



County of Fairfax, Virginia

MEMORANDUM

DATE: November 9, 2009

TO: Bernard Suchicital
Policy and Plan Development Branch, FCDPZ

FROM: Leonard Wolfenstein, Chief
Transportation Planning Section, TPD, FCDOT

SUBJECT: North County APR #08-III-DS1, Long and Foster

The Fairfax County Department of Transportation (FCDOT) offers the following comments regarding the traffic impact study submitted per the Chapter 527 requirements regarding the proposed changes to the Comprehensive Plan indicated in the subject Area Plan Review (APR) nomination. VDOT has prepared comments, which have been acknowledged in this memo and are attached to the final staff report. FCDOT's comments are as follows:

Current Comprehensive Plan Guidelines and Background Information

- Willard Road as shown on the Fairfax County Transportation Plan Map has been improved to four lanes and most of Lee Road has also been improved to four lanes. There are two portions of Lee Road that are only two lanes (one in each direction). One is just north of the site where the road crosses the Schneider Branch Stream and one is just south of the site across from the Fairfax County Criminal Justice building. The interchange at Willard Road and Sully Road (Route 28) is currently under construction and is anticipated to be completed by the end of 2009. Sully Road is currently six lanes. The Constrained Long Range Plan (CLRP), which has a constrained road network (less than the Fairfax County Transportation Plan Map), assumes this road being improved to eight lanes by 2030 (the horizon year for the traffic analysis).
- The study mentioned that WMATA bus routes 20W, 20X, 12C, 12D, and 12R operate in general proximity to the site. On June 29, 2009 the Fairfax Connector assumed responsibility of all the WMATA 12s and 20s bus routes including the ones mentioned previously. Fairfax Connector bus routes 650 and 651 operate from the Metro Vienna Metro station on Route 50 and along Lee Road in front of the nominated site. Route 651 provides service every 30 minutes during the AM and PM peak hour and Route 650 provides midday and evening service every 60 minutes. The County's Draft Transit Development Plan (TDP) is a comprehensive 10-year plan for bus service (Fairfax Connector and Metrobus) throughout the entire County. The draft plan recommends increasing midday and evening service from every 60 minutes to every 30 minutes. However, funding will be needed for all service improvements.

- There is currently only one point of vehicle access to the site, which is located on Lee Road at George Carter Way/Lee Road. The Comprehensive Plan states that any access to Land Unit I should be from Lee Road and Penrose Place. Access to Penrose Place would require a significant amount of inter-parcel access and a connection across Schneider Branch Stream. While inter-parcel access is desirable in the future for possible entrance consolidations along Lee Road, this site effectively only has access to Lee Road at the present time. Access to Route 28 and Willard Road would not be encouraged with this nomination.

Traffic Impact Analysis Results from the 3UP Traffic Study (Includes FCDOT Comments)

- Trip reductions are not assumed in the traffic impact analysis so that vehicular trips are not understated when reviewing the study. Some trip reductions may be realized through use of a Transportation Demand Management (TDM) program, which includes use of the Fairfax Connector bus routes but the amount of reduction that could be achieved is unknown at this time and no reduction was suggested or recommended in the study.
- The traffic study analyzed the nominated density of a 1.0 FAR and a reduced density of 0.70 FAR. Both look at incorporating office and hotel development. The lower density assumes a reduction in office square footage of approximately 490,000 square feet while the hotel square footage is kept the same. The tables below show both the 0.70 FAR and the 1.0 FAR options. However, FCDOT compared the reduced density of 0.70 FAR against the current Comprehensive Plan because the nominator recommended a density of 0.70 FAR in the traffic study. Development at a 1.0 FAR will have greater impacts on the analyzed intersection and road links (segments).
- Tables 1-4 below outlines intersection level of service (LOS), road segment congestion, and total trips for both the 1.0 FAR original proposed density increase and the reduced proposed density increase of 0.70 FAR. All 2030 values assume build-out of the Constrained Long Range Plan (CLRP) transportation network.

Table 1
Intersection Level of Service (LOS) – With the Proposed Densities of 0.70 and 1.0 FAR

Intersection	2009 Existing	2030 Comp Plan	2030 w/ 0.70 FAR	2030 w/ 1.0 FAR
Sully Road (Rt.28)/ Willard Road	AM - D PM - F	AM - C PM - D	AM - C PM - D	AM - C PM - D
Lee Road/ Willard Road	AM - D PM - C	AM - D PM - E	AM - F PM - F	AM - F PM - F
Lee Road/ George Carter Way * (entrance)	AM - A/C PM - A/F	AM - C PM - C	AM - D PM - D	AM - E PM - F
Lee Road/ Route 50	AM - C PM - D	AM - F PM - F	AM - F PM - F	AM - F PM - F

* Non-signalized intersection only for existing conditions

- The table above shows that the Sully Road/Willard Road and Lee Road/George Carter Way intersections operate at acceptable levels of service under the current Comprehensive Plan. The overall level of service at the Lee Road/George Carter Way intersection still operates acceptably under the 0.70 FAR option; however, certain turning movements outside the site (on Lee Road) begin to experience unacceptable levels of service. Northbound rights into the site in the AM peak hour and southbound lefts into the site in the PM peak hour begin to experience unacceptable level of service delays with the 0.70 FAR option.
- The Lee Road/Route 50 intersection fails under the current Comprehensive Plan and experiences a degradation in overall level of service under the 0.70 FAR option. The overall delay under the current Comprehensive Plan in the AM peak hour is a little under 3 minutes and increases by 5 seconds (3% increase) under the proposed density of 0.70 FAR. The PM peak hour delay under the Comprehensive Plan is approximately 2 minutes and 20 seconds. The proposed density increases the overall delay by approximately 12 seconds (9% increase) in the PM peak hour. Again, there are certain approaches such as the westbound left turn lane from Route 50 to southbound Lee Road that experience a significant increase in delay with this nomination.
- According to the traffic study, the intersection that is most severely impacted by this nomination is Willard Road and Lee Road in the AM and PM peak hours. Under the current Comprehensive Plan the overall intersection level of service in the AM peak hour is D (52 seconds of delay). The 0.70 FAR option would decrease the overall level of

service to an F, which is approximately an 80% increase in delay that is attributed solely to the proposed nomination. The overall intersection level of service in the PM peak hour under the current Comprehensive is an LOS E (one minute delay) and would decrease to an F (almost two minutes in delay) under the 0.70 option or approximately a 70% increase.

- There are several approaches at Lee Road and Willard Road that will experience an increase in delay associated with the nomination. However, one approach is severely impacted by the nomination. It is the southbound left turn lane from Lee Road to eastbound Willard Road. Many of the vehicles exiting the site, according to the traffic study, will turn left onto southbound Lee Road. They then turn left at Lee Road to eastbound Willard Road to access the interchange at Route 28 and Willard Road. The table below highlights the impacts to the left turn lane from southbound Lee Road to eastbound Willard Road associated with the proposed nominations

Table 2
Level of Service Approach - Left Turn Lane from SB Lee to EB Willard

Density	AM LOS & Delay	% Inc. in Delay	PM LOS & Delay	% Inc. in Delay
Comp Plan	F - (138)	--	E - (79)	--
0.70 FAR	F - (484)	251%	F - (289)	266%
1.0 FAR	F - (545)	295%	F - (472)	497%

Delay (xx) in seconds

- Table 2 shows that under the 0.70 FAR option, the delay in the morning increases from approximately 2 minutes to 8 minutes (251%) in the AM peak hour and from 1 and a half minutes to a little under 5 minutes (266%) in the PM peak hour.

Table 3
2030 Link Analysis – With Comp Plan and Proposed Densities of 0.70 and 1.0 FAR

Roadway	Section	AM/PM Peak Hour	2030 Comp Plan V/C Ratio	2030 0.70 FAR V/C Ratio	2030 1.0 FAR V/C Ratio
EB Willard Road	Lee Rd to Route 28	AM	0.26	0.33	0.35
WB Willard Road	Lee Rd to Route 28	AM	0.98	1.17	1.27
NB Lee Road	Willard Rd to Route 50	AM	0.49	0.85	1.05
SB Lee Road	Willard Rd to Route 50	AM	0.46	0.58	0.61
EB Willard Road	Lee Rd to Route 28	PM	0.65	0.77	0.88
WB Willard Road	Lee Rd to Route 28	PM	0.48	0.56	0.59
NB Lee Road	Willard Rd to Route 50	PM	0.75	0.89	0.94
SB Lee Road	Willard Rd to Route 50	PM	0.97	1.21	1.44

- 1) Capacity on Willard is 3 lanes per direction (2250 vehicles per hour)
- 2) Capacity on Lee is 2 lanes per direction (1500 vehicles per hour)

- The link analysis above is from the traffic study and it assumes six lanes on Willard Road. Per the VDOT memorandum (pg.4) on this traffic study and the Fairfax County Transportation Plan Map, this road is only four lanes. Footnote number 1 under Table 3 is based on the Nominator’s study. The v/c ratio on Willard Road can be expected to be higher than what is shown in Table 3.
- FCDOT requested that the nominator provide a link capacity analysis on Lee Road and Willard Road. A volume to capacity ratio above 1.0 (highlighted in yellow) means that the roads are saturated with vehicles. The link analysis shows that none of the segments experience a v/c ratio above 1.0 under the current Comprehensive Plan, which means that the road segments are within an acceptable level of service. Under the 0.70 FAR option, westbound Willard in the AM and southbound Lee Road in the PM have v/c ratios above 1.0. The 1.0 FAR option increases the v/c ratio for all segments and shows that northbound Lee Road in the AM now has a v/c ratio above 1.0.
- VDOT’s memorandum dated October 16, 2009 provides additional technical information regarding the traffic impact analysis conducted for this APR nomination.

Table 4
Trip Generation – Current Comprehensive Plan vs. Proposed Density Increases

Density	AM Peak	PM Peak	Daily	Percent Inc. Daily Trips
Comp Plan	406	499	3,688	--
0.70 FAR	1,406	1,300	12,734	245%
1.0 FAR	1,899	1,869	15,891	331%

- The above table shows trip generation estimates that could be generated from either of the density increases. It also shows the daily percentage increase of both options above the current Comprehensive Plan.

RECOMMENDATIONS

- While not quantified, the nominator suggested the following mitigation measures:
 - Transportation Demand Management (TDM) program.
 - Shuttle system for Hotel development.
 - Supportive of future transit options that may become available along the Route 28 corridor.
- The road network assumed in the submitted traffic impact analysis, along with the mitigation measures suggested in the traffic study by the nominator, is insufficient to

support a level of development associated with either of the proposed density increases due to the net increase in traffic generated by this development above the 2030 background.

- The nominator states in the traffic study that “no additional roadway geometric improvements are identified that would be the direct responsibility of the Nominator to mitigate.” However, the traffic study and points noted above in this memorandum, as well as VDOT comments, show that this nomination would exacerbate intersection level of service (especially at Lee Road and Willard Road) to the point of failure. The nominator should mitigate their impacts to the intersections from their development.
- FCDOT acknowledges that the nominator has provided right-of-way for the Route 28/Willard Road interchange currently under construction, made frontage improvements to Lee Road, and partially funded the signal now in place at the applicant’s site entrance. The analysis indicates that additional mitigation would be needed to accommodate the additional 0.35 FAR proposed in the nomination, which is double the current density under the existing Comprehensive Plan.
- Should this nomination be approved, plan language should stipulate the following key conditions:
 - Because of the degradation in the intersection level of service at Willard Road and Lee Road, intersection improvements would be needed at this intersection to mitigate the traffic impacts.
 - As assumed in the submitted traffic analysis and demonstrated with the link analysis, Lee Road would need to be improved to four lanes from Route 50 to Willard Road. Development of this site should be phased with the improvement of Lee Road to four lanes and the above mentioned intersection improvements at Lee Road and Willard Road.
 - A strong and meaningful TDM program must be established and include FCDOT-approved TDM measures. The program should consider but not be limited to the following:
 - Contribution to the increased headways on established Fairfax Connector Routes 650 and 651 and possibly a provision of shuttle service on the Route 28 corridor and/or to the Vienna Metrorail station for all types of development.

Please contact Mike Garcia at Michael.Garcia3@fairfaxcounty.gov or 703-877-5673 should you need further information or clarification of these comments.

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