.1	5.1		4.1	5.1	5.1
Lane Grp Cap (vph)	473	235	231	102	77		373	2645		103	2663	810
v/s Ratio Prot	c0.12	c0.08		0.01	0.01		c0.07	0.14		0.03	0.31	
v/s Ratio Perm			0.02	0.02								c0.36
v/c Ratio	0.85	0.53	0.14	0.46	0.32		0.68	0.24		0.46	0.59	0.69
Uniform Delay, d1	62.7	58.6	55.1	65.7	69.2		64.3	16.5		68.0	25.1	27.0
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		0.83	1.88	4.54
Incremental Delay, d2	13.1	2.4	0.3	3.4	2.5		4.9	0.2		3.8	0.8	4.0
Delay (s)	75.9	61.0	55.4	69.1	71.7		69.2	16.7		60.5	47.8	126.6
Level of Service	E	E	E	E	E		E	B		E	D	F
Approach Delay (s)		66.6			70.3			31.6			75.8	
Approach LOS		E			E			C			E	
Intersection Summary												
HCM 2000 Control Delay			64.8			HCM 2000 Level of Service				E		
HCM 2000 Volume to Capacity ratio			0.72									
Actuated Cycle Length (s)			150.0			Sum of lost time (s)				28.7		
Intersection Capacity Utilization			74.4%			ICU Level of Service				D		
Analysis Period (min)			15									
c Critical Lane Group												

HCS7 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	Wolverton	Intersection	SR 53 at Site Driveway
Agency/Co.	GDOT	Jurisdiction	City of Gainesville
Date Performed	7/23/2018	East/West Street	Site Driveway
Analysis Year	2019	North/South Street	SR 53/Dawsonville Hwy
Time Analyzed	AM Peak - GDOT Project	Peak Hour Factor	0.92
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	Commercial Development on SR 53		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	1		0	0	1	0	1	3	0	0	1	3	0
Configuration				R				R		L	T	TR		L	T	TR
Volume, V (veh/h)				15				20		10	840	5		5	2115	5
Percent Heavy Vehicles (%)				3				3		3				3		
Proportion Time Blocked																
Percent Grade (%)	0				0											
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)				7.1				7.1		5.3				5.3		
Critical Headway (sec)				7.16				7.16		5.36				5.36		
Base Follow-Up Headway (sec)				3.9				3.9		3.1				3.1		
Follow-Up Headway (sec)				3.93				3.93		3.13				3.13		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)				16				22		11				5		
Capacity, c (veh/h)				163				468		86				426		
v/c Ratio				0.10				0.05		0.13				0.01		
95% Queue Length, Q ₉₅ (veh)				0.3				0.1		0.4				0.0		
Control Delay (s/veh)				29.5				13.1		52.7				13.6		
Level of Service, LOS				D				B		F				B		
Approach Delay (s/veh)	29.5				13.1				0.6				0.0			
Approach LOS	D				B											

Queues

2019 Future GDOT IMP PM

07/23/2018

1: SR 53/Dawsonville Hwy & Commercial Dwy



Lane Group	EBL	EBT	WBL	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	16	43	266	185	98	2500	141	1461
v/c Ratio	0.04	0.08	0.75	0.38	0.41	0.91	0.65	0.49
Control Delay	45.4	0.3	69.3	22.9	10.6	23.9	51.0	20.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.4	0.3	69.3	22.9	10.6	23.9	51.0	20.8
Queue Length 50th (ft)	13	0	258	65	20	857	91	320
Queue Length 95th (ft)	34	0	373	141	m21	m866	171	358
Internal Link Dist (ft)		164				848		580
Turn Bay Length (ft)				135	240		235	
Base Capacity (vph)	368	517	354	492	240	2756	216	2972
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.08	0.75	0.38	0.41	0.91	0.65	0.49

Intersection Summary

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

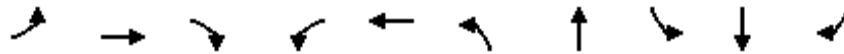
HCM Signalized Intersection Capacity Analysis

1: SR 53/Dawsonville Hwy & Commercial Dwy

2019 Future GDOT IMP PM

07/23/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	0	40	245	0	170	90	2080	220	130	1305	40
Future Volume (vph)	15	0	40	245	0	170	90	2080	220	130	1305	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0		6.0	6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00		1.00		1.00	1.00	0.91		1.00	0.91	
Flt	1.00	0.85		1.00		0.85	1.00	0.99		1.00	1.00	
Flt Protected	0.95	1.00		0.95		1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	1615		1805		1615	1805	5113		1805	5164	
Flt Permitted	0.76	1.00		0.73		1.00	0.14	1.00		0.04	1.00	
Satd. Flow (perm)	1439	1615		1385		1615	258	5113		83	5164	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	16	0	43	266	0	185	98	2261	239	141	1418	43
RTOR Reduction (vph)	0	32	0	0	0	79	0	8	0	0	2	0
Lane Group Flow (vph)	16	11	0	266	0	106	98	2492	0	141	1459	0
Turn Type	Perm	NA		Perm		Perm	pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8	2			6		
Actuated Green, G (s)	41.0	41.0		41.0		41.0	95.0	86.0		107.0	92.0	
Effective Green, g (s)	41.0	41.0		41.0		41.0	95.0	86.0		107.0	92.0	
Actuated g/C Ratio	0.26	0.26		0.26		0.26	0.59	0.54		0.67	0.58	
Clearance Time (s)	6.0	6.0		6.0		6.0	6.0	6.0		6.0	6.0	
Lane Grp Cap (vph)	368	413		354		413	240	2748		216	2969	
v/s Ratio Prot		0.01					0.02	c0.49		c0.06	0.28	
v/s Ratio Perm	0.01			c0.19		0.07	0.22			0.38		
v/c Ratio	0.04	0.03		0.75		0.26	0.41	0.91		0.65	0.49	
Uniform Delay, d1	44.8	44.6		54.8		47.4	15.2	33.4		47.5	20.1	
Progression Factor	1.00	1.00		1.00		1.00	0.89	0.66		1.00	1.00	
Incremental Delay, d2	0.2	0.1		13.7		1.5	1.4	1.7		14.3	0.6	
Delay (s)	45.0	44.7		68.5		48.9	15.0	23.7		61.8	20.7	
Level of Service	D	D		E		D	B	C		E	C	
Approach Delay (s)		44.8			60.4			23.4			24.3	
Approach LOS		D			E			C			C	
Intersection Summary												
HCM 2000 Control Delay			27.5			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.83									
Actuated Cycle Length (s)			160.0			Sum of lost time (s)			18.0			
Intersection Capacity Utilization			87.5%			ICU Level of Service			E			
Analysis Period (min)			15									
c Critical Lane Group												



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	871	299	272	118	170	441	1918	71	1312	500
v/c Ratio	1.00	0.64	0.44	0.53	0.89	0.84	0.99	0.81	0.81	0.60
Control Delay	89.7	53.1	6.8	44.2	97.8	81.1	63.1	120.2	65.7	25.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	89.7	53.1	6.8	44.2	97.8	81.1	63.1	120.2	65.7	25.3
Queue Length 50th (ft)	~477	266	0	79	146	234	724	78	508	199
Queue Length 95th (ft)	#561	355	57	119	#254	280	726	m#160	515	261
Internal Link Dist (ft)		546			135		841		829	
Turn Bay Length (ft)	180		475			400		250		575
Base Capacity (vph)	867	464	623	237	199	523	1947	88	1618	835
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.00	0.64	0.44	0.50	0.85	0.84	0.99	0.81	0.81	0.60

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis

2019 Future GDOT IMP PM

3: SR 53/Dawsonville Hwy & SR 53/McEver Rd/Lakeshore Marketplace dwy

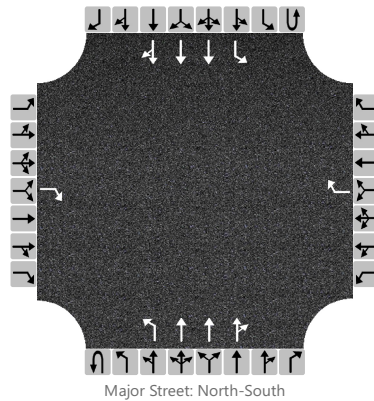
07/23/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	740	135	350	100	65	80	375	1570	60	60	1115	425
Future Volume (vph)	740	135	350	100	65	80	375	1570	60	60	1115	425
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			3%			0%			0%	
Total Lost time (s)	6.5	7.3	7.3	7.3	7.3		7.2	6.6		7.5	6.6	6.6
Lane Util. Factor	0.97	0.95	0.95	1.00	1.00		0.97	0.91		1.00	0.91	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.93	0.85	1.00	0.92		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3335	1579	1519	1693	1650		3433	4705		1687	5136	1563
Flt Permitted	0.95	1.00	1.00	0.57	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3335	1579	1519	1015	1650		3433	4705		1687	5136	1563
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	871	159	412	118	76	94	441	1847	71	71	1312	500
RTOR Reduction (vph)	0	19	195	0	28	0	0	2	0	0	0	343
Lane Group Flow (vph)	871	280	77	118	142	0	441	1916	0	71	1312	158
Confl. Peds. (#/hr)							1					1
Heavy Vehicles (%)	5%	11%	1%	5%	9%	0%	2%	10%	0%	7%	1%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	1	0	0	0
Turn Type	Prot	NA	Perm	pm+pt	NA		Prot	NA		Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4	8								6
Actuated Green, G (s)	41.6	45.2	45.2	27.6	16.0		24.4	66.2		8.3	50.4	50.4
Effective Green, g (s)	41.6	45.2	45.2	27.6	16.0		24.4	66.2		8.3	50.4	50.4
Actuated g/C Ratio	0.26	0.28	0.28	0.17	0.10		0.15	0.41		0.05	0.31	0.31
Clearance Time (s)	6.5	7.3	7.3	7.3	7.3		7.2	6.6		7.5	6.6	6.6
Vehicle Extension (s)	3.1	3.1	3.1	3.1	3.1		3.1	5.1		4.1	5.1	5.1
Lane Grp Cap (vph)	867	446	429	224	165		523	1946		87	1617	492
v/s Ratio Prot	c0.26	0.18		0.04	c0.09		0.13	c0.41		0.04	c0.26	
v/s Ratio Perm			0.05	0.05								0.10
v/c Ratio	1.00	0.63	0.18	0.53	0.86		0.84	0.98		0.82	0.81	0.32
Uniform Delay, d1	59.2	50.0	43.4	58.9	70.9		65.9	46.4		75.1	50.4	41.7
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		0.96	1.21	6.88
Incremental Delay, d2	31.7	2.8	0.2	2.3	34.1		11.9	17.0		40.8	4.1	1.5
Delay (s)	90.9	52.8	43.6	61.2	105.0		77.8	63.4		112.7	65.2	288.6
Level of Service	F	D	D	E	F		E	E		F	E	F
Approach Delay (s)		74.1			87.1			66.1			126.3	
Approach LOS		E			F			E			F	
Intersection Summary												
HCM 2000 Control Delay			88.0			HCM 2000 Level of Service				F		
HCM 2000 Volume to Capacity ratio			1.00									
Actuated Cycle Length (s)			160.0			Sum of lost time (s)				28.7		
Intersection Capacity Utilization			88.5%			ICU Level of Service				E		
Analysis Period (min)			15									
c Critical Lane Group												

HCS7 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	Wolverton	Intersection	SR 53 at Site Driveway
Agency/Co.	GDOT	Jurisdiction	City of Gainesville
Date Performed	7/23/2018	East/West Street	Site Driveway
Analysis Year	2019	North/South Street	SR 53/Dawsonville Hwy
Time Analyzed	PM Peak - GDOT Project	Peak Hour Factor	0.92
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	Commercial Development on SR 53		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	1		0	0	1	0	1	3	0	0	1	3	0
Configuration				R				R		L	T	TR		L	T	TR
Volume, V (veh/h)				45				15		20	2385	10		5	1580	15
Percent Heavy Vehicles (%)				3				3		3				3		
Proportion Time Blocked																
Percent Grade (%)	0				0											
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)				7.1				7.1		5.3				5.3		
Critical Headway (sec)				7.16				7.16		5.36				5.36		
Base Follow-Up Headway (sec)				3.9				3.9		3.1				3.1		
Follow-Up Headway (sec)				3.93				3.93		3.13				3.13		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)				49				16		22				5		
Capacity, c (veh/h)				253				129		169				60		
v/c Ratio				0.19				0.12		0.13				0.08		
95% Queue Length, Q ₉₅ (veh)				0.7				0.4		0.4				0.3		
Control Delay (s/veh)				22.6				36.9		29.5				70.0		
Level of Service, LOS				C				E		D				F		
Approach Delay (s/veh)	22.6				36.9				0.2				0.2			
Approach LOS	C				E											

Queues

2019 Future with Devel & GDOT Imp AM

1: SR 53/Dawsonville Hwy & Commercial Dwy

07/24/2018



Lane Group	EBL	EBT	WBL	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	5	11	60	27	38	962	43	2304
v/c Ratio	0.02	0.04	0.29	0.06	0.25	0.27	0.10	0.65
Control Delay	55.4	0.2	61.3	0.2	17.4	3.8	4.6	14.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.4	0.2	61.3	0.2	17.4	3.8	4.6	14.9
Queue Length 50th (ft)	4	0	53	0	5	43	9	443
Queue Length 95th (ft)	18	0	101	0	m16	24	18	486
Internal Link Dist (ft)		164				848		580
Turn Bay Length (ft)				135	240		235	
Base Capacity (vph)	210	305	209	456	152	3528	437	3524
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.04	0.29	0.06	0.25	0.27	0.10	0.65

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

1: SR 53/Dawsonville Hwy & Commercial Dwy

2019 Future with Devel & GDOT Imp AM

07/24/2018

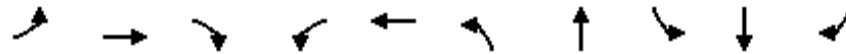
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	0	10	55	0	25	35	820	65	40	2110	10
Future Volume (vph)	5	0	10	55	0	25	35	820	65	40	2110	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0		6.0	6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00		1.00		1.00	1.00	0.91		1.00	0.91	
Flt	1.00	0.85		1.00		0.85	1.00	0.99		1.00	1.00	
Flt Protected	0.95	1.00		0.95		1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	1615		1805		1615	1805	5130		1805	5183	
Flt Permitted	0.76	1.00		0.75		1.00	0.04	1.00		0.27	1.00	
Satd. Flow (perm)	1439	1615		1426		1615	82	5130		519	5183	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	0	11	60	0	27	38	891	71	43	2293	11
RTOR Reduction (vph)	0	9	0	0	0	23	0	6	0	0	0	0
Lane Group Flow (vph)	5	2	0	60	0	4	38	956	0	43	2304	0
Turn Type	Perm	NA		Perm		Perm	pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8	2			6		
Actuated Green, G (s)	22.0	22.0		22.0		22.0	111.0	103.0		109.0	102.0	
Effective Green, g (s)	22.0	22.0		22.0		22.0	111.0	103.0		109.0	102.0	
Actuated g/C Ratio	0.15	0.15		0.15		0.15	0.74	0.69		0.73	0.68	
Clearance Time (s)	6.0	6.0		6.0		6.0	6.0	6.0		6.0	6.0	
Lane Grp Cap (vph)	211	236		209		236	152	3522		437	3524	
v/s Ratio Prot		0.00					c0.01	0.19		0.00	c0.44	
v/s Ratio Perm	0.00			c0.04		0.00	0.17			0.07		
v/c Ratio	0.02	0.01		0.29		0.02	0.25	0.27		0.10	0.65	
Uniform Delay, d1	54.8	54.7		57.0		54.7	11.8	9.1		5.8	13.8	
Progression Factor	1.00	1.00		1.00		1.00	2.98	0.40		1.00	1.00	
Incremental Delay, d2	0.2	0.1		3.4		0.1	3.6	0.2		0.4	1.0	
Delay (s)	55.0	54.7		60.4		54.9	38.6	3.8		6.3	14.8	
Level of Service	E	D		E		D	D	A		A	B	
Approach Delay (s)		54.8			58.7			5.1			14.6	
Approach LOS		D			E			A			B	
Intersection Summary												
HCM 2000 Control Delay			13.2								B	
HCM 2000 Volume to Capacity ratio			0.57									
Actuated Cycle Length (s)			150.0								18.0	
Intersection Capacity Utilization			60.7%								B	
Analysis Period (min)			15									
c Critical Lane Group												

Queues

2019 Future with Devel & GDOT Imp AM

3: SR 53/Dawsonville Hwy & SR 53/McEver Rd/Lakeshore Marketplace dwy

07/24/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	412	224	217	47	42	253	659	47	1588	894
v/c Ratio	0.86	0.66	0.52	0.41	0.40	0.75	0.24	0.39	0.58	0.78
Control Delay	80.4	37.7	11.1	56.7	54.8	80.1	17.2	62.5	46.1	34.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	80.4	37.7	11.1	56.7	54.8	80.1	17.2	62.5	46.1	34.4
Queue Length 50th (ft)	204	104	0	36	23	126	119	45	576	586
Queue Length 95th (ft)	250	178	62	66	59	165	152	m69	597	647
Internal Link Dist (ft)		546			135		841		829	
Turn Bay Length (ft)	180		475			400		250		575
Base Capacity (vph)	500	440	512	114	215	338	2737	128	2758	1151
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.82	0.51	0.42	0.41	0.20	0.75	0.24	0.37	0.58	0.78

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

2019 Future with Devel & GDOT Imp AM

3: SR 53/Dawsonville Hwy & SR 53/McEver Rd/Lakeshore Marketplace dwy

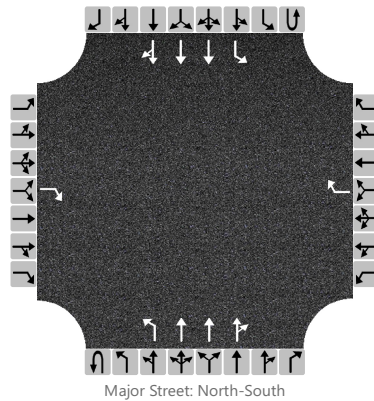
07/24/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	350	40	335	40	20	15	215	510	50	40	1350	760
Future Volume (vph)	350	40	335	40	20	15	215	510	50	40	1350	760
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			3%			0%			0%	
Total Lost time (s)	6.5	7.3	7.3	7.3	7.3		7.2	6.6		7.5	6.6	6.6
Lane Util. Factor	0.97	0.95	0.95	1.00	1.00		0.97	0.91		1.00	0.91	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.88	0.85	1.00	0.94		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3335	1543	1519	1693	1666		3433	4690		1687	5136	1563
Flt Permitted	0.95	1.00	1.00	0.61	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3335	1543	1519	1091	1666		3433	4690		1687	5136	1563
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	412	47	394	47	24	18	253	600	59	47	1588	894
RTOR Reduction (vph)	0	99	184	0	17	0	0	7	0	0	0	324
Lane Group Flow (vph)	412	125	33	47	25	0	253	652	0	47	1588	570
Confl. Peds. (#/hr)							1					1
Heavy Vehicles (%)	5%	11%	1%	5%	9%	0%	2%	10%	0%	7%	1%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	1	0	0	0
Turn Type	Prot	NA	Perm	pm+pt	NA		Prot	NA		Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4	8								6
Actuated Green, G (s)	21.6	23.1	23.1	11.5	6.9		16.2	84.4		9.2	77.7	77.7
Effective Green, g (s)	21.6	23.1	23.1	11.5	6.9		16.2	84.4		9.2	77.7	77.7
Actuated g/C Ratio	0.14	0.15	0.15	0.08	0.05		0.11	0.56		0.06	0.52	0.52
Clearance Time (s)	6.5	7.3	7.3	7.3	7.3		7.2	6.6		7.5	6.6	6.6
Vehicle Extension (s)	3.1	3.1	3.1	3.1	3.1		3.1	5.1		4.1	5.1	5.1
Lane Grp Cap (vph)	480	237	233	102	76		370	2638		103	2660	809
v/s Ratio Prot	c0.12	c0.08		0.01	0.01		c0.07	0.14		0.03	0.31	
v/s Ratio Perm			0.02	0.02								c0.36
v/c Ratio	0.86	0.53	0.14	0.46	0.33		0.68	0.25		0.46	0.60	0.70
Uniform Delay, d1	62.7	58.4	54.9	65.8	69.3		64.4	16.7		68.0	25.2	27.4
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		0.83	1.86	4.32
Incremental Delay, d2	14.2	2.2	0.3	3.4	2.6		5.2	0.2		3.7	0.8	4.2
Delay (s)	76.9	60.6	55.2	69.2	71.9		69.6	16.9		60.2	47.7	122.6
Level of Service	E	E	E	E	E		E	B		E	D	F
Approach Delay (s)		67.1			70.5			31.5			74.4	
Approach LOS		E			E			C			E	
Intersection Summary												
HCM 2000 Control Delay			64.0			HCM 2000 Level of Service				E		
HCM 2000 Volume to Capacity ratio			0.74									
Actuated Cycle Length (s)			150.0			Sum of lost time (s)				28.7		
Intersection Capacity Utilization			75.1%			ICU Level of Service				D		
Analysis Period (min)			15									
c Critical Lane Group												

HCS7 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	Wolverton	Intersection	SR 53 at Site Driveway
Agency/Co.	GDOT	Jurisdiction	City of Gainesville
Date Performed	7/23/2018	East/West Street	Site Driveway
Analysis Year	2019	North/South Street	SR 53/Dawsonville Hwy
Time Analyzed	AM Peak-Devel & GDOT proj	Peak Hour Factor	0.92
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	Commercial Development on SR 53		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	1		0	0	1	0	1	3	0	0	1	3	0
Configuration				R				R		L	T	TR		L	T	TR
Volume, V (veh/h)				15				75		10	845	25		60	2135	5
Percent Heavy Vehicles (%)				3				3		3				3		
Proportion Time Blocked																
Percent Grade (%)	0				0											
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)				16				82		11				65		
Capacity, c (veh/h)				160				459		84				413		
v/c Ratio				0.10				0.18		0.13				0.16		
95% Queue Length, Q ₉₅ (veh)				0.3				0.6		0.4				0.6		
Control Delay (s/veh)				30.0				14.6		54.2				15.3		
Level of Service, LOS				D				B		F				C		
Approach Delay (s/veh)	30.0				14.6				0.6				0.4			
Approach LOS	D				B											

Queues

2019 Future with Devel & GDOT Imp PM

1: SR 53/Dawsonville Hwy & Commercial Dwy

07/21/2018



Lane Group	EBL	EBT	WBL	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	16	43	266	185	185	2532	141	1500
v/c Ratio	0.04	0.08	0.75	0.35	0.57	0.91	0.69	0.57
Control Delay	45.4	0.3	69.3	11.0	38.1	25.7	56.2	28.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.4	0.3	69.3	11.0	38.1	25.7	56.2	28.5
Queue Length 50th (ft)	13	0	258	18	89	861	92	391
Queue Length 95th (ft)	34	0	373	85	m95	m760	#183	438
Internal Link Dist (ft)		164				848		580
Turn Bay Length (ft)				135	240		235	
Base Capacity (vph)	368	546	354	535	325	2788	205	2617
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.08	0.75	0.35	0.57	0.91	0.69	0.57

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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

HCM Signalized Intersection Capacity Analysis

1: SR 53/Dawsonville Hwy & Commercial Dwy

2019 Future with Devel & GDOT Imp PM

07/21/2018

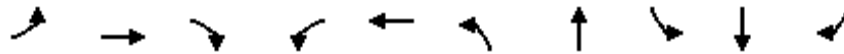
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	0	40	245	0	170	170	2110	220	130	1340	40
Future Volume (vph)	15	0	40	245	0	170	170	2110	220	130	1340	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0		6.0	6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00		1.00		1.00	1.00	0.91		1.00	0.91	
Flt	1.00	0.85		1.00		0.85	1.00	0.99		1.00	1.00	
Flt Protected	0.95	1.00		0.95		1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	1615		1805		1615	1805	5114		1805	5165	
Flt Permitted	0.76	1.00		0.73		1.00	0.10	1.00		0.05	1.00	
Satd. Flow (perm)	1439	1615		1385		1615	185	5114		94	5165	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	16	0	43	266	0	185	185	2293	239	141	1457	43
RTOR Reduction (vph)	0	32	0	0	0	121	0	8	0	0	2	0
Lane Group Flow (vph)	16	11	0	266	0	64	185	2524	0	141	1498	0
Turn Type	Perm	NA		Perm		Perm	pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8	2			6		
Actuated Green, G (s)	41.0	41.0		41.0		41.0	107.0	87.0		95.0	81.0	
Effective Green, g (s)	41.0	41.0		41.0		41.0	107.0	87.0		95.0	81.0	
Actuated g/C Ratio	0.26	0.26		0.26		0.26	0.67	0.54		0.59	0.51	
Clearance Time (s)	6.0	6.0		6.0		6.0	6.0	6.0		6.0	6.0	
Lane Grp Cap (vph)	368	413		354		413	326	2780		205	2614	
v/s Ratio Prot		0.01					c0.07	c0.49		0.06	0.29	
v/s Ratio Perm	0.01			c0.19		0.04	0.31			0.35		
v/c Ratio	0.04	0.03		0.75		0.15	0.57	0.91		0.69	0.57	
Uniform Delay, d1	44.8	44.6		54.8		46.1	19.2	32.9		44.4	27.5	
Progression Factor	1.00	1.00		1.00		1.00	2.00	0.70		1.00	1.00	
Incremental Delay, d2	0.2	0.1		13.7		0.8	3.1	2.6		17.2	0.9	
Delay (s)	45.0	44.7		68.5		46.9	41.6	25.6		61.6	28.4	
Level of Service	D	D		E		D	D	C		E	C	
Approach Delay (s)		44.8			59.6			26.7			31.2	
Approach LOS		D			E			C			C	
Intersection Summary												
HCM 2000 Control Delay			31.5			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.84									
Actuated Cycle Length (s)			160.0			Sum of lost time (s)			18.0			
Intersection Capacity Utilization			88.1%			ICU Level of Service			E			
Analysis Period (min)			15									
c Critical Lane Group												

Queues

2019 Future with Devel & GDOT Imp PM

3: SR 53/Dawsonville Hwy & SR 53/McEver Rd/Lakeshore Marketplace dwy

07/21/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	912	299	272	118	170	441	1965	100	1353	541
v/c Ratio	1.05	0.65	0.44	0.53	0.89	0.85	1.04	0.88	0.83	0.63
Control Delay	101.6	53.2	6.9	44.2	97.8	81.5	79.4	120.3	63.3	25.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	101.6	53.2	6.9	44.2	97.8	81.5	79.4	120.3	63.3	25.9
Queue Length 50th (ft)	~535	266	0	79	146	235	~812	109	535	249
Queue Length 95th (ft)	#607	355	57	119	#254	280	#812	m#211	534	325
Internal Link Dist (ft)		546			135		841		829	
Turn Bay Length (ft)	180		475			400		250		575
Base Capacity (vph)	865	463	622	237	199	521	1882	113	1624	864
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.05	0.65	0.44	0.50	0.85	0.85	1.04	0.88	0.83	0.63

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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

HCM Signalized Intersection Capacity Analysis

2019 Future with Devel & GDOT Imp PM

3: SR 53/Dawsonville Hwy & SR 53/McEver Rd/Lakeshore Marketplace dwy

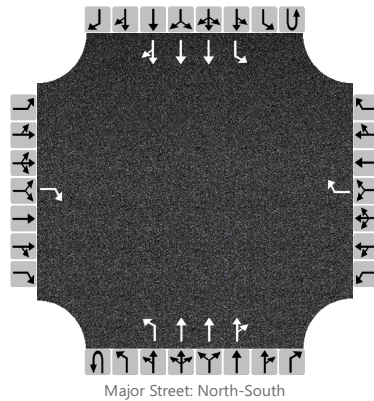
07/21/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	775	135	350	100	65	80	375	1610	60	85	1150	460
Future Volume (vph)	775	135	350	100	65	80	375	1610	60	85	1150	460
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			3%			0%			0%	
Total Lost time (s)	6.5	7.3	7.3	7.3	7.3		7.2	6.6		7.5	6.6	6.6
Lane Util. Factor	0.97	0.95	0.95	1.00	1.00		0.97	0.91		1.00	0.91	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.93	0.85	1.00	0.92		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3335	1579	1519	1693	1650		3433	4705		1687	5136	1563
Flt Permitted	0.95	1.00	1.00	0.57	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3335	1579	1519	1015	1650		3433	4705		1687	5136	1563
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	912	159	412	118	76	94	441	1894	71	100	1353	541
RTOR Reduction (vph)	0	19	195	0	28	0	0	2	0	0	0	370
Lane Group Flow (vph)	912	280	77	118	142	0	441	1963	0	100	1353	171
Confl. Peds. (#/hr)							1					1
Heavy Vehicles (%)	5%	11%	1%	5%	9%	0%	2%	10%	0%	7%	1%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	1	0	0	0
Turn Type	Prot	NA	Perm	pm+pt	NA		Prot	NA		Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4	8								6
Actuated Green, G (s)	41.5	45.1	45.1	27.6	16.0		24.3	63.9		10.7	50.6	50.6
Effective Green, g (s)	41.5	45.1	45.1	27.6	16.0		24.3	63.9		10.7	50.6	50.6
Actuated g/C Ratio	0.26	0.28	0.28	0.17	0.10		0.15	0.40		0.07	0.32	0.32
Clearance Time (s)	6.5	7.3	7.3	7.3	7.3		7.2	6.6		7.5	6.6	6.6
Vehicle Extension (s)	3.1	3.1	3.1	3.1	3.1		3.1	5.1		4.1	5.1	5.1
Lane Grp Cap (vph)	865	445	428	224	165		521	1879		112	1624	494
v/s Ratio Prot	c0.27	0.18		0.04	c0.09		0.13	c0.42		0.06	c0.26	
v/s Ratio Perm			0.05	0.05								0.11
v/c Ratio	1.05	0.63	0.18	0.53	0.86		0.85	1.04		0.89	0.83	0.35
Uniform Delay, d1	59.2	50.1	43.5	58.9	70.9		66.0	48.0		74.1	50.8	42.0
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		0.91	1.15	7.25
Incremental Delay, d2	45.9	2.8	0.2	2.3	34.1		12.1	33.5		49.3	4.6	1.7
Delay (s)	105.2	52.9	43.7	61.2	105.0		78.2	81.5		117.1	62.8	306.2
Level of Service	F	D	D	E	F		E	F		F	E	F
Approach Delay (s)		83.4			87.1			80.9			131.6	
Approach LOS		F			F			F			F	
Intersection Summary												
HCM 2000 Control Delay			98.2			HCM 2000 Level of Service				F		
HCM 2000 Volume to Capacity ratio			1.05									
Actuated Cycle Length (s)			160.0			Sum of lost time (s)				28.7		
Intersection Capacity Utilization			90.8%			ICU Level of Service				E		
Analysis Period (min)			15									
c Critical Lane Group												

HCS7 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	Wolverton	Intersection	SR 53 at Site Driveway
Agency/Co.	GDOT	Jurisdiction	City of Gainesville
Date Performed	7/23/2018	East/West Street	Site Driveway
Analysis Year	2019	North/South Street	SR 53/Dawsonville Hwy
Time Analyzed	PM Peak-Devel & GDOT proj	Peak Hour Factor	0.92
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	Commercial Development on SR 53		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	1		0	0	1	0	1	3	0	0	1	3	0
Configuration				R				R		L	T	TR		L	T	TR
Volume, V (veh/h)				45				105		20	2385	85		40	1650	15
Percent Heavy Vehicles (%)				3				3		3				3		
Proportion Time Blocked																
Percent Grade (%)	0				0											
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)				49				114		22				43		
Capacity, c (veh/h)				239				121		154				55		
v/c Ratio				0.21				0.94		0.14				0.79		
95% Queue Length, Q ₉₅ (veh)				0.8				6.1		0.5				3.4		
Control Delay (s/veh)				23.9				134.8		32.1				182.9		
Level of Service, LOS				C				F		D				F		
Approach Delay (s/veh)	23.9				134.8				0.3				4.2			
Approach LOS	C				F											