



**MONTGOMERY COUNTY PLANNING DEPARTMENT**  
THE MARYLAND NATIONAL CAPITAL PARK AND PLANNING COMMISSION

**Item #**  
**MCPB 10-25-07**

**MEMORANDUM**

DATE: October 12, 2007  
TO: Montgomery County Planning Board  
VIA: Rose Krasnow, Chief *RK*  
Development Review Division  
FROM: Robert A. Kronenberg, Supervisor *RAK*  
Development Review Division  
(301) 495-2187



REVIEW TYPE: **Site Plan Review**  
CASE #: **820060120**  
PROJECT NAME: **Piedmont Crossing (Phase I)**

APPLYING FOR: 62 one-family dwelling units, including 12.5% MPDUs, on 66.09 acres

REVIEW BASIS: Div. 59-D-3 of the Montgomery County Zoning Ordinance

ZONE: R-90

LOCATION: Located on Amity Drive, approximately 250 feet west of the intersection with Bounding Bend Court

MASTER PLAN: Shady Grove Master Plan  
APPLICANT: Toll Brothers, Inc.  
ENGINEER: Dewberry and Davis  
FILING DATE: September 8, 2005  
HEARING DATE: October 25, 2007

The following staff report is for Phase I of the overall site for Piedmont Crossing (formerly Casey Property at Mill Creek). The Planning Board public hearing for this application is scheduled for October 25, 2007. Staff recommends approval of the plan with conditions as delineated in the report.

## **Summary**

### Background

The Piedmont Crossing site, formerly known as the Casey Property at Mill Creek, is a 66-acre site adjacent to the Town of Washington Grove and in the Shady Grove Planning Area. The preliminary plan was approved for 184 residential lots in three phases. The subject application is Phase I of the three-phase development. Major concerns addressed during the preliminary plan review included the road connection from existing Amity Drive through the subject site, density and compatibility with surrounding subdivisions, transportation issues involving traffic calming, the reservation/dedication of a future elementary school site, pedestrian facilities and environmental impacts.

### Proposal

The Applicant proposes to develop the entire site in three phases, starting with the primary entrance into the site from Amity Drive and ending with the phase to the south that will eventually connect with Shady Grove Road and Crabbs Branch Way. The Applicant is proposing 62 residential dwelling units of which approximately 70 percent will be one-family detached units. The plan includes community wide facilities, such as a local park on the south side of Amity Drive.

### Issues

Issues addressed during the site plan review included reservation of the elementary school site in Phase II, which has been eliminated from the overall site, traffic calming measures within the Amity Drive extended right-of-way, a modification in the number of residential units along the northern boundary and, with respect to the stormwater management facility, trail connections and the impacts to the existing environmental features. Staff and residents of the Town of Washington Grove worked with the Applicant to minimize impacts to the environmental features, provide for traffic calming measures on Amity Drive and address compatibility issues along the northern boundary.

### Community Outreach

The Town of Washington Grove and Mill Creek South residents have been actively involved with this proposed development since 2001. Staff and the Applicant have held meetings with the Town and other interested parties on numerous occasions. The primary issues brought to the attention of Staff and the Applicant include the need for buffer planting adjacent to Ridge Road, impacts to the wetlands and significant environmental features, density of the site as it relates to the ICC and potential impacts of the adjacent water wells associated with this development.

**STAFF RECOMMENDATION:** Approval of 61 dwelling units (42 one-family detached, 20 townhouses), including 12.5% Moderately Priced Dwelling Units (MPDUs), on 66.09 acres. All site development elements as shown on the site and landscape plans stamped by the M-NCPPC on April 30 and May 1, 2007 shall be required except as modified by the following conditions:

1. Preliminary Plan Conformance

The proposed development shall comply with the conditions of approval for Preliminary Plan 120020220 as listed in the Planning Board opinion dated July 11, 2005[Attachment A].

2. Site Design

- a. Remove the retaining wall from the Legacy Open Space site adjacent to lot 11 in Block A.
- b. Remove one one-family detached unit east of Street A, reducing the total number from five units to four units, in order to increase compatibility and consistency with the approved preliminary plan.
- c. Provide a water line stub to the northern property line to allow for future hookups to parcels along Ridge Road that are currently served by private wells in the event that the individual wells fail or are contaminated during or after construction.

3. Landscaping

- a. Provide street trees at a minimum spacing of 40 feet on center and a maximum spacing of 50 feet on center, except where physical site improvements do not allow for the spacing. Any deviation from the minimum standards need to be approved in writing by DPS, DPWT and M-NCPPC, if the spacing exceeds the minimum standards due to physical site improvements.
- b. Provide a 15-foot-wide planted buffer between the property line and Ridge Road, if acceptable to the Town of Washington Grove. The Applicant, Staff and the Town of Washington Grove shall review and approve the planting plan. The plant material shall include a mix of evergreen and deciduous trees and shrubs and shall be native, wherever possible.
- c. Planting associated with the Legacy Open Space site shall be reviewed by M-NCPPC Park Planning and Stewardship

4. Pedestrian Circulation

- a. Provide an 8-foot-wide hard surface trail connection from the southwest side of Brown Street to future Amity Drive.
- b. Provide an 8-foot-wide bikeway on the north side of Amity Drive.

5. Recreation Facilities

- a. The Applicant shall specify the square footage requirements for all of the applicable proposed recreational elements and demonstrate that each element is in conformance with the approved M-NCPPC Recreation Guidelines.
- b. The Applicant shall provide the following recreation facilities: (10) picnic/sitting areas, (1) tot lot, (1) multi-age play area, (1) half multi-purpose court II, (1) play lot, natural area and a pedestrian system.
- c. Remove the credit for the off-site facilities since the demand points are satisfied on-site.

6. M-NCPPC Park Facility

The applicant shall comply with the following conditions of approval from M-NCPPC-Park Planning and Stewardship in the memorandum dated August 30, 2007 [Attachment B]:

- a. Dedication of all designated park open space areas to M-NCPPC, including the approximately 0.9 acre neighborhood park site on the south side of the temporary terminus of Amity Drive, the stream valley areas that lie between the developed portions of the development including the buffers, wetlands and sufficient upland area to allow for construction of natural surface trails, and the approximately 12 acre Legacy Open Space Natural Area. The areas are identified on the Site Plan as Parcel B, Blocks A&C; Parcel C, Block C; Parcel E, Block A and Parcel F, Block A. Dedicated land to be free of trash and unnatural debris with the boundaries adequately marked and signed to delineate between parkland and private properties. Location and design of boundary markers and signs to be approved by M-NCPPC Department of Parks ("Parks") staff. Land for Dedication to be conveyed by time of record plat, except the Legacy Open Space Natural Area that has already been transferred by Applicant to M-NCPPC pursuant to Preliminary Plan Conditions of Approval.
- b. Applicant to construct on the neighborhood park site the following recreation facilities:
- i. Multi-Age Playground with minimum size of 10,000 square feet and maximum grade of 2%.
  - ii. Adequately sized Picnic Area with shelters and tables
  - iii. Basketball/Multipurpose Court sized as acceptable to M-NCPPC Parks staff.
  - iv. Neighborhood park amenities details to include:
    - 1) Plan Submittals - All plans submitted for park permit shall comply with The Maryland-National Capital Park and Planning Commission (M-NCPPC) design standards for park facilities, including all details and technical specifications.
    - 2) Playground Equipment- All playground equipment supplied for this park shall comply with the M-NCPPC specifications.
    - 3) Playground Safety Sign - Remove the age appropriate safety signs in the playground area as requested by the M-NCPPC legal department.
    - 4) Safety Surfacing Wood Carpet - Replace the 8-inch depth of wood fiber with a 12-inch minimum compacted depth and provide a drainage system under the wood fiber.
    - 5) Adaptative Swing Seats - Replace (2) of the tot swings on the Site Plan with adaptive swing seats with coated chains which will accommodate a 3 ½-inch outside diameter top rail design.
    - 6) Accessible Playground Transfer Platform - Provide a transfer station for the 5-12 age play equipment and label its location on applicable plans.
    - 7) Benches with backs/armrests - Replace the four 6-foot length Tuffclad benches on the Plan with four 6-foot benches with backs and armrests (such as the Gametime Sedona Series or equal). Armrests on benches must meet the Americans with Disabilities Act (ADA) proposed amended standards. Also, provide one additional 6-foot bench with back and armrests adjacent to the tot swings to accommodate seating needs for the swing bay area. Rotate the bench (located in the SW corner) in the 5-12 age group play area so that all play equipment can be viewed.
    - 8) Zip Slide/Deck - Replace the single zip slide on the Plan with a double zip slide (2-5 age equipment) to accommodate more users and provide an

adequate size deck to accommodate the double slide width opening requirements.

- 9) Timber Edging/Walls- Replace the 24-inch length rebar on the Plan with 30-inch length rebar, countersink the rebar and place wood plugs with exterior grade glue.
  - 10) Sidewalk Location - Relocate the proposed sidewalk to occur adjacent to the proposed parking near the playground.
  - 11) Retaining Wall Height - Reduce the proposed 4-foot height retaining wall to 30-inch maximum height to avoid the need to provide railings and to enhance playground safety.
  - 12) Playground Slopes - Regrade the park playground to provide 2% maximum slopes to reduce the proposed 30-foot length by 8-foot high slopes currently proposed 3:1 and 4:1 grading, the multi-purpose court shall remain at the proposed 1% maximum slope with a north-south orientation.
  - 13) Concrete Picnic Pad - Provide a concrete pad (30-foot x 40-foot minimum) for the proposed (20-foot x 30-foot) picnic pavilion.
  - 14) Accessible Route- Reduce the proposed 8% sidewalk ramp connections within the park to a 5% maximum slope to meet ADA sidewalk standards, if possible.
  - 15) Tree Species - Replace the proposed Aristocrat Pear trees with a mix of tree species: October Glory Red Maple, Yoshino Cherry, and Little Leaf Linden. Provide 4 additional shade trees at 2 ½" - 3" caliper for shade along the south side of the swing set area. All trees shall be located a minimum of 20 feet from the playground edging. Provide deer protection measures for all trees per standards and specifications.
  - 16) Basketball Court - The proposed ½ basketball court shall be color coated as specified by M-NCPPC Parks staff.
- c. Adequate parking to be provided adjacent to the neighborhood park and sufficient access (including handicap access) to be provided from the parking to the park facilities. Parking and access to include:
- i. On-Street Parking - Delineate all Amity Drive on-street parking as requested by DPWT to identify shared parking for the park users.
  - ii. Crosswalks - Provide two striped crosswalks, at the intersection of Amity Drive and Street B, for egress from the proposed accessible ramps to the park; this will promote safe connections to the park.
  - iii. Sidewalk Location - Relocate the proposed sidewalk along Amity Drive to occur adjacent to the proposed parallel parking spaces for ease of pathway access.
  - iv. Ramps - Eliminate the proposed ramp shown at the northwest side of the Amity Drive and Street B intersection; this ramp serves no purpose since no connection is provided nor is it required.
- d. Natural surface trails to be provided by Applicant within the dedicated open space and sufficient access to the trail system from the communities adjacent to the parkland. Trail locations to be coordinated with and acceptable to M-NCPPC Parks staff and constructed to park standards and specifications. Trail amenities to include:



- i. Connections - Provide one connection from the park to the stream valley trail at Amity Drive.
  - ii. Natural Surface Trail Plan - Provide a natural surface trail plan that complies with all M-NCPPC design standards and technical specifications.
  - iii. Alignment - Align trail to avoid the historic quarry locations and any archaeological historical artifacts located on the property.
  - iv. Specimen Tree Locations - Delineate all specimen trees and locate trail a minimum of 10 feet away from specimen trees to protect tree roots.
  - e. Applicant to obtain a Park Permit for construction of any amenities on dedicated parkland. Minor modifications to the agreed construction of amenities made pursuant to the Park Permit process or as agreed by the parties may be made without the need to revise or amend the approved Site Plan.
7. Moderately Priced Dwelling Units (MPDUs)
- a. The proposed development shall provide 12.5 percent MPDUs of the total number of units proposed for Phase I on-site.
  - b. The MPDU agreement shall be executed prior to the release of any building permits for Phase I.
  - c. All of the required MPDUs shall be provided on-site.
8. Transportation
- The applicant shall comply with the following conditions of approval from M-NCPPC-Transportation Planning in the memorandum dated September 4, 2007 [Attachment B]:
- a. Phase I of the development must be limited to a maximum of 65 dwelling units.
  - b. The applicant must retain the transportation-related conditions of approval required to satisfy the APF approval for Preliminary Plan No. 120020220, unless modified by the recommendations below.
  - c. The applicant must enter into a Traffic Mitigation Agreement (TMAg) with the Planning Board and the Montgomery County Department of Public Works and Transportation (DPWT) to participate in the Greater Shady Grove Transportation Management Organization (TMO) and the Share-A-Ride District. The TMAg must be signed and executed by all parties prior to certification of the site plan.
  - d. The applicant must provide the shared use path connection between Brown Street in the Town of Washington Grove and the future Amity Drive.
  - e. The applicant must coordinate with the Maryland State Highway Administration (SHA) regarding the status of the proposed alternative technical concept for the Intercounty Connector prior to submitting a Phase II Site Plan.
  - f. The portion of Parcel C, Block C must be dedicated to M-NCPPC for public use.
9. Forest Conservation
- The applicant shall comply with the following conditions of approval from M-NCPPC-Environmental Planning in the memorandum dated October 9, 2007 [Attachment B]:
- a. Compliance with the conditions of approval of the final forest conservation plan.
  - b. Applicant to submit a tree save plan for the long-term protection of the 44" Black Tupelo.
  - c. Applicant in conjunction with MCDPS and MCDEP to explore ways to get increased water surface flow to the northern wetland bordered by Lots 12-16 and 20-27.
  - d. Applicant to submit a plan for annual wetland monitoring to cover pre-development evaluation and for a period of time out to 5-years beyond post-development completion. This plan to be submitted and approved prior to certified site plan.

- e. Applicant to construct a split-rail fence at the back of Lots 21-27 to delineate the edge of the forest saved area.
  - f. The Applicant shall place four lots (lots 12-15, block A) in reservation and shall be released only after a site specific geotechnical analysis indicates that adverse impacts to the upland drainage area does not negatively impact the groundwater recharge to the wetlands.
10. Stormwater Management  
The proposed development is subject to Stormwater Management Concept approval conditions dated January 8, 2007 unless amended and approved by the Montgomery County Department of Permitting Services [Attachment B].
11. Common Open Space Covenant  
Record plat of subdivision shall reference the Common Open Space Covenant recorded at Liber 28045 Folio 578 ("Covenant"). Applicant shall provide verification to M-NCPPC staff prior to issuance of the 43rd building permit (the same number used for completion of amenities) that Applicant's recorded Homeowners Association Documents incorporate by reference the Covenant.
12. Development Program  
Applicant shall construct the proposed development in accordance with a Development Program. A Development Program shall be reviewed and approved by M-NCPPC staff prior to approval of the certified site plan. The Development Program shall include a phasing schedule as follows:
- a. Street tree planting and the installation of street lights shall progress as street construction is completed, but no later than six months after completion of the units adjacent to those streets.
  - b. Community-wide pedestrian pathways and recreation facilities, including the M-NCPPC recreation facilities, on-site recreation facilities and trail connections, shall be completed prior to issuance of the 43rd building permit.
  - c. On-site landscaping and lighting associated with the units, recreation facilities and amenities shall be completed as construction of each unit or facility is completed, but no later than six months after completion of those facilities.
  - d. The buffer area on the north side of Street 'A' (adjacent to Ridge Road) shall be installed upon completion of Street 'A' and the stormwater management facility associated with the road, but no later than six months after completion of the road.
  - e. Provide the water line stub and associated easements
  - f. Clearing and grading shall correspond to the construction phasing, to minimize soil erosion.
  - g. Provide each section of the development with necessary roads.
  - h. Phasing of dedications, stormwater management, sediment/erosion control, recreation, forestation, community paths, trip mitigation and other features.
13. Clearing and Grading  
No clearing or grading prior to M-NCPPC approval of the certified site plan.
14. Certified Site Plan  
Prior to approval of the certified site plan, the following revisions shall be included and/or information provided, subject to staff review and approval:
- a. Development program, inspection schedule, site plan index, and site plan resolution.
  - b. Undisturbed stream buffers as shown on the site plan and forest conservation plan.

- c. Limits of disturbance.
- d. Methods and locations of tree protection.
- e. Forest Conservation easement areas.
- f. MPDU, TDR, and recreation facility calculations.
- g. Note stating the M-NCPPC staff must inspect tree-save areas and protection devices prior to clearing and grading.
- h. Details of the buffer planting plan for the 15-foot-wide buffer strip between the property line and Ridge Road.
- i. Provision of the water line stub.



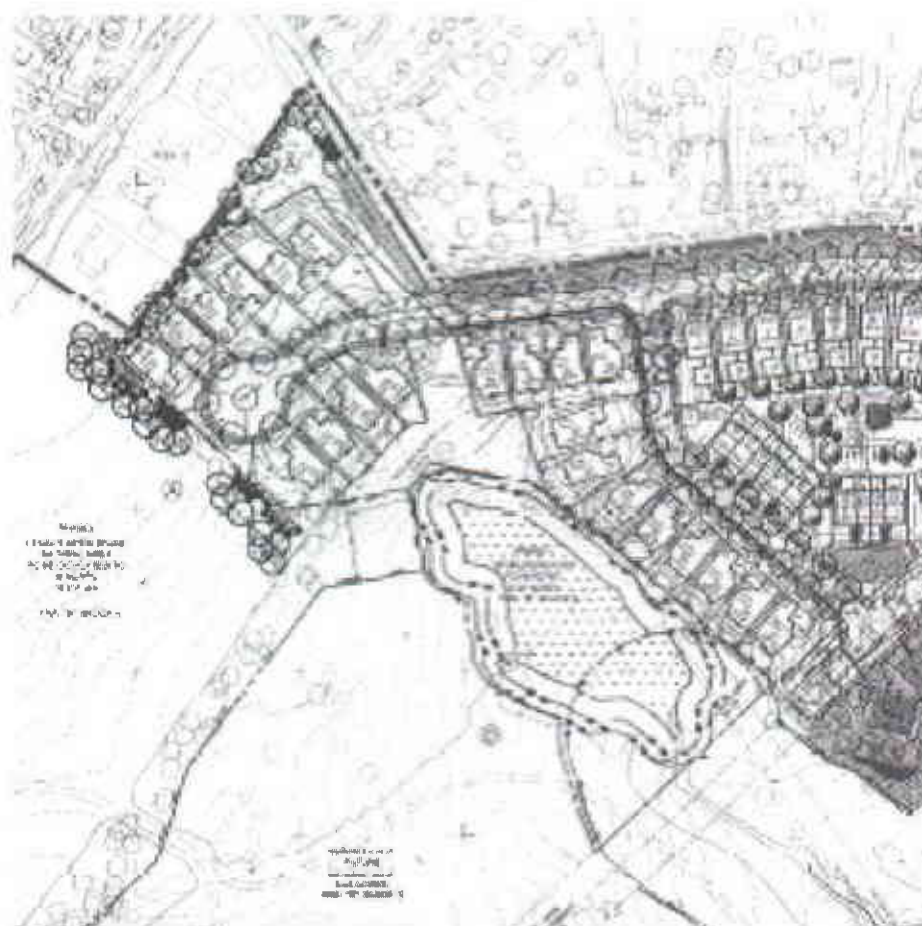
## SITE PLAN REVIEW ISSUES

### I. Environmental Impacts

During the review of this development, concerns have been raised over environmental impacts related to wetlands and potential impacts to wells.

There are three wetland areas associated with Phase One; Wetland North, Wetland East and Wetland South. Wetland North is located centrally on the northern portion of the site at the southern edge of development for Phase One behind proposed Lots 21 to 26, Block A. This 0.81-acre forested wetland gives rise to an intermittent channel that flows east-southeast across the site along the southern edge of Phase One joined by another spring to the east. Wetland East is a 0.11-acre forested wetland associated with this spring and is located adjacent to the future local park on the south side of future Amity Drive. Wetland South is a 0.31-acre forested wetland located in the southwest portion of the site just north of the future alignment of Amity Drive. This 0.31-acre area of Wetland South in Phase One is part of a larger 1.82-acre wetland that straddles Phases One, Two and Three.

The residents located in the lower Ridge Road section of Washington Grove are concerned about the water flow that fills and maintains the wells and the potential harm the proposed construction will have on their well water.



#### Applicant's Proposal (or Position)

The Applicant has analyzed the existing and proposed conditions of the wetland located on the northwest edge of Phase I development of Piedmont Crossing. Currently there is approximately 12 acres drain only to the wetland. After completion of the Phase I development (post construction) there will only be approximately 8 acres, including approximately 4 acres of the legacy open space site. The Phase I development adjacent to the wetland consists of single-family detached houses. The total rooftop area of the end units on the south side of the road (units 12 and 15) and a portion of interior units (units 13 and 14) will drain into either a dry well or a grass swale adjacent to the wetland. These houses will also have dry wells to drain the proposed roofs. In addition, the 4 acres of legacy open space will continue to drain toward the wetland. Accordingly, the approximate total drainage area to the wetland after development of the remainder of the site is approximately 8.3 acres.

Toll Brothers recognizes the importance of providing runoff to the existing wetland to assist with groundwater recharge. Even though the total drainage area to the wetland will be reduced, the runoff volume will remain basically the same due to development of a portion of the drainage areas with houses and lawns. Runoff from the impervious areas draining toward the wetland will be treated for water quality utilizing dry wells and a grass swale as required by Montgomery County standards.

A geotechnical report dated October 3, 2007 was prepared and submitted to M-NCPPC that outlines pre-development conditions and post-development impacts to the 0.81-acre northern wetland area. The report discusses surface water runoff, groundwater recharge, and post-development recharge.

The pre-development surface drainage area to the northern wetland is approximately 12-acres with about 0.8-acres of this being residential property. The post-development condition reduces this drainage area to 8.3-acres and increases the residential property to 1.9-acres. This results in an increase in surface water runoff from 2.75 acre-feet for pre-development conditions to 4.38 acre-feet for post-development conditions. More information about the report is included in the Environmental Planning memorandum.

The report concludes that the proposed development will not adversely impact the subject wetlands due to a reduction in the hydrologic cycle. This is due to the addition of a drywell recharge requirement associated with the homes that are immediately adjacent to the wetland area and to the proposed conveyance of surface water flows from Parcel A, Block A into the wetlands. This proposed conveyance is contingent upon MCDPS and MDE approval. The current SWM plan shows this runoff from Parcel A, Block A being directed into a drainage system and delivered to a SWM pond downstream of the northern wetland.

The GTA report proposes that the wetlands be monitored on an annual basis to evaluate the conditions of the wetlands. This monitoring would include an initial pre-development evaluation followed by subsequent annual evaluations. These evaluations would include site reconnaissance, observation and recording of landscapes, hydrology, plant species and soil characteristics.

### Community Position

The Town of Washington Grove has expressed concerns over the impacts to the wetlands at the base of the northern stream valley (Wetland North). The impacts relate to the loss of drainage into the existing wetland area and the effect that the proposed homes/lots in Block A will have on groundwater recharge. The community has recommended changes to the grading pattern in this area as well as alternative stormwater management practices. A copy of the residents' concerns is included in Attachment C.

### Staff Analysis/Position

Staff has met with the Applicant and their geotechnical consultant, DPS and members of the community to address drainage patterns to the wetlands from the proposed housing and road network.

Although the geotechnical report is comprehensive in nature, Staff acknowledges specific limitations of this document. First, there were no field studies conducted to determine the exact recharge factors for this particular site. The report relies on published data that is general in nature, and in some cases, the referenced sites are some distance removed from this area. Second, the report's conclusions rely on the implementation of the proposed drywells and other stormwater management elements. The concern is that the drywells will not be installed until the lots are developed. If the development is rough graded and the roads constructed, but the homes are not built for an extended period of time, then this may have potentially dire consequences on the overall health of the wetlands since the drywell recharge elements will not be constructed. Third, the report does not address the underlying geology or soil types, which may present particular problems for the long-term health of the wetland once construction begins. Lastly, the report suggests long term monitoring of the wetland area. Although a good idea, there are no parameters given that define this monitoring. There is no plan of action outlined within the methodology nor is there any responsible party identified who is to be held accountable for action should any adverse findings be discovered during the monitoring period.

Staff contacted DPS-Well and Septic who do not employ a hydro-geologist, an individual that would test results of the well water associated with construction. DPS summarized that water wells in the Piedmont of Maryland generally access water that is transmitted through the fractured bedrock that lies below the soil cover. Typical residential construction does not generally affect adjacent wells, largely because the earth moving activities tend to be confined to the shallow soil layers. DPS did evaluate the residents' wells and documented the depth, a shallow water stream and the existing casings.

Staff recommends that the Applicant shall place four lots (lots 12-15, block A) in reservation on the northwestern perimeter at the top of the wetland area. Lots would only be released after site specific geotechnical analysis indicates that adverse impacts to the upland drainage area do not negatively impact the groundwater recharge to the wetlands. Staff recommends documented monitoring of the pre-inspection through post-construction (up to 5 years) of the wetland areas. Additionally, Staff recommends that the Applicant coordinate with the adjacent residents fronting along Ridge Road and MCDEP to study the potential impacts to the wells. DPS has stated they will study the supply well completion reports as needed.

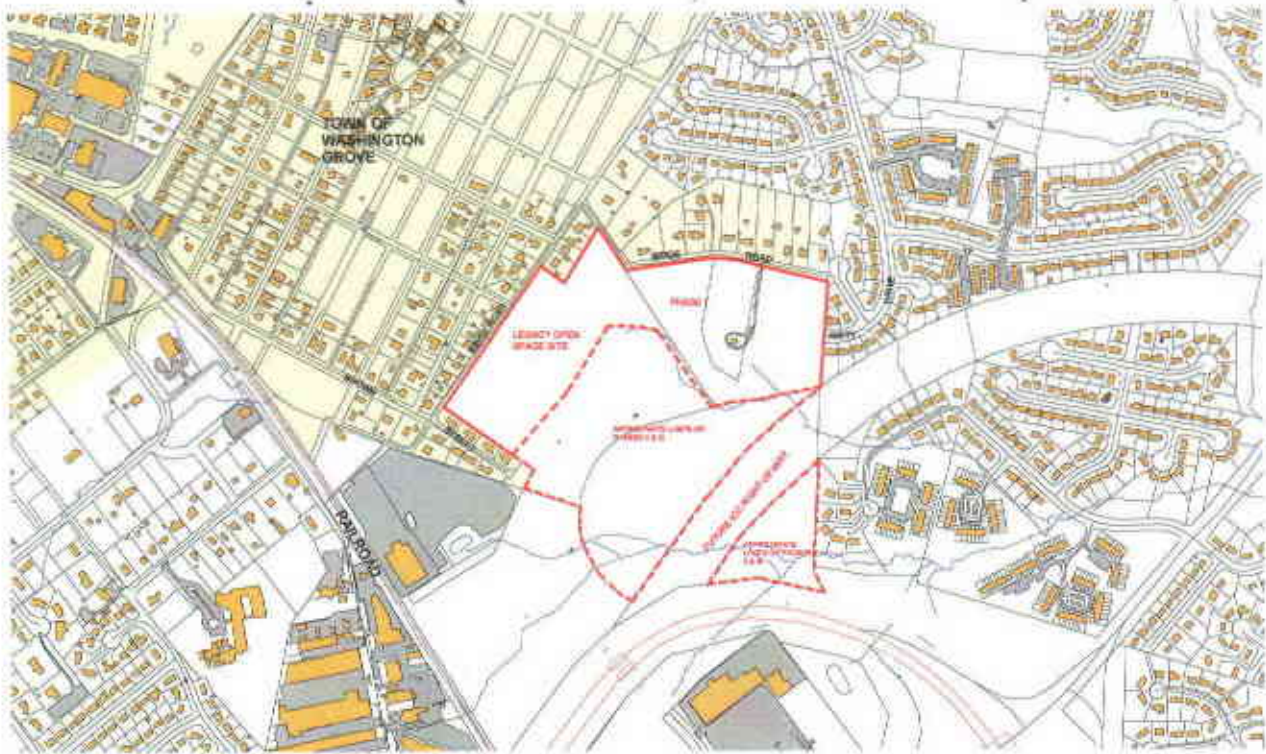


## PROJECT DESCRIPTION:

## Site Vicinity

The subject property is bounded to the west and north by Ridge Road and will include the future extension of Amity Drive and a portion of the Inter County Connector ("ICC"). The town of Washington Grove, a historic encampment, now containing one-family detached dwellings, is located directly to the north and west of the subject property. The I-370 ramp to Shady Grove forms the southern boundary, as well as the future ICC connection, which will bifurcate a triangular section of land near the ramp.

The CSX railroad tracks to the west of the site run north to south and form the western boundary of Washington Grove. Amity Drive traverses north to connect with Washington Grove Lane. The majority of the homes within this area are one-family detached homes and are zoned R-???. Mid-County Highway is also located to the north providing access to Shady Grove Middle School. A number of parks are located to the north including Mill Creek Stream Valley Park, located adjacent to the middle school, Woodward Park located within the Washington Grove town limits, and Maple Lake Park on the north side of Washington Grove Lane.



## PROJECT DESCRIPTION:

### Site Description

The 66.09-acre site is a three-phased development with Phase I bounded by existing Ridge Road to the north and west, and Amity Drive on the northeastern perimeter. Phase I includes the 11.78-acre Legacy Open Space site, also known as the “Historic Grove”, currently owned by the M-NCPPC and situated at the northern perimeter of the site.

The western boundary of the Phase I site is an extension of the Mill Creek tributary and associated stream valley buffer. Phase II, located to the west and south of the Legacy Open Space site, was being programmed for a future school site. However, the Board of Education decided in May of 2007 not to pursue dedication of the site. Phase III is located on the south side of future Amity Drive.

Phase I contains a total of 35.736 acres, including approximately 21.28 acres of park dedication, including the 11.78-acre legacy open space. The net site area for Phase I is 11.80 acres, located primarily on the north side of Amity Drive to the northern boundary near the Washington Grove town limits.

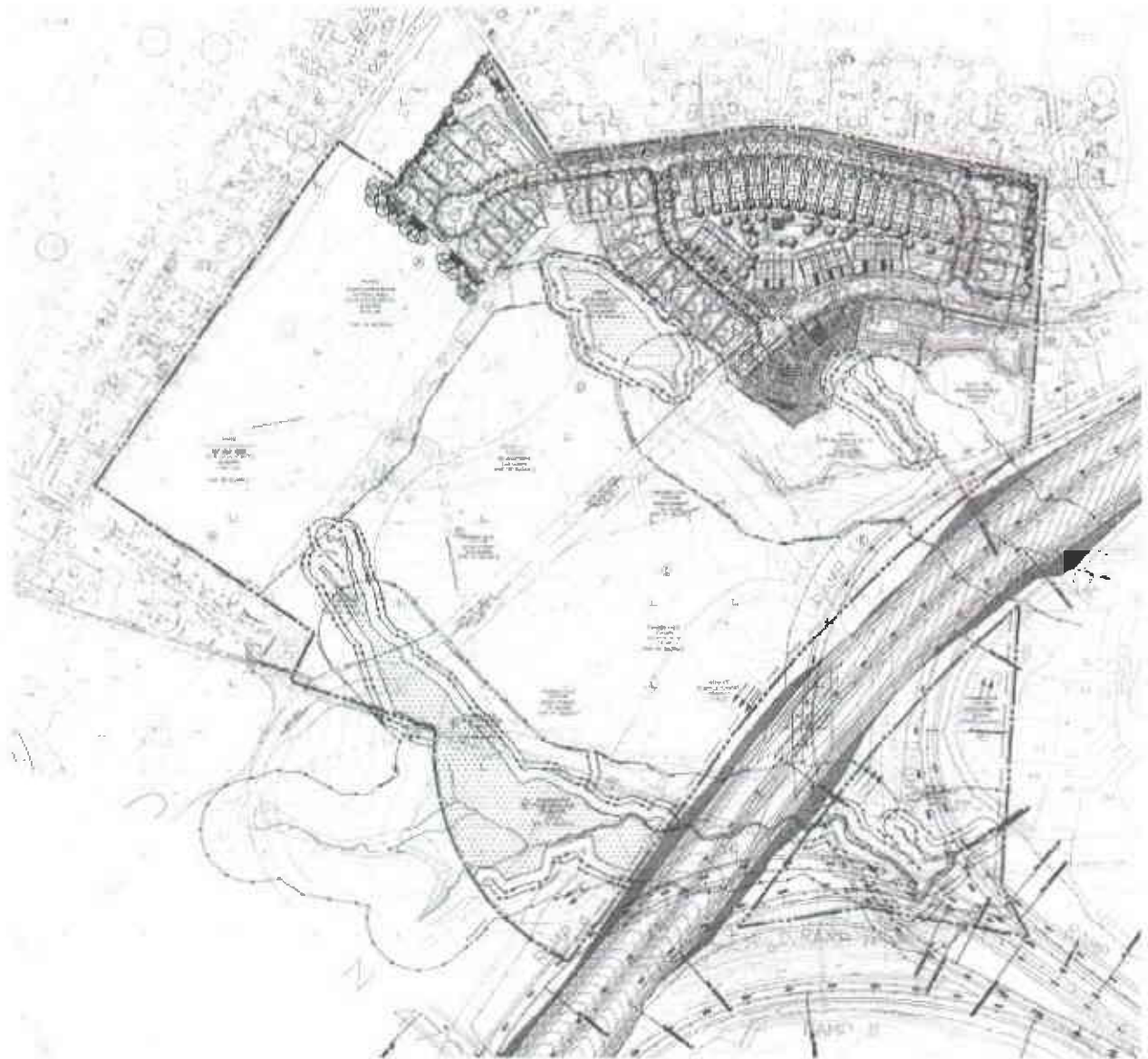




**PROJECT DESCRIPTION:** Proposal

The Piedmont Crossing plan is a multi-phased project with the subject area shown as Phase I. Phase I is situated primarily in the northern section of the overall site near the southern boundary of Washington Grove.

Amity Drive is the key vehicular access point for this phase and the future phases of the site. Amity Drive will serve as an extension of the existing road to Shady Grove Road, and is proposed to eventually connect with Crabbs Branch Road toward the south. Five-foot sidewalks are being provided along Amity Drive. Four-foot sidewalks are being provided along all the reduced width tertiary residential streets except where no houses front along them or for environmental reasons.



Compatibility of the proposed units to the south presents an opportunity to transition to the proposed higher density land uses associated with Casey 6 and 7 properties to the south near Shady Grove Road.

The Montgomery County Public Schools (MCPS) chose not to locate an elementary school site within the designated area proposed for Phase II. The M-NCPPC's Montgomery County Parks Department is considering acquiring this Phase II site for a local park with ball fields.

The Applicant is coordinating with the Town of Washington Grove and Staff to expand the buffer at the northern edge in order to provide additional screening for the properties north of Ridge Road.

**PROJECT DESCRIPTION:** Prior Approvals

Preliminary Plan

The Planning Board approved Preliminary Plan 120020220 for Casey Property at Mill Creek (now known as Piedmont Crossing) in December 2004 with 28 conditions of approval. The plans approved the development in three phases for a total of 184 residential lots that will cover 65.59 acres.

**ANALYSIS:** Conformance to Development Standards

PROJECT DATA TABLE (R-90 Zone)

Zoning Ordinance Development Standard	Permitted/ Required	Proposed for Approval
Gross Site Area (ac.):		
Phase I		35.74
Phase II and II		20.85
MSHA ICC Reservation		<u>9.510</u>
Total Site Area		66.09
Phase I Site Area:		
Gross Site Area		35.74
Less Street Dedication		2.66
Amity Drive 1.26 acres		
Street A 1.07 acres		
Street B 0.33 acres		
Less Park Dedication		
Pcl. B, Blk A		12.01
Pcl. E, Blk A		2.21
Pcl. F, Blk A		1.81
Pcl. B, Blk C		0.91
Pcl. C, Blk C		<u>4.34</u>
Net Site Area		11.80
Min. Tract Area (ac.):		35.74
Max. Density of Development (d.u./ac.)	4.39	1.73
	156 d.u.'s	62 d.u.'s
Number of Dwelling Units		
One-family detached	not specified	42
One-family attached (incl. MPDUs)	50% max./31 d.u.'s max	20
Total	65 per Preliminary Plan	62
Min. Lot Area (sf.):		
One-family detached	5,000	5,277
Townhouse	1,500	1,566

Zoning Ordinance Development Standard	Permitted/ Required	Proposed for Approval
<b>Min. Building Setbacks (ft.)</b>		
<u>One-family detached</u>		
from street	25	25
rear yard	20	20
side yard	not specified	5
<u>One-family attached (townhouse)</u>		
from street	25	25
rear yard	20	20
side yard	not specified	5 for end units
<u>Accessory Buildings</u>		
from street	60	25
rear yard	5	5
side yard	5	5
<b>Min. Lot Width at Street (ft.):</b>		
One-family detached	25	25
<b>Min. Green Area (sf.)</b>	2,000 sf/du (130,000 sf)	21,327 sf/du (1,386,250 sf)
<b>Max. Building Height (ft.):</b>		
One-family detached	3 stories/40 max	40
One-family detached	3 stories/40 max	40
Accessory Structure	2 stories/40 max	25
<b>Parking Spaces</b>		
Detached units	30	47
Attached units	30	30
Visitor		6
Total		83

### RECREATION CALCULATIONS

	Tots	Children	Teens	Adults	Seniors
<b>Demand Points</b>					
SFII (14)	1.82	3.36	3.50	14.84	1.54
SFIII (28)	3.92	5.32	6.44	35.56	3.64
TH (20)	3.40	4.40	3.60	25.80	1.80
<b>Total Required Points</b>	<b>9.14</b>	<b>13.08</b>	<b>13.54</b>	<b>76.20</b>	<b>6.98</b>
<b>Supply Points</b>					
Tot lot (1)	9.0	2.0	0.0	4.0	1.0
Half Multi-purpose court II	2.0	5.0	4.0	5.0	1.0
Play lot (1)	0.0	9.0	3.0	4.0	1.0
Multi-age Play Area (1)	9.00	11.0	3.0	7.0	1.0
Picnic/sitting (10)	10.0	10.0	15.0	50.0	20.0
Pedestrian System	0.91	1.31	1.35	7.62	0.70
Natural Area	0.0	0.65	1.35	7.62	0.35
<b>Total Supply Points</b>	<b>30.91</b>	<b>38.96</b>	<b>27.71</b>	<b>85.24</b>	<b>25.05</b>
<b>% of demand met on-site</b>	<b>338</b>	<b>298</b>	<b>205</b>	<b>112</b>	<b>359</b>

### **ANALYSIS:**

#### Conformance to Master Plan

The property is located within the Approved and Adopted (2006) Shady Grove Sector Plan and is in conformance with the recommendations for zoning and land use for this site. The Sector Plan recommends the following:

- Allow an elementary school site as an alternative location to the school site on Jeremiah Park if the site is acquired by private funds. If a school site is located here, do not place the school on any portion of the Legacy Open Space site.
- Provide Legacy Open Space to protect the existing meadow adjacent to the Town of Washington Grove.
- Provision of a neighborhood park for passive recreation and achieve a bike trail from Amity Drive to Washington Grove.

The site plan provides for a local neighborhood park with a multi-age play area on the south side of Amity Drive extended that is integrated with the stormwater management facility for the ICC. A shared use path (Class I) is provided along the north side of Amity Drive to facilitate pedestrian and bicycle use and integration with the surrounding developments.

#### Noise

The Applicant submitted a noise analysis on May 31, 2007 which incorporated the Maryland Department of Transportation State Highway Administration's Technical Noise Analysis dated November 30, 2004 and the revised report dated January 2006 for the ICC. The results of the analysis indicates that the Piedmont Crossing site will be located outside the future 65 dBA L<sub>dn</sub> ground noise impact zone and that the future unmitigated upper noise contours will not be impacting the proposed homes on the Piedmont Crossing site. Therefore, no special exterior or interior noise mitigation is warranted.



### Legacy Open Space

Approximately 12 acres have been dedicated to the M-NCPPC for the Legacy Open Space site.

### Status of the Intercounty Connector

Contract "A" for the ICC has been awarded to a design-build team for construction of the Intercounty Connector (MD 200) as a six-lane freeway between I-270/I-370 to Georgia Avenue (MD 97). The design-builder has proposed an alternative technical concept that would lower the profile of the I-370 interchange by shifting one ramp from a flyover ramp to a "flyunder" ramp. This concept, akin to the trumpet interchange envisioned in the 1997 Draft Environmental Impact Statement, would require additional right-of-way along its northern limits of disturbance line including nearly all of Phase III and portions of Phase II. As currently proposed, the extension of Amity Drive from its terminus at Piedmont Crossing Phase I to Crabbs Branch Way extended may have to be shifted to the north. Staff is reviewing the alternative technical concept for the interchange with SHA and other state and federal agencies. Staff finds that this alternative technical concept would adversely affect the development potential available for Phase II and Phase III, but does not adversely affect the feasibility of the Phase I development.

## **FINDINGS: For Site Plan Review**

1. *The site plan conforms to all non-illustrative elements of a development plan or diagrammatic plan, and all binding elements of a schematic development plan, certified by the Hearing Examiner under Section 59-D-1.64, or is consistent with an approved project plan for the optional method of development, if required, unless the Planning Board expressly modifies any element of the project plan.*

An approved development plan or a project plan is not required for the subject development.

2. *The site plan meets all of the requirements of the zone in which it is located, and where applicable conforms to an urban renewal plan approved under Chapter 56.*

The Site Plan meets all of the requirements of the R-90 zone as demonstrated in the Project Data Table on page 17.

3. *The locations of buildings and structures, open spaces, landscaping, recreation facilities, and pedestrian and vehicular circulation systems are adequate, safe, and efficient.*

- a. Locations of buildings and structures

The locations of buildings and structures on the subject property are safe, adequate and efficient.

The proposed units on the northern portion of the property face Ridge Road, enhancing the character of the existing neighborhood and street frontage. The northwestern quadrant respects the back-to-back relationship with the adjacent homes and has been sited close to the road to avoid grading conflicts and issues with detached garages.

The units along future Amity Drive resemble a neo-traditional neighborhood with an emphasis on the fronts of the units, with detached garages in the rear of the units and accessed via a private alley.

Retaining walls are placed in areas at the rear of the units backing to the stream valley buffers and within the park site to accommodate grading.

- b. Open Spaces

The open space provided on the subject Phase I of the property is safe, adequate and efficient.

The Phase I plan proposes approximately 31.82 acres of open space, or 89 percent of the property. The open space includes approximately 11.78 acres of Legacy Open Space property, also known as the "Historic Grove", over 21 acres of

parkland dedication for active and passive use, and area between units and along the perimeter of the property.

c. Landscaping and Lighting

Landscaping and lighting is safe, adequate and efficient.

The proposed landscaping on the site consists of shade trees within the county right-of-way with spacing approximately 50 feet on-center and a mix of shade, evergreen and flowering trees along the perimeter of the property. The northern perimeter of the site, adjacent to Ridge Road, contains a mix of native and non-native deciduous and evergreen trees, shrubs and groundcover that provides a buffer to the existing neighborhood. The applicant is supplementing the buffer on site with an additional 15 feet of native plantings on the area of property owned by Washington Grove. The additional planting area requires the approval of the town and will require a collective look at the type of plant material selected for this area by the Town of Washington Grove, Staff and the Applicant. The selected materials will also be planted in a manner to preserve existing trees along the road edge.

The recreation areas include shade trees and evergreen trees to provide a distinction between the public and private areas and a boundary for the facilities.

The lighting consists of street lights within the public rights-of-way. No additional lighting is provided in the private alleys.

d. Recreation Facilities

The overall recreation facilities have been incorporated into the park to include a multi-age play area, picnic shelter and sports courts. In addition to the programmed facilities, the development will provide for natural features such as the stream valleys with integrated trails. Recreation facilities are based upon a calculation of the number and type of unit provided within the development, as well as community facilities offered by the Applicant.

The site plan is in compliance with the M-NCPPC Recreation Guidelines and the facilities are safe adequate and efficient.

The Piedmont Crossing project will be providing significant open space and some needed recreation amenities, both of which will be a significant benefit to the communities in this area.

e. Pedestrian and Vehicular Circulation Systems

The proposed access to the site and the internal pedestrian circulation and walkways, as shown on the plan and with the implementation of recommended

conditions, will provide for a safe and adequate movement of vehicular, pedestrian and bicycle traffic.

Vehicular access to the site is provided from the existing terminus of Amity Drive that connects directly to Washington Grove Lane and to Shady Grove Road via Epsilon Drive. The Phase I development is located on the north side of the master-planned Intercounty Connector right-of-way, west of the existing terminus of Amity Drive. A portion of the Amity Drive Extended alignment will be determined as part of the Phase II Site Plan. The portion of Parcel C, Block C to be dedicated to M-NCPPC as part of the Phase I Site Plan should be dedicated to public use, as opposed to parkland, to retain flexibility for roadway and shared use path alignment decisions that will occur at the time of the Phase II Site Plan review.

The proposed vehicular circulation from Amity Drive consists of two access points on the northern portion of Amity Drive.

Besides the shared-use path along Amity Drive Extended, a shared use path should connect Brown Street in the Town of Washington Grove to the future Amity Drive Extended. This connection, approximately 150 feet in length, is recommended in the Shady Grove Sector Plan and shown on the site plan as an Alternate 8' Bikeway. The southern terminus of the shared use path will be determined when the Amity Drive Extended alignment is established as part of the Phase II Site Plan.

An eight-foot-wide shared use path (Class I bikeway) is provided on the north side of Amity Drive and will eventually connect with Crabbs Branch Way to the south.

4. *Each structure and use is compatible with other uses and other site plans, and with existing and proposed adjacent development.*

The proposed structures and uses are compatible with other uses and site plans and adjacent development.

The proposed lots directly south of Ridge Road are compatible with respect to the respective zoning, height of proposed buildings in relation to the existing structures and the orientation of the units to the street (front to front). The proposed units are separated from the boundary by approximately 55 feet, which is comparable to the existing structures. The proposed public road that parallels Ridge Road adds to the separation to reinforce compatibility along the northern boundary. The zoning of the subject property, R-90, allows 5,000 square foot lots, and are approximately 50 feet wide by 120 feet deep. The properties across Ridge Road are zoned at a lower density allowing larger lots. The existing properties are approximately 95 feet wide by 250 feet deep. The separation from the boundary and addition of the landscape buffer provide for a greater compatibility.

The architecture presented by the applicant represents a vernacular style of the 1930's era, with an emphasis on the front façade of the units to complement the varying styles evident in Washington Grove. The detached garages also place an emphasis on pedestrian circulation and connectivity, which is a strong characteristic of the town of Washington Grove, with an emphasis on interconnected pedestrian alleys.

5. *The site plan meets all applicable requirements of Chapter 22A regarding forest conservation, Chapter 19 regarding water resource protection, and any other applicable law.*

A Natural Resource Inventory/Forest Stand Delineation (NRI/FSD) was submitted for the entire 66.07-acre site and approved on January 4, 2005. The Planning Board approved the preliminary forest conservation plan for the entire site on July 11, 2005. There are three forested wetlands on this project called Wetland North, Wetland East and Wetland South. There are also two streams associated with these wetlands.

There are environmental buffers associated with each stream and wetland in this phase. These areas will be protected by Category I forest conservation easements. The environmental buffers around all wetlands are a minimum of 40-feet which is 15-feet greater than the minimum wetland buffer required by the Maryland Department of Environment. For intermittent and perennial streams, all stream buffers are a minimum of 125-feet from the top of the stream bank. Both the wetland and stream valley buffers are consistent with the environmental buffers recommended in the Planning Board's Guidelines for Environmental Management for Use IV watersheds.

There are 17-acres of existing forest in Phase One. Of this total 0.62-acres of forest are included in the Maryland State Highway Administration reservation for the Inter County Connector (ICC). This leaves a net total of 16.38-acres of forest on-site.

The proposed stormwater management concept consists of (1) on-site channel protection measures via construction of a detention pond; (2) on-site water quality control via construction of two Montgomery County Sand Filters (MCSF's), biofiltration, infiltration, and nonstructural measures; and onsite recharge via infiltration, storage below the proposed sand filters, and nonstructural measures.

## ATTACHMENTS

- A. Planning Board opinion for Preliminary Plan 120020220.
- B. Memoranda from agencies
- C. Correspondence from surrounding community and citizens
- D. Correspondence from the Applicant



## **ATTACHMENT A**

Planning Board Opinion for Preliminary Plan 120020220

**Date Mailed:** JUL 11 2005**Action:** Approved Staff Recommendation with modifications.**Motion** of Commissioner Perdue, seconded by Commissioner Bryant, with a vote of 5 - 0.

Chairman Berlage and Commissioners Perdue, Bryant, Wellington and Robinson voting in favor.

**MONTGOMERY COUNTY PLANNING BOARD  
OPINION**

Preliminary Plan 1-02022

NAME OF PLAN: Casey Property at Mill Creek

**I. Introduction**

The date of this written opinion is JUL 11 2005 (which is the date that this opinion is mailed to all parties of record). Any party authorized by law to take an administrative appeal must initiate such an appeal within thirty days of the date of this written opinion, consistent with the procedural rules for the judicial review of administrative agency decisions in Circuit Court (Rule 7-203, Maryland Rules of Court - State).

On September 14, 2001, Oxbridge Development at Washington Grove, L.C. ("Applicant") submitted an application for the approval of a preliminary plan of subdivision of property in the R-90 (MPDU Option) zone.

The application proposed to create Preliminary Plan approval of one hundred eighty four (184) lots, ninety two (92) one family detached and ninety two (92) one family attached units including twenty three (23) Moderately Priced Dwelling Units on 65.59 acres of land ("Subject Property") located at the southern terminus of Amity Drive, south of Ridge Road, in the Shady Grove Sector Plan. Ridge Road and the Town of Washington Grove ("Town") bound the site to the north. Amity Drive terminates at the eastern border of the site. A number of homes on Bounding Bend Court directly abut the

eastern property line. Existing homes along Brown Street frame the western border of the property along with undeveloped industrial-zoned property. The southern portions of the site have a master plan ICC right-of-way traversing through it. The northwestern and central portions of the site are idle agricultural lands. The northeastern portion and the extreme southern portion of the site are forested. Two stream valley tributaries to Mill Creek cross the site and are for the most part forested. Numerous trees of specimen size and other significant trees are found on the property both within and out of the stream valleys.

The application was designated Preliminary Plan 1-02022. The Montgomery County Planning Board considered the application during a public hearing that began on December 16, 2004 and was continued on December 23, 2004. At the public hearing, the Montgomery County Planning Board heard testimony and received evidence submitted in the record on the application.<sup>1</sup>

The record for this application ("Record") closed at the conclusion of the December 23 public hearing, upon the taking of an action by the Planning Board. The Record includes: the information on the Preliminary Plan Application Form; the Planning Board staff-generated minutes of the Subdivision Review Committee meeting(s) on the application; all correspondence and any other written or graphic information concerning the application received by the Planning Board or its staff following submission of the

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<sup>1</sup> Staff noted on the record that the plan originally had been noticed for Phase I, only, however the notice was revised and re-sent, advising all parties that the Board would consider all three Phases as part of this public hearing. Additionally, legal counsel to the Town of Washington Grove and legal counsel to the Greater Shady Grove Civil Alliance ("Opposition Counsel") asked to cross-examine staff and other witnesses as they testified. The Chairman advised Opposition Counsel they could cross-examine witnesses present in the room during their allotted speaking time. Opposition Counsel noted their objections for the record, including the difficulty of cross-examining witnesses and making a presentation within their allotted time limits. The Chairman noted their objections, and confirmed on the record that this hearing was conducted in accordance with the Board's Rules of Procedure and their consistent application at public hearings. Vice-Chair Perdue noted that unlimited written testimony and/or requests for answers to questions can be submitted in record, thus Opposition Counsel has the ability to present all of its evidence in written form, regardless of the time limits on presenting spoken evidence. Opposition Counsel did cross-examine a MCPS representative during the course of the hearing.

Opposition Counsel also asked to have witnesses sworn in. The Chairman likewise denied this request, based on the Board's Rules of Procedure (which do not require witnesses to be sworn in) and on agency practice. The Chairman noted Opposition Counsel's objections in the record.

application and prior to the Board's action at the conclusion of the public hearing from (among many others) the Applicant, the Town of Washington Grove and its legal counsel, the National Trust for Historic Preservation and Montgomery County's Historic Preservation Commission, public agencies, and private individuals or entities; all correspondence and any other written or graphic information issued by Planning Board staff concerning the application, prior to the Board's action following the public hearing; all evidence, including written and oral testimony and any graphic exhibits, presented to the Planning Board at the public hearing.

## II. Project Description

The application proposes a total of 184 units divided between 92 attached and 92 detached residential lots. The plan utilizes the MPDU option provision under Section 59-C-1.6 of the Montgomery County Zoning Ordinance. Although this option permits an increase in density above the total number of dwelling units permitted by the standard method, the application does not take advantage of this allowance. The plan is at a density of 3.10 dwelling units per gross acre; below the allowable density of 4.39 dwelling units per gross acre. Site Plan approval procedures under Section 59-D-3 must be followed once the Planning Board approves a preliminary plan application.

The plan has been split into three separate phases to accommodate a number of development options and overriding public needs on the site. The phases and options are discussed below.

### A. Phase I

Phase I includes fifty-three one family detached and twelve one family attached units (9 MPDUs) and is approximately 22 acres in size including the adjacent stream valley. Staff has worked with the Town and Applicant to provide a predominantly one family detached mix of units for this phase that staff believes to be compatible with the Town. Twelve townhomes including nine MPDUs will be located on the extension of Amity Drive. A landscape buffer of evergreens is proposed to provide screening along the Ridge Road edge.

During staff's review of the plan, the Applicant removed one proposed lot to the rear of the homes on Bounding Bend Court, and reduced the number of lots to the rear of the existing homes at the turn in Ridge Road in the northernmost portion of the Subject Property. The Applicant also revised its grading plan to save a specimen tree in this area. Phase I also includes a local park and a picnic area; the improvements of which are discussed in the conditions of approval. Staff anticipates further review of all remaining compatibility issues that are more appropriately addressed when the detailed site plan is submitted.

B. Phase II

Residential development in Phase II includes a maximum of twenty-three (23) detached and sixty-six (66) attached residential units, including eleven (11) MPDUs. Phase II as originally proposed also included a dedicated Legacy Open Space ("LOS") parcel totaling approximately 12.0 acres, which is adjacent to the Town of Washington Grove.

As a result of the ongoing Shady Grove Sector Plan discussion, the plans include an option to reserve an 8.5-acre elementary school site. The Montgomery County Public Schools ("MCPS") reviewed the proposed school site and found it to be adequate with the caveat that the alignment of Amity Drive/Crabbs Branch Way will need to be shifted to the south to meet their operational requirements. The school site will be placed on a plat of reservation for a period not to exceed 24 months from the Planning Board hearing or December 23, 2006. It is not known at this time if the proposed ICC right-of-way, which may affect Phase III, will require re-configuration of lots or changes to unit count. The Applicant may be able to negotiate certain elements of the dedication with the State Highway Administration ("SHA") (i.e., shared stormwater management) that will avoid changes to the preliminary plan.

C. Phase III

Residential Development in Phase III is limited to a maximum of sixteen (16) detached and fourteen (14) attached residential units, including 3 MPDUs. This portion of the site may also be impacted by the November 2004 ICC alignment study. The final number of units will be determined once the State Highway Administration makes a decision on the need for the area shown within the study. Again, it is not known at this time if the ICC right-of-way will require re-configuration of lots or changes to unit count. The Applicant may be able to negotiate certain elements of the acquisition with the SHA (i.e., shared stormwater management) that will avoid changes to the preliminary plan. If not, staff is recommending that the preliminary plan be revised by Planning Board action.

**MASTER PLAN COMPLIANCE**

Staff testified that the Preliminary Plan is consistent with the Draft Plan, and with previous master and sector plans. The Subject Property is proposed to be recommended in the Draft Shady Grove Sector Plan for an elementary school site because of its location in the community and its relationship to the LOS parcel. The Draft Plan recommended:



- Designating the Subject Property as the preferred site for an elementary school. (The Applicant has agreed to place this area in reservation for future conveyance for 24 months from December 23, 2004.)<sup>2</sup>
- Designing the elementary school layout to encourage walking as well as accommodate school buses and parking areas. Walkway connections from all sides of the surrounding community to be provided.

The Draft Plan also acknowledges the historic and cultural significance of the proposed LOS parcel, and encourages protecting the parcel through the development review process through dedication as follows:

- Protect as much of the 13-acre Ridge Road Meadow on the Casey at Mill Creek property as possible through the development review process, balancing site constraints and developer interests. It has been identified as a Class II Heritage site in the Legacy Open Space Functional Plan and provides a historic setting and open space buffer for Washington Grove. It should offer passive recreational opportunities including trails and nature observation. As much as possible of the meadow should eventually be acquired through dedication.

## **ENVIRONMENTAL**

### **Forest Conservation**

There are approximately 29.21-acres of existing forest on the property. The development is proposing to utilize an optional method of development and therefore must comply with Section 22A-12(f) of the Montgomery County code. This section of the Code requires developments utilizing an optional method of development to either retain or plant a certain percentage of forest onsite. For this particular plan, the appropriate threshold is the conservation threshold, which is approximately 13.12 acres.

The plan proposes to remove approximately 12.57 acres of forest and retain approximately 16.64 acres of forest. The preliminary forest conservation indicates that the proposed plan retains more forest than is necessary to meet the forest conservation threshold and there are no forest planting requirements. In addition, there are unforested stream buffer areas that could be used for onsite planting areas if necessary in the future.

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<sup>2</sup> The Approved and Adopted (1985) Gaithersburg Vicinity Master Plan makes no specific recommendations for a school site regarding the Casey at Mill Creek property, and the associated Approved and Adopted Land Use Map does not show a school site in this area.

### Environmental Guidelines

The site includes stream buffers and wetlands. These areas will be protected by Category I forest conservation easements. The environmental buffers around all wetlands are a minimum of 40 feet. This is 15 feet greater than the wetland buffer required by the Maryland Department of Environment. All stream buffers are a minimum of 125 feet from the top of the stream bank. Both the wetland and stream buffers are consistent with the environmental buffers identified in the Environmental Guidelines for Use IV watersheds. The only encroachment into stream valley buffers is for necessary infrastructure such as stormwater management outfalls and necessary road connections. All stream crossings will be designed using environmental sensitive methods.

### Noise

The property is located near the proposed future ICC. When the State Highway Administration (SHA) conducted its noise analysis for the ICC, SHA did not measure existing noise levels on the subject property and will not provide noise mitigation for the future occupants. It is SHA policy to provide noise mitigation for existing developments when constructing new roads and for developers to provide the noise mitigation for the future developments. Therefore, it is necessary for the Applicant to prepare and submit a noise analysis with future site plans. The future site plans must identify the means to mitigate future noise levels to acceptable interior and exterior levels. M-NCPPC discourages residential units within 150 feet of the proposed ICC. The preliminary plan submitted does not have any residential units within 150 feet area of the proposed ICC. This separation is the first, and staff's preferable, method for noise mitigation.

## TRANSPORTATION

### Status of the Intercounty Connector

As part of its preparation of the Draft Environmental Impact Statement (DEIS) dated November 2004, for the proposed ICC, SHA included engineering mapping for the roadway, proposed as a limited-access east-west highway intended to link areas between I-270 and I-95/US 1, through central/eastern Montgomery and western Prince George's Counties, including an interchange with Shady Grove Metrorail Station Access Road to the south of the subject property.

The ICC planning process has concurrently two alternative alignments, selected through the Alternatives Retained for Detailed Study (ARDS), called Corridor 1 and Corridor 2. Corridor 1 is the southern alignment that generally follows the ICC alignment incorporated in the area master plans and runs along the south side of the subject property. The Corridor 2 is the alignment that diverts to the north, east of

Georgia Avenue. It is noted that the ICC Corridor 2 alignment is not represented in any area master plans.

The area for Phase III includes the now-expired Reservation Plat No. 576-90 (i.e., first approved on June 1989 and recorded on July 1989) to reflect the master-planned ICC interchange with the Shady Grove Metrorail Station Access Road at that time. The area south of Phase I bordered the now-expired Reservation Plat No. 574-10 (i.e., approved on October 1986 and recorded in November 1996) to reflect the master-planned ICC right-of-way east of this interchange.

According to SHA's November 2004 plans (Attachment No. 1), even less right-of-way is needed for the interchange within the Phase III area, but additional right-of-way within the Phase I area is now required to the east for storm water management. Condition Number 5, below, requires reservation of this area in anticipation of SHA's eventual acquisition of that property if needed after selection of a final alignment of the ICC.

#### Trail Connection and Pedestrian Facilities

The alignment of a future trail connection should be coordinated with M-NCPPC's Park Planning and Resource Analysis staff, the Town of Washington Grove, and (MCPS) with the specific alignment to be determined at site plan. The trail starts from Amity Drive Extended along the east side of the proposed elementary school site, through the Legacy Open Space, into the Town of Washington Grove corporate limits, and to the Washington Grove Marc Station. The Draft Plan also recommends extending the bikeway route along Crabbs Branch Way through the proposed development at Casey at Mill Creek to connect with Washington Grove's bikeway system.

Five-foot sidewalks are being provided along Amity Drive. Four-foot sidewalks are being provided along all the reduced width tertiary residential streets except where no houses front along them or for environmental reasons. Transit service is not available along Amity Drive or connecting Epsilon Drive between Washington Grove Lane and Shady Grove Road. With the future extension of Amity Drive to extended Crabbs Branch Way, transit service can more readily be provided along extended Crabbs Branch Way to extended Amity Drive into the existing Mill Creek community.

#### Adequacy of Transportation Facilities

The Planning Board expressly incorporates herein the transportation analysis provided by staff in its December 10, 2004 staff report and subsequently updated December 13, 2004 staff report from the Department of Transportation.

Amity Drive Extended (to Crabbs Branch Way Extended) should be designed to discourage non-local traffic using Amity Drive as an alternative route between Shady

Grove Road and Washington Grove Lane and, reflect its surrounding residential character. Instead of a straight-line connection between its existing terminus and Crabbs Branch Way, traffic calming measures should include an alignment with gentle curves and traffic islands. Where the 70-foot-right-of-way Amity Drive Extended connects with 80-foot-right-of-way Crabbs Branch Way, a traffic circle should be considered in lieu of an intersection design.

Local Area Transportation Review ("LATR") was analyzed under the standards in the FY 2002 AGP and the July 2002 LATR Guidelines, because the preliminary plan was submitted and completed before the July 2004 LATR procedures. Under the 2002 standards, the CLV/congestion standard is 1,525 for intersections within the Derwood Policy Area, (and not the reduced congestion standards under the FY 2005 AGP). Both the entire development, and Phase I only, generate more than 50 peak-hour trips during the weekday morning peak period (considered then from 7:00 to 9:00 a.m.) and the evening peak period (considered then from 4:00 to 6:00 p.m.). Consequently, the Applicant was required to submit traffic studies to verify traffic levels. Based on those studies, and staff's subsequent review, staff determined for Phases I, II, and III that LATR would be satisfied with the following improvements:

1. Shady Grove Road and Epsilon Drive/Tupelo Drive: The improvements described in Recommendation No. 3 would mitigate the impact of site-generated peak-hour trips for Phase I only. Although still exceeding the 1,525 congestion standard, the CLV value in the total-with Phase I traffic condition added is less than the CLV value in the background traffic condition during the weekday morning peak period.

The improvements described in Recommendation No. 4 would be needed to satisfy LATR for the additional traffic generated by Phases II and III by the connecting Amity Drive Extended with Crabbs Branch Way Extended. This connection provides an alternative travel route in lieu of Epsilon Drive to Shady Grove Road. Although still exceeding the 1,525 congestion standard, the redistribution of traffic to Amity Drive Extended and Crabbs Branch Way Extended reduces the congestion and mitigated the traffic impact of the site-generated peak-hour trips.

### Public Hearing Testimony

Applicant, represented by legal counsel, appeared and testified. The Applicant testified that the three-phase preliminary plan is the result of several years of cooperation and negotiation that occurred between the Planning Board's staff, representatives of the Town, the Applicant, and MCPS. The Applicant stated that it is willing to dedicate the LOS to M-NCPPC, and additionally that it was willing to place the school site and ICC right-of-way portions of the site in reservation for 24 months from December 23, 2004. The Applicant further testified that it agreed with the staff's



recommendation of approval, and with staff's proposed amendments to conditions six and nine as presented during the public hearing.

A number of speakers appeared to testify about the project. The primary contested issues were (A) the timing and size of the LOS parcel to be dedicated; (B) the timing of the dedication of the school site; (C) the density and housing mix within the three acres of the LOS property that will not be dedicated, and the new road proposed adjoining those lots; (D) the preservation of trees and wetlands on the site; and (E) the protection of stone quarry sites on the property. These issues will be addressed in turn.

#### A. LOS Parcel

In its staff report and presentation, staff noted that the Planning Board approved the addition of part of the property as LOS site on February 7, 2002.<sup>3</sup> Specifically, the 13-acre open field adjacent to Ridge Road was determined to provide a valuable buffer to the significant heritage resource that is the Town of Washington Grove. The meadow enhances the setting of the Town, designated a National Register historic site, by maintaining the town's rural character. The site was added to Legacy Open Space as a Heritage Resource (Class II) with protection recommended through negotiations with the developer as part of the development review process. Legacy Open Space staff supported approval of the proposed preliminary plan.

The plan proposes dedication to the Commission of approximately 12 acres as the Legacy Open Space resource, including approximately 10.5 acres of the designated open field and approximately 1.5 acres of a forested hedgerow adjacent to the field. The Town negotiated over a period of several years with the Applicant and reached a

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<sup>3</sup> The meadow was determined to be significant according to several Legacy Open Space criteria:

- a. The property has countywide and national significance in terms of its association with the Town of Washington Grove, a heritage resource of national import with exceptional architectural character and rural viewsapes.
- b. Because of its association with Washington Grove, the site contributes to the Legacy program's heritage theme of the Rail Community Cluster, of which the Town is a part.
- c. If preserved as open space, the site would serve as a protective buffer of the significant heritage resource that is Washington Grove. Over 57% of the Town is preserved as forest today, and the preservation of this open field would preserve a rural viewscape on the last remaining unprotected side of the Town.



compromise whereby houses are proposed on 3 acres of the field in the northeast corner but the forested hedgerow would be saved to preserve the existing natural edge to the field. The current plan preserves approximately a 50-70 foot width along the entire length of the hedgerow on all versions of the plan.

The record includes a November 24, 2004 memorandum from the Chair of the Planning, Housing and Economic Development Committee, which asked the Phases 2 and 3 of the preliminary plan be deferred pending completion of the Council's review of the Shady Grove Sector Plan, in order for the Council to make a final determination on the location of a school site in the Shady Grove planning area. The Board considered all three phases during this plan, as the Applicant asked for a decision on all three phases and the Board had no authority to unilaterally defer a portion of the application.

The Town Mayor testified at length, both at the hearing and through written correspondence. He stated that the staff recommendation reflected almost four years of cooperation and negotiation between Applicant, the staff and the Town. He intended to testify in full support of the project, indicating that the three-phase plan confers significant benefit to many citizens. His primary concern was with Condition No. 15, which addressed the timing of dedication of the LOS piece. It had been his understanding that the staff recommendation would require dedication of the LOS property in Phase I, and he objected to any suggestion that dedication should occur in Phase II. The Mayor testified that the Town's overriding concern was to ensure the protection of the 13-acre Legacy Open Space parcel to provide a buffer between the new project and the existing Town communities. In response to Planning Board questioning, staff testified that it had changed its earlier position on dedication at Phase I to a requirement that dedication occur in Phase II because geographically the LOS piece was more related to Phase II, and in keeping with staff's general practice of requiring dedication of property with adjoining development, they adjusted the phasing schedule for the dedication requirement.

The Mayor also testified that the proposed plan confers many public benefits, including the preservation of the LOS site as parkland, which also ensures compatibility between the Town and the new development, and which enhances the preservation of the rural character of Ridge Road. Additionally, the project offers a school site that the Town and surrounding community support. The Mayor urged that the Board require dedication of the LOS piece with Phase I, not Phase II, suggesting that to delay dedication to Phase II risks the loss of the site. He noted that unlike many LOS properties that the County has purchased at great cost, this LOS site will be conveyed to the County at no cost.

The Town's legal counsel testified that in prior proceedings the Planning Board directed Applicant to work with community and staff to remove lots from this site and to coordinate the protection of the LOS property. He urged that the Board require dedication of the LOS site in Phase I. Legal counsel for the Town also argued that the

reservation period for the school site should be extended to three years, rather than the two years proposed by staff. He noted that the proposal before the Board reflected a consensus between the Applicant and the Town that had been reached two years earlier, consistent with Planning Board's direction after the February 14, 2002 hearing.

This line of testimony was extensively reiterated. The Chair of Historic Preservation Commission for the Town, and a resident, testified that the Town had worked extensively with Applicant to (1) ensure protection of LOS property; and (2) allow Applicant to attain viable density on the site. He testified that the project protected large areas of passive open space, reflected positive modifications to Amity Road, achieved a desirable balance of 50/50 single family detached and single family attached housing, all of which combined to maximize the compatibility of the proposed neotraditional style of the new development with the existing historic Town. He also raised concerns that the density in Phase I along the meadow was too high, and asked the Board to review the plan at the time of site plan to reduce this density and create a 50' forested buffer along this edge.

A representative of both the Montgomery Civic Federation and Norbeck Meadows Association testified that the Civic Federation adopted a resolution approving staff's recommendations on the plan. A member of the Greater Shady Grove Civic Alliance ("Alliance") and Town Councilmember testified that the Town and Applicant negotiated at length to achieve a balance between the character of the existing Town and the new development, achieved in large part through preservation of the meadow, and asked that the Board honor the balance achieved by the Town and require dedication of the LOS property in Phase I. The record also includes written correspondence from the Southern Field Office of the National Trust for Historic Preservation and Montgomery County's Historic Preservation Commission supporting dedication of the LOS parcel.

Individual residents of the Town, of the greater Shady Grove area and of Derwood also supported the dedication of the LOS parcel in Phase I, reiterating the concept that the meadow was critical to the long-term protection of the Town as a historic resource, and concerned that if the LOS parcel was not dedicated with Phase I, the dedication may be lost. This evidence was submitted in both testimony and written correspondence contained in the record.

In response to Board questions, staff provided a chronology of the application. Staff noted that the plan was first filed four years before the December public hearing, and that the Board identified the LOS parcel in 2002. The Board approved for County Council review and ultimate adoption the Draft Shady Grove Sector Plan in July of 2004, and that draft recommended the LOS parcel to remain. The Draft Plan also recommends a school site within the Subject Property, adjacent to the Mill Creek South Community along Amity Drive.

B. Dedication of School Site

Legal counsel to MCPS appeared to testify, and asked that the Board require reservation of a viable school site - stating that the location shown on the preliminary plan before the Board was such a site. MCPS also testified that it was concerned that the Amity Drive alignment would be adequate for this school site, and asked that there be appropriate plat of reservation for school site and access. MCPS stated on the record that revised condition numbers six and nine, as presented by staff at the hearing, adequately addressed both of these concerns, and testified in support of the staff report and recommendations.

Opposition Counsel cross-examined a MCPS representative as to why it had agreed to seek a two-year (versus a three-year) period of reservation for the school site. The MCPS representative testified that the school changed its position based on good-faith negotiations with Planning Board staff, who had recommended a two-year period of reservation, and the school board agreed to that time frame.

Legal counsel for the Greater Shady Grove Alliance testified on this issue, as well, and asked the Board to require dedication of the LOS parcel in Phase I to ensure that the location of the school site would not occur.

In response to Planning Board questioning about the length of time for the reservation period, the Board's legal counsel indicated that under Maryland law a period of reservation must be tied to a reasonable period of time. In light of the fact that the District Council will finalize the Draft Plan within several months, the 24-month period gives MCPS a reasonable amount of time to acquire the site.

Responding to testimony raising concerns about the Council's request that the Board defer action on the LOS property until a decision could be made in the Master Plan process about the need for a school site, Chairman Berlage, noted that the Planning Board makes ultimate findings on the dedication issues. He also noted, however, that the Council memorandum was part of the public record and the concerns of council members, like the concerns of all other citizens, are a matter for the Board to consider and weigh.

C. Density and Housing Mix/Ridge Road location.

Several people testified in opposition to the location of housing within the three acres of LOS property that the Applicant has not proffered to dedicate. The Town Mayor testified that the 5,000 - 6,000 square foot new lots in that location are incompatible with the Town, and asked for additional setbacks for compatibility and greater protection of stream buffers, perhaps through more multi-unit dwellings in interior of site, thus reducing the number of units in this location. (However, in response to Planning Board questions, the Mayor stated that it was not his intent to reduce overall density on the



site through a reduction of density within this single portion of the site.) Individual residents echoed these concerns, seeking relocation of 12 homes within the LOS property elsewhere within the site, leaving the entire Legacy site undeveloped. The Mayor asked that these changes be made during the site plan review process. Additional compatibility concerns were raised with respect to the new street proposed to run parallel to existing Ridge Road, and the lots adjoining that road, with the suggestion that the new road should be moved internally into the new community to provide additional buffering between the new units and the old by replacing the road location with open space buffering. There was also testimony raising the loss of old, large hardwood forest in this area, resulting from the development of these units. In particular, the testimony raised concerns about large white oak, black gum and red maples that were estimated by the authors to be more than 100 years old, and in particular about a single black gum near lot 51 - (according to the witness one of largest in county) and should be preserved.

Staff testified that the single-family detached units were placed next to existing single-family homes in Town for compatibility purposes, but that layout could change somewhat at site plan, and additionally that the proposed 30-foot buffer in Phase I may be widened at site plan. During rebuttal, the Applicant noted that testimony on this issue was contradictory; some speakers urged the Board to increase the townhome density in the center of the site to allow for larger lots on the periphery, providing greater compatibility with the Town's development pattern, however, other speakers suggested that the development as proposed included too many townhome units in the center of site thus skewing the monetary valuation of the school site in the event it is acquired through purchase by MCPS.

#### D. Preservation of Trees and Wetlands

A representative of the Maryland Native Plant Society, and several neighboring residents, testified as to a number of old specimen trees on the site, and argued for the preservation of those trees. Although this testimony gave detailed information on the location, size and specimen of those trees that would be lost, none of the testimony indicated that the project as recommended by staff failed to meet the standards and criteria contained in the County's Forest Conservation Law or in the Planning Board's Environmental Guidelines.

In addition there was testimony that the development should be revised to preserve additional wetland and stream buffer areas, in order to better preserve the water quality of the streams. The Board asked staff if they had conducted a study on the impact of Phase I on water quality. In response to that questioning, Staff testified that the Applicant had provided, and Montgomery County's Department of Permitting Services ("DPS") had approved, a study that analyzed (among other things) the impact of Phase I on water quality and on wetlands, and that the stormwater management

concept plan requires maximization of recharge into wetlands. This is an area of substantive review that lies with DPS, not with the Planning Board.

E. Stone Quarry Sites

A representative of the Maryland Native Plant society and individual residents testified as to the existence of certain archaeological and historical artifacts near rock quarry sites (pottery, glassware and old bottles) located within the Subject Property. Additionally, the Greater Shady Grove Civic Alliance submitted a report dated July 18, 2003, recommending that the property should be further evaluated to historical and cultural significance. Park Staff testified at the hearing that it would work with the Applicant to further study the site for these artifacts. During rebuttal the Applicant objected to the study, noting that he had not seen the testimony on this issue until the commencement of the public hearing.

F. Transportation

There was some generalized testimony raising concerns about traffic, but no specific evidence that refuted the findings and conclusions of Transportation staff with respect to the adequacy of public facilities for road purposes.

**FINDINGS**

Having given full consideration to the recommendations of its Staff; the recommendations of the applicable public agencies<sup>4</sup>; the Applicant's position; and other evidence contained in the Record, which is hereby incorporated in its entirety into this Opinion, the Montgomery County Planning Board finds that:

- 1) Preliminary Plan No. 1-02022 substantially conforms to the Gaithersburg Vicinity Master Plan and the Draft Shady Grove Sector Plan, and particularly with the current layout which provides both protection of the Legacy Open Space parcel and the provision of a school site as requested by MCPS. The Board specifically finds that the plan is consistent with the Draft Plan, and moreover reflects the community agreement based on Board comments at the time the LOS property was identified. Moreover, the Board finds that the Applicant has voluntarily proffered to dedicate the LOS site, when it is under no legal obligation to do so. The Board accepts the Applicant's proffer to dedicate 12 acres of property identified as "Legacy Open Space" on the preliminary plan, and finds that this dedication conforms with the public hearing draft sector plan as approved by the Board.

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<sup>4</sup> The application was referred to outside agencies for comment and review, including the Washington Suburban Sanitary Commission, the Department of Public Works and Transportation, the Department of Permitting Services and the various public utilities.



- 2) The Board expressly adopts the analysis of its Transportation Staff with respect to the adequacy of transportation capacity, and finds that through the application of condition numbers 2, 3, 4 and 24 below, that roads and public transportation facilities will be adequate. The Board also expressly finds based upon uncontested evidence of record, that all other public facilities, including sewerage and water service, schools, police stations and firehouses public facilities are adequate to support and service the area of the proposed subdivision.
- 3) The Board finds that the size, width, shape, and orientation of the proposed lots are appropriate for the location of the subdivision. The Board additionally finds that while there was testimony suggesting that additional townhome density be included in the center of the site, that testimony was offset by other testimony suggesting that the townhome density in the center of the site is too great. The Board looked specifically at the plan before it, and determines based upon the recommendations of its staff that the application as presented meets the standards and requirements of the Subdivision Regulations, and should be approved as presented. The Board notes that it will determine the compatibility of specific lots at the time of site plan, when the size, number and location of lots may be reconfigured and/or reduced, and in particular will look at the units located adjacent to the dedication portion of the LOS parcel with respect to this issue.
- 4) The Board finds that based upon the uncontested evidence of record, the application satisfies all the applicable requirements of the Forest Conservation Law, Montgomery County Code, Chapter 22A. This finding is subject to the applicable conditions of approval in a final forest conservation plan to be submitted at site plan. With respect to the specific testimony presented on the issue of the loss of forest, trees and wetlands, the testimony submitted raised generalized concerns but did not present any evidence that the plan as reviewed by the Board failed to meet the standards as set forth in the Board's Environmental Guidelines or in Montgomery County's Forest Conservation law. Consequently, the Board adopts and incorporates the written and oral testimony of staff on these matters, and finds the plan to be in full compliance with the Guidelines and law, and approves the preliminary plan as submitted.
- 5) The application meets all applicable stormwater management requirements and will provide adequate control of stormwater runoff from the site. This finding is based on the determination by the Montgomery County Department of Permitting Services ("MCDPS") that the Stormwater Management Concept Plan meets MCDPS' standards, and notes that MCDPS has exclusive jurisdiction over this aspect of the preliminary plan application.

6) The Board further finds as follows:

- i. The Board finds that a requirement that the Applicant place in reservation Phase II of the Plan for a period of 24 months from the public hearing date (December 23, 2004) conforms with its legal authority under Section 50-31 of the Subdivision Regulations and conforms with the request for reservation as submitted by MCPS.
- ii. With respect to the issue of the archaeological and historical artifacts found on the site, the Board finds that it has no jurisdiction over this matter, however notes that Planning Board staff indicated that they would seek further study on these issues prior to site plan approval.

7) The Board further finds that any objection (concerning a substantive issue) that was not raised prior to the closing of the Record is waived.

**CONDITIONS OF APPROVAL**

Finding Preliminary Plan No. 1-02022 in accordance with the purposes and all applicable regulations of Montgomery County Code Chapter 50, the Planning Board approves Preliminary Plan No. 1-02022 subject to the following conditions:

- 1) Approval under this preliminary plan is limited to the following:
  - a. Phase I - fifty-three (53) one family detached and twelve (12) one family attached residential units, including nine (9) MPDUs.
  - b. Phase II - twenty-three (23) one family detached and sixty-six (66) one family attached units, including eleven (11) MPDUs.
  - c. Phase III - sixteen (16) one family detached and fourteen (14) one family attached units, including three (3) MPDUs.
- 2) To satisfy LATR for the first 65 building permits, provide for the following off-site transportation improvements:
  - a. Install or provide funding to the Montgomery County Department of Public Transportation and Transportation (DPWT) to install the non-automobile transportation infrastructure amenities listed below prior to release of the first building permit:
    - Two bus shelters
    - Two sets of electronic signing for real-time transit information
    - 1,560 linear feet of off-site sidewalks and or bike path
    - Two bike lockers that are equivalent to one vehicular trip per locker

- b. Provide for the following future modification of the traffic signal operation at the intersection of Shady Grove Road and Epsilon Drive/Tupelo Drive as requested in the DPWT letter dated December 1, 2004, provide the following:
    - i. Reconfigure the eastbound approach on Epsilon Drive-Tupelo Drive to allow shared through/right and an exclusive right turn.
    - ii. The appropriate signs to prohibit right-turns-on-red.
    - iii. Change the traffic phasing on the Epsilon Drive-Tupelo Drive approaches from concurrent to split phasing (i.e., one approach moves at a time)
  - c. Prior to release of the first building permit, construct the extension of Amity Drive westward from its current terminus to the eastern stream buffer as follows:
    - i. Dedicate 70 ft. of right-of-way for and construct this segment that is in accordance with DPWT's primary residential street standards, and includes a five-foot sidewalk on the south side, an eight-foot bike path on the north side, and other cross-section design features/amenities.
    - ii. Include along this segment the necessary vehicular and pedestrian access and provide a parking area for the master-planned local park on the south side of Amity Drive.
- 3) To satisfy LATR, prior to release of the 66<sup>th</sup> building permit, provide the following transportation improvements:
- a. Provide for the construction of the westward extension of master-planned Amity Drive and its connection to the terminus of master-planned Crabbs Branch Way (i.e., from its terminus north of Shady Grove Road and northward under the existing I-370 bridge). The Amity Drive and Crabbs Branch Way extensions must be under construction prior to release of the 66<sup>th</sup> building permit or be funded in DPWT's CIP by December 23, 2008. Under construction means all construction contracts are let and all bonds are posted with the Montgomery County Department of Permitting Services.
  - b. Extend Amity Drive segment from the eastern stream buffer to the master-planned extension of Crabbs Branch Way as follows:

- Provide adequate traffic calming measures such as proposed traffic islands before and after the eastern and western stream buffer crossings. These measures are needed to discourage non-local traffic from using master-planned extensions of Amity Drive and Crabbs Branch Way as an alternative route between Shady Grove Road and Washington Grove Lane.
  - Provide along this segment the vehicular and pedestrian access and a parking area for the master-planned local park on the south side of Amity Drive.
  - Coordinate with prospective Applicant(s) of the adjoining property west of the subject site regarding, 1) the alignment of Amity Drive master-planned extension approaching Crabbs Branch Way Extended, and 2) the transition and cross-sectional delineation of Crabbs Branch Way as an industrial roadway compared with Amity Drive as a primary residential street.
- 4) Enter into a traffic mitigation agreement that provides for effective transportation demand management with the Planning Board and DPWT to participate with the Greater Shady Grove Transportation Management District (TMD). The TMD's trip reduction goal is to achieve and maintain the commuting mode share goals of the Greater Shady Grove TMD of 25 percent non-auto drivers for the residents and 12 percent non-auto drivers for workers in the peak hours. DPWT is anticipating implementation of the Greater Shady Grove TMD and Share-A-Ride District within the time frame of this development.
- 5) Provide for the necessary right-of-way for the Inter County Connector (ICC) as follows:
- a. Record a plat of reservation for the right-of-way needed for the (SHA) ICC according to SHA's November 2004 plans for an interchange with the Shady Grove Metrorail Station Access Road including two stormwater management areas. The right-of-way should be held in reservation until the earlier of either:
    - September 1, 2005; or
    - A final Record of Decision is issued the Federal Highway Administration (FHWA) and that Record of Decision does not include the Reservation Area, or any portion thereof, within the final ICC alignment.

- b. If FWHA issues a final Record of Decision that includes the Reservation Area Applicant shall either coordinate with SHA to negotiate a shared stormwater facility and thereby not require alteration of lots or submit a revised preliminary plan locating all dwelling units (including MPDU's), roadways, stormwater management ponds, public area and other related infrastructure outside of the Reservation Area and show the ICC right-of-way area of acquisition on final record plat.
- 6) Applicant to record a "plat of reservation" for a 24-month period not to exceed December 23, 2006 as shown on the Preliminary Plan for Phase II within 60 days from the date of the Opinion of the Preliminary Plan approval, together with an area representing the future dedication of Amity Drive in an alignment suitable for the school site.
  - 7) Compliance with the conditions of approval for the preliminary forest conservation plan. The Applicant must satisfy all conditions prior to recording of plat(s) or MGDPS issuance of sediment and erosion control permits.
  - 8) At the time of site plan approval, Applicant to submit a noise analysis for technical staff review and approval that delineates the location of the existing and 20-year future, 60 and 65 Ldn dBA noise contours and the methods to minimize exterior and interior noise levels if the analysis indicates the need for mitigation.
  - 9) The Applicant shall dedicate all road rights-of-way shown on the approved preliminary plan to the full width mandated by the Shady Grove Sector Plan unless otherwise designated on the preliminary plan, including the designation of Amity Drive through Phase II no later than at the time of acquisition of the proposed elementary school site and in an alignment suitable for the school site.
  - 10) The Applicant shall construct all road rights-of-way shown on the approved preliminary plan to the full width mandated by the Shady Grove Sector Plan and to the design standards imposed by all applicable road codes. Only those roads (or portions thereof) expressly designated on the preliminary plan, "To Be Constructed By \_\_\_\_\_" are excluded from this condition.
  - 11) Record plat to reflect a Category I easement over all areas of stream valley buffers and forest conservation that are not dedicated to Parks.
  - 12) Record plat to reflect common ingress/egress and utility easements over all shared driveways.
  - 14) Record plat to reference the Common Open Space Covenant recorded at Liber 28045 Folio 578 ("Covenant"). Applicant shall provide verification to Commission



staff prior to release of final building permit that Applicant's recorded HOA documents incorporate by reference the Covenant.

- 15) Within the earlier of 24 months of the issuance of the opinion for Preliminary Plan 1-02022 or the recordation of the initial plat of Phase I, Applicant to dedicate to MNCPPC the area shown on the plan as "Legacy Open Space Natural Area" totaling approximately 12 acres.
- 16) Dedication of the areas identified as "To be dedicated to M-NCPPC" for use as parkland and protection of the valuable natural resources including: 1) the designated area located south of Amity Drive and east of the stream crossing in the Phase I Section of the plan to be used as a neighborhood park and; 2) the stream valley that lies between the developed portions of the property and along the south side of the site surrounding and including the streams and wetland areas. Dedication not to include any stormwater management ponds.
- 17) Dedicated land described in Condition No. 16 to be conveyed in concert with Condition No. 5 above pending resolution of ICC boundaries. Dedication to parks to be free of any trash and unnatural debris with the boundaries adequately marked and signed to delineate between parkland and private properties. Location and design of boundary markers and signs to be approved by M-NCPPC staff.
- 18) Applicant to construct within the dedicated neighborhood park, in the location as agreed by Applicant and M-NCPPC staff, the following recreation facilities to be constructed to park standards and specifications:
  - Multi-Age Playground with minimum size of 100' x 100'
  - Picnic Area with shelters and tables
  - Adequate Parking for active recreation and picnic areas
  - Basketball/Multipurpose Court (if no school is constructed)M-NCPPC staff to approve location and design of recreation facilities and parking. Engineering and design plans, acceptable to M-NCPPC staff, to be prepared for the site by Applicant by time of Site Plan and are subject to staff approval.
- 19) Applicant to provide natural surface trails within the dedicated open space and sufficient access to the trail system from the communities adjacent to the parkland. Trail locations to be determined by time of Site Plan and to be coordinated with and acceptable to M-NCPPC staff. Trails to be constructed to park standards and specifications.

- 20) Compliance with the conditions of approval of the MCDPS stormwater management approval dated May 4, 2004.
  - 21) No recordation of plats until Site Plan signature set approval and final stormwater management approval by MCDPS.
  - 22) Compliance with conditions of MCDPWT letter dated February 15, 2002 and as revised December 6, 2004, unless otherwise amended.
  - 23) No clearing, grading or recording of plats prior to signature set approval.
  - 24) Final approval of the number and location of dwelling units, sidewalks, bikepaths and a master-planned hard-surface trail connection from Amity Drive through the Legacy Open Space area to the north and recreational amenities will be determined at site plan(s).
  - 25) A landscape and lighting plan must be submitted as part of each future site plan application for review and approval by technical staff.
  - 26) Final number of MPDU's/TDR's, as per Condition No. 24 above to be determined at the time of site plan.
  - 27) The Adequate Public Facility (APF) review for the preliminary plan will remain valid for sixty-one (61) months from the date of mailing of the Planning Board opinion.
  - 28) Other necessary easements.
- \* . . . . .

[CERTIFICATION OF BOARD VOTE ADOPTING OPINION ON FOLLOWING PAGE]

MF 6/17/05  
\_\_\_\_\_  
Approved for legal sufficiency  
M-NCPFC Office of General Counsel

**CERTIFICATION OF BOARD VOTE ADOPTING OPINION**

At its regular meeting, held on Thursday, June 23, 2005, in Silver Spring, Maryland, the Montgomery County Planning Board of The Maryland-National Capital Park and Planning Commission, by unanimous consent, ADOPTED the above Opinion, which constitutes the final decision of the Planning Board and memorializes the Board's findings of fact and conclusions of law for the Casey Property at Mill Creek, Preliminary Plan 1-02022.

  
\_\_\_\_\_  
Certification As To Vote of Adoption  
Technical Writer

## **ATTACHMENT B**

### **Memoranda from Agencies**



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## FIRE MARSHAL COMMENTS

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**DATE:** 6/1/2007  
**TO:** PAUL LORD - DEWBERRY  
**FROM:** TYLER MOSMAN  
**RE:** PIEDMONT CROSSING 8-20060120

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### PLAN APPROVED.

1. Review based only upon information contained on the plan submitted **5-30-07**. Review and approval does not cover unsatisfactory installation resulting from errors, omissions, or failure to clearly indicate conditions on this plan.
2. Correction of unsatisfactory installation will be required upon inspection and service of notice of violation to a party responsible for the property.

cc: Department of Permitting Services

MNCPPC-MC





DEPARTMENT OF ENVIRONMENTAL PROTECTION

Douglas M. Duncan  
*County Executive*

James A. Caldwell  
*Director*

July 14, 2006

Ms. Shelley J. Winkler  
P.O. Box 1423  
Washington Grove, Maryland 20880

Dear Ms. Winkler:

On behalf of County Executive Douglas Duncan, thank you for your recent letter inquiring if there is a government body that is responsible to ensure the continued viability of the wetlands at Piedmont Crossing, formerly known as Casey Property at Mill Creek. As you observe in your letter, the Department of Permitting Services (DPS) is responsible for approving both the stormwater management plan as well as the sediment and erosion control plan. The Maryland National Capital Park and Planning Commission (MNCPPC) approves the overall site plan.

DPS reviewed the stormwater concept plan for this development prior to the MNCPPC for Preliminary Plan review. The DPS stormwater concept approval letter included the requirement that as much recharge as possible be incorporated into the final site design. The County does remain committed to doing all that can be done during the stormwater management (SWM) design process to ensure that the development plans for Piedmont Crossing provide as much recharge to the wetlands as they can; however, the County can not guarantee that the wetlands will remain viable after development.

An example of the great lengths the County has taken in the past to maintain a wetland of state concern is the work done by DPS to maintain the recharge to the Germantown Fen. Requirements to maintain the recharge to the fen were made during the site plan approval process by the MNCPPC. The resulting DPS approved SWM design had substantial success in maintaining a flow of clean water to the fen by infiltrating only the rooftop water from the nearby shopping center, and providing a well for severe drought conditions. However, the fen continues to evolve to a forested wetland and today is very different from the open water fen it was before the area developed. Given the level of oversight the fen has received, and the fact that the water flow volume and quality have changed very little from pre-development, the viability of the fen was not guaranteed.



Office of the Director

255 Rockville Pike, Suite 120 • Rockville, Maryland 20850-2589 • 240.777-7770, FAX 240.777-7765

Ms. Winkler  
July 14, 2006  
Page 2

After the Piedmont Crossing project gained Preliminary Plan approval, the site planners at the MNCPPC began working with the applicant to refine the proposed plans. Maximization of recharge to the wetland areas still remains a required element of the SWM design; however, the existing wetlands may decline as a result of the proposed development. Final site plan approval has not taken place for this property. Your continued participation in the planning process can help to ensure that your concerns and views are heard during this time when adjustments to the site plan and conditions to site plan approval can be made to provide for a management plan to protect this wetlands recharge area as well. For more information, please contact the MNCPPC at 301-495-4610.

Sincerely,



James A. Caldwell  
Director



DEPARTMENT OF PERMITTING SERVICES

Isiah Leggett  
County Executive

January 8, 2007

Reginald Jetter  
Acting Director

Ms. Joanne Check  
Dewberry  
203 Perry Parkway, Suite 1  
Gaithersburg, MD 20877-2169

Re: **Revised Stormwater Management CONCEPT**  
Request for Casey @ Mill Creek Phase I  
Preliminary Plan #: 1-02022  
SM File #: 204040  
Tract Size/Zone: 65.6 acres / R-90 MPDU  
Total Concept Area: Phase 1 Area = 37.5 acres  
Lots/Block: N/A  
Parcel(s): P433, P543, N759, N725, P615  
Watershed: Upper Rock Creek

Dear Ms. Check:

Based on a review by the Department of Permitting Services Review Staff, the revised stormwater management concept for the above mentioned site is **acceptable**. The stormwater management concept consists of on-site channel protection measures via construction of a detention pond; on-site water quality control and onsite recharge via construction of Montgomery County sand Filters (MCSF's), Bio Filtration, Infiltration and various nonstructural measures including a designed swale north of Street A which will provide water quality control for the street.

The following **items** will need to be addressed **during** the detailed sediment control/stormwater management plan stage:

1. This revised stormwater concept is for Phase I of this project **ONLY**. A revised stormwater concept for Phase II must be submitted separately prior to submission of any detailed plans for Phase II review.
2. Prior to permanent vegetative stabilization, all disturbed areas must be topsoiled per the latest Montgomery County Standards and Specifications for Topsoiling.
3. A detailed review of the stormwater management computations will occur at the time of detailed plan review.
4. An engineered sediment control plan must be submitted for this development.
5. Because elements of the site layout are critical to the design of the nonstructural stormwater management approach, revisions to the site layout will likely require submission of a revised stormwater concept.
6. The details of the stormwater management approach for the proposed park area will be determined at the detailed plan review stage. This will most likely involve construction of a bio filter to serve the park area.
7. Due to the presence of wetlands adjacent to the areas of development, it is imperative that groundwater recharge be maximized in an effort to maintain vital subsurface water flow to these areas if they are to be maintained in viable condition. Stormwater management deals with the



treatment of surface runoff to ensure the required elements of channel protection, water quality, and subsurface recharge are met. However, it does not include analyses of the direction of subsurface flows or wetland viability. If the viability of the wetland areas is considered to be of importance, it may be advisable to have an appropriate geotechnical professional analyze the proposed plans and offer design guidance prior to final Site Plan approval.

8. The proposed density of development for this project continues to be of concern. There is very little room for error if the detailed design of the proposed stormwater management facilities shows that more space is necessary to meet current standards. Please note that stormwater management requirements will not be relaxed if unforeseen difficulties arise that prevents full compliance with stormwater management standards. In such cases it may be necessary to revise the site layout. This may include a loss building lots.
9. The request to waive the open section roadway requirement for this project has yet to be approved. Proposed water quality offsets for allowance of the open section waiver include groundwater recharge, structural pretreatment to the MCSF's, and enlarged MCSF surface areas. No detailed plan review will take place prior to approval of the open section roadway waiver request.
10. This stormwater concept approval supercedes the approval granted on May 26, 2004.

This list may not be all inclusive and may change based on available information at the time.

Payment of a stormwater management contribution in accordance with Section 2 of the Stormwater Management Regulation 4-90 is not required.

This letter must appear on the sediment control/stormwater management plan at its initial submittal. The concept approval is based on all stormwater management structures being located outside of the Public Utility Easement, the Public Improvement Easement, and the Public Right of Way unless specifically approved on the concept plan. Any divergence from the information provided to this office; or additional information received during the development process; or a change in an applicable Executive Regulation may constitute grounds to rescind or amend any approval actions taken, and to reevaluate the site for additional or amended stormwater management requirements. If there are subsequent additions or modifications to the development, a separate concept request shall be required.

If you have any questions regarding these actions, please feel free to contact Mark Etheridge at 240-777-6338.

Sincerely,



Richard R. Brush, Manager  
Water Resources Section  
Division of Land Development Services

RRB:dm mce

cc: C. Conlon  
S. Federline  
SM File # 204040

QN -ON; Acres:  
QL - ON; Acres:  
Recharge is provided

## **WSSC Comments**

### **February 12, 2007 Development Review Committee Meeting**

**6. 8-20060120**

#### **PIEDMONT CROSSING (Retake)**

**Water and sewer mainline extensions are required. Maintain 5 foot clearance from storm drains and curbing.**

**A 20' wide WSSC right-of-way easement is required in proposed Parcel A Block A to the north of street B and along Ridge Road for future WSSC water extension.**

**Unless otherwise noted, all extensions require Requests for Hydraulic Planning Analysis and need to follow the System Expansion Permit (SEP) Process. Contact WSSC's Development Services Center (301-206-8650) or visit the Development Services on WSSC's web-site ([www.wsscwater.com](http://www.wsscwater.com)) for information on requesting a Hydraulic Planning Analysis and additional requirements for extensions. Contact WSSC's Permit Services (301-206-4003) for information on service connections and on-site system reviews.**



# SHA

## State Highway Administration

Maryland Department of Transportation  
June 11, 2007

Martin O'Malley, Governor  
Anthony G. Brown, Lt. Governor

John D. Porcari, Secretary  
Neil J. Pedersen, Administrator

~~Ms. Catherine Conlon~~ **Robert Kronenberg**  
Supervisor, Development Review  
Subdivision Division  
Maryland National Capital  
Park and Planning Commission  
8787 Georgia Avenue  
Silver Spring, Maryland 20910-3760

Re: Montgomery County  
Piedmont Crossing  
File # 8-20060120  
I-370/ICC Contract 'A'

Dear Ms. Conlon:

The State Highway Administration (SHA) appreciates the opportunity to review the revised site plans for the 64-unit residential development. We offer the following comments:

- Proposed access is from a County Road (Amity Drive) and is subject to the permit process and requirements of the Montgomery County Department of Public Works and Transportation.
- The ICC Team reviewed the revised site plans and offers no specific comments at this time. The site plans accurately reflect the required ICC right-of-way areas.
- Please be advised that the ICC Contract 'A' design builder is considering a change in the design of the interchange. SHA has approved this change conditional on an environmental re-evaluation. This environmental re-evaluation is currently underway. Providing these interchange revisions move forward, changes will be necessary to the right-of-way areas adjacent to Piedmont Crossing. Some right-of-way areas would increase and others would decrease.

If you have any questions, please contact Raymond Burns at 410-545-5592 or our toll free number in Maryland only 1-800-867-4742.

Sincerely,

for

  
Steven D. Foster, Chief  
Engineering Access Permits Division

SDF/rbb

cc: Dewberry & Davis, LLC / 203 Perry Parkway, Suite 1, Gaithersburg, MD 20877  
Mr. Shahriar Etemadi / M-NCPPC  
Mr. Sam Farhadi / MCDPWT  
Mr. Ken Briggs sent via e-mail  
Mr. Jeff Wentz sent via e-mail  
Ms. Kate Mazzara sent via e-mail

My telephone number/toll-free number is \_\_\_\_\_  
Maryland Relay Service for Impaired Hearing or Speech: 1.800.735.2258 Statewide Toll Free

Street Address: 707 North Calvert Street • Baltimore, Maryland 21202 • Phone: 410.545.0300 • www.marylandroads.com



DEPARTMENT OF PERMITTING SERVICES

Isiah Leggett  
County Executive

January 8, 2007

Reginald Jetter  
Acting Director

Ms. Joanne Cheek  
Dewberry  
203 Perry Parkway, Suite 1  
Gaithersburg, MD 20877-2169

Re: **Revised Stormwater Management CONCEPT**  
Request for Casey @ Mill Creek Phase I  
Preliminary Plan #: 1-02022  
SM File #: 204040  
Tract Size/Zone: 65.6 acres / R-90 MPDU  
Total Concept Area: Phase 1 Area = 37.5 acres  
Lots/Block: N/A  
Parcel(s): P433, P543, N759, N725, P615  
Watershed: Upper Rock Creek

Dear Ms. Cheek:

Based on a review by the Department of Permitting Services Review Staff, the revised stormwater management concept for the above mentioned site is **acceptable**. The stormwater management concept consists of on-site channel protection measures via construction of a detention pond; on-site water quality control and onsite recharge via construction of Montgomery County sand Filters (MCSF's), Bio Filtration, Infiltration and various nonstructural measures including a designed swale north of Street A which will provide water quality control for the street.

The following **items** will need to be addressed during the detailed sediment control/stormwater management plan stage:

1. This revised stormwater concept is for Phase I of this project **ONLY**. A revised stormwater concept for Phase II must be submitted separately prior to submission of any detailed plans for Phase II review.
2. Prior to permanent vegetative stabilization, all disturbed areas must be topsoiled per the latest Montgomery County Standards and Specifications for Topsoiling.
3. A detailed review of the stormwater management computations will occur at the time of detailed plan review.
4. An engineered sediment control plan must be submitted for this development.
5. Because elements of the site layout are critical to the design of the nonstructural stormwater management approach, revisions to the site layout will likely require submission of a revised stormwater concept.
6. The details of the stormwater management approach for the proposed park area will be determined at the detailed plan review stage. This will most likely involve construction of a bio filter to serve the park area.
7. Due to the presence of wetlands adjacent to the areas of development, it is imperative that groundwater recharge be maximized in an effort to maintain vital subsurface water flow to these areas if they are to be maintained in viable condition. Stormwater management deals with the



treatment of surface runoff to ensure the required elements of channel protection, water quality, and subsurface recharge are met. However, it does not include analyses of the direction of subsurface flows or wetland viability. If the viability of the wetland areas is considered to be of importance, it may be advisable to have an appropriate geotechnical professional analyze the proposed plans and offer design guidance prior to final Site Plan approval.

8. The proposed density of development for this project continues to be of concern. There is very little room for error if the detailed design of the proposed stormwater management facilities shows that more space is necessary to meet current standards. Please note that stormwater management requirements will not be relaxed if unforeseen difficulties arise that prevents full compliance with stormwater management standards. In such cases it may be necessary to revise the site layout. This may include a loss building lots.
9. The request to waive the open section roadway requirement for this project has yet to be approved. Proposed water quality offsets for allowance of the open section waiver include groundwater recharge, structural pretreatment to the MCSF's, and enlarged MCSF surface areas. No detailed plan review will take place prior to approval of the open section roadway waiver request.
10. This stormwater concept approval supercedes the approval granted on May 26, 2004.

This list may not be all inclusive and may change based on available information at the time.

Payment of a stormwater management contribution in accordance with Section 2 of the Stormwater Management Regulation 4-90 is not required.

This letter must appear on the sediment control/stormwater management plan at its initial submittal. The concept approval is based on all stormwater management structures being located outside of the Public Utility Easement, the Public Improvement Easement, and the Public Right of Way unless specifically approved on the concept plan. Any divergence from the information provided to this office; or additional information received during the development process; or a change in an applicable Executive Regulation may constitute grounds to rescind or amend any approval actions taken, and to reevaluate the site for additional or amended stormwater management requirements. If there are subsequent additions or modifications to the development, a separate concept request shall be required.

If you have any questions regarding these actions, please feel free to contact Mark Etheridge at 240-777-6338.

Sincerely,



Richard R. Brush, Manager  
Water Resources Section  
Division of Land Development Services

RRB:dm mce

cc: C. Conlon  
S. Federline  
SM File # 204040

QN -ON; Acres:  
QL - ON; Acres:  
Recharge is provided



**MONTGOMERY COUNTY PLANNING DEPARTMENT**  
THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION

**Memo**

To: Robert Kronberg  
Development Review Division

From: H. N'kosi Yearwood and Karen Kumm-Morris  
Community-Based Planning Division

*HKM*

Re: Piedmont Crossing  
Site Plan (8-20060120)-Phase I

Date: September 6, 2007

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**Staff Recommendation: APPROVAL**

Piedmont Crossing, Site Plan 8-2006120-Phase I, is a residential development that is adjacent to the Town of Washington Grove and Mill Creek South community in the Shady Grove Sector Plan area. The following represent Community-Based Planning Division comments:

1. Remove one unit east of "Street A" from five to four units in order to increase compatibility and consistency with the approved preliminary plan.
2. Coordinate with the Town of Washington Grove to use a portion of the Town property, along Ridge Road, to increase landscape screening along "Street A".

**Background**

The Planning Board approved the preliminary plan (#1-02022) for Casey Property at Mill Creek, prior name of development, in December 2004 with 28 conditions of approval. The preliminary plan approved 184 residential lots in three phases that cover the 65.59-acre property. Phase I is limited to 65 dwelling units.

In addition to the residential development, a two-year reservation for an elementary school was approved for Phase II and the dedication of approximately 12 acres for Legacy Open Space. The reservation for the elementary school has expired since Montgomery County Public Schools did not purchase the property.

The applicant has made several changes to the proposal since 2004, including traffic calming measures along Amity Drive extended; removal of residential units adjacent to the stormwater management facility; use of dry well for some dwelling units and different types residential units; and alternative stormwater management design.

## **Compliance with Sector Plan**

This site plan is consistent with recommendations of the Approved and Adopted (2006) Shady Grove Sector Plan. The Plan recommends R-90 (single-family residential) zoning for the Piedmont Crossing. The Plan recommends the following:

- Allow an elementary school as an alternative location to the school on Jeremiah Park if the site acquired by private funds. If a school is located here, do not place the school on any portion of the Legacy Open Space site (*County Council Resolution No. 15-1283, p.13*).
- Provide Legacy Open space to protect existing meadow adjacent to the Town of Washington Grove.
- Provision of a neighborhood park for passive recreation and achieve a bike trail from Amity Drive to Washington Grove (p.45)

The submitted site plan has a neighborhood park with multi-age play at the intersection of “Street B” and Amity Drive extended. Park Planning staff has worked with the applicant to reconfigure the neighborhood park that allows better grading of the property and equipment that meets Parks standards. The park is integrated with adjacent stormwater management and wetland areas north of the Inter-County Connector (ICC).

A Share Use Path-Class I along the northern segment of Amity Drive implements the Plan’s recommendation (*County Council Resolution No. 15-1283, p.23*). On-street parking and curb extensions are proposed for Amity Drive extended that achieves the Plan’s recommendation to mitigate cut-through traffic and calm travel speeds (p.78). Amity Drive is classified as primary residential street with 70 feet right-of-way.

## **Community Comments**

The Town of Washington Grove and Mill Creek South residents have been engaged with this property since 2001 when the initial preliminary was submitted. Since the approval of the preliminary plan in 2004, the applicant has held meetings with the Town and other interested persons.

The Town has some outstanding issues with the development: nature of landscaping along Ridge Road; density of the overall development since residential units were relocated to accommodate an ICC stormwater management; and potential impact of residential water wells along Ridge Road from grading for proposed development.

Residents from Mill Creek South are concern that five houses, east of “Street A”, are adjacent to two existing houses on Bounding Bend Court and the removal of existing vegetation along Ridge Road.



The creation of a wildlife corridor, similar grades between the Town and proposed development, saving of significant trees on the property; and removal of units adjacent to the stormwater management facility along Amity Drive extended are changes that address community concerns.



**Office of the General Counsel**  
**Maryland-National Capital Park and Planning Commission**

Reply To

August 7, 2006

Adrian R. Gardner  
General Counsel  
6611 Kenilworth Avenue, Suite 403  
Riverdale, Maryland 20737  
(301) 454-1670 • (301) 454-1674 fax

**Delivery Via Facsimile and Regular U.S. Mail**

William J. Chen, Esquire  
Chen, Walsh, Tecler & McCabe  
200-A Monroe Street, Suite 300  
Rockville, Maryland 20850

Robert C. Park, Esquire  
Linowes & Blocher, LLP  
7200 Wisconsin Avenue, Suite 800  
Bethesda, Maryland 20814-4842

**Re:** Town of Washington Grove v. Oxbridge Development;  
Civil No. 267037-V (Montgomery County Circuit Court)

Ladies and Gentlemen:

This letter is provided on behalf of the Montgomery County Planning Board (the "Board") of the Maryland-National Capital Park and Planning Commission (the "Commission") to advise you of its position in the civil condemnation proceedings captioned above.

As you know, this case involves the effort by the Town of Washington Grove (the "Town") to condemn a 12-acre meadow (the "Meadow") that is currently owned by Oxbridge Development at Washington Grove, LLC ("Oxbridge"). About six months before the Town instituted the condemnation, however, the Board approved a preliminary plan of subdivision for the "Casey Property at Mill Creek" project that includes the Meadow property. Among other things, the Board's approval imposed a condition requiring Oxbridge to dedicate the Meadow area to the Commission for Legacy Open Space purposes. As we understand it, the condemnation action now pending is based – at least in part – on the Town's desire to prevent the Commission from taking title to the Meadow as otherwise required according to the operative condition of subdivision approval.

Against this backdrop, we believe very strongly that the best interests of the Commission, the Board and the general public would not be served in the long run if we

William J. Chen, Esquire  
Robert C. Park, Esquire  
August 7, 2006  
Page 2

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acquiesce to a condemnation action that is openly targeted to pre-empt or frustrate a condition of subdivision approval expressed by the Board. For this reason, I want to alert all of the parties that the Board intends to oppose the Town going forward with the condemnation. We believe some important principles are placed in jeopardy within the context of this litigation, so my office is tasked with protecting the Board's approval process along with those principles.

At the same time, I have been asked to make it very clear to everyone involved that both the Board and its staff are very sympathetic to the concerns of the Town which prompted it to undertake condemnation of the Meadow in the first place. We part company, however, because the Town believes that such presumptively noble ends are justified by the objectionable means employed in this instance. In any event, in the coming weeks, before we all are pressed to move forward in the litigation, I have been tasked with exploring other alternatives to resolve these proceedings to everyone's reasonable satisfaction. Toward that end, I will be calling upon counsel for the Town and Oxbridge shortly to discuss this matter further.

As I said, given my understanding of the history of this litigation, we thought it was very important for me to make the Board's position on this matter very clear as quickly as possible. Please do not hesitate to call me with any questions, concerns or reactions.

Very truly yours,



Adrian R. Gardner  
General Counsel

cc: The Montgomery County Planning Board  
Debra Y. Daniel, Assoc. General Counsel



**THE MARYLAND-NATIONAL CAPITAL PARK AND  
PLANNING COMMISSION**

Department of Park & Planning, Montgomery County, Maryland  
8787 Georgia Avenue, Silver Spring, Maryland 20910

**MEMORANDUM**

TO: Robert Kronenberg, Site Plan Supervisor, Development Review

VIA: Stephen Federline, Supervisor, Environmental Planning *SA*  
Mark Pfefferle, Master Planner, Environmental Planning *MP*

FROM: Doug Johnsen, RLA; Planner Coordinator, Environmental Planning Division *dj*

DATE: October 9, 2007

SUBJECT: Site Plan 820060120  
Piedmont Crossing

The Environmental Planning staff has reviewed the site plan referenced above. Staff recommends approval of the site plan and the preliminary forest conservation plan with the following conditions:

1. Compliance with the conditions of approval of the final forest conservation plan.
2. Applicant to submit a tree save plan for the long-term protection of the 44" Black Tupelo.
3. Applicant in conjunction with MCDPS and MCDEP to explore ways to get increased water surface flow to the northern wetland bordered by Lots 12-16 and 20-27.
4. Applicant to submit a plan for annual wetland monitoring to cover pre-development evaluation and for a period of time out to 5-years beyond post-development completion. This plan to be submitted and approved prior to certified site plan.
5. Applicant to construct a split-rail fence at the back of Lots 21-27 to delineate the edge of the forest saved area.

**BACKGROUND**

The subject property is 35.74-acres in size and is located along the eastern town boundary with Washington Grove. It is bounded by Ridge Road to the west and north, with the Washington Grove Hills subdivision to the north, Mill Creek subdivision to the east and Interstate 370 to the south. A parcel of land in reservation for the Inter-county Connector (Parcel N730), is in the southeastern corner and cuts through the subject property in the northeast to southwest direction separating a 16-acre parcel (Parcel N759) from the main portion of the property.

The subject property is located within a sub-watershed of North Rock Creek, named the Mill Creek watershed, which is designated a Use Class IV. Three headwaters with associated springheads and wetlands exist on the site. One forested wetland is located centrally on the northern portion of the site and gives rise to an intermittent channel that flows east-southeast across the site. A second

spring located to the east of the first contributes to this base flow. An additional springhead exists in the forest in the southwest portion of the property. A small portion of the site in the southeast corner is mapped within the 100-year floodplain. The topography of the site is relatively flat with some moderately steep slopes located centrally within the site north of the large forested wetland area.

This project is split into three phases with only the first phase being submitted for approved at this time. Each one of the following two phases will be submitted under separate approvals. Phase One of this project consists of 35.74-acres with a total of 17-acres of existing forest.

### **Environmental Buffers**

A Natural Resource Inventory/Forest Stand Delineation (NRI/FSD) was submitted for the entire 66.07-acre site and approved by Environmental Planning staff on January 4, 2005. The Planning Board approved the preliminary forest conservation plan for the entire site on July 11, 2005. There are three forested wetlands on this project called Wetland North, Wetland East and Wetland South. There are also two streams associated with these wetlands.

There are environmental buffers associated with each stream and wetland in this phase. These areas will be protected by Category I forest conservation easements. The environmental buffers around all wetlands are a minimum of 40-feet which is 15-feet greater than the minimum wetland buffer required by the Maryland Department of Environment. For intermittent and perennial streams, all stream buffers are a minimum of 125-feet from the top of the stream bank. Both the wetland and stream valley buffers are consistent with the environmental buffers recommended in the Planning Board's Guidelines for Environmental Management for Use IV watersheds.

In total, there are 6.78-acres of stream valley buffer and 3.57-acres of wetland buffers for this phase of the project. There is a small pocket of steep slopes located behind Lots 21 and 22 in Block A. However, these slopes are within the stream valley buffer. The proposed site plan does not indicate any encroachment into the environmental buffers, except for necessary infrastructure, such as a roadway that connects Phase One and the future Phase Two.

### **Wetlands**

There are three wetland areas associated with Phase One; Wetland North, Wetland East and Wetland South. Wetland North is located centrally on the northern portion of the site at the southern edge of development for Phase One behind proposed Lots 21 to 26, Block A. This 0.81-acre forested wetland gives rise to an intermittent channel that flows east-southeast across the site along the southern edge of Phase One being joined by another spring to the east. Wetland East is a 0.11-acre forested wetland associated with this spring and is located adjacent to the future local park for Phase One. Wetland South is a 0.31-acre forested wetland located in the southwest portion of the site just north of the future alignment of Amity Drive. This 0.31-acre area of Wetland South in Phase One is part of a larger 1.82-acre wetland that straddles Phases One, Two and Three.

A Storm Water Management (SWM) concept approval letter dated January 8, 2007 from the Montgomery County Department of Permitting Services (MCDPS), Water Resources Section states that "it is imperative that groundwater recharge be maximized to maintain vital subsurface water flow to these areas (i.e. wetlands) if they are to be maintained in viable condition". The letter goes on to say that "If the viability of the wetlands is considered to be of importance, it may be advisable to have



an appropriate geotechnical professional analyze the proposed plans and offer design guidance prior to final Site Plan approval.”

A geotechnical report dated October 3, 2007 was prepared and submitted to M-NCPPC (Appendix A). This report outlines pre-development conditions and post-development impacts to the 0.81-acre northern wetland area. The report discusses surface water runoff, groundwater recharge, and post-development recharge.

The pre-development surface drainage area to the northern wetland is approximately 12-acres with about 0.8-acres of this being residential property. The post-development condition reduces this drainage area to 8.3-acres and increases the residential property to 1.9-acres. This results in an increase in surface water runoff from 2.75 acre-feet for pre-development conditions to 4.38 acre-feet for post-development conditions.

The pre-development groundwater recharge to the northern wetland area is estimated to be approximately 2.66 million gallons per year. In the post-development state this is reduced to about 2.2 million gallons per year. However, with the addition of drywells added to the homes directly adjacent to the northern wetland area there is an added 0.5 million gallons per year of recharge bringing the overall total of post-development recharge to approximately 2.73 million gallons per year.

***Piedmont Crossing Recharge Table*** (from GTA report dated 10/3/2007):

	Recharge Rate (inches per year)	Area of Recharge or Rooftop Collection (acres)	Impervious Fraction (acres; not applicable for Rooftops)	Recharge I gallons per year
<b>Pre-Development</b>				
Undeveloped Land	8.25	11.2	0.00	2,509,217
Residential	8.25	0.8	0.15	152,345
<b>Subtotals</b>				<b>2,661,563</b>
<b>Post-Development</b>				
Rooftop Contribution, full	34.3	0.55	0.00	513,230
Undeveloped Land	8.25	6.35	0.00	1,422,637
Residential	8.25	5.10	0.3	799,813
<b>Subtotal</b>		12.0		<b>2,735,679</b>

The report concludes that the proposed development will not adversely impact the subject wetlands due to a reduction in the hydrologic cycle. This is due to the addition of a drywell recharge requirement associated with the homes that are immediately adjacent to the wetland area and to the proposed conveyance of surface water flows from Parcel A, Block A into the wetlands. This proposed conveyance is contingent upon MCDPS and MDE approval. The current SWM plan shows

this runoff from Parcel A, Block A being directed into a drainage system and delivered to a SWM pond downstream of the northern wetland.

The GTA report proposes that the wetlands be monitored on an annual basis to evaluate the conditions of the wetlands. This monitoring would include an initial pre-development evaluation followed by subsequent annual evaluations. These evaluations would include site reconnaissance, observation and recording of landscapes, hydrology, plant species and soil characteristics.

Although the report is comprehensive in nature Staff acknowledges specific limitation of this document. First, there were no field studies conducted to determine the exact recharge factors for this particular site. The report relies on published data that is general in nature and in some cases the referenced sites are some distance removed from this area. Second, the report's conclusions rely on the implementation of the proposed drywells and other stormwater management elements. The concern is that the drywells will not be installed until the lots are developed. If the development is rough graded and the roads constructed, but the homes are not built for an extended period of time then this may have potential dire consequences on the overall health of the wetlands since the drywell recharge elements will not be constructed. Third, the report does not address the underlying geology or soil types. This area is known to contain an ultramafic rock layer with associated serpentinite soils which may present particular problems for the long-term health of the wetland once construction begins. Given the shallow depth of topsoil associated with serpentinite soils once construction begins the underlying ultramafic rock layer may have to be fractured to allow installation of basements and roadways. This fracturing may then allow groundwater that once flowed to the wetland to be dissipated into the underlying bedrock thereby starving the wetland of groundwater. Lastly, the report suggests long term monitoring of the wetland area. Although a good idea, there are no parameters given for defining this monitoring. There is no plan of action outlined within the methodology nor is there any responsible party identified who is to be held accountable for reacting to any adverse findings discovered during the monitoring period.

### **Forest Conservation**

There are 17-acres of existing forest in Phase One. Of this total 0.62-acres of forest are included in the Maryland State Highway Administration reservation for the Inter County Connector (ICC). This leaves a net total of 16.38-acres of forest on-site.

The on-site forest is comprised of four distinct stands based on species mix and general tree size. **Stand A** is a mid-stage forest dominated by Northern Red Oak (*Quercus borealis*) in the 6" to 12" DBH class. Additional overstory trees in this stand are Mockernut Hickory, Black Cherry, Tuliptree, White Oak, Persimmon, Honey Locust and Red Maple. Stand A is located on the upland slopes at the central portion of Phase One. **Stand B** is an early-stage forest dominated by Red Maple (*Acer rubrum*) in the 6" to 12" DBH class. Additional overstory trees in this stand are Black Cherry, Northern Red Oak, White Oak, Persimmon, and Honey Locust. Stand B is located in the low-lying area and is associated with the existing stream, wetlands and their buffers. **Stand C** is an early-stage forest dominated by Honey Locust (*Gleditsia triacanthos*) in the 2" to 6" DBH class. Additional overstory trees in this stand are Red Maple, Tuliptree, Sassafras, Black Cherry and Virginia Pine. Stand C is slowly reclaiming an area that was historically cleared or disturbed to serve the vacant residence. **Stand D** is an early-stage forest dominated by Red Maple in the 2" to 6" DBH class. Additional overstory trees in this stand are Black Cherry, White Oak, Honey Locust, Tulip Poplar,

Eastern Red Cedar and Mulberry. Stand D is located on the southwestern portion of Phase One.

There are twenty-six (26) trees 24 inches in diameter and greater on the subject property and ten (10) trees 30 inches in diameter and greater.

The final forest conservation plan for Phase One indicates the removal of 8.61-acres of forest and the preservation of 7.77-acres of forest. There is a planting requirement of 1.19-acres remaining to be met on-site. All retained forest, reforestation areas and all areas within a stream valley buffer/environmental buffer will be placed into a Category I Forest Conservation Easement or dedicated to M-NCPPC.

Under the R-90 development standards the minimum rear yard set back for a building is 25 feet. The final forest conservation plan does not show any house footprints within 25 feet of the rear property line. The Planning Board, through the approval of the preliminary plan of subdivision, establishes the building envelope and not the building location. The builder has the flexibility to locate the building anywhere within building envelope including at the rear building restriction line. If the builder constructs the house, or any house feature at the rear building restriction line there would be 25 feet from the building to the wetland buffer. This would provide an inadequate backyard space and encourage the homeowner to enter the environmental buffer area to create a useable backyard space. In order to delineate the buffer and protect the wetland from construction staff and future homeowner encroachment, Environmental Planning requests a site plan condition requiring the applicant to construct a split rail fence at the back of lots 21 through 27. The split rail fence should be installed as part of the tree protection fencing.

#### **Noise Analysis**

The applicant submitted a noise analysis on May 31, 2007 which incorporated the Maryland Department of Transportation State Highway Administration's Technical Noise Analysis dated November 30, 2004 and the revised report dated January 2006 for the ICC. The results of the analysis indicates that the Piedmont Crossing site will be located outside the future 65 dBA  $L_{dn}$  ground noise impact zone and that the future unmitigated upper noise contours will not be impacting the proposed homes of Piedmont Crossing site. Therefore, no special exterior or interior noise mitigation is warranted.

#### **RECOMMENDATION**

Environmental Planning recommends approval of the site plan with the conditions stated above.

# **Appendix A**

**Geo-Technology Associates, Inc.**

**Hydological Evaluation of Piedmont Crossing, Phase One**

# GEO-TECHNOLOGY ASSOCIATES, INC.

GEOTECHNICAL AND  
ENVIRONMENTAL CONSULTANTS



*A Practicing ASFE Member Firm*

October 3, 2007

Toll Brothers  
7164 Columbia Gateway Drive, Suite 230  
Columbia, Maryland 21046

Attn: Mr. Walter O'Connor

Re: Report of Hydrologic Evaluation  
*Piedmont Crossing*  
Montgomery County, Maryland

Gentlemen:

In accordance with our agreement, Geo-Technology Associates, Inc. (GTA) has performed a hydrologic evaluation at the Piedmont Crossing site, located in Montgomery County, Maryland. The purpose of the evaluation was to estimate the pre- and post-development groundwater recharge and surface water flows that reach the wetland area at the north-central portion of the site.

The evaluation included review of published hydrogeologic information, review and analysis of precipitation data, calculation of pre- and post-development groundwater recharge and incorporation of surface water runoff calculations performed by Dewberry, and transmitted to GTA on September 27, 2007 (Dewberry, 2007). The literature review and analysis provided a basis for evaluation of potential impact to the afore-mentioned wetlands, based on anticipated pre- and post-development hydrologic conditions. The results of the hydrologic evaluation indicate that hydrologic support of the wetlands will be maintained, i.e. pre- and post-development groundwater recharge and surface water run-off volume estimates indicate equivalent or greater water influx in the post-development condition.

It should be noted that proactive measures are proposed to maintain hydrologic support of the wetlands, including dry wells to facilitate recharge of rooftop drainage around the perimeter of the wetlands, and artificial recharge up-gradient of the wetlands via a recharge swale. The proposed configuration of drywells appears to be optimal in that it facilitates influx of groundwater in a diffuse manner around the wetland perimeter, allowing for more efficient and comprehensive recharge to the wetland area. In addition, it is proposed that run-off collected from an approximate 1-acre impervious area, situated outside of the proposed wetland drainage area, be routed to the wetlands. The proposed re-routing of surface water runoff is subject to Montgomery County and Maryland Department of the Environment (MDE) approval. The results of the hydrologic evaluation are summarized herein.

3445-A Box Hill Corporate Center Drive, Abingdon, MD 21009

(410) 515-9446

Fax: (410) 515-4895

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Visit us on the web at [www.ntragta.com](http://www.ntragta.com)



Toll Brothers

Re: *Piedmont Crossing –Hydrologic Evaluation*

October 3, 2007

Page 2

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### ***1.0 Surface Water Runoff***

According to Dewberry (2007), the current surface water drainage area to the wetlands is approximately 12 acres, with approximately 0.8 acres of residential land and the remainder undeveloped. Dewberry (2007) performed runoff volume calculations and estimated an annual average runoff volume of 2.75 acre-feet (ac-ft) for current conditions. Post-development run-off calculations were performed assuming an overall surface water drainage area to the wetland of approximately 8.3 acres, with about 1.9 acres of residential acreage, resulting in an estimated 4.38 acre-feet of average annual runoff (Dewberry, 2007). Thus, the estimated post-construction surface water flows to the wetlands exceed the pre-construction flows (Dewberry, 2007). A summary of Dewberry's surface water flow estimates are attached hereto.

Additional runoff may be routed to the wetlands via splitting captured runoff from the conveyance that will extend from the northwestern portion of the site to the proposed stormwater management facility below the wetlands. Specifically, it is proposed that runoff from an approximate 1-acre drainage area, situated outside of the proposed post-construction drainage area to the wetlands, be collected by a storm drain inlet in the vicinity of Station 12+75 of Street A and routed toward the wetlands. This is contingent upon MCDPS and MDE approval. Dewberry (2007) has calculated that this will result in an additional 1.66 ac-ft of runoff to the wetlands on an annual average basis, further increasing the post-construction surface water flows relative to pre-construction flows.

### ***2.0 Groundwater Recharge***

The results of the groundwater recharge evaluation indicates that post-development recharge to the groundwater flow system that moves toward the wetlands will be slightly higher than pre-development recharge, due to compensation for recharge that is assumed lost on impervious surfaces by collection and recharge of rooftop runoff. The relative estimates of recharge for the pre- and post-development conditions are approximately 2.66 and 2.73 million gallons per year (MGY), respectively. The results of the recharge evaluation are summarized in the *Piedmont Crossing Recharge Table*, attached to this letter, and the evaluation methodology and results are also summarized herein.

#### ***2.1 Introductory Discussion of Site Recharge***

Groundwater recharge occurs by infiltration of precipitation and movement of the infiltrated water to the water table surface. The groundwater table tends to generally mimic topography, in a relatively muted form, and groundwater flow is from areas of recharge toward areas of groundwater discharge such as wetlands, streams, rivers etc. Based on review of existing site information and published hydrogeologic information/topographic maps prepared by the Maryland Geological Survey (MGS) and United States Geological Survey (USGS), it appears that the area of the groundwater

Toll Brothers

Re: *Piedmont Crossing –Hydrologic Evaluation*

October 3, 2007

Page 3

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table that flows toward the subject wetlands consists of approximately 12 acres. Based on review of the *Piedmont Crossing 100-year Floodplain Drainage Area Map*, prepared by Dewberry and dated June, 2007 (Dewberry, 2007a), and based on GTA's experience with relatively long-term pre- and post-construction groundwater level monitoring in Montgomery County Special Protection Areas (which has not indicated any groundwater level trends due to construction/development), it is anticipated that the area of groundwater movement toward the wetlands will remain generally consistent. Post-development groundwater flow will continue toward existing groundwater discharge areas.

The approach used herein for estimating groundwater recharge at the site is consistent with MDE's methodology for groundwater resource evaluations, i.e. use of average published recharge rates, based on baseflow separation techniques. MDE's approach includes multiplication of the estimated recharge rate by the applicable site area in order to estimate recharge volume. According to MDE's *Baseflow Hydrograph Separation Analyses Table*, revised in January of 2006, annual average recharge for the Rock Creek watershed, in which the site is located, is 8 inches per year (in/yr). *The Availability of Groundwater in Western Montgomery County, Maryland*, published by the MGS in 1981 indicates average recharge of 8.5 in/yr for the Rock Creek watershed. For the purpose of the analysis summarized herein, a recharge value of 8.25 in/yr was used, which is the average of the two afore-mentioned recharge values.

## **2.2 Pre-Development Recharge Estimate**

Current recharge was estimated to be approximately 2.66 million gallons per year (MGY) based on the afore-mentioned 8.25 in/yr recharge rate and a 12-acre area, consisting of approximately 0.8 acres of residential development and 11.2 acres of undeveloped land. An approximate 15 percent reduction in recharge was assumed for the residential portion due to impervious surfaces. This reduction is consistent with current MDE policy for groundwater resource evaluations, where 10 to 15 percent reductions are assumed. It should be noted that until recently, no reduction due to impervious areas were assumed in many cases by MDE.

## **2.3 Post-Development Recharge Estimate**

The post-development recharge is estimated to be approximately 2.73 MGY. This estimate included calculation of the rooftop runoff that is proposed to be captured and routed to dry wells and a recharge swale. The basis for this recharge estimate follows.

Toll Brothers

Re: *Piedmont Crossing - Hydrologic Evaluation*

October 3, 2007

Page 4

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### **2.3.1 Rooftop Runoff Estimate**

Based on discussions with Ms. Joanne Cheok of Dewberry, the proposed collection of rooftop runoff is from the 16 proposed residential units that flank the wetland area, with full rooftop drainage collected from end units and only the drainage from the rear portion of rooftops for other units. According to Ms. Cheok, the recharge facilities will be designed to capture the first inch of runoff from the rooftops. In order to provide a basis for estimating the quantity of annual rooftop runoff that will reach the recharge facilities, an analysis of precipitation records was performed and a summary of the analysis follows.

For evaluation of precipitation conditions in the site vicinity, GTA obtained precipitation data from the Maryland State Climatology Office (MSCO). The MSCO forwarded electronic files containing precipitation data for Damascus, Maryland. The Damascus precipitation data spans the period of 1990 through 1999. To provide a basis for determining which years in the 1990-99 Damascus precipitation record approximate normal conditions, GTA reviewed the hydrogeologic literature, discussed regional precipitation conditions with MSCO personnel, and reviewed statistics on normal annual precipitation for the weather station at the Baltimore-Washington International Airport (BWI).

According to the MGS (1981), annual average precipitation in Western Montgomery County is approximately 42 inches. *The Water Resources of Howard and Montgomery Counties*, published by the Maryland Department of Geology, Mines and Water Resources (DGMWR) in 1954, indicates that annual average precipitation is approximately 43.5 inches per year at the Rock Creek basin, located in East-Central Montgomery County.

GTA obtained precipitation statistics maintained at the National Weather Service website for BWI to provide a long-term, regional perspective on annual precipitation. The reviewed statistics indicate that below-normal precipitation occurred in 1995 and 1998, while very low and relatively high annual precipitation totals occurred in 1991 and 1996, respectively.

Based on GTA's review of the Damascus precipitation data, and normal precipitation estimates for Montgomery County provided by the DGMWR (1954) and MGS (1981), it appears that the Damascus annual precipitation totals of approximately 43.11, 44.20 and 45.63 inches for 1995, 1998 and 1999, respectively, approximate normal conditions.

GTA calculated precipitation totals derived from the first inch of daily precipitation for the years 1991, 1995, 1996, 1998 and 1999, to simulate average rainfall conditions. In performing the calculations, 0.05 inches was subtracted from each daily precipitation event to account for sorption to impermeable surfaces. The calculations indicate that aside from the amount attributed to sorption,

Toll Brothers

Re: ***Piedmont Crossing –Hydrologic Evaluation***

October 3, 2007

Page 5

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approximately 26.07, 32.54, 49.72, 34.56 and 35.78 inches of precipitation, resulted from the first inch of daily rainfall in 1991, 1995, 1996, 1998 and 1999, respectively. A precipitation value of 34.29 inches, representing an average of the calculated totals for 1995, 1998 and 1999, was utilized for estimation of rooftop conveyance to recharge facilities.

Based on the site plan (Dewberry, 2007a), a rooftop drainage area of approximately 24,000 ft<sup>2</sup> was estimated. Based on capture/conveyance of approximately 34.3 inches of rainfall to the proposed recharge facilities, it is estimated that approximately 0.5 MGY of rooftop runoff will be recharged around the wetland area.

### ***2.3.2 Post-Development Recharge Across Land Surfaces***

Based on the proposed site development plan and existing conditions, it was assumed that approximately 5 acres of the 12 acres used for groundwater recharge calculations would be residential. An assumed 30 percent reduction in recharge to the residential land was applied to the recharge calculations. This is a conservative estimate; as previously mentioned, the MDE typically uses a 10 to 15 percent reduction, and based on review of the site plan (Dewberry, 2007a), actual impervious surfaces appear to comprise less than 25 per cent of the development area. Estimated post-development recharge across the land surface is approximately 2.2 MGY.

### ***3.0 Conclusions and Proposed Wetland Observation***

The results of the hydrologic evaluation indicate that post-development hydrologic support of the wetlands via groundwater recharge and surface water flows will meet or exceed pre-development conditions. This is in part due to proactive measures that are proposed to support wetland hydrology, i.e. supplemental recharge of collected rooftop runoff and proposed conveyance of surface water flows from outside of the post-development wetland drainage area. It should be noted that the proposed supplemental routing of surface water is contingent upon MCDPS and MDE approval. The results of the evaluation indicate that the proposed development will not adversely impact the subject wetlands due to a reduction in hydrologic support.

It is proposed that the wetlands be observed on an annual basis to evaluate the condition of the wetlands. This would include an initial pre-development evaluation of the wetlands, and subsequent annual evaluations. The annual evaluation would include reconnaissance, observation and recording of observed landscapes, hydrology, plant species and soil characteristics. This information is proposed to be compiled into an annual report and submitted to the applicant with copies available to Montgomery County staff and M-NCPPC staff upon request.

Toll Brothers

Re: ***Piedmont Crossing -Hydrologic Evaluation***

October 3, 2007

Page 6

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#### ***4.0 Limitations***

This Report has been prepared for the exclusive use of Toll Brothers in accordance with generally accepted hydrogeologic practice. No warranty, express or implied, is made herein.

The analyses and conclusions contained in this Report are based on the data obtained from existing hydrogeologic information and Dewberry (2007). In the event that any changes in the nature, design, or location of the facilities are planned, the conclusions contained in this Report should not be considered valid unless the changes are reviewed and conclusions of this Report are verified in writing. Geo-Technology Associates, Inc. is not responsible for any claims, damages, or liability associated with interpretation of subsurface data or reuse of the subsurface data or engineering analysis without the express written authorization of Geo-Technology Associates, Inc.

This Report is an instrument of service. If certain conditions or items are noted during our evaluation, Geo-Technology Associates, Inc. may be required by prevailing statutes to notify and provide information to regulatory or enforcement agencies. Geo-Technology Associates, Inc. will notify our Client should a required disclosure condition exist.

This Report was prepared by Geo-Technology Associates, Inc. (GTA) for the sole and exclusive use of GTA and Toll Brothers. Use and reproduction of this Report by any other person without the expressed written permission of GTA and Toll Brothers is unauthorized, and such use is at the sole risk of the user.

We appreciate the opportunity to continue working with you on this project. Should you have any questions or require any additional information, please do not hesitate to contact the undersigned.

Sincerely,  
GEO-TECHNOLOGY ASSOCIATES, INC.



Paul S. Scott, P.G.  
Vice President

PSS/wkc/als

071194

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## Piedmont Crossing

10/2/2007

### EXISTING DRAINAGE AREA

Drainage area (DA): 12.36 acres

Impervious area (AI): 0.23 acres

#### VOLUMETRIC RUNOFF COEFFICIENT

$$R_v = .05 + .009(I) \\ R_v = 0.067$$

$$I = (AI / DA) \\ I = 2$$

#### Average annual runoff in ac-ft

$$RO = (P/12) \times (R_v) \times (A)$$

P = average annual precipitation in Montgomery County = 40 inches

R<sub>v</sub> = Volumetric runoff coefficient

A = Drainage Area in acres

$$RO = 2.75 \text{ ac-ft}$$

### PROPOSED DRAINAGE AREA

Drainage area (DA): 8.26 acres

Impervious area (AI): 1.00 acres

#### VOLUMETRIC RUNOFF COEFFICIENT

$$R_v = .05 + .009(I) \\ R_v = 0.169$$

$$I = (AI / DA) \\ I = 12$$

#### Average annual runoff in ac-ft

$$RO = (P/12) \times (R_v) \times (A)$$

P = average annual precipitation in Montgomery County = 40 inches

R<sub>v</sub> = Volumetric runoff coefficient

A = Drainage Area in acres

$$RO = 4.38 \text{ ac-ft}$$

### PROPOSED DRAINAGE AREA

w/ additional cul-de-sac area

Drainage area (DA): 9.26 acres

Impervious area (AI): 1.50 acres

#### VOLUMETRIC RUNOFF COEFFICIENT

$$R_v = .05 + .009(I) \\ R_v = 0.196$$

$$I = (AI / DA) \\ I = 16$$

#### Average annual runoff in ac-ft

$$RO = (P/12) \times (R_v) \times (A)$$

P = average annual precipitation in Montgomery County = 40 inches

R<sub>v</sub> = Volumetric runoff coefficient

A = Drainage Area in acres

$$RO = 6.04 \text{ ac-ft}$$

10/3/2007 8:41 AM

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### ***Piedmont Crossing Recharge Table***

	Recharge Rate (inches per year)	Area of Recharge or Rooftop Collection (acres)	Impervious Fraction (Acres; Not applicable for Rooftops)	Recharge in gallons per year
<b><i>Pre-Development</i></b>				
Undeveloped Land	8.25	11.2	0.00	2,509,217
Residential	8.25	0.8	0.15	152,345
<b>Subtotals</b>		12.0		<b>2,661,563</b>
<b><i>Post-Development</i></b>				
Rooftop Contribution, full	34.3	0.55	0.00	513,230
Undeveloped Land	8.25	6.35	0.00	1,422,637
Residential	8.25	5.10	0.30	799,813
<b>Subtotals</b>		12.0		<b>2,735,679</b>



**MONTGOMERY COUNTY PLANNING DEPARTMENT**  
THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION

September 4, 2007

**MEMORANDUM**

TO: Robert Kronenberg, Supervisor  
Development Review Division

VIA: Daniel Hardy, Supervisor *DKH*  
Transportation Planning

FROM: Ed Axler, Planner/Coordinator *EA*  
Transportation Planning

SUBJECT: Site Plan No. 820060120  
Piedmont Crossing (or Casey Property at Mill Creek), Phase I  
Derwood Policy Area

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This memorandum is Transportation Planning staff's review of transportation-related requirements for the subject site plan. The adequate public facilities (APF) review of the overall development was approved with the Preliminary Plan No. 120020220 on December 23, 2004, under the FY 2002 *Annual Growth Policy* (AGP).

**RECOMMENDATIONS**

We recommend the following conditions as part of the transportation-related requirements to approval of this site plan:

1. Phase I of the development must be limited to a maximum of 53 single-family detached units and 12 single-family attached units.
2. The applicant must retain the transportation-related conditions of approval required to satisfy the APF approval for Preliminary Plan No. 120020220, unless modified by the recommendations below.
3. The applicant must enter into a Traffic Mitigation Agreement (TMAg) with the Planning Board and the Montgomery County Department of Public Works and Transportation (DPWT) to participate in the Greater Shady Grove Transportation Management Organization (TMO) and the Share-A-Ride District. The TMAg must be signed and executed by all parties prior to certification of the site plan.
4. The applicant must provide the shared use path connection between Brown Street in the Town of Washington Grove and the future Amity Drive.

5. The applicant must coordinate with the Maryland State Highway Administration (SHA) regarding the status of the proposed alternative technical concept for the Intercounty Connector prior to submitting a Phase II Site Plan.
6. The portion of Parcel C, Block C must be dedicated to M-NCPPC for public use.

## **DISCUSSION**

### Site Location, Vehicular Access, and Master-Planned Roadway Alignment

The Phase I development is located on the north side of the master-planned Intercounty Connector right-of-way, west of the existing terminus of Amity Drive. The proposed vehicular access point is from the existing terminus of Amity Drive that connects directly to Washington Grove Lane and to Shady Grove Road via Epsilon Drive. A portion of the Amity Drive Extended alignment will be determined as part of the Phase II Site Plan. The portion of Parcel C, Block C to be dedicated to M-NCPPC as part of the Phase I Site Plan should be dedicated to public use, as opposed to parkland, to retain flexibility for roadway and shared use path alignment decisions to occur at the time of the Phase II Site Plan review.

### Pedestrian and Bicycle Facilities

Five-foot sidewalks are being provided along Amity Drive. Four-foot sidewalks are being provided along all the reduced width tertiary residential streets except where no houses front along them or for environmental reasons.

Besides the shared-use path along Amity Drive Extended, a shared use path should connect Brown Street in the Town of Washington Grove to the future Amity Drive Extended. This connection, approximately 150 feet in length, is recommended in the Shady Grove Sector Plan and shown on the site plan as an Alternate 8' Bikeway. The southern terminus of the shared use path will be determined when the Amity Drive Extended alignment is established as part of the Phase II Site Plan.

### Status of the Master-Planned School Site

The Montgomery County Public Schools (MCPS) chose not to locate an elementary school site within the designated area proposed for Phase II. The M-NCPPC's Montgomery County Parks Department is considering acquiring this Phase II site for a local park with ball fields.

### Status of the Intercounty Connector

Contract "A" for the ICC has been awarded to a design-build team for construction of the Intercounty Connector (MD 200) as a six-lane freeway between I-270/I-370 to Georgia Avenue (MD 97). The design-builder has proposed an alternative technical concept that would lower the profile of the I-370 interchange by shifting one ramp from a flyover ramp to a "flyunder" ramp. This concept, akin to the trumpet interchange envisioned in the 1997 Draft Environmental Impact Statement, would require additional right-of-way along its northern limits of disturbance line including nearly all of Phase III and portions of Phase II. As currently proposed, the

extension of Amity Drive from its terminus at Piedmont Crossing Phase I to Crabbs Branch Way extended may have to be shifted to the north. Staff is reviewing the alternative technical concept for the interchange with SHA and other state and federal agencies. Staff finds that this alternative technical concept would adversely affect the development potential available for Phase II and Phase III, but does not adversely affect the feasibility of the Phase I development.

EA:tc

cc: Shahriar Etemadi  
Chuck Kines

mno Kronenberg Piedmont Crossing 820060120.doc



**MEMORANDUM**

**8/30/07**

**TO: Robert Kronenberg, Site Plan Supervisor, Development Review Division, Planning Department**

**FROM: Doug Powell, Plan Review Coordinator, Park Planning and Stewardship Division, Department of Parks**

**RE: Recommended Conditions of Approval for Piedmont Crossing, Site Plan #8-20060120**

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The Piedmont Crossing project will be providing significant open space and some needed recreation amenities, both of which will be a significant benefit to the communities in this area. Park Planning and Stewardship Division and Park Development Division of the Department of Parks would therefore request the following Conditions of Approval:

- Dedication of all designated park open space areas to M-NCPPC, including the approximately 0.9 acre neighborhood park site on the south side of the temporary terminus of Amity Drive, the stream valley areas that lie between the developed portions of the development including the buffers, wetlands and sufficient upland area to allow for construction of natural surface trails, and the approximately 12 acre Legacy Open Space Natural Area. Exact delineation of the park dedication area to be acceptable to M-NCPPC Department of Parks ("Parks") staff and to be finalized by the time of Certified Site Plan. Dedicated land to be free of trash and unnatural debris with the boundaries adequately marked and signed to delineate between parkland and private properties. Location and design of boundary markers and signs to be approved by M-NCPPC Parks staff. Land for Dedication to be conveyed by time of record plat, except the Legacy Open Space Natural Area that has already been transferred by Applicant to M-NCPPC pursuant to Preliminary Plan Conditions of Approval.
- Applicant to construct on the neighborhood park site the following recreation facilities:

- Multi-Age Playground with minimum size of 10,000 square feet and maximum grade of 2%.
- Adequately sized Picnic Area with shelters and tables
- Basketball/Multipurpose Court sized as acceptable to M-NCPPC Parks staff.

- Neighborhood park amenities details to include:

- a. Plan Submittals - All plans submitted for park permit shall comply with The Maryland-National Capital Park and Planning Commission (M-NCPPC) design standards for park facilities, including all details and technical specifications.
- b. Playground Equipment- All playground equipment supplied for this park shall comply with the M-NCPPC specifications.
- c. Playground Safety Sign - Remove the age appropriate safety signs in the playground area as requested by the M-NCPPC legal department.
- d. Safety Surfacing Wood Carpet - Replace the 8-inch depth of wood fiber with a 12-inch minimum compacted depth and provide a drainage system under the wood fiber.
- e. Adaptive Swing Seats - Replace (2) of the tot swings on the Site Plan with adaptive swing seats with coated chains which will accommodate a 3 1/2-inch O.D. top rail design.
- f. Accessible Playground Transfer Platform - Provide a transfer station for the 5-12 age play equipment and label its location on applicable plans.
- g. Benches with backs/armrests - Replace the four 6-foot length Tuffclad benches on the Plan with four 6-foot benches with backs and armrests (such as the Gametime Sedona Series or equal). Armrests on benches must meet the Americans with Disabilities Act (ADA) proposed amended standards. Also, provide one additional 6-foot bench with back and armrests adjacent to the tot swings to accommodate seating needs for the swing bay area. Rotate the bench (located in the SW corner) in the 5-12 age group play area so that all play equipment can be viewed.
- h. Zip Slide/Deck - Replace the single zip slide on the Plan with a double zip slide (2-5 age equipment) to accommodate more users and provide an adequate size deck to accommodate the double slide width opening requirements.
- i. Timber Edging/Walls- Replace the 24-inch length rebar on the Plan with 30-inch length rebar, countersink the rebar and place wood plugs with exterior grade glue.
- j. Sidewalk Location - Relocate the proposed sidewalk to occur adjacent to the proposed parking near the playground.
- k. Retaining Wall Height - Reduce the proposed 4-foot height retaining wall to 30-inch maximum height to avoid the provision of railings and to enhance playground safety.
- l. Playground Slopes - Regrade the park playground to provide 2% maximum slopes to reduce the proposed 30-foot length by 8-foot high slopes which propose 3:1 and 4:1 grading, the multi-purpose court shall remain at the proposed 1% maximum slope with a north-south orientation.
- m. Concrete Picnic Pad - Provide a concrete pad (30-foot x 40-foot minimum) for the proposed (20-foot x 30-foot) picnic pavilion.
- n. Accessible Route- Reduce the proposed 8% sidewalk ramp connections within the park to a 5% maximum slope to meet ADA sidewalk standards, if possible.

o. Tree Species - Replace the proposed Aristocrat Pear trees with a mix of tree species: October Glory Red Maple, Yoshino Cherry, and Little Leaf Linden. Provide 4 additional shade trees at 2 ½" - 3" caliper for shade along the south side of the swing set area. All trees shall be located a minimum of 20 feet from the playground edging. Provide deer protection measures for all trees per standards and specifications.

p. Basketball Court - The proposed ½ basketball court shall be color coated as specified by M-NCPPC Parks staff.

- Adequate parking to be provided adjacent to the neighborhood park and sufficient access (including handicap access) to be provided from the parking to the park facilities. Parking and access to include:

a. On-Street Parking - Delineate all Amity Drive on-street parking as requested by DPWT to identify shared parking for the park users.

b. Crosswalks - Provide two striped crosswalks, at the intersection of Amity Drive and Street B, for egress from the proposed accessible ramps to the park; this will promote safe connections to the park.

c. Sidewalk Location - Relocate the proposed sidewalk along Amity Drive to occur adjacent the proposed parallel parking spaces for ease of pathway access.

d. Ramps - Eliminate the proposed ramp shown at the northwest side of the Amity Drive and Street B intersection, this ramp serves no purpose as no connection is provided nor is it required.

- Natural surface trails to be provided by Applicant within the dedicated open space and sufficient access to the trail system from the communities adjacent to the parkland. Trail locations to be coordinated with and acceptable to M-NCPPC Parks staff and constructed to park standards and specifications. Trail amenities to include:

a. Connections - Provide one connection from the park to the stream valley trail, at Amity Drive.

b. Natural Surface Trail Plan - Provide a natural surface trail plan that complies with all M-NCPPC design standards and technical specifications.

c. Alignment - Align trail to avoid the historic quarry locations and any archaeological historical artifacts located on the property.

d. Specimen Tree Locations - Delineate all specimen trees and locate trail a minimum of 10 feet away from specimen trees to protect tree roots.

- Applicant to obtain a Park Permit for construction of any amenities on dedicated parkland. Minor modifications to the agreed construction of amenities made pursuant to the Park Permit process or as agreed by the parties may be made without the need to revise or amend the approved Site Plan.
- The species selection and the arrangement of the plantings to be located on or adjacent to dedicated parkland to be consistent with the existing plants on the property and should not include any non-native or invasive plant species. Choice of species and exact planting location to be acceptable to M-NCPPC Parks staff and to be finalized by time of Certified Site Plan.

- Applicant to conduct Non-Native Invasive (NNI) plant removal efforts during the two growing seasons subsequent to Site Plan final approval on the dedicated Legacy Open Space parcel, to include removing vines from the hedgerow next to the meadow and removal of NNI woody vegetation in the meadow. Applicant to coordinate all NNI removals with staff from Park Planning and Stewardship Division and other Parks staff selected by Park Planning and Stewardship Division staff prior to any NNI control activities.

## ATTACHMENT C

### Correspondence from Community and Residents



April 2, 2007

Montgomery County Department  
of Park and Planning  
Development Review Division  
8787 Georgia Avenue  
Silver Spring, MD 20910



To whom it may concern:

I am writing as a resident of the town of Washington Grove. I am aware of the development project that is destined to impact my property, "Piedmont Crossing" I have strong concerns regarding this project and therefore must write to you, voicing those concerns and asking for your additional attention of the matter.

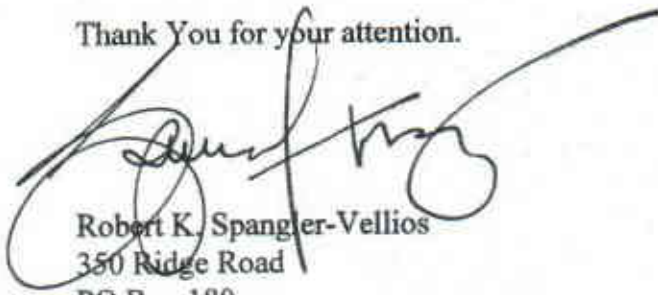
I reside at 350 Ridge Road, that is the lower Ridge Road section of Washington Grove. The proposed "Piedmont Crossing" development will be directly across from my home. In the fall of 2006, a presentation was given by the developer "Toll Brothers". In it they described the removal of the entire tree buffer that we have facing our home, and a new "dry river bed" in it's place. The dry river bed is no more than a drainage gully with a few new little tree's planted along it. That is not a cohesive change to the Washington Grove environment. Why can't a section of the tree vegetation that is currently there, just be reduced in density? I do not want to have the protection and privacy removed, because it would more cost effective to just level everything, for Toll Brothers.

Secondly, and the LARGEST CONCERN, is mine and my neighbors water wells. I have researched and studied the water flow that fills and maintains our wells, and I feel that the construction of homes, the digging of foundations, will have a MAJOR IMPACT on the underground fishers and tributaries that fill our wells. The elevation of a particular section of the Casey property, follows a flow pattern to all of our wells, which are located in our front yards adjacent to Ridge Road. This could leave us with no water, or undrinkable water from the construction.

I am demanding that an ENVIRONMENT IMPACT STUDY, with water specialists, be performed to pre-determine the impact that allowing "Piedmont Crossing" to be built will have on our water wells.

I am not against progression in the residential building arena, but I do believe that our water wells have not been considered at all. Please stop and look and have the study performed to protect our water!!!

Thank You for your attention.

A handwritten signature in black ink, appearing to read 'Spangler-Vellios', with a long, sweeping horizontal line extending to the right.

Robert K. Spangler-Vellios  
350 Ridge Road  
PO Box 180  
Washington Grove, MD 20880  
301-869-5559

P.O. Box 5  
Washington Grove, Maryland 20880

11 October 2006

Maryland National Capitol Park and Planning Commission  
Development Review Division  
8787 Georgia Avenue  
Silver Spring, Maryland 20910

Reference: Preliminary Plan No. 1-02022

Ladies and Gentlemen:

I am writing to ask for your understanding and assistance in substantially improving the site plan for the proposed Piedmont Crossing development. Development is proposed for an area that is adjacent to the Town of Washington Grove along lower Ridge Road and also adjacent to an area of single family homes outside of the Town along Bounding Bend Court.

The issues that must be properly addressed are a) properly buffering the proposed development, b) minimizing the costs that will be otherwise incurred if the development causes the homes along lower Ridge Road to have to cease relying on their wells and to have to obtain their water from the WSSC; and, c) making the proposed development more compatible with the adjoining properties.

To help you understand the need for a good buffer and careful consideration of compatibility issues, let me direct your attention to the portion of lower Ridge Road in Washington Grove. That neighborhood consists of a mix of larger new homes and smaller original homes all situated on large lots that vary from one-half acre (20,000 square feet) to one acre (40,000 square feet) in a distinctly semi-rural setting. Across from those houses, on the other side of Ridge Road, is a well-established forest.

Those properties deserve a substantial wooded buffer to protect them from visual and physical encroachment by the proposed development. That development, in turn, would benefit from the maintenance of a buffering hedgerow. That wooded hedge should be preserved and not clear-cut and it should be at least 35 to 50 feet in width. In this regard, the tentative proposal of the developer to use a drainage ditch as the buffer is totally out of line with any responsible buffering.

It is possible that, in spite of efforts to understand and avoid adverse effects on the underground water that now supplies the wells of homes along lower Ridge Road, unexpected occurrences may lead to those houses having to switch from well water. The costs of any such switch could be mitigated if the opportunity presented by the construction of water lines in the new development is seized upon to require at least the installation of a water main connection in an appropriate location along lower Ridge

COPY  
*Michael Ma*

11 2006

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Road. Such an installation would reduce the risk of substantial future costs that lower Ridge Road homes would otherwise face while also affording them some small mitigation of the adverse effects they can anticipate from the proposed large urban-like development.

The residents of lower Ridge Road and Bounding Bend Court should not face an urban street scene of a line of houses on small lots. The layout of the proposed development should be required to be compatible with its neighbors.

In closing, I urge you to consider that the recent primary election clearly indicated that the voters of Montgomery County want a careful and considered approach to development that does not substantially ignore the needs of existing neighborhoods. The site plan for Piedmont Crossing needs substantial modification.

Sincerely yours,

A handwritten signature in dark ink, appearing to read 'Sheldon Bierman', written in a cursive style.

Sheldon Bierman

slbrch@verizon.net

**Shelley J. Winkler  
501 Brown Street  
P.O. Box 1423  
Washington Grove, MD 20880  
(301) 330-6446**

November 16, 2006

Royce Hanson, Chairman  
Montgomery County Planning Board  
8787 Georgia Avenue  
Silver Spring, MD 20910

Re: Preliminary Plan #1-02022  
Piedmont Crossing, bordering the Town of Washington Grove

Dear Mr. Hanson:

Very serious policy concerns are raised by the site plan review process underway for the referenced plan. I apologize for the length of this letter – but the issues require detail.

**1A. Issues requiring re-examination of the Preliminary Plan by the Board.**

The approved Preliminary Plan for the site contains 65 units, 53 single family homes and 12 townhomes (9 of which are MPDU's). The master plan under which this plan was reviewed stated that the entire area should be single family, for compatibility and buffering of the unique, historic Town of Washington Grove. Washington Grove is rural in nature, with about 220 homes on 200 acres, 100 acres of which are forest. As approved, the Preliminary Plan represented a close clustering of homes in order to preserve a large part of the Legacy Open Space meadow (originally 13 open acres, but reduced to 10 open acres and a roughly 2-acre treeline during the preliminary plan proceedings).

After approval of the Preliminary Plan, the portion of the site containing 12 townhomes was removed from the plan (the State needed land there for ICC use). The remainder of the site contained the 53 single family homes. But the development did not lose 12 units, instead we learned that the applicant:

- Added the 12 units into the smaller, remaining land parcel. In the Preliminary Plan that remaining land contains only single family homes. The result is increased compaction of units and density adjoining the Town; and
- Changed the remaining housing stock to increase the number of townhomes and decrease the number of single family homes. The resulting mix is 28 townhomes and 37 single family homes, or 43% townhomes and 57% single



family homes. The Preliminary Plan approved 18% townhomes and 82% single family homes.

In other words, lost land did not mean lost units. Instead, the planning staff appears to be acquiescing in increased compaction in a smaller land area, with a complete change in the mix of the housing stock.

The significant nature of these changes should require the Commission to re-open the Preliminary Plan, not proceed to site plan. These are major deviations from the approved Preliminary Plan. It is even more troubling here because the added compaction creates increased incompatibility with what is essentially a rural portion of the Town.

We had always been told by staff that the Preliminary Plan fixed the maximum number of units (which could still be reduced depending on specific site details) and layout of roads. Then how can staff proceed to work with a plan where a portion of the site containing almost 20% of the units can be lost without also losing those units, or where a change in the entire mix of the development occurs, without first returning to the Board on the Preliminary Plan?

At a meeting with the public, the applicant recently stated that the community had requested an increase in the number of townhomes. This was disingenuous at best, and dishonest in its rendition. From the start, the community had suggested more townhomes in exchange for single family units IF that trade could achieve retaining all of the Legacy Open Space, preserving the mature trees, obtaining a larger forested transition between the Town and Phase I of the development, and better recharge of the wetlands. The testimony noted below clarifies the context of that suggestion.

### **1B. The Opinion of the Planning Board bears on this Question**

Planning staff said at the community meeting with the applicant that Condition 24 of the Board's Opinion supports these changes of land and unit mix ("Final approval of the number and location of dwelling units, sidewalks, bikepaths and a master-planned hard-surface trail connection from Amity Drive through the Legacy Open Space area to the north and recreational amenities will be determined at site plan(s).") This was precisely the condition staff had told the community was for the community's protection, so that specific lots could be dropped or redesigned for better compatibility with the Town! Now staff uses that same condition to justify proceeding with this essentially new configuration and plan. This is a game of Alice in Wonderland.

Use of this condition belies the specific description of the project in Section II.A of the Opinion, including "Staff has worked with the Town and Applicant to provide a predominantly one family detached mix of units [in Phase I] that staff believes to be compatible with the Town. Twelve townhomes including nine MPDU's will be located on the extension of Amity Drive." (Emphasis added.)

The Opinion's description of the testimony buttresses the communities' concerns that the site plan has significantly veered from the approved Preliminary Plan. The Opinion notes:

"Several people testified in opposition to the location of housing within the three acres of LOS property that the Applicant has not proffered to dedicate. The Town Mayor testified that the 5,000-6,000 square foot new lots in that location are incompatible with the Town, and asked for additional setbacks for compatibility and greater protection of stream buffers, perhaps through more multi-unit dwellings in interior of site, thus reducing the number of units in this location. (However, in response to Planning Board questions, the Mayor stated that it was not his intent to reduce overall density on the site through a reduction of density within this single portion of the site.) Individual residents echoed this concern, seeking relocation of 12 homes within the LOS property elsewhere within the site, leaving the entire Legacy site undeveloped. The Mayor asked that these changes be made during the site plan review process. Additional compatibility concerns were raised with respect to the new street proposed to run parallel to existing Ridge Road, and the lots adjoining that road, with the suggestion that the new road should be moved internally into the new community to provide additional buffering between the new units and the old by replacing the road location with open space buffering. There was also testimony raising the loss of old, large hardwood forest in this area, resulting from the development of these units....[including large white oaks, black gum and red maples that are estimated at more than 100 years old]" (Emphasis added, to show the type of issues contemplated at the hearing.)

"Staff testified that the single-family detached units were placed next to existing single-family homes in Town for compatibility purposes, but that layout could change somewhat at site plan, and additionally the proposed 30-foot buffer in Phase I may be widened at site plan. During rebuttal, the Applicant noted that testimony on this issue was contradictory; some speakers urged the board to increase the townhome density in the center of the site to allow for larger lots on the periphery, providing greater compatibility with the Town's development patter[sic], however, other speakers suggested that the development as proposed included too many townhomes units in the center of the site [note, this testimony refers to Phase II, which is not the phase under current review] thus skewing the monetary valuation of the school site in the event it is acquired through purchase by MCPS." (Board Opinion, July 11, 2005, Public Hearing Testimony, part C.) (Emphasis added.)

In the Board's findings, item 3 states in part: "The Board notes that it will determine the compatibility of specific lots at the time of site plan, when the size, number and location of lots may be reconfigured and/or reduced, and in particular will look at the units located adjacent to the dedication portion of the LOS parcel with respect to this issue." (Emphasis added.) Again, the issue raised for site plan is reconfiguration, with the possibility of reduction of lots. The area specifically referenced was the portion next to the LOS parcel – much of the testimony centered there – for better wetland recharge and compatibility, among many other reasons (preserving the historic LOS field, the heavily wooded bend in Ridge Road, and the oldest trees which are located there).

## **2. Wetland recharge is not handled due to a gap between DPS and Park and Planning oversight responsibilities.**

The property undergoing review contains headwaters of Mill Creek, and the current preliminary plan establishes a no-build buffer around those wetlands.

However, we are alarmed that no government body is responsible for ensuring that the viability of those wetlands remains after construction of the development occurs.

I have been advised by Park and Planning staff that they are responsible for keeping the no-build area open, but that DPS is responsible for all water issues outside of the buffer area.<sup>1</sup> DPS has advised me that they are responsible for stormwater management, in order to ensure that surface runoff is channeled appropriately, to keep the sediment load down and to keep nitrogen out of the Bay.

However, DPS has also advised me that they do not have the responsibility or the expertise to review the development plan to determine whether the wetlands being buffered will remain viable (apparently, geotechnical engineering expertise is required). As a result, it is still quite possible that the underground water currently forming the spring for these wetlands will be eradicated with construction, and the ecology of that wetland could completely change (dry up, damage old trees and lose the remaining forest, etc.). We had been advised by a local naturalist that construction above the headwaters without proper safeguards could easily cause these waters to be directed in a way which would dry up the headwaters.

This would be a ludicrous result – going to the trouble of protecting an old forest and wetland buffer, only to destroy the wetland and forest.

(As an aside, some years ago Newport Estates was developed along Girard Avenue. At the time, our town was assured by the developer that the spring feeding Maple Lake would not dry up. But the spring did dry up, and eventually a well was drilled, and power and a pump installed to provide the water for the lake. The consequences here would be much more severe. The same mistake cannot be repeated. We need independent evaluation by a trained engineer obligated to the County, and should not rely on developer's assurances.)

I am attaching a letter I received from the county Department of Environmental Protection in response to my question about this gap. As you will note, the response discusses recharge – but I have been told by DPS staff that they simply do not have the professional expertise to review the site plan for adequate recharge to the wetlands (as opposed to recharge in the general area, which is quite a different matter) – which is different from regulating surface runoff and sediment load. The reference to the Germantown Fen in that letter suggests that Park and Planning has that obligation – and yet Park and Planning staff has made clear to me that they do not have the authority to do

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<sup>1</sup> ...”The Board asked staff if they had conducted a study on the impact of Phase I on water quality. In response to that questioning, Staff testified that the Applicant had provided, and Montgomery County’s Department of Permitting Services (“DPS”) had approved, a study that analyzed (among other things) the impact of Phase I on water quality and on wetlands, and that the stormwater management concept plan requires maximization of recharge into wetlands. This is an area of substantive review that lies with DPS, not with the Planning Board.” (Board Opinion, July 11, 2005, Public Hearing Testimony, part D).

Finding 5 of the Board’s Opinion notes: “The application meets all applicable stormwater management requirements....” “...MCDPS has exclusive jurisdiction over this aspect of the preliminary plan application.”

As noted above, DPS has advised that they are not able to do this.

more than keep construction out of the wetland buffer area – which simply does not address continued wetland viability. In fact, the DEP letter ends with a referral back to Park and Planning. That is why we are asking you for help on this issue. Please close this serious gap –by obtaining professional advice from a geotechnical engineer.

### **3. Need appropriate natural forest transition between the Town of Washington Grove and this development.**

Citizens of the Town and the Shady Grove Alliance have been requesting that Park and Planning ensure that a natural forested area be restored between Ridge Road and the new development. At the presentation by the new applicant to the community, the applicant is now proposing an open swale, filled with stones, for stormwater purposes! We implore Park and Planning to ensure that the only buffer compatible with a forested Town -- a forested edge as currently exists, be required through site plan. When I spoke with DPS to ask if there is any reason why natural forest could not be planted in a stormwater management area, the staff person said he'd never been asked that question. The applicant had previously stated verbally that they intended to plant the buffer with native species. We rely on Park and Planning to require appropriate compatibility and transition – but we sense a failure to keep those requirements in mind at this site plan review level, and ask for your oversight.

### **4. A few old growth trees need to be preserved.**

In other parts of the County, Park and Planning seems concerned about preserving a lone mature tree here and there. Why can't the same concern be applied to several very old trees in this development? There are just a few notable old trees – more than 100 years old, some along lower Ridge Road and a few in the treeline between the bend in Ridge Road and the wetlands. These could easily be saved with some rearrangement from the Preliminary Plan – we have provided possible reconfigurations. For example, the wildlife corridor can be moved to coincide with one old growth area. We again ask your oversight to bring some accountability and reasonable thinking to this process.

### **5. Well water quality of existing lower Ridge Road residents**

At the recent presentation to the community by the applicant, Town residents of lower Ridge Road indicated that construction of the plan may jeopardize the quality of their well water. This was the first time this potential was realized, to my knowledge, by the applicant or planning staff. Please ensure that all appropriate investigations are conducted to retain the water quality of these residences before any site plan is approved.

### **6. Noise mitigation due to ICC**

The ICC will be very close to this development. The applicant should work with the County and/or the SHA to mitigate the substantial noise that will come from the ICC. At present, the SHA is not considering any responsibility for mitigation, nor does the area

appear to have been studied. The SHA is about to award the design/build contract for this section of the ICC with no mitigation for this area included.

Thank you very much for your attention. We hope Park and Planning can address these issues before the plan comes back for review by the Board, and that the Preliminary Plan will be revisited by the Board if the applicant indeed pursues the changes indicated to the community.

Sincerely,

Shelley Winkler

Cc: John Compton, Mayor, Washington Grove  
Phil Andrews, Councilmember (for specific reference to item 2 of this letter, which describes a serious gap in County oversight of this plan)

Attachments (2 separate pages constitute one attached letter)  
Via email



## **ATTACHMENT D**

### **Correspondence from the Applicant**

# GEO-TECHNOLOGY ASSOCIATES, INC.

GEOTECHNICAL AND  
ENVIRONMENTAL CONSULTANTS



*A Practicing ASFE Member Firm*

October 3, 2007

Toll Brothers  
7164 Columbia Gateway Drive, Suite 230  
Columbia, Maryland 21046

Attn: Mr. Walter O'Connor

Re: Report of Hydrologic Evaluation  
*Piedmont Crossing*  
Montgomery County, Maryland

Gentlemen:

In accordance with our agreement, Geo-Technology Associates, Inc. (GTA) has performed a hydrologic evaluation at the Piedmont Crossing site, located in Montgomery County, Maryland. The purpose of the evaluation was to estimate the pre- and post-development groundwater recharge and surface water flows that reach the wetland area at the north-central portion of the site.

The evaluation included review of published hydrogeologic information, review and analysis of precipitation data, calculation of pre- and post-development groundwater recharge and incorporation of surface water runoff calculations performed by Dewberry, and transmitted to GTA on September 27, 2007 (Dewberry, 2007). The literature review and analysis provided a basis for evaluation of potential impact to the afore-mentioned wetlands, based on anticipated pre- and post-development hydrologic conditions. The results of the hydrologic evaluation indicate that hydrologic support of the wetlands will be maintained, i.e. pre- and post-development groundwater recharge and surface water run-off volume estimates indicate equivalent or greater water influx in the post-development condition.

It should be noted that proactive measures are proposed to maintain hydrologic support of the wetlands, including dry wells to facilitate recharge of rooftop drainage around the perimeter of the wetlands, and artificial recharge up-gradient of the wetlands via a recharge swale. The proposed configuration of drywells appears to be optimal in that it facilitates influx of groundwater in a diffuse manner around the wetland perimeter, allowing for more efficient and comprehensive recharge to the wetland area. In addition, it is proposed that run-off collected from an approximate 1-acre impervious area, situated outside of the proposed wetland drainage area, be routed to the wetlands. The proposed re-routing of surface water runoff is subject to Montgomery County and Maryland Department of the Environment (MDE) approval. The results of the hydrologic evaluation are summarized herein.

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Re: *Piedmont Crossing - Hydrologic Evaluation*

October 3, 2007

Page 2

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### ***1.0 Surface Water Runoff***

According to Dewberry (2007), the current surface water drainage area to the wetlands is approximately 12 acres, with approximately 0.8 acres of residential land and the remainder undeveloped. Dewberry (2007) performed runoff volume calculations and estimated an annual average runoff volume of 2.75 acre-feet (ac-ft) for current conditions. Post-development run-off calculations were performed assuming an overall surface water drainage area to the wetland of approximately 8.3 acres, with about 1.9 acres of residential acreage, resulting in an estimated 4.38 acre-feet of average annual runoff (Dewberry, 2007). Thus, the estimated post-construction surface water flows to the wetlands exceed the pre-construction flows (Dewberry, 2007). A summary of Dewberry's surface water flow estimates are attached hereto.

Additional runoff may be routed to the wetlands via splitting captured runoff from the conveyance that will extend from the northwestern portion of the site to the proposed stormwater management facility below the wetlands. Specifically, it is proposed that runoff from an approximate 1-acre drainage area, situated outside of the proposed post-construction drainage area to the wetlands, be collected by a storm drain inlet in the vicinity of Station 12+75 of Street A and routed toward the wetlands. This is contingent upon MCDPS and MDE approval. Dewberry (2007) has calculated that this will result in an additional 1.66 ac-ft of runoff to the wetlands on an annual average basis, further increasing the post-construction surface water flows relative to pre-construction flows.

### ***2.0 Groundwater Recharge***

The results of the groundwater recharge evaluation indicates that post-development recharge to the groundwater flow system that moves toward the wetlands will be slightly higher than pre-development recharge, due to compensation for recharge that is assumed lost on impervious surfaces by collection and recharge of rooftop runoff. The relative estimates of recharge for the pre- and post-development conditions are approximately 2.66 and 2.73 million gallons per year (MGY), respectively. The results of the recharge evaluation are summarized in the *Piedmont Crossing Recharge Table*, attached to this letter, and the evaluation methodology and results are also summarized herein.

#### ***2.1 Introductory Discussion of Site Recharge***

Groundwater recharge occurs by infiltration of precipitation and movement of the infiltrated water to the water table surface. The groundwater table tends to generally mimic topography, in a relatively muted form, and groundwater flow is from areas of recharge toward areas of groundwater discharge such as wetlands, streams, rivers etc. Based on review of existing site information and published hydrogeologic information/topographic maps prepared by the Maryland Geological Survey (MGS) and United States Geological Survey (USGS), it appears that the area of the groundwater

Toll Brothers

Re: *Piedmont Crossing –Hydrologic Evaluation*

October 3, 2007

Page 3

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table that flows toward the subject wetlands consists of approximately 12 acres. Based on review of the *Piedmont Crossing 100-year Floodplain Drainage Area Map*, prepared by Dewberry and dated June, 2007 (Dewberry, 2007a), and based on GTA's experience with relatively long-term pre- and post-construction groundwater level monitoring in Montgomery County Special Protection Areas (which has not indicated any groundwater level trends due to construction/development), it is anticipated that the area of groundwater movement toward the wetlands will remain generally consistent. Post-development groundwater flow will continue toward existing groundwater discharge areas.

The approach used herein for estimating groundwater recharge at the site is consistent with MDE's methodology for groundwater resource evaluations, i.e. use of average published recharge rates, based on baseflow separation techniques. MDE's approach includes multiplication of the estimated recharge rate by the applicable site area in order to estimate recharge volume. According to MDE's *Baseflow Hydrograph Separation Analyses Table*, revised in January of 2006, annual average recharge for the Rock Creek watershed, in which the site is located, is 8 inches per year (in/yr). The *Availability of Groundwater in Western Montgomery County, Maryland*, published by the MGS in 1981 indicates average recharge of 8.5 in/yr for the Rock Creek watershed. For the purpose of the analysis summarized herein, a recharge value of 8.25 in/yr was used, which is the average of the two afore-mentioned recharge values.

### **2.2 Pre-Development Recharge Estimate**

Current recharge was estimated to be approximately 2.66 million gallons per year (MGY) based on the afore-mentioned 8.25 in/yr recharge rate and a 12-acre area, consisting of approximately 0.8 acres of residential development and 11.2 acres of undeveloped land. An approximate 15 percent reduction in recharge was assumed for the residential portion due to impervious surfaces. This reduction is consistent with current MDE policy for groundwater resource evaluations, where 10 to 15 percent reductions are assumed. It should be noted that until recently, no reduction due to impervious areas were assumed in many cases by MDE.

### **2.3 Post-Development Recharge Estimate**

The post-development recharge is estimated to be approximately 2.73 MGY. This estimate included calculation of the rooftop runoff that is proposed to be captured and routed to dry wells and a recharge swale. The basis for this recharge estimate follows.

Toll Brothers

Re: *Piedmont Crossing - Hydrologic Evaluation*

October 3, 2007

Page 4

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### **2.3.1 Rooftop Runoff Estimate**

Based on discussions with Ms. Joanne Cheok of Dewberry, the proposed collection of rooftop runoff is from the 16 proposed residential units that flank the wetland area, with full rooftop drainage collected from end units and only the drainage from the rear portion of rooftops for other units. According to Ms. Cheok, the recharge facilities will be designed to capture the first inch of runoff from the rooftops. In order to provide a basis for estimating the quantity of annual rooftop runoff that will reach the recharge facilities, an analysis of precipitation records was performed and a summary of the analysis follows.

For evaluation of precipitation conditions in the site vicinity, GTA obtained precipitation data from the Maryland State Climatology Office (MSCO). The MSCO forwarded electronic files containing precipitation data for Damascus, Maryland. The Damascus precipitation data spans the period of 1990 through 1999. To provide a basis for determining which years in the 1990-99 Damascus precipitation record approximate normal conditions, GTA reviewed the hydrogeologic literature, discussed regional precipitation conditions with MSCO personnel, and reviewed statistics on normal annual precipitation for the weather station at the Baltimore-Washington International Airport (BWI).

According to the MGS (1981), annual average precipitation in Western Montgomery County is approximately 42 inches. *The Water Resources of Howard and Montgomery Counties*, published by the Maryland Department of Geology, Mines and Water Resources (DGMWR) in 1954, indicates that annual average precipitation is approximately 43.5 inches per year at the Rock Creek basin, located in East-Central Montgomery County.

GTA obtained precipitation statistics maintained at the National Weather Service website for BWI to provide a long-term, regional perspective on annual precipitation. The reviewed statistics indicate that below-normal precipitation occurred in 1995 and 1998, while very low and relatively high annual precipitation totals occurred in 1991 and 1996, respectively.

Based on GTA's review of the Damascus precipitation data, and normal precipitation estimates for Montgomery County provided by the DGMWR (1954) and MGS (1981), it appears that the Damascus annual precipitation totals of approximately 43.11, 44.20 and 45.63 inches for 1995, 1998 and 1999, respectively, approximate normal conditions.

GTA calculated precipitation totals derived from the first inch of daily precipitation for the years 1991, 1995, 1996, 1998 and 1999, to simulate average rainfall conditions. In performing the calculations, 0.05 inches was subtracted from each daily precipitation event to account for sorption to impermeable surfaces. The calculations indicate that aside from the amount attributed to sorption,



Toll Brothers

Re: ***Piedmont Crossing –Hydrologic Evaluation***

October 3, 2007

Page 5

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approximately 26.07, 32.54, 49.72, 34.56 and 35.78 inches of precipitation, resulted from the first inch of daily rainfall in 1991, 1995, 1996, 1998 and 1999, respectively. A precipitation value of 34.29 inches, representing an average of the calculated totals for 1995, 1998 and 1999, was utilized for estimation of rooftop conveyance to recharge facilities.

Based on the site plan (Dewberry, 2007a), a rooftop drainage area of approximately 24,000 ft<sup>2</sup> was estimated. Based on capture/conveyance of approximately 34.3 inches of rainfall to the proposed recharge facilities, it is estimated that approximately 0.5 MGY of rooftop runoff will be recharged around the wetland area.

### ***2.3.2 Post-Development Recharge Across Land Surfaces***

Based on the proposed site development plan and existing conditions, it was assumed that approximately 5 acres of the 12 acres used for groundwater recharge calculations would be residential. An assumed 30 percent reduction in recharge to the residential land was applied to the recharge calculations. This is a conservative estimate; as previously mentioned, the MDE typically uses a 10 to 15 percent reduction, and based on review of the site plan (Dewberry, 2007a), actual impervious surfaces appear to comprise less than 25 per cent of the development area. Estimated post-development recharge across the land surface is approximately 2.2 MGY.

### ***3.0 Conclusions and Proposed Wetland Observation***

The results of the hydrologic evaluation indicate that post-development hydrologic support of the wetlands via groundwater recharge and surface water flows will meet or exceed pre-development conditions. This is in part due to proactive measures that are proposed to support wetland hydrology, i.e. supplemental recharge of collected rooftop runoff and proposed conveyance of surface water flows from outside of the post-development wetland drainage area. It should be noted that the proposed supplemental routing of surface water is contingent upon MCDPS and MDE approval. The results of the evaluation indicate that the proposed development will not adversely impact the subject wetlands due to a reduction in hydrologic support.

It is proposed that the wetlands be observed on an annual basis to evaluate the condition of the wetlands. This would include an initial pre-development evaluation of the wetlands, and subsequent annual evaluations. The annual evaluation would include reconnaissance, observation and recording of observed landscapes, hydrology, plant species and soil characteristics. This information is proposed to be compiled into an annual report and submitted to the applicant with copies available to Montgomery County staff and M-NCPPC staff upon request.

#### ***4.0 Limitations***

This Report has been prepared for the exclusive use of Toll Brothers in accordance with generally accepted hydrogeologic practice. No warranty, express or implied, is made herein.

The analyses and conclusions contained in this Report are based on the data obtained from existing hydrogeologic information and Dewberry (2007). In the event that any changes in the nature, design, or location of the facilities are planned, the conclusions contained in this Report should not be considered valid unless the changes are reviewed and conclusions of this Report are verified in writing. Geo-Technology Associates, Inc. is not responsible for any claims, damages, or liability associated with interpretation of subsurface data or reuse of the subsurface data or engineering analysis without the express written authorization of Geo-Technology Associates, Inc.

This Report is an instrument of service. If certain conditions or items are noted during our evaluation, Geo-Technology Associates, Inc. may be required by prevailing statutes to notify and provide information to regulatory or enforcement agencies. Geo-Technology Associates, Inc. will notify our Client should a required disclosure condition exist.

This Report was prepared by Geo-Technology Associates, Inc. (GTA) for the sole and exclusive use of GTA and Toll Brothers. Use and reproduction of this Report by any other person without the expressed written permission of GTA and Toll Brothers is unauthorized, and such use is at the sole risk of the user.

We appreciate the opportunity to continue working with you on this project. Should you have any questions or require any additional information, please do not hesitate to contact the undersigned.

Sincerely,  
**GEO-TECHNOLOGY ASSOCIATES, INC.**

A large, stylized handwritten signature in black ink, likely belonging to Paul S. Scott, P.G., is written over the company name.

Paul S. Scott, P.G.  
Vice President

PSS/wkc/als  
071194

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## Piedmont Crossing

10/2/2007

### EXISTING DRAINAGE AREA

Drainage area (DA): 12.36 acres

Impervious area (AI): 0.23 acres

#### VOLUMETRIC RUNOFF COEFFICIENT

$$R_v = .05 + .009(I)$$
$$R_v = 0.067$$

$$I = (AI / DA)$$
$$I = 2$$

#### Average annual runoff in ac-ft

$$RO = (P/12) \times (R_v) \times (A)$$

P = average annual precipitation in Montgomery County = 40 inches

R<sub>v</sub> = Volumetric runoff coefficient

A = Drainage Area in acres

$$RO = 2.75 \text{ ac-ft}$$

### PROPOSED DRAINAGE AREA

Drainage area (DA): 8.26 acres

Impervious area (AI): 1.60 acres

#### VOLUMETRIC RUNOFF COEFFICIENT

$$R_v = .05 + .009(I)$$
$$R_v = 0.169$$

$$I = (AI / DA)$$
$$I = 12$$

#### Average annual runoff in ac-ft

$$RO = (P/12) \times (R_v) \times (A)$$

P = average annual precipitation in Montgomery County = 40 inches

R<sub>v</sub> = Volumetric runoff coefficient

A = Drainage Area in acres

$$RO = 4.38 \text{ ac-ft}$$

### PROPOSED DRAINAGE AREA

w/ additional cul-de-sac area

Drainage area (DA): 9.26 acres

Impervious area (AI): 1.60 acres

#### VOLUMETRIC RUNOFF COEFFICIENT

$$R_v = .05 + .009(I)$$
$$R_v = 0.196$$

$$I = (AI / DA)$$
$$I = 16$$

#### Average annual runoff in ac-ft

$$RO = (P/12) \times (R_v) \times (A)$$

P = average annual precipitation in Montgomery County = 40 inches

R<sub>v</sub> = Volumetric runoff coefficient

A = Drainage Area in acres

$$RO = 6.04 \text{ ac-ft}$$

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### ***Piedmont Crossing Recharge Table***

	Recharge Rate (inches per year)	Area of Recharge or Rooftop Collection (acres)	Impervious Fraction (Acres; Not applicable for Rooftops)	Recharge in gallons per year
<b><i>Pre-Development</i></b>				
Undeveloped Land	8.25	11.2	0.00	2,509,217
Residential	8.25	0.8	0.15	152,345
<b>Subtotals</b>		12.0		<b>2,661,563</b>
<b><i>Post-Development</i></b>				
Rooftop Contribution, full	34.3	0.55	0.00	513,230
Undeveloped Land	8.25	6.35	0.00	1,422,637
Residential	8.25	5.10	0.30	799,813
<b>Subtotals</b>		12.0		<b>2,735,679</b>