



Z-14-11-001

City of Greensboro Planning Department Zoning Staff Report and Plan Amendment Evaluation

Zoning Commission Hearing Date: November 10, 2014

GENERAL INFORMATION

APPLICANT Charles E. Melvin, Jr. on behalf of CCC Development Partners, LLC

HEARING TYPE Rezoning

REQUEST **BP** (Business Park) to **CD-C-M** (Conditional District-Commercial-Medium)

CONDITIONS 1. Uses shall be limited to all uses permitted in the C-M district **except** animal shelters, amusement and water parks, campgrounds and recreational vehicle parks, pawnshops, sexually oriented businesses, automobile towing and storage, laundry and dry cleaning plants, and junked motor vehicles.

LOCATION **5421-5423 Millstream Road**, generally described as south of Millstream Road and east of Mt. Hope Church Road.

PARCEL ID NUMBER(S) **8804505585**

PUBLIC NOTIFICATION The notification area for this public hearing was 600 feet (Chapter 30-4-1.4 of the Land Development Ordinance requires notification of the owner of that parcel of land and the owners of all parcels of land adjoining and contiguous to that parcel of land as shown on the County tax listing). **20** notices were mailed to those property owners in the mailing area.

TRACT SIZE ~10.02 Acres

TOPOGRAPHY Undulating

VEGETATION None

SITE DATA

Existing Use	Undeveloped
Adjacent Zoning	Adjacent Land Uses
N BP (Business Park)	Interstate
E BP (Business Park)	Office Uses

W	C-M (Commercial-Medium) CD-C-M (Conditional District- Commercial-Medium)	Restaurant with drive through Convenience store with fuel pumps
S	BP (Business Park)	Undeveloped Property

Zoning History

Case #	Date	Request Summary
N/A	N/A	The property has been zoned BP since the adoption of the Land Development Ordinance in July 2011. Prior to the LDO, the property was zoned CP.

ZONING DISTRICT STANDARDS

District Summary *

Zoning District Designation:	Existing (BP)	Requested (CD-C-M)
Max. Density:	N/A	N/A

Typical Uses	Primarily intended to accommodate office complexes, warehouses, research and development, and assembly uses on large sites in a planned, campus-like setting that emphasizes natural characteristics and landscaping.	Primarily intended to accommodate a wide range of retail, service and office uses.
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**These regulations may not reflect all requirements for all situations; see the City of Greensboro Development Ordinance for all applicable regulations for site requirements for this zoning district.*

SPECIAL INFORMATION

Overlay District Ordinance/Historic Preservation

n/a

Environmental/Soils - Site drains to South Buffalo Creek

Water Supply Watershed	Site drains to Lake MacIntosh Creek Sub-basin	Water Supply Watershed, Little Alamance
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Floodplains N/A

Streams Potential stream onsite but stream has not been identified at this time. Existing channel must be verified, if perennial appropriate buffer will be required. Perennial streams in watershed areas require 100ft buffer each side measured from top of bank. The entire buffer must remain undisturbed & vegetated and no occupied structures are allowed. If stream is intermittent, a 50ft buffer each side measured from top of bank will be required.

Jordan Buffer Rules apply for utility connections across a stream. See the Land Development Ordinance (LDO) Chp.30-12-3.9, Table 12-5 for activities & structures allowed in stream buffers Zone 1 & Zone 2. See attached chart for activities. A 'No Practical Alternative' letter will need to be submitted Stormwater for approval for any disturbance that is considered 'Allowable with Restrictions'. *We recommend that it is assumed that the entire 50ft buffer is to be undisturbed since very few uses are allowed according to State requirements.*

Other: Site must meet current watersupply watershed requirements. Water Quality and Water Quantity must be addressed. For High Density development with sewer, the maximum Built Upon Area (BUA) allowed is 70%.

Utilities

Potable Water Available

Waste Water Available

Airport Noise Cone

n/a

Landscaping Requirements

Landscaping requirements will be established at the time a development plan is submitted for this site.

Mt. Hope Church Road & Millstream Road

- Street Yard – minimum width 10'; 2 canopy trees per 100', 17 shrubs per 100'

Required Landscaping

Parking lot planting yards must include at least one canopy tree for every 12 parking spaces.

Tree Preservation Requirements

Acreage

Requirements

10.02 ac. 10% of lot size to be determined at the time a development plan is submitted for the site.

Transportation

Street Classification: Mt. Hope Church Road – Major Thoroughfare.
Millstream Road – Collector Street.

Site Access: All access(s) must be designed and constructed to the City of Greensboro standards.

Traffic Counts:	Millstream Road ADT = 2,200 (NCDOT, 2011). Mt. Hope Church Road ADT = 2,300 (NCDOT, 2011).
Trip Generation:	24 Hour = 12,492, AM Peak Hour = 719, PM Peak Hour = 631.
Sidewalks:	Sidewalks are a requirement of the Development Ordinance. 5' sidewalk with a 5' grass strip is required along both sides of thoroughfares. 5' sidewalk with a 3' grass strip is required along one side (at a minimum, collectors may require sidewalk on both sides) of all other street types. Sidewalk does not exist along the frontage of this property.
Transit in Vicinity:	No.
Traffic Impact Study: (TIS)	Yes, required per TIS Ordinance. Please see the end of this staff report for the Executive Summary of the TIS.
Street Connectivity:	N/A.
Other:	N/A.

IMPACT ANALYSIS

Land Use Compatibility

The proposed **CD-C-M (Conditional District Commercial- Medium)** zoning, as conditioned, would allow land uses that are compatible with the general character of the area.

Connections 2025 Comprehensive Plan Policies

The Generalized Future Land Use Map designates this location as **Mixed Use Corporate / Business Park**. The requested **CD-C-M (Conditional District Commercial-Medium)** zoning district, as conditioned, is generally consistent with the **Mixed Use Corporate / Business Park** GFLUM designation.

Connections 2025 Written Policies

Land Use, Goal 4.1 - Growth Strategy: Promote sound investment in Greensboro's urban areas, including Center City, commercial and industrial areas, and neighborhoods.

Policy 4C - Promote new patterns and intensities of use to increase economic competitiveness and enhance quality of life in urban areas.

Community Character, Goal 5.2 - Man-Made Environment: Preserve and enhance the character and visual quality of Greensboro's built environment, including historic resources, private developments, and public landscapes.

Policy 5F - Implement and improve design standards governing the appearance of development from public roadways.

Economic Development, Goal 7: Promote a healthy, diversified economy with a strong tax base and opportunities for employment, entrepreneurship and for-profit and non-profit economic development for all segments of the community, including under-served areas such as East Greensboro.

Policy 7C - Ensure that city land use policies and regulations allow for an adequate supply of land to accommodate economic development.

Transportation, Goal 8: Develop and maintain a safe, efficient, and environmentally sound transportation system that provides convenient choices for accessing destinations throughout Greensboro and the Triad, including a range of well-integrated transit, pedestrian, and bicycle linkages.

Policy 8A - Maintain a roadway network that safely and efficiently accommodates vehicular traffic while supporting other community objectives defined in the Comprehensive Plan.

Connections 2025 Map Policies

Mixed Use Corporate / Business Park: This designation is intended for large tracts of undeveloped land near the City's fringe that are appropriate for well planned, larger scale business/employment parks with supporting uses such as retail, hotels, and residential. Primary uses such as office, flex office, technology research and development, light manufacturing, distribution, and assembly should be placed in a campus-like or "corporate park" setting with generous, linked open space to maximize value and to promote visual quality and compatibility with the surrounding area. Pedestrian-friendly features such as buildings placed near the street, sidewalks, and trails leading to nearby uses such as retail and housing should be encouraged.

CONFORMITY WITH OTHER PLANS

City Plans

Consolidated Plan 2010-2014: Plan for a Resilient Community

Principle 1) Provide More Transportation Choices:

Goal A) Promote transportation and development patterns and types that contribute to decreased household transportation costs.

Goal B) Improve access to destinations, especially via alternate modes (public transit, walking, and bicycling); including the critical first and last miles of journeys.

Principle 3) Enhance Economic Competitiveness:

Goal E) Focus on energy efficiency as an economic generator for small business development.

Goal F) Provide opportunities for job training, mentoring, education and job creation.

Principle 6) Value Communities and Neighborhoods:

Goal A) Promote coordinated transportation and land use decisions for broader livability throughout Greensboro.

Goal E) Work at the neighborhood level to reconnect neighborhoods to jobs and services, promote "Desirable Infill Development" and redevelop major corridors to strengthen adjacent neighborhoods.

Principle 7) Recognize The Environment as a Critical Element of Community Sustainability:

Goal A) Promote more efficient land development patterns.

Sustainability Action Plan

Element 1) Transportation and Land Use:

Policy 1) Encourage increased density, a mix of land uses and more integrated links between transportation and land use through changes to Greensboro's Comprehensive Plan, Development Ordinance and other related plans.

Element 2) Green Jobs and Buildings:

Policy 4) Use a combination of code changes, incentives, partnerships and education to

promote green building in Greensboro.

Policy 6) Promote more efficient use of water through education, partnerships and pilot projects.

Element 3) Waste Reduction and Recycling:

Policy 7) Employ a combination of expanded recycling infrastructure, regulations and incentives to increase Greensboro's solid waste diversion and recycling rates.

Element 6) Education and Outreach:

Policy 11) Provide technical support, awards and recognition to individuals and organizations furthering Greensboro's energy and sustainability efforts.

Other Plans

n/a

STAFF ANALYSIS AND RECOMMENDATION

Community Outreach

Applicant is strongly encouraged to discuss this proposed rezoning and development with owners of surrounding properties.

Staff Analysis

This 10.02 acre subject site is currently undeveloped. It adjoins BP (interstate, offices, and vacant property) to the north, east and south. West of the request the zoning transitions to C-M (restaurant with drive through facility) and CD-C-M (convenience store with fuel pumps).

The Generalized Future Land Use map designates this property as Mixed Use Corporate/Business Park. This designation is intended for large tracts of undeveloped land near the City's fringe that are appropriate for well planned, larger scale business/employment parks with supporting uses such as retail, hotels, and residential.

The C-M, Commercial–Medium District is primarily intended to accommodate a wide range of retail, service and office uses. The proposed zoning is consistent with the adjacent developed area and potential tenants could benefit from the site's close proximity and visibility from the interstate. This request could also provide additional services to existing and planned office and business park uses in the area.

Approving this request will address the Comprehensive Plan's Economic Development goal to promote a healthy, diversified economy. The proposed request also supports the Comprehensive Plan's Growth at the Fringe goal to provide a development framework for the fringe that guides sound, sustainable patterns of land use.

This request is consistent with the intent and purpose of the zoning code, the Comprehensive Plan (Connections 2025) and is generally compatible with the existing development and trend in the surrounding area.

Staff Recommendation

Staff recommends **approval** of the requested **CD-C-M** (Conditional District-Commercial-Medium) zoning district.

Additional Information

Carolina Corporate Center, Guilford County, NC – Transportation Impact Analysis
Prepared for CCC Development Partners, LLC

August 11, 2014

Executive Summary

The proposed Carolina Corporate Center development is located on the southeast quadrant of the interchange of I-40 at Mt. Hope Church Road in Guilford County, North Carolina. As currently planned, this development will consist of a convenience market with gasoline pumps, three (3) fast-food restaurants, and a hotel with 125 guest rooms. The site plan shows three (3) access points: one on Mt. Hope Church Road, and two (2) on Millstream Road. Figure 1 of the report shows the site plan.

DAVENPORT was retained to determine the potential traffic impacts of this development and to identify transportation improvements that may be required to accommodate the impacts of both background traffic and new development traffic. The following intersections were included in the study:

- Mt. Hope Church Road at I-40 Westbound Ramps
- Mt. Hope Church Road at I-40 Eastbound Ramps
- Mt. Hope Church Road at Site Access 1
- Mt. Hope Church Road at Millstream Road
- Millstream Road at Site Access 2
- Millstream Road at Site Access 3

The above intersections were analyzed for the following two access scenarios:

- Scenario 1: left-over access (left in, right in, right out) at access point on Mt. Hope Church Road, in addition to two (2) full accesses on Millstream Road
- Scenario 2: right in right out only access at access point on Mt. Hope Church Road, in addition to two (2) full accesses on Millstream Road

The planned build-out year for this development was taken as 2015. A study year of 2016 (build-out plus one year) was used for analysis purposes based on Greensboro Department of Transportation (GDOT) typical standards. The study intersections were analyzed during AM and PM peaks for the following conditions:

- 2014 Existing Conditions
- 2016 Future No Build Conditions
- 2016 Future Build
- 2016 Future Build with Improvements

This Transportation Impact Analysis (TIA) was carried out based on GDOT and NCDOT typical standards. Information regarding the property was provided by the developer, CCC Development Partners, LLC.

Scenario 1 Discussion of Results (Left-over Access)

The following section discusses 2016 Scenario 1 level of service results for each intersection.

Mt. Hope Church Road at I-40 Westbound Ramps

This signalized intersection currently operates at LOS A during AM and PM peaks. In 2016 future no build conditions, LOS A is expected in the AM peak and LOS B in the PM peak. With the addition of proposed site traffic, LOS A is expected in the AM peak and LOS B in the PM peak. The SimTraffic simulation does not indicate any queuing issues. No improvements are recommended at this intersection.

Mt. Hope Church Road at I-40 Eastbound Ramps

This signalized intersection currently operates at LOS B in the AM and PM peaks. In 2016 future no build conditions, LOS B is expected in AM and PM peaks. With the addition of proposed site traffic, the level of service is expected to remain at LOS B.

Currently, a channelized right turn island is in place on the I-40 Eastbound Off-ramp, controlled by a “Yield” sign. However, with the build-out of the site and due to the close proximity of the proposed site access (approximately 300 feet), there is the potential for unsafe weaving and maneuvering of site traffic on Mt. Hope Church Road in order to turn left into the site. We recommend removing the current channelized island on the I-40 Eastbound Off-ramp and placing this right turn movement under signalized control. This will allow site traffic from the I-40 Eastbound Off-ramp to make right turns while the traffic signal displays a green light, thus providing gaps in traffic to help prevent unsafe weave movements of site traffic on Mt. Hope Church Road. This modification will require NCDOT review and approval.

Mt. Hope Church Road at Site Access 1

This intersection currently operates at LOS B in existing AM and PM peaks. In 2016 future no build conditions, LOS B is expected in the AM peak and LOS C in the PM peak. In Scenario 1 build conditions, this intersection was analyzed as a left-over access (left in, right in, right out). Based on the capacity analysis, this intersection is expected to operate at LOS B during AM and PM peaks. The need for auxiliary turn lanes was reviewed based on page 80 of the 2003 NCDOT “Policy On Street and Driveway Access to North Carolina Highways” and based on page 24 of the GDOT Driveway Manual. Based on projected volumes, this intersection will warrant 125 feet of left turn storage and 100 feet of right turn storage entering the site. We recommend the following improvements as illustrated in Exhibit A:

- Provide southbound left turn lane on Mt. Hope Church Road with 220 feet of full lane width and appropriate taper
- Provide northbound right turn lane on Mt. Hope Church Road with 100 feet of full lane width and appropriate taper
- Provide northbound left turn lane into McDonalds access with 200 feet of full lane width and appropriate taper
- Provide channelized westbound right turn exit lane on Site Access 1
- Construct site access according to GDOT and NCDOT standards

Mt. Hope Church Road at Millstream Road

This signalized intersection currently operates at LOS C during the AM peak and LOS B during the PM peak. In 2016 future no build conditions, LOS C is expected in the AM peak and LOS B in the PM peak. With the addition of site traffic, LOS D is expected in the AM peak and LOS B in the PM peak.

The presence of a left-over access at Site Access 1 is expected to absorb a large portion of site traffic making southbound left turns into the site. This will reduce the volume of traffic making southbound left turns at the signalized intersection of Millstream Road at Mt. Hope Church Road.

The following improvements are recommended at this intersection:

- Extend southbound left turn lane on Mt. Hope Church Road to provide 630 feet of full lane width and appropriate taper
- The routine optimization of signal timing by GDOT to accommodate future traffic

Millstream Road at Site Access 2

In future build conditions, this access is expected to operate at LOS A and B in AM and PM peaks, respectively. Based on projected traffic volumes, 100 feet of left turn storage is warranted in this access. We recommend providing an eastbound left turn lane on Millstream Road with 100 feet of storage and appropriate taper.

Millstream Road at Site Access 3

In future build conditions, this access is expected to operate at LOS A in AM and PM peaks. As shown on the site plan, the existing grass median on Millstream Road tapers off near this location. We recommend that the existing median on Millstream Road be modified to GDOT and NCDOT standards.

The recommended improvements for Scenario 1 are illustrated in Figure 9 of the report and in the conceptual plan in Exhibit A.

Exhibit A – Conceptual Plan of Improvements
Scenario 1 Level of Service Summary (Left-over Access)

Table A presents the summary of the level of service analysis for all study intersections.

Table A - Level of Service Summary				
AM Peak	2014 Existing	2016 Future No Build	2016 Scenario 1 Build (Left-over)	2016 Scenario 1 Build with Improvements
I-40 Westbound Ramps at Mt. Hope Church Road	A (6.0)	A (8.8)	A (9.5)	
I-40 Eastbound Ramps at Mt. Hope Church Road	B (11.1)	B (15.4)	B (14.2)	B (14.1)
Mt. Hope Church Road at Site Access 1	B (13.2) EB Approach	B (14.5) EB Approach	B (11.3) WB Right	B (11.3) WB Right
Mt. Hope Church Road at Millstream Road	C (26.6)	C (28.1)	D (39.1)	
Millstream Road at Site Access 2			A (9.9) SB Approach	A (9.9) SB Approach
Millstream Road at Site Access 3			A (9.0) SB Approach	
PM Peak	2014 Existing	2016 Future No Build	2016 Scenario 1 Build (Left-over)	2016 Scenario 1 Build with Improvements
I-40 Westbound Ramps at Mt. Hope Church Road	A (9.9)	B (10.1)	B (11.3)	
I-40 Eastbound Ramps at Mt. Hope Church Road	B (11.3)	B (13.9)	B (13.5)	B (13.9)
Mt. Hope Church Road at Site Access 1	B (13.8) EB Approach	C (16.4) EB Approach	B (11.0) WB Right	B (10.9) WB Right
Mt. Hope Church Road at Millstream Road	B (16.5)	B (15.1)	B (14.5)*	
Millstream Road at Site Access 2			B (10.9) SB Approach	B (10.9) SB Approach
Millstream Road at Site Access 3			A (9.8) SB Approach	
LOS (delay in seconds)				
Note for unsignalized conditions, LOS and delay indicates only minor street approach with longest delay				
*Decrease in overall delay due to addition of mainly right turns				

Scenario 2 Discussion of Results (Right In Right Out Access)

The following section discusses 2016 Scenario 2 level of service results for each intersection.

Mt. Hope Church Road at I-40 Westbound Ramps

This signalized intersection currently operates at LOS A during AM and PM peaks. In 2016 future no build conditions, LOS A is expected in the AM peak and LOS B in the PM peak. With the addition of proposed site traffic, LOS A is expected in the AM peak and LOS B in the PM peak. The SimTraffic simulation does not indicate any queuing issues. No improvements are recommended at this intersection.

Mt. Hope Church Road at I-40 Eastbound Ramps

This signalized intersection currently operates at LOS B in the AM and PM peaks. In 2016 future no build conditions, LOS B is expected in AM and PM peaks. With the addition of proposed site traffic, LOS B is expected in AM and PM peaks. The distance on Mount Hope Church Road between I-40 Eastbound Ramps and Millstream Road (approximately 775 feet) is expected to be adequate for maneuvers into the site. No improvements are recommended at this intersection.

Mt. Hope Church Road at Site Access 1

This intersection currently operates at LOS B in existing AM and PM peaks. In 2016 future no build conditions, LOS B is expected in the AM peak and LOS C in the PM peak. In Scenario 2, this intersection was analyzed as a right in right out access. Based on the capacity analysis, this intersection is expected to operate at LOS B during AM and PM peaks. The need for auxiliary turn lanes was reviewed based on page 80 of the 2003 NCDOT "Policy On Street and Driveway Access to North Carolina Highways" and based on page 24 of the GDOT Driveway Manual. Based on projected volumes, this intersection will warrant 100 feet of right turn storage. We recommend the following improvements:

- Provide controlled access concrete median on Mount Hope Church Road between I-40 Eastbound Ramps and Millstream Road. Traffic seeking to make left turn at driveways on this section of Mount Hope Church Road will need to use an access on Millstream Road.
- Provide northbound right turn lane on Mt. Hope Church Road with full storage length in order to accommodate u-turns and traffic entering the site
- Provide channelized westbound right turn exit lane on Site Access 1

Mt. Hope Church Road at Millstream Road

This signalized intersection currently operates at LOS C during the AM peak and LOS B during the PM peak. In 2016 future no build conditions, LOS C is expected in the AM peak and LOS B in the PM peak. With the addition of Scenario 2 site traffic, LOS D is expected in the AM peak and LOS C in the PM peak.

The following improvements are recommended at this intersection:

- Extend southbound left turn lane on Mt. Hope Church Road to provide 630 feet of full lane width and appropriate taper
- The routine optimization of signal timing by GDOT to accommodate future traffic

Millstream Road at Site Access 2

In future build conditions, this access is expected to operate at LOS B in AM and PM peaks. Based on projected traffic volumes, 125 feet of left turn storage is warranted in this access. We recommend providing an eastbound left turn lane on Millstream Road with 125 feet of storage and appropriate taper.

Millstream Road at Site Access 3

In future build conditions, this access is expected to operate at LOS A in AM and PM peaks. As shown on the site plan, the existing grass median on Millstream Road tapers off near this location. We recommend that the existing median on Millstream Road be modified to GDOT and NCDOT standards.

The recommended improvements for Scenario 2 are illustrated in Figure 13 of the report.
Scenario 2 Level of Service Summary (Right In Right Out Access)

Table B presents the summary of the level of service analysis for all study intersections.

Table B - Level of Service Summary				
AM Peak	2014 Existing	2016 Future No Build	2016 Scenario 2 Build (RIRO)	2016 Scenario 2 Build with Improvements
I-40 Westbound Ramps at Mt. Hope Church Road	A (6.0)	A (8.8)	A (9.5)	
I-40 Eastbound Ramps at Mt. Hope Church Road	B (11.1)	B (15.4)	B (14.2)	
Mt. Hope Church Road at Site Access 1	B (13.2) EB Approach	B (14.5) EB Approach	B (11.9) WB Right	B (11.4) WB Right
Mt. Hope Church Road at Millstream Road	C (26.6)	C (28.1)	D (39.7)	
Millstream Road at Site Access 2			B (10.2) SB Approach	B (10.1) SB Approach
Millstream Road at Site Access 3			A (9.0) SB Approach	
PM Peak	2014 Existing	2016 Future No Build	2016 Scenario 2 Build (RIRO)	2016 Scenario 2 Build with Improvements
I-40 Westbound Ramps at Mt. Hope Church Road	A (9.9)	B (10.1)	B (11.3)	
I-40 Eastbound Ramps at Mt. Hope Church Road	B (11.3)	B (13.9)	B (13.5)	
Mt. Hope Church Road at Site Access 1	B (13.8) EB Approach	C (16.4) EB Approach	B (11.4) WB Right	B (11.1) WB Right
Mt. Hope Church Road at Millstream Road	B (16.5)	B (15.1)	C (20.6)	
Millstream Road at Site Access 2			B (11.2) SB Approach	B (11.2) SB Approach
Millstream Road at Site Access 3			A (9.8) SB Approach	
LOS (delay in seconds)				
Note for unsignalized conditions, LOS and delay indicates only minor street approach with longest delay				

Summary and Conclusion

The proposed Carolina Corporate Center development is located on the southeast quadrant of the interchange of I-40 at Mt. Hope Church Road in Guilford County, North Carolina. As currently planned, this development will consist of a convenience market with gasoline pumps, three (3) fast-food restaurants, and a hotel with 125 guest rooms. The site plan shows three (3) access points: one left-over access (left in, right in, right out) on Mt. Hope Church Road, and two (2) full access points on Millstream Road. Figure 1 shows the site plan. Based on trip generation rates and equations published in Trip Generation (Institute of Transportation Engineers, 9th Edition), this development has a trip generation potential of 490 net trips in the AM peak and 436 net trips in the PM peak.

DAVENPORT was retained to determine the potential traffic impacts of this development and to identify transportation improvements that may be required to accommodate the impacts of both background traffic and new development traffic.

This study analyzed the development of this site under two (2) access scenarios: **Scenario 1** considers left-over access (left in, right in, right out) at the access point on Mt. Hope Church Road. **Scenario 2** considers right in right out only access on Mount Hope Church Road. Based on the results of the traffic analysis, we have identified the improvements that will be necessary for each scenario.

Scenario 1 (Left-over Access)

Figure 9 and the conceptual plan in Exhibit A illustrate the recommended improvements for Scenario 1 based on the capacity analysis. The recommended roadway section on Mount Hope Church Road will provide two (2) through lanes in each direction, a southbound left turn lane terminating at the Millstream Road traffic signal, and an additional left turn lane for left turns into Site Access 1 and the McDonalds access. A concrete median with a break for a left-over access (left in, right in, right out) will be provided at the Site Access 1 and McDonalds access. A northbound right turn lane is recommended entering Site Access 1, as well as a channelized right turn exiting from Site Access 1. Based on projected traffic volumes, an eastbound left turn lane is recommended at Site Access 2 on Millstream Road with 100 feet of storage and appropriate taper. At Site Access 3, it is recommended that the existing median on Millstream Road be modified to GDOT and NCDOT standards.

To mitigate potential weaving/merging issues from the I-40 Eastbound Off-ramp, it is recommended to remove the current channelized island on the I-40 Eastbound Off-ramp and place this right turn movement under signalized control. This will allow site traffic from the I-40 Eastbound Off-ramp to make right turns while the traffic signal displays a green light, thus providing gaps in traffic to help prevent unsafe weave movements on Mt. Hope Church Road.

Scenario 2 (Right In Right Out Access)

Recommendations for Scenario 2 (right in right out access) are shown in Figure 13. The recommendations for Scenario 2 are the same as Scenario 1 with the following exceptions: A controlled access concrete median would be provided on the center of Mount Hope Church Road along the frontage of the site. It is recommended to provide full storage length on the northbound right turn lane on Mount Hope Church Road at Site Access 1 in order to accommodate u-turns and traffic entering the site. No improvements are recommended at the intersection of I-40 Eastbound Ramps and Mount Hope Church Road. The distance on Mount Hope Church Road between I-40 Eastbound Ramps and Millstream Road (approximately 775 feet) is expected to be adequate for maneuvers into the site.

Conclusion

Table C on the following page summarizes the recommended improvements. In conclusion, this study has reviewed the impacts of both background traffic and this development traffic, and has determined that with the recommended improvements in place, there will be adequate capacity to accommodate future traffic. Please note that all accesses to the site are required to be constructed to NCDOT and GDOT standards.

Table C – Recommended Improvements		
Intersection	Scenario 1 (Left-over Access)	Scenario 2 (Right in Right Out Access)
I-40 Westbound Ramps at Mt. Hope Church Road	No improvements recommended	No improvements recommended
I-40 Eastbound Ramps at Mt. Hope Church Road	<ul style="list-style-type: none"> Remove the current channelized island on the I-40 Eastbound Off-ramp and place this right turn movement under signalized control 	No improvements recommended
Mt. Hope Church Road at Site Access 1	<ul style="list-style-type: none"> Provide southbound left turn lane on Mt. Hope Church Road with 220 feet of full lane width and appropriate taper Provide northbound right turn lane on Mt. Hope Church Road with 100 feet of full lane width and appropriate taper Provide northbound left turn lane into McDonalds access with 200 feet of full lane width and appropriate taper Provide channelized westbound right turn exit lane on Site Access 1 	<ul style="list-style-type: none"> Provide controlled access concrete median on Mount Hope Church Road between I-40 Eastbound Ramps and Millstream Road. Traffic seeking to make left turn at driveways on this section of Mount Hope Church Road will need to use an access on Millstream Road. Provide northbound right turn lane on Mt. Hope Church Road with full storage length in order to accommodate u-turns and traffic entering the site Provide channelized westbound right turn exit lane on Site Access 1
Mt. Hope Church Road at Millstream Road	<ul style="list-style-type: none"> Extend southbound left turn lane on Mt. Hope Church Road to provide 630 feet of full lane width and appropriate taper. The routine optimization of signal timing by GDOT to accommodate future traffic is recommended. 	<ul style="list-style-type: none"> Extend southbound left turn lane on Mt. Hope Church Road to provide 630 feet of full lane width and appropriate taper. The routine optimization of signal timing by GDOT to accommodate future traffic is recommended.
Millstream Road at Site Access 2	<ul style="list-style-type: none"> Provide an eastbound left turn lane on Millstream Road with 100 feet of full lane width and appropriate taper. 	<ul style="list-style-type: none"> Provide an eastbound left turn lane on Millstream Road with 125 feet of full lane width and appropriate taper.
Millstream Road at Site Access 3	<ul style="list-style-type: none"> Modify existing median on Millstream Road to GDOT and NCDOT standards. 	<ul style="list-style-type: none"> Modify existing median on Millstream Road to GDOT and NCDOT standards.