

January 30, 2015

Ms. Maria Broadbent, Director
City of Annapolis Department of Neighborhood and Environmental Programs
City Hall
160 Duke of Gloucester
Annapolis, MD 21401

Annapolis Environmental Commission Comments on the December 31, 2014 Updated Submittal by Crystal Spring Development (CSD), Crystal Spring Preliminary Forest Conservation Plan (PFCP)

Dear Ms. Broadbent:

The Annapolis Environmental Commission (AEC) submits the following comments regarding the above referenced PFCP submittal.

Introduction

Annapolis has very little forest left. The site of the proposed development contains the largest among the last.

The AEC has consistently urged the city and the developers to recognize the importance of the forests, wetlands, stream, soils, and other natural resources on site, and to make every effort to preserve these resources. We note that the latest plan helpfully moves the structures away from the center of the property where many of the wetlands and high-quality forest and the headwaters to the intermittent stream are located. We also note that the current plan jeopardizes other important environmental features and submit these comments with our recommendation that the city cause such deficiencies to be rectified. The comments that follow reiterate certain earlier comments made by the AEC that were not addressed, and include others pertinent to this updated PFCP submittal.

Considerations Pertaining to the Destruction of Priority Forest

The Forest Conservation Act requires that reasonable efforts be made to protect priority forest and requires the developer to show that the plan cannot reasonably be altered. The applicant must show that all techniques for retaining existing forest cover on-site have been exhausted. Scaling back the development should be accomplished before approving requests to destroy any portion of the priority forest. In particular, a large percentage of the proposed development is dedicated to inefficient and destructive open parking lots, and this footprint could be reduced greatly by using structured parking (multi-story garages). The City has been advocating this since 2011.

The forest on the site is considered a contiguous forest according to Natural Resource Article 5-1607 c (ii): "Contiguous Forest that connects the largest undeveloped or most vegetated tracts of land within and adjacent to the site" is a priority for retention and protection. Stand A, part of Stands B, C, D and Stand E (using the Dec 2012 labels) are large vegetated tracts within the site, thus a priority for retention, and contiguous to forested tracts off site. See the "Ecological Values" sections below.

The applicants still assert on p. 21 of the Forest Clearing Justification that this project cannot be further scaled back because the four "nodes" including the Continuing Care Retirement Community, the Village Green, the commercial section and the townhomes all rely on each other, and are all essential, and none is a standalone element. No facts apart from the applicant's own assertion support this. Many communities in the City exist without retail within their development boundaries and there is more than enough retail on Forest Drive to support the additional residents proposed in this development. Smart growth means developing where services already exist, and they do exist along Forest Drive, which obviates new such amenities all packed onto a single development site. Characterizing this development as smart growth and using this as a justification for destruction of 44.24 acres of priority forest is misleading and should not be accepted.

Developer's Priority for Retaining Environmental Resources

In the document Forest Clearing Justification we note that the developers still accord the lowest of all priorities for retaining environmental resources, to the objectives of Wildlife Corridor and Tree Stands. We reiterate and reemphasize that these are foremost among the objectives of the Forest Conservation Act, not the least as the latest proposal continues to state.

In other words, the developers' priorities make little sense in a context of achieving the main purpose of a forest conservation plan, retaining forest and habitat. The stated order of priorities pretty much guarantees that the primary FCA objectives cannot be met. The forest stand boundaries were submitted to DNEP and accepted in 2013. The city should not change the boundaries *post hoc* in a kind of new Forest Stand Delineation (FSD) within this PFCP.

On page 1 of the Forest Clearing Justification, the applicant claims that they have exhausted all techniques for retention of the remaining areas of Priority Forest. We do not agree, and recommend that the city implement the recommendations contained in this AEC response to pursue additional opportunities.

CSD Claims Regarding Unwarranted Hardship

The Forest Clearing Justification is unchanged in continuing to claim "unwarranted hardship." Since neither the city nor the AEC has ever held that "the entire Priority Forest" must be preserved, this is a "straw man" argument and should be disregarded. There is no "unwarranted hardship" within the meaning of the body of law that applies.

The AEC believes that further project reconfiguration and rescaling are necessary to preserve essential environmental values, and that this can be accomplished without creating unwarranted hardship.

The justification for clearing priority forest appears entirely based on a desire to maximize the profitability of the project. Reducing the profitability of a project by reducing the extent of the development in order to address forest conservation and other environmental objectives, does not itself create an unwarranted hardship. (Note 1)

For example, a city decision to disallow destruction of forest in the southwestern portion of the site and require additional afforestation in that area, will not constitute unwarranted hardship considering that the applicant proposes destroying most of the priority forest designated for preservation in the

northeastern portion of the site. If the city decides to allow destruction of tens of acres of priority forest for retail, commercial and assisted living residential units, then this would be deemed as allowing more than “reasonable use” of the property.

The developer continues to compare the current site plan to prior site plans as part of their justification. This is irrelevant (especially considering that both plans significantly exceed the footprint proposed during the annexation hearings and greatly exceed anything contemplated in the comprehensive plan). Current site conditions, as described in the Forest Stand Delineation, are the legal starting point of a Forest Conservation Plan, not a concept plan created before the FSD was approved.

When the site was annexed into the City in 2006, the owners promised farmettes with white picket fences and horses strolling about and water access to the public and that all 75 acres of Mas Que Farm would be preserved in a permanent conservation easement. So far, no easement has been placed on the 75 acres and the owner has rescinded her promise to allow public access to Crab Creek, while quadrupling the size and scope of what was described to the Planning Commission and City Council when they voted to allow the annexation of the site into the City.

Claims that the plan is “shrinking” are incorrect. The applicant indicates that the plan continues to shrink. However, the attached letter to the Annapolis Environmental Commission dated December 11, 2012, indicates a commitment to destroy only 36 acres and replant all 36 acres of trees as opposed to the most recent plan which will destroy 43.48 and replant a mere 5.13 acres[

No justification is given for why the particular acres of priority forest must be destroyed. Moreover, the applicant has still not demonstrated that destroying priority forest, and replacing it by developed land, will not adversely affect water quality. Forest is the land cover that is most protective of local streams and the Chesapeake Bay. It adds the lowest load of nutrient and sediment pollution. The applicant has provided no quantitative information about the additional pollution loads that will accompany development. The AEC believes that on-site negative impacts will be significant, will adversely affect stream and Chesapeake Bay water quality, and that the city must require both estimation of likely impacts and their effective mitigation.

The letter dated September 5, 2014 and attached as exhibit L to the applicants PFCP postpones providing an adequate and detailed stormwater management plan, ignores the need for such information as a basis for review before the plan can be judged complete and correct. Instead, the applicant continues to claim that the water will be in better condition when it reaches Crab Creek that it will be with full forest cover. The city can and should require the developer to provide a detailed stormwater management plan and any other information that can support this now unsupported claim.

Inappropriate Introduction of “Breakeven Point” Analysis

The applicant incorrectly indicates that once it meets the “breakeven point” it has met the minimum requirements for retaining forest under the FCA. This is not true.

The Forest Conservation Threshold calculations found in Natural Resources Article Section 5-606 of the State Forest Conservation Act: Afforestation; forest conservation thresholds are to be completed, “After all reasonable efforts to minimize the cutting or clearing of trees and other woody plants have been exhausted in the development of a subdivision or project plan.”

Furthermore, the breakeven point calculation which yields the amount of forest retained beyond which no mitigation is required, appears in the Technical Manual only and is not part of the Natural Resources Article or Model Code passed by the State of Maryland. This was not adopted by the City of Annapolis. Regardless, it is not the minimum requirement and should not be looked on as such.

Ensuring Forest Contiguity

While the main Continuing Care Retirement Community building (CCRC) in this submission is placed north of the intermittent stream, the AEC finds that the PFCP is still inadequate for retaining forest contiguity. Development still planned south of the intermittent stream will eliminate and fragment forest.

More seriously, the buildings that are still planned for the southwestern portion of the site require a major road that will break the contiguity of the wildlife corridor/Greenway, and stand in the way of preserving and enlarging that corridor through afforestation.

The AEC mentioned in prior comments concerning the Forest Stand Delineation, that the forest boundaries are inaccurate in places, and show less contiguity than actually exists. For example, the forest is contiguous across Crystal Spring Farm Road. The unbroken tree canopy, which meets the normal definition of forest contiguity, is vital for many bird species that thrive in this forest. Also, the area between Stand A and the forest to the southwest is much more contiguous than depicted on the FSD and FCP. In fact, AEC members, with the permission of the owner, measured and the narrowest point between these exceeds 100 feet.

Ecological Values: Specimen Trees

The PFCP proposes to remove 18 specimen trees with DBH of 30 inches or greater. Pursuant to the Forest Conservation Act, such trees “shall be considered priority for retention and protection, and they shall be left in an undisturbed condition unless the applicant has demonstrated to the satisfaction of the State or local authority that the applicant qualifies for a variance under § 5-1611 of this subtitle...” MD. CODE ANN. NAT. RES. § 5-1607(c)(2)(iii). The Act states in § 5-1611 that the “State and local authorities shall provide for the granting of variances to the requirements of this subtitle, where *owing to the special features of a site or other circumstances*, implementation of this subtitle would result in unwarranted hardship to an applicant. MD. CODE ANN. NAT. RES. § 5-1611(a) (emphasis added). The law provides two guidelines for the development of variance procedures by local authorities. They shall (1) “[b]e designed in a manner consistent with the spirit and intent of [the Forest Conservation Act]”; and (2) “[a]ssure that the granting of a variance will not adversely affect water quality.” *Id.* at § 5-1611(b).

In addition, DNEP set forth Forest Conservation Act Development Review Criteria on July 2, 2012, which spells out in I. B. 3 that trees having a DBH above the ground of 24 inches, must qualify for a variance under Natural Resources Code Ann. Sec.5-1611. We have been unable to locate variance requests for these trees.

Ecological Values: Forest and Wildlife

The PFCP still fails to describe how the ecological values of forest and wildlife will be preserved.

The highest quality priority forest is dominated by large white oaks, containing wetlands, drainage headwaters, numerous specimen trees, few invasive species (primarily along an old road), a diverse forest structure (rated “Good” in the FSD), and high regenerative potential. The AEC, during a permitted visit, measured two representative canopy white oaks in different parts of the stand with diameters at breast height (DBH) of 18.7” and 17.6”, corresponding to a stand age of at least 80 years. Many trees are much bigger than this. Historic aerial photos confirm that this forest is at least this old. The high canopy and dense understory provide excellent forest bird habitat. Forest health appeared excellent during AEC’s visits from 2011-13, with only occasional snags or downed logs (which actually are important habitat elements). The stand contains numerous oak seedlings, indicating good recruitment and long-term persistence. It serves as essential wildlife habitat and a broad-scale corridor linking offsite forest, as recognized by Anne Arundel County’s Greenways Master Plan. See Master Greenways and Small Area Plan section, below.

Over 200 bird species, including many interior forest passerines, have been found on the property. This is one of very few properties remaining in Annapolis with habitat suitable for these birds. According to Ross Geredien, a professional biologist with expertise in ornithology, the following birds listed by Maryland Dept. of Natural Resources (DNR) as having the greatest conservation value, have been confirmed breeding at the property: Field Sparrow, Acadian Flycatcher, Brown Thrasher, Eastern Towhee, Hairy Woodpecker, Wood Thrush, Scarlet Tanager, Pileated Woodpecker. “There are several other species,” he wrote, “at least 20 more, on the list that overwinter on or migrate through the property but that do not breed there in the summer. Typically, breeding habitat is the most critical for species conservation, but wintering and stopover areas are important for species as well. Hence the overall value to birds of greatest conservation need is quite significant. A few of the species, like Brown Thrasher, Eastern Towhee, and Field Sparrow, actually are there year-round.”

Forest fragmentation has many negative effects including promoting the spread of invasive species and impacting sensitive native wildlife. Several of the birds on the list above require large areas of contiguous interior (away from edges) forest to breed successfully.

Ecological Values: Wetlands and Hydrology

The Crystal Spring property has a seasonally high water table throughout much of the site, and contains several acres of functional nontidal wetlands. These provide important ecosystem services, including abatement of stormwater runoff, groundwater recharge, and maintaining water quality in Crab Creek and the South River. In addition to the intermittent stream that drains through the center of the property to the south, there is also a smaller drainage to the west of this stream that provides periodic surface flow from the wetlands in the 80+ year old white oak-dominated stand, and several smaller areas of hydric soils that weren’t noted on the consultant’s maps. The forested wetlands are likely linked via subsurface flow as well, as most of these soils are permeable sandy loams.

Conversion of contiguous forest to buildings, roads and parking lots is likely to alter site hydrology. Any development should be carefully planned with preservation of wetland and stream hydrology in mind.

Relocation of the CCRC building away from the most ecologically important portion of the site is helpful. However, it still infringes on the Wetland B buffer, and converts a large proportion of its drainage area from forest to impervious cover. The AEC doubts strongly that green roofs can compensate for such a dramatic change.

The houses proposed to be sited in the southwestern portion of the site will have a major impact in terms of forest loss, fragmentation, and blocking afforestation that can help to guarantee a functional eco-corridor. The AEC urges that this portion of the site remain undeveloped.

This submission did not contain stormwater plans which are crucial to maintaining the hydrology of wetlands and streams. Therefore, the AEC reserves comment on stormwater and hydrology issues until such plans are submitted. The preliminary stormwater management computations (Exhibit M) claimed no significant increase in discharge to the intermittent stream or to the Crab Creek drainage to the west. The proposed project does increase discharge to the east arm of Crab Creek (via Site Outfalls 2 and 2A). AEC did not evaluate whether this increase of discharge would increase soil erosion, and recommends that the city require the developer to demonstrate that they will not increase the discharge of sediment, nutrients, or other pollutants into Crab Creek, nor scour any ephemeral drainages. Step pools or other outfall systems might mitigate potential damage if properly designed. The AEC recommends increasing the buffer around the intermittent stream to 300 feet and permitting the development to take place only north of the stream.

At least one wetland, a vernal pool, is not mapped on the PFCP, and should be included. The grassy vernal pool in the southwest portion has been observed holding standing water, supports amphibian breeding (e.g., spring peepers), and contains hydric soils (according to a core performed on April 18, 2013). Vegetation is affected by repeated mowing, and a sizeable drainage pipe removes standing water quicker than at the forested vernal pool to the north of it. The AEC has recommended for over two years that the city examine this vernal pool using a certified wetland delineator independent of the developer. We continue to urge this review.

The AEC supports functional wetland and stream buffers (generally at least 100 feet, but it depends on surface and groundwater flow), rather than the state regulatory minimums. For example, 25 feet for nontidal wetlands is insufficient to protect against altered hydrology, increased sediment and pollutant input, wind throw, increased solar radiation, invasive species, songbird predators, and other edge effects. Amphibians like spring peepers and wood frogs require contiguous forest to move between breeding sites and feeding areas.

The City has agreed not to permit the alteration of the hydrology on this property and has the authority under both the Forest Conservation Act as well as Chapter 21.62.080 *Surface water drainage*. It states that “A proposed development shall be designed to provide for proper surface water management through a system of controlled drainage that, wherever practicable, preserves the existing natural drainage patterns and wetlands, enhances groundwater recharge areas...”

Proposed Development Area Inconsistent with Established Planning Documents

The current PFCP is wholly inconsistent with the scope of development proposed in the Annapolis Comprehensive plan, and with two other important planning documents.

[Annapolis Comprehensive Plan](#), Chapter 3 - Land Use and Economic Development, Page 33 says:

“Policy 1. Growth will be directed primarily to four Opportunity Areas, illustrated in Figures 3-7 through 3-10 and reflected in the Future Land Use Map. Over the next decade, the City will formulate detailed land use and urban design plans or sector studies for each of the four opportunity areas.

1.1 The detailed area plans should identify the necessary role of the City and other public entities in facilitating redevelopment, including, for example, infrastructure improvements and zoning changes.

1.2 Each of the four opportunity areas should be developed as models for ecologically sustainable urban development.” No sector study has been completed for this area.

Furthermore, Chapter 7- Environment, Page 96, says:

“Policy 2.5. To help achieve the City’s environmental goals and ensure high quality development, the City will create a Site Design Manual that will replace the 1986 Parking and Landscaping Manual. The Site Design Manual will provide guidance on design of the landscape on public and private development sites. This will include planting with a preference for water conserving plants and plants tolerant of urban soils, rainwater management, tree preservation, and soil management. Best management practices for handling the impacts of development, use of pervious and impervious paving materials, design of parking areas, lighting, internal circulation, and other matters related to site\development should also be addressed in the Manual.

The Site Design Manual will aim to make the site design process more predictable. The Manual will be coordinated with the City’s Green Building standards and other sections of the City Code governing trees and other planting, grading, critical areas, and rainwater.” No such Site Design Manual has been drafted.

[The Anne Arundel Greenway Master Plan](#) (GMP) and the [Annapolis Neck Small Area Plan](#) (ANSAP), both identify the Crystal Spring Farm area as an important environmental space. The GMP pulls together various small area plans, states (table 4 page 35):

“A major greenway system for the Neck extending from Waterworks Park to Thomas Point, or CBF at Bay Ridge. Connect this system to the American Discovery Trail and the East Coast Greenway (Map 15). The greenway would extend from the headwaters of Church Creek to Quiet Waters Park and include the Masque Farm/Crystal Spring Farm area and the Hunt Meadow Woods open space.”

“Greenway would preserve a connected system of natural areas and provide for wildlife movement.”

The ANSAP states (p. 43): “Other large tracts of privately-held undeveloped land that are considered to be important environmental features include the Masque Farm/Crystal Spring Farm site on Spa Road.”

This recommendation is on p. 83: “Target Forest mitigation efforts to areas designated for the greenway where possible.”

Map 18 (p. 98) from this plan shows that the entire area of Masque Farm and Crystal Spring are included as part of the Greenway and the map titled “Middle Annapolis Neck” at the end of Appendix B shows Crystal Spring as an area to be protected. The plan also identifies the “Area west of end of Crystal Spring Farm Road at headwaters of Crab Creek” as a potential area for reforestation. (Table B-4, p B-8).

The developer has failed to incorporate either the Anne Arundel Greenway Master Plan or the Annapolis Neck Small Area Plan in the PFCP. Since the Greenway Master Plan, and the Annapolis Neck SAP constitute local land use plans, DNEP should consider them in its evaluation and conservation and mitigation efforts.

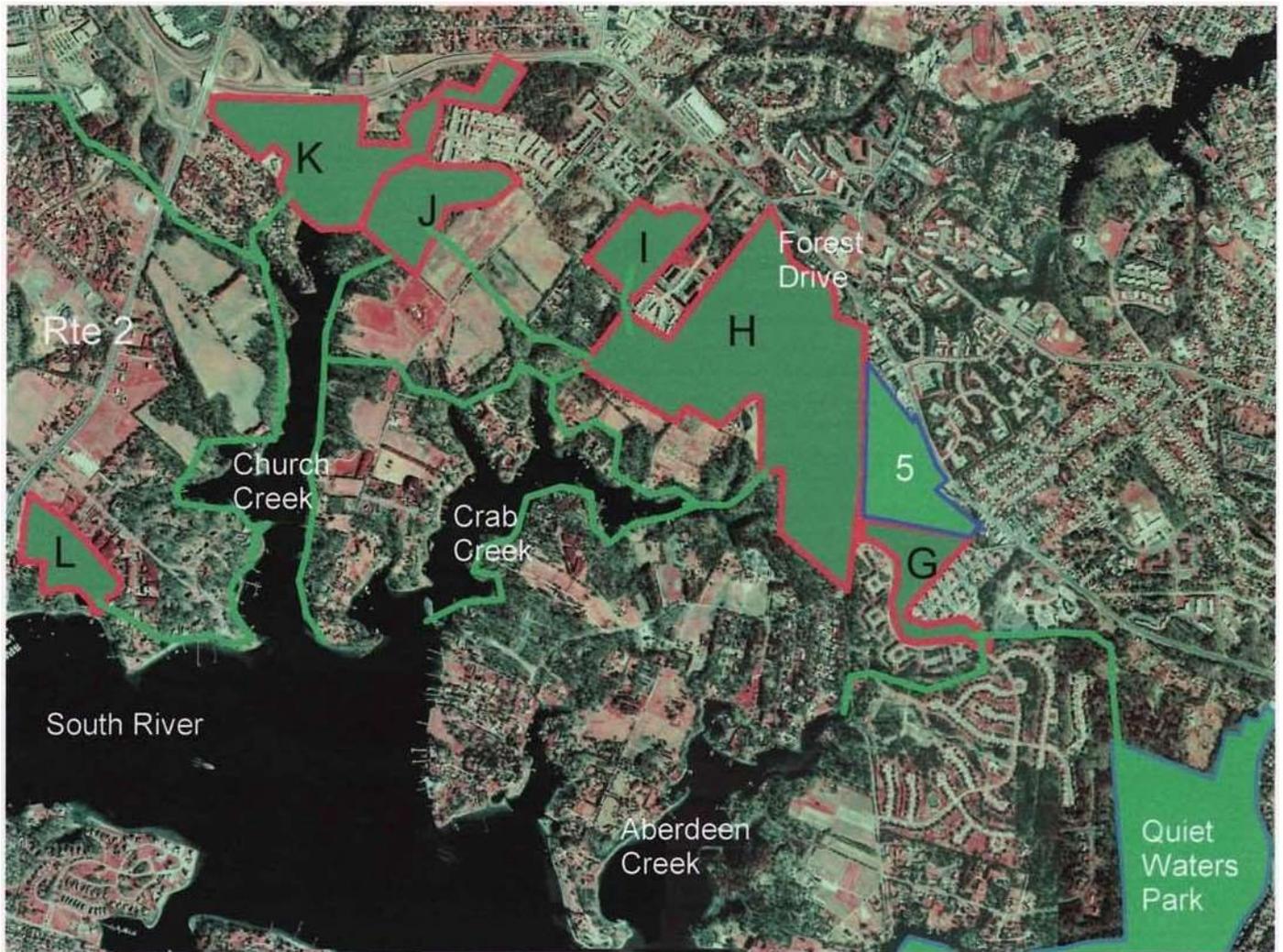


Figure 1, from the Anne Arundel County Greenway Master Plan

Tree Canopy

The submitted forest clearing justification is incorrect in asserting that the project will “increase the tree canopy to 54%, which exceeds the City of Annapolis Comprehensive Plan Goal for 2036 of 50%.”

It is wrong in its implicit assumption that the goal applies to individual properties, rather than to the aggregate of all properties comprising the City *in toto*, and is misleading in its conclusion. Among all private tracts, the proposed Crystal Spring development site contains the largest forest block in the

City and now contributes the largest single source of canopy cover toward meeting the Annapolis-wide goal. It is obvious that removing 3.48 acres of forest to make way for the development will *reduce* that contribution, and take the city backward in its progress toward its overall tree canopy goal. Losing 43.48 acres of forest will virtually ensure that the City will not attain a 50% tree canopy by 2036.

Mitigation of environmental impacts

The developers should avoid and minimize negative impacts to the forest, wetlands, hydrology, and other natural resources to the degree possible. Impacts not avoided should be mitigated. To conform to the city's goal of increasing rather than decreasing tree canopy, all forest removed should be replaced at least acre for acre. The AEC identified some possible reforestation areas (Figure 2 below) that would improve forest connectivity and contiguity and help protect Crab Creek and the South River.

The recommendation is consistent with the recommendations of the Annapolis Neck Small Area Plan: "Target Forest mitigation efforts to areas designated for the greenway where possible." That plan identifies the "Area west of end of Crystal Spring Farm Road at headwaters of Crab Creek" as a potential area for reforestation. (Table B-4, p B-8).

The Crystal Spring forest is a significant local carbon sink, that is, it sequesters carbon in biomass and soils from carbon dioxide removed from the atmosphere by photosynthesis, otherwise to remain there as a greenhouse gas. The planned development will convert the site from being a carbon sink to a large carbon source, increasing the city's contribution to carbon dioxide emissions and consequent climate change contrary to the city's goals as stated in its sustainability plan. City policy is to reduce rather than increase its greenhouse gas emissions, so the AEC recommends that the city evaluate carbon balance consequences of this development and require measures to mitigate those impacts.

Green Development Initiatives mentioned in the PFCP are potentially helpful, especially those relating to parking, if parking includes the creation of multilevel parking that will significantly reduce impervious surface area. Others of these initiatives have not been evaluated but we surmise that their collective effectiveness will be dwarfed by the removal of forest contemplated by the PFCP.

On-site and Off-site Mitigation

Mention is made of possible voluntary restoration of watercourses flowing from offsite drainage areas. While such activities may be commendable, they do not address the large negative impacts that will be created on-site. The scale and effectiveness of such off-site mitigation efforts is not quantified and is not wholly relevant to the PFCP which must focus on on-site environmental efforts.

**Crystal Spring Conservation and Restoration Areas
(DRAFT 10-3-2012)**

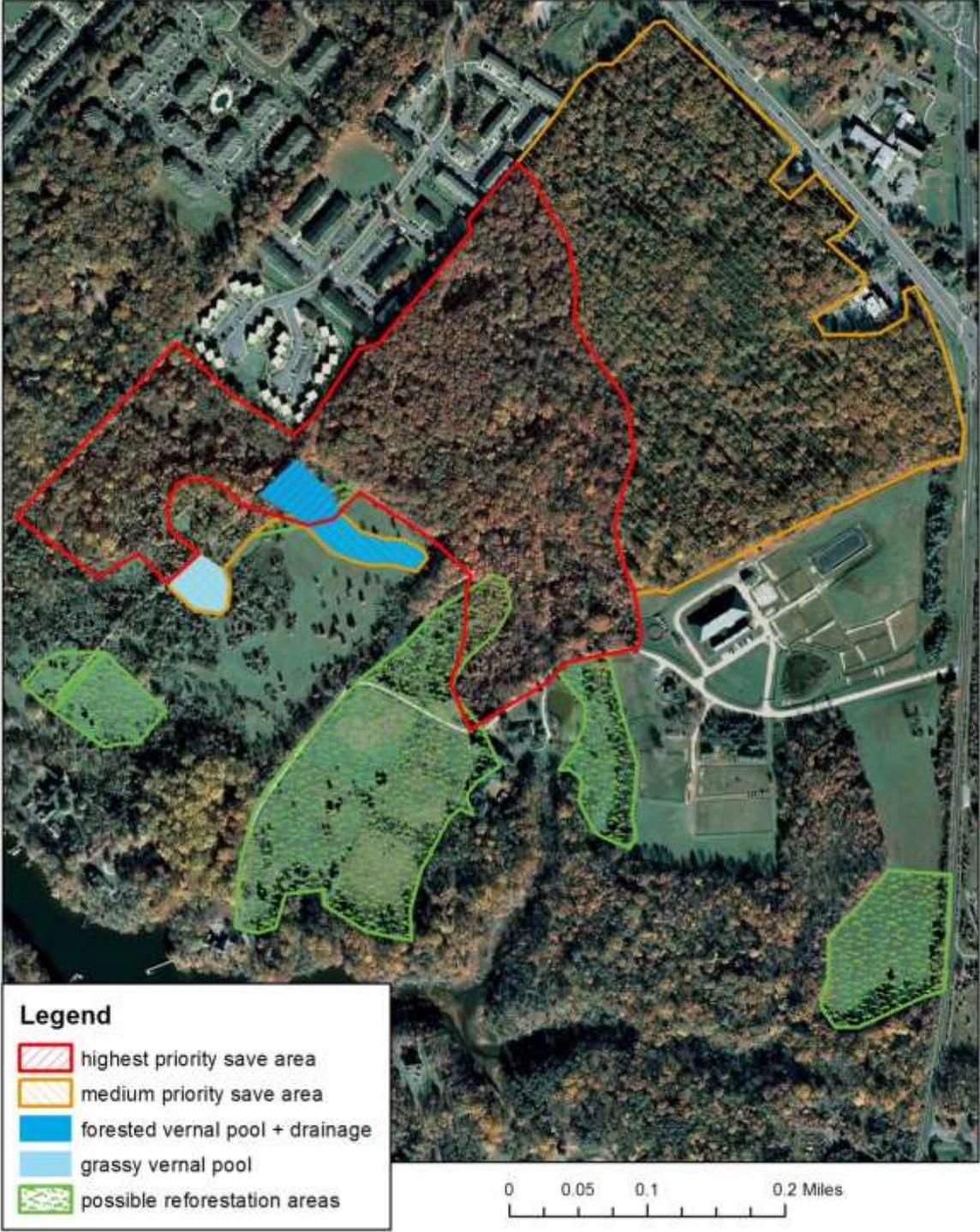


Figure 2 Map produced by Annapolis Environmental Commission in 2012 of priority reforestation and preservation areas on the Crystal Spring property.

The developers again cite their agreement with the South River Federation (SRF) to undertake improvements to stormwater drainage to Crab Creek as part of their justification to destroy priority forest. This gesture cannot be considered as part of the rationale to award a variance to the developers. The Forest Conservation Act aims to protect priority forest and the only mitigation measures contemplated under the Act are on-site or offsite reforestation, or payment to a fund used for reforestation as mitigation measures after all techniques and retention options have been exhausted. (See Md. Nat Resources Code Ann 5-1607) The Act does not contemplate or recognize other types of restoration measures as equivalent to retention of retaining priority forest, nor does it recognize them as justification for destruction of priority forest. Therefore, the city should accord no weight to an alleged agreement with SRF case for granting a variance.

On the other hand, while on-site emphasis is always the most productive, the city should encourage off-site reforestation and afforestation and secure binding commitments that will help to offset environmental damage caused by the Crystal Spring development.

Afforestation Plan

(1) "Forest land" means a biological community dominated by trees and other woody plants ... at least 100 trees per acre with at least 50% of those trees having a 2-inch or greater diameter at 4.5 feet above the ground.

(2) "Forest land" includes forested areas that have been cut but not converted to other land uses.

Tree replacements under City Code Chapter 17.09.070 should be enforced, such as requiring two trees on site for each tree removed, when diameters are between 18" and 24," etc. The developer did submit details showing there were 178 trees between 24" and 30" DBH with many of them removed in the development plans.

Street trees should not qualify toward forest mitigation. They do not remotely compensate for the destruction of naturally functioning mature forest. Neither does the state consider isolated trees as forest. Replacement should be native forest (e.g., oak-hickory, or whatever species mix is appropriate for the planting site). The applicant should be required by the City to replant at least 44.24 acres of forest that are destroyed during development, and because it takes 80 years for a tree stand to mature and provide the ecological benefits that had been provided by the existing priority forest, the City should apply the higher 2:1 ratio when applicable under the Code. One should keep in mind it will take 80 years to regain what's been lost, and even then the new forest will be behind the curve. For that reason, and because so many planted trees die, the AEC favors 2:1 to 4:1 afforestation ratios (similar to wetland requirements and the city tree replacement code, with the ratio depending on the age and condition of the forest destroyed). Also, any mitigation projects should be monitored (at least 5 years, with 10 preferable), and dead trees replaced. MDE requires 5 years of monitoring for wetland projects.

The City Code gives authority to the City to require replanting of trees removed during development. Chapter 17.09.070 establishes guidelines to allow development while also minimizing impacts to existing woodland communities and to encourage afforestation with species native to the area. Other stated purposes of this section of the code are to establish standards of practice for the preservation of trees and the environmental design of landscapes in development areas in order to better control soil

erosion and the transport of sediment, improve the environmental quality of surface and ground waters, screen noise, and preserve, protect and enhance wildlife habitat.

Furthermore, the section provides that where any provision of the Forest Conservation Act (FCA) and a provision of the City Code both apply, the more restrictive requirements may be employed. Therefore, even if the FCA does not require reforestation, the City code section can apply and require reforestation for a development. The code under section 17.09.070 (F) even notes that the reforestation required by the Forest Conservation Act should be considered the minimum applicable standard for replacement of trees.

Applicants seek to destroy 43.48 acres of priority forest by concentrating their buildings near Forest Drive where the priority forest is dense, mature and functioning well. Because the City will lose the ecological value and water quality value of the only remaining large tract of priority forest, and considering the loss of these acres will set the City back more than 43 acres from our tree canopy goal, the City should strictly require replanting of the trees on the replacement basis set forth in table 17.09.070.

The areas identified by the AEC identified as possible reforestation/afforestation areas (Figure 2 above), which are below the intermittent stream, would improve forest connectivity and contiguity. Also creation of forest cover closer to the water will help protect water quality of Crab Creek and the Chesapeake Bay. It should be noted that all of Maryland including Annapolis is subject to a federally imposed Total Maximum Daily Load that requires reduction of pollution and improvement of water quality. Maintaining forest cover is one of the best and least costly strategies to reduce pollution.

City code intends that tree replanting be on-site unless this cannot be accomplished. Afforestation should be limited to the Crab Creek watershed and be configured to increase forest connectivity and contiguity.

Afforestation/Reforestation of Meadow Area

Consistent with the Small Area and Greenway Master Plan which recommend afforestation in the meadow area of the site, This location also supports valuable ecosystem services as outlined by Eric C. Sprague, who co-authored the definitive report *State of the Chesapeake's Forest*. Sprague concludes that if 13.3 acres of meadow at Crystal Spring Farm were planted with trees, residents would see ozone pollution reduced by 750 pounds per year and dust, smoke and other particulate matter by 400 pounds per year or the equivalent of removing 520 cars from the road each year. In addition, if the existing 2.56 acres of trees were removed, Annapolis residents would see a decrease in the city's urban tree canopy to remove 144 pounds of ozone and 75 pounds of dust, smoke, ash and other particulates. In terms of air quality, the site part of region with high value to water quality. The loss of trees at Crystal Spring will have a larger effect on water quality than other less important regions.

If 13.3 acres of meadow at Crystal Spring Farm planted with trees, Annapolis would reduce nitrogen loads to the Chesapeake Bay by nearly 100 pounds per year. Phosphorus loads would be reduced by 5 pounds and sediment loads by 1,584 pounds per year.

If the existing forested 2.56 acres were lost, Annapolis would need to find other ways to reduce 18 pounds of nitrogen, one pound of phosphorus, and 305 pounds of sediment every year to maintain existing water quality at the site.

If the meadow was developed instead of forested, the site would see an increase of 148 pounds of nitrogen, 14 pounds of phosphorus, and 7,196 pounds of sediment pollution each year.

Carbon Sequestration -Trees sequester greenhouse gases emitted from cars, power plants and other sources as they grow and so help to offset emissions from Annapolis residents and businesses. If protected in perpetuity, 13.3 acres of tree plantings on the meadow at Crystal spring farm would sequester 632 metric tons of carbon over 100 years. This is the equivalent to the annual carbon emissions of 133 cars. Losing the existing 2.56 acres of existing trees would effectively remove 123 metric tons of carbon from the City’s “carbon bank.”

Soil Resilience -Soil types vary in their resilience or ability to bounce back from disturbances. Sites with high resilience are more forgiving to a range of disturbances like development than those with low resilience. Nearly 80% of the meadow soils at the Farm are classified as “Annapolis” (AoB) soil and have low resilience to disturbance.

Forest Productivity -While all woodlands have value to wildlife, water quality, and clean air; some woodlands are more fertile and better able to support plant and tree growth than other sites. The sandy loam soils on the Crystal Spring Farm meadow are highly productive. Therefore, planting trees on this site has potential to create healthy woodlands.

Critical Area -While the meadow is just outside of the critical area, new tree plantings will only enhance the water quality and wildlife habitat services provided by the buffer. New trees will also increase the resilience of the Critical Area to flooding, forest pests, and other disturbances.

The ecosystem services impacts to the City are enormous. Based upon the local land use documents as well as scientific understanding of the site, the logical area for afforestation/reforestation of any Priority Forest destroyed, is the meadow on site.

Summary

For the reasons stated above, the AEC urges the City of Annapolis to reject the Preliminary PFCP and associated documents, as detailed above, and to require revisions that satisfy these concerns.

Sincerely,



Paul Murphy, Chairman
Annapolis Environmental Commission

CC: Mayor Mike Pantelides, Alderman Joe Budge, Alderman Fred Paone, Alderwoman Rhonda Pindell Charles, Alderwoman Sheila Finlayson, Alderman Jared Littmann, Alderman Kenneth Kirby, Alderman Ian Pfeiffer, and Alderman Ross Arnett

Note 1

Refer to *Belvoir Farms Homeowners Ass'n v. North*, 355 Md. 259 (1999) (in the context of a variance, an unwarranted hardship is equivalent to the denial of reasonable and significant use of the property); see also *Loyola Federal Sav. & Loan Asso. v. Buschman*, 227 Md. 243 (1961) (it is settled Maryland law that the fact that some use other than that which is permitted under a zoning ordinance would be more profitable than a permitted use, is not enough to invalidate a use restriction if the property can reasonably be used for some purpose for which it is adapted). Mere financial hardship or an opportunity to get an increased return from the property is not a sufficient reason for granting a variance. *Daihl v. County Board of Appeals*, 258 Md. 157, 167, 265 A. 2d 227, 232 (1970)

This point is also more simply expressed as: “if reasonable use exists, generally an unwarranted hardship would not.” *North v. St. Mary's County*, 99 Md. App. 502, 517-518 (1994) (holding that denial of requested variance to build a gazebo on a property already used for residential purposes is not an unwarranted hardship). It is therefore reasonable to require the developer to further modify the project to reduce impacts to the priority forest areas.