

June 12, 2006

Mr. Alan Mayer
479 Walnut Street
Newton, MA

Re: Proposed Newton North High Construction
Transportation Impact & Access Review

Dear Mr. Mayer:

In response to your request, I have completed an initial review of the proposed high school rebuilding plans with a focus on the traffic impact, access plan and parking. As part of this review, traffic studies dated April 7th and May 31st 2006 prepared by Traffic Solutions, Inc. for the school design team were obtained and reviewed. It should be noted that we were not provided with the appendices although requested of both the City's consultant and the City's traffic engineer. This did inhibit the review to some degree as many of the report's findings and conclusions referenced the various appendices and there was little detail provided in the body of the report. In general, I find not providing the appendices to be curious at best. As it is part of the traffic report, which is a public document, the entire report including the Appendices should have been made available immediately upon request.

In addition to the traffic reports, the conceptual site plans developed both prior to and for the May 4th presentation were reviewed. Several site visits were also conducted to become familiar with the study area and observe vehicular and pedestrian patterns relative to the current facility and its characteristics. Published notes by the Design Review Committee were also reviewed.

This report addresses both the traffic study and the proposed access/parking plan. Overall, the traffic study is lacking in much detail as well as a description of the evaluation of access alternatives. The proposed preferred plan raises a multitude of questions and new safety concerns as well.

Existing Conditions

The existing site has the school building along the Lowell Avenue corridor with Elm Road at Lowell Avenue providing the more direct access to either the drop off/pick up area as well as the parking areas. One major entry to the building is on Elm Road approximately 100 feet east of Lowell Avenue. Elm Road is currently blocked in the middle and consequently, does not provide through access between Lowell Avenue and Walnut Street. Hull Street is a one-way street in the westbound direction with on-street parking allowed along the north side of the street. A major off street parking lot generally restricted to staff, teachers, certain "outside" programs and a small number of students is located along Walnut Street. Access to the lot is from Elm Road just west of its intersection with Walnut Street. A 6 +/- foot sidewalk runs along the north side of

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Elm Road between Walnut Street and Lowell Avenue providing walkers a generally safe facility (given the current low volume of vehicular traffic on most of the road section) to access and egress the school building, particularly towards Walnut Street. There is another walkway that runs through the site connecting both the east parking lot, the MBTA bus stop and current pedestrian crossing on Walnut Street to the school.

Walnut Street is a major arterial in the City that provides north-south mobility connecting with Route 9 and Commonwealth Avenue to the south of the project site and Washington Street and Route 16 to the north. It is generally a two lane facility with traffic signals at key locations. At these intersections, additional turn lanes are typically provided. In close proximity to the site, a traffic signal exists at Cabot Street, which is located approximately 100 feet north of Elm Road. The signal allows for protected pedestrian crossings.

Lowell Avenue is also a two lane roadway that functions more as a collector street in the City and runs in the north-south direction. It connects with Commonwealth Avenue to the north and Washington Street to the south. Near the site, its intersection with Otis Street is signalized that allows for protected pedestrian crossings. The major drop off-pick up location is on Elm Road off of Lowell Avenue. Access to the existing day care facility is also from Lowell Avenue. Finally, the bus loading/unloading area is accessed from Lowell Avenue.

Proposed Project Characteristics

It is my current understanding that the project will include constructing a new school building to the east of the present school and relocating or modifying current parking areas. A major point of access will be via Walnut Street at Elm Road that will provide access/egress to the largest parking lot. Elm Road is also proposed to become a through street and designated as one-way from Lowell Avenue to the building's north entry/drop off area. A new parking lot off Lowell Avenue will have two driveways onto Lowell Avenue. In addition, it is proposed to construct a new school drive opposite Trowbridge Street that would provide access to the Administration offices and its entry point. This area is being presented as a parent drop off-pick up area and would also have a number of parking spaces. Parking would also be designated on both Hull Street and Elm Road although it has been presented that the Elm Road parking would not be allowed during the day when school is in session.

Applicant Traffic Study

As indicated above, the traffic study does not provide a lot of detail or discussion on current travel patterns, the current problems, the future needs and the evaluation of access alternatives. It appears that the study essentially was done at the conclusion of the

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architectural studies and not as an integral part of siting decisions and the development of the best access plan feasible. That said, a number of questions and concerns with the analysis have been outlined below.

- There is no information provided as to the number of staff and their resident and transportation characteristics relative to the school.
- Information on student population categorized by those who walk, use the bus, and those driving are basic information that helps to define the needs and project the future demands. There should also be data on the number of students that use the MBTA bus route (#59), which stops on Walnut Street at Clyde Street. This information was not presented in the traffic report.
- The reports indicate that traffic counts conducted for this analysis included a count of pedestrians. It should be noted, however, that these pedestrian counts would likely only represent the pedestrians at intersections and crossing the street. Without the Appendix, the raw data cannot be checked to verify. It does not appear that the traffic consultant actually knows the number of walkers and the patterns to and from the school.
- There is a day care facility in the existing building. There is no information on this activity in the traffic study or if the day care will remain in the future. If it remains, where is it located in the building and how will the drop off/pick up occur for the day care. What are its hours of operation in comparison with the typical school schedule?
- It appears from the study, several intersections were not analyzed in the morning and afternoon periods including the Walnut Street intersection with Cabot Street. This is a major omission in the report as the traffic consultant has called the Walnut Street/Elm Road intersection the “major” access/egress point for the new facility. Field observations show that vehicles queues on Walnut Street in the northbound direction extend from Cabot Street to Clyde Street and beyond during the morning and afternoon peak hours. This will have a significant effect on the Walnut Street intersection with Elm Road. In addition, no mitigation at that intersection (in terms of traffic control) was proposed in the study report, although at the June 6 public hearing it was mentioned that a police officer would be placed at the intersection. Can it be guaranteed that a police officer will man this intersection?

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The Walnut Street intersection is a more unsafe location for having a person control traffic with more than 1,000 vehicles traveling the roadway during the peak hours. Currently, a police officer is at the Lowell Avenue intersection, however, there are significantly lower volumes in that location making it somewhat safer to be in the road managing traffic.

The traffic study analysis shows that the Walnut Street intersection with Elm Road will operate at what is labeled level of service (LOS) 'F' with very long delays. In fact, during the morning, the delays cannot be calculated by the engineering method, as there is insufficient capacity to accommodate exiting traffic. The analysis completed by the traffic consultant shows that operations at this intersection become more than 5 times worse than current conditions, which are not very good. With Cabot Street within approximately 100 feet of Elm Road, there is likely a major traffic conflict and congestion problem created by the current plan if there is some form of control (i.e. police officer or signal) and certainly safety related problems without some form of control beyond a STOP sign.

Additional questions arise in reviewing the traffic study and the current proposal related to the Walnut Street/Elm Road area including:

- ✦ Is the consultant suggesting separate left and right turning lanes exiting Elm Road?
- ✦ What is the proposed revised length of the northbound left turn storage lane on Walnut Street at Elm Road and what is the likelihood of it being blocked by the through movement?
- ✦ What is the purpose of Elm road being converted to a through way? What problems if any are created if Elm Road continues to not be a through road?
- ✦ If Elm Road is converted to a through road, why is it proposed to be one way west to east? Walnut Street carries approximately 5 times more traffic than Lowell Avenue and exiting onto Walnut Street will be significantly more difficult.
- ✦ How many real access options (not building site options) were examined? What were they? What were the criteria used in selecting the currently proposed site access points? Visibility, grade of roadways and distances from the existing key

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intersections (i.e. Walnut Street at Cabot Street) would appear to be the key factors as well as the volumes on the major abutting roadways.

- ✦ The analysis indicates that the design for the left turn lane at the “ceremonial drive” be approximately 160 feet in length when the concept plan shows approximately 100 feet. This shortfall may result in left turning vehicles unable to get into the left turn lane and thus block the through lane of vehicles in an area at the curve and downgrade and the intersection of Kirkstall Road.
- ✦ The analysis also shows that the northbound queue on Walnut Street from the signalized intersection at the “ceremonial drive” will be 500 feet, which results in a queue length well within the reverse curve just south of the school site.
- ✦ The justification for a signal at the “ceremonial drive and Trowbridge Street has not been shown. Reference (page 13) is made to needing it to “provide a safe crossing for students”. However, it has not been demonstrated that the current crossings are unsafe. The current Clyde Street crossing is marked and signed as a “stop for pedestrians in crosswalk”. Observations indicated that motorists obey the signage. Importantly, the crossing is located on a level straight section of Walnut Street where motorists have more than 500 feet in both directions to observe crossings and slow or prepare to stop. Observations also show that much of the student walking patterns occur along Elm Road to Walnut Street northbound with little crossing. Those who do cross, do so at the Cabot Street signal and not at Elm Road.
- ✦ Our recent observations showed that between 10 and 20 students use the MBTA bus and this stop location offers very acceptable visibility and apparent safety for the students to cross Walnut Street. Motorists were observed to stop if someone was in the crosswalk.
- ✦ It is mentioned on Page 20 of the traffic report that field observations of the existing queues and delays at the Walnut Street and Otis Street intersection were to “calibrate” the model. The details of these observations and the calibration (or adjustments) to the model should be provided.
- ✦ The analysis completed by the consultant and shown in Tables 5 and 6 show the following (which was not presented at the recent public hearing):
 - There was no level of service analysis completed for the Walnut Street intersection with Cabot Street, which is critical when evaluating the access decisions relative to Elm Road.

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- The expected vehicle delays on Elm Road during the morning and afternoon under unsignalized control increase by at least 5 times the No-Build (i.e. current patterns) condition. There is insufficient capacity to accommodate the morning exiting traffic that makes it impossible to estimate the length of vehicle delay during that period.
- During the morning peak hour, the overall operating condition of the Walnut Street intersection with Cabot Street is reduced from LOS 'B' to LOS 'D' with long queuing estimated on Walnut Street.
- The analysis for the Elm Road intersection appears to assume a widening of Elm Road to provide separate left and right turn exit lanes as well as an entering lane. This analysis does not appear consistent with the concept plans presented to the residents and Board of Alderman, which do not display a further widening of Elm Road at the Walnut Street intersection.
- There is no PM peak hour analysis for the intersections of Walnut Street at Trowbridge Street and with Otis Street as well as with Cabot Street.
- The concept plan presented for Walnut Street is so vague and sketchy that one cannot realistically determine what curblines changes are proposed other than the triangular island at Hull Street would be removed. It does not appear that narrowing can occur in the area of Kirkstall Road if the school drive opposite Trowbridge Street is pursued as there needs to be a transition area provided for the protected left turn lane that the consultant is proposing. Consequently, the "concept" entitled "long term improvements" is largely infeasible and does not provide the "calming" and safety improvements needed for Walnut Street in this area and those called for by many Alderman at the recent hearing.

Proposed Preferred Access Plan

- The current access plan appears to be seriously flawed. The increased use of the Walnut Street intersection with Elm Road in close proximity to the Cabot Street signal will add undue complexity, congestion and safety concerns in this area. As it is the observed major location of pedestrian movement, it increases the potential conflict between vehicles and the student walkers.

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- The proposed traffic signal at Trowbridge Street and the “ceremonial drive” does not appear warranted based on the information that has been presented in the report and taking into account general observations of traffic and pedestrian characteristics related to school and Walnut Street traffic. In addition, the location being just north of the reverse curve and at the bottom of a small downgrade, it is not the most desirable location to site a drive, particularly when compared to the alternative potential locations for site access. The analysis conducted by the traffic consultant also shows the need for a longer left turn lane than shown on the plan which results in a longer transition back to Kirkstall Road which is right at the end of the northbound curve.
- If the new drive with a signal is put at Trowbridge Street, what is the impact on Clyde Street and the MBTA bus stop? It does not appear desirable or safe to shift it to Trowbridge Street given the curve, roadway grade and proposed turn lane configuration.
- Visibility on Walnut Street in the northbound direction approaching the proposed new drive opposite Trowbridge Street does not appear to meet the minimum sight distance criteria. Based on the reported 43 miles per hour 85th percentile speed and taking into account the downgrade, the minimum stopping sight distance needed is approximately 380 feet. An object on the school drive cannot be seen at this distance due to the curve in the road and the landscaping on the private residences between the site drive and curves.
- The majority of pedestrian movement by students has been observed to occur along Elm Road to Walnut Street and points to the north. It would be anticipated that the north school entry/exit point will be the most highly used for this movement. The walkways between the school and Walnut Street are limited in width yet with the proposed one way pattern, there is anticipated more vehicular traffic moving in the same direction resulting in a greater number of conflicts.

When evaluating the potential points of access to the new facility, consideration should be given to visibility, grade of the roadway at the point of access, location and operation of the parking system, adjacent intersections and the volume along the major streets providing access to the school. The lower volume roadways will be able to accommodate turning traffic more efficiently and safely. If access from Walnut Street is determined to be essential, it should be located in the level area where maximum visibility will exist. It should also attempt to increase the distance to Cabot Street. One-way flow on Elm Road (east to west) reduces the congestion and complexities on Walnut Street between Elm Road and Cabot Street and possible should be included in the evaluation.

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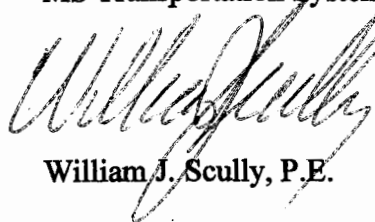
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In concluding, the currently preferred site plan does not address traffic operational issues related to the school that presently exist. In addition, the proposed plan looks to create new safety concerns or worsens existing conditions at several of the key locations within the school zone. Even if all the elements (i.e. athletic fields) of the site plan were essential, there are a number of access options possible that would be an improvement over the current plan. There is no evidence that alternative access and parking options were examined in detail by the traffic consultant, particularly in terms of safety. If vehicular access was required at the proposed administration entry/exit, it could likely be made from a safer location similar to the one concept option that showed a point of access opposite the church on Walnut Street. An alternative building configuration with an adjustment in the administration wing could make this access possibly more efficient as well.

Consequently, we would not recommend to the Alderman that the proposed plan as presented be approved from a traffic safety and access perspective. Many of the access and traffic issues and questions raised by the DRC are still unanswered.

If you have any questions or need to discuss this matter further, do not hesitate to contact me at 508-620-2832.

Very truly yours,
MS Transportation Systems, Inc.



William J. Scully, P.E.

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