

---

# TRAFFIC IMPACT ANALYSIS CHAPEL HILL ELEMENTARY SCHOOL

Chapel Hill, North Carolina

---



Prepared for:  
**The Town of Chapel Hill, NC**



***Architects-Engineers-Planners, Inc.***

April 2009

| <b>TABLE OF CONTENTS</b>   | <b>PAGE</b>  |
|--|--------------|
| <b>E.0 EXECUTIVE SUMMARY .....</b>                                     | <b>E - 1</b> |
| E.1 Project Overview .....   | E - 1        |
| E.2 Proposed Project Traffic.....                                      | E - 1        |
| E.3 Project Impacts .....  | E - 2        |
| E.4 Mitigation Measures and Recommendations.....                       | E - 8        |
| <b>1.0 INTRODUCTION.....</b>   | <b>1</b>     |
| 1.1 Project Overview .....   | 1            |
| 1.2 Site Location and Study Area .....                                 | 1            |
| 1.3 Existing and Proposed Land Uses in Site Vicinity .....             | 1            |
| 1.4 Existing and Committed Surface Transportation Network.....         | 4            |
| 1.5 Sidewalks .....  | 8            |
| 1.6 Bicycle Lanes.....   | 8            |
| 1.7 Bus Routes.....  | 8            |
| <b>2.0 2009 EXISTING CONDITIONS.....</b>                               | <b>9</b>     |
| 2.1 Peak Hour Mainline Capacity Analysis .....                         | 9            |
| 2.2 2009 Peak Hour Intersection Capacity Analysis.....                 | 11           |
| <b>3.0 FUTURE TRAFFIC CONDITIONS WITHOUT PROPOSED DEVELOPMENT.....</b> | <b>14</b>    |
| 3.1 Background Traffic.....  | 14           |
| <b>4.0 PROPOSED PROJECT TRAFFIC .....</b>                              | <b>21</b>    |
| 4.1 Adjustments to Trip Generation Rates.....                          | 21           |
| 4.2 Future Traffic Forecasts with the Proposed Development.....        | 21           |
| <b>5.0 PROJECT IMPACTS .....</b>                                       | <b>29</b>    |
| 5.1 2012 Peak Hour Mainline Capacity Analysis .....                    | 30           |
| 5.2 Access Analysis .....  | 32           |
| 5.3 Signal Warrant Analysis .....                                      | 32           |
| 5.4 Signal Phasing Analysis.....                                       | 34           |
| 5.5 Crash Analysis .....   | 34           |
| 5.6 Progression Analysis.....  | 34           |
| 5.7 Peak Hour Intersection Capacity Analysis.....                      | 34           |
| 5.7.1 2012 No Build Conditions: .....                                  | 34           |
| 5.7.2 2012 Build Conditions .....                                      | 37           |
| 5.8 Turn Lane Storage Requirements.....                                | 40           |
| 5.9 Sight Distance Analysis.....                                       | 40           |
| 5.10 Appropriateness of Acceleration or Deceleration Lanes.....        | 40           |
| 5.11 Pedestrian and Bicycle Analysis .....                             | 40           |
| 5.12 Public Transportation Analysis.....                               | 40           |
| 5.13 Special Analysis/Issues.....                                      | 40           |
| <b>6.0 MITIGATION MEASURES AND RECOMMENDATIONS .....</b>               | <b>41</b>    |
| 6.1 Planned Improvements .....   | 41           |
| 6.2 Background Committed Improvements.....                             | 41           |
| 6.3 Applicants Committed Improvements .....                            | 41           |
| 6.4 Recommended Improvements.....                                      | 41           |



| <b>LIST OF TABLES</b>   | <b>PAGE</b> |
|---|-------------|
| Table E-1 Site Trip Generation Rates and Volumes.....                     | E-3         |
| Table E-2 Mainline Capacity Analysis Summary .....                        | E-4         |
| Table E-3 Intersection Capacity Analysis Summary.....                     | E-5         |
| Table E-3 Summary of the Proposed Project’s Impacts .....                 | E-7         |
| Table 1 Mainline Capacity Analysis 2009 Existing Traffic Conditions ..... | 10          |
| Table 2 Intersection Capacity Analysis 2009 Existing Conditions .....     | 13          |
| Table 3 Trip Generation Other Development Projects.....                   | 16          |
| Table 4 Site Trip Generation Rates and Volumes .....                      | 22          |
| Table 5 Intersection Capacity Analysis Criteria .....                     | 29          |
| Table 6 Mainline Capacity Analysis 2012 No Build Traffic Conditions ..... | 30          |
| Table 7 Mainline Capacity Analysis 2012 Build Traffic Conditions.....     | 31          |
| Table 8 Intersection Capacity Analysis 2013 No Build Conditions .....     | 36          |
| Table 9 Intersection Capacity Analysis 2012 Build Conditions.....         | 38          |

| <b>LIST OF FIGURES</b>   |    |
|--|----|
| Figure 1 Project Site Plan .....   | 2  |
| Figure 2 Project Location .....  | 3  |
| Figure 3 2009 Existing Traffic Conditions .....                            | 5  |
| Figure 4 2012 Background Traffic.....                                      | 17 |
| Figure 5 2012 No Build Traffic Conditions .....                            | 19 |
| Figure 6 2012 Site Traffic Distribution.....                               | 23 |
| Figure 7 2012 Site Traffic Assignment.....                                 | 25 |
| Figure 8 2012 Build Traffic Conditions.....                                | 27 |
| Figure 9 2012 Four-Hour and Peak Hour Traffic Signal Warrant Analysis..... | 33 |

  

|                                 |           |
|---------------------------------|-----------|
| <b>TECHNICAL APPENDIX .....</b> | <b>42</b> |
|---------------------------------|-----------|



## E.0 EXECUTIVE SUMMARY

### E.1 Project Overview

A new Chapel Hill–Carrboro City Elementary School is proposed near the intersection of Caldwell Street and Church Street in Chapel Hill, North Carolina. The school is expected to be open in the fall of 2011 with three driveways providing access. Two driveways will be located along Caldwell Street and one along McMasters Street. Currently, the proposed site is occupied by a child care center with one driveway accessing Caldwell Street, and one driveway accessing McMasters Street. The existing site is zoned as Residential 3 (R-3).

### E.2 Proposed Project Traffic

The proposed Chapel Hill Elementary School would have 585 students and would employ 88 staff members. The existing child care center has 20 employees working at this location. The Elementary School is scheduled to operate from 7:30 AM to 2:30 PM. Trips related to students drop off and pick up by parents and school buses are expected to occur during these times (AM and mid-afternoon Peak hours) only. Trips related to staff are expected to occur during the AM and PM peak hours.

This study assumed that about ten percent of the proposed development's traffic would occur via Chapel Hill Public Transit or walk. With this assumption, the proposed school would generate 388 additional vehicle trips during the AM peak hour (parents and school buses drop off and staff arrival), and 186 additional vehicle trips during mid-afternoon peak hour (parents and school buses pick up). During the PM peak hour, the proposed development would not add any extra traffic, but would reduce 12 vehicles in the study area (removal of the child care center).

Table E-1 summarizes the trip generation rates and the number of trips generated by the proposed land use categories during the AM, mid-afternoon and PM peak hours of the day.



### E.3 Project Impacts

To determine the traffic impacts of the proposed site development on nearby roadways, traffic flow conditions were analyzed at the following five arterial segments and seven intersections for the 2009 Existing Conditions and 2012 No Build Conditions. In the 2012 Build Conditions, along with the existing seven intersections, three additional intersections (proposed driveways) were also analyzed.

#### Arterial Segments:

1. Martin Luther King, Jr. Boulevard between North Street and Longview Street
2. Columbia Street between Fraternity Court and North Street
3. Franklin Street between Church Street and Henderson Street
4. Caldwell Street between Cotton Street and Columbia Street
5. McMasters Street between Carver Street and Church Street

#### Intersections

1. Columbia Street at Franklin Street (four-leg signalized intersection)
2. Columbia Street at Rosemary Street (four-leg signalized intersection)
3. Church Street at Rosemary Street (four-leg signalized intersection)
4. Martin Luther King, Jr. Boulevard at North Street/Columbia Street (four-leg unsignalized intersection)
5. Columbia Street at Caldwell Street (three-leg unsignalized intersection)
6. Church Street at Caldwell Street (four-leg unsignalized intersection)
7. Church Street at McMasters Street (three-leg unsignalized intersection)
8. Caldwell Street at Driveway # 1 (proposed three-leg unsignalized intersection)
9. Caldwell Street at Driveway # 2 (proposed three-leg unsignalized intersection)
10. McMasters Street at Driveway # 3 (proposed three-leg unsignalized intersection)

The proposed elementary school would have three driveways, two along Caldwell Street and one along McMasters Street. All the traffic associated with parents' drop-off and pick up is expected to occur via driveway #1 along Caldwell Street and all the staff is expected to use driveway #2 along Caldwell Street. All the school buses are expected to use driveway #3 along McMasters Street.

Tables E-2 and E-3 compare the arterial and intersection capacity analysis results for all of the scenarios analyzed in this study. Table E-4 summarizes the overall impacts of the proposed project.



**Table E-1**  
**Site Trip Generation Rates and Volumes**  
**Chapel Hill Elementary School**

| Trip Generation Rates                |                     |                                       |          |  |          |   |          |  |          |
|--------------------------------------|---------------------|---------------------------------------|----------|--|----------|---|----------|--|----------|
| Land Use                             | No. & Type of Units | Weekday<br>(veh. per unit<br>per day) |          | AM Peak<br>Hour<br>(veh. per unit<br>per hour) |          | mid-<br>afternoon<br>Peak Hour<br>(veh. per unit<br>per hour) |          | PM Peak<br>Hour<br>(veh. per unit<br>per hour) |          |
|                                      |                     | Inbound                               | Outbound | Inbound  | Outbound | Inbound   | Outbound | Inbound  | Outbound |
| Chapel Hill<br>Elementary School     | 585 Students        | 0.53                                  | 0.53     | 0.37   | 0.37     | 0.16  | 0.16     | 0  | 0        |
|                                      | 88 Employees        | 1                                     | 1        | 1  | 0        | 0   | 0        | 0  | 1        |
| Child Care Center<br>(To be removed) | 20 Employees        | 13.7                                  | 13.7     | 2.6  | 2.3      | 0   | 0        | 2.25   | 2.55     |

| Trip Generation Volumes                     |                     |            |            |                 |            |                                |           |                 |           |
|---|---------------------|------------|------------|-----------------|------------|--------------------------------|-----------|-----------------|-----------|
| Land Use                                    | No. & Type of Units | Weekday    |            | AM Peak<br>Hour |            | mid-<br>afternoon<br>Peak Hour |           | PM Peak<br>Hour |           |
|   |                     | Inbound    | Outbound   | Inbound         | Outbound   | Inbound                        | Outbound  | Inbound         | Outbound  |
| Chapel Hill<br>Elementary School            | 585 Students        | 310        | 310        | 214             | 214        | 96                             | 96        | 0               | 0         |
|   | 88 Employees        | 88         | 88         | 88              | 0          | 0                              | 0         | 0               | 88        |
|   | 7 Buses             | 14         | 14         | 7               | 7          | 7                              | 7         | 0               | 0         |
|   | Sub-Total           | 412        | 412        | 309             | 221        | 103                            | 103       | 0               | 88        |
| Child Care Center<br>(To be removed)        | 20 Employees        | -274       | -274       | -52             | -46        | 0                              | 0         | -45             | -51       |
| Sub-Total                                   |                     | 138        | 138        | 257             | 175        | 103                            | 103       | -45             | 37        |
| 10% discount for Transit/Pedestrian traffic |                     | -14        | -14        | -26             | -18        | -10                            | -10       | 0               | -4        |
| <b>Total Additional Traffic Generated</b>   |                     | <b>124</b> | <b>124</b> | <b>231</b>      | <b>157</b> | <b>93</b>                      | <b>93</b> | <b>-45</b>      | <b>33</b> |



**Table E-2**  
**Mainline Capacity Analysis Summary (Volume-to-Capacity Ratio)**  
**Chapel Hill Elementary School**

| Facility Type  | Segment            | Direction of Travel | No. of Lanes (both directions) | Threshold Capacity* | 2009 Existing Conditions Volume-to-Capacity Ratio |                    |         | 2012 No Build Conditions Volume-to-Capacity Ratio |                    |         | 2012 Build Conditions Volume-to-Capacity Ratio |                    |         |
|----------------|--------------------|---------------------|--------------------------------|---------------------|---|--------------------|---------|---|--------------------|---------|--|--------------------|---------|
|                |                    |                     |                                |                     | AM Peak   | mid-afternoon Peak | PM Peak | AM Peak   | mid-afternoon Peak | PM Peak | AM Peak  | mid-afternoon Peak | PM Peak |
| Major Arterial | MLK, Jr. Boulevard | Northbound          | 4                              | 1,600               | 0.30  | 0.42               | 0.59    | 0.35  | 0.50               | 0.69    | 0.35   | 0.50               | 0.69    |
|                |                    | Southbound          |                                | 1,600               | 0.55  | 0.32               | 0.48    | 0.63  | 0.39               | 0.56    | 0.63   | 0.39               | 0.56    |
|                | Columbia Street    | Northbound          | 4                              | 1,600               | 0.32  | 0.44               | 0.61    | 0.37  | 0.52               | 0.71    | 0.40   | 0.53               | 0.71    |
|                |                    | Southbound          |                                | 1,600               | 0.57  | 0.35               | 0.51    | 0.66  | 0.42               | 0.59    | 0.68   | 0.43               | 0.59    |
|                | Franklin Street    | Westbound           | 4                              | 1,600               | 0.24  | 0.32               | 0.41    | 0.29  | 0.43               | 0.53    | 0.29   | 0.43               | 0.53    |
|                |                    | Eastbound           |                                | 1,600               | 0.25  | 0.30               | 0.40    | 0.31  | 0.39               | 0.50    | 0.31   | 0.39               | 0.50    |
| Local Street   | Caldwell Street    | -                   | 2                              | 1,500               | 0.58  |                    |         | 0.63  |                    |         | 0.78   |                    |         |
|                | McMasters Street   | -                   | 2                              | 1,500               | 0.47  |                    |         | 0.51  |                    |         | 0.53   |                    |         |

\* For major arterials, analysis was performed using hourly traffic volumes per direction. For local streets, analysis was performed using 24-hour two-way traffic volumes (ADT); Source: Guidelines for Traffic Impact Analysis, Town of Chapel Hill, October, 2001.

**Table E- 3**  
**Intersection Capacity Analysis Summary (Level of Service)**  
**Chapel Hill Elementary School**

| Intersection  | Movement             | 2009 Existing Conditions |                    |         | 2012 No Build Conditions |                    |         | 2012 Build Conditions |                    |         |
|---|----------------------|--------------------------|--------------------|---------|--------------------------|--------------------|---------|-----------------------|--------------------|---------|
|   |                      | AM Peak                  | mid-afternoon Peak | PM Peak | AM Peak                  | mid-afternoon Peak | PM Peak | AM Peak               | mid-afternoon Peak | PM Peak |
| Columbia Street at Franklin Street (Signalized Intersection)  | Overall Intersection | C                        | C                  | C       | C                        | C                  | D       | C                     | C                  | D       |
|   | Eastbound            | L                        | C                  | C       | C                        | C                  | C       | C                     | C                  | C       |
|   |                      | TR                       | C                  | D       | D                        | D                  | D       | D                     | D                  | D       |
|   | Westbound            | L                        | C                  | C       | C                        | C                  | C       | C                     | C                  | C       |
|   |                      | TR                       | C                  | D       | D                        | C                  | D       | D                     | C                  | D       |
|   | Northbound           | L                        | C                  | C       | C                        | C                  | C       | C                     | C                  | C       |
|   |                      | TR                       | C                  | C       | C                        | C                  | C       | D                     | C                  | C       |
|   | Southbound           | L                        | A                  | B       | B                        | A                  | B       | B                     | A                  | B       |
| TR  |                      | A                        | B                  | B       | B                        | B                  | C       | B                     | B                  |         |
| Columbia Street at Rosemary Street (Signalized Intersection)  | Overall Intersection | C                        | C                  | D       | C                        | C                  | F       | C                     | D                  | F       |
|   | Eastbound            | L                        | C                  | C       | E                        | C                  | D       | F                     | C                  | D       |
|   |                      | TR                       | C                  | C       | D                        | D                  | D       | F                     | D                  | D       |
|   | Westbound            | L                        | C                  | C       | C                        | C                  | C       | C                     | C                  | C       |
|   |                      | TR                       | D                  | D       | F                        | D                  | E       | F                     | D                  | E       |
|   | Northbound           | L                        | B                  | B       | B                        | B                  | B       | B                     | B                  | B       |
|   |                      | TR                       | B                  | C       | C                        | B                  | C       | C                     | B                  | C       |
|   | Southbound           | L                        | C                  | C       | C                        | C                  | C       | C                     | C                  | C       |
| T   |                      | C                        | C                  | C       | D                        | C                  | C       | D                     | C                  |         |
| R   | A                    | A                        | A                  | A       | A                        | A                  | A       | A                     |                    |         |
| Church Street at Rosemary Street (Signalized Intersection)  | Overall Intersection | A                        | A                  | B       | A                        | A                  | B       | A                     | A                  | B       |
|   | Eastbound            | L                        | A                  | A       | A                        | A                  | A       | B                     | A                  | A       |
|   |                      | TR                       | A                  | A       | A                        | A                  | A       | B                     | A                  | A       |
|   | Westbound            | L                        | A                  | A       | A                        | A                  | A       | B                     | A                  | A       |
|   |                      | TR                       | A                  | A       | B                        | A                  | A       | B                     | A                  | A       |
|   | Northbound           | LTR                      | B                  | B       | B                        | B                  | B       | B                     | B                  | B       |
| Southbound  | LTR                  | B                        | B                  | B       | B                        | B                  | C       | B                     | B                  |         |
| Martin Luther King, Jr. Boulevard/ Columbia Street at North Street/ Columbia Street (Unsignalized Intersection) | Eastbound            | LTR                      | B                  | B       | B                        | B                  | B       | B                     | B                  | B       |
|   | Westbound            | LTR                      | B                  | B       | B                        | B                  | B       | C                     | B                  | C       |
|   | Northbound           | L                        | B                  | A       | A                        | B                  | A       | B                     | B                  | B       |
|   | Southbound           | L                        | A                  | A       | A                        | A                  | A       | A                     | A                  | B       |
| Columbia Street at Caldwell Street (Unsignalized Intersection)  | Eastbound            | LR                       | A                  | A       | B                        | A                  | A       | B                     | B                  | A       |
|   | Northbound           | LT                       | A                  | A       | A                        | A                  | A       | A                     | A                  | A       |



**Table E- 3**  
**Intersection Capacity Analysis Summary (Level of Service) continued...**  
**Chapel Hill Elementary School**

| Intersection   | Movement   |     | 2009 Existing Conditions |                    |         | 2012 No Build Conditions |                    |         | 2012 Build Conditions |                    |         |
|--|------------|-----|--------------------------|--------------------|---------|--------------------------|--------------------|---------|-----------------------|--------------------|---------|
|  |            |     | AM Peak                  | mid-afternoon Peak | PM Peak | AM Peak                  | mid-afternoon Peak | PM Peak | AM Peak               | mid-afternoon Peak | PM Peak |
| Church Street at Caldwell Street<br>(Unsignalized Intersection)  | Eastbound  | LTR | A                        | A                  | A       | A                        | A                  | A       | A                     | A                  | A       |
|  | Westbound  | LTR | A                        | A                  | A       | A                        | A                  | A       | A                     | A                  | A       |
|  | Northbound | LTR | A                        | A                  | A       | A                        | A                  | A       | A                     | A                  | A       |
|  | Southbound | LTR | A                        | A                  | A       | A                        | A                  | A       | A                     | A                  | A       |
| Church Street at McMasters Street<br>(Unsignalized Intersection) | Westbound  | LT  | A                        | A                  | A       | A                        | A                  | A       | A                     | A                  | A       |
|  | Northbound | LR  | A                        | A                  | A       | A                        | A                  | A       | A                     | A                  | A       |
| Caldwell Street at Driveway #1<br>(Unsignalized Intersection)    | Eastbound  | LT  | NOT APPLICABLE           |                    |         |                          |                    |         | A                     | A                  | A       |
|  | Southbound | LR  |                          |                    |         |                          |                    |         | B                     | A                  | A       |
| Caldwell Street at Driveway #2<br>(Unsignalized Intersection)    | Eastbound  | LT  |                          |                    |         |                          |                    |         | A                     | A                  | A       |
|  | Southbound | LR  |                          |                    |         |                          |                    |         | A                     | A                  | A       |
| McMasters Street at Driveway #3<br>(Unsignalized Intersection)   | Westbound  | LT  |                          |                    |         |                          |                    |         | A                     | A                  | A       |
|  | Northbound | LR  |                          |                    |         |                          |                    |         | A                     | A                  | A       |

**Table E- 4  
Summary of the Proposed Projects Impacts**

| Analyses   | Impacts  |
|--|--|
| Peak Hour Mainline Capacity                        | Traffic demand on all the mainline segments analyzed would flow with volume-to-capacity ratio of 0.78 or better throughout the day during both the 2012 No Build and 2012 Build Conditions.  |
| Site Access  | The proposed site will have three driveway accesses: two via Caldwell Street for cars and one via McMasters Street for school buses. The three driveways shown in the proposed site plan should be sufficient to accommodate the site traffic as estimated for the proposed development.   |
| New Signal Location                                | Traffic signal warrant analysis was performed for 2012 Build Conditions at the intersections of Martin Luther King, Jr. Boulevard/Columbia Street/North Street, Columbia Street/Caldwell Street, Church Street/Caldwell Street and Church Street/McMasters Street. This analysis indicated that none of these locations warrants a traffic signal under the 2012 Build Conditions.   |
| Traffic Signal Phasing                             | The intersections analyzed for this study have multi-phase signal controllers that can accommodate variations in traffic flows. The Peak Hour Intersection Capacity section shown below provides a summary of the intersection capacity analysis.  |
| High Crash Locations                               | The Town of Chapel Hill crash data indicated that there are no high crash locations in the study area.   |
| Traffic Signal Progression                         | The signalized intersections in the study area were analyzed as isolated intersections, therefore, no progression analysis was conducted as part of this study.  |
| Peak Hour Intersection Capacity                    | For the 2012 Build Conditions, the traffic demand at all the study area intersections would flow at acceptable rates (Level of Service D or better) with the exception of Columbia Street/Rosemary Street intersection which flows at Level of Service F under both the No Build and Build Conditions during the PM Peak Hour. Since the proposed development adds only five cars to this intersection during the PM peak hour, this study does not recommend any signal phasing or roadway improvements to the study intersections. |
| Turn Lane Storage Requirements                     | The capacity analysis indicates that no additional turn lanes are needed at the site driveways.  |
| Intersection Sight Distance                        | There are no sight distance issues found at the proposed driveways.  |
| Appropriateness of Acceleration/Deceleration Lanes | The speed limits on Caldwell Street and McMasters Street are 25 miles per hour. Since the speed limits for the roadway are low, acceleration/ deceleration lanes are not needed at the proposed site driveways.  |
| Pedestrian and Bicycle Facilities                  | The proposed development would not add any sidewalks or bicycle facilities in the study area.  |
| Public Transportation Facilities                   | Bus Routes A and N operated by Chapel Hill Transit Authority, have bus stops in the vicinity of the elementary school. Route A has stops along Columbia Street and Caldwell Street where as Route N has several stops along Columbia Street.   |



## E.4 Mitigation Measures and Recommendations

For purposes of this analysis, roadway improvements are divided into four categories as follows:

- Improvements already planned by the Town of Chapel Hill or the North Carolina Department of Transportation;
- Improvements required regardless of development at the proposed site;
- Improvements proposed as part of the site development;
- Any additional improvements required as a result of site development.

### Planned Improvements

There are no planned improvements to roadways in the study area.

### Background Committed Improvements

No other roadway improvements that directly impact this analysis are committed by other development projects in the area.

### Applicant Committed Improvements

There are no other applicant committed improvements in the study area.

### Recommended Improvements

Based on the NCDOT School Traffic Calculator, this study recommends a minimum of 969 feet of storage length for the parents' drop-off/pick up area. It is indicated in the site plan of the school that the bus pull-off area would be on McMasters Street. Hence sufficient storage length for bus pull offs should be provided by the developer. The additional traffic generated by the proposed elementary school would have minimal impact on the traffic flow in the study area. Therefore, this study does not recommend any roadway improvements at the study intersections.

The 2012 Build Conditions capacity analysis indicates that traffic demand at the intersection of Caldwell Street/Church Street would flow at Level of Service B or better throughout the day; a very good rate of traffic flow. A signal warrant analysis at this location for the 2012 Build Conditions indicates that a signal may not be warranted. However, it should be noted that the proposed development would add 77 vehicles to the northbound left-turn movement, 95 vehicles to the westbound through movements, and 64 vehicles to the eastbound through movements. Once the proposed school is open, this intersection should be monitored to determine if there is a need for change in the stop conditions (four-way stop to two-way stop); adding a traffic signal; or providing turn lanes. Based on the current traffic volumes this study does not recommend any improvements to this location.

