



APPLICATION ACCEPTED: June 20, 2008
PLANNING COMMISSION: February 16, 2011
BOARD OF SUPERVISORS: Not yet Scheduled

County of Fairfax, Virginia

February 3, 2011

STAFF REPORT ADDENDUM III

SPECIAL EXCEPTION APPLICATION SE 2008-PR-021

PROVIDENCE DISTRICT

APPLICANT: James W. Jackson

ZONING: R-1

PARCEL(S): 48-1 ((1)) 50

ACREAGE: 1.29 acres

FAR: 0.11

PLAN MAP: Residential; 3-4 du/ac

SE CATEGORY: Category 3: Child Care Center and Nursery School

PROPOSAL: To permit a child care center and nursery school with a maximum enrollment of 150 students.

REQUESTED WAIVERS AND MODIFICATIONS:

Waiver of the service drive requirement along Chain Bridge Road;

Waiver of construction of the on-road bike lane along Chain Bridge Road;

Kelli-Mae Goddard-Sobers

Department of Planning and Zoning
Zoning Evaluation Division
12055 Government Center Parkway, Suite 801
Fairfax, Virginia 22035-5509
Phone 703-324-1290 FAX 703-324-3924
www.fairfaxcounty.gov/dpz/



Modification of the transitional screening requirements along Sutton Road and Chain Bridge Road frontages of the site, in favor of that shown on the Special Exception (SE) Plat;

Waiver of the barrier requirement along the Sutton Road frontage and modification of the barrier requirement along Chain Bridge Road;

Waiver of the 10-foot wide landscaped peripheral yard between the off-street parking and the front lot line along Chain Bridge Road in favor of that shown on the SE Plat;

Waiver of the 4-foot wide peripheral landscaped strip between the off-street parking and the adjacent use to the southeast in favor of that shown on the SE Plat; and

Deviation from the tree preservation target requirement of Chapter 122 of the County Code and the Public Facilities Manual by the Director of DPWES, UFM.

STAFF RECOMMENDATIONS:

Staff recommends that SE 2008-PR-021 be denied; however, if it is the intent of the Board of Supervisors to approve SE 2008-PR-021, staff recommends that the approval be subject to the draft development conditions contained in Attachment 1 of the staff report.

It should be noted that it is not the intent of staff to recommend that the Board, in adopting any conditions proffered by the owner, relieve the applicant/owner from compliance with the provisions of any applicable ordinances, regulations, or adopted standards.

It should be further noted that the content of this report reflects the analysis and recommendation of staff; it does not reflect the position of the Board of Supervisors.

The approval of this special exception does not interfere with, abrogate or annul any easement, covenants, or other agreements between parties, as they may apply to the property subject to this application.

For information, contact the Zoning Evaluation Division, Department of Planning and Zoning, 12055 Government Center Parkway, Suite 801, Fairfax, Virginia 22035-5505, (703) 324-1290.

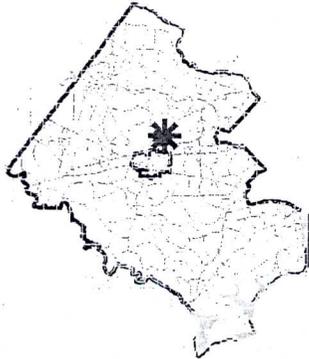
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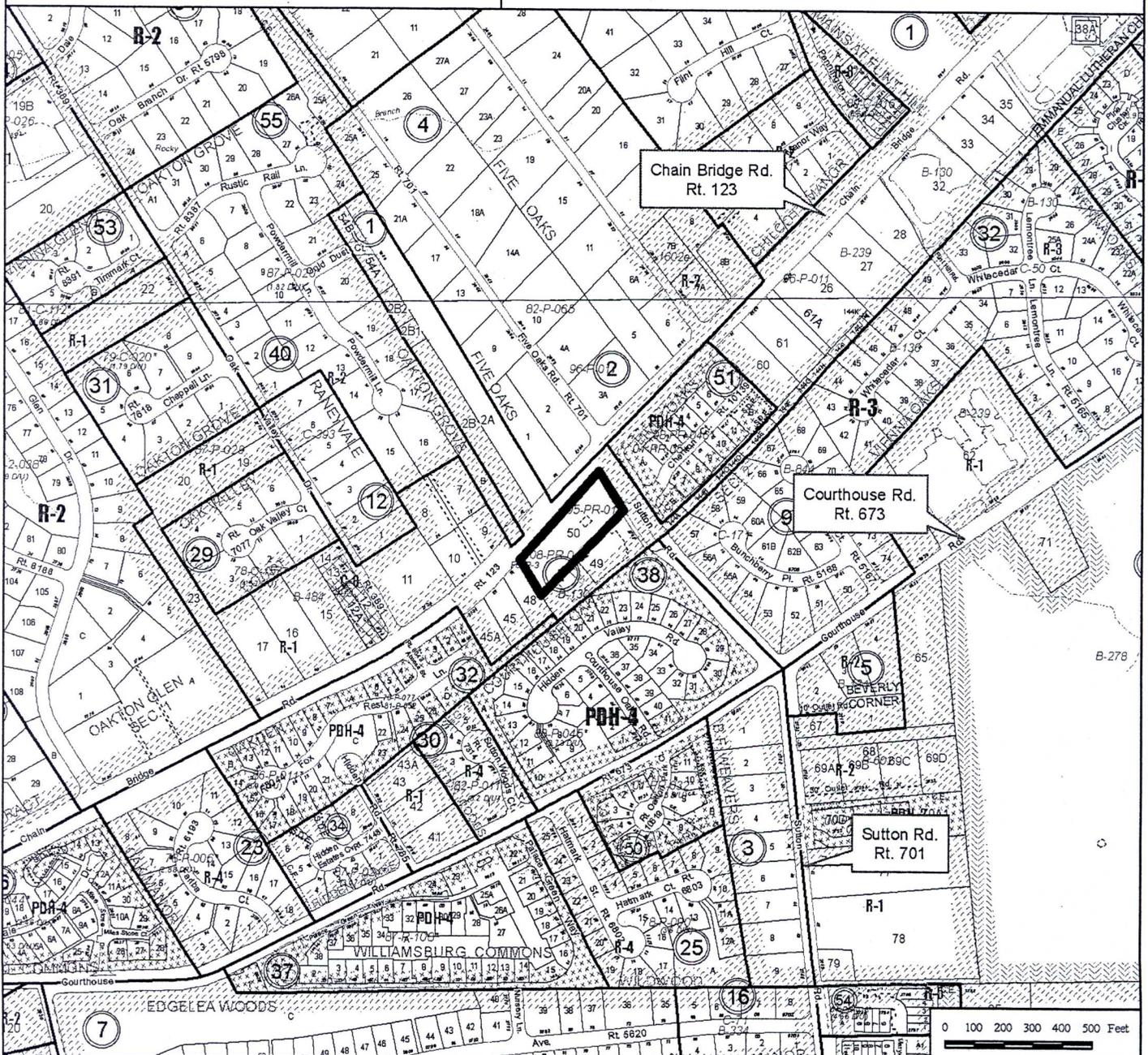
Americans with Disabilities Act (ADA): Reasonable accommodation is available upon 7 days advance notice. For additional information on ADA call (703) 324-1334 or TTY 711 (Virginia Relay Center).

Special Exception

SE 2008-PR-021



Applicant: JAMES W. JACKSON
Accepted: 06/20/2008
Proposed: CHILD CARE CENTER AND NURSERY SCHOOL
Area: 1.29 AC OF LAND; DISTRICT - PROVIDENCE
Zoning Dist Sect: 03-010403-0104
Art 9 Group and Use: 3-10 3-10
Located: 2701 CHAIN BRIDGE ROAD
Zoning: R- 1
Plan Area: 2,
Overlay Dist:
Map Ref Num: 048-1- /01/ /0050



BACKGROUND

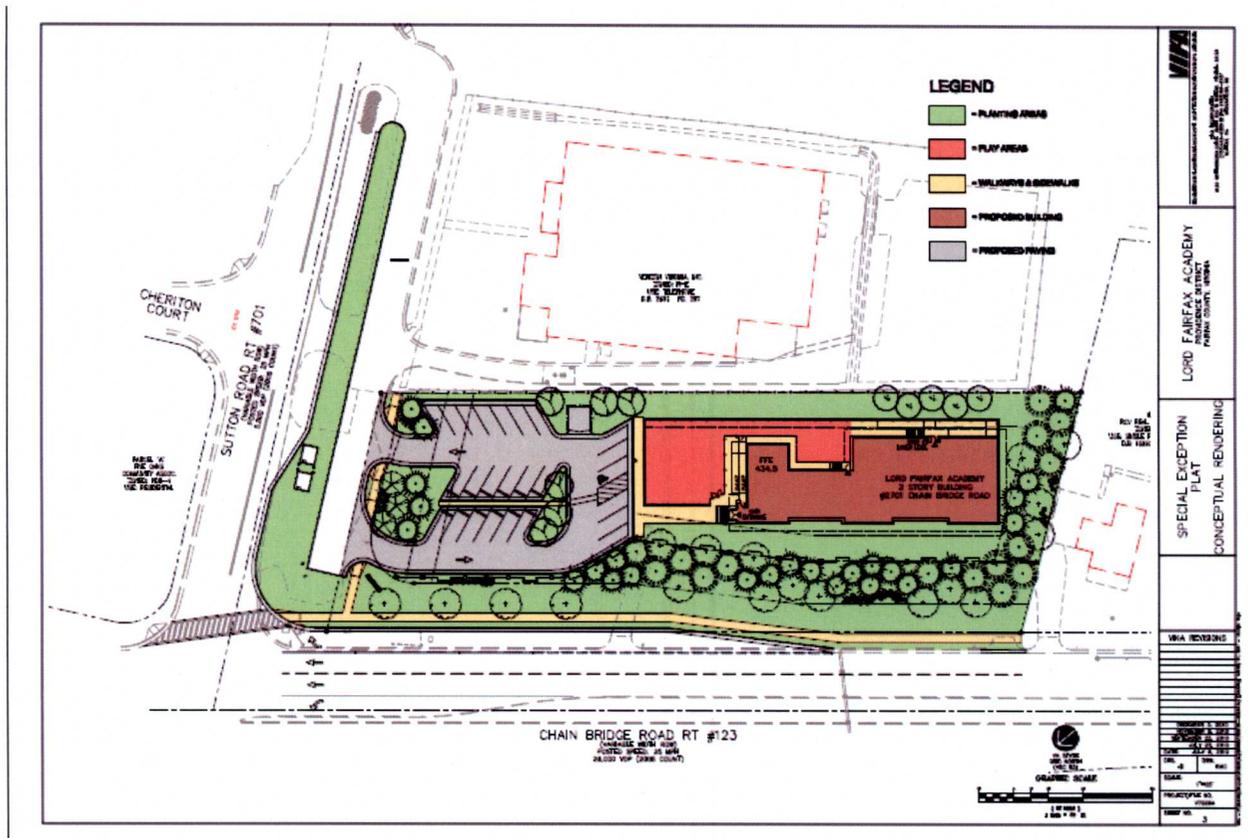
This staff report addendum has been written to clarify and discuss in more detail some of the issues raised in the second addendum report; to include all of the transportation documents submitted by the applicant to Fairfax County Department of Transportation (FCDOT) as attachments to this addendum report; and to revise and delete some of the development conditions published in the second addendum report.

On January 12, 2011, the second staff report addendum was published. In this report, staff documented that the applicant had withdrawn rezoning application RZ 2008-PR-010, which was no longer required as the revised site design now meets the R-1 District setback requirements. The staff report failed to mention that an additional reason a rezoning was no longer required, is due to the proposed reduction in gross floor area from 9,600 square feet (SF) to 6,228 SF, resulting in a floor area ratio (FAR) of 0.11, which is below the maximum FAR allowed within the R-1 District.

Staff Report	Proposed No. of Children	Gross Floor Area (GFA)	Bldg. Footprint Area	Floor Area Ratio (FAR)	No. of Parking Spaces	Size of Play Area
Original	170	9,600 SF	10,000 SF	0.17	29	7,200 SF
Addendum I	170	11,795 SF	6,576 SF	0.21	29	6,200 SF
Addendum II	150 (no more than 120 children at one time)	6,228 SF	7,350 SF	0.11	25	2,980 SF

DISCUSSION

The applicant submitted a revised Special Exception (SE) Plat dated January 3, 2011, included as Attachment 2 to this addendum. In the second addendum report, staff described the changes the applicant made to the site layout, the proposed transportation improvements, access, parking, pedestrian amenities, landscaping, and stormwater management facilities. The following describes in more detail the changes made to the site layout, clarifies how the site would be accessed, describes the proposed landscaping, and explains the parking requirements.



Site Layout: The proposed two-story, 35-foot high brick and exterior siding building for the nursery school/child care center has been moved eleven feet farther back from Chain Bridge Road and is now located approximately 41 feet from the property line fronting Chain Bridge Road and 201 feet from Sutton Road and meets the minimum setbacks of 40 feet for the front yard, 20 feet for the side yard, and 25 feet for the rear yard. The building has also been redesigned and elongated to accommodate one of the two outdoor play areas behind the building. The second outdoor play area is now depicted between the parking lot and the building. Additionally, an indoor play area is to be provided.

Access: Access to the site is to be provided via an approximately 202-foot long existing service drive located on Sutton Road. The applicant is proposing to extend the service drive, which currently provides access to the adjacent Verizon facility, by approximately 107 feet, and to close one of the two service drive entrances, which is approximately 175 feet from the intersection of Sutton Road and Chain Bridge Road. The other existing entrance to the service drive, which is approximately 312.5 feet from the roadway intersection and meets VDOT's standard access regulations, will serve as the only access point to the service drive and the proposed use. The applicant is also proposing to construct a right turn lane on Sutton Road to accommodate vehicles turning into the service drive. Once vehicles have entered the service drive, the subject site can be accessed via a one-way entrance which is shown approximately 42.5 feet from the intersection of Sutton Road and Chain Bridge Road. The circulation on the site is one-way.

Vehicles would exit the site via a one-way exit which is shown approximately 100 feet from the intersection of the two roadways. The applicant is also proposing to construct a right turn lane on Chain Bridge Road which is warranted due to existing traffic conditions

An alternate schematic layout is also depicted on Sheet 3 for the ultimate Route 123 (Chain Bridge Road) configuration. It shows one access point to the site serving as both an entrance and exit to Sutton Road. The proposed access point would be located approximately 60 feet from the intersection of Sutton Road and Chain Bridge Road.

Parking: The number of parking spaces to be provided in the surface parking lot has been reduced from 29 to 25 parking spaces; twenty-four parking spaces are required for a child care center/nursery school with a maximum enrollment of 150 children, which is calculated at a ratio of 0.16 parking space per child.

Landscaping: In the second addendum, staff acknowledged that the applicant has increased the width of the proposed transitional screening from approximately 15 feet to 25 feet, which is in accordance with the Zoning Ordinance transitional screening width requirement, along approximately 480 linear feet of the Chain Bridge Road frontage. However, approximately 100 linear feet of transitional screening along the segment of Chain Bridge Road in front of the proposed parking lot has been reduced from approximately 10 feet in width to four feet to accommodate the proposed dedication of right-of-way (ROW) on Chain Bridge Road. The applicant is proposing to supplement this four-foot wide landscaping strip by planting vegetation within a portion of the ROW area to be dedicated to the Virginia Department of Transportation (VDOT), along this segment of Chain Bridge Road, that is approximately 20 feet wide by 125 feet long. Four deciduous trees are depicted on the SE Plat as the proposed plantings within the dedicated area, which is subject to approval of a license agreement with VDOT. The VDOT dedication area is approximately 9,560 SF. Of that area, approximately 1,500 SF would be public sidewalk, leaving approximately 8,060 SF available for landscaping. Staff also notes that no tree preservation is being proposed on-site.

ANALYSIS

Site layout

Size and Location of Outdoor Play Area

Staff acknowledges that the applicant is providing two outdoor play areas totaling 2,980 SF and an indoor play area totaling approximately 1,286 SF. Previously, staff advised the applicant that if the proposed number of students were reduced, then the required square footage of outdoor play area could also be reduced. Subsequently, the applicant reduced the proposed outdoor play area from 6,200 SF to 2,980 SF.

In the second addendum, staff also acknowledged the applicant's effort to relocate and redesign the outdoor play area and expressed concern that the play area may now be too small for a reasonable number of older children, (children ages 9 through 12) to use at any one time. However, it should be noted that the Zoning Ordinance does not require larger play areas for older children. Section 9-309 of the Zoning Ordinance states "*the minimum lot area shall be of such size that 100 square feet of usable outdoor recreation area shall be provided for each child that may use the space at any one time.*" Staff's concern with adequately sized play areas to accommodate older children is exacerbated by the outdoor play area's capacity. Previously, a maximum of 62 children could play outdoors at any one time. The revised site design limits use of the play area to a maximum of 29 children. The applicant has informed staff that an employee or employees will monitor each class using the play area, to ensure that no more than 29 children of the same age group use the outdoor play area at any one time.

In the second addendum, staff also stated that one of the newly proposed locations for a play area is problematic as it is now shown between the proposed building and the parking area which results in a greater distance that parents have to walk to take their children in and out of the building. As a result, vehicles will remain parked on-site for a longer period of time, as parents would have to walk past the play area to get to and from the building. It has been brought to staff's attention by the applicant that it should take approximately twelve seconds to walk past the play area at a rate of 3.5 feet per second (based on information provided in the Manual on Uniform Traffic Control Devices). Fairfax County Department of Transportation (FCDOT) staff has evaluated this information and concluded that the referenced time frame is typically applicable to adult pedestrian crossing times at signalized crosswalks.

Parking

In the second addendum, staff acknowledged that the area of the surface parking lot was reduced from approximately 13,671 SF to 11,125 SF and now provides 25 parking spaces. Parking is based on the number of children and not the number of employees. For the proposed child care center/nursery school with a maximum enrollment of 150 children, twenty-four parking spaces are required (0.16 parking space per child). With the current proposal, the applicant has reduced the number of proposed employees from 23 to 11. In error, staff did not revise the development conditions published in the second addendum to reflect this change; the development condition has now been revised to accurately reflect the current proposal.

Staff is concerned, however, that the staff to child ratio of 11 teachers to 120 children may be inadequate. The applicant has stated that the staff to child ratio is determined by Virginia State licensing and is based on the age of the children. Therefore, the number of employees required may vary based on the age of the children enrolled during any given year. Staff has verified with the State that the staff to child ratio for this proposal would be according to the various age groups outlined in the following table:

Age Range	Employee to Child Ratio
Infants	1:4
Young toddlers	1:5
2 and 3 years	1:10
4 years	1:12
5 years and older	1:20

Staff understands that the number of children within each age group will vary each year and therefore recognizes that the number of employees is likely to fluctuate beyond the maximum of 11 cited by the applicant depending upon the age mix of the enrollment. As a result, employee parking needs may vary significantly each year.

Noise Mitigation

In the second addendum, staff acknowledged that the applicant submitted a noise study to staff on November 16, 2010, which was included as an attachment to the addendum, but failed to conclude whether the mitigation would be sufficient. The noise study contains detailed information regarding the structural design of the fence and specifies that a minimum height of six feet was required to effectively reduce the noise level coming from Chain Bridge Road. The noise barrier depicted on the SE plat incorporates the noise study recommendations into the structural design of the fence and the proposed height of the fence is six feet. Therefore, the noise mitigation has been successfully addressed.

Transportation Issues



Existing Roads and Site Condition

In the second addendum, staff acknowledged the applicant's attempt to resolve the previously cited existing transportation issue regarding the need for a right-turn lane on Chain Bridge Road by proffering to construct the right turn lane and to move the existing utility poles to enable the construction of the turn lane. Also, staff acknowledged that the applicant is proposing to construct a right turn lane on Sutton Road along the western side of the service drive to accommodate vehicles waiting to turn into the service drive to gain access to the proposed child care center.



Proposed Traffic Circulation

However, staff still had the following concerns:

- The use is too intense for this particular location at the intersection of Chain Bridge Road and Sutton Road;
- The potential for the queuing of vehicles backing into the existing service drive and onto Sutton Road; and
- The existing service drive on Sutton Road may be removed when intersection improvements warranted by existing traffic conditions at the intersection of Chain Bridge Road and Sutton are constructed.

If Sutton Road is to be widened and the service drive is removed, the applicant proposes to construct one site entrance which would be located approximately 60 feet from the intersection; all queuing of vehicles would then have to occur on-site. Staff is concerned that this entrance would be too close to the intersection of

Sutton Road and Chain Bridge Road and would not meet VDOT's Access Management Regulations which requires site entrances to be at least 225 feet from a roadway intersection.

The applicant has submitted several transportation documents to FCDOT to provide empirical data to support their position that no further intersection improvements other than the two right turn lanes they are proposing to construct would be warranted, as the intersection is currently operating at level of service C during the AM peak hour and at level of service B during the PM peak hour. As the intersection is operating at a lower traffic level, the existing service drive could remain and access to the site could be provided by it. However, FCDOT notes that while the Comprehensive Plan currently shows Sutton Road as a two-lane improved roadway, intersection improvements are typically not identified on the Comprehensive Plan and the existing service drive may have to be eliminated. As a result, the proposed one-way site entrance and exit would provide direct access to and from Sutton Road at a location that would not meet VDOT's Access Management Regulations as the entrance and exit would be less than 225 feet from the roadway intersection.

It was brought to staff's attention that some material the applicant previously submitted to FCDOT was not addressed in their memo dated December 21, 2010. FCDOT has provided an updated memo dated January 25, 2011 included as Attachment 4 which states the following:

- The proposed turning radius for vehicular access to the service drive is inadequate due to the reduced width of the median after construction of the proposed right turn lane;
- The applicant's sketch of potential, not yet planned, improvements to Sutton Road, which show the proposed right turn lane modified to a through-lane to accommodate a future four-lane undivided roadway contradicts staff's belief that a four-lane median divided roadway would be warranted.
- The applicant's sketch for a possible future interparcel access to the Verizon site and a shared driveway is problematic for three reasons:
 - The entrance would not meet VDOT's Access Management Regulations as it would be less than 225 feet from the roadway intersection;
 - The applicant has no documentation that Verizon would be agreeable to sharing their driveway; and
 - Verizon may have concerns regarding liability if non-employees are utilizing their driveway. There is the potential for conflicts with trucks coming to the Verizon site for maintenance visits.
- All parking has to be contained on-site with eleven employees on-site on a daily basis; the proposed parking lot does not provide for special events

and after hours activities, which is important because no parking is allowed on Sutton Road; and

- The school bus picking up and dropping off children in the mornings and afternoons for child care services would most likely stop in the proposed right turn lane to the service drive and prevent traffic from going southbound on Sutton Road during peak traffic hours affecting traffic turning south from Chain Bridge Road.

Additionally, it has been brought to staff's attention that Washington Gas has recently installed a gas monitoring system in the service drive median on Sutton Road. Staff does not believe that the expansion of Sutton Road to create a four-lane median divided roadway would be hindered by the gas monitoring system, as it is not unusual for the County and utility companies to enter into contractual agreements to relocate utilities before the intersection improvements are constructed.

In the previous addendum, staff acknowledged that the applicant has agreed to development conditions to stagger the arrival and departure of children during peak traffic hours to:

- Reduce the number of vehicles on-site at one time and to reduce the trip generation impacts on the surrounding road network;
- Provide carpooling measures; and
- Provide a school bus to pick up and drop off children from remote locations.

The applicant is proposing that the arrival and departure of children would be as follows:

- Arrival of children in the morning between 8:00 a.m. and 9:30 a.m.:
 - between 8:00 a.m. and 8:30 a.m., no more than 50 children; and
 - between 8:30 a.m. and 9:30 a.m., no more than 50 children shall arrive.
- Departure of children in the afternoon between 3:00 p.m. and 7:00 p.m.:
 - between 3:00 p.m. and 4:00 p.m., no more than 30 children;
 - between 4:00 p.m. and 5:00 p.m., no more than 40 children; and,
 - between the hours of 5:00 p.m. and 7:00 p.m. no more than 50 children.

The applicant has informed staff that during student enrollment, parents will be assigned specific drop off and pick up times to maintain the staggered arrival and departure system outlined above.

DEVELOPMENT CONDITIONS

Application RZ 2010-PR-010, originally submitted concurrent with this Special Exception (SE) application but subsequently withdrawn, proposed proffers for monetary contributions to be made to the Park Authority, the Oakton Public Library, and the Providence District Tree Fund. These previously proposed commitments offered by the applicant were incorporated into the proposed development conditions contained in the second staff report addendum. Because a rezoning is no longer requested, the applicant is no longer willing to proffer these contributions; therefore, these development conditions have been deleted.

CONCLUSIONS AND RECOMMENDATIONS

Staff Conclusions

The second staff report addendum acknowledged that the applicant had made several revisions to the site's design to address staff's previously identified concerns regarding:

- the need to reduce the proposed number of children;
- the need for the proposed building to be set farther back from the Chain Bridge Road frontage to provide more space for buffering;
- the need to relocate the play area;
- the need for a reduction in the size of the surface parking lot; and
- the need for the construction of a right-turn lane on Chain Bridge Road.

However, staff stated that the proposed changes did not fully address the design and intensity issues previously identified in the staff report and first addendum. Staff acknowledged that the applicant reduced the GFA of the building, the number of parking spaces, and the play area. However, the majority of the site is still consumed by the parking lot and building. Staff continues to suggest that with a smaller structure and parking lot, full transitional screening and improved on-site circulation may be achieved.

There are also access issues that remain. FCDOT staff has stated that future spot improvements at the Chain Bridge Road and Sutton Road intersection and/or the improvement of Sutton Road as a four-lane median divided roadway may be warranted, which would eliminate the existing service drive. As a result, the proposed site entrances would not meet VDOT's Access Management Regulations. The alternate design for an interparcel access with the adjacent Verizon site would also be problematic, as this entrance would not meet VDOT's Access Management Regulations. Additionally, it has been determined that the turning radius for the proposed access to the existing service drive would be too narrow, as the median

width would be reduced to accommodate construction of the proposed right turn lane.

Overall, staff concludes that the proposed use will and site design are too intense and significant access concerns remain unmitigated.

Staff Recommendations

Staff recommends that SE 2008-PR-021 be denied; however, if it is the intent of the Board of Supervisors to approve SE 2008-PR-021, staff recommends that the approval be subject to the draft development conditions contained in Attachment 1 of the staff report.

It should be noted that it is not the intent of staff to recommend that the Board, in adopting any conditions proffered by the owner, relieve the applicant/owner from compliance with the provisions of any applicable ordinances, regulations, or adopted standards.

It should be further noted that the content of this report reflects the analysis and recommendation of staff; it does not reflect the position of the Board of Supervisors.

ATTACHMENTS

1. Proposed Development Conditions
2. Reduction of the Special Exception Plat revised January 3, 2011
3. Statement of Justification
4. Transportation Analysis
5. Transportation Documents submitted by the applicant

PROPOSED DEVELOPMENT CONDITIONS

SE 2008-PR-021

February 3, 2011

If it is the intent of the Board of Supervisors to approve SE 2008-PR-021, located at 2701 Chain Bridge Road [Tax Map 48-1-((1))-50], to permit a child care center and nursery school pursuant to Section 3-104 of the Fairfax County Zoning Ordinance, then Staff recommends that the Board condition the approval by requiring conformance with the following development conditions.

1. This Special Exception is granted for and runs with the land indicated in this application and is not transferable to other land.
2. This Special Exception is granted only for the purpose(s), structure(s) and/or use(s) indicated on the Special Exception Plat with the application, as qualified by these development conditions.
3. A copy of the Non-Residential Use Permit SHALL BE POSTED in a conspicuous space on the property of the use and be made available to all departments of Fairfax County during the hours of operation of the permitted use.
4. This Special Exception is subject to the provisions of Article 17, Site Plans, as may be determined by the Director, Department of Public Works and Environmental Services (DPWES). Any plan submitted pursuant to this special exception shall be in substantial conformance with the approved Special Exception Plat entitled Lord Fairfax Academy, prepared by Vika, Inc and dated July 9, 2010 as revised through January 3, 2011 and these development conditions. Minor modifications to the approved Special Exception may be permitted pursuant to Par. 4 of Section 9-004 of the Zoning Ordinance.
5. The hours of operation shall be limited to 6:30 a.m. to 7:00 p.m., Monday through Friday except for after-hours activities. After-hours activities shall be limited to five per year with no more than one after-hour activity during any one month. All after-hours activities shall be concluded no later than 9:00 p.m. All parking for such activities shall be on-site. If parking cannot be accommodated on-site, shuttle service, by car or bus, from an off-site location shall be utilized to ensure that no vehicles are parked on Sutton Road or the access road.
6. In order to monitor compliance with the foregoing restrictions, the operator of this Special Exception shall be required to file with the Zoning Administrator at the beginning of each calendar year a notarized affidavit identifying: (1) the total number of children enrolled, full or part time; (2) the age of each child; (3) the scheduled arrival and departure times; and (4) the number of employees.
7. The arrival and departure of children shall be staggered during peak traffic hours to minimize the number of vehicles on-site at any one time. The arrival of

children in the morning between 8:00 a.m. and 9:30 a.m. shall be staggered as follows:

Between 8:00 a.m. and 8:30 a.m., no more than 50 children shall arrive; between 8:30 a.m. and 9:30 a.m., no more than 50 children shall arrive.

The departure of children in the afternoon between 3:00 p.m. and 7:00 p.m. shall be staggered as follows:

Between the hours of 3:00 p.m. and 4:00 p.m., no more than 30 children shall be dismissed; between the hours of 4:00 p.m. and 5:00 p.m., no more than 40 children shall be dismissed, and between the hours of 5:00 p.m. and 7:00 p.m. no more than 50 children shall be dismissed.

An employee shall be designated to monitor and enforce the above arrival and departure times.

8. At time of registration, all parents/guardians shall receive written information regarding transportation procedures including, but not limited to, staggered arrival and departure times, restrictions on parking and vehicle maneuvers, and efficient drop-off and pick-up of children.
9. All children coming after school for child care services shall be transported to the site by the Applicant's passenger mini-bus. The mini-bus shall deliver the children on-site and not stop on Sutton road or in the service drive used to access the site.
10. No more than 25 children shall be outside on the playground at any one time. The use of the playground shall be limited to the hours between 10:00 a.m. and 4:30 p.m.
11. Carpooling shall be encouraged as a mechanism to minimize daily vehicular trips to the site. To facilitate carpool arrangements, zip code rosters shall be provided to all parents/guardians of children and employees.
12. At time of registration, all parents/guardians shall receive written information regarding transportation procedures including, but not limited to, staggered arrival and departure times, restrictions on parking and vehicle maneuvers, and efficient delivery and pick up of children.
13. A minimum of one bus or van with a seating capacity of 14 children shall be used to pick up and drop off children from remote locations.
14. Energy Star appliances shall be installed within the building to maximize energy efficiency.
15. Prior to the issuance of the Non-RUP, the appropriate water line extension, as determined by Fairfax County Water Authority, shall be installed to support this development.

16. Prior to any land disturbing activities on the property, a Phase I archeological study of the Application Property shall be conducted and the result of such studies shall be submitted to the Heritage Resources Branch of the Fairfax County Park Authority ('Heritage Resources'). If deemed necessary by Heritage Resources, a Phase II and/or Phase III archeological study shall be conducted on only those areas of the Application Property identified for further study by Heritage Resources. The studies shall be conducted by a qualified archeological professional approved by Heritage Resources, and shall be reviewed and approved by Heritage Resources. The studies shall be completed prior to site plan approval.
17. Limits of Work. The "Limits of Work" as noted on the submitted SE plat shall be construed to be the limits of clearing and grading. The limits of clearing and grading shall be strictly observed as shown on the SE, subject to allowances specified in these development conditions and for the installation of utilities and/or trails as determined necessary by the Director of DPWES, as described herein. If it is determined necessary to install utilities and/or trails in areas protected by the limits of clearing and grading as shown on the SE, they shall be located in the least disruptive manner necessary as determined by the UFMD, DPWES. A replanting plan shall be developed and implemented, subject to approval by the UFMD, DPWES, for any areas protected by the limits of clearing and grading that must be disturbed for such trails or utilities.
18. Use of outdoor lighting and/or audio equipment shall be restricted as follows:
 - A. There shall be no installation or use of loudspeakers, bells, or any other audio equipment installed permanently or temporarily outdoors, including portable equipment.
 - B. Any outdoor lighting shall be shielded so as the element shall not be visible to adjacent properties.
 - C. Installation of any new free-standing lights shall be limited to shoebox-style with a height not to exceed eight (8) feet. There shall be no outdoor lighting installed, or temporary lighting structures, in any area designated as playgrounds or outdoor recreation areas.
19. The dumpster shall be located as shown on the Special Exception Plat and be fully screened from view through the use of a solid enclosure.
20. Building Materials: The building shall be in substantial conformance with the architectural drawings depicted on Sheet 11 of the Special Exception Plat, consisting of a combination of brick and siding exterior materials. The exterior design of the building may be varied as long as the building remains generally similar in style and presentation to the elevations depicted in the SE Plat and compatible with residential structures in the neighborhood as determined by the Zoning Administrator.
21. Right of Way Dedication on Chain Bridge Road and Construction Commitments: Right of way for public street purposes (together with all ancillary easements),

up to 73.5 feet from the centerline of Chain Bridge Road along the entire site frontage shall be dedicated and conveyed in fee simple without encumbrances to the Board of Supervisors as shown on the Special Exception Plat, and a 5' wide concrete sidewalk shall be constructed as shown thereon. Such right of way shall be dedicated at the time of site plan approval, or upon demand by the County of Fairfax and/or VDOT, whichever shall first occur. In addition, a right turn from Route 123 northbound into Sutton Road shall be constructed, subject to VDOT approval, as shown on the Special Exception Plat. Right of way dedication for the right turn lane shall be made by the applicant at time of construction.

22. Right of Way Dedication on Sutton Road: Right of way for public street purposes (together with all ancillary easements), 66.5 feet from the centerline of Sutton Road shall be dedicated and conveyed in fee simple without encumbrances to the Board of Supervisors, as shown on the Special Exception Plat, and public improvements shall be constructed as shown thereon. Such right of way shall be dedicated at the time of site plan approval, or upon demand by the County of Fairfax and/or VDOT, whichever shall first occur. Prior to issuance of a Non-RUP, a right turn lane shall be constructed on Sutton Road into the service drive entrance for the property as shown on the Special Exception Plat.
23. Ingress/Egress: All vehicular traffic shall enter and exit the site by way of the right turn lane into the service drive parallel to Sutton Road. Appropriate signs shall be placed at the entrance to guide the flow of traffic into and out of the property as shown on the Special Exception Plat.
24. The following noise attenuation measures shall be provided by the Applicant:
 - a) In order to reduce the maximum interior noise to a level of approximately 45 dBA Ldn, the facades impacted by noise from Chain Bridge Road, which shall be annotated and shown as such on the site plan, shall have the following acoustical attributes:
 - i) Exterior walls shall have a laboratory sound transmission class (STC) rating of at least 45;
 - ii) Doors and glazing shall have a laboratory STC rating of at least 37 unless doors, windows and glazing constitute more than 20 percent of any façade exposed to noise levels of DNL 65 dBA or above. If doors, windows and other glazed areas constitute more than 20 percent of an exposed façade, then the glazing of such features shall have an STC rating of at least 45; and
 - iii) Measures to seal and caulk between surfaces shall follow methods approved by the American Society for testing and Materials to minimize sound transmission.

- b) In order to reduce the maximum exterior noise to a level of approximately 65 dBA Ldn or less for outdoor play areas, a noise wall shall be provided parallel to Chain Bridge Road. The noise wall shall be faced with materials similar in type and compatible with the exterior building materials.
25. Hours of Construction: Outdoor construction activity shall be limited to between the hours of 7:00 a.m. and 7:00 p.m., Monday through Friday and 8:00 a.m. and 5:00 p.m. on Saturdays. No outdoor construction activities shall be permitted on Sundays or on federal holidays. The site superintendent shall notify all employees and subcontractors of these hours of operation and shall ensure that the hours of operation are respected by all employees and subcontractors. Construction hours shall be posted on-site in both English and Spanish. This applies to the original construction only and not to future additions and renovations by homeowners.
26. Extension of Water Service: Water service into the Application property shall be designed, shown on the site plan and constructed according to standards of Fairfax Water Authority.

The above proposed conditions are staff recommendations and do not reflect the position of the Board of Supervisors unless and until adopted by that Board.

This approval, contingent on the above-noted conditions, shall not relieve the applicant from compliance with the provisions of any applicable ordinances, regulations, or adopted standards. The applicant shall be himself responsible for obtaining the required Non-Residential Use Permit through established procedures, and this Special Exception shall not be valid until this has been accomplished.

The approval of this special exception does not interfere with, abrogate or annul any easements, covenants, or other agreements between parties, as they may apply to the property subject to this application.

Pursuant to Section 9-015 of the Zoning Ordinance, this Special Exception shall automatically expire, without notice, thirty (30) months after the date of approval unless, at a minimum, the use has been established or construction has commenced and been diligently prosecuted. The Board of Supervisors may grant additional time to establish the use or to commence construction if a written request for additional time is filed with the Zoning Administrator prior to the date of expiration of the Special Exception. The request must specify the amount of additional time requested, the basis for the amount of time requested, and an explanation of why additional time is required.

■ LORD FAIRFAX ACADEMY ■

PROVIDENCE DISTRICT
FAIRFAX COUNTY, VIRGINIA

SPECIAL EXCEPTION PLAT

PLAN NUMBER: SE 2008-PR-021

MAY 6, 2008

(REVISED JULY 9, 2010)

(REVISED JULY 23, 2010)

(REVISED SEPTEMBER 22, 2010)

(REVISED NOVEMBER 5, 2010)

(REVISED DECEMBER 3, 2010)

(REVISED JANUARY 3, 2011)

APPLICANT/OWNER

JACKSON CONSTRUCTION SERVICES
11325 LEB HIGHWAY, #110
FAIRFAX, VIRGINIA 22030
CONTACT: JAMES JACKSON
(703) 352-2772

ATTORNEY

WALSH, COLUCCI, LUBELEY, EMRICH, & WALSH
2200 CLARENDON BLVD., 13TH FLOOR
ARLINGTON VIRGINIA, 22201
CONTACT: LYNNE J. STROBEL, ESQ.
(703) 528-4700

ENGINEER/LANDSCAPE ARCHITECT

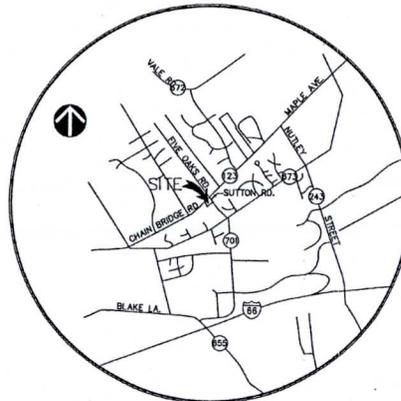
VIKA INC.
8180 GREENSBORO DRIVE, SUITE 200
MCLEAN, VIRGINIA 22102
CONTACT: JOHN AMATETTI, P.E. & JEFF KREPS, L.A.
(703) 442-7800

ARCHITECT

MILLER ARCHITECTS
11436 WASHINGTON PLAZA WEST
RESTON, VA 20190
CONTACT: MICHAEL MILLER
(703) 716-4300

TRANSPORTATION CONSULTANT

WELLS & ASSOCIATES, LLC.
11441 ROBERTSON DRIVE, SUITE 201
MANASSAS, VA 20109
CONTACT: WILLIAM JOHNSON
(703) 365-9262



VICINITY MAP

SCALE: 1"=200'

TM NO. 48-1

SHEET INDEX

1. COVER SHEET
2. NOTES AND TABULATIONS
3. SPECIAL EXCEPTION PLAT
- 3A. SITE SECTION AND SITE DETAILS
4. EXISTING VEGETATION MAP
5. CONCEPT LANDSCAPE PLAN
6. ANGLE OF BULK PLANE DIAGRAMS
7. SWM PLAN & DRAINAGE DIVIDES TO SWM SYSTEMS
8. SWM/BMP CALCULATIONS
9. ROADWAY CROSS SECTIONS & MISCELLANEOUS DETAILS
10. OUTFALL ANALYSIS
11. ILLUSTRATIVE ARCHITECTURAL DRAWINGS



JOB NUMBER
SHEET 1

GENERAL NOTES

1. THE PROPERTY DELINEATED HEREON IS SHOWN ON FAIRFAX COUNTY TAX ASSESSMENT MAP NO. 48-1 ((1))50 AND IS CURRENTLY ZONED R-1.
2. THE PROPERTY IS LOCATED IN LAND UNIT "V5-NUTLEY COMMUNITY PLANNING SECTOR" OF THE VIENNA PLANNING DISTRICT, OF THE FAIRFAX COUNTY COMPREHENSIVE PLAN.
3. THIS SITE IS CURRENTLY VACANT. THIS PLAN HAS BEEN PREPARED TO ACCOMPANY A SPECIAL EXCEPTION APPLICATION FOR A NEW CHILD CARE FACILITY.
4. FOR EASEMENTS OR ENCUMBRANCES NOT SHOWN HEREON, IF ANY, PLEASE CONSULT TITLE REPORT. NO TITLE REPORT WAS FURNISHED TO THIS FIRM DURING THE PREPARATION OF THIS PLAN.
5. SOME INFORMATION INCLUDED IN THIS APPLICATION WAS PREVIOUSLY PREPARED BY BARNES & JOHNSON, INC. UNDER CONTRACT WITH THE OWNER.
6. BOUNDARY AND TOPOGRAPHIC SURVEY IS FIELD RUN BY JEFF WARNER LAND SURVEYORS INC., DATED JULY 10, 2007. ELEVATIONS ARE BASED ON NGVD 1929, CONTOUR INTERVAL IS 2 FEET.
7. THIS SITE DOES NOT LIE WITHIN ANY KNOWN FLOODPLAIN DESIGNATED BY F.I.A., U.S.G.S. OR FAIRFAX COUNTY, NOR DOES THIS SITE LIE WITHIN A CHESAPEAKE BAY PRESERVATION AREA PER CURRENT FAIRFAX COUNTY CHESAPEAKE BAY MAPS.
8. PUBLIC WATER AND SANITARY SEWER ARE AVAILABLE TO SERVE THE DEVELOPMENT.
9. THERE ARE NO KNOWN UTILITY EASEMENTS HAVING A WIDTH OF 25' OR MORE ON THE SUBJECT PARCEL.
10. TO THE BEST OF OUR KNOWLEDGE, NO GRAVE SITES OR STRUCTURES MARKING A BURIAL SITE ARE PRESENT ON THE SUBJECT PROPERTY.
11. TO THE BEST OF OUR KNOWLEDGE, NO HAZARDOUS OR TOXIC SUBSTANCES ARE KNOWN TO EXIST ON THE SUBJECT PROPERTY.
12. THE ENTIRE SUBJECT PROPERTY IS LOCATED WITHIN AN RMA ZONE. NO R.P.A. OR ENVIRONMENTAL QUALITY CORRIDOR CURRENTLY EXIST ON THIS PROPERTY.
13. STORMWATER MANAGEMENT AND BEST MANAGEMENT PRACTICES WILL BE PROVIDED BY SEVERAL METHODS: UNDERGROUND DETENTION WITH NON-FILTRATION GRAVEL TRENCH, GRASS SWALE, AND A CATCHBASIN STORMFILTER. THE SPECIFIC SIZE AND LOCATION OF THESE PRACTICES HAS BEEN SHOWN ON THESE PLANS, HOWEVER, SOME MODIFICATIONS MAY BE REQUIRED UPON FINAL ENGINEERING.
14. ALL STORMWATER EROSION AND SEDIMENT CONTROL MEASURES WILL BE PROVIDED IN ACCORDANCE WITH THE REQUIREMENTS OF THE FAIRFAX COUNTY PUBLIC FACILITIES MANUAL, THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK (CURRENT EDITION) DURING SITE PLAN REVIEW PROCESS.
15. IT IS ANTICIPATED THAT CONSTRUCTION ON THIS PROJECT CAN BE COMPLETED WITHIN ONE YEAR OF OBTAINING ALL NECESSARY PERMITS.
16. ANY EXISTING SITE ELEMENTS ARE TO BE DEMOLISHED PRIOR TO CONSTRUCTION OF THE CHILD CARE FACILITY.
17. THE PROPOSED DEVELOPMENT ON THE SUBJECT PROPERTY WILL NOT POSE ANY ADVERSE EFFECT ON ADJACENT OR NEIGHBORING PROPERTIES.
18. ALL PROPOSED WORK IN THE VDOT RIGHT-OF-WAY IS SUBJECT TO VDOT APPROVAL.
19. THE LIMIT OF CLEARING AND GRADING SHOWN ON THE SPECIAL EXCEPTION PLAT IS SUBJECT TO MODIFICATION WITH FINAL ENGINEERING. THE DEVELOPMENT OF THE SITE WILL BE IN GENERAL CONFORMANCE WITH THESE LIMITS. FINAL LIMITS OF CLEARING AND GRADING WILL TAKE INTO CONSIDERATION FINAL SITE ENGINEERING AND SHALL BE SUBMITTED FOR REVIEW AND APPROVAL BY THE COUNTY URBAN FORESTER AT THE TIME OF FINAL SITE REVIEW.
20. THE PROPOSED DEVELOPMENT CONFORMS TO THE PROVISIONS OF ALL APPLICABLE STANDARDS WITH THE EXCEPTION OF WAIVERS AND MODIFICATIONS REQUESTED BELOW.
21. ADDITIONAL SITE FEATURES SUCH AS PLAZAS, GAZEBOS, FENCING, RETAINING WALLS (+/- 3' HT), CORNICES, ENTRANCE SIGNS, LIGHTS AND ACCESSORY USES NOT REPRESENTED HEREON MAY BE PROVIDED.
22. THE PROPOSED BUILDING FOOTPRINT REPRESENTED HEREIN IS APPROXIMATE; THE FINAL FOOTPRINT MAY BE INCREASED OR DECREASED IN SIZE IF IN SUBSTANTIAL CONFORMANCE WITH THIS SPECIAL EXCEPTION PLAT.
23. ANY PROPOSED SIGNAGE WILL BE PROVIDED IN ACCORDANCE WITH THE PROVISIONS OF ARTICLE 12 OF THE ZONING ORDINANCE, UNLESS WAIVED OR MODIFIED BY THE BOARD.

SITE TABULATION

EXISTING ZONE: R-1
 PROPOSED ZONE: SAME

SITE AREA: 56,009 SF (1.286 ACRES)

PROPOSED USE: CHILD CARE FACILITY
 PARKING REQUIRED : 0.16 SPACES PER CHILD
 MAXIMUM ENROLLMENT : 150 CHILDREN (INCLUDING A MAXIMUM OF 16 INFANTS IN NURSERY)
 PARKING REQUIRED: 24 SPACES
 PARKING PROVIDED: 25 SPACES
 ACCESSIBLE SPACES REQUIRED : 1
 ACCESSIBLE SPACES PROVIDED : 1

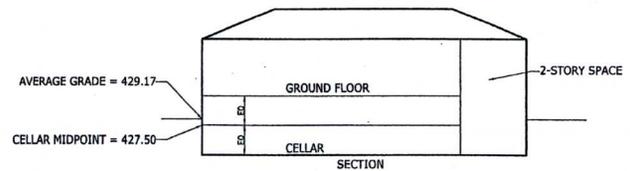
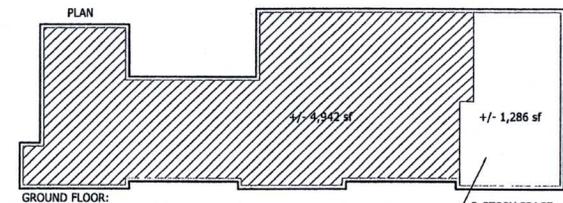
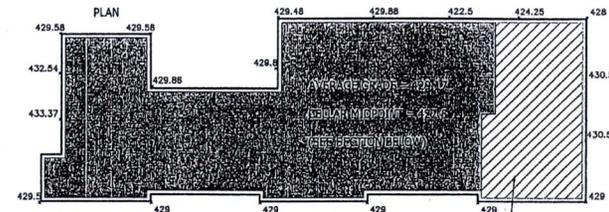
FLOOR AREA RATIO TABULATION
 GROSS SITE AREA : 56,009 SF OR 1.2858 ACRES
 GROSS FLOOR AREA : +/-6,228 SF (SEE GRAPHIC AT RIGHT)
 MAXIMUM FLOOR AREA RATIO PERMITTED (R-1 ZONE) : .15
 PROPOSED FLOOR AREA RATIO : +/-6,228 / 56,009 = .11

BULK REGULATIONS
 MAXIMUM BUILDING HEIGHT PERMITTED: 60'
 BUILDING HEIGHT PROPOSED: 35'4"

FRONT YARD: CONTROLLED BY A 50° ANGLE OF BULK PLANE BUT NOT LESS THAN 40'
 SIDE YARD: CONTROLLED BY A 45° ANGLE OF BULK PLANE BUT NOT LESS THAN 10'
 REAR YARD: CONTROLLED BY A 45° ANGLE OF BULK PLANE BUT NOT LESS THAN 25'
 SEE SHEET #6 FOR ANGLE OF BULK PLANE DETAILS

INTERIOR PARKING LOT LANDSCAPING
 TOTAL AREA OF PARKING LOT AND TRAVEL LANES : 10,680 SF
 5% INTERIOR PARKING LOT LANDSCAPING REQUIRED : 534 SF
 INTERIOR PARKING LOT LANDSCAPING PROVIDED : 600 SF OR 5.6%

CELLAR AND GFA CALCULATION



NOTE:
 THIS EXHIBIT IS FOR ILLUSTRATIVE PURPOSES ONLY.
 ALL GFA CALCULATIONS AND SPOT AVERAGE GRADE ELEVATIONS ARE SUBJECT TO CHANGE WITH THE FINAL SITE ENGINEERING SO LONG AS THE BUILDING GFA AND HEIGHT AS REPORTED HEREON IS MAINTAINED.

WAIVERS & MODIFICATIONS REQUESTED

1. WAIVER OF SERVICE DRIVE IS REQUESTED ALONG ROUTE #123 (ARTICLE 17 SECTION 201 (3A)). ALSO, WAIVER OF CONSTRUCTION FOR STREET WIDENING ON ROUTE #123 (TO THE ULTIMATE WIDTH IN THE COMPREHENSIVE PLAN) IS HEREBY REQUESTED IN FAVOR OF THAT WHICH IS SHOWN ON THE PLAN. STREET DEDICATION TO THE ULTIMATE R.O.W. IS BEING PROVIDED - SEE SPECIAL EXCEPTION PLAT (SHEET #3) AND STREET SECTIONS (SHEET #9). ALSO, A WAIVER OF THE REQUIREMENT TO CONSTRUCT AN ON-ROAD BIKE TRAIL AS IDENTIFIED ON THE COUNTY MASTER TRANSPORTATION PLAN IS HEREBY REQUESTED.
2. A WAIVER OF THE BARRIER REQUIREMENTS (ARTICLE 13 SECTION 304) IN FAVOR OF THAT WHICH IS SHOWN ON THE PLAN ALONG THE SUTTON ROAD FRONTAGE, IS HEREBY REQUESTED. IN ADDITION, A MODIFICATION OF THE TRANSITIONAL YARD SCREENING REQUIREMENTS (ARTICLE 13 SECTION 303) IN FAVOR OF THAT WHICH IS SHOWN ON THE PLAN ALONG THE ROUTE 123 FRONTAGE, IS HEREBY REQUESTED. SEE SE PLAT (SHEET 3) AND CONCEPT LANDSCAPE PLAN (SHEET 5) FOR FURTHER INFORMATION AND JUSTIFICATION.
3. A MODIFICATION OF THE ENTRANCE THROAT DEPTH REQUIREMENTS (VDOT ROAD AND BRIDGE DESIGN MANUAL, APPENDIX F, SECTION 4.4) FOR THE ENTRY OFF SUTTON ROAD, IN FAVOR OF THAT SHOWN ON THIS PLAN IS HEREBY REQUESTED.
4. A WAIVER (PER FFX COUNTY Z.O. SECTION 13-203-3) OF THE REQUIREMENT TO PROVIDE A 10' LANDSCAPED PERIPHERAL YARD BETWEEN OFF-STREET PARKING AREAS AND A FRONT LOT LINE (ALONG ROUTE 123)—IN FAVOR OF THAT WHICH IS SHOWN ON THE PLAN—IS HEREBY REQUESTED.
5. A WAIVER OF THE REQUIREMENT TO PROVIDE A 4' PERIPHERAL LANDSCAPE STRIP BETWEEN THE PARKING LOT AND THE ADJACENT USE (PUBLIC--VERIZON BLDG) IN FAVOR OF THAT WHICH IS SHOWN ON THE PLAN.
6. A MODIFICATION OF THE FRONT YARD FENCE HEIGHT LIMITATIONS OF ARTICLE 10, SECTION 10-104-3-B, IN FAVOR OF THAT WHICH IS SHOWN ON THE PLAN. SEE CONCEPT LANDSCAPE PLAN (SHEET 5) FOR ADDITIONAL INFORMATION AND JUSTIFICATION.



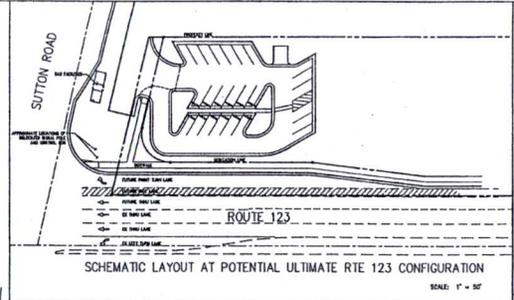
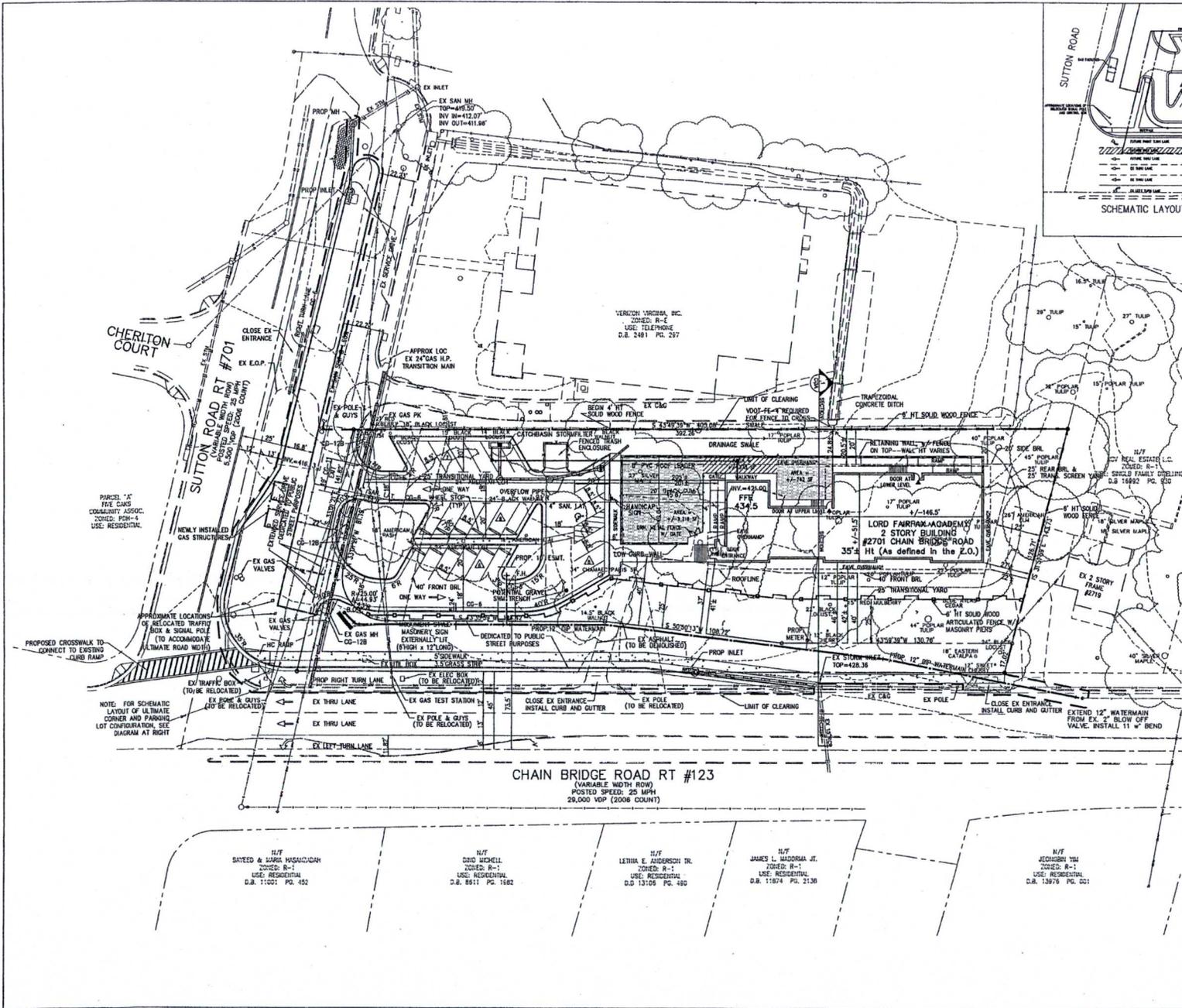
LORD FAIRFAX ACADEMY
 PROVIDENCE DISTRICT
 FAIRFAX COUNTY, VIRGINIA

NOTES AND TABULATIONS

VKA REVISIONS

DATE:	JULY 9, 2010
DES. JK	DWN. RMC
SCALE:	N/A
PROJECT/FILE NO.	17299A
SHEET NO.	2





Vika

ENGINEER PLANNERS & ARCHITECTS & SURVEYORS & GPS SERVICES

1100 W. WASHINGTON ST.
 RENO GREENSBORO DRIVE, SUITE 300 • HALL LANE, VIRGINIA 22102
 (703) 790-0000 • FAX (703) 790-0001
 WWW.VIKAINC.COM • VIKAINC.COM

LORD FAIRFAX ACADEMY
 PROVIDENCE DISTRICT
 FAIRFAX COUNTY, VIRGINIA

SPECIAL EXCEPTION
 PLAT

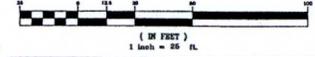


VIKA REVISIONS

*NOTE: EAVES ARE ALLOWED A 3' ENCROACHMENT INTO THE REQUIRED SETBACK, AS SET FORTH AND QUALIFIED IN THE FAIRFAX COUNTY ZONING ORDINANCE—ARTICLE 2, PART 4, SECTION 2-412 "PERMITTED EXTENSIONS INTO MINIMUM REQUIRED YARDS"



VA STATE GRID NORTH (VSC 83)
 GRAPHIC SCALE



NO.	DESCRIPTION	BY	APPROVED	DATE

JANUARY 3, 2011	DES.	JK	DWN	RMC
DECEMBER 3, 2010				
NOVEMBER 5, 2010				
SEPTEMBER 23, 2010				
JULY 23, 2010				
DATE:	JULY 9, 2010			
SCALE:	1"=25'			
PROJECT/FILE NO.	V7229A			
SHEET NO.	3			

REVISION APPROVED BY
 DIVISION OF DESIGN REVIEW

12/2/2010 10:03:16 PM EST

Table 12.12 10-Year Tree Canopy Calculation Worksheet			
Step	Description	Value	Reference
A. Tree Preservation Target Calculations and Statement			
A.1	Pre-development area of existing tree canopy (from existing vegetation map) (SF) =	28,736	see § 12-0507.2
A.2	Percentage of gross site area covered by existing tree canopy =	61%	
A.3	Percentage of 10-year tree canopy required for site =	30%	see Table 12.4
A.4	Percentage of the 10-year tree canopy requirement that should be met through tree preservation =	16%	
A.5	Proposed percentage of canopy requirement that will be met through tree preservation =	0.0%	
A.6	Has the Tree Preservation Target minimum been met? If No for line A.6, then a request to deviate from the Tree Preservation Target shall be provided on the plan that states one or more of the justifications listed in § 12-0507.3 along with a narrative that provides a site-specific explanation of why the Tree Preservation Target is not being met.	No	Provide Yes or No
A.7	If No for line A.6, then a request to deviate from the Tree Preservation Target shall be provided on the plan that states one or more of the justifications listed in § 12-0507.3 along with a narrative that provides a site-specific explanation of why the Tree Preservation Target is not being met.	See Sheet 5	Provide sheet number, see § 12-0507.4
A.8	If line A.7 requires a narrative, it shall be prepared in accordance with § 12-0507.4		see § 12-0507.4

B. Tree Canopy Requirements			
B.1	Minimum gross site area (SF) =	66,000	§ 12-0510.1A
B.2	Subtotal area designated to parks, road corridor (SF) =	10,903	§ 12-0510.1B
B.3	Subtotal area of exemptions (SF) =	0	§ 12-0510.1C(1) through § 12-0510.1C(6)
B.4	Adjusted gross site area (61.82.63)(SF) =	49,097	Square Feet
B.5	Identify the site's zoning and/or use =	R-1	§ 12-0508.1 and Table 12.4
B.6	Percentage of 10-year tree canopy required =	30.0%	12.4
B.7	Area of 10-year Tree Canopy Required (61.82.63)(SF) =	14,931.8	Square Feet
B.8	Modification of 10-year tree canopy requirements requested? =	No	Yes or No
B.9	If B.8 is yes, then list plan sheet where modification request is located =		Sheet number

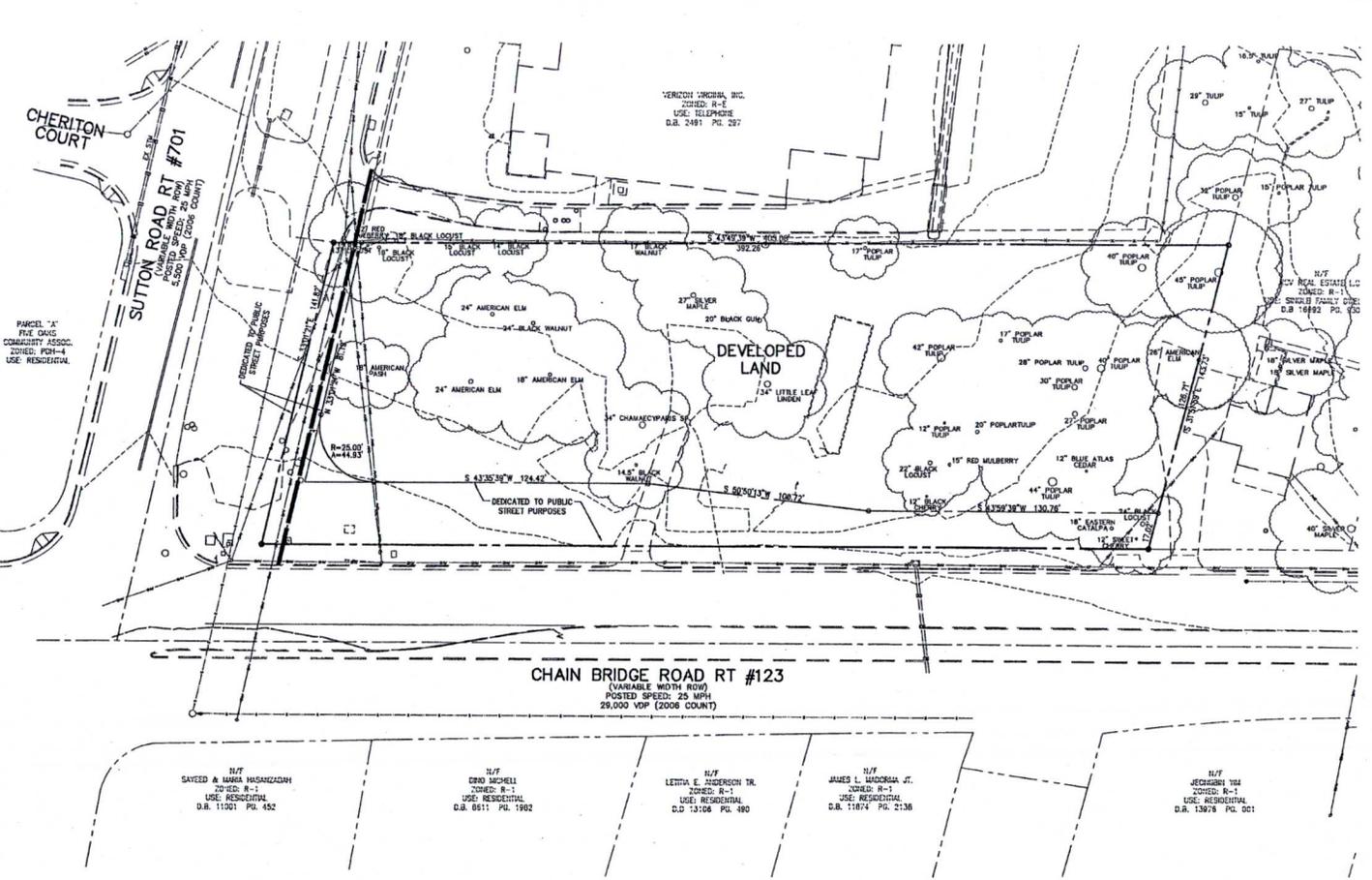
C. Tree Preservation			
C.1	Tree Preservation Target (TP) =	2083.8972	Square Feet
C.2	Total canopy area meeting standards of § 12-0509 (SF) =	0	Square Feet
C.3	Area of canopy provided by mature trees (SF) =	0	§ 12-0509.3(a)
C.4	Total canopy area provided by mature trees (SF) =	0	Square Feet
C.5	Area of canopy provided by young trees (SF) =	0	§ 12-0509.3(b)
C.6	Total canopy area provided by young trees (SF) =	0	Square Feet
C.7	Area of canopy provided by trees with resource protection areas and 100-year floodplains (SF) =	0	Square Feet
C.8	Total canopy area provided by trees with resource protection areas and 100-year floodplains (SF) =	0	Square Feet
C.9	Total of C.3, C.4, C.5, C.6, C.7 and C.8 =	0	Square Feet

D. Tree Planting			
D.1	Area of canopy to be met through tree planting (D.7-C.9) =	13,552	Square Feet
D.2	Area of canopy planted for air quality benefits =	0	Square Feet
D.3	Area of canopy planted for stormwater management =	0	Square Feet
D.4	Area of canopy planted for water quality benefits =	0	Square Feet
D.5	Area of canopy planted for wildlife benefits =	0	Square Feet
D.6	Area of canopy provided by native trees =	0	Square Feet
D.7	Area of canopy provided by improved cultivars and varieties =	0	Square Feet
D.8	Area of canopy provided through tree banking (SF) =	0	Square Feet
D.9	Area of canopy provided through tree banking (SF) =	0	Square Feet
D.10	Area of canopy provided through tree banking (SF) =	0	Square Feet
D.11	Area of canopy provided through tree banking (SF) =	0	Square Feet
D.12	Area of canopy provided through tree banking (SF) =	0	Square Feet
D.13	Area of canopy provided through tree banking (SF) =	0	Square Feet
D.14	Area of canopy provided through tree banking (SF) =	0	Square Feet
D.15	Area of canopy provided through tree banking (SF) =	0	Square Feet
D.16	Area of canopy provided through tree banking (SF) =	0	Square Feet
D.17	Area of canopy to be planted with no benefit credits =	0	Square Feet
D.18	Total area of canopy to be planted with no benefit credits =	0	Square Feet
D.19	Is an offset planting credit requested? =	Yes or No	Yes or No § 12-0511
D.20	Tree Bank or Tree Fund? =	Yes or No	Yes or No § 12-0511
D.21	Canopy area requested to be acquired through offset banking at tree fund =	0	Square Feet
D.22	Amount to be deposited into the Tree Preservation and Planting Fund =	0	Square Feet

E. Total of 10-year Tree Canopy Provided			
E.1	Total of canopy area provided through tree preservation (C.10) =	0	Square Feet
E.2	Total of canopy area provided through tree banking (D.18) =	14,100	Square Feet
E.3	Total of canopy area provided through offset banking (D.21) =	0	Square Feet
E.4	Total of 10-year Tree Canopy Provided (E.1+E.2+E.3) =	14100	Square Feet

Table 12.13 Interior Parking Lot Landscaping Calculations			
Area of parking compound to be counted (SF) =		10,660	square feet
Interior Landscaping Required (SR) =		534	square feet
Total Interior Tree Canopy Provided =		0	square feet
(Existing Trees to Provide Parking Canopy Coverage) =		0	Counting benefit credits
(New Checkered IV Disclosures Trees @ 200 SF EA) =		700	Counting benefit credits
Total Area Required (SF) =		534	5%
Total Area Provided (SF) =		700	5.34%

TRANSITIONAL SCREENING REQUIREMENTS			
Transitional Screening Area (SF) =	16,208	square feet	
Required Landscaping Area (75%) =	12,156	square feet	
Required with Evergreen Area (75%)(SF) =	7000.125	square feet	No more than 35% of any species
Linear Feet of Transitional Screen Yard =	600	linear feet	
Required Medium Evergreen Shrubs (3 per 10 LF) =	183		
Provided Transitional Yard Landscaping(SF) =	11,828		
Provided Evergreen Area (SF) =	8,125		
Provided Shrubs =	183		



TRANSITIONAL SCREEN YARD CALCULATIONS

NORTH PROPERTY LINE = 103.655 LF
 REQUIRED CANOPY = 1944 SF (103.655x25x.75)
 1361 sf = EVERGREEN (70%) MIN
 REQUIRED SHRUBS = 31

WEST PROPERTY LINE = 378.365 LF
 REQUIRED TREES = 7095 SF (378.365x25x.75)
 4967 SF = EVERGREEN (70%) MIN
 REQUIRED SHRUBS = 114

SOUTH PROPERTY LINE = 126.71 LF
 REQUIRED TREES = 2,376 sf (126.71x25x.75)
 1664 SF = EVERGREEN (70%) MIN
 REQUIRED SHRUBS = 38

TREE COVER NARRATIVE

TREE COVER AND PLANTING NOTE:
 THE APPLICANT HEREBY NOTES THAT REVISIONS TO THE TREE COVERAGE QUANTITY AND / OR TYPE OF SPECIES MAY BE PERMITTED DURING THE FINAL SITE PLAN REVIEW STAGE AS APPROVED BY THE URBAN FORESTER.

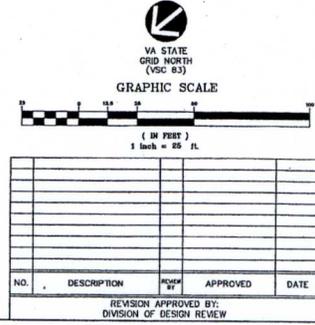
DEVIATION REQUESTED
 IN ACCORDANCE WITH THE FAIRFAX COUNTY CODE (TREE CONSERVATION ORDINANCE) SECTION 122-2-3 (B), THE APPLICANT HEREBY RESPECTFULLY REQUESTS CONSIDERATION OF THE FOLLOWING JUSTIFICATIONS FOR A DEVIATION IN WHOLE FROM THE TREE PRESERVATION TARGET.

MEETING THE TREE PRESERVATION TARGET WOULD PREVENT THE DEVELOPMENT OF THE LORD FAIRFAX ACADEMY ON THIS SITE. SUBSTANTIAL RIGHT-OF-WAY DEDICATION HAS LIMITED THE BUILDING AREA TO THAT SHOWN. CONSTRUCTION ACTIVITIES WOULD IMPACT ANY TREE ATTEMPTED TO BE SAVED DUE TO THE TIGHT CONFIGURATION OF THE SITE. THAT BEING SAID, VERY FEW TREES ON SITE MEET THE STANDARDS FOR HEALTH, STRUCTURAL CONDITION AND SAFETY MANAGEMENT. THE ARBORIST PROVIDED THE FOLLOWING NOTE ON THE EVAL. THERE ARE VERY FEW TREES WITHIN THIS LOT THAT WOULD WARRANT CONSIDERATION FOR PRESERVATION. GIVEN THE EXTENT OF HISTORIC DISTURBANCE, PRESERVATION OF ANY KIND WOULD REPRESENT A SIGNIFICANT RISK OF FAILURE.

EXISTING VEGETATION NARRATIVE

THE SITE CONTAINS ONE COVER TYPE: DEVELOPED LAND
 PRIMARY SPECIES: TULIP POPLAR, AMERICAN ELM, BLACK LOCUST, SILVER MAPLE, MULBERRY
 SUCCESSIONAL STAGE: N/A
 CONDITION: POOR

ACREAGE:
 COMMENTS: THIS SITE IS A HIGHLY DISTURBED URBAN LOT. IT HAS BEEN EXTENSIVELY DISTURBED BY THE DEMOLITION OF EXISTING FEATURES, GRADING, FILL, AND OTHER PAST USES. THE TREES ARE OF VERY POOR CONDITION WITH FEW EXCEPTIONS. THERE ARE SOME REMNANT TREES OF BOTTOMLAND FOREST TYPE TOWARD THE SOUTHERN PART OF THE SITE. HOWEVER THESE REMNANT TREES DO NOT CREATE A CONTIGUOUS CANOPY AND DO NOT HAVE THE CHARACTERISTICS OF "FOREST" OF ANY TYPE. THE UNDERSTORY IS HIGHLY DISTURBED AND CONSISTS PRIMARILY OF ENGLISH IVY, MUCK ORANGE, AND BAMBOO. THERE ARE VERY FEW TREES WITHIN THIS LOT THAT WOULD WARRANT CONSIDERATION FOR PRESERVATION. GIVEN THE EXTENT OF HISTORIC DISTURBANCE, PRESERVATION OF ANY KIND WOULD REPRESENT A SIGNIFICANT RISK OF FAILURE.



VIFA
 PROFESSIONAL ENGINEERS, ARCHITECTS & SURVEYORS SERVICES

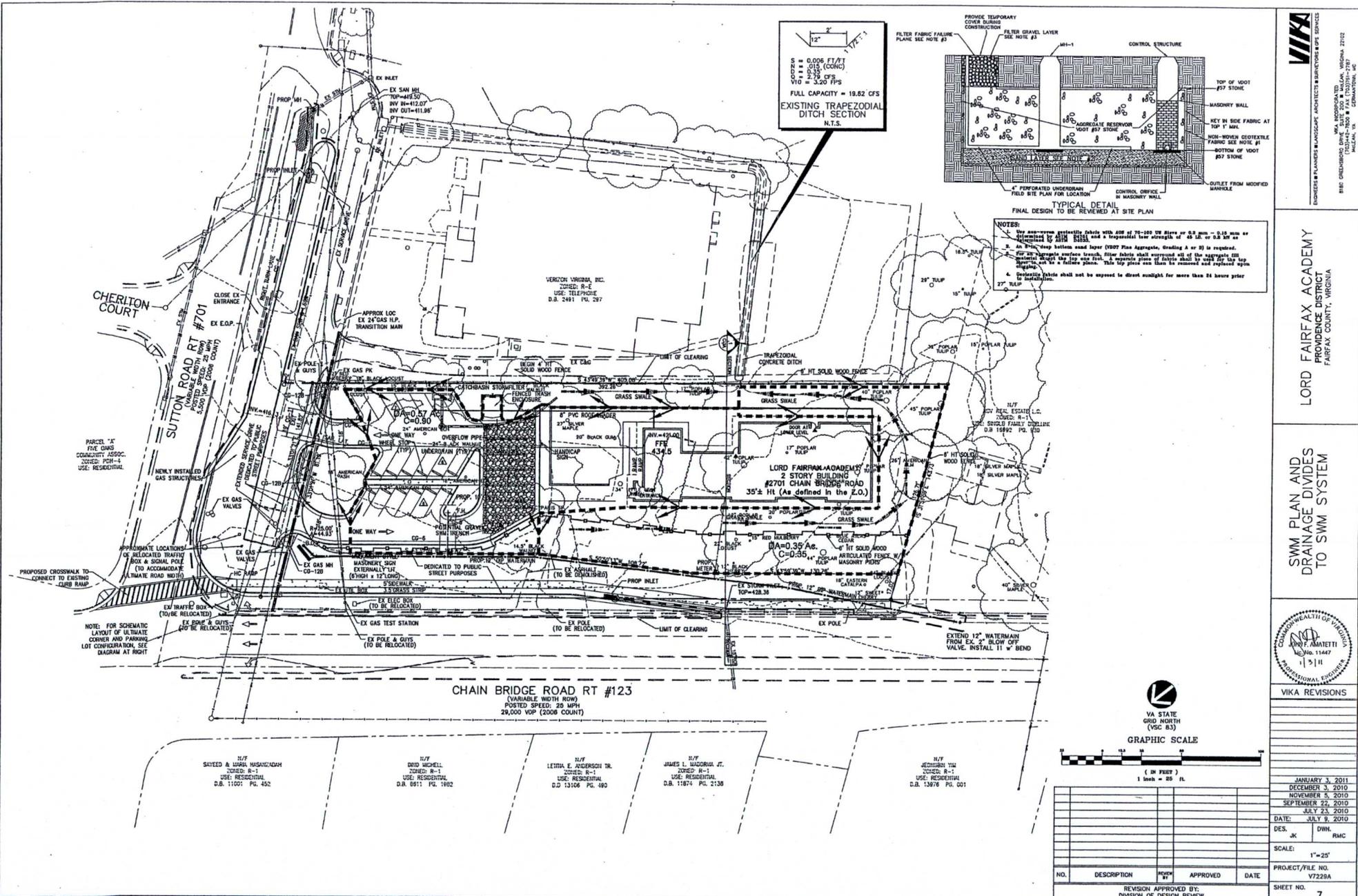
LORD FAIRFAX ACADEMY
 PROPOSED DISTRICT
 FAIRFAX COUNTY, VIRGINIA

EXISTING VEGETATION MAP

REVISIONS:
 JANUARY 3, 2011
 DECEMBER 3, 2010
 NOVEMBER 5, 2010
 SEPTEMBER 22, 2010
 JULY 23, 2010

DATE: JULY 9, 2010
 DES: JK DWB RMC
 SCALE: 1" = 25'
 PROJECT/FILE NO: V7225A
 SHEET NO: 4

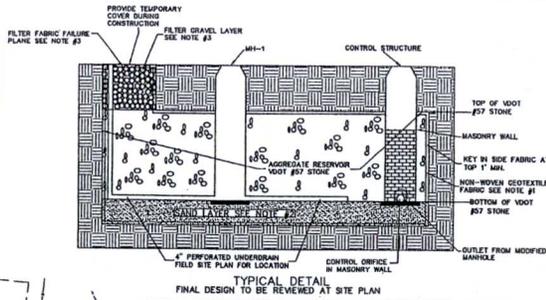
REVISION APPROVED BY:
 DIVISION OF DESIGN REVIEW



$\frac{1}{2}$ " = 1'

S = 0.006 FT/FT
 N = 0.015 (CONC)
 V = 2.72 CFS
 V = 3.00 FPS

FULL CAPACITY = 18.82 CFS
EXISTING TRAPEZOIDAL DITCH SECTION
 N.T.S.



NOTES:

1. Use non-woven geotextile fabric with 400 of 75-100 US sieve per 0.8 mm - 0.15 mm as indicated by 2007 B188.
2. In practice bottom used 2007 Fine Aggregate, Grading A or B is required.
3. For 20' aggregate surface length, filter fabric shall surround all of the aggregate. All material shall be 100% virgin. If aggregate piece of fabric shall be used for top up, specify on a failure plan. The top piece can then be removed and replaced upon failure.
4. Geotextile fabric shall not be exposed to direct sunlight for more than 24 hours prior to installation.

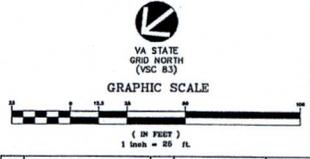
Vika
 ENGINEERS & PLANNERS & ARCHITECTS & ENVIRONMENTAL & GPS SERVICES
 1501 N. WASHINGTON ST.
 FIVE CREEKWOOD DRIVE, SUITE 200 • FALLS CHURCH, VIRGINIA 22024
 703.261.1147
 FALLS CHURCH, VA • COMMANTON, VA

LORD FAIRFAX ACADEMY
 PROVIDENCE DISTRICT
 FAIRFAX COUNTY, VIRGINIA

SWM PLAN AND DRAINAGE DIVIDES TO SWM SYSTEM



Vika Revisions

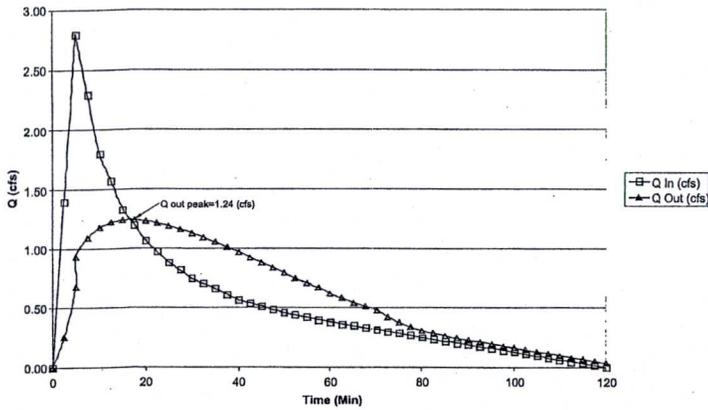


NO.	DESCRIPTION	DATE	APPROVED	DATE

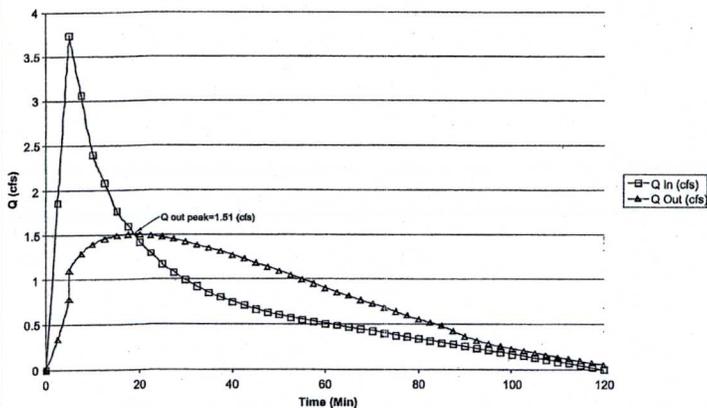
JANUARY 3, 2011
 DECEMBER 3, 2010
 NOVEMBER 5, 2010
 SEPTEMBER 22, 2010
 JULY 23, 2010
 DATE: JULY 8, 2010
 DES. JK DWH RMC
 SCALE: 1" = 25'
 PROJECT/FILE NO. V7228A
 SHEET NO. 7

P:\Planning\Projects\VA\2599A\dwg\2599A.dwg 12/2/2010 10:03:16 PM EST

Gravel Trench
2yr Storm In/Out Hydrograph



Gravel Trench
10yr Storm In/Out Hydrograph



BMP/SWM NARRATIVE

STORMWATER MANAGEMENT REQUIREMENTS SHALL BE SATISFIED THROUGH THE USE OF UNDERGROUND GRAVEL NON-INfiltration PERCOLATION TRENCH. THE SYSTEM SHALL HAVE UNDER-DRAINS AND A CONTROL STRUCTURE TO CONVEY THE FLOW AT OR BELOW PRE-DEVELOPMENT 2 AND 10 YEAR RELEASE RATES (SEE ATTACHED CALCULATIONS). THE ENTIRE STORMWATER MANAGEMENT SYSTEM SHALL BE OWNED, MAINTAINED UNDER A MAINTENANCE AGREEMENT EXECUTED AT THE SITE PLAN STAGE. THE STORMWATER MANAGEMENT SYSTEM SHALL OUTFALL INTO A CONCRETE LINED TRAPEZOIDAL DITCH THAT HAS THE CAPACITY TO CARRY THE FLOWS FROM THE POST-DEVELOPED SITE. OUTFALL FROM THIS SITE MEETS THE REQUIREMENTS CONTAINED IN THE PFM SECTION 6-2201.2 WHERE THE DISCHARGE IS INTO AN EXISTING DRAINAGE FACILITY THAT HAS SUFFICIENT CAPACITY.

BEST MANAGEMENT PRACTICE (BMP) REQUIREMENTS FOR THIS SITE SHALL BE MET THROUGH THE USE OF A CATCH-BASIN STORMFILTER AND A GRASS SWALE APPROXIMATELY 400 LINEAR FEET IN TOTAL. THESE BMP'S ARE DESIGNED TO TREAT THE FIRST 0.5" OF RUNOFF FROM THE SITE THIS PROVIDING 50% PHOSPHORUS REMOVAL FOR THE STORMFILTER AND 15% FOR THE GRASS SWALE. AS CAN BE SEEN ON THE COMPUTATIONS ON THIS SHEET, A PHOSPHORUS REMOVAL OF 40.3% SHALL BE ACHIEVED. THIS IS GREATER THAN THE 40% REQUIRED, THEREFORE BMP REQUIREMENTS HAVE BEEN MET.

Allowable Outflow Computation					
Project Name:	Lord Fairfax Academy	Date:	11/3/2010		
Design Date:	NOV, 2010	Plan Number:	SE 2008-PR-021	Engineer:	JDA
Design Engineer:	Joseph D Amatelli				
Step 1 - Pre-Developed Flows					
Site Area (Ac):	1.04				
% Imp:	0.00				
2-Yr C-Factor:	0.39				
10-Yr C-Factor:	0.39				
2-Yr Intensity (in/hr):	5.45				
10-Yr Intensity (in/hr):	7.27				
Q _{in} = C x I x A	x	I	x	A	=
Q ₂ = 0.39 x 5.45 x 1.04	=	2.21			
Q ₁₀ = 0.39 x 7.27 x 1.04	=	2.95			
Step 2 - Post-Developed Inflows to SWM					
Area Detained (Ac):	0.57				
% Imp:	0.00				
C-Factor:	0.80				
2-Yr Intensity (in/hr):	5.45				
10-Yr Intensity (in/hr):	7.27				
Q _{in} = C x I x A	x	I	x	A	=
Q ₂ = 0.80 x 5.45 x 0.57	=	2.80			
Q ₁₀ = 0.80 x 7.27 x 0.57	=	3.25			
Step 3 - Post-Developed On-site Undetained Flows					
Area Undetained (Ac):	0.47				
% Imp:	0.00				
C-Factor:	0.37				
2-Yr Intensity (in/hr):	5.45				
10-Yr Intensity (in/hr):	7.27				
Q _{in} = C x I x A	x	I	x	A	=
Q ₂ = 0.37 x 5.45 x 0.47	=	0.94			
Q ₁₀ = 0.37 x 7.27 x 0.47	=	1.28			
Step 4 - On-site Flows to SWM					
Area Detained (Ac):	N/A - See Flow Rate Determined Elsewhere Below				
% Imp:	N/A - See Flow Rate Determined Elsewhere Below				
C-Factor:	N/A - See Flow Rate Determined Elsewhere Below				
2-Yr Intensity (in/hr):	N/A - See Flow Rate Determined Elsewhere Below				
10-Yr Intensity (in/hr):	N/A - See Flow Rate Determined Elsewhere Below				
Q _{in} = C x I x A	x	I	x	A	=
Q ₂ = N/A x N/A x N/A	=	0.00			
Q ₁₀ = N/A x N/A x N/A	=	0.00			
Step 5 - Allowable Release Rates					
Q _{in} allow = Q _{in} act	<	Q _{in} allow	<	Q _{in} act	
Q ₂ allow = 2.21	<	0.00	<	0.90	= 1.29
Q ₁₀ allow = 2.95	<	0.00	<	1.28	= 1.67
Step 6 - Compare Actual Release Rates to Allowable Release Rates					
Q ₂ actual = 1.24	Q ₂ Analysis: 1.31	<	1.25		
Therefore Design O.K.					
Q ₁₀ actual = 1.51	Q ₁₀ Analysis: 1.51	<	1.67		
Therefore Design O.K.					

MINIMUM STORMWATER INFORMATION FOR REZONING, SPECIAL EXCEPTION, SPECIAL PERMIT AND DEVELOPMENT PLAN APPLICATIONS

The following information is required to be shown or provided in all zoning applications, or a waiver request of the submission requirements who justification shall be attached. Notes: Waivers will be acted upon separately. Failure to adequately address the required submission information may result in a delay in processing this application.

This information is required under the following Zoning Ordinance paragraphs:

- Special Permits (8-011.21 & 3.1)
- Special Exceptions (9-011.21 & 2.1)
- Cluster Subdivisions (6-015.1G & 1N)
- Commercial Reutilization Districts (9-022.2A (17)&(14))
- Development Plans PRC Districts (16-302.3 & 4.1)
- PRC Plan (16-303.1E & 10)
- FDP - F Districts (6-016.1F & 1C)
- Amusements (18-203.1F & 100)

- Plot is at a minimum scale of 1"=50' (unless it is depicted on one sheet with a minimum scale of 1"=100').
- A graphic depicting the stormwater management facility(ies) and limits of clearing and grading to accommodate the stormwater management facility(ies), storm drainage pipe systems and outlet protection, pond spillways, access roads, site outfalls, energy dissipation devices, and stream stabilization measures as shown on Sheet 3.
- Provide:

Facility Name/Type & No.	On-Site area served (acres)	Off-Site area (acres)	Design area (acres)	Footprint area (sf)	Storage Volume (cf)	If pond, dam height (ft.)
GRAVEL TRENCH	0.57	0.80	0.57	3,343	1600	N/A
(e.g., dry pond, A, trench, underground vault, etc.)						
- Concrete drainage channels, outfalls and pipe systems are shown on Sheet 3.
- Final inlet and outlet pipe systems are shown on Sheet 3.
- Maintenance access (road) to stormwater management facility(ies) are shown on Sheet 3. Type of maintenance access road surface noted on the plot is N/A (asphalt, goliobck, grave, etc.)
- Landscaping and tree preservation shown in and near the stormwater management facility is shown on Sheet 3.
- A "stormwater management narrative" which contains a description of low diversion and best management practices requirement will be met is provided on Sheet 3.
- A description of the existing conditions of each nonpoint site outfall extended downstream from the site to a point which is at least 100' from the site area or which has a drainage area of at least one acre (640 sq ft) is provided on Sheet 3.
- A description of how the outfall requirements, including known changes to contributing drainage areas (i.e. drainage diversions), of the Public Facilities Manual will be satisfied is provided on Sheet 10.
- Existing topography with maximum contour intervals of two (2) feet and a note as to whether it is an advisory or field run is provided on Sheet 3.8.
- An advisory waiver is requested for N/A.
- Stormwater management is not required because N/A.

Revised 2-21-2006

BMP FACILITY DESIGN CALCULATIONS

Plan Name: Lord Fairfax Academy Date: 11/3/2010
Plan Number: SE 2008-PR-021 Engineer: JDA

I. WATER QUALITY NARRATIVE

The site consists of 1.04 (AC) to Best Management Practices (BMP) practices 0.80 (AC) of the onsite area will be controlled, 0.15 (AC) on-site will go uncontrolled. We will meet all the BMP requirements through the implementation of a StormFilter with an efficiency rating of 50% and a Grass Swale with an efficiency rating of 15%. The post-development phosphorus load requires to be reduced by 40%, this design provides a 40.3% phosphorus reduction, thus meeting BMP requirements.

II. WATERSHED INFORMATION

Part 1: List all of the Subareas and "C" factors used in the BMP Computations

Subarea Designation	"C" Factor	Area (Ac)	Product
(1) StormFilter	0.39	0.57	0.22
(2) Grass Swale	0.35	0.32	0.11
(3) ON SITE UNCONTROLLED	0.35	0.15	0.05
Total			0.04

III. a. PHOSPHORUS REMOVAL - "OCOCQUAN METHOD"

Part 2: Compute the Weighted Average "C" Factor for the Site

(A) Area of the Site (a) 1.04 acres

Subarea Designation	"C" Factor	Area (Ac)	Product
(1) StormFilter	0.39	0.57	0.22
(2) Grass Swale	0.35	0.32	0.11
(3) ON SITE UNCONTROLLED	0.35	0.15	0.05
Total			0.08

(C) Weighted average "C" factor (b)/(a) = (C) 0.85

Part 3: Compute the Total Phosphorus Removal for the Site

Subarea Designation	Removal Efficiency (%)	Area (Ac)	"C" Factor	Product
(1) StormFilter	50	0.57	0.39	0.11
(2) Grass Swale	15	0.32	0.35	0.02
(3) ON SITE UNCONTROLLED	0	0.15	0.35	0.00
Total				0.03

(b) Total = 0.03

Part 4: Determine Compliance with Phosphorus Removal Requirement

- (A) Select Requirement (a) 40
- Water Supply Overlay District (Occoquan Watershed) = 50% (Fairfax County and Prince William County)
- Chesapeake Bay Preservation Area (New Development) = 40% (Fairfax County) 50% (Prince William County)
- Chesapeake Bay Preservation Area (Redevelopment) = 50% (Fairfax County)
- (1 - 0.8 x (T pr/T post)) x 100 = %
- Line 3(a) 40.3 >> 40

(B) If Line 3(a) > Line 4(a), the Phosphorus removal requirement is satisfied.

PHOSPHORUS REMOVAL REQUIREMENT IS SATISFIED

IV. SITE COVERAGE

Part 5: Determine Compliance with Site Coverage Requirement

Sum of the uncontrolled onsite area and compute a weighted average "C" factor. Do not include qualifying open space.

Subarea Designation	"C" Factor	Area (Ac)	Product
(1)			
(2)			
(3) ON SITE UNCONTROLLED	0.35	0.15	0.05
Total			0.05

(A) Total equivalent uncontrolled area (a) Total = 0.05

(B) Total uncontrolled area (b) = 0.15

(C) Weighted average "C" factor (b)/(a) = (C) 0.35

(D) If line 5(b) < 20% of Line 2(a), then the site coverage requirement is satisfied.

Line 5(b) is the equivalent onsite area for which coverage may be required.

100 x Line 5(b) / Line 2(a) = 1.04 = 14.2%

SITE COVERAGE REQUIREMENT IS SATISFIED



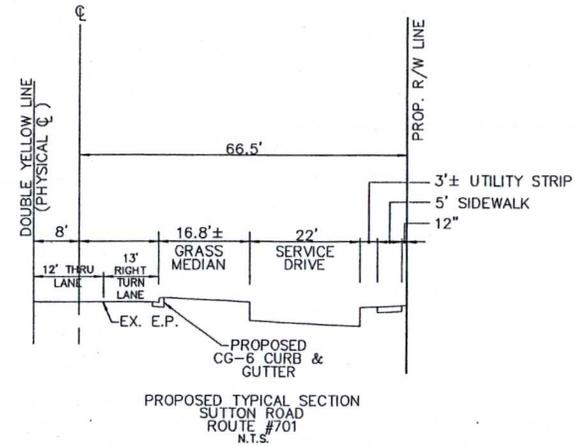
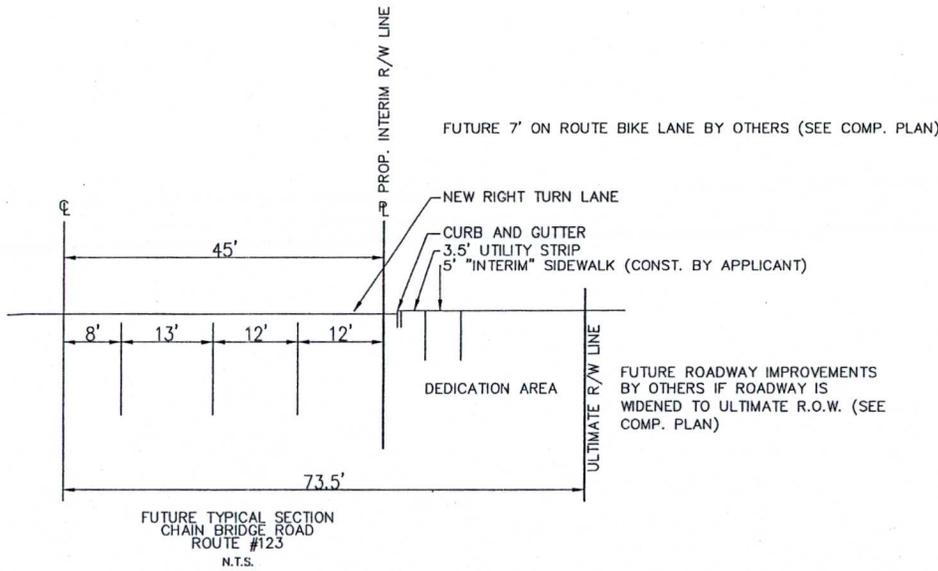
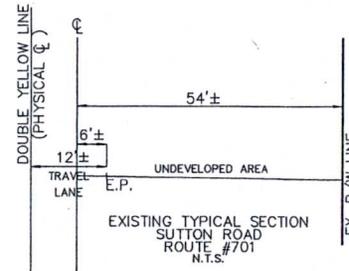
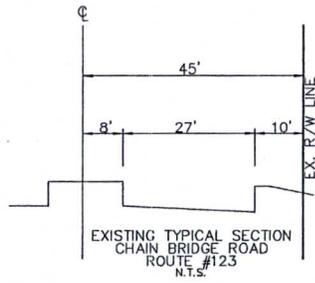
LORD FAIRFAX ACADEMY
PROVIDENCE DISTRICT
FAIRFAX COUNTY, VIRGINIA

SWM / BMP
CALCULATIONS



VFA REVISIONS

JANUARY 3, 2011
DECEMBER 5, 2010
NOVEMBER 5, 2010
SEPTEMBER 22, 2010
JULY 23, 2010
DATE: JULY 9, 2010
DES: JDA DWG: RMC
SCALE: N/A
PROJECT/FILE NO. V7298A
SHEET NO. 8

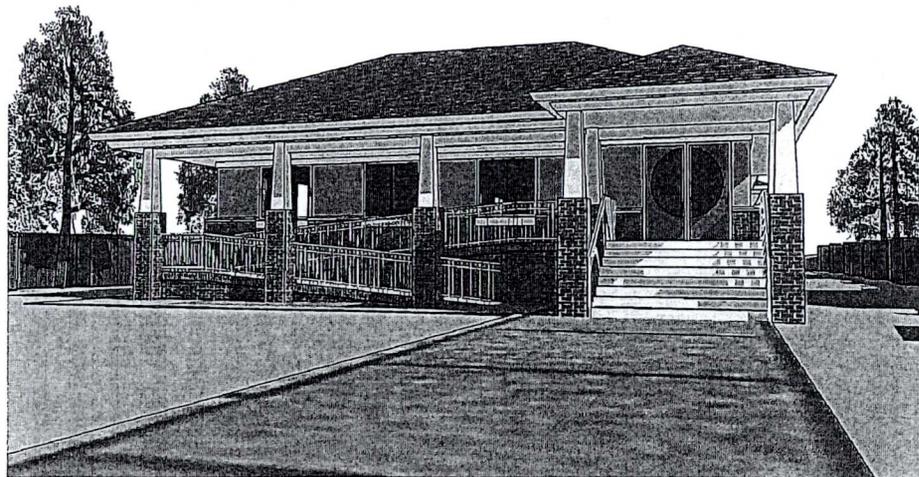


NOTE:
ALL PROPOSED WORK IN THE PUBLIC RIGHT OF WAY
IS SUBJECT TO VDOT APPROVAL.

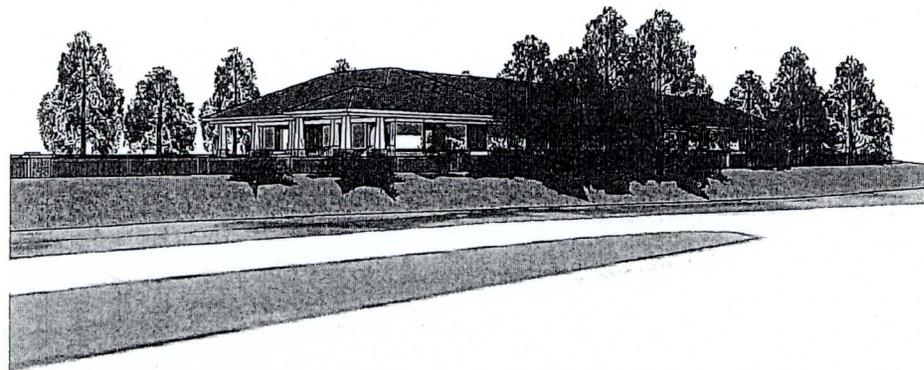


VIA REVISIONS

DATE:	JULY 9, 2010
DES. JK	DRW. RMC
SCALE:	N/A
PROJECT/FILE NO.	V2299A
SHEET NO.	9



VIEW TOWARD MAIN ENTRY FROM PARKING LOT



VIEW TOWARD PROJECT SITE FROM NORTHBOUND RTE 123

NOTE: IMAGES ARE FOR
ILLUSTRATIVE PURPOSES, ONLY



VIA ARCHITECTURAL SERVICES
1100 GREGORY DRIVE SUITE 200 W FALLS CHURCH VIRGINIA 22024
VA 22024
TEL: 703.441.1400
WWW.VIAARCHITECTURAL.COM

LORD FAIRFAX ACADEMY
PROVIDENCE DISTRICT
FAIRFAX COUNTY, VIRGINIA

ILLUSTRATIVE
ARCHITECTURALS



VIA REVISIONS

DATE	DES.	DWN.
JANUARY 3, 2011		
DECEMBER 5, 2010		
NOVEMBER 5, 2010		
SEPTEMBER 22, 2010		

SCALE:	N/A
PROJECT/FILE NO.	V7289A
SHEET NO.	11

11/7/2010 4:40:34 PM EST



Lynne J. Strobel
 (703) 528-4700 Ext. 5418
lstrobel@arl.thelandlawyers.com

**WALSH COLUCCI
 LUBELEY EMRICH
 & WALSH PC**

August 20, 2010

RECEIVED
 Department of Planning & Zoning
 AUG 23 2010
 Zoning Evaluation Division

Via Scheduled Express

Regina C. Coyle, Director
 Fairfax County Department of Planning & Zoning
 Zoning Evaluation Division
 12055 Government Center Parkway, Suite 801
 Fairfax, Virginia 22035

Re: SE 2008-PR-021
 Applicant: James W. Jackson
 Fairfax County Tax Map Reference: 48-1 ((1)) 50 (the "Subject Property")

Dear Ms. Coyle:

Please accept this letter as a revised statement of justification for the referenced special exception application. The Applicant previously proposed a rezoning to be processed concurrently with the special exception application. A rezoning of the Subject Property is no longer requested, and the Applicant is proceeding solely with a special exception application to permit the establishment of a nursery school and child care center.

The Applicant is the owner of the Subject Property that is located on the south side of Chain Bridge Road (Route 123) at its intersection with Sutton Road. The Subject Property is zoned to the R-1 District and contains approximately 1.286 acres. Although previously developed with residential structures, the Subject Property is currently vacant. There are no proffers applicable to the Subject Property, which has been used over the years for the sale of seasonal items such as Christmas trees. Surrounding uses include a Verizon building and single family residential developments primarily zoned to the PDH-4 and R-2 Districts.

The Subject Property is located in the Nutley Community Planning Sector (V5) of the Area II Comprehensive Plan (the "Plan"). There are no site specific recommendations for the Subject Property and the general recommendations suggest that this area is largely developed with stable residential neighborhoods. Additional development is recommended to be of a compatible use, type and intensity to existing development. As nursery schools and child care centers are permitted with the approval of a special exception in the R-1 District, the Applicant's proposal is in harmony with the recommendations of the Plan.

The Applicant is the owner and operator of two other successful nursery schools and child care centers in Fairfax County. The Subject Property provides an ideal location to establish a neighborhood serving community use. Uses such as nursery schools and child care centers should be located in proximity to the people that they serve. The proximity of the Subject Property to Chain Bridge Road will meet this objective without generating traffic that will cut

through established residential neighborhoods. The facility will serve local residents as they travel to employment centers located in Tysons Corner, Vienna, and Fairfax. As a result, the nursery school and child care center will capture existing traffic and not create a new destination for commuters.

The Applicant proposes to construct a single building on the Subject Property containing approximately 6,721 gross square feet. The proposed gross floor area results in an FAR of .12, which is well below the permitted FAR of .15 for non-residential uses in the R-1 District. The building is designed to minimize building height. The proposed building height is approximately 29 feet, which is below the permitted building height of 35 feet in the R-1 District. The building will include classroom areas, administrative offices, and other features typically found in a nursery school and child care center. Up to 150 children may be accommodated in the proposed building.

In addition to a building design that minimizes height and square footage, the Applicant has been thoughtful in the layout of the proposed improvements. The play area has been located in front of the building in proximity to the adjacent non-residential use. This location minimizes any noise associated with the play area from impacting adjacent residential communities. A significant setback has been provided to Chain Bridge Road that includes berming, landscaping and a wooden fence. The Applicant has incorporated all of these features into the design to minimize the appearance of the building from the roadway. These features will have the added benefit of providing noise mitigation to the surrounding communities. Access will be provided from the existing service drive on Sutton Road, and a one way vehicular circulation pattern will ensure that traffic flows freely through the Subject Property. While it is anticipated that parents will typically park and walk their children into the building, the arrival and departure of children will be staggered. The staggered arrival and departure times will minimize the number of vehicles on the Subject Property at any one time. Access to the Subject Property will be facilitated with the construction of a right turn lane from Chain Bridge Road to Sutton Road. Even though a turn lane is required as a result of existing traffic generation, the Applicant will dedicate the necessary property frontage and construct the improvement, including the relocation of signal poles. Lastly, stormwater management will be provided in the form of infiltration trenches, which is a preferred method to address runoff. The infiltration trenches will be located outside of the play area and will provide effective detention.

In accordance with the requirements of Section 9-011 of the Fairfax County Zoning Ordinance (the "Ordinance"), please accept the following information:

- The type of operation will be a child care center and nursery school.
- The hours of operation will be from 6:30 a.m. to 6:30 p.m., Monday through Friday. The nursery school and child care center will include activities that are typical of this type of facility. Activities that will take place after hours will be limited. The Applicant anticipates a holiday party and a graduation ceremony as after hours activities during the course of the year.

- The maximum daily enrollment for all uses on the Subject Property is 150 children, however, given the different education programs offered, only a maximum of 120 children will be present on the Subject Property at any one time. The children will range in age from six (6) weeks to twelve (12) years.
- The proposed number of employees is twelve (12) teachers and three (3) administrative staff. A maximum of eleven (11) employees will be on-site at any one time.
- The total number of vehicle trips to the Subject Property will be approximately 350 per day. The number of vehicle trips per day will be mitigated in a number of ways. The Applicant utilizes a bus for the transporting of children to and from the facility. In addition, it is anticipated that approximately one-half of the families will have more than one child enrolled in the facility, thereby increasing the number of children per vehicle. Lastly, parents and employees actively participate in an organized carpool program. The estimated peak traffic impact in the morning will be between 7:30 a.m. and 8:30 a.m. and in the evening between 4:30 p.m. and 5:30 p.m. During the peak hours of operation, approximately 40 vehicles will enter and exit the Subject Property.
- The child care center and nursery school will primarily serve Fairfax County residents within a radius of approximately ten (10) miles. This radius includes Fairfax, Vienna, Oakton and Merrifield.
- A single new building is proposed to be constructed on the Subject Property that will contain approximately 6,721 gross square feet with a height of approximately 29 feet. The building will be constructed with residential design elements and materials so that it will be compatible with the surrounding residential community. Exterior materials will include cementitious siding, residential style windows, and a shingled roof.
- The Applicant is not aware of any hazardous or toxic substances located on the Subject Property.
- The proposed development complies with all adopted standards, ordinances and regulations except as may be noted on the special exception plat.

The Applicant's proposal is an opportunity to establish a community serving use at a scale and intensity that is compatible with the surrounding area and the existing R-1 zoning. As a majority of households in Fairfax County are dependent on the income of two (2) working parents, the need for quality nursery school and child care facilities is critical. The Applicant is an established child care provider who believes that the proposed location represents an ideal opportunity to address this need in Fairfax County without adversely impacting transportation. The proposed use will capture traffic that is already on the road network and will not create cut-through traffic in the neighborhood.

August 20, 2010

Page 4

I would appreciate the scheduling of the amended special exception application for a public hearing before the Fairfax County Planning Commission at your earliest convenience. Should you have any questions regarding this request, or require additional information, please do not hesitate to give me a call.

As always, I appreciate your cooperation and assistance.

Very truly yours,

WALSH, COLUCCI, LUBELEY, EMRICH & WALSH, P.C.


Lynne J. Strobel

LJS/kae

cc: James Jackson
John Amatetti
Jeff Kreps
Will Johnson
Mike Miller
Martin D. Walsh

{A0200463.DOC / 1 Revised Statement of Justification 006856 000002}



Lynne J. Strobel
(703) 528-4700 Ext. 5418
lstrobel@arl.thelandlawyers.com

**WALSH COLUCCI
LUBELEY EMRICH
& WALSH PC**

RECEIVED
Department of Planning & Zoning
NOV 08 2010
Zoning Evaluation Division

November 5, 2010

Via E-Mail & Hand Delivery

Kelli-Mae Goddard-Sobers
Fairfax County Department of Planning and Zoning
Zoning Evaluation Division
12055 Government Center Parkway, #801
Fairfax, Virginia 22035

Re: SE 2008-PR-021
Applicant: James W. Jackson

Dear Ms. Goddard-Sobers:

Thank you for the opportunity to meet on October 15, 2010 to discuss the pending special exception application. The dialogue was very productive, and I look forward to the successful resolution of outstanding staff concerns. In response to our discussion, a revised special exception plat has been prepared by VIKA, Inc. and submitted under separate cover. Modifications to the plat may be briefly described as follows:

- The proposed building has been relocated so that it is approximately 38 feet closer to Sutton Road.
- The layout of the building and supporting facilities has been modified in response to specific suggestions. The play areas have been consolidated and, to the extent possible, relocated further from Route 123. As shown on the special exception plat, one of the play areas is now located completely behind the proposed building. The second play area remains in the front of the building, however, the sidewalk has been relocated so that the play area is not divided. Although the play areas have been reduced in size, the redesigned layout meets the objectives of consolidation and creating a further separation from Route 123.
- An open space calculation has been added to the special exception plat. The amount of open space on the property, as defined by the Zoning Ordinance is approximately 65%. Please note that even if the play areas are excluded, the amount of open space is approximately 59%. The amount of open space supports the Applicant's position that the use is not too intense for the size of the property nor out of character with the surrounding area.

PHONE 703 528 4700 ■ FAX 703 525 3197 ■ WWW.THELANDLAWYERS.COM
COURTHOUSE PLAZA ■ 2200 CLARENDON BLVD., THIRTEENTH FLOOR ■ ARLINGTON, VA 22201-3359

LOUDOUN OFFICE 703 737 3633 ■ PRINCE WILLIAM OFFICE 703 680 4664

ATTORNEYS AT LAW

- A cross section has been provided of the proposed landscaping, fence and berm that is parallel to Route 123. In addition, fence details, both in proximity to Route 123 and at the rear property line, have been provided. The cross section and fence details are shown on Sheet C-3A of the special exception plat. Please note that the height of the fence has been reduced to six (6) feet and the note on Sheet 5 has been edited appropriately.
- Plantings are shown within the VDOT right-of-way at the intersection of Route 123 and Sutton Road. Representatives of VIKA have contacted VDOT for approval of the proposed plantings, but have not yet received a response. Therefore, a note remains on the special exception plat that the plantings will be provided subject to VDOT approval. Given past experiences, I believe that VDOT will allow the proposed plantings.
- Several modifications have been made to the proposed stormwater management facilities. Representatives of VIKA had the opportunity to speak to Beth Forbes and have revised the piping system to ensure that roof and playground areas are directed to the filter. In addition, the swale grading has been revised and a fence removed from the swale. My understanding is that the modifications shown on the special exception plat address all of Ms. Forbes' concerns.

During our meeting, there was discussion of potential noise impacts on the property associated with Route 123. The Applicant has retained Gary Ehrlich of Hush Acoustics to perform a noise study. While Mr. Ehrlich has completed his noise measurements, he was unable to complete a formal report in time to be included with this submission. I anticipate that Mr. Ehrlich will be able to complete his report on or about November 17, 2010, which is well in advance of the final submission deadline of December 3, 2010. Mr. Ehrlich is confident that the noise generated by Route 123 will be adequately mitigated by a six (6) foot high solid fence. Therefore, a six (6) foot high solid fence is shown on the special exception plat to reduce noise from Route 123 to an acceptable level. In addition, Mr. Ehrlich concluded that typical building construction techniques will ensure that interior noise levels will meet Fairfax County standards.

We also discussed potential traffic impacts associated with the proposed use on Sutton Road. I have attached a memorandum prepared by Will Johnson of Wells & Associates that describes predicted traffic patterns and their impact on the surrounding road network. Mr. Johnson concludes that traffic from the Applicant's property will result in minimal impacts on Sutton Road. Please note that Mr. Johnson reached his conclusion without consideration of the mitigation measures proposed by the Applicant and reflected in the submitted development conditions.

Thank you for your continued efforts in the review and evaluation of the Applicant's proposal. I look forward to our meeting on **November 19, 2010 at 10:00 a.m.** to receive final staffing comments.

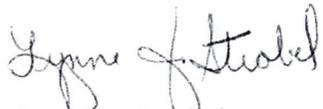
November 5, 2010

Page 3

As always, I appreciate your cooperation and assistance.

Very truly yours,

WALSH, COLUCCI, LUBELEY, EMRICH & WALSH, P.C.



Lynne J. Strobel

LJS/kae

Attachment

cc: Regina Coyle
Jimmy Jackson
John Amatetti
Jeff Kreps
Mike Miller
Will Johnson
Gary Ehrlich
Martin D. Walsh

{A0206568.DOC / 1 Goddard-Sobers ltr 11-5-10 006856 000002}



Lynne J. Strobel
(703) 528-4700 Ext. 5418
lstrobel@arl.thelandlawyers.com

**WALSH COLUCCI
LUBELEY EMRICH
& WALSH PC**

December 22, 2010

RECEIVED
Department of Planning & Zoning

DEC 28 2010

Zoning Evaluation Division

Via E-Mail and U.S. Mail

Kelli-Mae Goddard-Sobers
Fairfax County Department of Planning and Zoning
Zoning Evaluation Division
12055 Government Center Parkway, Suite 801
Fairfax, Virginia 22035

Re: SE 2008-PR-021
Applicant: James W. Jackson
Fairfax County Tax Map Reference: 48-1 ((1)) 50

Dear Ms. Goddard-Sobers:

Please accept this letter to supplement the revised statement of justification submitted to you on August 20, 2010. In response to your specific questions, I am providing additional information regarding the anticipated ages of the children that will attend the proposed nursery school and child care center, and the programs that will be offered. The information is approximate as the exact number of children for each program will not be known until the center is operating.

The Applicant will offer enrollment in the child care center to children ranging in age from six (6) weeks to twelve (12) years. Younger children will have an opportunity to enroll in the nursery school that will offer instruction in the Montessori teaching method. Based on the Applicant's current nursery school and child care center, the anticipated number of children by age will be as follows:

- Infants – approximately twenty (20);
- Sixteen (16) months to two (2) years – approximately twenty (20);
- Two (2) to three (3) years - approximately twenty-two (22);
- Three (3) year olds – approximately twenty-one (21);
- Four (4) to five (5) years – approximately twenty-one (21); and
- Children over the age of five (5) – approximately (35) thirty-five.

In accordance with the Montessori teaching method, instruction is offered to children as young as sixteen (16) months. Classrooms may include children of different ages. Older

PHONE 703 528 4700 ■ FAX 703 525 3197 ■ WWW.THELANDLAWYERS.COM
COURTHOUSE PLAZA ■ 2200 CLARENDON BLVD., THIRTEENTH FLOOR ■ ARLINGTON, VA 22201-3359

LOUDOUN OFFICE 703 737 3633 ■ PRINCE WILLIAM OFFICE 703 680 4664

ATTORNEYS AT LAW

December 22, 2010

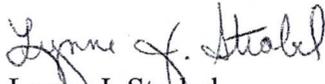
Page 2

children will have more structured education than younger children. Based on the curriculum for each classroom, instruction may range from two (2) to three (3) hours per day. Educational instruction is typically offered for 1 to 1 1/2 hours in the morning and for 1 to 1 1/2 hours in the afternoon. The exact time of instruction varies by age group. Other activities that take place during the day as part of the child care component of the center include playtime, arts and crafts, outside playtime, snacks and naps. The children over the age of five (5) who are enrolled in the child care center will be on-site in the morning from 6:30 a.m. to 7:45 a.m. or in the afternoon from 3:00 p.m. to 6:30 p.m. As agreed, no more than 120 children will be on-site at one time.

All other information as presented in my letter of August 20, 2010 remains the same. Should you have additional questions, or require additional information, please do not hesitate to give me a call. As always, I appreciate your cooperation and assistance.

Very truly yours,

WALSH, COLUCCI, LUBELEY, EMRICH & WALSH, P.C.


Lynne J. Strobel

LJS/kae

Jimmy Jackson

Will Johnson

John Amatetti

Gary Ehrlich

Jeff Kreps

Martin D. Walsh

Mike Miller

{A0210148.DOC / 1 Goddard-Sobers ltr 12-22-10 006856 000002}



County of Fairfax, Virginia

MEMORANDUM

DATE: January 25, 2011

TO: Regina Coyle, Director
Zoning Evaluation Division
Department of Planning and Zoning

FROM: Angela Kadar Rodeheaver, Chief
Site Analysis Section
Department of Transportation

AKR by CAA

FILE: 3-5 (SE 2008-PR-021)

SUBJECT: Transportation Impact, Addendum

REFERENCE: SE 2008-PR-021, James W. Jackson,
Lord Fairfax Academy
Traffic Zone: 1618
Land Identification: 48-1 ((1)) 50

Transmitted herewith are additional comments from the Department of Transportation with respect to the referenced application. These comments are based on plats made available to this office dated May 6, 2008, and revised through December 3, 2010, and information from Wells & Associates including: a right-turn lane analysis dated March 20, 2009; a Traffic Assessment dated November 5, 2010, which includes a Route 123 and Sutton Road intersection traffic count dated March 17, 2009; Route 123 and Sutton Road queue studies dated November 30, 2009, and November 23, 2010; an email dated November 29, 2010, concerning future Sutton Road improvements and including a sketch of same; and a sketch of possible interparcel access to the Verizon site dated November 30, 2010; and the applicant's December 2, 2010, response to staff's comments.

The applicant has made revisions to the site plan to move the building farther back on the site with the playground in front of the building. Right-of-way is dedicated on Route 123 for the future third through lane and right turn lane. A right-turn lane is shown on the site plan on Route 123 and the applicant does propose to construct this improvement. The applicant is also providing curb and gutter on Sutton Road across both the site and the Verizon frontages to the proposed access from Sutton Road. The applicant is proposing a right turn lane from Sutton Road to this access to the service drive as requested by VDOT. However, due to the proximity of the service drive to the main roadway, the median width between the two roadways will be approximately fifteen feet. This width is significantly less than the typical spacing of twenty

feet between service drives and main travel lanes. As such, it will be difficult for drivers to make this turn without crossing into adjoining traffic lanes.

The basic problem with this site is the intensity of the use and the location at the intersection of Route 123, a major arterial, and Sutton Road, a collector road which is used extensively to access a high school, the Metro station and as a bypass for Route 123 when that road becomes too congested. According to the analysis for the right turn lane from Route 123 to Sutton Road which was based on existing peak hour turning movement counts, a full width right-turn lane and taper is warranted under existing conditions *before* development of the proposed school. That shows there are a substantial number of right turns from Route 123 without the addition of turns for the site. There are also a number of left turns onto Sutton Road which, combined with the right turns, means that during peak periods there may be limited gaps for left turns from northbound Sutton Road into the service drive access to the site. Consequently, it is expected that a majority of the trips to the school will come from Route 123. All these trips must also enter and leave the site, adding interference to the through southbound trips on Sutton Road which is one lane southbound. The applicant is providing a right turn lane from Sutton Road to the service drive; however, staff has some concerns about the turn radius which may be tight for some vehicles to make easily. The Wells submitted memo dated November 30, 2020, and sketch of Sutton Road – Future Improvement (By Others) would make the applicant's proposed right turn lane a through lane to accommodate a future four-lane undivided section. (Intersection improvements such as this are usually not noted in the Comprehensive Plan and are made when funds are available.) Staff believes a future four-lane section of Sutton Road would be a median divided section from Route 123 south at least past the Verizon site and probably to Courthouse Road in which case the area between the service drive and the road would be severely narrowed or disappear altogether.

With the parking now located farther from the building, it will take more time for the children to be dropped off or picked up and the queuing vehicles may back onto the street. This will be most likely to occur if/when the intersection is improved and the service drive and strip of land separating it from Sutton Road disappear. Although the service drive gives some room for stacking vehicles now, at such time as the intersection is improved, without the service drive, the site will have only one entrance directly from Sutton Road and all queuing must occur on site. The one entrance will be extremely close to the intersection of Sutton Road and Route 123 resulting in additional conflict points at an already busy intersection. This one entrance would not meet current Access Management Regulations and would need an exception to these standards approved by VDOT.

The November 30, 2010, sketch of a possible future interparcel access to the Verizon site and a shared driveway access to Sutton Road if Sutton Road is improved to four lanes is problematic for several reasons. One, it would move the entrance to the site only a short distance south of where it would be if the single entrance were directly to the site. Two, there is no documentation that Verizon would agree to sharing their driveway. Three, Verizon may have concerns about liability if non-employees are utilizing their driveway.

Staff has concerns about containing all parking on site, as required, with eleven employees on site at a time on a daily basis and, especially, for special events and after hours activities since there is no parking allowed on Sutton Road. Additionally, the school bus that picks up the children from before school and drops them off after school will likely stop in the right turn lane to the service drive and may stop traffic from going southbound on Sutton Road long enough at peak times to affect the turns south from Route 123.

The proposed use is intense for a site with significant constraints. The peak hour site generated trips with 150 students, according to ITE Trip Generation, 8th Edition, rates would be 123 in the a.m. and 128 in the p.m. Although ITE Trip rates are only an estimate and sometimes result in higher numbers than actually occur, this far exceeds the number of trips that would be generated by the planned residential use of 4-5 trips in the a.m. peak hour and 5-6 trips in the p.m. peak hour.

The applicant has committed to provide various transportation improvements to the Route 123/ Sutton Road intersection and will implement mitigation measures such as busing and car pooling as much as possible to ameliorate the impact of the trip generation. However, as noted above, the proposed use remains very intense with considerable trip generation.

AKA/LAH/lah

**WELLS + ASSOCIATES****MEMORANDUM**

TO: Lynne J. Strobel
Walsh Colucci Lubeley Emrich & Walsh

FROM: William F. Johnson, P.E.

RE: SE 2008-PR-021; Fairfax Academy – Traffic Assessment
Fairfax County, Virginia

DATE: November 5, 2010

Introduction

This memorandum serves to provide an assessment of the traffic impacts associated with the above referenced Special Exception application. Specifically, this assessment addresses the impacts of the proposed new day care center on the surrounding roadway network. The subject site is located east of Route 123 and south of Sutton Road in Fairfax County, Virginia. If approved, the site would be developed with a day care center that would accommodate up to 150 students. Access to/from the property would be provided via an existing service drive which intersects Sutton Road at a point approximately 315 feet east of the Route 123/Sutton Road signalized intersection. An existing connection to the service drive located closer to the signalized intersection would be closed.

During the course of application review, County transportation staff noted concerns about whether the proximity of the Route 123/Sutton Road signal and existing and/or potential future queuing may render the proposed site access unable to serve the needs of the property. To that end, Wells + Associates has performed a trip generation analysis and intersection capacity assessment to determine the impacts of the proposed new development on the future performance and queuing along Sutton Road.

Trip Generation

Trips associated with the proposed day care center were generated using standard Institute of Transportation Engineers (ITE) Trip Generation, 8th edition rates/equations. These trips are summarized in Table I. As shown, at full build-out the site would generate approximately 115 AM peak hour (61 inbound and 54 outbound), 108 PM peak hour (51 inbound and 57 outbound), and 677 daily (24-hour) trips on a typical weekday. It should be noted that these calculations do not necessarily account for any potential transportation demand management (TDM) or otherwise trip-reducing measures that may be implemented by the property owner.

Table I
 Fairfax Academy
 Trip Generation Analysis (I)

Land Use	Land Use Code	Size	Unit	AM Peak Hour			PM Peak Hour (Generator)			Daily Trips
				In	Out	Total	In	Out	Total	
Day Care Center	565	150	Students	61	54	115	51	57	108	677

Notes:

(I) Analysis performed using Institute of Transportation Engineers (ITE) Trip Generation rates/equations

Trip Distribution

For purposes of this assessment, the distribution of site vehicular trips was assumed as follows based on a review of baseline traffic counts and engineering judgment:

To/From south Route 123:	45%
To/From north Route 123:	40%
To/From east Sutton Road:	15%

The site trips were assigned to the roadway network based on the above distribution. As a result, and upon build-out of the day care center, approximately 46 site trips would make a left out of the service drive onto Sutton Road during the AM peak hour. The remaining 9 outbound trips would make a right out of the service drive. During the PM peak hour, 48 trips would turn left out of the service drive while 9 trips would turn right.

Intersection Capacity and Queuing Analysis

An intersection capacity analysis was performed using Synchro software, version 7. The base signal timing Synchro file was obtained for the Route 123/Sutton Road intersection from VDOT and used for the analysis of both the Route 123/Sutton Road intersection and the Sutton Road/Service Drive intersection. The results of the analysis are summarized in Table 2 and provided in Attachment I.

As shown in Table 2, the Route 123/Sutton Road intersection operates at overall LOS "C" or better during peak hours with several movements operating at LOS "E" under existing conditions (without buildout of the subject site). When the site trips are added to the baseline traffic volumes, the Route 123/Sutton Road intersection would continue to operate at overall levels of service consistent with existing conditions. Minimal increases in intersection vehicular delay would occur as a result of the proposed new day care center. Furthermore, critical movements at the Sutton Road/Service Drive intersection would operate at LOS "B" with the buildout of the subject site indicating that site trips would be able to exit the Service Drive on to Sutton Road without significant delays.

The Synchro software was also used to estimate potential future queuing at the subject intersections. The results of the queuing analysis are summarized in Table 2. As shown, under existing conditions the Sutton Road (westbound) approach at the Route 123/Sutton Road intersection experiences a 95th-percentile queue of approximately 115 feet (or five vehicles) during the PM peak hour. This result is consistent with field observations. Under future conditions (with buildout of the site), the queues may increase to 147 feet during the AM peak hour and 134 feet during the PM peak hour (or approximately six vehicles). Under either scenario, the Sutton Road queue would not likely extend back to the Service Drive entrance for any consistent period of time. Therefore, the proposed day care center access along Sutton Road would not be adversely impacted by the proximity of the signalized intersection.

Conclusions

Based on the analyses conducted and presented herein, the following may be concluded:

- Build-out of the proposed new day care center would result in minimal impacts to the performance of the surrounding roadway network.
- Future queues along Sutton Road approaching the signalized intersection with Route 123 would not extend back to the Service Drive access serving the proposed new day care use.

I trust that the information provided herein addresses any remaining concerns related to the traffic impacts of the proposed Fairfax Academy. If you need any additional information, please feel free to contact Will Johnson at wfjohnson@mjwells.com or 703.365.9262.

Attachments: a/s

Table 2

Fairfax Academy

Levels of Service and Queue Summary (1) (2) (3)

Intersection	Control	Lane Group	Existing		Future with Site	
			AM	PM	AM	PM
Levels of Service						
Chain Bridge Road (North-South)/	Signal	EBLTR	E (59.2)	C (33.7)	E (57.2)	C (32.2)
Sutton Road (Westbound)/		WBLT	E (62.7)	D (38.0)	E (63.9)	D (37.9)
Five Oaks Road (Eastbound)		WBR	E (59.4)	C (34.2)	E (58.0)	C (32.9)
		NBL	A (3.1)	A (6.6)	A (3.7)	A (7.6)
		NBTR	B (16.0)	B (10.9)	C (20.9)	B (12.4)
		SBL	D (50.7)	A (4.6)	E (62.3)	A (5.6)
		SBTR	A (3.3)	B (10.4)	A (3.7)	B (11.6)
		Overall	C (20.0)	B (12.6)	C (25.3)	B (14.0)
Sutton Road (East-West)/	STOP	EBTR	A	A	A [0.0]	A [0.0]
Service Drive (Northbound)		WBLT	A	A	A [0.5]	A [0.3]
		NBLR	A	A	B [14.9]	B [13.0]
95th Percentile Queues, ft						
Chain Bridge Road (North-South)/	Signal	EBLTR	33	20	32	19
Sutton Road (Westbound)/		WBLT	113	115	147	134
Five Oaks Road (Eastbound)		WBR	62	48	74	50
		NBL	0	3	0	3
		NBTR	308	226	344	257
		SBL	219	58	288	72
		SBTR	74	442	79	474
Sutton Road (East-West)/	STOP	EBTR	0	0	0	0
Service Drive (Northbound)		WBLT	0	0	1	1
		NBLR	0	0	12	10

Notes:

- (1) Analysis performed using Synchro software, version 7
- (2) Values in parentheses, (), represent signalized delay in seconds
- (3) Values in brackets, [], represent unsignalized delay in seconds

HCM Unsignalized Intersection Capacity Analysis
 4: Sutton Rd & Service Drive

11/5/2010



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	
Volume (veh/h)	404	0	0	181	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	449	0	0	201	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)	386					
pX, platoon unblocked			0.99		0.99	0.99
vC, conflicting volume			449		650	449
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			436		640	436
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1110		435	613

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	449	201	0
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1110	1700
Volume to Capacity	0.26	0.00	0.00
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	0.0
Lane LOS			A
Approach Delay (s)	0.0	0.0	0.0
Approach LOS			A

Intersection Summary			
Average Delay		0.0	
Intersection Capacity Utilization		24.6%	ICU Level of Service A
Analysis Period (min)		15	

Queues

10: Five Oaks Rd & Chain Bridge Rd

11/5/2010



Lane Group	EBT	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	15	70	131	2	1840	226	488
v/c Ratio	0.08	0.38	0.44	0.00	0.78	0.68	0.17
Control Delay	49.5	66.6	13.4	2.0	17.4	46.2	2.8
Queue Delay	0.0	0.0	0.0	0.0	0.5	0.0	0.0
Total Delay	49.5	66.6	13.4	2.0	17.8	46.2	2.8
Queue Length 50th (ft)	11	65	0	0	728	134	28
Queue Length 95th (ft)	33	113	62	m0	308	m219	m74
Internal Link Dist (ft)	974	145			534		1223
Turn Bay Length (ft)				130		165	
Base Capacity (vph)	284	262	373	766	2370	352	2918
Starvation Cap Reductn	0	0	0	0	177	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.27	0.35	0.00	0.84	0.64	0.17

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis
 10: Five Oaks Rd & Chain Bridge Rd

11/5/2010



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↗	↖	↕		↖	↕	
Volume (vph)	4	7	3	63	0	118	2	1462	194	203	437	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95		1.00	0.95	
Fr _t		0.97			1.00	0.85	1.00	0.98		1.00	1.00	
Fit Protected		0.99			0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1789			1770	1583	1770	3477		1770	3537	
Fit Permitted		0.93			0.85	1.00	0.47	1.00		0.06	1.00	
Satd. Flow (perm)		1691			1575	1583	883	3477		108	3537	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	4	8	3	70	0	131	2	1624	216	226	486	2
RTOR Reduction (vph)	0	3	0	0	0	116	0	6	0	0	0	0
Lane Group Flow (vph)	0	12	0	0	70	15	2	1834	0	226	488	0
Turn Type	Perm			Perm		Perm	pm+pt			pm+pt		
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4		4	6			2		
Actuated Green, G (s)		13.4			13.4	13.4	100.5	99.1		123.6	115.2	
Effective Green, g (s)		17.4			17.4	17.4	108.5	102.1		127.6	118.2	
Actuated g/C Ratio		0.12			0.12	0.12	0.72	0.68		0.85	0.79	
Clearance Time (s)		7.0			7.0	7.0	7.0	6.0		7.0	6.0	
Vehicle Extension (s)		3.0			3.0	3.0	2.0	3.0		2.0	3.0	
Lane Grp Cap (vph)		196			183	184	671	2367		330	2787	
v/s Ratio Prot							0.00	c0.53		c0.10	0.14	
v/s Ratio Perm		0.01			c0.04	0.01	0.00			0.48		
v/c Ratio		0.06			0.38	0.08	0.00	0.77		0.68	0.18	
Uniform Delay, d1		59.0			61.3	59.2	5.7	16.2		41.9	3.9	
Progression Factor		1.00			1.00	1.00	0.53	0.87		1.11	0.81	
Incremental Delay, d2		0.1			1.3	0.2	0.0	1.8		4.3	0.1	
Delay (s)		59.2			62.7	59.4	3.1	16.0		50.7	3.3	
Level of Service		E			E	E	A	B		D	A	
Approach Delay (s)		59.2			60.5			16.0			18.3	
Approach LOS		E			E			B			B	

Intersection Summary

HCM Average Control Delay	20.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	77.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
 4: Sutton Rd & Service Drive

11/5/2010



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	
Volume (veh/h)	234	0	0	237	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	260	0	0	263	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)	386					
pX, platoon unblocked			0.99		0.99	0.99
vC, conflicting volume			260		523	260
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			253		518	253
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1305		515	781

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	260	263	0
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1305	1700
Volume to Capacity	0.15	0.00	0.00
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	0.0
Lane LOS			A
Approach Delay (s)	0.0	0.0	0.0
Approach LOS			A

Intersection Summary			
Average Delay		0.0	
Intersection Capacity Utilization		15.8%	ICU Level of Service A
Analysis Period (min)		15	

Queues

10: Five Oaks Rd & Chain Bridge Rd

11/5/2010



Lane Group	EBT	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	13	116	147	3	886	190	1488
v/c Ratio	0.04	0.47	0.36	0.01	0.42	0.37	0.58
Control Delay	25.9	42.3	8.1	4.3	11.6	5.8	9.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.9	42.3	8.1	4.3	11.6	5.8	9.1
Queue Length 50th (ft)	5	67	0	0	136	26	166
Queue Length 95th (ft)	20	115	48	3	226	58	442
Internal Link Dist (ft)	974	145			534		1223
Turn Bay Length (ft)				130		165	
Base Capacity (vph)	491	418	592	344	2131	514	2582
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.28	0.25	0.01	0.42	0.37	0.58

Intersection Summary

HCM Signalized Intersection Capacity Analysis
 10: Five Oaks Rd & Chain Bridge Rd

11/5/2010



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↗	↖	↕		↖	↕	
Volume (vph)	5	3	4	101	4	132	3	737	60	171	1334	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95		1.00	0.95	
Fr _t		0.96			1.00	0.85	1.00	0.99		1.00	1.00	
Fit Protected		0.98			0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1745			1777	1583	1770	3499		1770	3537	
Fit Permitted		0.88			0.72	1.00	0.13	1.00		0.25	1.00	
Satd. Flow (perm)		1576			1349	1583	245	3499		471	3537	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	6	3	4	112	4	147	3	819	67	190	1482	6
RTOR Reduction (vph)	0	3	0	0	0	120	0	5	0	0	0	0
Lane Group Flow (vph)	0	10	0	0	116	27	3	881	0	190	1488	0
Turn Type	Perm			Perm		Perm	pm+pt			pm+pt		
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4		4	6			2		
Actuated Green, G (s)		14.2			14.2	14.2	59.1	57.7		72.5	64.4	
Effective Green, g (s)		18.2			18.2	18.2	67.1	60.7		76.8	67.4	
Actuated g/C Ratio		0.18			0.18	0.18	0.67	0.61		0.77	0.67	
Clearance Time (s)		7.0			7.0	7.0	7.0	6.0		7.0	6.0	
Vehicle Extension (s)		3.0			3.0	3.0	2.0	3.0		2.0	3.0	
Lane Grp Cap (vph)		287			246	288	247	2124		519	2384	
v/s Ratio Prot							0.00	0.25		c0.04	c0.42	
v/s Ratio Perm		0.01			c0.09	0.02	0.01			0.24		
v/c Ratio		0.03			0.47	0.09	0.01	0.41		0.37	0.62	
Uniform Delay, d1		33.7			36.6	34.0	6.6	10.3		4.4	9.2	
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.0			1.4	0.1	0.0	0.6		0.2	1.2	
Delay (s)		33.7			38.0	34.2	6.6	10.9		4.6	10.4	
Level of Service		C			D	C	A	B		A	B	
Approach Delay (s)		33.7			35.9			10.9			9.8	
Approach LOS		C			D			B			A	

Intersection Summary			
HCM Average Control Delay	12.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	64.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis
 4: Sutton Rd & Service Drive

11/5/2010



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↩			↩	↩	
Volume (veh/h)	404	52	9	181	46	8
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	449	58	10	201	51	9
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)	386					
pX, platoon unblocked			0.98		0.98	0.98
vC, conflicting volume			507		699	478
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			484		681	454
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		87	98
cM capacity (veh/h)			1055		403	592

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	507	211	60
Volume Left	0	10	51
Volume Right	58	0	9
cSH	1700	1055	423
Volume to Capacity	0.30	0.01	0.14
Queue Length 95th (ft)	0	1	12
Control Delay (s)	0.0	0.5	14.9
Lane LOS		A	B
Approach Delay (s)	0.0	0.5	14.9
Approach LOS			B

Intersection Summary			
Average Delay		1.3	
Intersection Capacity Utilization		34.4%	ICU Level of Service A
Analysis Period (min)		15	

Queues

10: Five Oaks Rd & Chain Bridge Rd

11/5/2010



Lane Group	EBT	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	15	97	156	2	1871	252	488
v/c Ratio	0.07	0.53	0.47	0.00	0.81	0.78	0.17
Control Delay	47.4	70.8	14.4	2.0	22.2	60.1	3.2
Queue Delay	0.0	0.0	0.0	0.0	1.6	0.0	0.0
Total Delay	47.4	70.8	14.4	2.0	23.9	60.1	3.2
Queue Length 50th (ft)	10	90	8	0	904	176	33
Queue Length 95th (ft)	32	147	74	m0	344	m#288	m79
Internal Link Dist (ft)	974	145			534		1223
Turn Bay Length (ft)				130		165	
Base Capacity (vph)	284	232	386	748	2296	336	2866
Starvation Cap Reductn	0	0	0	0	251	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.42	0.40	0.00	0.91	0.75	0.17

Intersection Summary

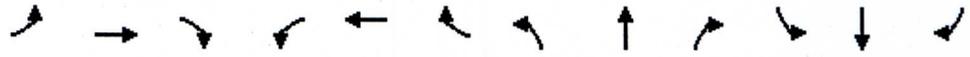
95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis
 10: Five Oaks Rd & Chain Bridge Rd

11/5/2010



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↗	↖	↕		↖	↕	
Volume (vph)	4	7	3	87	0	140	2	1462	222	227	437	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95		1.00	0.95	
Frt		0.97			1.00	0.85	1.00	0.98		1.00	1.00	
Flt Protected		0.99			0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1789			1770	1583	1770	3469		1770	3537	
Flt Permitted		0.93			0.75	1.00	0.47	1.00		0.05	1.00	
Satd. Flow (perm)		1690			1393	1583	883	3469		89	3537	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	4	8	3	97	0	156	2	1624	247	252	486	2
RTOR Reduction (vph)	0	3	0	0	0	128	0	7	0	0	0	0
Lane Group Flow (vph)	0	12	0	0	97	28	2	1864	0	252	488	0
Turn Type	Perm			Perm		Perm	pm+pt			pm+pt		
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4		4	6			2		
Actuated Green, G (s)		15.6			15.6	15.6	97.4	96.0		121.4	113.0	
Effective Green, g (s)		19.6			19.6	19.6	105.4	99.0		125.4	116.0	
Actuated g/C Ratio		0.13			0.13	0.13	0.70	0.66		0.84	0.77	
Clearance Time (s)		7.0			7.0	7.0	7.0	6.0		7.0	6.0	
Vehicle Extension (s)		3.0			3.0	3.0	2.0	3.0		2.0	3.0	
Lane Grp Cap (vph)		221			182	207	652	2290		325	2735	
v/s Ratio Prot							0.00	c0.54		c0.12	0.14	
v/s Ratio Perm		0.01			c0.07	0.02	0.00			0.53		
v/c Ratio		0.06			0.53	0.14	0.00	0.81		0.78	0.18	
Uniform Delay, d1		57.1			60.9	57.7	6.6	18.7		47.9	4.5	
Progression Factor		1.00			1.00	1.00	0.56	0.99		1.10	0.80	
Incremental Delay, d2		0.1			3.0	0.3	0.0	2.4		9.4	0.1	
Delay (s)		57.2			63.9	58.0	3.7	20.9		62.3	3.7	
Level of Service		E			E	E	A	C		E	A	
Approach Delay (s)		57.2			60.3			20.9			23.7	
Approach LOS		E			E			C			C	

Intersection Summary

HCM Average Control Delay	25.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	81.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis
 4: Sutton Rd & Service Drive

11/5/2010



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	
Volume (veh/h)	234	43	8	237	48	9
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	260	48	9	263	53	10
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None		None			
Median storage veh						
Upstream signal (ft)	386					
pX, platoon unblocked			0.98		0.98	0.98
vC, conflicting volume			308		565	284
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			289		551	265
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		89	99
cM capacity (veh/h)			1253		485	762

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	308	272	63
Volume Left	0	9	53
Volume Right	48	0	10
cSH	1700	1253	514
Volume to Capacity	0.18	0.01	0.12
Queue Length 95th (ft)	0	1	10
Control Delay (s)	0.0	0.3	13.0
Lane LOS		A	B
Approach Delay (s)	0.0	0.3	13.0
Approach LOS			B

Intersection Summary			
Average Delay		1.4	
Intersection Capacity Utilization	28.9%	ICU Level of Service	A
Analysis Period (min)	15		

Queues

10: Five Oaks Rd & Chain Bridge Rd

11/5/2010



Lane Group	EBT	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	13	144	172	3	911	212	1488
v/c Ratio	0.04	0.53	0.38	0.01	0.45	0.43	0.59
Control Delay	24.2	42.3	7.3	5.0	13.5	7.3	10.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.2	42.3	7.3	5.0	13.5	7.3	10.3
Queue Length 50th (ft)	5	83	0	1	154	33	186
Queue Length 95th (ft)	19	134	50	3	257	72	474
Internal Link Dist (ft)	974	145			534		1223
Turn Bay Length (ft)				130		165	
Base Capacity (vph)	491	418	609	333	2039	500	2516
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.34	0.28	0.01	0.45	0.42	0.59

Intersection Summary

HCM Signalized Intersection Capacity Analysis
 10: Five Oaks Rd & Chain Bridge Rd

11/5/2010

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↗	↖	↕		↖	↕	
Volume (vph)	5	3	4	126	4	155	3	737	83	191	1334	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95		1.00	0.95	
Frt		0.96			1.00	0.85	1.00	0.98		1.00	1.00	
Flt Protected		0.98			0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1745			1776	1583	1770	3486		1770	3537	
Flt Permitted		0.88			0.72	1.00	0.13	1.00		0.24	1.00	
Satd. Flow (perm)		1574			1346	1583	238	3486		441	3537	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	6	3	4	140	4	172	3	819	92	212	1482	6
RTOR Reduction (vph)	0	3	0	0	0	138	0	7	0	0	0	0
Lane Group Flow (vph)	0	10	0	0	144	34	3	904	0	212	1488	0
Turn Type	Perm			Perm		Perm	pm+pt			pm+pt		
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4		4	6			2		
Actuated Green, G (s)		16.0			16.0	16.0	56.7	55.3		71.0	62.6	
Effective Green, g (s)		20.0			20.0	20.0	64.7	58.3		75.0	65.6	
Actuated g/C Ratio		0.20			0.20	0.20	0.65	0.58		0.75	0.66	
Clearance Time (s)		7.0			7.0	7.0	7.0	6.0		7.0	6.0	
Vehicle Extension (s)		3.0			3.0	3.0	2.0	3.0		2.0	3.0	
Lane Grp Cap (vph)		315			269	317	237	2032		500	2320	
v/s Ratio Prot							0.00	0.26		c0.05	c0.42	
v/s Ratio Perm		0.01			c0.11	0.02	0.01			0.26		
v/c Ratio		0.03			0.54	0.11	0.01	0.45		0.42	0.64	
Uniform Delay, d1		32.2			35.8	32.7	7.6	11.7		5.4	10.2	
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.0			2.0	0.2	0.0	0.7		0.2	1.4	
Delay (s)		32.2			37.9	32.9	7.6	12.4		5.6	11.6	
Level of Service		C			D	C	A	B		A	B	
Approach Delay (s)		32.2			35.1			12.4			10.8	
Approach LOS		C			D			B			B	

Intersection Summary			
HCM Average Control Delay	14.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	66.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



WELLS + ASSOCIATES

MEMORANDUM

TO: Angela K. Rodeheaver
Lou Ann Hutchins
Fairfax County Department of Transportation

FROM: Robin L. Antonucci
William F. Johnson, P.E.

RE: SE 2008-PR-021; James W. Jackson (Fairfax Academy)
Fairfax County, Virginia

DATE: December 2, 2010

This memorandum presents a point-by-point response to the most recent transportation comments received from the Fairfax County Department of Transportation (VDOT) as forwarded by Department of Planning & Zoning staff regarding the above-referenced special exception (SE) application. The point-by-point comments and our responses to each are as follows. This response cites a traffic analysis memorandum provided to County staff and prepared by Wells + Associates dated November 5, 2010. The analysis provided therein utilized traffic counts conducted on March 17, 2009, which are provided herein as Attachment I.

Comment #1: The proposed use is not suitable at this particular location. Existing conditions warrant intersection improvements at this location. The proposed use is bounded by a primary roadway (Chain Bridge Road) and is not comparable to the other existing child care facilities that were provided to use by the applicant. The access points to those facilities are off of local and collector streets. The only facility (Winwood Children Center) that is located on a primary roadway (Lee Jackson Memorial Highway) has its own service drive which forms the fourth leg of a signalized intersection.

Response: According to the traffic analysis dated November 5, 2010 provided to staff, the Chain Bridge Road/Sutton Road intersection operates at an overall acceptable level of service (LOS) "C" or better during weekday peak hours under existing conditions. As such, this specific intersection does not appear to warrant improvement.

The proposed use is bounded by Chain Bridge Road (Route 123) on the west and Sutton Road (Route 701) on the north. Chain Bridge Road is classified by Fairfax County as a principal arterial. The primary function of such roadways is to provide for through travel mobility. Therefore, in order to preserve the function of the arterial, access to the property was solely oriented to/from Sutton Road. No direct access has ever been proposed from Chain Bridge Road to serve the property.

Sutton Road is *not* classified as an arterial roadway by the Fairfax County Comprehensive Plan. The VDOT highway classification map does classify Sutton Road as an *urban collector*. Collector streets provide both land access service and traffic circulation within residential neighborhoods, commercial and industrial areas. It differs from the arterial system in that facilities on the collector system may penetrate residential neighborhoods, distributing trips from the arterials through the area to the ultimate destination. Conversely, the collector street also collects traffic from local streets in residential neighborhoods and channels it into the arterial system. Therefore, the access to the proposed day care center from this urban collector would not be, in essence, contrary to previously developed day care sites as cited by staff, which tend to be located on collector and local streets.

Comment #2: **A full width right-turn lane and taper is warranted under existing conditions before development.**

Response: It is assumed this comment refers to the right-turn movement on the eastbound approach of Chain Bridge Road at Sutton Road. We concur with staff's position that such a turn lane and taper is warranted based on existing traffic volumes without consideration of the proposed new use. However, in response to staff concerns, the applicant has committed to constructing and completing this turn lane in conjunction with the establishment of the proposed use.

Comment #3: **There will be limited gaps for left turns from northbound Sutton Road into the service drive access to the school.**

Response: According to the traffic analysis provided to staff, the northbound approach of Sutton Road would operate at level of service (LOS) "B" or better during weekday peak hours, indicating sufficient gaps in the southbound traffic stream would be available for vehicles making left turns into the service drive. The presence of the traffic signal at the Chain Bridge Road/ Sutton Road intersection further aids in metering traffic for those movements turning onto Sutton Road, creating gaps in the stream for vehicles to make their turns from Sutton Road into the service drive. Additionally, field observations of northbound vehicle queues on Sutton Road at Chain Bridge Road during peak periods did not routinely extend back to the proposed site entrance on Sutton Road. A queue analysis was conducted at the Route 123/Sutton Road intersection on November 30, 2010 from 6:00 to 9:00 AM and 4:00 to 7:00 PM. The results of the study are summarized in Attachment II

herein. As shown, for the Sutton Road approach at the intersection, the 95th percentile queues were measured at 5.20 vehicles during the AM peak hour and 7.45 vehicles during the PM peak hour. As detailed in the traffic analysis dated November 5, 2010 and provided to staff, future trips associated with the new day care would add up to two (2) vehicles to this 95th percentile queue. There is approximately 315 feet of vehicle storage (or the length of approximately 12 vehicles) available along Sutton Road between Route 123 and the entrance to the service drive that would serve proposed day care traffic. Therefore, future queues on Sutton Road at the Route 123 intersection would not block the entrance to the service drive and day care trips may turn from northbound Sutton Road with little or no impedance.

Comment #4: Traffic coming from 123 will add interference to the southbound trios [trips] on Sutton Road which is one lane southbound.

Response: It is unclear what interference this comment is specifically referring to. However, upon review of the Transportation Impact Addendum 2 prepared by FCDOT dated April 15, 2009, the issue appears to be with regard to trips entering/exiting the site on Sutton Road, which is "one lane southbound" and the "limited gaps for left turns from Sutton Road northbound." As stated in the response to comment #3 above, field observations have shown that northbound vehicle queues on Sutton Road do not routinely block the entrance to the site as currently proposed; left turn movements into the site from the south can be made with little or no practical impedance. Additionally, in the analysis provided to staff, critical movements at the site entrance would operate at a LOS "B" or better during the peak hours with the longest northbound left-turn 95th percentile queues reported as 12 feet in the AM peak hour and 10 feet occurring during the PM peak hour. This level of service analysis accounts for the traffic volumes along Sutton Road originating from Route 123 and indicates that turns into the site (via the service drive) may be made with little to no interference from traffic along southbound Sutton Road. In order to further remediate any additional concerns staff may have regarding interference with southbound through traffic, the SE plat reflects a full width right-turn lane and taper on Sutton Road at the service drive/site access. This lane effectively removes slower moving traffic from the mainline eliminating any interference.

Comment #5: Longer time for children to be picked up and dropped off with parking lot farther back from school building; queuing of vehicles may back onto the street when and if the intersection is improved and the service drive disappears. At that time, without the service drive, the site will also have only one entrance and all queuing must occur on site. The single access point will be too close to the intersection of Sutton Road and Route 123. Despite all the revisions, the use is too intense for such a small site with so many existing limitations.

Response:

Sutton Road is currently constructed as a two-lane, urban, collector roadway with a posted speed limit of 25 miles per hour (mph). The County's Comprehensive Plan recommends Sutton Road be improved to a standard two-lane cross section from Chain Bridge Road (Route 123) south to Blake Lane. Accordingly the minimum right-of-way necessary for such a facility would be 24'6" from centerline. The right-of-way shown on the SE plat along the property's frontage is approximately 73 feet from centerline. Such a dedication, according to the Policy Plan, is sufficient to accommodate 1/2 of a six-lane, median-divided, cross section. Currently the section of Sutton Road between Blake Lane and Route 123 carries approximately 5,600 vehicles per day according to 2009 VDOT traffic count data. Based on the existing development along Sutton Road, which is primarily stable residential neighborhoods, significant increases in traffic are not likely in the near term and therefore any significant widening of Sutton Road in the next 10 to 20 years is unlikely.

Other developments along Sutton Road have proffered considerably less right-of-way. For example, the Five Oaks community (RZ 2001-PR-054) located opposite the subject site on Cheriton Court proffered to dedicate the necessary right-of-way and construct a 26-foot wide half section along Sutton Road for a dedicated right-turn lane northbound at Chain Bridge Road. An additional 60 feet of dedication from the centerline of Chain Bridge Road was also proffered; or 13'6" less than proffered by the Applicant along his Chain Bridge Road frontage. This Applicant has also proffered to construct a third lane along the site's Route 123 frontage, which would function as an interim right-turn lane on Route 123.

In the Transportation Impact Addendum dated December 17, 2008 prepared by staff, FCDOT states any improvement to Sutton Road would likely "...provide a northbound left turn lane, a left/through lane and a right turn lane at the intersection with Route 123. In addition, another southbound lane would be added to make available two southbound lanes from Route 123 which would transition to one southbound lane past the Verizon site. The median between Sutton Road and the service drive would be eliminated with this scenario and the access to the site would be right-in/right-out only." The intersection of Route 123 and Sutton Road currently operates at a LOS "C" during the AM peak hour and "B" during the PM peak hour. With build out of the proposed new use, the intersection will continue to operate at LOS "C" during the AM peak hour and "B" during the PM peak hour with minimal increases in overall delay. As a result, such a level of improvement as described above by staff is not warranted in the near term. Further, the volume of through traffic between Sutton Road and Five Oaks Road is minimal at best and volumes do not indicate the need for an exclusive lane for this movement.

The section of Sutton Road between Route 123 and Courthouse Road is approximately 57 feet at its intersection with Courthouse Road and 38 feet at Route 123. Given the level of residential development along both sides of Sutton Road widening to a four-lane, median-divided roadway appears infeasible and impractical. However, if a four-lane, undivided, cross section were to be subsequently constructed, access to/from the site at its current location could be

accommodated. Holding the far side curb on Sutton Road and widening towards the subject property would require approximately 53 feet of construction to facilitate two lanes in each direction and 2 two-foot gutter pans. As shown in Attachment II, the future extension of the proposed right turn lane on Sutton Road back to Chain Bridge Road would not necessitate the elimination of the median between the mainline and service drive. Therefore, the Applicant's site access could remain as proposed.

Based on the applicant's proposed operations of the day care use and experience with other similar uses under his ownership, it is unlikely that queuing would occur offsite as a result of the unloading/loading of children. Based on a recent count and field reconnaissance conducted on November 23, 2010 at Horizon Child Development Center, located on Holly Avenue in Fairfax County, no offsite interference was observed as a result of day care operations. As detailed in Attachment III provided herein, the center had a total attendance 133 children on the day of the count. According to ITE, a total of 102 AM peak hour and 97 PM peak hour trips would be generated based on this level of attendance. However, a total of 78 AM peak hour and 71 PM peak hour trips were observed (or a 24% percent AM peak hour and 27% PM peak hour reduction from ITE forecasted trips). Therefore, it is not anticipated that trips generated by the proposed use would meet or exceed ITE calculations. Furthermore, over a twelve-hour observation conducted at Horizon Child Development, the longest reported queue was two (2) vehicles in length which was fully contained on-site. Therefore, considering similar operational characteristics at the proposed new center, no offsite queues would be anticipated.

To further address staff concerns regarding transportation and to ensure a safe and efficient means of site access and circulation, the applicant has committed to implement transportation demand management (TDM) measures to reduce the numbers of trips that may be generated by the proposed development. Such measures would include staggered arrival and departure times; encouraging the use of carpooling; and the provision of bus service from centralized locations.

We trust that the responses provided herein serve to address outstanding County issues related to transportation on this application. Please feel free to contact Will Johnson at 703.365.9262 should you have any questions.

Attachments: a/s

Attachment I

**Route 123/Sutton Road Traffic Count
March 17, 2009**

Wells + Associates, Inc.

McLean, Virginia

Existing Traffic Count

Time Period	Turning Movements																Total	PHF	Time Period		
	Southbound Chain Bridge Road				Westbound Sutton Road				Northbound Chain Bridge Road				Eastbound Five Oaks Road							North & South	East & West
	1 Right	2 Thru	3 Left	Total	4 Right	5 Thru	6 Left	Total	7 Right	8 Thru	9 Left	Total	10 Right	11 Thru	12 Left	Total					
AM																					
6:00-6:15	1	18	9	28	4	0	2	6	6	127	1	134	1	0	1	2	162	8	170		6:00-6:15
6:15-6:30	0	40	14	54	11	1	1	13	9	187	1	197	1	0	0	1	251	14	265		6:15-6:30
6:30-6:45	0	49	14	63	20	0	2	22	11	298	1	310	2	1	0	3	373	25	398		6:30-6:45
6:45-7:00	0	54	35	89	20	0	6	26	29	401	0	430	3	1	1	5	519	31	550		6:45-7:00
7:00-7:15	0	90	27	117	44	1	3	48	35	338	0	373	0	4	0	4	490	52	542		7:00-7:15
7:15-7:30	3	105	47	155	22	0	8	30	32	350	0	382	1	0	4	5	537	35	572		7:15-7:30
7:30-7:45	0	90	30	120	29	0	11	40	36	387	1	424	1	2	0	3	544	43	587		7:30-7:45
7:45-8:00	0	103	77	180	22	0	14	36	63	331	1	395	1	3	0	4	575	40	615		7:45-8:00
8:00-8:15	0	114	62	176	33	0	21	54	58	343	0	401	1	2	1	4	577	58	635		8:00-8:15
8:15-8:30	2	130	34	166	34	0	17	51	37	401	0	438	0	0	3	3	604	54	658		8:15-8:30
8:30-8:45	1	116	34	151	28	0	6	34	25	373	0	398	1	0	1	2	549	36	585		8:30-8:45
8:45-9:00	0	114	25	139	37	0	10	47	28	301	0	329	1	0	0	1	468	48	516		8:45-9:00
3 Hour Totals	7	1,023	408	1,438	304	2	101	407	369	3,837	5	4,211	13	13	11	37	5,649	444	6,093		
1 Hour Totals																					
6:00-7:00	1	161	72	234	55	1	11	67	55	1,013	3	1,071	7	2	2	11	1,305	78	1,383	0.63	6:00-7:00
6:15-7:15	0	233	90	323	95	2	12	109	84	1,224	2	1,310	6	6	1	13	1,633	122	1,755	0.80	6:15-7:15
6:30-7:30	3	298	123	424	106	1	19	126	107	1,387	1	1,495	6	6	5	17	1,919	143	2,062	0.90	6:30-7:30
6:45-7:45	3	339	139	481	115	1	28	144	132	1,476	1	1,609	5	7	5	17	2,090	161	2,251	0.96	6:45-7:45
7:00-8:00	3	388	181	572	117	1	36	154	166	1,406	2	1,574	3	9	4	16	2,146	170	2,316	0.94	7:00-8:00
7:15-8:15	3	412	216	631	106	0	54	160	189	1,411	2	1,602	4	7	5	16	2,233	176	2,409	0.95	7:15-8:15
7:30-8:30	2	437	203	642	118	0	63	181	194	1,462	2	1,658	3	7	4	14	2,300	195	2,495	0.95	7:30-8:30
7:45-8:45	3	463	207	673	117	0	58	175	183	1,448	1	1,632	3	5	5	13	2,305	188	2,493	0.95	7:45-8:45
8:00-9:00	3	474	155	632	132	0	54	186	148	1,418	0	1,566	3	2	5	10	2,198	196	2,394	0.91	8:00-9:00
AM Peak 7:30-8:30	2	437	203	642	118	0	63	181	194	1,462	2	1,658	3	7	4	14	2,300	195	2,495	0.95	AM Peak 7:30-8:30
PM																					
4:00-4:15	2	308	34	344	33	0	14	47	14	122	1	137	1	0	0	1	481	48	529		4:00-4:15
4:15-4:30	2	325	24	351	29	3	17	49	8	176	1	185	0	0	2	2	536	51	587		4:15-4:30
4:30-4:45	1	314	24	339	44	2	23	69	9	180	2	191	0	1	0	1	530	70	600		4:30-4:45
4:45-5:00	0	344	44	388	29	1	18	48	11	198	1	210	1	0	2	3	598	51	649		4:45-5:00
5:00-5:15	2	314	31	347	24	0	25	49	11	186	1	198	1	2	0	3	545	52	597		5:00-5:15
5:15-5:30	3	364	43	410	39	2	26	67	20	183	1	204	0	1	2	3	614	70	684		5:15-5:30
5:30-5:45	0	312	53	365	40	1	32	73	18	170	0	188	2	0	1	3	553	76	629		5:30-5:45
5:45-6:00	2	299	37	338	48	2	30	80	19	170	2	191	0	1	2	3	529	83	612		5:45-6:00
6:00-6:15	1	343	23	367	38	3	44	85	24	127	0	151	1	1	2	4	518	89	607		6:00-6:15
6:15-6:30	3	356	20	379	51	1	26	78	15	137	0	152	1	0	0	1	531	79	610		6:15-6:30
6:30-6:45	1	263	29	293	48	0	38	86	9	148	1	158	0	0	1	1	451	87	538		6:30-6:45
6:45-7:00	1	324	31	356	36	1	24	61	11	136	1	148	0	1	0	1	504	62	566		6:45-7:00
3 Hour Totals	18	3,866	393	4,277	459	16	317	792	169	1,933	11	2,113	7	7	12	26	6,390	818	7,208		
1 Hour Totals																					
4:00-5:00	5	1,291	126	1,422	135	6	72	213	42	676	5	723	2	1	4	7	2,145	220	2,365	0.91	4:00-5:00
4:15-5:15	5	1,297	123	1,425	126	6	83	215	39	740	5	784	2	3	4	9	2,209	224	2,433	0.94	4:15-5:15
4:30-5:30	6	1,336	142	1,484	136	5	92	233	51	747	5	803	2	4	4	10	2,287	243	2,530	0.92	4:30-5:30
4:45-5:45	5	1,334	171	1,510	132	4	101	237	60	737	3	800	4	3	5	12	2,310	249	2,559	0.94	4:45-5:45
5:00-6:00	7	1,289	164	1,460	151	5	113	269	68	709	4	781	3	4	5	12	2,241	281	2,522	0.92	5:00-6:00
5:15-6:15	6	1,318	156	1,480	165	8	132	305	81	650	3	734	3	3	7	13	2,214	318	2,532	0.93	5:15-6:15
5:30-6:30	6	1,310	133	1,449	177	7	132	316	76	604	2	682	4	2	5	11	2,131	327	2,458	0.98	5:30-6:30
5:45-6:45	7	1,261	109	1,377	185	6	138	329	67	582	3	652	2	2	5	9	2,029	338	2,367	0.97	5:45-6:45
6:00-7:00	6	1,286	103	1,395	173	5	132	310	59	548	2	609	2	2	3	7	2,004	317	2,321	0.95	6:00-7:00
PM Peak 4:45-5:45	5	1,334	171	1,510	132	4	101	237	60	737	3	800	4	3	5	12	2,310	249	2,559	0.94	PM Peak 4:45-5:45

Attachment II

**Route 123/Sutton Road Queue Study
November 30, 2009**

INTERSECTION APPROACH STOPPED DELAY

INTERSECTION: Chain Bridge Rd. & Sutton Rd.
APPROACH: Westbound Lord Fairfax Academy
LANE(S): Two
DIRECTION: Right, Thru/Left
TIME: 6:00-9:00 AM 4-7 PM **# 4479**
WEATHER: Clear
COUNTER(S): Darrir
DATE: 11/30/2010

Time	AM			PM				
	Westbound Sutton Road			Westbound Sutton Road				
	Right		Thru/Left	Time	Right		Thru/Left	
6:00			1	6:00			2	
			1				7	
			1				3	
6:15			1				3	
							2	
	1						1	
			1				1	
6:30	1		1		2		3	
			1	16:15			3	
			1				2	
6:45			1		1		3	
			1				1	
					1		4	
			2				2	
			1				1	
7:00	3		1	16:30			1	
	2		2				1	
	1		1					
	6		7		1		2	
			1				2	
7:15			4		1		2	
	1		5				2	
	1		5				4	
			4				4	
7:30	1		3	16:45	1		8	
	1		2				2	
			2				1	
7:45			3				4	
			2		1		3	
			4				2	
	4				1		2	
			7		1		1	
8:00	3		5		1		3	
			3	17:00			3	
	1		2				2	
			2				2	
	1		1				4	
			2		1		6	
8:15	1		2		1		4	
			1		1		3	
			1				2	
	2		3	17:15	1		1	
	1		1				3	
8:30	3		2		2		3	
			3				2	
			6				2	
			1		1		4	
8:45			1				8	
	1		1	17:30			7	
			3				2	
9:00	1		3				4	
					1		5	
					1		2	
							5	
				17:45			1	
					1		3	
							3	
							4	
							3	
							3	
							6	
							3	
				18:00	1		3	
							4	
							6	
							3	
							7	
					1		1	
					1		3	
							3	
				18:15	1		4	
					2		1	
							1	
							1	
							3	
					1		1	
							2	
				18:30	1		1	
					2		2	
							2	
							3	
							5	
					1		1	
							2	
					1		3	
				18:45			2	
							2	
							3	
					1		4	
					1		1	
							3	
					3		4	
					2		4	
Total	37	0	111	0	40	0	272	0
Maximum	6	0	7	0	3	0	8	0
Average (pk hour)	1.67		2.47		1.08		3.22	
95th Percentile (pk hour)	3.60		5.20		1.40		7.45	

INTERSECTION APPROACH STOPPED DELAY

INTERSECTION: Chain Bridge Rd. & Sutton Rd.
APPROACH: Westbound Lord Fairfax Academy
LANE(S): One
DIRECTION: Left
TIME: 6:00-9:00 AM 4-7 PM **# 4479**
WEATHER: Clear
COUNTER(S): Admir
DATE: 11/30/2010

AM				PM			
Southbound Chain Bridge Road				Southbound Chain Bridge Road			
Time		Left		Time		Left	
6:00		1		16:00		2	
6:15		1				4	
6:30		1				3	
6:45		2		16:15		3	
		1		16:30		1	
		3				1	
		7		16:45		2	
		4				1	
7:00		10		17:00		3	
		5				1	
		4				1	
		2				3	
		9		17:15		1	
7:15		2				3	
		3				2	
		4		17:30		2	
7:30		4				1	
7:45		1				3	
		7				1	
8:00		1		17:45		1	
8:15		4		18:00		1	
		1				2	
		2				1	
8:30		1		18:15		2	
		1				1	
		6				2	
8:45		2				1	
						2	
				18:30		1	
						1	
				18:45		2	
						1	
						2	
Total	0	89	0		0	58	0 0
Maximum	0	10	0		0	4	0 0
Average (pk hour)		2.86				2.00	
95th Percentile (pk hour)		6.1				3.00	

Attachment III

**Horizon Child Development Center Trip Count and Queue Analysis
November 23, 2010**

Attachment III

Horizon Child Development Center (Existing Site)

Trip Generation Analysis

Land Use	Land Use			AM Peak Hour			PM Peak Hour (Generator)			Daily Trips
	Code	Size	Unit	In	Out	Total	In	Out	Total	
ITE Calculated Trips (1)										
Day Care Center	565	133	Students	54	48	102	46	51	97	600
Actual Driveway Count (2)										
Day Care Center	n/a	133	Students	40	38	78	33	38	71	379
						24%			27%	37%

Notes:

(1) Analysis performed using Institute of Transportation Engineers (ITE) Trip Generation rates/equations

(2) Count conducted Tuesday, November 23, 2010; 133 students in attendance

Goddard-Sobers, Kelli-Mae

From: Robin L. Antonucci [Rlantonucci@mjwells.com]
Sent: Monday, November 29, 2010 3:58 PM
To: Hutchins, Lou Ann; Rodeheaver, Angela K.
Cc: Goddard-Sobers, Kelli-Mae; William F. Johnson; Strobel, Lynne J.
Subject: Sutton Road schematic for future improvements by others
Attachments: Sutton Road Improvements.pdf

Ladies,

I have spent a lot of time looking at Sutton Road. As you know the Plan says 2 lane improved. I also reviewed the staff reports and addendum from 2009. The issue appears to be the need someday in the future to replan and then rebuild Sutton. Given the nature of Sutton I doubt it would be feasible to provide a 4-lane median divided section. There are a number of side streets and even houses that have direct access to Sutton along its length. So if I assume a future 4 lane undivided Sutton I'd need a 53 foot curb to curb section (2 foot gutter pan, 24 foot lanes, 1 foot strip, 24 foot lanes, 2 foot gutter pan = 2+24+1+24+2=53). This seems feasible in the future at least for the section between 123 and Courthouse. As shown on my sketch (done by hand with a marker) and holding the Cheriton Court side of the road constant I marked a line 53 from that face of curb. It would tie into where our right-turn lane into the service drive is located. So in the future if the county or VDOT has a project to widen Sutton you could do so by extending our right-turn lane back to the intersection. The median could remain and access stays as proposed. I would like to sit with you both to discuss this project and the access scheme. As you may recall, we have never proposed access to/from Chain Bridge and we even closed our entrance to Sutton in lieu of a connection to that adhoc service drive/driveway provided by Verizon. Also remember, our analyses shows the Chain Bridge Road/Sutton Road intersection operates at LOS "C" during the AM peak hour and "B" during the PM peak hour. Let me know when you can meet. I'm at FCDOT for a 9:00 AM and a 10:30 meeting. I can meet anytime after that or before or anytime the rest of the week. We do need another submission by Friday per Ms. Goddard-Sobers, right Kel?

Robin

Robin L. Antonucci



WELLS + ASSOCIATES

11441 Robertson Drive, Suite 201
Manassas, Virginia 20109
Phone: 703.365.9262
Mobile: 571.330.1986

1/24/2011

CHERITON COURT

SUTTON ROAD RT #701
(VARIABLE WIDTH ROW)
POSTED SPEED: 25 MPH
5,500 VDP (2008 COUNT)

PARCELS AT
FAIR OAKS
COMMUNITY ASSOC
ZONED: PCH-4
USE: RESIDENTIAL

VERIZON VIRGINIA, INC.
ZONED: R-E
USE: TELEPHONE
D.B. 2497 PG. 297

CHAIN BRIDGE ROAD RT #123

(VARIABLE WIDTH ROW)
POSTED SPEED: 25 MPH
29,000 VDP (2008 COUNT)

FFE
434.5

DOOR AT
LOWER LEVEL

LORD FAIRFAX ACADEMY
2 STORY BUILDING
#2701 CHAIN BRIDGE ROAD
35'± Ht (As defined in the Z.O.)

VIKA 11/30/10

1"=40'





WELLS + ASSOCIATES

MEMORANDUM

TO: Angela K. Rodeheaver
Lou Ann Hutchins
Fairfax County Department of Transportation

FROM: Robin L. Antonucci
William F. Johnson, P.E.

RE: SE 2008-PR-021; James W. Jackson (Fairfax Academy)
Fairfax County, Virginia

DATE: December 2, 2010

This memorandum presents a point-by-point response to the most recent transportation comments received from the Fairfax County Department of Transportation (VDOT) as forwarded by Department of Planning & Zoning staff regarding the above-referenced special exception (SE) application. The point-by-point comments and our responses to each are as follows. This response cites a traffic analysis memorandum provided to County staff and prepared by Wells + Associates dated November 5, 2010. The analysis provided therein utilized traffic counts conducted on March 17, 2009, which are provided herein as Attachment I.

Comment #1: **The proposed use is not suitable at this particular location. Existing conditions warrant intersection improvements at this location. The proposed use is bounded by a primary roadway (Chain Bridge Road) and is not comparable to the other existing child care facilities that were provided to use by the applicant. The access points to those facilities are off of local and collector streets. The only facility (Winwood Children Center) that is located on a primary roadway (Lee Jackson Memorial Highway) has its own service drive which forms the fourth leg of a signalized intersection.**

Response: According to the traffic analysis dated November 5, 2010 provided to staff, the Chain Bridge Road/Sutton Road intersection operates at an overall acceptable level of service (LOS) "C" or better during weekday peak hours under existing conditions. As such, this specific intersection does not appear to warrant improvement.

The proposed use is bounded by Chain Bridge Road (Route 123) on the west and Sutton Road (Route 701) on the north. Chain Bridge Road is classified by Fairfax County as a principal arterial. The primary function of such roadways is to provide for through travel mobility. Therefore, in order to preserve the function of the arterial, access to the property was solely oriented to/from Sutton Road. No direct access has ever been proposed from Chain Bridge Road to serve the property.

Sutton Road is *not* classified as an arterial roadway by the Fairfax County Comprehensive Plan. The VDOT highway classification map does classify Sutton Road as an *urban collector*. Collector streets provide both land access service and traffic circulation within residential neighborhoods, commercial and industrial areas. It differs from the arterial system in that facilities on the collector system may penetrate residential neighborhoods, distributing trips from the arterials through the area to the ultimate destination. Conversely, the collector street also collects traffic from local streets in residential neighborhoods and channels it into the arterial system. Therefore, the access to the proposed day care center from this urban collector would not be, in essence, contrary to previously developed day care sites as cited by staff, which tend to be located on collector and local streets.

Comment #2: A full width right-turn lane and taper is warranted under existing conditions before development.

Response: It is assumed this comment refers to the right-turn movement on the eastbound approach of Chain Bridge Road at Sutton Road. We concur with staff's position that such a turn lane and taper is warranted based on existing traffic volumes without consideration of the proposed new use. However, in response to staff concerns, the applicant has committed to constructing and completing this turn lane in conjunction with the establishment of the proposed use.

Comment #3: There will be limited gaps for left turns from northbound Sutton Road into the service drive access to the school.

Response: According to the traffic analysis provided to staff, the northbound approach of Sutton Road would operate at level of service (LOS) "B" or better during weekday peak hours, indicating sufficient gaps in the southbound traffic stream would be available for vehicles making left turns into the service drive. The presence of the traffic signal at the Chain Bridge Road/ Sutton Road intersection further aids in metering traffic for those movements turning onto Sutton Road, creating gaps in the stream for vehicles to make their turns from Sutton Road into the service drive. Additionally, field observations of northbound vehicle queues on Sutton Road at Chain Bridge Road during peak periods did not routinely extend back to the proposed site entrance on Sutton Road. A queue analysis was conducted at the Route 123/Sutton Road intersection on November 30, 2010 from 6:00 to 9:00 AM and 4:00 to 7:00 PM. The results of the study are summarized in Attachment II

herein. As shown, for the Sutton Road approach at the intersection, the 95th percentile queues were measured at 5.20 vehicles during the AM peak hour and 7.45 vehicles during the PM peak hour. As detailed in the traffic analysis dated November 5, 2010 and provided to staff, future trips associated with the new day care would add up to two (2) vehicles to this 95th percentile queue. There is approximately 315 feet of vehicle storage (or the length of approximately 12 vehicles) available along Sutton Road between Route 123 and the entrance to the service drive that would serve proposed day care traffic. Therefore, future queues on Sutton Road at the Route 123 intersection would not block the entrance to the service drive and day care trips may turn from northbound Sutton Road with little or no impedance.

Comment #4: Traffic coming from 123 will add interference to the southbound trips [trips] on Sutton Road which is one lane southbound.

Response: It is unclear what interference this comment is specifically referring to. However, upon review of the Transportation Impact Addendum 2 prepared by FCDOT dated April 15, 2009, the issue appears to be with regard to trips entering/exiting the site on Sutton Road, which is "one lane southbound" and the "limited gaps for left turns from Sutton Road northbound." As stated in the response to comment #3 above, field observations have shown that northbound vehicle queues on Sutton Road do not routinely block the entrance to the site as currently proposed; left turn movements into the site from the south can be made with little or no practical impedance. Additionally, in the analysis provided to staff, critical movements at the site entrance would operate at a LOS "B" or better during the peak hours with the longest northbound left-turn 95th percentile queues reported as 12 feet in the AM peak hour and 10 feet occurring during the PM peak hour. This level of service analysis accounts for the traffic volumes along Sutton Road originating from Route 123 and indicates that turns into the site (via the service drive) may be made with little to no interference from traffic along southbound Sutton Road. In order to further remediate any additional concerns staff may have regarding interference with southbound through traffic, the SE plat reflects a full width right-turn lane and taper on Sutton Road at the service drive/site access. This lane effectively removes slower moving traffic from the mainline eliminating any interference.

Comment #5: Longer time for children to be picked up and dropped off with parking lot farther back from school building; queuing of vehicles may back onto the street when and if the intersection is improved and the service drive disappears. At that time, without the service drive, the site will also have only one entrance and all queuing must occur on site. The single access point will be too close to the intersection of Sutton Road and Route 123. Despite all the revisions, the use is too intense for such a small site with so many existing limitations.

Response:

Sutton Road is currently constructed as a two-lane, urban, collector roadway with a posted speed limit of 25 miles per hour (mph). The County's Comprehensive Plan recommends Sutton Road be improved to a standard two-lane cross section from Chain Bridge Road (Route 123) south to Blake Lane. Accordingly the minimum right-of-way necessary for such a facility would be 24'6" from centerline. The right-of-way shown on the SE plat along the property's frontage is approximately 73 feet from centerline. Such a dedication, according to the Policy Plan, is sufficient to accommodate 1/2 of a six-lane, median-divided, cross section. Currently the section of Sutton Road between Blake Lane and Route 123 carries approximately 5,600 vehicles per day according to 2009 VDOT traffic count data. Based on the existing development along Sutton Road, which is primarily stable residential neighborhoods, significant increases in traffic are not likely in the near term and therefore any significant widening of Sutton Road in the next 10 to 20 years is unlikely.

Other developments along Sutton Road have proffered considerably less right-of-way. For example, the Five Oaks community (RZ 2001-PR-054) located opposite the subject site on Cheriton Court proffered to dedicate the necessary right-of-way and construct a 26-foot wide half section along Sutton Road for a dedicated right-turn lane northbound at Chain Bridge Road. An additional 60 feet of dedication from the centerline of Chain Bridge Road was also proffered; or 13'6" less than proffered by the Applicant along his Chain Bridge Road frontage. This Applicant has also proffered to construct a third lane along the site's Route 123 frontage, which would function as an interim right-turn lane on Route 123.

In the Transportation Impact Addendum dated December 17, 2008 prepared by staff, FCDOT states any improvement to Sutton Road would likely "...provide a northbound left turn lane, a left/through lane and a right turn lane at the intersection with Route 123. In addition, another southbound lane would be added to make available two southbound lanes from Route 123 which would transition to one southbound lane past the Verizon site. The median between Sutton Road and the service drive would be eliminated with this scenario and the access to the site would be right-in/right-out only." The intersection of Route 123 and Sutton Road currently operates at a LOS "C" during the AM peak hour and "B" during the PM peak hour. With build out of the proposed new use, the intersection will continue to operate at LOS "C" during the AM peak hour and "B" during the PM peak hour with minimal increases in overall delay. As a result, such a level of improvement as described above by staff is not warranted in the near term. Further, the volume of through traffic between Sutton Road and Five Oaks Road is minimal at best and volumes do not indicate the need for an exclusive lane for this movement.

The section of Sutton Road between Route 123 and Courthouse Road is approximately 57 feet at its intersection with Courthouse Road and 38 feet at Route 123. Given the level of residential development along both sides of Sutton Road widening to a four-lane, median-divided roadway appears infeasible and impractical. However, if a four-lane, undivided, cross section were to be subsequently constructed, access to/from the site at its current location could be

accommodated. Holding the far side curb on Sutton Road and widening towards the subject property would require approximately 53 feet of construction to facilitate two lanes in each direction and 2 two-foot gutter pans. As shown in Attachment II, the future extension of the proposed right turn lane on Sutton Road back to Chain Bridge Road would not necessitate the elimination of the median between the mainline and service drive. Therefore, the Applicant's site access could remain as proposed.

Based on the applicant's proposed operations of the day care use and experience with other similar uses under his ownership, it is unlikely that queuing would occur offsite as a result of the unloading/loading of children. Based on a recent count and field reconnaissance conducted on November 23, 2010 at Horizon Child Development Center, located on Holly Avenue in Fairfax County, no offsite interference was observed as a result of day care operations. As detailed in Attachment III provided herein, the center had a total attendance 133 children on the day of the count. According to ITE, a total of 102 AM peak hour and 97 PM peak hour trips would be generated based on this level of attendance. However, a total of 78 AM peak hour and 71 PM peak hour trips were observed (or a 24% percent AM peak hour and 27% PM peak hour reduction from ITE forecasted trips). Therefore, it is not anticipated that trips generated by the proposed use would meet or exceed ITE calculations. Furthermore, over a twelve-hour observation conducted at Horizon Child Development, the longest reported queue was two (2) vehicles in length which was fully contained on-site. Therefore, considering similar operational characteristics at the proposed new center, no offsite queues would be anticipated.

To further address staff concerns regarding transportation and to ensure a safe and efficient means of site access and circulation, the applicant has committed to implement transportation demand management (TDM) measures to reduce the numbers of trips that may be generated by the proposed development. Such measures would include staggered arrival and departure times; encouraging the use of carpooling; and the provision of bus service from centralized locations.

We trust that the responses provided herein serve to address outstanding County issues related to transportation on this application. Please feel free to contact Will Johnson at 703.365.9262 should you have any questions.

Attachments: a/s

Attachment I

**Route 123/Sutton Road Traffic Count
March 17, 2009**

Attachment II

**Route 123/Sutton Road Queue Study
November 30, 2009**

INTERSECTION APPROACH STOPPED DELAY

INTERSECTION: Chain Bridge Rd. & Sutton Rd.
APPROACH: Westbound
LANE(S): Two
DIRECTION: Right; Thru/Left
TIME: 6:00-9:00 AM 4-7 PM
WEATHER: Clear
COUNTER(S): Damir
DATE: 11/30/2010

4479

Time	AM			PM				
	Westbound Sutton Road			Westbound Sutton Road				
	Right	Thru/Left		Time	Right	Thru/Left		
6:00		1		16:00		2		
		1				7		
		1				3		
6:15		1				3		
						2		
	1					1		
		1				1		
6:30	1	1			2	3		
		1		16:15		3		
		1				2		
6:45		1			1	3		
		1				1		
					1	4		
		2				2		
		1				1		
7:00	3	1		16:30		1		
	2	2				1		
	1	1						
	1	7			1			
	6	1				2		
		1				2		
7:15		4			1	2		
	1	5				2		
	1	5				4		
		4				4		
7:30	1	3		16:45	1	8		
	1	2				2		
		2				1		
7:45		3				4		
		2			1	3		
		4				2		
					1	2		
8:00	3	7			1	1		
		5		17:00	1	3		
	1	3				3		
		2				2		
		2				2		
	1	1				4		
		2			1	2		
8:15	1	2			1	2		
		1			1	6		
		1			1	4		
		1				3		
	2	3				2		
		1		17:15	1	1		
	1	1				3		
8:30	3	2			2	3		
		3				2		
		6				4		
		1			1	4		
8:45		1				8		
	1	1		17:30		7		
		3				2		
						4		
9:00		3			1	5		
					1	2		
						5		
						1		
				17:45		3		
					1	3		
						4		
						3		
						3		
						6		
						3		
				16:00	1	3		
						4		
						6		
						3		
						7		
					1	1		
					1	3		
						3		
				16:15	1	4		
					2	1		
						1		
						3		
						3		
					1	1		
						2		
				16:30	1	1		
					2	2		
						2		
						3		
						5		
					1	1		
						2		
				16:45	1	3		
						2		
						2		
						3		
					1	4		
					1	1		
						3		
					3	3		
					3	4		
					2	4		
Total	37	0	111	0	40	0	272	0
Maximum	6	0	7	0	3	0	8	0
Average (pk hour)	1.67		2.47		1.08		3.22	
95th Percentile (pk hour)	3.60		5.20		1.40		7.45	

Attachment III

**Horizon Child Development Center Trip Count and Queue Analysis
November 23, 2010**

Attachment III

Horizon Child Development Center (Existing Site)

Trip Generation Analysis

Land Use	Land Use Code	Size	Unit	AM Peak Hour			PM Peak Hour (Generator)			Daily Trips
				In	Out	Total	In	Out	Total	
ITE Calculated Trips (1)										
Day Care Center	565	133	Students	54	48	102	46	51	97	600
Actual Driveway Count (2)										
Day Care Center	n/a	133	Students	40	38	78	33	38	71	379
						24%			27%	37%

Notes:

(1) Analysis performed using Institute of Transportation Engineers (ITE) Trip Generation rates/equations

(2) Count conducted Tuesday, November 23, 2010; 133 students in attendance

Wells + Associates, Inc.

McLean, Virginia

Existing Traffic Count

Time Period		Turning Movements																Total	PHF	Time Period		
		Southbound Holly Avenue				Westbound n/a				Northbound Holly Avenue				Eastbound Site Driveway							North & South	East & West
		1 Right	2 Thru	3 Left	Total	4 Right	5 Thru	6 Left	Total	7 Right	8 Thru	9 Left	Total	10 Right	11 Thru	12 Left	Total					
6:45-7:00	0	22	0	22	0	0	0	0	0	0	5	3	8	0	0	0	0	30	0		6:45-7:00	
7:00-7:15	0	11	0	11	0	0	0	0	0	0	6	6	12	3	0	0	3	23	3	26	7:00-7:15	
7:15-7:30	0	15	0	15	0	0	0	0	0	0	3	7	10	5	0	0	5	25	5	30	7:15-7:30	
7:30-7:45	1	21	0	22	0	0	0	0	0	0	4	6	10	4	0	0	4	32	4	36	7:30-7:45	
7:45-8:00	0	15	0	15	0	0	0	0	0	0	5	9	14	10	0	0	10	29	10	39	7:45-8:00	
8:00-8:15	0	15	0	15	0	0	0	0	0	0	6	10	16	4	0	0	4	31	4	35	8:00-8:15	
8:15-8:30	1	16	0	17	0	0	0	0	0	0	4	14	18	9	0	0	9	35	9	44	8:15-8:30	
8:30-8:45	0	18	0	18	0	0	0	0	0	0	2	6	8	15	0	0	15	26	15	41	8:30-8:45	
8:45-9:00	0	17	0	17	0	0	0	0	0	0	9	6	15	5	0	0	5	32	5	37	8:45-9:00	
9:00-9:15	0	14	0	14	0	0	0	0	0	0	8	7	15	3	0	0	3	29	3	32	9:00-9:15	
9:15-9:30	0	12	0	12	0	0	0	0	0	0	6	6	12	3	0	0	3	24	3	27	9:15-9:30	
9:30-9:45	0	11	0	11	0	0	0	0	0	0	2	3	5	5	0	1	6	16	6	22	9:30-9:45	
9:45-10:00	0	3	0	3	0	0	0	0	0	0	2	1	3	1	0	0	1	6	1	7	9:45-10:00	
10:00-10:15	0	5	0	5	0	0	0	0	0	0	3	2	5	0	0	0	0	10	0	10	10:00-10:15	
10:15-10:30	0	8	0	8	0	0	0	0	0	0	9	2	11	3	0	0	3	19	3	22	10:15-10:30	
10:30-10:45	1	9	0	10	0	0	0	0	0	0	6	1	7	1	0	0	1	17	1	18	10:30-10:45	
10:45-11:00	0	8	0	8	0	0	0	0	0	0	3	0	3	1	0	0	1	11	1	12	10:45-11:00	
11:00-11:15	0	6	0	6	0	0	0	0	0	0	7	1	8	1	0	0	1	14	1	15	11:00-11:15	
11:15-11:30	0	5	0	5	0	0	0	0	0	0	4	0	4	2	0	0	2	9	2	11	11:15-11:30	
11:30-11:45	0	7	0	7	0	0	0	0	0	0	10	0	10	0	0	0	0	17	0	17	11:30-11:45	
11:45-12:00	0	4	0	4	0	0	0	0	0	0	6	0	6	0	0	0	0	10	0	10	11:45-12:00	
12:00-12:15	0	5	0	5	0	0	0	0	0	0	2	0	2	0	0	0	0	7	0	7	12:00-12:15	
12:15-12:30	0	7	0	7	0	0	0	0	0	0	7	3	10	2	0	0	2	17	2	19	12:15-12:30	
12:30-12:45	0	5	0	5	0	0	0	0	0	0	6	2	8	5	0	0	5	13	5	18	12:30-12:45	
12:45-1:00	0	4	0	4	0	0	0	0	0	0	8	1	9	0	0	0	0	13	0	13	12:45-1:00	
1:00-1:15	0	6	0	6	0	0	0	0	0	0	8	0	8	0	0	0	0	14	0	14	1:00-1:15	
1:15-1:30	0	6	0	6	0	0	0	0	0	0	8	1	9	0	0	0	0	15	0	15	1:15-1:30	
1:30-1:45	0	12	0	12	0	0	0	0	0	0	8	3	11	2	0	0	2	23	2	25	1:30-1:45	
1:45-2:00	0	8	0	8	0	0	0	0	0	0	12	1	13	3	0	0	3	21	3	24	1:45-2:00	
2:00-2:15	0	10	0	10	0	0	0	0	0	0	7	2	9	2	0	0	2	19	2	21	2:00-2:15	
2:15-2:30	0	13	0	13	0	0	0	0	0	0	9	3	12	0	0	0	0	25	0	25	2:15-2:30	
2:30-2:45	0	11	0	11	0	0	0	0	0	0	3	3	6	4	0	0	4	17	4	21	2:30-2:45	
2:45-3:00	0	6	0	6	0	0	0	0	0	0	10	2	12	1	0	0	1	18	1	19	2:45-3:00	
3:00-3:15	0	10	0	10	0	0	0	0	0	0	12	2	14	1	0	0	1	24	1	25	3:00-3:15	
3:15-3:30	0	15	0	15	0	0	0	0	0	0	12	2	14	1	0	0	1	29	1	30	3:15-3:30	
3:30-3:45	0	10	0	10	0	0	0	0	0	0	13	2	15	2	0	0	2	25	2	27	3:30-3:45	
3:45-4:00	0	8	0	8	0	0	0	0	0	0	19	4	23	3	0	0	3	31	3	34	3:45-4:00	
4:00-4:15	0	12	0	12	0	0	0	0	0	0	13	3	16	4	0	0	4	28	4	32	4:00-4:15	
4:15-4:30	0	5	0	5	0	0	0	0	0	0	10	1	11	1	0	0	1	16	1	17	4:15-4:30	
4:30-4:45	0	10	0	10	0	0	0	0	0	0	14	3	17	4	0	0	4	27	4	31	4:30-4:45	
4:45-5:00	0	10	0	10	0	0	0	0	0	0	9	14	23	11	0	0	11	33	11	44	4:45-5:00	
5:00-5:15	0	5	0	5	0	0	0	0	0	0	14	9	23	9	0	0	9	28	9	37	5:00-5:15	
5:15-5:30	0	3	0	3	0	0	0	0	0	0	12	5	17	12	0	0	12	20	12	32	5:15-5:30	
5:30-5:45	0	15	0	15	0	0	0	0	0	0	18	5	23	3	0	3	6	38	6	44	5:30-5:45	
5:45-6:00	0	12	0	12	0	0	0	0	0	0	14	7	21	10	0	0	10	33	10	43	5:45-6:00	
6:00-6:15	0	4	0	4	0	0	0	0	0	0	19	6	27	4	0	0	4	31	4	35	6:00-6:15	
6:15-6:30	0	10	0	10	0	0	0	0	0	0	11	7	18	12	0	0	12	28	12	40	6:15-6:30	
6:30-6:45	1	7	0	8	0	0	0	0	0	0	19	5	24	11	0	1	12	32	12	44	6:30-6:45	
6:45-7:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6:45-7:00	
12 Hour Totals	4	471	0	475	0	0	0	0	0	0	407	188	595	182	0	5	187	1,070	187	1,227		
AM Peak 7:45-8:45	1	64	0	65	0	0	0	0	0	0	17	39	56	38	0	0	38	121	38	159	0.90	AM Peak 7:45-8:45
Mid-Day Peak 1:00-2:00	0	32	0	32	0	0	0	0	0	0	36	5	41	5	0	0	5	73	5	78	0.78	Mid-Day Peak 1:00-2:00
PM Peak 5:30-6:30	0	41	0	41	0	0	0	0	0	0	62	27	89	29	0	3	32	130	32	162	0.92	PM Peak 5:30-6:30