PHILIP
POST
&
ASSOCIATES

6-3-2008

June 2, 2008

The Catholic Community of St Thomas More
MASTER LAND USE MODIFICATION
CHAPEL HILL, NORTH CAROLINA

MASTER LAND USE PLAN MODIFICATION
STATEMENT OF JUSTIFICATION

The Catholic Community of St. Thomas More respectfully request modification to the approved Master Land Use Plan filed February 26, 1997.

The requested items of change include:

1. An increase in the proposed floor area from 111,210 sq. ft. to 137,405 sq. ft.
2. An increase in the number of parking spaces. 250 spaces were approved on the 1997 Master Land Use Plan. In 2002, the Town Manager administratively approved an increase of 26 spaces to the current level of 276 spaces. The church requests an increase from 276 to 422 on-site spaces.
3. Increase the number of buildings from 5 to 8 buildings.
4. Relocation of the proposed athletic field.

REQUIRED FINDINGS

FINDING #1
"That the use or development is located, designed and proposed to be operated so as to maintain or promote the public health, safety and general welfare".

The MLUP originally anticipated 111,210 square feet of total floor area. This modification will add an additional 26,195 square feet of floor area. The allowable floor area on this site is 283,607SF. The proposed 26,195SF increase is less than 10% of the allowable square footage and the building area as a percentage of the allowable square footage would increase from 39.2% to 48.4%. In sum, the building square footage will continue to be well below the allowable limit. We also note that the proposed square footage will not result in capacity increases at either the worship facility or the school. Instead, the building square footage increase will allow the essential mission of the church and the school to be carried out more effectively.

With regard to the relocated athletic field, physical education and physical fitness has always been an essential part of the elementary school and middle school curriculum at St. Thomas More School. The relocated field will allow safe, vigorous physical education to occur on regulation-sized, multi-purpose fields. The applicant believes this will enhance the physical and mental well-being of St. Thomas More students, and is in the best interest of our community.

401 Providence Road, Suite 200 Chapel Hill, NC 27514 (919) 929-1173 (919) 493-2600 FAX (919) 493-6548

The number of on-site automobile parking spaces is requested to be increased in order to provide sufficient on-site parking to, hopefully, replace the need for Sunday parking on Carmichael Street and to best accommodate the parking needs of the two land uses: a "place of worship" and a "school, elementary". 141 bicycle parking spaces will be provided as well.

We believe these three modest changes in the MLUP will allow ST. Thomas More to better carry out its religious, school and community missions, and will have no adverse impact on public health, safety or welfare in our community.

FINDING #2

"That the use or development is located, designed and proposed to be operated so as to maintain or enhance the value of contiguous property, or the use or development is a public necessity."

There will be no change in the current use of the property. The proposed design is to maintain the existing size of the worship area and the existing school population. The proposed facilities will simply augment current uses and will not result in new traffic impacts. The proposed facilities will house support functions such as a Parish Center, a Chapel, a renovated gymnasium, an art and music building and a relocated caring and sharing area. The character of the surrounding neighborhoods will be maintained or enhanced by the proposed improvements to the church property.

The requested modifications to the MLUP will maintain/enhance the value of contiguous property.

FINDING #3

"That the use or development conforms with the general plans for the physical development of the Town as embodied in this Chapter and in the Comprehensive Plan".

The applicant believes that the proposed Special Use Permit and the requested modification to the MLUP are in accordance with the Town's Comprehensive Plan. The applicant also believes that this proposal complies with LUMO and that the proposed religious, educational and recreational improvements will promote the general public health and welfare of our community and will have no adverse impacts on public safety.

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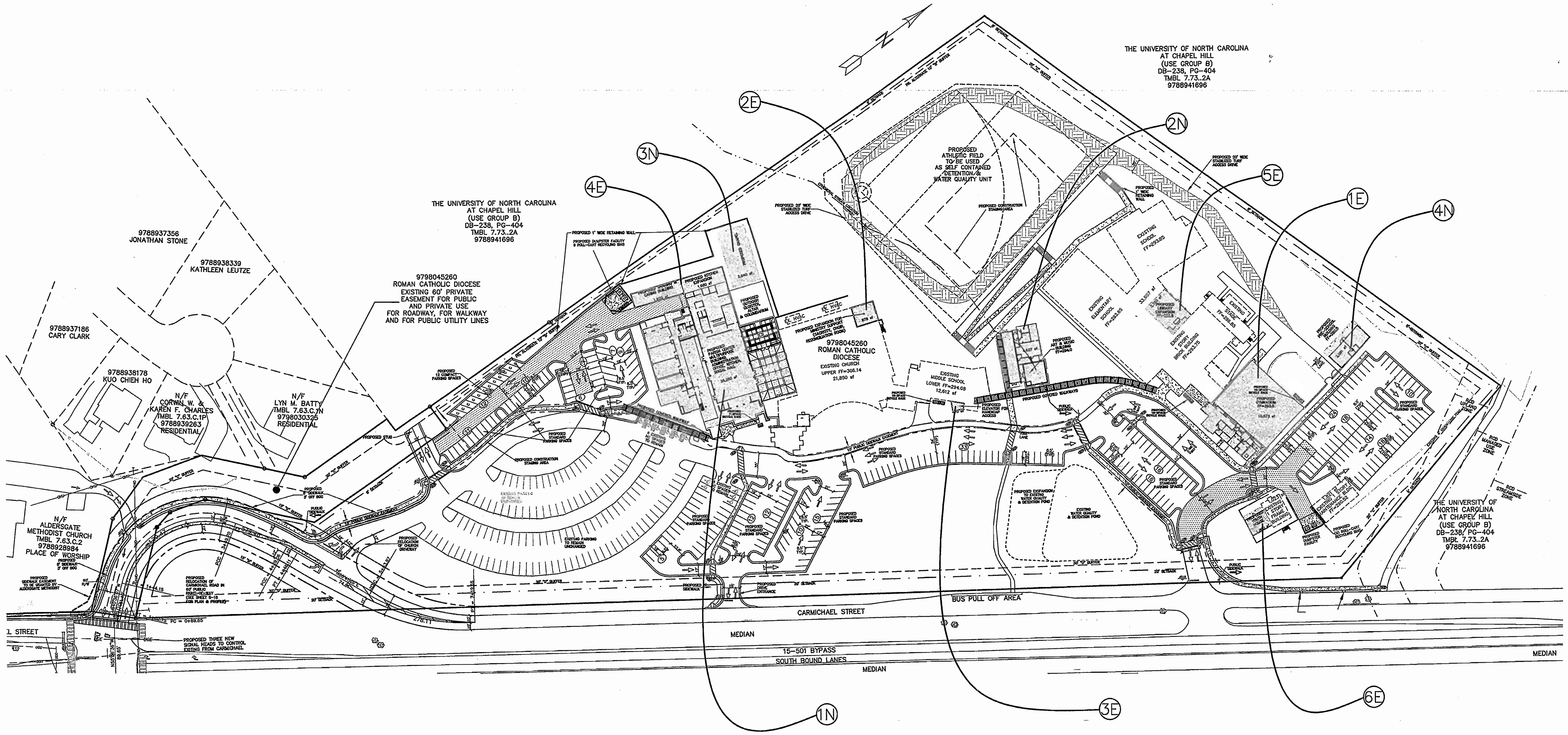

LEGEND

- PROPOSED STRIPED CROSSWALK
- PROPOSED CONCRETE SIDEWALK
- PROPOSED VEHICLE FLOW DIRECTION
- PROPOSED HEAVY DUTY PAVING
- PROPOSED 20' WIDE STABILIZED TURF ACCESS DRIVE
- (66) PARKING SPACE COUNTS
- PROPOSED CONCRETE CURB & GUTTER
- PROPOSED WHEELCHAIR RAMP
- PROPOSED COVERED WALKWAYS
- PROPOSED 7' HIGH DUMPSTER SCREEN & GATE
- PROPOSED HANDICAP PARKING SIGN
- DNE — DO NOT ENTER SIGN
- STOP — STOP SIGN
- EXISTING BUILDING FOOTPRINT
- PROPOSED NEW BUILDING/EXPANSION

NEW BUILDINGS
1N = PARISH CENTER PHASE 1
2N = ARTS/MUSIC BLDG PHASE 1
3N = CHAPEL PHASE 2
4N = PRESCHOOL PHASE 2

EXPANSIONS
1E = GYM PHASE 1
2E = MINISTRY PHASE 1
3E = ELEVATOR PHASE 1
4E = KITCHEN/CARE and SHARE PHASE 2
5E = LIBRARY PHASE 2
6E = YOUTH HOUSE PHASE 2

ATHLETIC FIELD PHASE 1
PARKING LOT ADDITIONS/IMPROVEMENTS PHASE 1
CARMICHAEL STREET RECONFIGURATION PHASE 1

NOTES:
1. ALL WATER AND SEWER MAINS TO BE INSTALLED DURING PHASE 1 CONSTRUCTION.
2. PHASE 2 UTILITY SERVICES TO BE INSTALLED DURING CONSTRUCTION OF PHASE 2.
3. ALL PUBLIC IMPROVEMENTS SHALL BE CONSTRUCTED PRIOR TO ISSUANCE OF A CERTIFICATE OF OCCUPANCY FOR PHASE I DEVELOPMENT.
4. THE APPLICANT SHALL PROVIDE A NEW TRAFFIC IMPACT ASSESSMENT, OR EXEMPTION, IN ORDER TO CONTINUE PHASED DEVELOPMENT, UPON EXPIRATION OF THE ORIGINAL SPECIAL USE PERMIT CONSTRUCTION COMPLETION DEADLINE.

SCALE IN FEET
60 30 0 60 120

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PLANNERS
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NORTH CAROLINA PROFESSIONAL SEAL 7635 ENGINEER PHILIP M. POST
6/10/2008

MASTER LAND USE PLAN

MASTER LAND USE PLAN
ST. THOMAS MORE CATHOLIC COMMUNITY
CHAPEL HILL ORANGE COUNTY, N.C.

SCALE 1"=60'
DRAWN BY JRW
CHECKED BY PLM
DATE 6/06/2008
PROJECT NO. 540503
DRAWING NO. A473SP06

REVISIONS

SHEET M-1
OF 1

Prepared by: Beverly Kawalec Chapel Hill Planning Department

Return to: Philip Post and Associates, Inc 401 Dawson Rd #300 Chapel Hill NC 27514

TOWN OF CHAPEL HILL

BOOK 1556 PAGE 205

306 NORTH COLUMBIA STREET
CHAPEL HILL, NORTH CAROLINA 27516
Telephone (919) 968-2700

ORANGE COUNTY NORTH CAROLINA

MASTER LAND USE PLAN

KNOW ALL MEN BY THESE PRESENTS, that the undersigned property owner(s) the Most Reverend Joseph Gossman, Bishop of the Roman Catholic Diocese of Raleigh, NC having applied to the Town of Chapel Hill for a Master Land Use Plan for the use and development of the property hereinafter described, the same was granted by the Town of Chapel Hill on December 4, 1996, the terms of which are as follows:

NAME OF PROJECT: St. Thomas More Church and School Master Land Use Plan

NAME OF DEVELOPER: St. Thomas More Church

DESCRIPTION OF PREMISE

LOCATION: 920 Carmichael Drive

TAX MAP REFERENCE : Chapel Hill Township Tax Map 73, Lot 5 9798-04-5260

DESCRIPTION OF DEVELOPMENT

GROSS LAND AREA: 936,429 sq. ft.

OPEN SPACE: 874,561 sq. ft.

NUMBER OF BUILDINGS: 5

LIVABILITY SPACE: 745,057 sq. ft.

TOTAL FLOOR AREA: 111,210 sq. ft.

NUMBER OF PARKING SPACES: 250

SPECIAL TERMS AND CONDITIONS

Development according to the Site Plan dated February 23, 1996, on file in the Chapel Hill Planning Department, and according to the special terms and conditions set forth below:

Stipulations Specific to the Development

1. Land Use Intensity: That this Master Land Use Plan approves a total Floor Area of 111,210 square feet; Open Space of 874,561 square feet; and Livability Space of 745,057 square feet.

2. Southernmost Driveway Access on to Public Right-of-Way: That the southernmost driveway access the site from Carmichael Street, as proposed.

Stipulations Specific to Permanent Retention Basin Installation

3. The wet retention pond shall meet or exceed the North Carolina Division of Environmental Management requirements and shall be designed so as to be approved by the Division of Environmental Management and the Town Manager.

4. The size, accessibility, location and design of the pond shall be approved by the Town Manager.

5. The property owner shall post a performance bond or other surety instrument satisfactory to the Town Manger, in an amount approved by the Town Manager to assure maintenance, repair, or reconstruction necessary for adequate performance of the engineered stormwater controls.

FILED
26 FEB 1997, at 11:25:11am
Book 1556, Page 205 - 208
Betty June Hayes,
Register of Deeds,
Orange County, N. C.

6. Maintenance of the pond shall be the responsibility of the applicant. A maintenance plan shall be provided for the pond, to be approved by the Town Manager. The plan shall address inspection, maintenance intervals, type of equipment required, access to the pond and related matters.

7. The minimum permanent pool depth shall be at least three feet in addition to enough volume to store the accumulated sediment between clean out periods.

8. All sediment deposited in the pond during construction activity must be removed before "normal" pond operation begins.

9. Emergency drains shall be installed in the pond to allow access for repairs and sediment removal as necessary.

10. Anti-seepage collars shall be used on any structures penetrating dams or water retaining embankments.

11. Public storm drainage systems or other utilities shall not be located within a pond or dam structure.

12. No pond shall be created within the required perimeter landscaped buffer.

13. The pond shall be located and designed such that damage to existing large trees can be minimized.

Required Improvements

14. Parking Lot Paved to Town Standards: That a decision regarding paving the parking lot to Town standards shall be evaluated as part of a Phase II Special Use Permit application.

Stipulations Related to State and Federal Governments Approvals

15. Approval of Encroachment Agreements: That any required State permits or encroachment agreements be approved and copies of the approved permits and agreements be submitted to the Town of Chapel Hill prior to the issuance of a Zoning Compliance Permit.

Stipulations Related to Landscape Elements

16. Landscape Plan Approval: That a detailed Landscape Plan, Landscape Maintenance Plan, and Lighting Plan be approved by the Appearance Commission prior to issuance of a Zoning Compliance Permit.

17. Shade Trees Provided: That shade trees be provided in small groupings along the eastern side of Carmichael Street, subject to approval from the North Carolina Department of Transportation.

18. Landscape Protection Plan: That a Landscape Protection Plan be approved by the Town Manager prior to issuance of a Zoning Compliance Permit.

Stipulations Related to Building Elevations

19. Building Elevation Approval: That detailed building elevations for the buildings be approved by the Appearance Commission prior to issuance of a Zoning Compliance Permit.

20. Fire Flow: That a fire flow report prepared by a registered professional engineer, showing that flows meet the minimum requirements of the Design Manual, be approved by the Town Manager prior to issuance of a Zoning Compliance Permit.

21. Utility/Lighting Plan Approval: That the final utility/lighting plan be approved by Orange Water and Sewer Authority, Duke Power Company, Public Service Company, Southern Bell, applicable cable supplier, and the Town Manager before issuance of a Zoning Compliance Permit.

Miscellaneous Stipulations

22. Solid Waste Management Plan: That a detailed solid waste management plan, including positioning of dumpster pad and including a recycling plan and a plan for managing and minimizing construction debris, be approved by the Town Manager prior to the issuance of a Zoning Compliance Permit.

23. Dumpster Pad Relocated: That the dumpster pad shall be relocated so as to eliminate the need for a long backing movement of the waste collection vehicles, subject to the Town Manager's approval prior to the issuance of a Zoning Compliance Permit.

24. Transportation Management Plan: That a Transportation Management Plan be approved by the Town Manager prior to issuance of a Zoning Compliance Permit.

25. Detailed Plans: That final detailed site plan, grading plan, utility/lighting plans, stormwater management plan (with hydraulic calculations), which shows the method(s) of conveying the storm water around the building site, and a landscape plan and landscape management plan be approved by the Town Manager before issuance of a Zoning Compliance Permit, and that such plans conform to the plans approved by this application and demonstrate compliance with all applicable conditions and the design standards of the Development Ordinance and the Design Manual.

26. No Clearing in the Landscape Buffer: That there be no clearing in the landscape buffer for the Stormwater Management Pond.

27. Erosion Control: That a soil erosion and sedimentation control plan be approved by the Orange County Erosion Control Officer and the Town Manager before issuance of a Zoning Compliance Permit.

28. Silt Control: That the applicant take appropriate measures to prevent and remove the deposit of wet or dry silt on adjacent paved roadways.

29. Continued Validity: That continued validity and effectiveness of this approval is expressly conditioned on the continued compliance with the plans and conditions listed above.

30. Non-severability: If any of the above conditions is held to be invalid, approval in its entirety shall be void.

****

ST. THOMAS MORE CAMPUS EXPANSION

TRAFFIC IMPACT STUDY

EXECUTIVE SUMMARY

Prepared for:

The Town of Chapel Hill
Engineering Department

Prepared by:

HNTB North Carolina, PC

343 East Six Forks Road
Suite 200
Raleigh, NC 27609

November, 2007

HNTB

ST. THOMAS MORE CAMPUS EXPANSION

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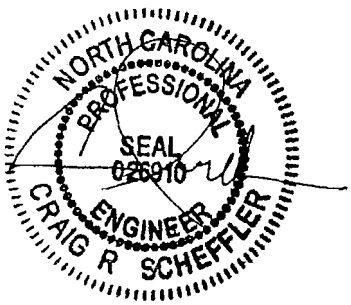


11-2-07

EXECUTIVE SUMMARY

Project Overview

A redevelopment of the existing Saint Thomas More Catholic Church and School campus, located along U.S.15-501 (Fordham Boulevard) between Old Mason Farm Road and Raleigh Road, is being proposed for construction in Chapel Hill. The redevelopment will reorganize existing campus space, demolish some existing facilities and add new space to better accommodate existing and future parish needs. The redevelopment will also reorganize internal roadways on the campus, add parking spaces, and provide a new access roadway to the church aligning with Old Mason Farm Road just north of U.S. 15-501. **Figure ES-1** shows the general location of the site. The initial phase of the project is anticipated to be complete by 2010. This report analyzes the Phase I build-out scenario for the year 2011 (one year after Phase I buildout), the no-build scenario for 2011, as well as 2007 existing year traffic conditions. The church also has additional redevelopment plans for a long-range phase (2020).

The proposed redevelopment plans show a realignment of Carmichael Street to the south of the site to provide a direct, full movement access connection to U.S. 15-501 directly opposite of Old Mason Farm Road. Most site-related traffic will use U.S. 15-501 for access to locations external to the study area. **Figure ES-2** displays the preliminary site plans for the proposed St. Thomas More Campus Expansion and nearby roadways.

The new land uses proposed for the site include a 35,000 square foot multi-purpose building, a 3,000 square foot worship center, and 14,900 square feet of expansion to the existing school. Some existing facilities that are either outdated or oversized will be demolished. An estimated 150 additional parking spaces will be provided through the expansion of existing surface lots.

Existing Conditions

Study Area

The study area contains sections of N.C. 54 (Raleigh Road) and U.S. 15-501 and their interchange to the north of the existing site. Major intersections of U.S. 15-501 with Manning Drive and Old Mason Farm Road are studied. Some minor intersections directly adjacent to the St. Thomas More site are also studied along Carmichael Street. Site traffic is expected to use existing entrance and exit driveways along Carmichael Street to ultimately use U.S. 15-501 for access external to the study area. U.S. 15-501 is a major arterial running north-south through the study area, connecting areas of south Chapel Hill/UNC Hospitals to University Mall/Eastgate and the I-40 corridor. N.C. 54 is a major arterial connecting the UNC Campus area with the eastern Chapel Hill, Interstate 40, and Durham. The remaining study area streets are either minor arterials, collector streets or local roadways providing access to residential and commercial developments or the UNC Campus in the study area.

This report analyzes and presents the transportation impacts that the St. Thomas More

Campus Expansion project will have on the following intersections along U.S. 15-501 in the project study area:

- U.S. 15-501 and Manning Drive
- U.S. 15-501 and Old Mason Farm Road
- U.S. 15-501 Southbound and Existing Church Driveway Access Break
- U.S. 15-501 Northbound Loop Off Ramp and N.C. 54 (Raleigh Road) Eastbound
- U.S. 15-501 Northbound Off Ramp and N.C. 54 Westbound
- N.C. 54 Westbound Loop Ramp and U.S. 15-501 Southbound
- N.C. 54 Eastbound Ramp and U.S. 15-501 Southbound

The study area also includes the following intersections located adjacent to the proposed St. Thomas More Campus Expansion site:

- Carmichael Street and Old Mason Farm Road / Aldersgate Church Driveway
- Carmichael Street and Existing Church Drive/Access Break Connection

Site Traffic Generation

With the addition of new peak hour trips during the AM, noon, PM, and Sunday AM peak hours, there are potential site traffic impacts to the study area intersections. **Table ES-1** shows the site trip generation details, with generation rates taken directly from existing data for peak period trip generation to and from all existing site driveways. Standard trip generation methods from the *ITE Trip Generation Manual, Volume 7* would not account for the types of additional development being proposed for both the church and school property. Additional trips were "generated" by applying growth factors to bring the school to its ultimate capacity of 470 students by 2011 and by growing existing traffic data by a 2.7 percent per year growth factor (that represents current parish membership growth).

Trip reductions for "pass-by" type tripmaking, internal capture, and alternative transportation (transit/carpooling/pedestrian/bicycles) was not accounted for due to the availability of existing traffic generation data from the existing church and school, which would account for all of these factors. No significant increase in any trip reduction factors is expected by the 2011 analysis year.

Table ES-1
Vehicle Trip Generation Summary – St. Thomas More Campus Expansion

Time Period	Existing Trips		Estimated Growth Ratio	2011 Trips		2011 New Trips		
	In	Out		In	Out	In	Out	Total
AM Peak	299	207	1.083	324	224	25	17	42
Noon Peak	156	212	1.083	169	230	13	18	31
PM Peak	68	67	1.108	75	74	7	7	14
Sunday Peak	212	393	1.108	235	435	23	42	65

Background Traffic

There are several developments, either approved by the Town of Chapel Hill, or currently under construction in the study area that could generate additional background traffic in the study area by the 2011 analysis year (above and beyond what would be considered ambient area-wide traffic growth). Per information from the Town, these developments are listed below:

- University of North Carolina at Chapel Hill Development Plan Modification No.3
- 54 East (formerly known as University Village)
- North Carolina Botanical Garden Expansion
- Family House at UNC Hospitals
- Woodmont Development
- Aydan Court Condominiums

The review of previously submitted traffic impact studies and/or TIA exemptions for these developments indicates that the North Carolina Botanical Garden Expansion and Family House at UNC Hospitals, though proximal to the St. Thomas More site, would not generate significant peak hour traffic beyond what would be considered "ambient" growth in the study area by 2011. The Woodmont Development (with Phase I complete) and the Aydan Court Condominiums are located a significant distance (approximately 1.5 miles) from the St. Thomas More site, and a review of their site traffic assignment details indicates that relatively few site trips from these developments will impact the study area and could be considered part of the ambient traffic growth.

The remaining two potential background traffic generators, the UNC 2010 Campus Development Plan and 54 East were considered to be significant background traffic generators and their peak hour site traffic assignment data will be used for the 2011 design year analyses for this study.

An ambient area-wide traffic growth percentage of two percent per year was applied to existing traffic volumes based on information from the NCDOT Traffic Surveys Unit and the Town of Chapel Hill Planning Department.

Impact Analysis

Peak Hour Intersection Level of Service

The 2007 Existing Conditions analysis shows that the major signalized intersections – U.S. 15-501 with Old Mason Farm Road and Manning Drive – operate over capacity in at least one analyzed peak hour. These intersections will continue to experience problems in the 2011 analyses, with or without site traffic impacts. Additionally, background traffic growth (ambient + approved traffic generators) will cause the signal controlled intersection of U.S. 15-501 southbound and N.C. 54 westbound ramp to drop to a LOS E in the AM and PM peak hours. Several stop-controlled critical intersection delays also increase to an unacceptable level. Site traffic impacts will cause minor increases in delays during all peak periods, but some delays and intersection operations actually improve due to the proposed access improvement to Carmichael Street near the U.S. 15-501/Old Mason Farm Road intersection. A summary of the traffic operations for each intersection, related to vehicular delays (intersection average as a whole if signalized, critical movement if stop-controlled) and the corresponding Level-of-Service (LOS) is shown in **Table ES-2** below.

Table ES-2 also shows the effects of a mitigation analysis that includes a major capacity upgrade to the U.S. 15-501 corridor in the project study area. Additional through lanes on U.S. 15-501 were studied to assess effectiveness in providing adequate throughput between Manning Drive and the N.C. 54 interchange since no minor signal timing or auxiliary lane improvements could have enough impact to make a significant reduction in some of the projected peak hour delays. Signal timings were adjusted and optimized for all of the 2011 No-Build and Build Scenarios.

Table ES-2. LOS and Delay Summary

Intersections	Time Period	2007 Existing		2011 No-Build		2011 Build		2011 Mitigated	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
Manning Drive and U.S. 15-501	AM	27.6	C	***55.4***	***E***	***56.9***	***E***	34.5	C
	NOON	51.7	D	***64.9***	***E***	***65.5***	***E***	51.5	D
	PM	***164.6***	***F***	***227.5***	***F***	***228.0***	***F***	***176.8***	***F***
	SUN	12.7	B	12.3	B	12.4	B	11.2	B
Old Mason Farm Road and U.S. 15-501	AM	***61.0***	***E***	***82.1***	***F***	***72.3***	***E***	22.7	C
	NOON	20.4	C	27.9	C	26.9	C	23.0	C
	PM	***94.5***	***F***	***89.4***	***F***	***89.1***	***F***	24.6	C
	SUN	47.8	D	47.4	D	43.7	D	32.1	C
School Access Break and U.S. 15-501 Southbound	AM	37.5	E	***92.0***	***F***	***92.0***	***F***	N/A	N/A
	NOON	19.4	C	25.7	D	27.9	D	N/A	N/A
	PM	22.6	C	28.5	D	28.5	D	N/A	N/A
	SUN	15.1	C	18.4	C	18.4	C	N/A	N/A
Raleigh Rd Eastbound Ramp and U.S. 15-501 Southbound	AM	12.0	B	13.1	B	13.4	B	N/A	N/A
	NOON	10.8	B	10.6	B	14.9	B	N/A	N/A
	PM	11.7	B	12.8	B	12.8	B	N/A	N/A
	SUN	12.2	B	12.0	B	12.0	B	N/A	N/A
U.S. 15-501 Northbound Ramp and N.C. 54 Eastbound	AM	36.1*	E*	42.0*	E*	42.1*	E*	N/A	N/A
	NOON	23.7*	C*	29.2*	D*	29.3*	D*	N/A	N/A
	PM	37.7*	E*	***45.2****	***F****	***45.3****	***F****	N/A	N/A
	SUN	15.0*	B*	18.4*	C*	18.6*	C*	N/A	N/A
Raleigh Rd Westbound Ramp and U.S. 15-501 Southbound	AM	34.5	C	***65.3***	***E***	***67.1***	***E***	N/A	N/A
	NOON	14.9	B	22.1	C	22.2	C	N/A	N/A
	PM	31.7	C	***59.5***	***E***	***59.9***	***E***	N/A	N/A
	SUN	8.6	A	12.4	B	12.5	B	N/A	N/A
U.S. 15-501 Northbound Off-Ramp and N.C. 54 Westbound	AM	16.5	C	21.2	C	21.3	C	N/A	N/A
	NOON	12.6	B	14.9	B	10.7	B	N/A	N/A
	PM	13.3	B	15.6	C	15.6	C	N/A	N/A
	SUN	11.0	B	12.0	B	12.0	B	N/A	N/A
Old Mason Farm Road and Carmichael Street	AM	18.2	C	21.2	C	14.7	B	N/A	N/A
	NOON	12.9	B	10.5	B	12.0	B	N/A	N/A
	PM	12.1	B	12.6	B	10.4	B	N/A	N/A
	SUN	49.4	E	***81.8***	***F***	16.9	C	N/A	N/A
School Driveway and Carmichael Street	AM	24.1	C	29.1	D	26.5	D	N/A	N/A
	NOON	9.2	A	10.2	B	15.1	C	N/A	N/A
	PM	8.3	A	12.4	B	12.4	B	N/A	N/A
	SUN	10.5	B	10.8	B	11.7	B	N/A	N/A

N/A => Not Applicable, i.e. movement is non-existent or no improvements made
* - HCM Multi-lane Highway Methodology used to produce LOS and Density

Access Analysis

Vehicular site access is currently accommodated via two full movement driveways along Carmichael Street. The northern driveway serves school-related traffic and the southern driveway church-related traffic. The northern driveway is adjacent to a right-turn in/right-turn out access break along U.S. 15-501. The southern driveway is located a short distance from the Carmichael Street/Old Mason Farm Road stop-controlled intersection.

Modifications to this access are proposed on the preliminary site plan and are design to enhance both internal parking lot traffic circulation and external intersection traffic operations. The site plan proposes to realign Carmichael Street to directly connect to the Old Mason Farm Road/Carmichael Street intersection in a manner which existing northbound Carmichael Street would form a "T" intersection with the new realigned roadway and existing Old Mason Farm Road. The realignment would still allow for a connection upstream for the Aldersgate Methodist Church, which is an existing one-way gravel driveway directly connecting to Old Mason Farm Road. The proposed improvements also include a new driveway connection in-between the existing campus driveways along Carmichael Street (see **Figure ES-2** for details).

At the U.S. 15-501 intersection with Old Mason Farm Road, the proposed realignment would have an exclusive left-turn lane and a shared through/right-turn lane. Notation on the site plan indicates the possibility of adjusting signal phasing at this intersection to serve both the realigned southbound Carmichael Street movements and the northbound Carmichael Street movements separately. Though potentially possible, this non-standard configuration was not analyzed in this study. Instead, it was assumed that the "T" intersection would have stop-control northbound for those movements and the newly realigned roadway would have a stop-bar upstream of the "T" intersection and would be actuated for the current split phase signal operation scheme at the signalized intersection of U.S. 15-501 and Old Mason Farm Road. No access changes are proposed for the existing access break with U.S. 15-501 and that corresponding site driveway intersection with nearby Carmichael Street.

Driveway throat lengths as shown on the proposed site redevelopment plans are adequate for the driveway access onto the realigned Carmichael Street. Driveway distances from the signalized intersections at U.S. 15-501 and Old Mason Farm Road are acceptable, based on recommendations of 100 foot minimum corner clearance as set forth in the 2003 *NCDOT Policy on Street and Driveway Access to North Carolina Highways* and the 2003 *Town of Chapel Hill Design Manual*. The Town Design Manual recommends 250 foot minimum spacing between an intersection and driveway along an arterial, which is adhered to in existing conditions and in the proposed site plan.

Internal circulation for site-related traffic is improved from existing conditions, as shown on the site plan. Additional parking spaces and an access connection to Carmichael Street will serve to distribute traffic more efficiently among the three driveways. Circulation patterns to maintain a separation between church and school-related functions currently exists and will be retained as shown in the proposed site plan.

Access for pedestrians and bicyclists is currently limited, as no sidewalk is present in the site vicinity and the U.S. 15-501 corridor is difficult for bicycling due to high traffic volumes in the immediate area. As previously discussed, there is good sidewalk connectivity, at least in the local study area along N.C 54/Raleigh Road. Bicycle access is possible to and from the site, although no specific bicycle amenities exist directly on N.C. 54 or on US. 15-501 adjacent to the site

Sight Distance Analysis
In general, sight distance issues entering and exiting the existing and proposed site driveways would be minimal. Sight distance along Carmichael Street and U.S. 15-501 is adequate, with only slight horizontal and/or vertical curvature present on these roadways in the study area. Sight distance across the U.S. 15-501 roadway between the Old Mason Farm Road approaches is limited by vertical curvature (the 15-501 roadway is elevated above the approaches) and this would serve to keep the approaches under split phase traffic signal control. No additional limitations or problems due to the site development or site traffic impacts are expected at these intersections.

Intersection Crash Analysis
Data from the NCDOT Traffic Safety Unit was provided for the period 5/1/2004 to 4/30/2007 for the study area intersections along U.S. 15-501 from Manning Drive to the N.C. 54 interchange. 90 total crashes were recorded along U.S. 15-501 in the study area between mid 2004 and mid 2007. There were 16 crashes in the vicinity of the U.S. 15-501 and N.C. 54 interchange along U.S. 15-501, 31 crashes near the Old Mason Farm Road intersection, and 15 crashes near the Manning Drive intersection. 72 of the 90 incidents were rear-end crashes, likely due to congested conditions along U.S. 15-501. Another five crashes were related to vehicle side-swipes, also suggesting that vehicles were trying to change lanes and weave in traffic flow during congested conditions. **Table 8** presents a comparison between study area crash rates and the latest North Carolina statewide rates for the period 2003-2005 (compiled by NCDOT Traffic Safety Unit).

Table 8. Study Area Crash Rate Comparison

Statistic	Crashes Per 100 Million Vehicle Miles	North Carolina Statewide Average Urban US Routes with 4 Lanes Divided with No Control of Access
Total Crash Rate	185.24	413.81
Fatal Crash Rate	2.06	1.13
Non Fatal Crash Rate	55.57	128.66
Night Crash Rate	39.11	86.27
Wet Crash Rate	26.76	75.83

Overall, the number and severity of crashes at study area intersections are average to above average compared to other similar intersections in the Town of Chapel Hill. The data in **Table 8** shows that the crash rate is actually lower than statewide averages for similar U.S. Highway urban facilities. Most of the study area crashes are rear-end, sideswipe, and angle collisions due to the high volume of traffic in the area, and the

delays and congested conditions that result from the traffic. There was one fatality during the three year period - a pedestrian was killed by a vehicle along northbound U.S. 15-501 near Manning Drive in 2006.

Other Transportation-Related Analyses

Other transportation-related analyses relevant to the 2001 Town of Chapel Hill Guidelines for the preparation of Traffic Impact Studies were completed as appropriate. The following topics listed in **Table ES-4** below are germane to the scope of this study.

Table ES-4. Other Transportation-Related Analyses

Analysis	Comment
Long Range Planning-Level Capacity Analysis	Long Range Daily Capacity and Level of Service analyses were conducted for this study, due to the small overall daily traffic impact of the proposed redevelopment. It should be noted that previous traffic impact studies in the study area noted Long-Range capacity issues for the U.S. 15-501 and N.C. 54 corridors, given existing laneage.
Signal Phasing Analysis	Signal phasing for existing and future conditions is adequate for traffic operations at the signalized intersections under study.
Progression Analysis	Signals in the study area are part of the Town's signal system and coordination of these signals provides orderly traffic flow upstream and downstream of the proposed site. Signal timing plans were adjusted for each peak period under study. Signal timing for the existing signal at U.S. 15-501 southbound and N.C. 54 westbound ramp were left in free-run operation for all analyses.
Turn Lane Storage Requirements	Storage lengths for existing turning bays on U.S. 15-501 are currently adequate, though extremely high through traffic volumes on U.S. 15-501 and left-turning volumes on eastbound Manning Drive cause congestion that a) prevents efficient use of existing turning lanes or b) requires long traffic signal cycle lengths that cause spillback on existing turning-lanes. Recommendations to improve operations along the U.S. 15-501 corridor need to focus on additional through lane capacity and no adding additional auxiliary lanes or lengthening existing lanes.
Appropriateness of Acceleration/ Deceleration Lanes	Existing acceleration/deceleration lanes for access to and from the site are adequate for safe and efficient operations.
Pedestrian and Bicycle Analysis	Existing pedestrian access and connectivity is poor through the study area. While pedestrian facilities exist on N.C. 54 and Manning Drive, no connectivity is currently provided along U.S. 15-501 and no pedestrian signal crossing of U.S. 15-501 are currently in existence.
Public Transportation Analysis	Public transportation service to the site is excellent; the limitation to usage of the multiple routes in or near the study area is a lack of pedestrian connectivity in accessing the bus stops from the existing site.

Mitigation Measures / Recommendations

Planned Improvements

The Town of Chapel Hill and the North Carolina Department of Transportation are not expected to make any significant transportation improvements to the project study area within the design year time frame of 2007-2011.

Background Committed Improvements

No other significant background improvements to study area intersection geometrics and/or traffic control are committed by the other project area developments.

Applicant Committed Improvements

Based on the concept plan provided, there are several transportation-related off-site improvements. The proposed site redevelopment plan, as shown in **Figure ES-2**, would realign existing Carmichael Road to directly make a connection to Old Mason Farm Road and simplify traffic flow at the U.S. 15-501 intersection with Old Mason Farm Road. The Applicant also desires a new access connection for additional on-site parking lots to Carmichael Street to be located approximately halfway between existing driveway connections. The existing southern connection to Carmichael Street would be realigned also. The existing Carmichael Street/Old Mason Farm intersection would become a "T" intersection, with the northbound Carmichael Street approach remaining stop-controlled and a stop bar placed at the realigned street segment to prevent vehicular queues from blocking this new "T" intersection. The Applicant also indicates on the site plan that the northbound Carmichael Street approach should have a separate traffic signal phase with the U.S. 15-501/Old Mason Farm Road traffic signal. This may be operationally possible through installation of detector loops at this approach and a new signal phasing configuration, but this desired improvement was not specifically studied for this analysis. The existing eastbound approach to the U.S. 15-501/Old Mason Farm Road intersection is shown on the site plan to be restriped to a left-turn and through/right-turn configuration. The proposed improvements to the eastbound approach at the U.S. 15-501/Old Mason Farm Road intersection are expected to make a small to moderate improvement for peak hour traffic operations at this intersection.

Necessary Improvements

As shown by the short-term capacity analyses for this study, existing traffic operations along the U.S. 15-501 corridor in the project study area are very congested during the AM and PM peak hours and are likely to worsen with projected traffic growth by 2011. No simple addition of an auxiliary turn lane, signal phasing adjustment, or lengthening of an existing turn lane will provide the capacity necessary to adequately serve traffic demands along the corridor, particularly at the Manning Drive and Old Mason Farm Road intersections. To provide adequate mitigation of peak hour traffic impacts (with or

without the proposed St. Thomas More site redevelopment), significant throughput capacity improvement is necessary via the construction of additional northbound and southbound through travel lanes from Manning Drive to the U.S. 15-501 interchange (see **Figure ES-3**).

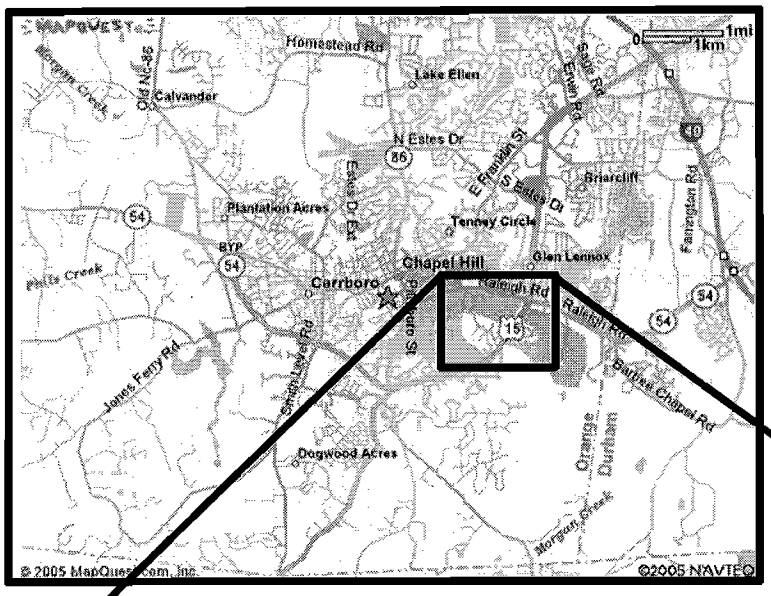
An additional northbound through travel lane should be added at least 500 feet prior to the Manning Drive intersection (around the location of the taper for the southbound drop lane). This lane should be extended all the way to the N.C. 54 Eastbound Ramp diverge at the U.S. 15-501 interchange, where the lane would be the drop lane for the existing ramp. An additional southbound through travel lane should be developed starting at the existing Church Driveway access break on U.S. 15-501. This lane should continue through the Old Mason Farm Road intersection and eventually drop at Manning Drive (where there is an existing southbound right-turn bay). These through travel lanes will allow more efficient signal operations at the major intersections and serve to separate traffic that is using Manning Drive or N.C. 54 over a longer distance.

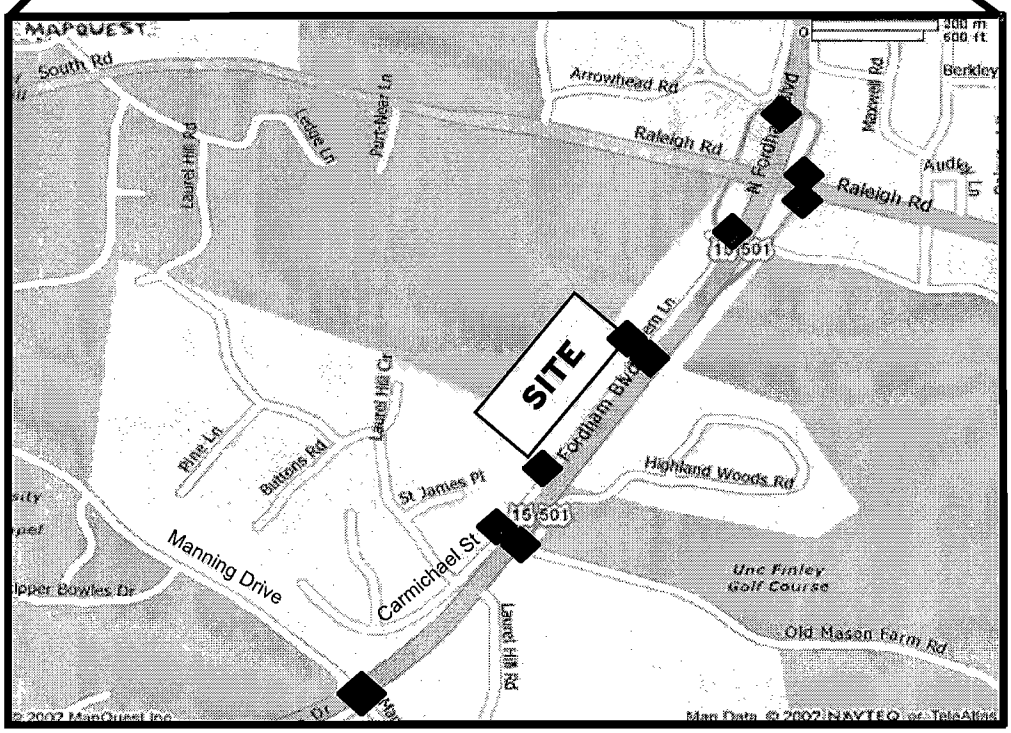
With this improvement, it is also recommended that the through eastbound lane on Manning Drive be converted to a shared left-turn/through lane, as there would be three downstream receiving lanes on U.S. 15-501 northbound. It is also recommended that the existing right-turn southbound deceleration lane on U.S. 15-501 at the Old Mason Farm Road intersection be converted to a shared through/right-turn lane.

No improvements are recommended to mitigate potential future deficient traffic operations at the U.S. 15-501 southbound intersection with the N.C. 54 westbound ramp and the U.S. 15-501 northbound off-ramp to N.C. 54 eastbound. These areas would require major modifications to the existing interchange bridges and ramp configuration and are considered to be beyond the scope of this study, since site-traffic impacts to the overall operation at the interchange are relatively minor. Likewise, no mitigation is recommended to the stop-controlled access break intersection along U.S. 15-501 southbound near the existing school driveway to reduce AM peak hour deficiencies. Operations at this right-turn in/right-turn out intersection are likely better than what analysis data shows due to gaps in southbound traffic flow provided by the upstream signal at the N.C. 54 westbound ramp connection with U.S. 15-501 southbound.

LEGEND

- Existing Intersections
- SITE — St. Thomas More Site





St. Thomas More Expansion Traffic Impact Study

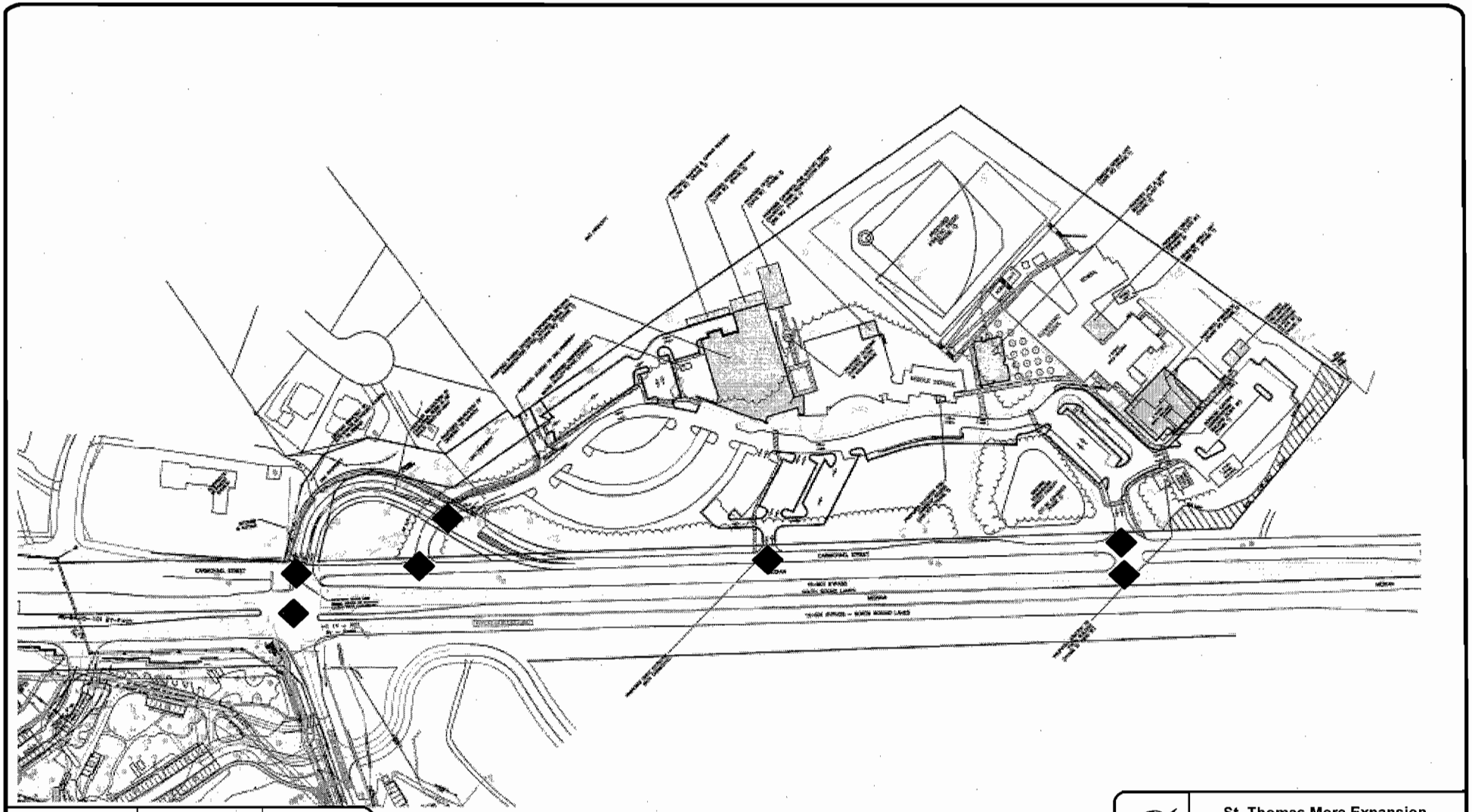
SITE LOCATION MAP

NOT TO SCALE

DATE: October, 2007

FIGURE ES-1

HNTB



HNTB

LEGEND

- Existing Intersections
- Proposed Site Driveways

TOWN OF CHAPEL HILL

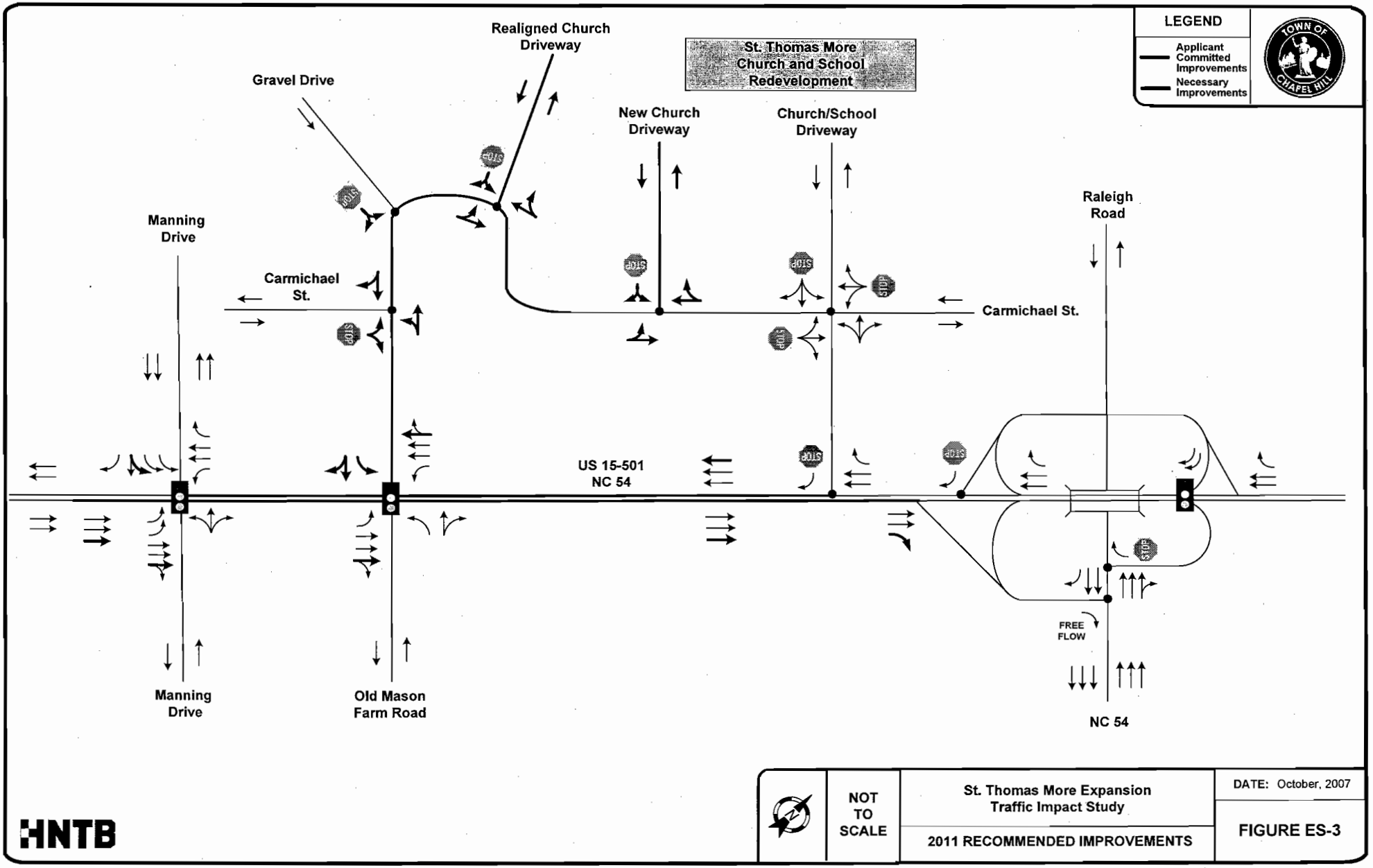
St. Thomas More Expansion
Traffic Impact Study

PRELIMINARY SITE PLAN

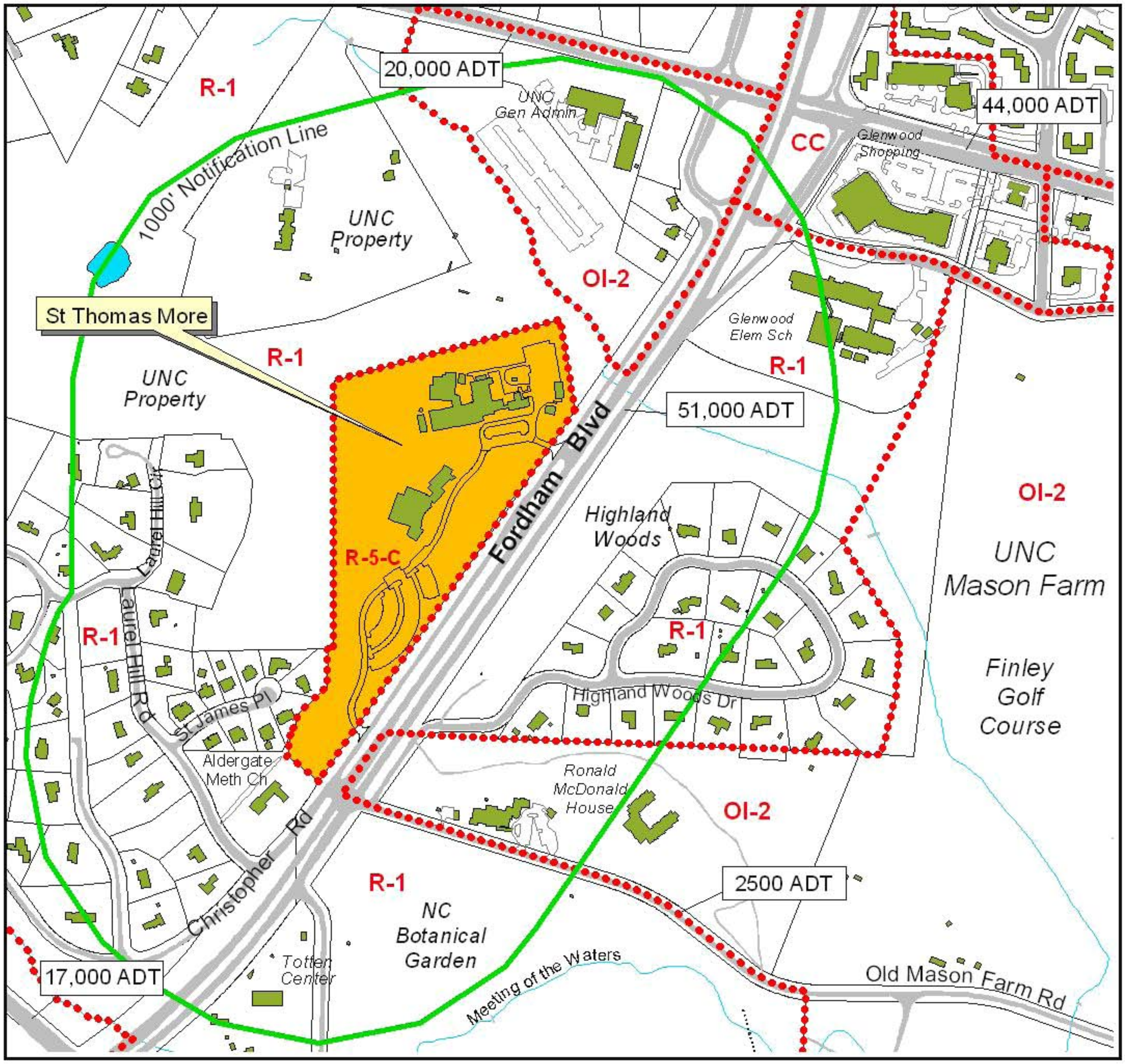
DATE: October, 2007

NOT TO SCALE

FIGURE ES-2


LEGEND
Applicant Committed Improvements
Necessary Improvements
TOWN OF CHAPEL HILL
St. Thomas More Church and School Redevelopment
Realigned Church Driveway
Gravel Drive
New Church Driveway
Church/School Driveway
Raleigh Road
Manning Drive
Carmichael St.
Carmichael St.
US 15-501
NC 54
FREE FLOW
Manning Drive
Old Mason Farm Road
NC 54
HNTB
NOT TO SCALE
St. Thomas More Expansion
Traffic Impact Study
2011 RECOMMENDED IMPROVEMENTS
DATE: October, 2007
FIGURE ES-3

Area Map
St Thomas More



Site of St Thomas More

Existing Buildings

Chapel Hill Zoning (R-1, R-2)

2500 ADT — Average Daily Traffic (ADT) 2005 DOT Data

N

200 0 200 400 Feet

GIS Map prepared by
Chapel Hill Planning
June, 2008