



WELLS & ASSOCIATES, LLC

TRAFFIC, TRANSPORTATION, and PARKING CONSULTANTS

July 12, 2006

Ms. Carol J. Mitten
Chairperson
DC Zoning Commission
441 Fourth Street
Washington, D.C. 20001

RE: Tilden Street PUD (Case No. 05-26)
Supplemental Traffic Analyses

Dear Ms. Mitten:

The purpose of this memorandum is to address with clarity questions raised at the hearing before the Zoning Commission for Case No. 05-26 on June 22, 2006. First, a question was raised regarding the analysis of the driveway for the proposed residential development. The original traffic impact study (dated October 2004) analyzed the proposed driveway as a full-access driveway (i.e. with a median break). Subsequently, additional analyses were conducted with the proposed driveway modeled as a right-in/right-out only driveway (i.e. no median break). Second, a question was raised regarding the implementation of an exclusive westbound right-turn lane on Tilden Street. The Connecticut Avenue Transportation Study, commissioned by DDOT, recommended the removal of parking along the north side of Tilden Street to create an exclusive westbound right-turn for vehicles wishing to turn right onto Connecticut Avenue to travel northbound. The analysis of the Connecticut Avenue/Tilden Street intersection presented in the original traffic impact study, therefore, assumed this improvement to be in place for future conditions. Since the right-turn lane has yet to be implemented by DDOT, the analysis of the Connecticut Avenue/Tilden Street intersection was revised to determine whether other improvements could be made to improve the operation of the intersection; particularly the Tilden Street approaches. The results of these revised analyses as well as additional information pertaining to the crash data for the study area are summarized herein and are submitted for the record.

Tilden Street/29th Street

The additional traffic generated by the proposed site would have a negligible effect on traffic thereby maintaining the same levels of service at the Tilden Street/29th Street intersection. With a right-in/right-out driveway, all traffic exiting the proposed site would make a right turn on Tilden Street and then 1) continue eastbound on Tilden Street to Park Road, 2) make a U-turn at 29th Street, or 3) turn left to go northbound on 29th Street. Figure 1 illustrates the site-generated traffic volumes in the study area. As shown on Figure 1, the volume of traffic expected to make the U-turn at 29th Street is projected to be minimal: 14 vehicles during the AM peak hour and six vehicles during the PM peak hour. Two vehicles are projected to travel eastbound on Tilden Street through the 29th Street intersection and on to Park Road during the AM peak hour. During the PM peak hour, one vehicle is projected to travel eastbound through the intersection and on to Park Road. Although the increase in traffic at the Tilden Street/29th Street intersection is projected to be minimal, a level of service/capacity analysis was undertaken to ensure sufficient capacity would be available.

Figure 2 summarizes the traffic volumes at the Tilden Street/29th Street intersection under the following conditions: 1) existing conditions, 2) 2007 conditions without the proposed development, and 3) 2007 conditions with the proposed development. It should be noted that the analysis of the intersection reflects the current road configuration including only one travel lane in each direction along Tilden Street. Table I summarizes the results of the level of service/capacity analyses. As shown in Table I, the intersection would continue to operate well, with all lane groups operating at a LOS C or better. Additionally, the location of the proposed driveway (235 feet east of Connecticut Avenue) would not pose a problem related to queuing along Tilden Street since the proposed driveway would be a right-in/right-out driveway. First, egress movements from the driveway would be unimpeded by westbound queues along Tilden Street stemming from the signal at Connecticut Avenue. Second, eastbound queues along Tilden Street stemming from its intersection with 29th Street are projected to be minimal and would not block the proposed driveway.

Table I
Level of Service Summary
Tilden Street/29th Street

Approach	2007 Conditions Without Proposed Development ¹		2007 Conditions With Proposed Development	
	AM Peak	PM Peak	AM Peak	PM Peak
EB	A [9.2] ²	A [8.8]	A [9.3]	A [8.8]
WVB	A [8.1]	A [8.2]	A [8.1]	A [8.2]
NB	B [13.0]	C [16.7]	B [13.3]	C [17.0]
SB	C [17.5]	C [18.9]	C [17.9]	C [19.2]
¹ Volumes utilized included a regional growth rate of 1% per year, compounded annually, which accounts for other developments outside the immediate study area such as the Sheridan School and the Chinese Embassy. ² [17.5] = delay in seconds/vehicle				

It also should be noted that the need to make U-turns at the Tilden Street/29th Street intersection is not unique. Similar situations are present at other locations in the District. MacArthur Boulevard is perhaps the most notable. Vehicles entering or exiting right-in/right-out driveways along MacArthur Boulevard in areas where no median breaks are present must make U-turns at median break locations. On Wednesday, June 14, 2006, the MacArthur Boulevard/Cushing Place intersection and the MacArthur Boulevard/U Street intersection were observed between 6:30 AM and 9:30 AM and 4:00 PM and 7:00 PM, respectively. During the three hour AM peak period, eight U-turns were made at the MacArthur Boulevard Cushing Place intersection (in addition to the left turns being made from MacArthur Boulevard onto Cushing Place). During this time, no queues were observed. During the PM peak period, 69 U-turns were observed at the MacArthur Boulevard/U Street intersection (in addition to the left turns being made from MacArthur Boulevard onto U Street). During the peak hour, the number of vehicles in the queue waiting to turn left or make a U-turn ranged from three vehicles to seven vehicles. The queues observed were attributable to both U-turns and conventional left turns from MacArthur onto U-Street. We expect the traffic volumes to be significantly less at the Tilden Street/29th Street intersection, and therefore conclude that the U-turns at the Tilden Street/29th Street intersection would function in a similar but even more efficient manner.

In summary, the traffic analyses show that the proposed development, with a right-in/right-out driveway, would not have a significant impact on the operation of the Tilden Street/29th Street intersection or the Connecticut Avenue/Tilden Street intersection.

Connecticut Avenue/Tilden Street

The Connecticut Avenue/Tilden Street intersection was evaluated to determine whether additional improvements could be implemented in lieu of the westbound right turn lane on Tilden Street that was recommended as part of the Connecticut Avenue Transportation Study. An imbalance in levels of service suggests that timing adjustments may be appropriate. Under background conditions with and without the proposed development, the southbound Connecticut Avenue approach is expected to operate at a LOS B during the AM peak hour and a LOS C during the PM peak hour. The eastbound and westbound Tilden Street approaches would operate at a LOS F during both peak hours. An improvement analysis was conducted to determine the effectiveness of the following timing changes: 1) four seconds of green time shifted from the southbound advance phase to the eastbound/westbound Tilden Street phase and one second of green time shifted from the southbound advance phase to the northbound/southbound mainline phase during the AM peak hour; and, 2) three seconds of green time shifted from the southbound advance phase to the eastbound/westbound Tilden Street phase during the PM peak hour. By implementing minor timing adjustments, the delay for the eastbound Tilden Street approach would be reduced by 38 percent during the AM peak hour and 28 percent during the PM peak hour. The delay for the westbound Tilden Street approach would be reduced by 28 percent during the AM peak hour and 27 percent during the PM peak hour. The levels of service on Connecticut Avenue would remain unchanged.

Crash Data

We have reviewed the crash data for the Connecticut Avenue corridor as reported in the Connecticut Avenue Transportation Study, prepared by DMJM+Harris, Inc. for the District Department of Transportation in March 2003. The following intersections along Connecticut Avenue were evaluated:

- Ablemarle Street
- Yuma Street
- Windom Place
- Veazey Terrace
- Van Ness Street
- Upton Street
- Tilden Street
- Sedgwick Street

The crash data are summarized in Table 2. Many factors contribute to the occurrence of crashes at a particular location, including: driver error, speed, volume, and the number of conflict points (i.e. 4-leg intersections have more conflict points than 3-leg intersections). In the case of the Connecticut Avenue corridor, the presence of reversible lanes also influences the number of crashes, as noted in the Connecticut Avenue Transportation Study.

At seven of the nine locations, more than half of the crashes occurred during off-peak hours, as shown in Table 2. This seems to indicate that speed and the reversible lane operation on Connecticut Avenue are more significant contributors to the number of crashes along the corridor than volume.

Table 2
Crash Data Summary
Connecticut Avenue Corridor
(2003-2005)

Location	Intersection Type	Total Peak Hour Volume (AM + PM) ¹	Total Number of Reportable Crashes	Percent of Crashes Occurring During Weekday Peak Hours	Percent of Crashes Occurring During Non-Peak Hours
Ablemarle Street	4-leg	7,017	31	52%	48%
Yuma Street	3-leg	6,722	38	55%	45%
Windom Place	4-leg	7,401	6	33%	67%
Veazey Terrace	3-leg	7,332	24	42%	58%
Van Ness Street ²	4-leg	8,435	22	41%	59%
Upton Street	3-leg	6,934	24	42%	58%
Tilden Street	4-leg	8,012	33	36%	64%
Sedgwick Street ²	3-leg	NA	12	42%	58%
¹ Volumes taken from the <u>Connecticut Avenue Transportation Study</u> .					
² Data taken from the <u>Connecticut Avenue Transportation Study</u> (for the period 1999-2001).					

The proposed residential development would increase traffic at the Connecticut Avenue/Tilden Street intersection by 0.4 percent during the AM peak hour and by 0.5 percent during the PM peak hour. That is, the proposed development would account for 17 vehicles out of the 4,284 vehicles that would be traveling through the intersection during the AM peak hour. During the PM peak hour, the proposed development would account for 21 vehicles out of the 3,867 vehicles that would be traveling through the intersection.

On a daily basis, traffic volumes can fluctuate by as much as 10 to 15 percent. The additional traffic that would be generated by the proposed development is well within the daily variations present at the intersection and, therefore, is expected to have an imperceptible impact on the operation of the intersection. The volume of traffic that would be generated by the proposed development is not expected to have an impact on the rate of crashes at the intersection.

Crash data also were obtained from DDOT for the intersection of Tilden Street and 29th Street. For the period from January 1, 2000 to December 31, 2005, four crashes occurred at this location. One of the crashes involved a parked car and, presumably, was not directly related to the operation of the intersection. As with the Connecticut Avenue Corridor, the majority (75 percent) occurred during off-peak times.

Again, the volume of traffic that would be generated by the proposed development is not expected to have an impact on the rate of crashes at this intersection.

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Ms. Carol J. Mitten
July 12, 2006

We trust that the information provided herein will be helpful to the Commission in rendering its decision. Please do not hesitate to contact me at 724-933-9010 or jlmilanovich@mjwell.com should you have any questions on the enclosed.

Sincerely,

A handwritten signature in cursive script, reading "Jami L. Milanovich".

Jami L. Milanovich, P.E.
Senior Associate

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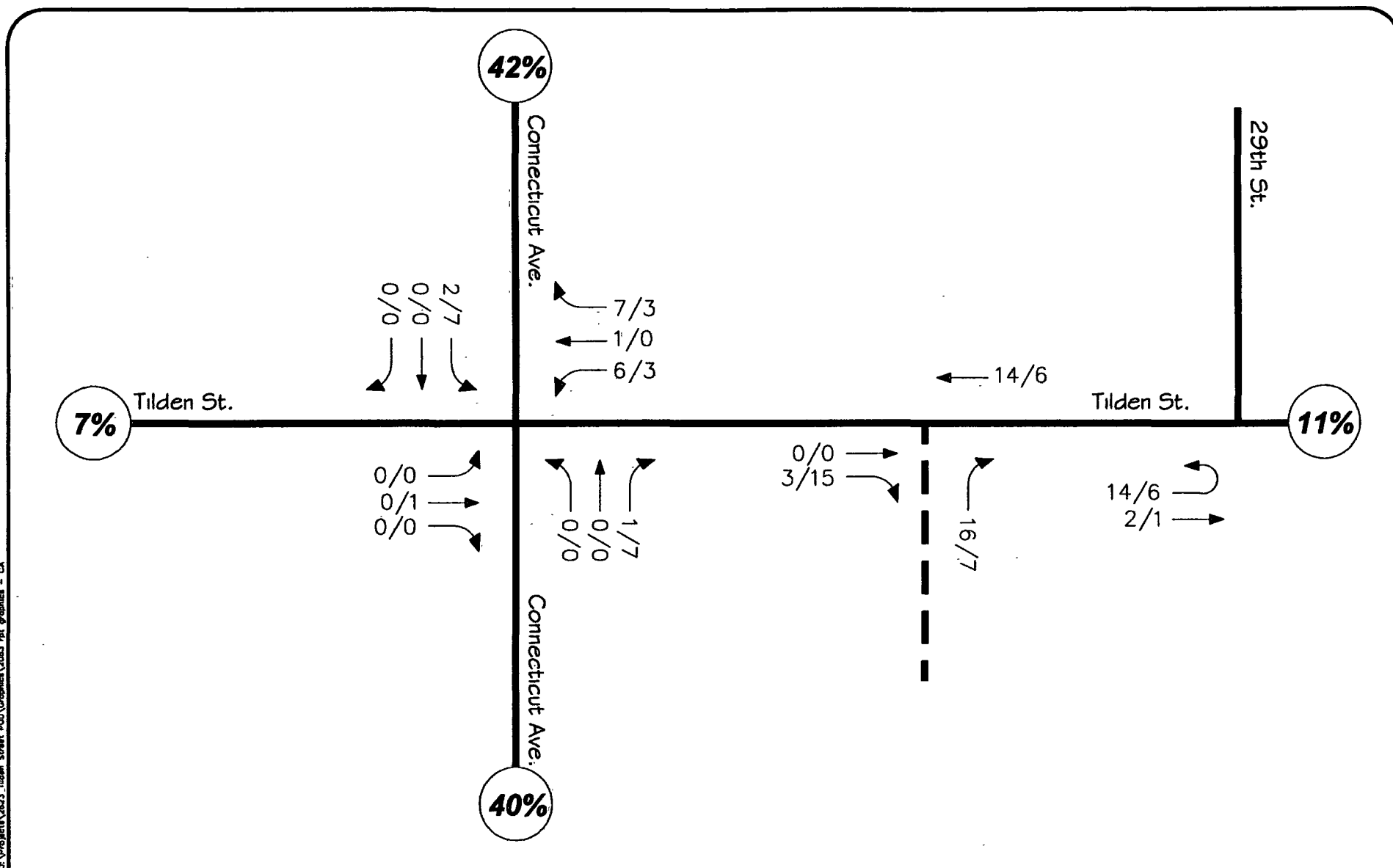
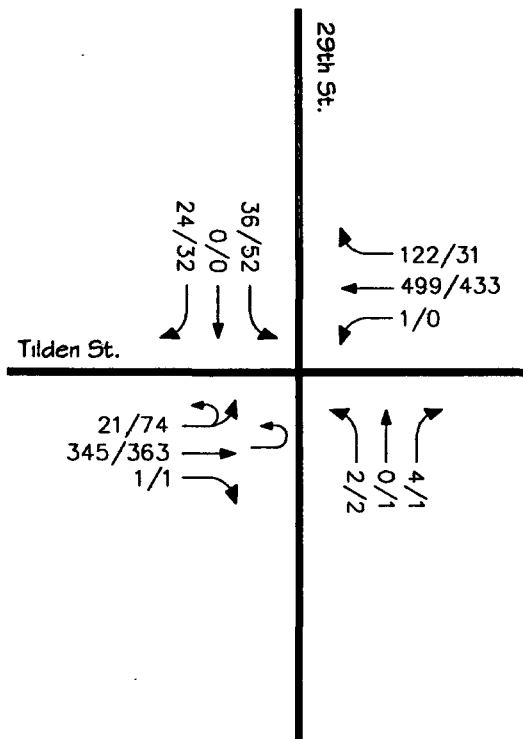
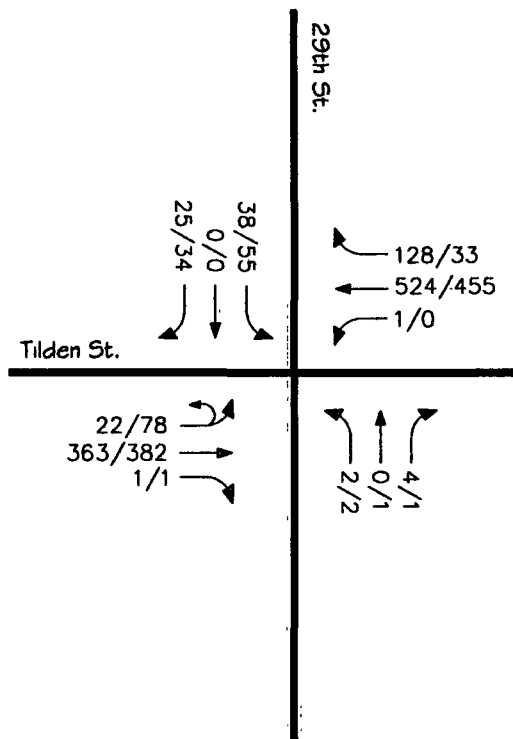


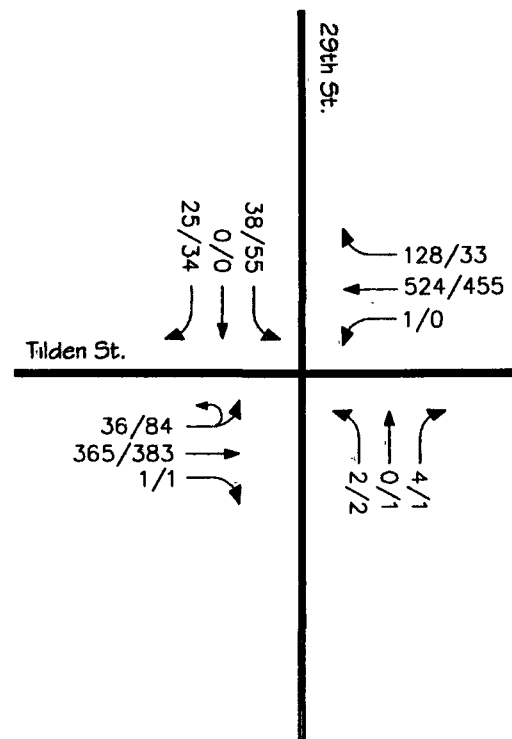
Figure 1
Trip Distribution and Assignments



2002 Traffic Volumes



2007 Traffic Forecasts
Without Proposed Development



2007 Traffic Forecasts
With Proposed Development

Figure 2
Peak Hour Traffic Volumes – Tilden Street/29th Street

AM PEAK HOUR
PM PEAK HOUR
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Schematic