MEMORANDUM

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February 27, 2000

To: Richard B. Nettler, Esq.

From: Stephen G. Petersen, P.E.

Subject: Critique of *Preliminary Traffic Impact Study - Studio House School of the Arts*

The purpose of this Memorandum is to summarize the observations that have been derived from a review of the subject report dated December 17, 1999 and prepared by Everett C. Carter, Ph.D., and an inspection of the site and its relationship to Sheridan Circle. The principal issues deal with 1) the validity of the traffic analysis given that an important link in the street system served by Sheridan Circle was closed at the time that data was collected and 2) the total lack of detail of the operation of the school that would have permitted the consultant to reach valid conclusions relative to the effect on traffic of curbside drop-off and pick-up of students.

Validity of Traffic Analysis

The traffic data reported in the subject study were collected in December 1999, almost two months after the Q Street bridge over Rock Creek Park was closed to traffic. This bridge is an important access to the north side of the Georgetown Community. Furthermore, because outbound traffic on Massachusetts Avenue can not turn left at 22nd Street, traffic on this street that desires to use Q Street to enter Georgetown must travel around Sheridan Circle, past the subject site to get to 23rd Street which, in turn, provides access to the bridge. Logic suggests that, with the bridge closed, the volume of traffic that was counted in December 1999 would be substantially understated.

Further review of the traffic data reveals that the number of vehicles entering and leaving Sheridan Circle is unbalanced. Using the data in Exhibit 2, Page 4, the tabulation on the next page illustrates the issue. The report provides no explanation for a difference that amounts to about 22% of the entering volume. Even more critical, from the perspective of this application, the difference occurs primarily in the portion of Sheridan Circle that is in front of the site. For this link, Exhibit 2 shows 884 vehicle entering in the peak hour but 1237

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leaving, a difference of 353, or 40% of the entering volume. In fact, if the exit volume is correct, the portion of the circle in front of the site is the most heavily traveled even with the Q Street Bridge closed.

TRAFFIC VOLUMES IN & OUT OF SHERIDAN CIRCLE

Evening Peak Hour Traffic Count by Dr. Carter, December 9, 1999

Street	Entering Volume	Exiting Volume
Mass. Ave., West Leg	870	916
23rd Street Leg	5	251
Mass. Ave., East Leg	911	1016
TOTALS	1786	2183
Difference	-397	+397

Finally, the report suggests that the traffic on the entrances to the circle can be analyzed using a technique known as the "critical lane technique". In my opinion, as the author of a paper describing the technique, this is an inappropriate use of this methodology. Level of Service at intersections has been defined in terms of *average delay/vehicle* since 1985 and this technique does **not** measure delay. Therefore, the results derived from the technique should not be equated to Level of Service.

In addition, a review of the characteristics of Sheridan Circle as a whole indicates that it has most of the attributes of a "roundabout" and could have been analyzed using computer programs designed for such analysis to provide an indication of the actual usage of the circle relative to its capacity as whole. (The procedure available in the American *Highway Capacity Manual* is relatively crude and is only applicable to one lane roundabouts. However, readily available software from other sources would be applicable and could have been used to provide a basis for the analysis.)

Operation of School

The proposed operation of this school is totally dependent on the use of curb space to drop-off and pick-up the students. In turn, the effectiveness of this proposed operation is critically dependent on the number of classes that are proposed, their duration and the time interval between successive classes. None of these factors are described in either the application or the preliminary traffic report.

Each student who attends a class will generate several operations as listed below:

1) The driver of the drop-off vehicle parks either in the single available curb space or in front of the driveway to the site.
2) The proffered attendant exits the building and walks to the vehicle, a distance of about 60 feet. At a design walking speed of 4 feet/second, this is 15 seconds.
3) The child disembarks (with his musical instrument?). Can he disembark with it in hand? Must it be unloaded separately?

4) The child is then walked to the entrance, another 15 second interval.
5) The driver of the drop-off vehicle must then seek a gap in traffic approaching on the circle. Because of the curvature, his mirrors are ineffective, he must turn his head and watch three lanes for the gap (two entering from Mass. Ave. around a curve and one on the circle).
6) While all this activity is on-going additional vehicles arrive to drop-off more students. Where do they stop? Do they double park on the circle, block a lane and further restrict the departing driver's view of approaching traffic?
7) What about the drivers/parents who have arrived to pick-up students? The reverse of the operation just described for drop-off must take place and may take even more time to secure a child in his seat belt and load his instrument. Does the driver/parent have to disembark to help?
8) What about the drivers/parents who are picking up students who arrive early. This a common characteristic at regular schools where parents arrive earlier than planned because traffic was better than expected or they simply have extra time. Where will they park?; On the circle because they want to be able to be within view of the entrance so the child can see them?

Without any discussion or description of the mechanics of the drop-off and pick-up operation, how can the Board of Zoning Adjustment reach an affirmative conclusion that the proposed use will not have a detrimental effect on traffic in the immediate vicinity of the site?

A related operational issue is the on-site parking. Although the applicant claims that he can provide nine spaces, he does not account for his own personal vehicle (or is he one of the instructors?). Furthermore, there is no room for any vehicle, except possibly the last one, to turn around on the site. Therefore, the persons who park on the site will need to back out into traffic on the circle in order to leave. If a driver departing a curb space has difficulty finding gaps, how does someone backing out from behind a wall, across a sidewalk, know when it is safe to do so?

Also of concern, from the perspective of the neighborhood, what is the effect of the planned recitals and other group activities on parking in the neighborhood. The applicant's consultant assumes that because of the diplomatic character of the neighborhood that street parking will be readily available. No documentation of whether or not this is the case is provided in the preliminary report.

Conclusion

Apart from the fact that the applicant's traffic consultant was relying on faulty data for his analysis, the more significant issue relative to a finding of acceptable traffic impact is the manner in which the school will manage the arrival and departure of students from their lessons. Unless this operation is managed with great care and precision, there will be queuing of vehicles and double parking on Sheridan Circle that will place both traffic using the circle and drivers/parents who enroll their children in this school in considerable jeopardy.

Therefore, in my opinion, the use of the building at 2306 Massachusetts Avenue as a school should not be approved.