

# *Dawsonville Highway-McEver Road Connectivity Study*

Final Report  
February 7, 2019





**A Resolution by the Gainesville-Hall Metropolitan Planning Organization  
Policy Committee Adopting the  
Dawsonville Highway–McEver Road Connectivity Study**

**WHEREAS**, the Gainesville-Hall Metropolitan Planning Organization (GHMPO) is the designated Metropolitan Planning Organization for transportation planning within the Gainesville Metropolitan Area Boundary which includes all of Hall County and a portion of Jackson County following the 2010 Census; and

**WHEREAS**, the Fixing America’s Surface Transportation (FAST) Act directs GHMPO to increase the accessibility and mobility options available;

**WHEREAS**, the FAST Act furthermore directs GHMPO to enhance the integration and connectivity of the transportation system, across and between modes;

**WHEREAS**, the Dawsonville Highway-McEver Road Connectivity Study makes recommendations to improve the area’s accessibility and mobility;

**NOW, THERE, BE IT RESOLVED** that the Gainesville-Hall Metropolitan Planning Organization adopts the Dawsonville Highway-McEver Road Connectivity Study.

A motion was made by PC member Richard Higgins and seconded by PC member Danny Dunagan and approved this the 14<sup>th</sup> of May, 2019.

Emily Foote  
Notary Public  
Hall County  
State of Georgia  
My commission expires July 31, 2022

  
\_\_\_\_\_  
Mayor Mike Miller, Chairperson  
Policy Committee

Subscribed and sworn to me this the May 14, 2019.

  
\_\_\_\_\_  
Notary Public

My commission expires 7/31/2022



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- Appendix B – Concept Alternate Design Drawings
- Appendix C – Concept Alternate Descriptions
- Appendix D – Concept Alternate Quantities and Cost Estimates
- Appendix E – Turning Movement Diagrams
- Appendix F – Development of Year 2040 Growth Rates
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The opinions, findings, and conclusions in this publication are those of the author(s) and not necessarily those of the Georgia Department of Transportation, State of Georgia, or Federal Highway Administration. Prepared in cooperation with the Georgia Department of Transportation and Federal Highway Administration.



## 1.1 BACKGROUND

This document summarizes the assessment of needs, potential transportation improvements and recommendations for the Dawsonville Highway – McEver Road Connectivity Study. The needs assessment builds upon the information within the Existing Conditions Report, attached as **Appendix A** of this document. The sections of this document include summaries pertaining to the following:

- Development of Concept Design Alternatives
- Assessment of Existing and Future Traffic Operations
- Assessment of Additional Improvements
- Summary of Public Outreach Activities and Responses

## 1.2 DEVELOPMENT OF CONCEPT DESIGN ALTERNATIVES

The RS&H study team collaborated with the City of Gainesville and the Gainesville-Hall Metropolitan Planning Organization (GHMPO) staff to develop and assess potential traffic improvements along the Dawsonville Highway corridor, including the analysis of various concept design alternatives connecting Dawsonville Highway to McEver Road.

The primary criteria utilized to develop the concept alternatives included:

- Minimization of impacts
  - Adjacent parcels
  - Environmental features including wetlands and Lake Lanier / Corps of Engineers property
  - Utilities
- Horizontal and vertical geometric constraints including grade differentials
- Existing intersections, signalization, driveways and median breaks

Two (2) general sets of alternatives were developed using a combination of existing roadways and/or utility easements. The first set (Alternates 1 through 3) generally connected McEver Road to Dawsonville Highway along Beechwood Drive. Alternate 4 comprised the second alternative set and followed the utility easement connecting the area near Otilla Drive and Lanier Valley Drive at Dawsonville Highway to McEver Road at Eagle Eye Road. **Figure 1** presents the approximate horizontal alignments.

Each of the four (4) initial alternatives were discussed at the April 19, 2018 Technical Team meeting. **Table 1** presents the length and design speed for Alternates 1 -4. **Figures 2 - 5** present the four (4) design concept alternates. Larger copies of each design concept are included in **Appendix B** and detailed descriptions of each alternate are included in **Appendix C**.

**FIGURE 1. ALTERNATES 1 THROUGH 4**



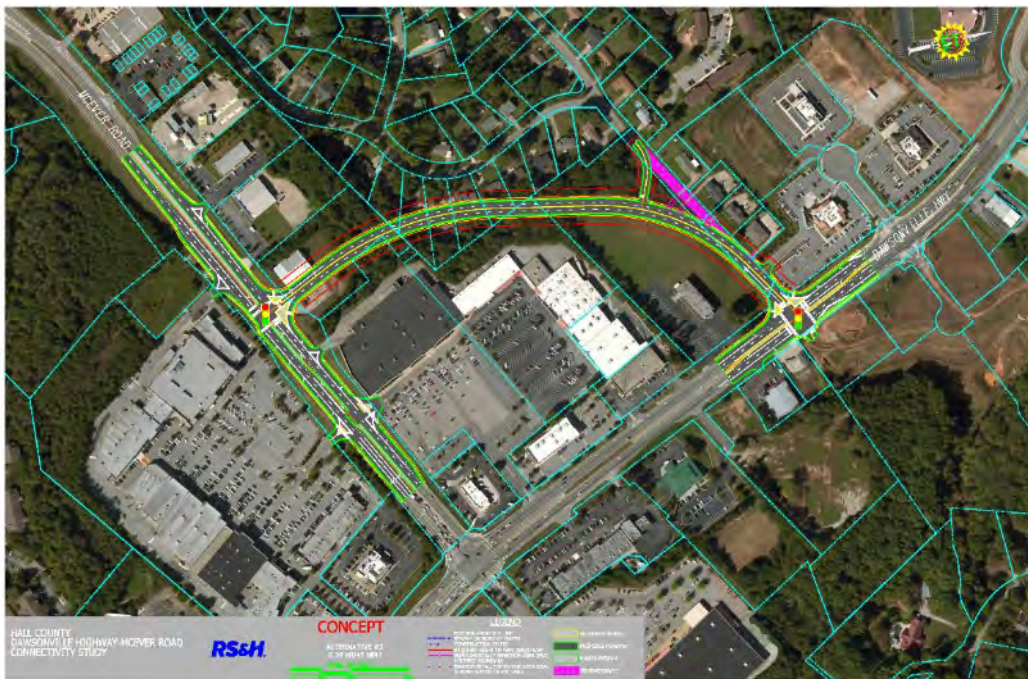
**TABLE 1. DESIGN INFORMATION FOR ALTERNATES 1-4**

Alternate No.	Connection	Description	Length (mile)	Design Speed (mph)
1	Beechwood Boulevard	<ul style="list-style-type: none"> <li>S-curve to minimize impacts</li> <li>Existing median breaks</li> </ul>	0.43	35
2		<ul style="list-style-type: none"> <li>Shortest alternate</li> <li>New McEver Rd. median break</li> </ul>	0.39	45
3		<ul style="list-style-type: none"> <li>New intersection with Publix</li> <li>New median break</li> </ul>	0.40	45
4	Lanier Valley	<ul style="list-style-type: none"> <li>Longest alternate</li> <li>Most impacts</li> </ul>	0.84	45

**FIGURE 2. ALTERNATE 1**



**FIGURE 3. ALTERNATE 2**





**FIGURE 4. ALTERNATE 3**



**FIGURE 5. ALTERNATE 4**





**Table 2** presents a summary of the potential impacts possible with construction of Alternates 1 – 4. Both two-lane and four-lane design cross sections were evaluated for each alternate, including a summary of potential parcels and relocations that would potentially be required, respectively.

**TABLE 2. POTENTIAL IMPACTS FOR ALTERNATES 1-4**

Alternate	1		2		3		4	
<b>No. Lanes</b>	2-Ln	4-Ln	2-Ln	4-Ln	2-Ln	4-Ln	2-Ln	4-Ln
<b>ROW (ft)</b>	100	120	100	120	100	120	100	120
<b>Parcels Affected</b>								
<i>Residential</i>	14	14	11	11	11	12	10	10
<i>Commercial</i>	6	6	5	5	7	7	3	3
<i>Public</i>	0	0	0	0	0	0	4	4
<b>Relocations</b>								
<i>Residential</i>	5	6	5	6	5	6	5	6
<i>Commercial</i>	1	1	1	1	1	1	1	2
<i>Public</i>	0	0	0	0	0	0	1	1

Analysis of the **Table 2** results reveals that each alternate would result in some level of impact with two-lane facilities having a narrower right-of-way “footprint” and less impacts than the four-lane alternatives. Overall, Alternate 4 appears to have the least impact amongst Alternates 1 – 4.

Planning-level cost estimates were next developed for Alternates 1- 4 using standard unit rates<sup>1</sup> and standard engineering methodologies and assumptions. **Table 3** presents a summary of the estimated costs (in million dollars) for the construction of each alternate as either a two-lane, or four-lane facility.

The costs presented do not include right-of-way costs, potential relocation costs, or costs for utility relocations and/or construction. **Appendix D** presents the detailed cost estimates for each alternate.

**TABLE 3. ESTIMATED CONSTRUCTION COSTS (MILLION DOLLARS)**

Alternate	1	2	3	4
<b>Two-Lane</b>	\$3.1	\$2.9	\$3.0	\$4.7
<b>Four-Lane</b>	\$4.1	\$3.9	\$3.9	\$6.5

\* **Excludes** right-of-way acquisition/owner relocations and utility relocations

The cost estimate for Alternate 2 is the lowest with Alternate 4 having the highest cost.

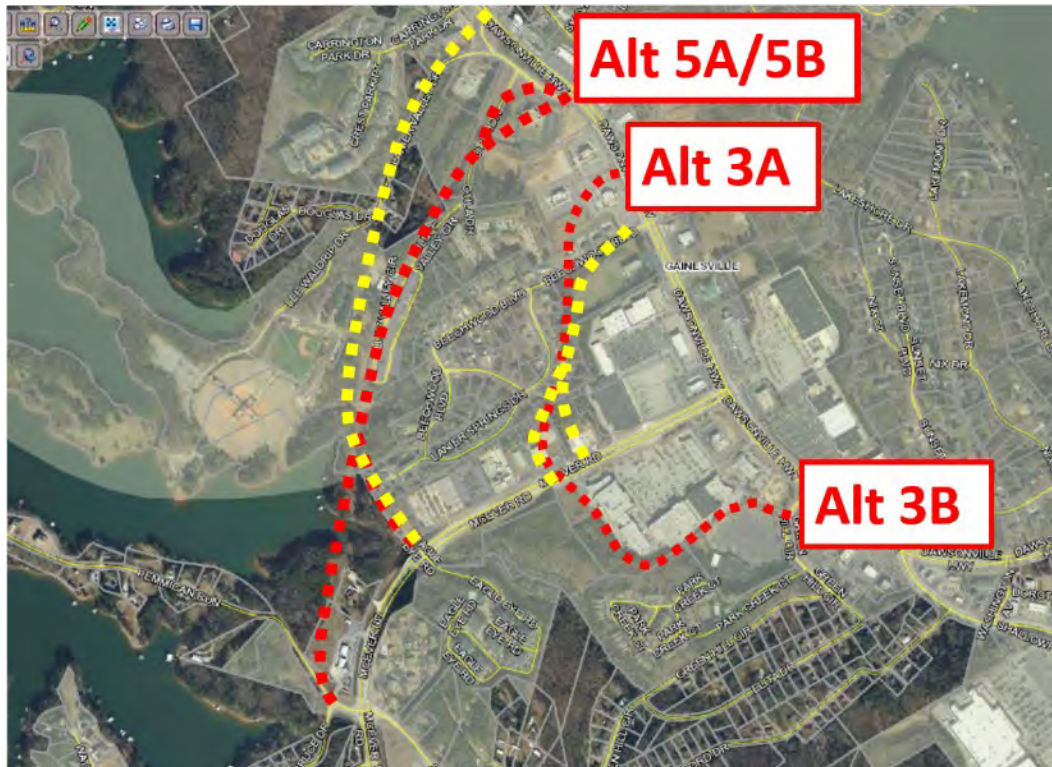
<sup>1</sup> Current as of April 2018

Upon review of the four alternates by the study team four (4) additional alternates were proposed as follows:

- Alternate 3A, which included a shift of alignment north to connect with the existing signalized intersection of Academy Sports at Dawsonville Highway.
- Alternate 3B, which is a connection between McEver Road and Dawsonville Highway south of the Publix Shopping Center, in front of the Hollywood 15 Cinemas connecting with Green Hill Circle.
- Alternates 5A and 5B provided an assessment of connections between the existing signalized intersections of McEver Road at Pemmican Run / Spring Road and Dawsonville Highway at Ahaluna Drive.

**Figure 6** presents the approximate horizontal alignments of the new Alternates along with the first set of Alternates 1-4.

**FIGURE 6. REVISED ALTERNATES 3A, 3B, 5A AND 5B**



**Table 4** presents the length and design speed for Alternates 3A, 3B, 5A and 5B, while **Figures 7 - 11** present the four (4) design concept alternates. Larger copies of each design concept are also included in **Appendix B**.

**TABLE 4. DESIGN INFORMATION FOR ALTERNATES 3A, 3B, 5A AND 5B**

Alternate No.	Connection	Description	Length (mile)	Design Speed (mph)
3A	McEver Road to Academy Sports	<ul style="list-style-type: none"> <li>Revised design to previous Alternate 3 connecting into existing commercial driveway at Academy Sports</li> </ul>	0.49	35
3B	McEver Road to Green Hill Circle	<ul style="list-style-type: none"> <li>Designed as more of a driveway due to geometric constraints</li> </ul>	0.53	25
5A	McEver Road at Pemmican/Spring to Ahaluna Drive	<ul style="list-style-type: none"> <li>More impacts than 5B</li> <li>Better intersection design with Dawsonville Hwy</li> </ul>	1.51	35
5B	McEver Road at Pemmican/Spring to Ahaluna Drive	<ul style="list-style-type: none"> <li>Longest alternative</li> <li>Less Impacts</li> <li>Skew intersection</li> </ul>	1.53	35

**FIGURE 7. ALTERNATE 3A**



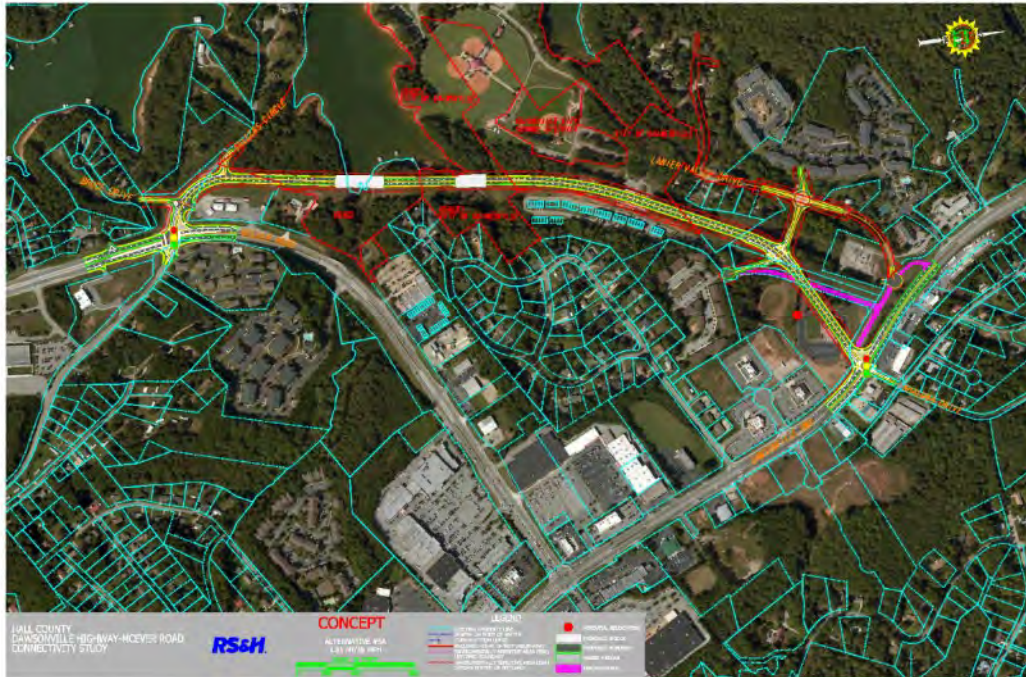
**FIGURE 8. ALTERNATE 3B**



**FIGURE 9. ALTERNATE 5A**



**FIGURE 10. ALTERNATE 5B**



**FIGURE 11. ALTERNATE 5B WITH OVERHEAD UTILITY DETAILS**





Both two-lane and four-lane design cross sections were evaluated for each alternate, with the exception of Alternate 3B. Only the two-lane section for this alternative was assessed due to the proposed configuration and location. **Table 5** presents a summary of the potential impacts that are possible with construction of Alternates 3A, 3B, 5A and 5B and includes a summary of potential parcels and relocations.

**TABLE 5. POTENTIAL IMPACTS FROM ALTERNATES 3A, 3B, 5A AND 5B**

Alternative	3A		3B	5A		5B	
No. Lanes	2-Ln	4-Ln	2-Ln	2-Ln	4-Ln	2-Ln	4-Ln
ROW (ft)	100	120	100	100	120	100	120
<b>Parcels Affected</b>							
<i>Residential</i>	9	9	0	6	7	6	7
<i>Commercial</i>	10	10	7	6	6	6	6
<i>Public</i>	0	0	0	3	3	3	3
<b>Relocations</b>							
<i>Residential</i>	7	8	0	0	0	0	0
<i>Commercial</i>	1	1	0	1	1	0	0
<i>Public</i>	0	0	0	0	0	0	0

Analysis of the **Table 5** results reveals that each alternate would result in some level of impact with two-lane facilities having a narrower right-of-way “footprint” and less impacts than their four-lane counterparts. Alternate 3B is omitted from this comparative analysis as it is located in a different quadrant of the larger Dawsonville Highway – McEver Road corridor intersection. For the other options, Alternates 5B and 3A appear to have the least impacts.

Planning-level cost estimates were developed for Alternates 3A, 3B, 5A and 5B using standard unit rates<sup>2</sup> and standard engineering methodologies and assumptions. **Table 6** presents a summary of the estimated costs (in million dollars) for the construction of each alternate as either a two-lane, or four-lane facility. The cost estimates do not include potential right-of-way acquisitions and/or utility relocations

**TABLE 6. ESTIMATED CONSTRUCTION COSTS (IN MILLIONS)**

Alternative	3A	3B	5A	5B
<b>Two-Lane</b>	\$3.3	\$3.1	\$12.4	\$12.7
<b>Four-Lane</b>	\$4.5	N/A	\$17.3	\$17.7

\* *Excludes right-of-way acquisition/owner relocations and utility relocations*

<sup>2</sup> Current as of April 2018



### 1.3 ASSESSMENT OF CONCEPT ALTERNATES

Each of the Alternates was reviewed based upon the data compiled and presented. The next step in the assessment process included a detailed traffic assessment of the most favorable Alternates. The potential of impacts and the associated constructability of each Alternate were the criteria most heavily utilized to select the most favorable Alternates. Based upon the data available, Alternates 3A and 5B create the most favorable connectivity for traffic and were carried forward for further assessment and review of existing and future traffic operations.

### 1.4 TRAFFIC ANALYSIS

The next step in the assessment of Alternates 3A and 5B included the analysis of traffic operational conditions. For the analysis, data and models from the Georgia Department of Transportation (GDOT) were utilized. Several recently completed studies were also identified and were utilized as part of the analysis. **Table 7** presents a summary of the sources and type of data utilized.

Based upon the recent studies, year 2017 was utilized to assess existing traffic operational conditions. Year 2020 was chosen as the base year for analysis as the potential “open to traffic” milestone. A 20-year design life, year 2040 future scenario, was used for comparison purposes. The team utilized the Synchro traffic micro-simulation modeling platform to complete the traffic operational analysis.

**TABLE 7. SUMMARY OF TRAFFIC DATA SOURCES**

Source/Project	Volume Data						Synchro Files	Trip Distribution
	Daily			Design Hourly Volumes		Growth Rates		
	Historic	Existing	Future	Existing	Future			
SR 53 Study Lane Conversion		•	•	•	•	•	•	
McEver Rd RCUT		•		•			•	
Oak Hall DRI		•	•	•	•	•		
Geocounts (GDOT)	•	•		•		•		
Travel Demand Model (TDM)		•	•	•	•	•		
Streetlight								•

#### 1.4.1 Base Year 2020 Traffic Conditions

The traffic analysis included the nine (9) intersections along both Dawsonville Highway and McEver Road. Level-of-Service (LOS) was identified as the primary metric for assessment of intersection conditions. LOS is based on a grading system similar to a report card, from “A” to “F” equivalent to excellent to failing. **Figures 12-13** and **Table 8** presents a summary of 2020 base year traffic conditions for the AM and PM peak periods, respectively. Turning movement diagrams are included in **Appendix E**.



**FIGURE 12. 2020 NO-BUILD LEVEL-OF-SERVICE – AM PEAK**



**FIGURE 13. 2020 NO-BUILD LEVEL-OF-SERVICE - PM PEAK**





**TABLE 8. NO-BUILD SCENARIO - YEAR 2020**

Roadway	Intersection	2020 No-Build Level-of-Service	
		AM	PM
<b>Dawsonville Highway</b>	Lanier Valley Drive/Ahaluna Drive	C	C
	Academy Sports Complex	A	A
	McEver Road	D	E
	Green Hill Circle	B	C
	Shallowford Road	B	C
<b>McEver Road</b>	Pemmican Drive/Spring Drive	B	C
	Eagle Eye Road	D	F
	Aarons Drive	C	F
	McEvers Corner/Village Shoppes	B	C

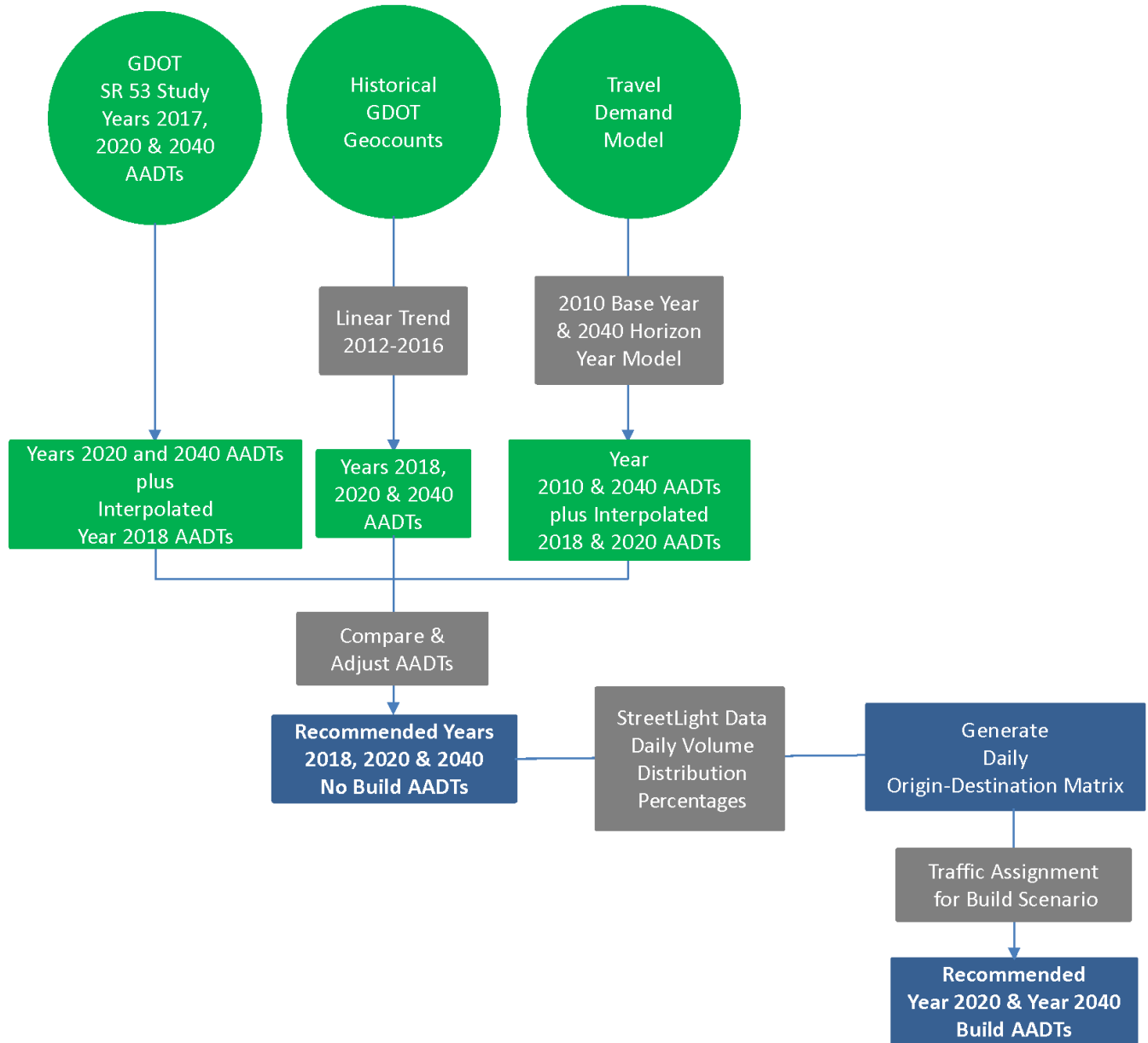
As presented in **Figures 12-13** and **Table 8**, traffic conditions within the study area for the 2020 No-Build scenario are worse in the PM peak than the AM peak period. Traffic operations at the primary study intersection of Dawsonville Highway and McEver Road are LOS D and E in the 2020 AM and PM peak periods, respectively.

#### 1.4.2 Development of Future 2040 Traffic Volumes

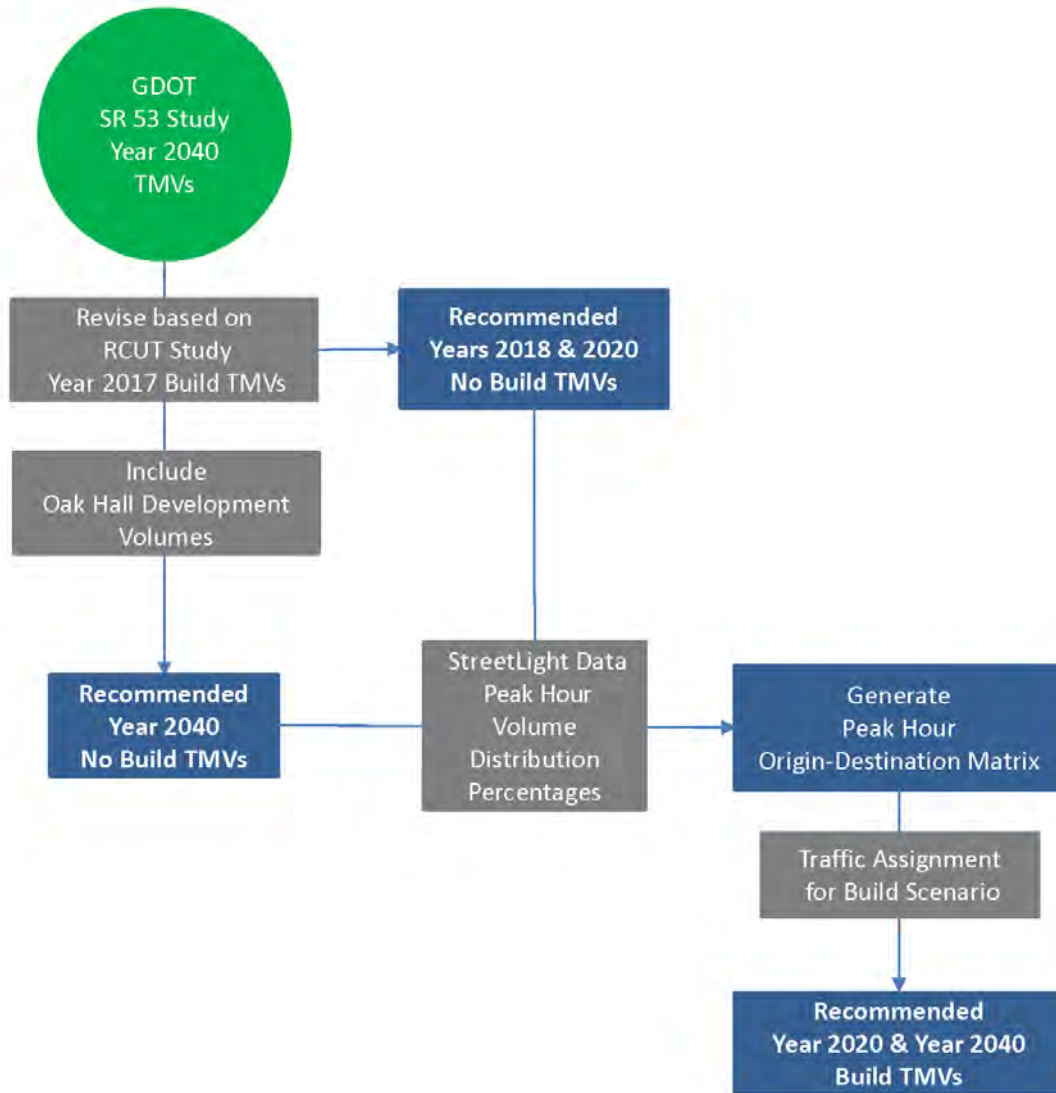
Traffic volumes for year 2040 were developed using several sources and methods. Sources included historic daily traffic volume counts from GDOT; travel demand model volumes from the Gainesville – Hall Metropolitan Planning Organization (GHMPO) adopted model (2015 RTP); data from GDOT’s SR 53 study, including RCUT project analysis; and incorporation of distribution percentages gathered from StreetLight Insight data. **Figure 14** presents the process utilized to develop the Annual Average Daily Traffic (AADT) volumes, while **Figure 15** presents the process utilized to develop Design Hourly Volumes (DHV) used in the micro-simulation analysis of each scenario.

**Appendix F** presents additional detail of the assessment of historic and future growth projections utilized to determine the ultimate growth rates used to calculate the future daily and hourly traffic volumes.

**FIGURE 14. DEVELOPMENT OF FUTURE AADT VALUES**



**FIGURE 15. DEVELOPMENT OF FUTURE DHV VALUES**



### 1.4.3 Assessment of Future Traffic Conditions

The growth rates previously discussed were utilized to develop the 2040 future daily and hourly traffic volumes incorporated into the 2040 future No-Build scenario assessment. The No-Build refers to a scenario where no major improvements are implemented by year 2040. **Figures 16-17** and **Table 9** presents a summary of 2040 future No-Build scenario traffic conditions for the AM and PM peak periods, respectively.

**FIGURE 16. 2040 NO-BUILD LEVEL-OF-SERVICE - AM PEAK**



The results for both the AM and PM peak in year 2040 show degraded LOS from the same periods of year 2020. The worsening conditions are due to increases in traffic volumes along both Dawsonville Highway and McEver Road forecast to occur between years 2020 and 2040. The intersection of Dawsonville Highway and McEver Road is projected at LOS F in both the AM and PM peak periods of the No-build 2040 scenario.

**FIGURE 17. 2040 NO-BUILD LEVEL-OF-SERVICE - PM PEAK**

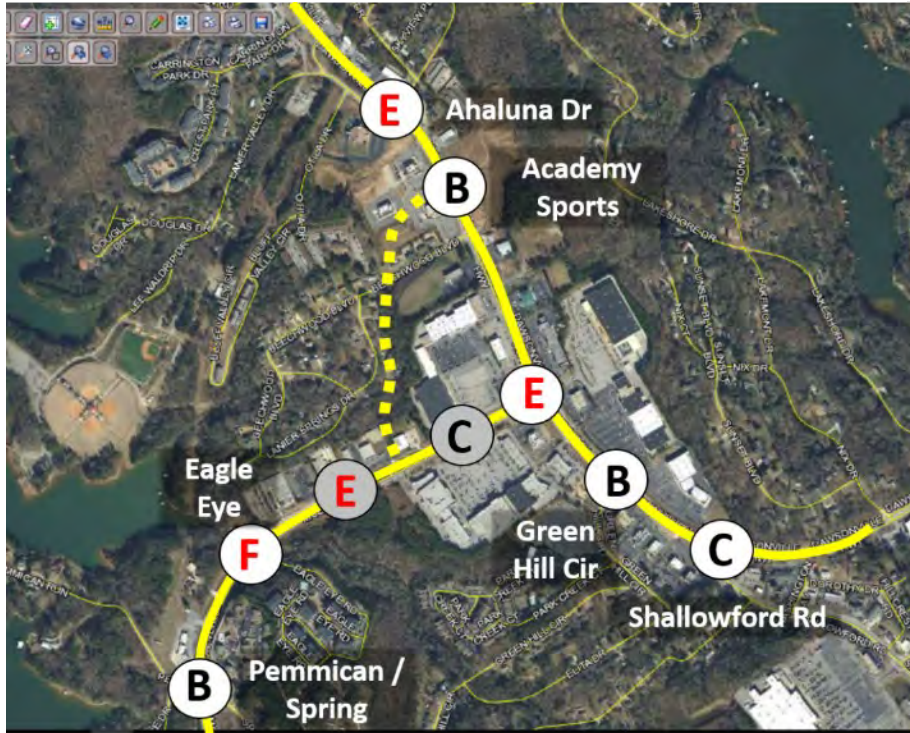


**TABLE 9. NO-BUILD SCENARIO – YEAR 2040**

Roadway	Intersection	2040 No-Build Level-of-Service	
		AM	PM
Dawsonville Highway	Lanier Valley Drive/Ahaluna Drive	E	D
	Academy Sports Complex	A	A
	McEver Road	F	F
	Green Hill Circle	B	C
	Shallowford Road	C	D
McEver Road	Pemmican Drive/Spring Drive	B	C
	Eagle Eye Road	F	F
	Aarons Drive	E	F
	McEvers Corner/Village Shoppes	C	D

The next phase of the analysis was to assess traffic operations for year 2040 with implementation of Alternate 3A and Alternate 5B. **Figures 18-19** and **Table 10** present the year 2040 results with Alternate 3A. **Figures 20-21** and **Table 11** present the results for Alternate 5B.

**FIGURE 18. 2040 ALTERNATE 3A - AM PEAK**



**FIGURE 19. 2040 ALTERNATE 3A - PM PEAK**



**TABLE 10. ALTERNATE 3A - YEAR 2040**

Roadway	Intersection	2040 Alternate 3 Level-of-Service	
		AM	PM
Dawsonville Highway	Lanier Valley Drive/Ahaluna Drive	E	D
	Academy Sports Complex	B	C
	McEver Road	E	E
	Green Hill Circle	B	C
	Shallowford Road	C	D
McEver Road	Pemmican Drive/Spring Drive	B	C
	Eagle Eye Road	F	F
	Aarons Drive	E	F
	McEvers Corner/Village Shoppes	C	B

**FIGURE 20. 2040 ALTERNATE 5B - AM PEAK**





**FIGURE 21. 2040 ALTERNATE 5B - PM PEAK**



**TABLE 11. ALTERNATE 5B - YEAR 2040**

Roadway	Intersection	2040 Alternate 5 Level-of-Service	
		AM	PM
Dawsonville Highway	Lanier Valley Drive/Ahaluna Drive	D	D
	Academy Sports Complex	A	A
	McEver Road	D	E
	Green Hill Circle	B	C
	Shallowford Road	C	D
McEver Road	Pemmican Drive/Spring Drive	C	D
	Eagle Eye Road	C	E
	Aarons Drive	B	E
	McEvers Corner/Village Shoppes	A	B



The operational results for the 2040 Alternate 3A and Alternate 5B scenarios were compared with the 2040 No-Build results. The construction of both Alternates shows some limited improvement in LOS, but the improvements are not significant. An example is the intersection of Dawsonville Highway at McEver Road, which would operate at a LOS F in both the AM and PM peak periods within the 2040 No-Build scenario. Under the Alternate 3A scenario, LOS in both the AM and PM peak improves to LOS E. Under the Alternate 5B scenario, LOS improves to LOS D in the AM peak and LOS E in the PM peak. **Tables 12 - 13** present a comparison of the other study intersections. Further evaluation of the benefits and costs of the two Alternates are discussed in more detail in the following section.

**TABLE 12. COMPARISON OF NO-BUILD AND ALTERNATE 3A - YEAR 2040**

Roadway	Intersection	2040 No-Build Level-of-Service		2040 Alternate 3 Level-of-Service	
		AM	PM	AM	PM
Dawsonville Highway	Lanier Valley Drive/Ahaluna Drive	E	D	E	D
	Academy Sports Complex	A	A	B	C
	McEver Road	F	F	E	E
	Green Hill Circle	B	C	B	C
	Shallowford Road	C	D	C	D
McEver Road	Pemmican Drive/Spring Drive	B	C	B	C
	Eagle Eye Road	F	F	F	F
	Aarons Drive	E	F	E	F
	McEvers Corner/Village Shoppes	C	D	C	B

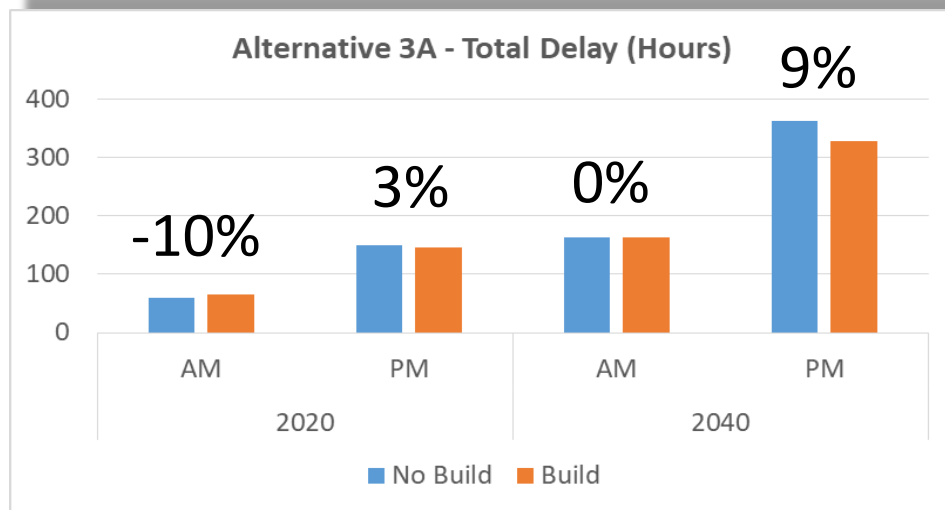
**TABLE 13. COMPARISON OF NO-BUILD AND ALTERNATE 5B - YEAR 2040**

Roadway	Intersection	2040 No-Build Level-of-Service		2040 Alternate 5 Level-of-Service	
		AM	PM	AM	PM
Dawsonville Highway	Lanier Valley Drive/Ahaluna Drive	E	D	D	D
	Academy Sports Complex	A	A	A	A
	McEver Road	F	F	D	E
	Green Hill Circle	B	C	B	C
	Shallowford Road	C	D	C	D
McEver Road	Pemmican Drive/Spring Drive	B	C	C	D
	Eagle Eye Road	F	F	C	E
	Aarons Drive	E	F	B	E
	McEvers Corner/Village Shoppes	C	D	A	B

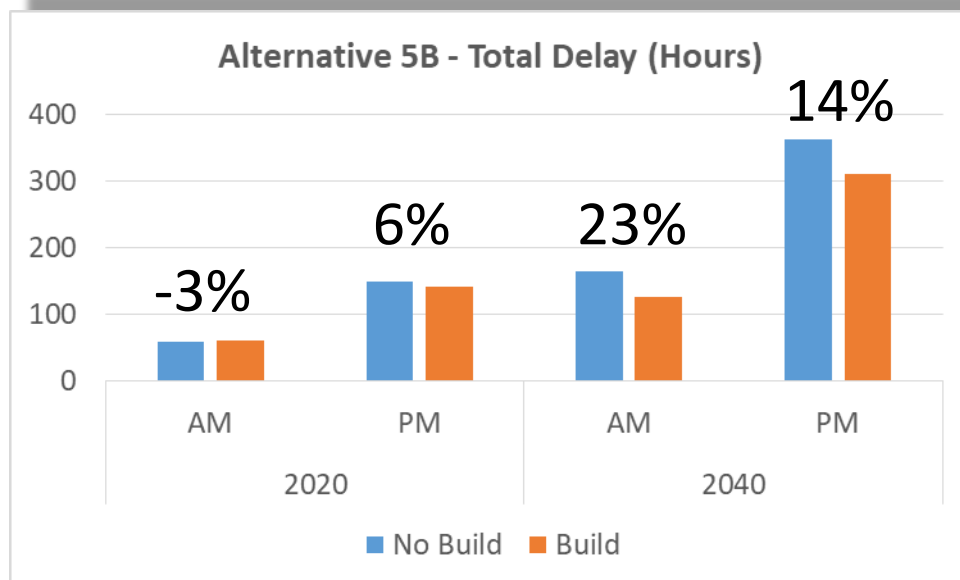


The study included analysis of various measures of effectiveness (MOE) including LOS as well as travel delay. Both factors were analyzed and assessed throughout the study. Travel delay was the primary MOE utilized for development of the travel benefits associated with each Alternate. **Figures 22 and 23** present a summary of the travel delay reduction that would be realized with both Alternate 3A and Alternate 5B compared to the No Build. Results for both Alternates show a slight improvement for both Alternates; however, neither shows excessive decreases in travel delay.

**FIGURE 22. TRAVEL DELAY REDUCTION - ALTERNATE 3A**



**FIGURE 23. TRAVEL DELAY REDUCTION - ALTERNATE 5B**





## 1.5 CALCULATION OF BENEFIT-TO-COST RATIOS

The assessment of benefits from each Alternate was completed with the methodology used by the GDOT for the SR 53 / Dawsonville Highway Turn Lane Conversion Project (PI# 0015702). This methodology uses the reduction of travel delay to determine benefits using assumed values of time for vehicles waiting in congestion. For example, a decrease in delay correlates to an increase of reduced delay, or less time sitting in congestion. The input parameters from GDOT’s model assume a value of auto travel at \$13.75 per hour and \$72.65 per hour for value of truck travel. **Tables 14-15** presents a summary of the total delay (in hours) for Alternates 3A and 5B.

**TABLE 14. ALTERNATE 3A - TOTAL DELAY (HOURS)**

	2020		2040	
	AM	PM	AM	PM
<b>No Build</b>	60	150	164	362
<b>Build</b>	66	146	164	328

**TABLE 15. ALTERNATE 5B - TOTAL DELAY (HOURS)**

	2020		2040	
	AM	PM	AM	PM
<b>No Build</b>	60	150	164	362
<b>Build</b>	62	141	127	311

The estimated construction costs for each alternate are presented in **Table 16**; the four-lane design option was chosen for both Alternates 3A and 5B. **Table 17** presents the calculated benefits for Alternates 3A and 3B with **Table 18** presenting the resulting Benefit-to-Cost ratio for each alternate. **Appendix H** presents the detailed benefit-to-cost calculations.

**TABLE 16. ESTIMATED CONSTRUCTION COSTS (MILLION DOLLARS)**

Alternative	3A	5B
<b>Two-Lane</b>	\$3.3	\$12.7
<b>Four-Lane</b>	<b>\$4.5</b>	<b>\$17.7</b>

**TABLE 17. CALCULATED 20-YEAR BENEFITS (MILLION DOLLARS)**

Alternative	3A	5B
<b>Four-Lane</b>	(\$0.72)	\$2.5

**TABLE 18. CALCULATED BENEFIT-TO-COST RATIO**

Alternative	3A	5B
<b>Four-Lane</b>	(-0.16)	0.14



## 1.6 ASSESSMENT OF OTHER IMPROVEMENTS

This study also included the assessment of other potential improvements and policies for potential implementation to enhance traffic operations within the Dawsonville Highway - McEver Road study area. The following sections present discussions of various potential alternatives.

### 1.6.1 Planned and Programmed Projects

There are several projects currently planned and programmed through GDOT and the GHMPO. Two specific projects are outlined below.

- *GH-104 Dawsonville Highway / McEver Road Intersection Improvements*

The City of Gainesville is the sponsor for a project included in the GHMPO 2015 Regional Transportation Plan (RTP). This project calls for operational improvements to the Dawsonville Highway - McEver Road intersection with right-of-way acquisition scheduled for 2026 and construction in 2029.

- *GDOT PI #0015702: Turn Lane-to-Thru Lane Conversion Project*

GDOT currently has a planned project extending from Ahaluna Drive south to approximately Shallowford Road. The scope of the project will convert the right turn lanes along this stretch of road into through travel lanes. Certain elements of the project have already been completed which include “quick fix” restriping of gore areas along Dawsonville Highway southbound from Beechwood Boulevard to McEver Road. The project is currently under concept review and design development by GDOT. Design concepts provided to the study team are included as part of **Appendix A**. The proposed schedule for Right of Way acquisition is to begin in March 2021 with construction let set for March 2022. The cost-benefit for this project is \$17.8M / \$2.M equivalent to 6.1. The specific cost-benefit calculations are also included as part of **Appendix H**.

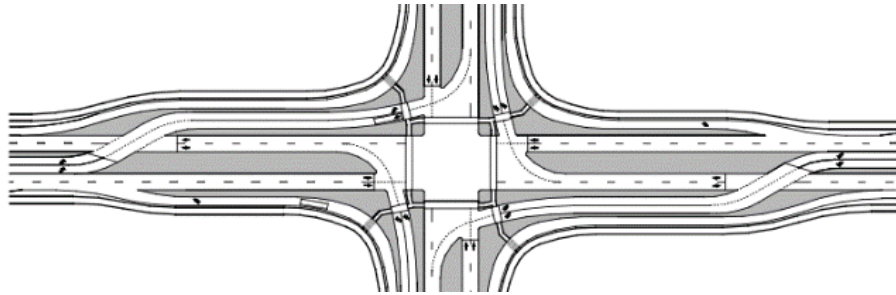
- *Dawsonville Highway / SR 53 Capacity Project*

There is a planned roadway widening project in the GHMPO 2015 RTP proposing to widen Dawsonville Highway / SR 53 to six (6) lanes from Sportsman Club Road to Washington Street.

### 1.6.2 Continuous Flow Intersection / Displaced Left Turn

Continuous flow intersections (CFI), also known as displaced left turn (DLT), improve efficiency by removing left turns from the main signalized intersection. This improvement is achieved by having the left turn movements cross over the opposing traffic ahead of the main intersection (displaced left turn), then proceed together with the through movement (continuous flow). **Figure 24** shows a CFI/DTL with displaced left turns on all approaches. **Figure 25** presents an aerial image of a CFI, a commonly used urban roadway example in the Salt Lake City, UT region.

**FIGURE 24. CFI/DTL INTERSECTION SCHEMATIC**



Source: *Displaced Left Turn Intersection Informational Guide*, FHWA, August 2014.

**FIGURE 25. CFI EXAMPLE IN SALT LAKE CITY, UT**

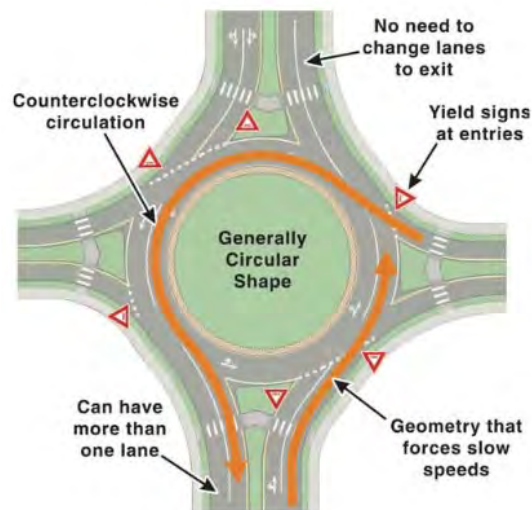


Source: Google Earth©

### 1.6.3 Roundabout

Roundabouts are an alternative intersection design that have the potential to improve safety and traffic operations by reducing conflict points. **Figure 26** provides an overview of characteristics of roundabouts. GDOT's Roundabout Analysis Tool is based on Highway Capacity Manual 2010 Edition and 6<sup>th</sup> Edition Methodologies, NCHRP Report 672, and FHWA's Roundabout Informational Guide. GDOT's tool notes volume conditions for mini, single-lane, and multi-lane roundabouts, as "roundabouts may not operate well if there is too much traffic entering the intersection or if the percentage of traffic on the major road is too high." The first condition is the entering volume should be less than 45,000 ADT. Based on the GDOT SR 53 study, entering Average Daily Traffic (ADT) at the Dawsonville Highway-McEver Road intersection is 47,600. Therefore, the volume of entering traffic at this location is too great, even for a multi-lane roundabout to be considered.

**FIGURE 26. TYPICAL ROUNDABOUT LAYOUT**



*Source: Roundabouts: An Informational Guide, Second Edition, NCHRP Report 672, National Cooperative Highway Research Program, Transportation Research Board of the National Academies, 2010.*

### 1.6.4 Lane Changing Barriers

Similar to vehicles blocking intersections, another common complaint from drivers within the study area is vehicles attempting to change lanes during congested conditions. For example, queues in the left turn lanes on McEver Road approaching Dawsonville Highway can be substantial during the afternoon peak. To avoid the queue, vehicles often proceed in the McEver Road northbound through lane and then attempt to merge into the left turn lanes closer to the intersection. Not able to fully change lanes, these vehicles remain in the through lane, blocking other through northbound vehicles. A potential mitigation measure to address such issues is the installation of barriers preventing lane changing maneuvers in targeted areas. Two variations include bollards and raised median with bollards. The bollards can be flexible vertical plastic tubes that present a visual barrier and discourage lane changing. The raised median would further reinforce the barrier, at the expense of additional width requirements. **Figure 27** presents examples of the measures.

**FIGURE 27. LANE RESTRICTION BARRIERS**



*Sources: Google Earth and RoadSafe Traffic Systems*

### 1.6.5 Flyover Interchange

The study team also evaluated a potential flyover ramp to connect northbound McEver Road to north/westbound Dawsonville Highway. Although the project provided some advantages, the benefit-cost was very low, even without incorporating the massive impacts that would come from construction.



### 1.6.6 Intelligent Transportation System

The City of Gainesville is successfully utilizing Intelligent Transportation System (ITS) technology to monitor and manage traffic operations along many of its corridors. Via a city control room, City staff is able to monitor real-time live feeds of many of the City's intersections, including Dawsonville Highway at McEver Road, and adjust signal timing in real-time to manage changing conditions. Through increased operations, the efficiency of the City's transportation network continues to improve and will be further supplemented with additional ITS system coverage in the near future.



### 1.6.7 Don't Block the Box

One commonly reported problem cited in the survey response is vehicles blocking intersections. Queues are not able to clear by the end of a cycle, and vehicles remain in the intersection blocking other movements. An approach many jurisdictions have taken to combat this common problem in urban intersections is "don't block the box." The aim is to keep intersections clear by posting such signage, painting boxes in intersections delineating clear zones, and instituting associated enforcement. Such measures are intended to influence driver behavior to avoid further degradation of intersection performance. Relative low cost in terms of infrastructure, enforcement involves labor costs. The City of Gainesville over the holidays installed warning signs and utilized an increased police presence to discourage vehicles from blocking intersections along the Dawsonville Highway corridor.

### 1.6.8 Access Management and Inter-Parcel Access

The study team completed an assessment of the driveway spacing along both Dawsonville Highway and McEver Road. **Appendix I** presents a summary of analysis results which appeared to be within acceptable standards.

Inter-parcel access is an important access management technique that allows trips between parcels to be made without loading onto the regionally significant roadway facility. Review of opportunities for increased inter-parcel access identified potential areas for implementation. One example is between the Home Depot and Academy Sports shopping centers to the east, targeting the north-south movement of local trips along the corridor.



## 2.0 SUMMARY OF PUBLIC OUTREACH

The Dawsonville Highway - McEver Road Connectivity Study employed an extensive outreach program, including both the general public and technical staff from partnering agencies. The public engagement program included both an online program, as well as in-person opportunities to discuss the project with the study team and agency representatives.

The online engagement program involved several key elements. The study included a project website hosted by the GHMPO. Additionally, an online interactive survey was open for approximately one month during the spring of 2018. The survey included two key elements. The first was a Survey Monkey© written survey affording respondents the opportunity to provide detailed input to the study team. The second survey element included a mapping component using WikiMapping© that afforded respondents the opportunity to “drop a pin” exercise to identify issues and to help the study team better understand current conditions and challenges along the study corridor, as well as indicate the origins and destinations of their daily travel. The survey was extremely successful with a total of 644 responses in one month.

The last component of the online engagement program was the use of social media to help publicize the study. The study team utilized social media accounts on Facebook© and Instagram© to advertise the study and direct individuals to the project website, social media accounts, online surveys and in-person engagement opportunities to provide feedback and help inform them of the study.

The team also conducted an in-person workshop on March 22, 2018. At the workshop, members of the study team, as well as representatives from the City of Gainesville and the GHMPO, were present to answer questions and provide information about the study. Attendees were also able to log onto tablets and computers and take the online survey.

The study also included recurring project team meetings to present and discuss interim study findings and help ensure the study met the core objectives. Monthly Technical Committee meetings were conducted, and participants included the study team in addition to staff from the City of Gainesville and GHMPO, as well as coordination with GDOT.

**Appendix J** presents the Stakeholder Engagement Summary for the study and provides more detailed information regarding the comments and input received by through the outreach efforts.



### 3.0 STUDY RECOMMENDATIONS

Based upon review of the various proposed Alternate connections, including the most favorable (Alternates 3A and 5B), the benefits provided do not appear to justify such a project. The benefit-to-cost ratios for both top alternates were below 1.0, therefore neither would “break even”. Further, the B/C ratios decrease further once all of the additional costs were added, including right of way acquisition, any potential residential relocations, as well as utility relocations. Other qualitative impacts, such as those to environmental resources, would also be impacted, as well as inconveniences to local residents and business owners. Based upon these factors, a new alternate connection is not recommended.

The two planned / programmed projects both remain viable improvements for further consideration. The intersection improvement project (GH-104) should be further assessed as part of the update of the GHMPO RTP currently underway. GDOT PI# 0015702 has already been initiated and is well underway. The analysis conducted for this study, as well as the SR 53 analysis conducted by GDOT, shows this project may help to improve traffic operations considerably, while having a low level of impact on the community at a very positive benefit-cost. As mentioned previously, the proposed schedule for ROW acquisition is to begin in March 2021 with construction let set for March 2022.

Of the innovative intersection designs considered, the CFI appears to be the most favorable and warranting further assessment. GDOT has hired a consultant charged with assessing the feasibility of a CFI at the intersection of Dawsonville Highway and McEver Road. This analysis is not complete, but should a CFI design prove favorable, a project would be programmed midterm with anticipated design to start in 2028 with construction let in 2029.

Several policy recommendations appear viable for further assessment and implementation. The “Don’t Block the Box” program was already implemented by the City over the recent holiday shopping season utilizing movable messaging boards. Permanent implementation of this program should be considered. Another policy recommendation is the implementation of increased inter-parcel access along both Dawsonville Highway and McEver Road. Opportunities should be considered for all new development and re-development proposals, as feasible.

Finally, strategies to work with private property land owners is also recommended where potential improvements could provide corridor-level (and not just parcel-level) benefits. One example is for the City and GHMPO to remain involved in potential corridor-level improvements, such as the ongoing discussions between the developer of Publix shopping center and GDOT regarding the addition of a new signal along McEver Road.