#### **Transportation Analysis**

Staff analyzed the traffic impacts of the four options (and three different scenarios for Option 1) for development properties in the Southeast Quadrant. While a formal proposal has not been submitted for the Gandel Property, options 1C, 3 and 4 in this analysis assumes an ultimate population of 1,100 students based on the public hearing testimony and meetings with the representatives of WCA. The transportation analysis considered three measures of effectiveness:

- Effect on the overall transportation balance in the Public Hearing Draft Plan.
- Effect on average daily traffic in the SEQ.
- Effect on the Draft Plan recommendation of Batchellors Forest Road as a rustic road.

The findings of the transportation analyses are:

- 1. From an overall land use and transportation balance perspective in the Olney Master Plan area, none of these options will have a significant effect on the area's transportation network.
- 2. Some of these options will result in higher traffic volumes on the local traffic network in the SEQ. This effect is especially significant for options with higher densities on properties along Batchellors Forest Road.
- 3. None of the all-residential development scenarios, even those that would result in measurable changes in traffic volumes, would affect the proposed rustic road classification of Batchellors Forest Road since the number of dwelling units relying on Batchellors Forest Road for access would remain below the threshold of 200 units and the average daily traffic (ADT) volume would be below the threshold of 3,000 ADT for a rustic road classification.
- 4. The potential development of the Gandel property as a private educational institute for 1,100 students, however, would cause the traffic volume on Batchellors Forest Road between the Gandel property and Georgia Avenue (MD 97), a segment approximately 1,500 feet in length, to exceed 3,000 ADT. From a traffic perspective, the WCA has a greater impact on potential changes to the roadway network than the various density options analyzed in this report.

Each of the three measures of effectiveness is discussed in the following paragraphs.

#### Effect on Overall Transportation Balance

As described on page 82 of the Public Hearing Draft of the Olney Master Plan, the year 2025 forecast Average Congestion Index (ACI) for the Olney Policy Area equals the current Annual Growth Policy (AGP) congestion standard of 0.55.

This analysis assumes the Public Hearing Draft Option (213 units) as the baseline option for comparison purposes. The highest yield option, Option 3, therefore, could add as many as 78 additional housing units (291-213) in the SEQ outside the Golden Bear Triangle area.

An additional 78 units, approximately one-half of one percent over the Public Hearing Draft Plan projection of approximately 14,800 housing units in the entire Olney Master Plan area at build-out, would have a negligible affect on the overall balance between transportation and land use in the Public Hearing Draft Plan. Staff expects the effect on average congestion levels from this additional development to be minimal for three reasons: 1) a substantial amount of congestion is due to through traffic, not traffic generated by Olney households; 2) the total number of current and potential new housing units in the SEQ is smaller than the other three quadrants of Olney; and 3) trips generated by residents in the southeast quadrant have a somewhat lower impact on the overall Olney roadway network by virtue of their location near the southern edge of the Plan area and the prevailing commuting patterns to and from locations to the south than do those generated by other Olney residents.

# **Effect on Average Daily Traffic**

Table 2 presents Average Daily Traffic (ADT) volumes based on the vehicle trip generation estimates for a typical weekday under each of the alternative development scenarios analyzed. The average vehicle trip generation rates (from the 7<sup>th</sup> Edition of the *Institute of Transportation Engineers Trip Generation Manual*) are 9.57 trips per weekday for a single-family detached dwelling unit and 2.48 trips per student for a private school serving kindergarten through 12<sup>th</sup> grade.

Table 2: Weekday Vehicle Trip Generation Estimates

	Option 1	(current Ze	oning)	Option 2	Option 3	Option 4
	1a	1b	1c	(PH Draft)	(Property (Modified Plowners) Draft)	(Modified PH Draft)
	157units	230 units	211 units	213 units	291 units	236 units
Resid'l ADT	1502	2201	2019	2038	2785	2259
WCA ADT	0	0	2728	0	2728	2728
TOTAL	1502	2201	4747	2038	5513	4987

The analysis was conducted for average daily trips rather than peak hour trips for two reasons. First, the examination of rustic road classification relies on an analysis of daily trips rather than peak hour trips. Second, since the afternoon peak trip generation period for schools is typically earlier than the peak trip generation period for homes, a comparison of the land uses is facilitated by examination of daily totals rather than peak hour totals.

The introduction of the WCA has the most significant effect on total trip generation rates. In Option 3, the 2,728 trips generated by the 1,100 students alone are nearly equivalent to the 2,785 trips generated by the 291 dwelling units. Staff notes that the trip generation characteristics attributed to the WCA reflect average rates from ITE, and

do not include specific operations plans or travel demand management strategies that the applicant may propose. As of December 24, 2003, staff does not have a specific proposal from the WCA to reflect in the analyses. The actual trip generation rate of the WCA will be a function of many factors, including staff and student transit options and the nature and frequency of special events at the school.

## Effect on Batchellors Forest Road Rustic Classification

The Public Hearing Draft Plan recommends that the entire length of Batchellors Forest Road be classified as a rustic road for its entire length between Georgia Avenue (MD 97) and Doctor Bird Road (MD 108). From a transportation perspective, the recommendation is based primarily on two quantitative factors; the number of dwelling units that rely on the roadway for access, and the estimated travel demand on the roadway. Montgomery County Code states that a primary residential road is one that serves an existing or prospective residential development for 200 or more families.

As shown in Table 3, staff estimates that currently there are 45 residential units reliant on the portion of Batchellors Forest Road south of Farquhar Middle School. Staff estimates that under the zoning recommended in the Public Hearing Draft Plan (Option 2), the number of residential units relying on this portion of Batchellors Forest Road will increase to as many as 159, lower than the 200 unit threshold described in the County Code. Under Options 3 and 4, the residential unit yield increases to as many as 192 residential units, remaining below the 200-unit threshold. Staff therefore finds that none of the options would affect the recommendation to classify Batchellors Forest Road as a rustic road based upon the County Code description of a primary road classification.

Table 3 also presents estimated average daily traffic (ADT) volumes on different portions of Batchellors Forest Road. Section 49-78 (b) of the County Code states that a rustic road must be a low volume road with traffic volumes that do not detract significantly from the rustic character of the road. The 1996 Rustic Roads Functional Master Plan (RRFMP) suggests that roadways with an ADT volume less than 3,000 can be considered low-volume roads.

The range of weekday trips generated by the residential component of each scenario is directly proportional to the number of dwelling units in each scenario. Option 3, the property owners' proposal, for example, has 37% more dwelling units and therefore 37% more vehicle trips than Option 2, the Public Hearing Draft Plan option.

Staff estimates that the current ADT volume on Batchellors Forest Road ranges from 620 to 1,440 vehicles, with traffic volumes highest at each end of the road and lowest in the middle (exhibit 3). Under Option 2 (the Public Hearing Draft Plan), the estimated ADT volume on the southern segment of Batchellors Forest Road ranges between 1,440 and 2,630 vehicles. Options 1c, 3 and 4 include the Washington Christian Academy, and the westernmost segment of Batchellors Forest Road in these options reaches approximately 5,000 ADT.

Table 3. Effect of Development Options on Batchellors Forest Road Classification

Note: Co			Number
ounty Code ind			of Dwelling U
Note: County Code indicates that Primary Residential Street designation applies for neighborhoods with > 200 units	45	Existing	Number of Dwelling Units Reliant on Rustic Road for Access
Residential Stree	136	Option 1a	tic Road for Ac
t designation ap	189	Option 1b	Cess
plies for neighbo	170	Option 1c	
orhoods with > 2	159	Option 2	
00 units	192	Option 3	
	170	Option 4	

Location	Existing	Option 1a	Option 1b	Option 1c	Option 2	Option 3	Option 4
East of MD 97	1280	2440	2830	4990	2630	5180	5010
East of Gandel Property	770	1860	2200	2580	2050	2770	2600
At Batchellor's Run	630	1390	1530	1910	1480	2000	1930
South of Farquhar MS	620	1350	1490	1870	1440	1960	1890
South of MD 108	1440	450	470	510	470	540	520

The evaluation of the relationship between a private educational institute and a rustic road requires consideration of qualitative concerns in addition to quantitative traffic volume measures. In particular, additional information is needed to assess the amount of vehicular and pedestrian activity that might be generated by either special events or community access to the campus. If the Gandel property is developed with WCA for 1,100 students, the western limit of the rustic road classification of Batchellors Forest Road would need to be reevaluated. At this time, insufficient information exists regarding the nature and extent of the proposed WCA operations for staff to make a conclusive recommendation regarding the suitability of the rustic road classification between the Gandel property and Georgia Avenue.

#### Compatibility/Rural Character Analysis

The compatibility analysis of the four options focuses primarily on average lot size of the various development scenarios. Although another measure would be the minimum lot size and the number of lots near that threshold, such detailed analysis is not possible without actual development proposals for each site from developers. Staff has used the estimated average lot size and how close that number is to the 15,000 square foot minimum lot size in various scenarios to qualitatively assess the compatibility of each scenario.

The existing development pattern in the SEQ is predominantly of large lots on septic or sewer mostly based on the two-acre minimum lot size of the 1966 Master Plan and the subsequent RE-2 and RC zoning of the 1980 Plan.

Of the four options, Option 1 (between 157 to 230 units) would result in minimum lot sizes most compatible with the existing development pattern in the SEQ since the RC/LDRC zoning has a minimum lot size of 1.0 acre and the RE-2 Zone has a minimum lot size of two acres. However, due to these larger minimum lot sizes under current zoning, Option 1 would consume more land for housing lots leaving less for open space to protect the rural character of the area.

Since the open space to be protected is the same on all other options, leaving roughly the same amount of land to be divided into maximum permitted housing lots (assuming consistent estimated numbers for roads and stormwater management areas for all sewered option), any increase in the permitted densities tends to drive the average lot sizes lower, and therefore, less compatible with the existing pattern.

Table 3 is a comparison of the estimated average lot sizes of the four large, sewered properties under various options analyzed in this report.

Table 3: Comparison of Average Lot Sizes

Property	Option :	Density/ Zoning	Max. Units	Rural Open Space Acres (%)	Average Lot Size SF
Polinger	1a	0.2/RC	35	105.6 (60%)	65,000
(176 acres)	1b &1c	0.33/RE-2	58	0.0	100,000
•	2&4	0.33/RNC	58	97.2 (65%)	39,000
	3	0.45/RNC	79	97.2 (65%)	28,800
Hyde	1a	0.2/RC	18	26.25 (60%)	50,000
(49.7 acres)	1b&1c	0.33/RE-2	16	0.0	100,000
	2&4	0.33/RNC	25	28.62 (65.4%)	20,400
	3	0.33/RNC	31	28.62 (65.4%)	16,200
Casey	1a	0.2/RC	18	45.24 (60%)	65,000
(75.4 acres)	1b&1c	0.33/RE-2	30	0.0	100,000
	2&4	0.33/RNC	30	53.36 (78.2%)	21,850
	3	0.45/RNC	41	53.36 (78.2%)	18,000
NWI	1a, 1b, 1c*	0.2/RC	20	62.67(60%)	65,000
(104.6 acres)	2&4	0.33/RNC	34	78.4 (83%)	19,500
•	3	0.45/RNC	47	78.4 (83%)	14,500

<sup>\*</sup> All three existing zoning scenarios for NWI are based on its current zoning of RC.

### **Jobs/Housing Balance Analysis**

The Olney Master Plan area today (2000) has approximately 7,528 jobs and 13,500 housing units (built and approved). This yields a jobs/housing ratio of 0.55. Under the 1980 Master Plan, the Olney area has the potential to generate approximately 900 additional housing units (between 800 and 1,000 units depending upon the perc rates of some of the properties on septic systems) with a potential full build-out of approximately 14,400 housing units in the future. Jobs projections indicate that by 2025 there will be 7,838 jobs in Olney resulting in a jobs/housing ratio of 0.54. Although the Public Hearing Draft Plan adds more jobs in the Town Center and supports future job growth at the Montgomery General Hospital, it adds another 400 units to the Town Center to create a mixed-use urban center resulting in an estimated jobs/housing ratio of 0.53.

As Table 4 below indicates, the jobs to housing ratios will decline in all options. This is mainly due to the fact that there is no additional land left for commercial development; job growth will come primarily from higher intensity of uses through redevelopment and additions on the existing commercial properties. Future job/housing balance in Olney will be determined largely by the potential housing growth on the remaining developable residential properties.

Table 4: Jobs/Housing Balance Comparison

	Curren	Ontion					
	(2000)	1A	11В	lic	Option 2	Option 3	Option 4
Jobs	7,528	7,838	7,838	7,888*	7,838	7,888*	7,88 <b>8</b> *
Housing	13,500	14,364	14,437	14,418	14,820	14,898	14,843
Jobs/Housing Ratio	0.55	0.545	0.542	0.547	0.528	0.529	0.531

<sup>\* 50</sup> jobs assumed for WCA

The difference between Option 2 and 3 is due to the fact that Option 2 (Public Hearing Draft Option) does not include WCA on Gandel property. If WCA is assumed for Gandel in Option 2, the jobs/housing ratio increases to 0.532, better than all other rezoning options

# SECTION 6: RURAL OPEN SPACE IN THE RNC ZONE

Representatives of the two properties, Hyde and Gandel, have requested that the definition of Rural Open Space in the RNC Zone be modified to allow ballfields and other active recreational uses in the Rural Open Space preserved under the Optional Method of Development of the RNC Zone. At the first worksession the Planning Board asked the staff to address this question.

Based on staff's recommendations for these two properties, a text change to the RNC Zone is not necessary. Staff's proposal to rezone the Gandel property to RC, instead of RNC as recommended in the Draft Plan, eliminates the issue of Rural Open Space on the Gandel property. On the Hyde property, the developer's proposal to rezone Good Counsel to RNC to achieve 41 lots still involves using part of the recreation facilities on the Good Counsel High School site for Rural Open Space on Hyde East. Staff does not support the density proposed by the developer. Instead, staff recommends a density of 0.33 units per acre on Hyde East and retaining the RC on the Good Counsel site, which makes any changes to the definition of the Rural Open Space unnecessary.

# SECTION 7: SUMMARY OF PUBLIC TESTIMONY AND STAFF RESPONSE

The following table summarizes the specific recommendations in the Public Hearing Draft, public hearing testimony and comments on these recommendations or issues; and the proposed staff response to each.

#	Recommendation/Issue	Public Comment	Staff Response
1	Properties of more than 10 acres within the recommended community sewer service envelope should be allowed to develop at a maximum of 0.33 units per acre on community sewer. (p.22)	SEROCA, Others: O.33 units per acre for the large sewerable properties is too highwill have adverse impacts on the environmental resources, low-density character, groundwater recharge, traffic on Batchellors Forest and Emory Church Roads, and the area schools.	The proposed density of 0.33 units per acre is generally consistent with the current average density of all developed properties in the SEQ. Cluster development at 0.33 units per acre pursuant to the provisions of the RNC Zone and Master Plan guidelines, would minimize the adverse environmental impacts of slightly higher densities on some of the larger properties under the 1980 Plan.
			Retain draft recommendation of maximum 0.33 units per acre in the proposed sewer envelope for properties of more than 10 acres.
2	All properties of more than five acres currently zoned RE-2 in the Southeast Quadrant should be rezoned to RNC. (p. 22) (#5 Pachulskja and Other Properties, p. 28) (#14 Danshes and other properties, p.35) (#16, Kimble and Graefe properties, p. 36)  Properties of less than 10 acres in the RNC Zone would be limited to 0.2 units per acre, properties of larger than 10 acres would be allowed 0.33 units per acres.	SEROCA, Others: Unfair and inequitableapplies different densities to different parcels increases the values of certain larger properties that have access to public sewer and devalues other smaller ones and those not on sewer.	Staff proposes to address the equity issue by proposing to retain the current RE-2 Zone for properties of less than 10 acres outside the sewer envelope. Properties smaller than acres within the sewer envelope should remain as RE-2 and allowed to connect to sewer with a maximum of 0.33 units per acre.  Modify the Draft Plan recommendation for properties of less than ten acres, outside the sewer envelope to RE-2 on septic with a maximum of two units per acre.  Note: Kimble and Graefe properties' park acquisition recommendation will be discussed during the worksession on Parks and Recreation issues.
3	Polinger Property: Rezone the Polinger property from RE-2 to RNC on community water	Bob Harris, Attorney; Dave Ager, Planning Consultant:	The proposed rezoning of the property from RE-2 on septic to RNC on sewer with maximum 0.33 units per acre is consistent with the overall land use
	and sewer with 0.33 units per acre. (Property #8, p.	Maximum permitted density on this property	and zoning concept for SEQ. It is slightly higher than what the property

29, 30)	should be 0.45 units per acre, similar to the Sandy Spring/Ashton Master Plan since this area is closer to the Aspen Hill area and has fewer sensitive environmental resources than the Upper Rock Creek Master Plan area. Also, 0.45 units per acre would provide economic justification for converting the existing golf course into a housing development.	would be allowed under the 1980 Plan. Any additional density would be detrimental to the low-density character of SEQ and the environmental resources on the site.  Retain the Draft Plan recommendations for the Polinger property.
<ul> <li>4 Hyde Property: <ol> <li>Retain the current RC</li> <li>Zone on community water and sewer with 0.2 units per acre for the western portion of the Hyde property.</li> <li>Rezone the eastern portion of the Hyde property to RNC on community water and sewer, if feasible, with 0.33 units per acre. (p.27)</li> </ol> </li> </ul>	Steve Kaufman, Attorney:  1. Western portion of the property be identified on the Master Plan maps as the future home of the Good Counsel High School.  2. Entire Hyde property (107 acres on both side of Batchellors Forest Road) should be rezoned to the RNC Zone with the actual density to be determined at the subdivision stage.  3. Modify the RNC Zone definition of "Rural Open Space" to include recreational areas such as ballfields.	1. Master Plan maps and zoning maps generally do not show the proposed project because if the project is discontinued, the maps would be incorrect for the next 20 years. The text of the Master Plan does refer to the proposed Good Counsel High School on the western part of the Hyde property.  2. The western portion of the property has been approved by the Planning Board for the development of Good Counsel High School (GCHS) under the current RC Zone. Staff believes that no change is necessary or needed for that portion of the Hyde property.  The proposed rezoning of the eastern portion of the property from RE-2 on septic to RNC on sewer is consistent with the overall land use and zoning concept for SEQ. Any additional density would be detrimental to the low-density character and environmental resources on the site.  3. See Section 6: Rural Open Space in the RNC Zone, in this report.

Retain the Draft Plan

			recommendations for the Hyde
5	Northwest Investment Property: Rezone the Northwest Investment (NWI) property from the existing RC to the RNC Zone on community water and sewer with maximum 0.33 units per acre. (p. 33)	Jody Kline, Attorney:  The property should have higher density than the proposed 0.33 units per acre because: although it is zoned RC it should be considered as RE-2 since it was never developed as RC, so the previous downzoning from RE-2 to RC never occurred; and You can see townhouses across the street from this property. This site is in a transition area and should be zoned RE-2.	The proposed rezoning of the property to RNC on sewer with 0.33 units per acre is higher than what the property is currently allowed under the RC zone. The site contains the headwaters of the Northwest Branch. Any additional density would be detrimental to the environmental resources on the site and the low-density character of SEQ. Retain the draft recommendations for the NWI property.
6	Gandel Property: Rezone Bruzee, Gandel, Lyons and Kupersmidt properties from RE-2 to RNC on community water and septic with 0.2 units per acre. Protect the existing forest and stream buffers through conservation easements on individual lots. (p.29, 30)	Steve Robins, Attorney for Washington Christian Academy:  1. The Master Plan should specifically recommend that the Gandel property be serviced by public sewer via WSSC grinder pump service to the west.  2. Remove statement in the Master Plan that the preferred option for the property is preservation in its entirety, if possible.  3. Play fields should count towards the open space requirements of the RNC Zone.  4. Master Plan should have language that acknowledges that an appropriate use of the property would be to house a private school.	1. The potential sewer service via grinder pump should be decided by the WSSC and the Council at the time of the subdivision and development of the property. Master Plan should not make project-specific recommendations for grinder pumps. Extending gravity sewer to this property through stream valleys is not recommended.  2. Staff still believes that the preferred option for the Gandel property is preservation in its entirety. Staff recommends preserving a major portion of the property in forest. If possible, preserve the entire property through transfer of density or purchase as off-set for other projects.  3. Rezoning the property from RE-2 to RC instead of RNC as recommended in the Draft Plan, would eliminate the issue of Rural Open Space requirement for this property.  4. Master plans have a 20-year horizon and therefore should not

			make project-specific
			recommendations for any site.
			1. Modify the Draft Plan
			recommendation to rezone the property to RC on septic with a
			maximum of 0.2 units per acre.
			-
			2. Recommend property for housing on septic or an
			institutional use with low
			imperviousness.
7	Kupersmidt Property:	Ken Lyons for Kupersmidt:	Providing sewer service to the Kupersmidt property would be
	1.Rezone Bruzee, Gandel, Lyons and Kupersmidt	•	contrary to the Master Plan's policy of
	properties from RE-2 to	Kupersmidt property should be sewered.	no new sewer mains in the stream
	RNC on community water		valleys. Kupersmidt is not serviceable from existing sewer lines and
	and septic with 0.2 units per acre. Protect the		therefore should not be included in the
	existing forest and stream		sewer envelope.
	buffers through conservation easements		Retain the Draft Plan
	on individual lots. (p. 29,		recommendations for the
	30)	·	Kupersmidt property.
8	Rezone all existing LDRC	SEROCA:	LDRC exists only in the Southeast Quadrant of Olney. Plan
	properties to RNC on community water and	This recommendation is unnecessary. Only one	recommendation would delete this
	sewer with 0.2 units per	property left to be	zone without impacting the land use
	acre. Delete the current	developed under LDRC and should retain the	on any of the subject properties. The undeveloped property in question
	LDRC Zone from the Zoning Ordinance. (p. 24,	LDRC zoning for potential	The Kimble Propertyis
	Public Hearing Draft)	future development	recommended for Park acquisition.
			Retain Draft Plan recommendation to rezone all LDRC properties to
			RNC with a maximum of 0.2 units
			per acre.
9	Environmental concerns	Delores Milmoe for Audubon Naturalist	With the exception of the Hyde     property, the ground water recharge
	in the Southeast Quadrant.	Society, Ann Wiley,	protection areas shown on the map
		others:	submitted with Delores Milmoe's
		Ground Water	testimony are either already developed or not recommended for
		Recharge.	sewer service in the draft plan.
		2. Ten percent	2. The recommended zoning would
		imperviousness limitation.	result in residential development with
			generally less than 9 percent

	imperviousness, making the proposed ten percent limit unnecessary. Total imperviousness in the Batchellors Forest Tributary will increase from approximately 9.5 percent to 11.5 percent under the existing zoning or the proposed RNC Zone at the recommended densities.
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#### SECTION 8: OPTION 4

Modified Staff Recommendation (0.33 for all, except Gandel w/WCA on RC) Draft December 31, 2003

Α	В		D		
#	Property	Acreage			Comments
				Yield	
	16		40	DNC	2-10-00
	Sewered pro		10 acr		The state of the s
1	Caseyl	17.2	100		Recommended for park acquisition
2	Casey II	75.40			5 units transferred from Casey I
3	Hyde	49.70			9 units from GCHS site under current RC
4	NWI	104.60		34	
5	Pachulskja	10.20		3	
6	Polinger	176.00		58	
7	Sub-Total	433.10		149	
8	Sewered pro	operties <	10 acr	es RF-2	2 sewered at 0.33
	Applegate	6.63		2	
	Brownley	9.67		3	
	Campbell	7.50		2	
	Koenig	7.20		2	
	Kozorski	6.98		2	
	Little	6.89		2	
	Mckeever	5.60		1	
	Miller	7.25		2	
	Weidner	7.20	-	2	
	Sub-Total	64.92		18	
		rties on se	eptic	RE-2 at	0.33 (except Gandel w/WCA on RC)
20	Barnes	8.00		2	
21		6.00		1	
	Bruzee	24.00		7	
	Cronin	16.00		5	
	Danshes	38.60		12	
25	Dodge	26.14		8	
26	Doherty	15.00		4	
	Flannery	5.70		1	
28	Gandel	60.00		WCA	WCA to replace 12 units under RC
29	Graefe	10.36		3	Recommended for park acquisition
30	Hanks	10.70		3	
31	Johnson	6.17		2	
32	Kimble	16.48			Recommended for park acquisition
	Kuperschmid	45.11		14	
33		8.94		2	
	Lyons	0.941			
34	Lyons Sub Total	297.20		69	ANDRAK: BREDINE BENING BENING SAR SAR DARD

Note: Option 4 assumes GCHS on Hyde west, master plan alignment of ICC, parts of Georgia Avenue Busway, and MD 28 widening D:\Olney\SEQ Option 4 Modified Staff Recommendation