



COMMONWEALTH OF VIRGINIA
COUNTY OF FAIRFAX

4100 CHAIN BRIDGE ROAD
FAIRFAX, VIRGINIA 22030



January 19, 1982

STAFF REPORT

APPLICATION NUMBER RZ 81-P-116

PROVIDENCE DISTRICT

Applicant: Board of Supervisors

Present Zoning: R-1

Requested Zoning: R-8

Proposed Use: Single Family Attached
Residential

Acreage: 1.659

Subject Parcels: 48-1((1)) 98

Application Filed: January 30, 1981

Planning Commission Public Hearing : January 28, 1982

Board of Supervisors Public Hearing : February 8, 1982

Staff Recommendation: Staff recommends that the proposed R-8 District not be approved. Staff further recommends that without adequate noise attenuation no increase in density be approved for the subject property.

It should be noted that it is not the intent of the 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.

REZONING APPLICATION



Number: 81-P-116

District: Providence

Acreage: 1.659

Section Sheet: 48-1

From: R-1

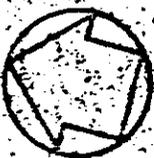
Subdivision: ((1))

To: R-8

Lot: 98

Applicant: Board of Supervisors





SUTTON ROAD
APPROXIMATE LOCATION

OAK HILL FARMS
(JOHN BOBBY)

RUNNYMEADE DRIVE

OLIVER

IRWIN

INTERSTATE RTE. 66

EXISTING DRIVEWAY

ANALYSIS OF UNIT REAR
YARD REQUIREMENT ON
LOT'S 11 & 12 REQUESTED

(6' WIDE)

ACOUSTICAL WALL
(WOOD or MASONRY)

SPACES

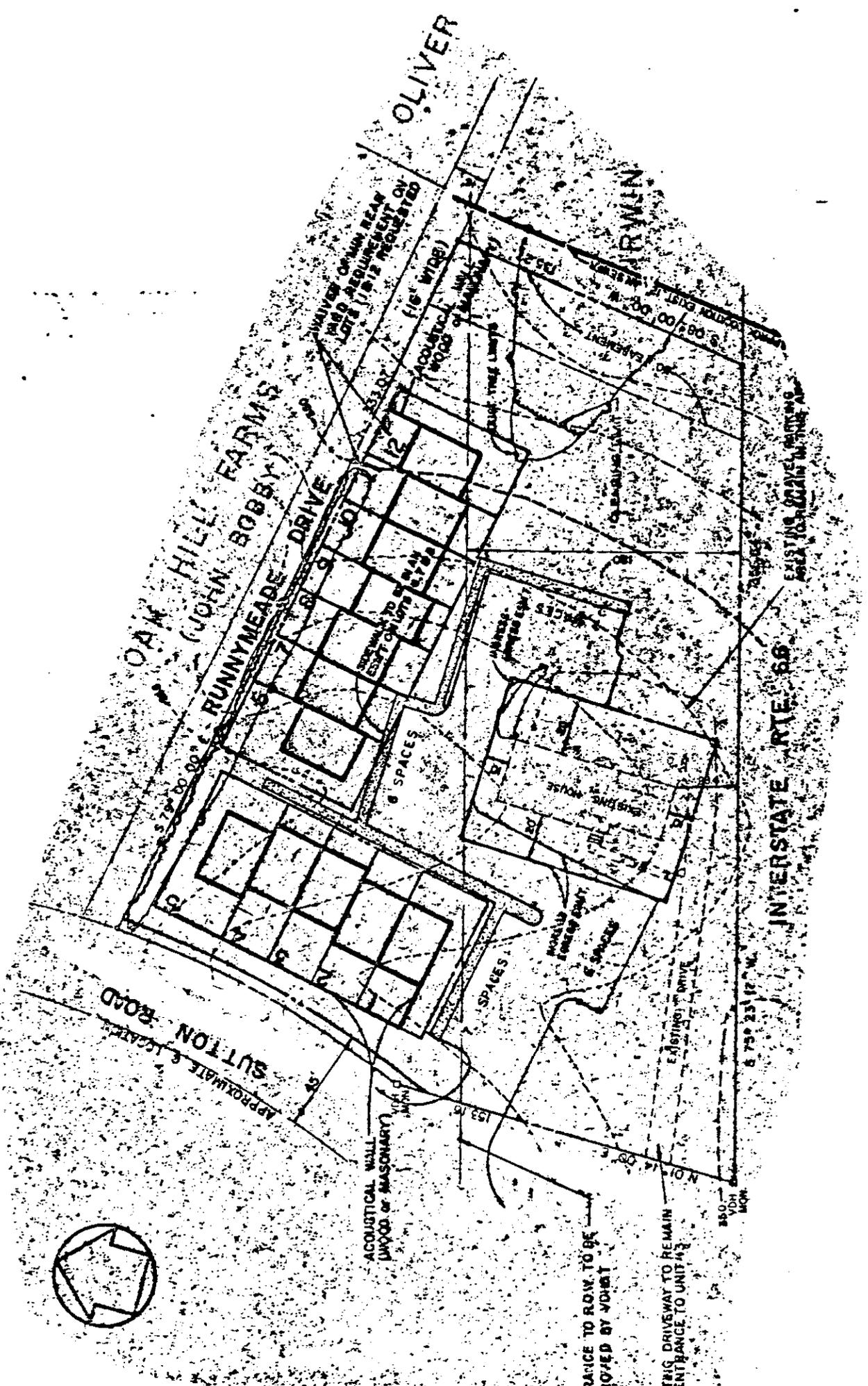
MOVING FOREVER DRIVE

ENTRANCE TO ROW TO BE
APPROVED BY ADJST

EXISTING DRIVEWAY TO REMAIN
FOR ENTRANCE TO UNIT #3

350' VDH MON.

8 750 23 17' W.



A GLOSSARY OF TERMS FREQUENTLY
USED IN STAFF REPORTS WILL BE
FOUND AT THE BACK OF THIS REPORT

DESCRIPTION OF THE APPLICATION

On November 16, 1981, the Board of Supervisors authorized advertisement of a public hearing on the Board's Own Motion to consider rezoning of the subject property from the R-1 District to the R-8 District. This action arose out of discussion with the owners of the property, the objective of which was to arrive at an acceptable pre-trial settlement of a pending court case filed by the owners against the Board of Supervisors. The suit was initiated because the Board denied the owners Rezoning Application 78-P-124 and accompanying Special Exception 035-P-79 on September 17, 1979.

The owners have submitted a revised development Plan (GP) which depicts a twelve unit townhouse community; a reduction of one-unit from the earlier development plan. This GP has been proffered along with commitments addressing most other development issues (Appendix 2).

LOCATION AND CHARACTER OF THE AREA

The property in this application is adjacent to Sutton Road, directly across from Oakton High School. The right-of-way for Interstate Highway Route #66 abuts the property to the South. The location of the future Metro Station is planned approximately one-half mile to the east. Properties to the immediate north and east have been rezoned to and are developing at the R-8 District.

A single family detached dwelling is currently situated on the property. The proffered development plan proposes to retain this structure in its existing use.

COMPREHENSIVE PLAN RECOMMENDATION

The subject property is located in the Vienna Metro Station Complex Area of the Vienna Planning District in Area II. On page 224, under Specific Recommendations (Tract D), the Plan states the following:

"(Tract D) Residential: 5-8 units per acre with noise buffering from I-66."

The adopted Area II Plan map indicates the subject property as planned for residential use at 5-8 units per acre.

PUBLIC FACILITIES ANALYSIS

Information regarding sanitary sewer, water service, Fire and Rescue services, and Park Authority are located in Appendices 3 through 6, respectively. The Water Authority has determined that to have adequate water service, an offsite water main extension will be required.

TRANSPORTATION ANALYSIS

Three transportation issues (road improvements, sight distance, and parcel consolidation) developed from the analysis of this application. It was determined that, to offset probable safety impacts associated with vehicles turning at the site entrance, road improvements should be constructed along the site's frontage. Road improvements would be particularly appropriate here to ensure smooth traffic flow along this access to the proposed Vienna Metro Station. Final determination of sight distance adequacy will be completed by DEM at the Site Plan review stage.

Consolidation (access) to adjacent parcels is normally desirable when such parcels are also zoned and developing at a compatible use. However, in that construction on adjacent Parcel 102 has already commenced (by another property owner), redesign of Parcels 98 and 102 to accommodate consolidated access is not feasible. Additional transportation analysis is located in Appendix 7.

ENVIRONMENTAL SITE ANALYSIS

The Environmental Analysis, Appendix 8, determined that the property is subject to very severe levels of highway noise from I-66. Projected (1995) noise level estimates indicate that noise levels are anticipated to be in excess of 75 dBA Ldn for that portion of the site within 120 feet of the property line adjacent to I-66.

EPA's Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety states that:

- (1) a 24-hour yearly average not in excess of 70 dB is requisite to protect the public health and welfare with an adequate margin of safety from a permanent hearing loss;
- (2) an 8-hour daily average not in excess of 75 dB is requisite to protect the public health and welfare with an adequate margin of safety from a permanent hearing loss.

(It should be noted that other health and welfare impacts such as sleep interference, stress responses such as blood pressure elevation, and speech communication and activity interference occur at much lower levels.)

In order to protect the residents from the negative health and welfare impacts associated with highway noise, noise attenuation measures to achieve a maximum interior noise level of 45 dBA Ldn should be taken.

This interior noise level would protect the residents from sleep interference and speech communication and activity disruption. In addition, an exterior noise level for recreational areas should not exceed 65 dBA Ldn. This will promote a comfortable environment, minimizing annoyance and activity interference. These levels are based on the recommended levels cited in HUD's "Environmental Criteria" (24 CFR Part 51) and the Federal Interagency on Urban Noise publication, "Guidelines for Considering Noise in Land Use Planning and Control."

Additional noise, geology, topography, hydrology, and soils analyses are included in the environmental Appendix.

DEVELOPMENT PLAN ANALYSIS

The development plan proposes to construct twelve townhouse units and to retain the existing single family dwelling on 1.659 acres of land. The resultant density would be 7.83 du/ac. Open space for the proposed development (approximately 47%) is concentrated along the eastern/southeastern end of the property.

Units 11 and 12 do not satisfy either the minimum rear yard or the privacy yard requirements. Both of these requirements may be waived by the Board in conjunction with the rezoning. In addition, privacy fences are necessary for all the units.

Since September 1979, when the previous request to rezone this property to R-8 was denied, two key factors have developed to warrant staff reevaluation. First, the environmental staff has further refined its noise forecasting model per standards utilized by the Federal Highway Administration. From this refinement, staff has determined that excessive noise levels (greater than 75dBA Ldn) extend approximately 120 feet into the site from the property line adjacent to the I-66 right-of-way. The remaining portions of the property are within the 70-75 dBA Ldn noise range. Staff believes that residential units could be located within the 70-75 dBA Ldn zone without promoting adverse health impacts if, and only if, appropriate acoustical treatment to such units is accomplished. Earlier staff analysis, based on state-of-the-art methodology, had projected noise levels in excess of 75 dBA Ldn impacting the entire site.

The second factor responsible for this reevaluation was an agreement by the property owner to revise the development plan such that all proposed townhouse units (except for the southeastern corner of unit #12) would be located outside the severe (75 dBA Ldn) noise impact zone. In conjunction with this setback, the owner agreed to acoustically treat the townhouses in a manner expected to attain acceptable exterior and interior noise levels for each.

A revised and proffered development plan has situated the townhouses (except for the SE corner of #12) outside the severe noise zone. Additional proffers (Appendix 2) address the exterior and interior noise attenuation measures for the townhouses located in the 70-75 dBA Ldn zone. Staff reviewed the exterior proffer - "acoustic barriers" - and determined that it satisfies appropriate noise criteria for resolving this problem. An evaluation of the proffer for interior noise mitigation revealed that it lacked sufficient commitment to adequately mitigate the projected noise impacts on all townhouse units; including that portion of unit 12 which is located within the 75 dBA Ldn noise zone.

As discussed in the previous staff report (RZ 78-P-124), the property is located almost entirely within the minimum 200 foot setback as required pursuant to the provisions of Sect. 2-414 of the Zoning Ordinance. Without a satisfactory commitment to adequate noise attenuation, as recommended in the Comprehensive Plan, staff would not support a waiver of this requirement.

The major transportation issue, road improvements, has been satisfied with an appropriate proffer. The other proffers are a continuation of those submitted with the earlier rezoning application.

CONCLUSIONS AND RECOMMENDATION

Conclusion

The development plan proffered by the owner along with the other proffers only partially satisfy the development issues pertinent to this property. The proffer for interior noise mitigation has not been satisfactorily addressed by the owner at this time.

Recommendation

The staff recommends that the proposed R-8 District not be approved. Staff further recommends that without adequate noise attenuation no increase in density be approved for the subject property.

It should be noted that it is not the intent of the 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.

Appendixes

1. Board Authorization
2. Draft Proffer Statement
3. Sanitary Sewer
4. Water Service
5. Fire and Rescue Services
6. Park Authority
7. Transportation Analysis
8. Environmental Analysis
9. Glossary

PROFFERS

APPLICATION OF TRIFAM SYSTEMS, INC.
REZONING APPLICATION 81-P-116

Pursuant to Section 15.1-491(a) of the Code of Virginia (1950, as amended) and Section 18-204 of the Zoning Ordinance of Fairfax County (1978), the applicant and owner do hereby proffer the following conditions contingent upon a rezoning to R-8 district to allow twelve (12) townhouse units and one single family dwelling:

1. The property will be developed for residential townhouse use as shown on the submitted development plan entitled "Development Plan, Trifam Systems, Inc.," prepared by Charles J. Huntley Associates, Inc. and dated 9/4/81, hereinafter "the Development Plan". No new units will be constructed on those portions of the site which are within 120 feet of the property line adjacent to the I-66 right-of-way unless the ambient noise level estimates are 75 dBA Ldn or less except for those portions of units 11 and 12 as shown on the Development Plan. The existing structure that is within 120 feet of the said property line shall remain and shall be renovated as a part of the development subject to these proffers.

2. To address for noise attenuation from Interstate Route I-66 traffic the applicant shall:

(a) Construct privacy fences to seven (7) feet as shown on the Development Plan. Said fences shall be "acoustic barriers" as defined by the Federal Highway Administration in Noise Barrier Design Handbook (1976).

(b) All units will be acoustically treated so as to insure interior spaces that are within applicable countywide noise standards. Such acoustical treatment shall include steel insulated doors, double glazed windows, and insulation as follows: ceilings, R-30; walls, R-13.

3. The density of this property shall not exceed thirteen (13) units, which is a density of 7.84 dwelling units per acre. The location of dwelling units within the property shall be generally as shown on the Development Plan, subject only to engineering refinement for subdivision and site plan submissions.

4. On Sutton Road dedication will be provided for right-of-way to 45 feet from center line and 80 feet from the opposite existing curb, with such to be aligned with the right-of-way dedication to the north. Road widening shall be constructed with face of curb set 35 feet from the center line, such construction to align with road improvements to the north.

5. The owner will cooperate with the owner of that area known as "Runnymede Drive," which is adjacent to the northern edge of this property, for the vacation thereof.

6. Either no basements will be provided for these units or a two-year express warranty of dry basements will be provided upon settlement.

7. The existing trees in the eastern section of the parcel shall be preserved as indicated on the Development Plan,

Proffers
Rezoning Application 81-P-116
Page 3

subject only to the provision of sanitary sewer or other
utilities through that area.

TRIFAM SYSTEMS, INC.

January 19, 1982

By: _____
Gary Weaver
Owner/Applicant

Date 12-30-81

TO: Staff Coordinator (Tel: 691-3387)
Plan Implementation Branch, OCP
5th Floor, Massey Building

FROM: Robert W. Morris (Tel: 691-2191)
Systems Analysis Section, Office of Waste Management,
Department of Public Works

SUBJECT: Sanitary Sewer Analysis, Rezoning Application 81-P-116

The following information is submitted in response to your request for a sanitary sewer analysis for subject rezoning application:

1. The application property is located in the Accotink Crk. (M) Watershed. It would be sewerred into the Lower Potomac Treatment Plant.

2. Based upon current flow and committed flow, there is excess capacity in the Lower Potomac Treatment Plant at this time. For purposes of this report, committed flow shall be deemed that for which fees have been previously paid, building permits have been issued, or priority reservations have been established by the Board of Supervisors. No commitment can be made, however, as to the availability of treatment capacity for the development of the subject property. Availability of treatment capacity will depend upon the current rate of construction and the timing for the development of this site.

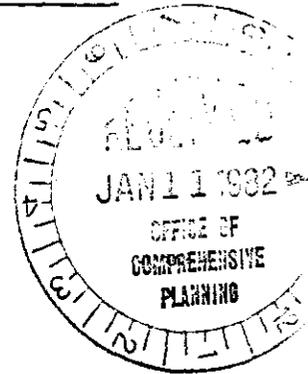
3. An 12 inch line located in an easement and approx. 40 feet from the property is ~~is not~~ adequate for the proposed use.

4. The following table indicates the condition of all related sewer facilities and the total effect of this application.

<u>Sewer Network</u>	<u>Existing Use + Application</u>		<u>Existing Use + Application + Previous Rezoning</u>		<u>Existing Use + Application + Comp. Plan</u>	
	<u>Adeq.</u>	<u>Inadeq.</u>	<u>Adeq.</u>	<u>Inadeq.</u>	<u>Adeq.</u>	<u>Inadeq.</u>
Collector	_____	_____	_____	_____	_____	_____
Submain	<u>X</u>	_____	<u>X</u>	_____	<u>X</u>	_____
Main/Trunk	<u>X</u>	_____	<u>X</u>	_____	<u>X</u>	_____
Interceptor	_____	_____	_____	_____	_____	_____
Outfall	_____	_____	_____	_____	_____	_____

5. Other pertinent information or comments: Tract is located within the West Branch sanitary sewer pro-rata share shed. Additional unit charge applicable prior to issuance of plumbing permits.

January 11, 1982



TO: Staff Coordinator (691-3387)
Zoning Evaluation Branch, OCP
5th floor, Massey Building

FROM: JoAnn Knight, Supervisor (691-4385)
Research and Planning Division
Fire and Rescue Services

SUBJECT: Fire and Rescue Services Preliminary Analysis,
Rezoning Application RZ-81-P-116 R-8

The following information is submitted in response to your request for a preliminary Fire and Rescue Services analysis for the subject rezoning application:

1. The Fire and Rescue Services' protection guidelines for this type of development is that the development should be no farther than 2 miles from a properly manned fire station. The Insurance Services Office mileage guideline for maximum insurance benefits for this property is 1.5 miles.
2. The application property is 2 miles from the Vienna Fire Department, Company number 2.
3. This fire department is equipped with the following apparatus:
2 piece engine company
Med

4. This fire department is authorized 25 personnel. As of 7/81, the department was ~~xxxxxx/short/xxxx~~ 1 personnel in providing proper staffing of its apparatus, or 1 paid firefighters short/~~xxxx~~ per shift.
5. After construction programmed for FY _____, this property will be serviced by the _____ Fire Department which will be _____ miles away. This distance is/is not adequate under the minimum mileage response criteria.
6. In summary, the Fire and Rescue Services considers that fire protection:
 - a. is adequate now
 - _____ b. would be adequate with satisfactory personnel allocation
 - _____ c. will be adequate when the proposed fire station becomes fully operational
 - _____ d. is not adequate and will not become adequate without an additional facility which is not currently planned or funded.



M E M O R A N D U M

To: Sidney R. Steele, for Staff Coordinators
Chief, Zoning Evaluation Branch-OCP

Date: 12-30-81

From: Dorothea L. Stefen, Assistant Superintendent
Division of Land Acquisition-FCPA

Subject: RZ-81-P-116
Loc: 48-1((1))98

The Fairfax County Park Authority staff has reviewed the above referenced rezoning application and it appears that the proposal does not conflict with the plans, policies and/or holdings of the Park Authority.

cc: Oscar Hendrickson-DEM
Ed Spann-OCP

DLS/rmk

FAIRFAX COUNTY, VIRGINIA

MEMORANDUM

TO: Sidney R. Steele, Chief
Zoning Evaluation Branch, OCP DATE January 14, 1982

FROM: Robert L. Moore *RM*
Office of Transportation

FILE NO: 3-4

SUBJECT: Transportation Impact

REFERENCE: RZ81-P-116, Board of Supervisors, 48-1

IMPACT ANALYSISCompatibility with the Adopted Plan

The subject application is located on Sutton Road, a facility that is recommended in the Countywide Plan for improvement to current two lane standards. This improvement has already been constructed across the frontage of the site and the submitted development plan shows further right-of-way dedication to accommodate additional road widening. However, no additional lanes to accommodate traffic generated at the site, particularly turning movements, have been provided.

Although the potential trip generation of the development would be relatively low, the impact of traffic disruption by turning vehicles at the site entrances could be serious at this location. Disruption of traffic flow near Country Creek Road would affect the quality of access to the proposed Vienna Metro Station via this facility.

Traffic Impact

The potential trip generation of this site is estimated to be about 10 vpd at its existing R-1 zoning, 105 vpd with the R-8 development plan submitted and 65 to 105 vpd for development within the 5 to 8 du/ac density range recommended in the Plan. These traffic volumes are based on trip generation rates of 10 vpd/du for single family detached dwellings and 8 vpd/du for townhouses. The single family rate is from the ITE Trip Generation report and the townhouse rate is from Five Year Plan data.

The traffic from this development would have its most direct impact on the roads listed below. The 1979 VDH&T secondary road traffic counts, the latest available, are also shown.

Sutton Road (Rt. 701)	
Chain Bridge Road to Courthouse Road	4,044 vpd
Courthouse Road to Blake Lane	3,879 vpd

January 14, 1982

Courthouse Road (Rt. 673)	
Chain Bridge Road to Sutton Road	2,440 vpd
Sutton Road to Nutley Street	6,133 vpd
Blake Lane (Rt. 655)	
Lee Highway to Sutton Road	13,582 vpd
Sutton Road to Jermantown Road	10,633 vpd
Country Creek Road (not in VDH&T system)	not available

Sutton Road is a two lane road for most of its length although some sections have been widened in conjunction with contiguous development. The widened sections include the frontages of the Oakton High School, opposite the subject site, and the Country Creek development, just to the north of the subject site. However, the remaining two lane sections form the governing capacity restrictions. Because of the resulting congestion, low average speeds, and lack of adequate passing opportunities, Sutton Road is estimated to be operating at level of service E.

DESIGN CONSIDERATIONS

The development plan for this application shows two entrances, both of which are located on a curve. The geometrics of this curve limit sight distance to some extent. Although field inspection indicates that sight distance may be adequate, final determination must be made by the Department of Environmental Management and VDH&T at the time of site plan review when detailed engineering information would be available.

The major entrance to the development is also located too close to Country Creek Road to meet crossover spacing standards and the quality of access to the site would be reduced if a raised median is constructed on Sutton Road. Left turn access would then no longer be possible. Therefore, development in this area ideally should be consolidated so that access via Country Creek Road would also be available.

SUMMARY

Three transportation issues remain outstanding with this application. Road improvements should be constructed along the frontage of the site to offset the impacts that vehicles turning at the site entrances would have on through traffic. Road improvements would be particularly appropriate here to ensure smooth traffic flow along this access to the proposed Vienna Metro Station. The final determination of sight distance adequacy cannot be made until additional information is made available. This would normally occur at the time of site plan review. Direct left turn access to the development may also no longer be possible once Sutton Road is improved with a raised median. Consolidation with other land would be desirable to allow access via Country Creek Road also.

ENVIRONMENTAL SITE ANALYSIS

Project Number: RZ-81-S-116 Location: 48-1(1)98
 Existing Zoning: R-1 Proposed Zoning and/or Use: R-8 Acreage: 1.65 ac.

Site Features	Presence		Comments
	yes	no	
A. Geology: Coastal Plain, Piedmont, Triassic			C. Located in headwaters of Accotink. See Attachment 1.
1. shallow bedrock		x	
2. groundwater resource		x	
3. mineral resources		x	D. (1A+) Floodplain - highwater table, low bearing strength and poor infiltration soils - not suitable for building location.
B. Topography:			
1. steep slopes (>15%)		x	(10B) Glenville - high water table, marginal for building support and poor for groundwater recharge. If basements are constructed in this soil, they should be engineered to ensure dryness. See Attachment 1 and 2.
2. irregular landform		x	
C. Hydrology:			
1. water features		x	
2. critical location in watershed	x		
3. water supply watershed		x	
D. Soils:			
1. marine clays		x	
2. shrink-swell clays		x	
3. highly erodible soils		x	
4. high water table soils	x		
5. soils with low bearing strength	x		
6. poor infiltration soils	x		
E. Vegetation, Wildlife & Open Space:			
1. quality vegetation		x	
2. wildlife habitat		x	
3. adopted EQC		x	

Environmental Quality	Problems		Comments
	yes	no	
F. Noise:			F. Severe noise impacts which exceed 75 dBA Ldn have been estimated to impact that portion of the site within 120 feet of the property line adjacent to I-66 right-of-way. Mitigation measures should be provided. See Attachment 1 for details.
1. airport noise		x	
2. highway noise	x		
3. railroad noise		x	
4. other types of noise		x	
G. Water:			G. Conversion of this site to its proposed use will increase non-point loadings into Accotink Creek. See Attachment 1 for details about impacts and mitigation measures.
1. point source pollution		x	
2. nonpoint source pollution	x		
H. Air:			I. Interior landscaping of parking areas and along property line adjacent to I-66 can provide important visual amenities to the tightly aligned townhouse units. In addition, landscaping will reduce glare from parking areas and can provide energy savings to residents.
1. mobile source pollution		x	
2. stationary source pollution		x	
I. Aesthetics: For example: internal views, views from site, views of site from adjacent development	x		
J. Other:			

GEOLOGY

This parcel is located in the Piedmont geologic province. It is underlain by phyllite, metasiltstone and slate at depths of between 50 feet and 100 feet. Phyllite and metasiltstone weather to saprolite of irregular thickness; slate commonly is overlain by very thin, clay-rich saprolite and soil. A schist aquifer of low yield (i.e. 50 gal/min to 150 gal/min) and good quality underlies this site as well. No geologic constraints are associated with this site.

TOPOGRAPHY

No irregular configurations likely to require extensive cutting or filling are present on this site. Elevations range from 342' in the southeast to 358' in the northwest. Slopes on this site are nearly flat; ranging from 0 - 2%.

HYDROLOGY

This site lies within the headwaters of the Accotink Creek watershed. There is a very small drainage swale located along the eastern boundary of this parcel. Because of the sensitive nature of the parcel's location (i.e. headwaters region), sedimentation and erosion controls should be strictly enforced. Stormwater management as directed by DEM should be provided to mitigate impacts associated with runoff volumes, and BMP's as noted in the Public Facilities Manual which are under the review of DEM could be provided to alleviate impacts to water quality.

SOILS

Approximately twenty-five (25) percent of this site consists of Mixed (1A+) Alluvial Land soils. This soil type is subject to periodic flooding. It rates poor for both building support and recharge of groundwater. The remaining seventy-five (75) percent consists of Glenville (10) silt loam soil. This soil is subject to a seasonally high-water table. It rates poor for both building support and groundwater recharge. See Attachment 2 for soils map.

ENVIRONMENTAL NOISE

The entire site is impacted by severe levels of highway noise from I-66. Projected (1995) noise levels for the portion of the site within 120 of the property line adjacent to I-66 have been estimated to range between 77 and 75dBA Ldn.

In addition to the mitigation measures staff mentioned as suitable in the report and addendum of RZ 78-P-124, a previous rezoning application on the subject property, the following noise attenuation measures will also meet the intent of the Plan language (see Comprehensive Plan Analysis for specific language) and should be provided:

1. a maximum exterior noise level for receivers at any given open window not to exceed 75 dBA Ldn
2. a maximum interior noise level not to exceed 45 dBA Ldn
3. a maximum exterior noise level for some usable recreational space (privacy yards/areas of outdoor recreational use) in which the maximum acceptable level is 65 dBA Ldn.

(These noise levels are based upon the Federal guidelines cited in the main text of Environmental Analysis).

One example of mitigation measures which could achieve the maximum acceptable noise levels which correlate directly to 1-3 above includes:

1. In order to achieve a maximum exterior noise level for receivers at any given open window not to exceed 75 dBA Ldn, any one of the following measures could be provided:
 - (a) construction of a barrier/fence/berm or any combination thereof to ensure that a receiver directly in front of any open window (especially second story) is not exposed to noise levels in excess of 75 dBA Ldn. (The estimated projected 1995 noise level at the property line is 77 dBA Ldn, hence a 2dBA reduction for receivers in the vicinity of the property line is necessary). However, the necessary height and location may vary; or
 - (b) construction of acoustically designed and engineered balconies such that any receiver directly in front of any open window or on the balcony is not exposed to noise levels in excess of 75 dBA Ldn; or
 - (c) set-back to behind the projected (1995) 75 dBA Ldn contour which is estimated to be approximately 120 feet from the property line adjacent to I-66.

The submitted development plan generally observes (c) above for all new units and would meet Criteria 1.

2. In order to achieve a maximum interior noise level not to exceed 45 dBA Ldn, the following could be provided (as one appropriate mitigation alternative) for new units 1-12 which are setback at least 120 feet from the property line adjacent to I-66:
 - (a) exterior walls should have a laboratory sound transmission class (STC) of at least 45, and
 - (b) doors and windows should have a laboratory sound transmission class (STC) of at least 37.

Should any remodeling occur to the existing single family detached unit within 120 feet of the I-66 right-of-way, the following could be provided:

- (a) exterior walls should have a laboratory sound transmission class (STC) of at least 47
- (b) doors and windows should have a laboratory sound transmission class (STC) of at least 39.

At a minimum, storm doors and storm windows should be provided.

Acoustical treatment to achieve this interior noise level may include:

- use of building materials of a given sound transmission class (Sound level reduction capability) as suggested above
- reduction of window to wall space
- use of double and triple glaze windows
- use of storm windows and doors
- use of insulation

Based on the information submitted by the applicant, it is not possible to determine if Criteria 2 is satisfied.

3. In order to provide a maximum exterior noise level for some usable recreational space (privacy yards/areas of outdoor recreation) not to exceed 65 dBA Ldn, the following could be provided (as one appropriate mitigation alternative) for the yards of the new units 1-12 which are setback at least 120 feet from the property line adjacent to I-66:

- architecturally solid fencing at least 7 feet in height should be provided to shield privacy yards.

Should any remodeling occur to the existing single family detached unit, the following could be provided:

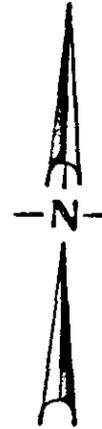
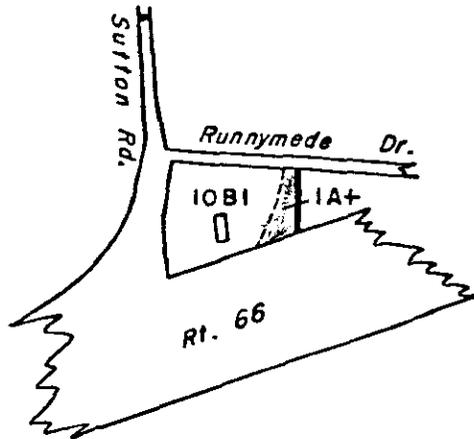
- architecturally solid fencing at least 10 feet in height should be provided to shield a usable portion of the yard i.e. patio area.

All fencing should be flush with the topography.

The submitted development plan indicates that architecturally solid fencing 7 feet height will be provided to shield privacy yards for new units 1-12; and Criteria 3 would be satisfied for all new units.

(It should be noted that the above information is based upon a noise analysis that was updated from the one originally performed for RZ 78-P-124).

SOIL SURVEY MAP OF A 1.65 ACRE PROPERTY PROPOSED FOR REZONING FROM R-1 TO R-8 Attachment #2 (RESIDENTIAL 8 DU/AC) USE, LOCATED ADJACENT TO AND SOUTH OF RUNNYMEDE DRIVE, BOUNDED ON THE WEST BY SUTTON ROAD, AND TO THE SOUTH BY RT. 66. REZONING REQUESTED BY: TRIFAM SYSTEMS, INC.



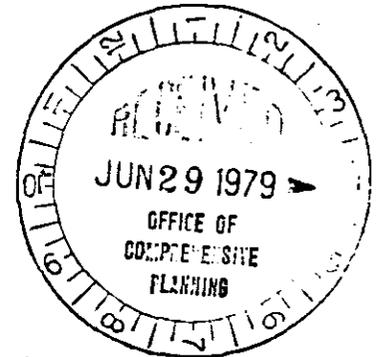
LEGEND

<u>Soil Symbol</u>	<u>Soil Name</u>
1A+	Mixed alluvial land, Flood Plain, 0-2% slope
10B1	Glenville silt loam, 2-7% slope
-----	Soil Boundary

Scale: 1" = 500 feet
 Checked by: James E. Belshan, Soil Scientist
 Soil Survey Office
 Date: June 29, 1979

LOCATION: 48-1-001-98

NOTE: Eighteen percent, or 0.30 acre, of this property consists of Flood Plain (1A+). None of this flood plain is suitable for a building site.
 Eighty-two percent, or 1.35 acres, of this property consists of Glenville (10) soil. This soil has a high seasonal water table. It rates marginal for building support. It rates poor for recharge of groundwater.



GLOSSARY

- This Glossary is presented to assist citizens in a better understanding of Staff Reports; it should not be construed as representing legal definitions.
- BUFFER** - A strip of land established as a transition between distinct land uses. May contain natural or planted shrubs, walls or fencing, singly or in combination.
- CLUSTER** - The "alternate density" provisions of the Zoning Ordinance, which permits smaller lots and pipestem lots, if specified open space is provided. Primary purpose is to preserve environmental features such as stream valleys, steep slopes, prime woodlands, etc.
- COVENANT** - A private legal restriction on the use of land, recorded in the land records of the County.
- DEVELOPMENT PLAN** - Conceptual, Final, Generalized. A Development Plan consists of graphic, textual or pictorial information, usually in combination, which shows the nature of development proposed for a parcel of land. The Zoning Ordinance contains specific instructions on the content of development plans, based upon the purpose which they are to serve. In general, development plans contain such information as: topography, location of streets and trails, means by which utilities and storm drainage are to be provided, general location and types of structures, open space, recreation facilities, etc. A Conceptual Development Plan is required to be submitted with an application for the PDH or PDC District; a Final Development Plan is a more detailed plan which is required to be submitted to the Planning Commission after approval of a PDH or PDC District and the related Conceptual Development Plan; a Generalized Development Plan is required to be submitted with all residential, commercial and industrial applications other than PDH or PDC.
- DEDICATE** - Transfer of property from private to public ownership.
- DENSITY** - Number of dwelling units divided by the gross acreage being developed (DU/AC). Density Bonus is an increase in the density otherwise allowed, and granted under specific provisions of the Zoning Ordinance when developer provides excess open space, recreation facilities, moderately priced housing, etc.
- DESIGN REVIEW** - The Division of the Department of Environmental Management which reviews all subdivision plats and site plans for conformance with County policies and requirements contained in the Zoning Ordinance, the Subdivision Control Ordinance, the Public Facilities Manual, the Building Code, etc, and for conformance with any proffered plans and/or conditions.
- EASEMENT** - A right given by the owner of land to another party for specific limited use of that land. For example, an owner may give or sell easements to allow passage of public utilities, access to another property, etc.
- OPEN SPACE** - The total area of land and/or water not improved with a building, structure, street, road or parking area, or containing only such improvements as are complementary, necessary or appropriate to use and enjoyment of the open area.
- Common** - All open space designed and set aside for use by all or designated portions of residents of a development, and not dedicated as public lands (dedicated to a homeowners association which then owns and maintains the property).
- Dedicated** - Open space which is conveyed to a public body for public use.
- Developed Recreation** - That portion of open space, whether common or dedicated, which is improved for recreation purposes.
- PROFFER** - A Development plan and/or written condition, which, when offered by an owner and accepted by the Board of Supervisors, becomes a legally binding part of the regulations of the zoning district pertaining to the property in question. Proffers, or proffered conditions, must be considered by the Planning Commission and submitted by an owner in writing prior to the Board of Supervisors public hearing on a rezoning application, and thereafter may be modified only by an application and hearing process similar to that required of a rezoning application.
- PUBLIC FACILITIES MANUAL** - The manual, adopted by the Board of Supervisors, which defines guidelines which govern the design of those facilities which must be constructed to serve new development. The guidelines include streets, drainage, sanitary sewers, erosion and sediment control and tree preservation and planting.
- SERVICE LEVEL** - An estimate of the effectiveness with which a roadway carries traffic, usually determined under peak anticipated load conditions.
- SETBACK, REQUIRED** - The distance from a lot line or other reference point, within which no structure may be located.
- SITE PLAN** - A detailed plan, to scale, depicting development of a parcel of land and containing all information required by the Zoning Ordinance. Site plans are required, in general, for all townhouse and multi-family residential development and for all commercial and industrial development.
- SUBDIVISION ORDINANCE** - An ordinance regulating the division of land into smaller parcels and which, together with the Zoning Ordinance, defines required conditions laid down by the Board of Supervisors for the design, dedication and improvement of land.
- SUBDIVISION PLAT** - A detailed drawing, to scale, depicting division of a parcel of land into two or more lots and containing engineering considerations and other information required by the Subdivision Ordinance.
- USE** - The specific purpose for which a parcel of land or a building, is designed, arranged, intended, occupied or maintained.
- Permitted** - Uses specifically permitted by the Zoning Ordinance Regulations of the Zoning District within which the parcel is located. Also described as a Conforming Use.
- Non-Conforming** - A use which is not permitted in the Zoning District in which the use is located but is allowed to continue due to its existence prior to the effective date of the Zoning Regulation(s) now governing.

USE - Continued.

Special Permit - A use specified in the Zoning Ordinance which may be authorized by the Board of Zoning Appeals or the Board of Supervisors in specified zoning districts, upon a finding that the use will not be detrimental to the character and development of the adjacent land and will be in harmony with the policies contained in the latest adopted comprehensive plan for the area in which the proposed use is to be located. A Special Permit is called a Special Exception when granted by the Board of Supervisors.

Transitional - A use which provides a moderation of intensity of use between uses of higher and lower intensity.

VARIANCE - A permit which grants a property owner relief from certain provisions of the Zoning Ordinance when, because of the particular physical surroundings, shape or topographical condition of the property, compliance would result in a particular hardship or practical difficulty which would deprive the owner of the reasonable use of the land or building involved. Variances may be granted by the Board of Zoning Appeals after notification, advertising, posting and conduct of a public hearing on the matter in question.

VPD - Vehicle trips per day (for example, the round trip to and from work equals two VPD). Also ADT - Average Daily Traffic.

ENVIRONMENTAL TERMS

ACOUSTICAL BERM - Usually a triangular-shaped earthen structure paralleling a highway noise source and extending up from the elevation of the roadway a distance sufficient to break the line of sight with vehicles on the roadway.

AQUIFER - A permeable underground geologic formation through which groundwater flows.

AQUIFER RECHARGE AREA - A place where surface runoff enters an aquifer.

CHANNEL ENLARGEMENT - A development-related phenomenon whereby the stream's bank full capacity is exceeded with a greater frequency than under natural undeveloped conditions, resulting in bank and stream bottom erosion. Hydrology literature suggests that flows produced by a storm event which occurs once in 1.5 years are the channel defining flows for that stream.

COASTAL PLAIN GEOGRAPHIC PROVINCE - In Fairfax County, it is the relatively flat southeastern 1/4 of the County, distinguished by low relief and a preponderance of sedimentary rocks and materials (sands, gravels, silts) and a tendency towards poorly drained soils.

dB(A) - Abbreviation for a decibel or measure of the noise level perceived by the ear in the A scale or range of best human response to a noise source.

DRAINAGE DIVIDE - The highest ground between two different watersheds or subheds.

ENVIRONMENTAL LAND SUITABILITY - A reference to a land use intensity or density which should occur on a site or area because of its environmental characteristics.

ERODIBLE SOILS - Soils susceptible to diminishing by exposure to elements such as wind or water.

FLOODPLAIN - Land area, adjacent to a stream or other surface waters, which may be submerged by flooding; usually the comparatively flat plain within which a stream or riverbed meanders.

IMPERVIOUS SURFACE - A natural or man-made surface (road, parking lot, roof top, patio) which forces rainfall to runoff rather than infiltrate.

MONTMORILLONITIC CLAY - A fine grained earth material whose properties cause the clay to swell when wet and shrink when dry. In addition, in Fairfax County these clays tend to slip or slump when they are excavated from slope situations.

NEF - Noise Exposure Forecast - A noise description for airport noise sources.

PERCENT SLOPE - The inclination of a landform surface from absolute horizontal: formula is vertical rise (feet) over horizontal distance (feet) or V/H.

PIEDMONT GEOGRAPHIC PROVINCE - The central portion of the County, characterized by gently rolling topography, substantial stream dissection, V-shaped stream valleys, an underlying metamorphic rock matrix (schist, gneiss, greenstone) and generally good bearing soils.

PIES/ENVIRONMENT - Project Impact Evaluation - A systematic, comprehensive environmental review process used to identify and evaluate likely environmental impacts associated with individual project or area plan proposals.

SHRINK-SWELL RATE - The susceptibility for a soil's volume to change due to loss or gain in moisture content. High shrink-swell soils can buckle roads and crack foundations.

SOIL BEARING CAPACITY - The ability of the soil to support a vertical load (mass) from foundations, roads, etc.

STREAM VALLEY - Any stream and the land extending from either side of it to a line established by the high point of the concave/convex topography, as delineated on a map adopted by the Stream Valley Board. For purposes of stream valley acquisition, the five-criteria definition of stream valleys contained in "A Restudy of the Pohick Watershed" (1969) will apply. The two primary criteria include all the land within the 100-year floodplain and the area along the floodplain in slopes of 15 percent or more.

STORM WATER MANAGEMENT - An emerging art/science that attempts to treat storm water runoff at the source and as a resource. Storm water management programs seek to mitigate or abate quantity and quality impacts typically associated with development by the specific design of onsite systems such as Detention Devices which slow down runoff and in some cases improve quality, and Retention Systems, which hold back runoff.

TRIASSIC GEOGRAPHIC PROVINCE - The western 1/4 of Fairfax County, characterized by broad expanses of nearly level topography, subtle ridge lines, a shallow depth to sedimentary rocks which are locally intruded by igneous rocks and a tendency towards soils with high shrink-swell properties.

AIREAX COUNTY, VIRG

MEMORANDUM

TO: Oscar Hendrickson, Chief
Site Plan Review Branch, SRD, DEM **DATE** March 26, 1982

FROM: Philip G. Yates
Zoning Administrator

FILE NO:

SUBJECT: Deviation of Yard Requirement, RZ 81-P-116, B/S Own Motion

REFERENCE:

This memorandum responds to your office's inquiry to Joe Wiltse regarding B/S waiver of the 200 foot yard requirement for residential buildings along interstate highways.

On February 8, 1982 the Board approved rezoning of the referenced application to the R-8 District. The application was filed on the B/S Own Motion in settlement of litigation with Trifam. In conjunction with the rezoning, the Board accepted proffers from Trifam of the Generalized Development Plan and development conditions providing noise attenuation. The conditions satisfied the need for noise attenuation identified in the staff report as a basis for approval of residential buildings within 200 feet of an interstate.

It is my determination that the Board's approval action and acceptance of proffers clearly indicated its intent to authorize deviation from the 200 foot yard requirement under the provisions of Par 3 of Sect. 2-414.

cc: Sidney R. Steele, Chief
Zoning Evaluation Branch, ZAD, OCP