Revised
Environmental Report for Critical Area Growth Allocation

Centreville TND
Carter Farm – Chesterfield
Centreville, Maryland
Job #130454

Lands of
Bank of America and Clayton C. Carter, Trustees & Clayton C. Carter

Prepared for
Joe Downey
October 28, 2014

Report revisions from original report dated June 6, 2014 are based on a revised Concept Plan prepared by GPS Designs submitted for Town review on October 29, 2014.

Prepared by
Lane Engineering, LLC
354 Pennsylvania Avenue
Centreville, MD 21617

Purpose

This report is intended to address the requirements of COMAR 27.01.02.06-2 pertaining to Critical Area Growth Allocation. Site and plan information used in this report is taken from an Environmental Features Plan prepared by Lane Engineering, LLC dated June 6, 2014 and a Concept Site Plan prepared by GPS Designs and submitted for Town review on October 29, 2014. Both plans, submitted separately, are incorporated with this report by reference.

Information in this report follows the order and content prescribed in COMAR 27.01.02.06-2

Project Description

- Tax Map 35I, Grid 19, Parcel, 1288
- Located in the Northwest portion of the Town of Centreville along Chesterfield Avenue (Public Street) and the Yellow Bank Stream, a tidal headwater tributary of the Corsica River.
- 46.869 AC-site with existing home, agricultural field and wooded shoreline with steep slopes leading to non-tidal (1.263 AC) and tidal wetlands (6.396 AC). A short section of tributary stream exists in the southwest portion of the property. 0.72 AC of tidal wetlands on County portion of the property are mapped as "State Wetlands" per the 1972 State Wetland Maps. Wetlands and streams as shown on the Environmental Features Plan have been reviewed by Chris Pajak, Maryland Department of Environment. Nontidal wetlands as shown have been reviewed by the U.S. Army Corp of Engineers and a Jurisdictional Determination Verification Map was approved April 1, 2014 (Attachment #1).
- All steep slopes 15 percent or greater, tidal wetlands, non-tidal wetlands and streams are protected by an Expanded Buffer containing 12.505 AC. Tidal wetlands are not included in the Expanded Buffer. The methodology and calculations used for Buffer Expansion for Steep Slopes and Tributary Streams is outlined in detail on the Environmental Features Plan. The methodology used, calculations and the Buffer Expansion as shown have been previously reviewed and found to be acceptable by Critical Area Commission staff.
- Site elevations in the open field portions of the site range from approximately 55 feet to 16 feet as shown on the Environmental Features Plan. All upland areas of the site drain towards the Yellow Bank Stream.
- As shown on the Environmental Features Plan the 100 year Flood Zone (elevation 7 ft) is located within the Expanded Buffer and does not impact the proposed development.
- 44.757 AC of Parcel 1288 located within Town limits and has a Critical Area Limited Development Area (LDA) designation.
- 2.112 AC is located in the unincorporated portion of Queen Anne's County. The unincorporated area of the property is almost exclusively tidal wetlands and is designated as a Critical Area Resource Conservation Area. (RCA)
- Proposed development includes 138 total residential units consisting of 93 single-family detached homes, 44 townhomes and the existing farm residence. Project is designed as a Traditional Neighborhood Design (TND) development with community open space, recreational facilities, public streets and private alleys. A Public Path is proposed around the shoreline perimeter of the site with a connected Community Path and observation pier proposed on the western shoreline of the site.

- Growth Allocation from LDA to IDA is requested for 40.372 acres. (entire site area minus unincorporated area and other area of tidal wetlands)

Recent Subdivision/Development History

- The property has not been developed or subdivided since December 1, 1985. The site includes a private single-family, detached residence that pre-dates December 1, 1985. The site is listed in the Maryland Historic Trust (MHT) Inventory. (QA-333) An inquiry has been made to MHT concerning a records search for any significant archeological resources which may be present on the site. No information has been provided to date although it is believed the site once contained a historic home which burned down in 1908.
- The existing house is proposed to remain as a residence.

Project Narrative Overview

- Proposed development includes 138 total residential units consisting of 94 single-family detached homes and 44 townhomes. Project is designed as a Traditional Neighborhood Design (TND) development with community open space, recreational facilities, public streets and private alleys. A Public Path is proposed around the shoreline perimeter of the site with a connected Community Path and observation pier proposed on the western shoreline of the site.
- A 12.505 AC± Critical Area Buffer with Expansions for Steep Slopes is proposed.
- Proposed development exclusive of the Public Path, Community Path and observation pier is limited to the area of the site outside of the Expanded Buffer. (27.968 AC)
- Town of Centreville 2009 Community (Comprehensive) Plan identifies Centreville as a "Growth Area" for Queen Anne's County.
- The Plan's Future Town Land Use Map, Figure 11 (Attachment #2) identifies the site as "Traditional Neighborhood Development" and "Infill Area 3."
- Page 4-5 of the Centreville Community Plan (Attachment #3) specifically describes the proposed project site as appropriate for Traditional Neighborhood Development (TND).
- The Town Commissioners recently adopted TND Zoning District Regulations (Attachment #4) intended to apply specifically to the project site and recently amended the zoning map designation of the property from Residential R-1 to Traditional Neighborhood Development District (TND). The proposed project is designed to be consistent with the recently adopted TND regulations. Maximum density permitted is 5 dwelling units per acre. Proposed density is 3.1 dwelling units per acre (138 units/44.75 AC).
- Figure 12, Future Town Growth Area and Greenbelt (Attachment #5), shows a Proposed Greenway along Yellow Bank Stream and the greenway is further described on Page 5-6 (Attachment #6). The Plan objective is to provide a greenway and path for The North Brook subdivision east of MD RT 213 all the way to the Town Wharf property just west of the project site and ultimately to the existing Mill Stream path and greenway on the west and south sides of the Town. The proposed project provides the greenway buffer and public path envisioned in the Town's plan.
- The proposed project will be served by public water and sewer. Town Staff has indicated that the Town's wastewater treatment plant (WWTP) currently has capacity for the proposed development. While no preliminary engineering has been performed to-date it

is anticipated that a gravity collection system will be used on-site with conveyance to the nearby Centreville WWTP via an on-site pump station with shellfish protection measures and a force main crossing the intervening Board of Education property. Public water would be a loop system into existing water mains which would also include a crossing of the Board of Education property to the existing water storage tower. The developer will be responsible for acquisition of sewer and water allocation and for all on-site and off-site public water and sewer improvements necessary to serve the project.

- The subject site is designated on the Town's Critical Area Map as "Infill Growth Allocation Area" (Attachment #7). This is consistent with the Town's Comprehensive Plan and Zoning Ordinance as outlined above.
- The proposed Growth Allocation from Limited Development Area (LDA) to Intensely Developed Area (IDA) is entirely consistent with the Town's Comprehensive Plan, Zoning Ordinance and Critical Area Program.

Critical Area and Growth Allocation Acreage

- The entire property is located within the Critical Area 46.869 AC.
- 44.757 acres are within Town limits and are designated as Limited Development Area
- 12.404 acres within the Town limits are in Expanded Buffer
- 4.385 acres are tidal wetlands within Town limits
- 2.112 acres are within the County and are designated as Resource Conservation Area (RCA) and are not proposed for development disturbance or Growth Allocation.
- 2.011 acres within County are tidal wetlands of which 0.72 acres are "State Wetlands." 0.101 acres are upland and part of the Expanded Buffer
- Growth Allocation from LDA to IDA is requested for the 40.372 acre Town portion of the site including the Expanded Buffer within Town limits (12.404 AC) and not including the 4.385 acres of tidal wetlands within Town limits.
- If the Town and Critical Area Commission were to agree to not include the Expanded Buffer within the Growth Allocation acreage then the amount of Growth Allocation needed for this project would be 27.968 acres and 12.404 acres would remain designated as LDA.
- The Town of Centreville currently has 180 acres of Growth Allocation available.

Proposed Forest Clearing

- Total forest on the site is 11.664 acres and is predominantly located within the Expanded Buffer. As shown on the Concept Plan there are a few locations where existing forest cover extends slightly beyond the Expanded Buffer but no clearing of existing forest is proposed beyond minimal clearing necessary for construction of a Public Path and Community Path within and slightly outside of the Expanded Buffer. Path alignment and design are still conceptual at this point and will require coordination between the developer and the Town to ensure the Path is compliant with all applicable Town, State and Federal requirements for public access.

Stormwater Management Concept

- A concept for stormwater management (SWM) has been prepared to address the County Stormwater Management Ordinance and Critical Area 10 Percent Rule requirements.

The basic SWM features proposed are shown on the Concept Plan and a SWM Concept Plan Report prepared by Lane Engineering, LLC. (Attachment #8)

- The SWM concept calls for use of a variety of Environmental Site Design (ESD) features to the Maximum Extent Practical (MEP).
- Engineering and construction plans for SWM and a complete SWM report will be reviewed and approved by the Town, County and Critical Area staff as a condition of final development approval.

Ten (10) Percent Pollution Reduction

- By adhering to new State and County regulations and standards for SWM, it is not anticipated that the project will have any difficulty adhering to the Critical Area 10 Percent Rule for IDA development which requires that pollutant loads from a development site be reduced to a level at least 10 percent below the same load generated by the site prior to development.
- Engineering and construction plans for SWM and a complete SWM report will be reviewed and approved by the Town, County and Critical Area staff as a condition of final development approval.

Soil Erosion and Sediment Control

- A Limit of Disturbance (LOD) will be established for the area proposed for development construction activity. This LOD will not encroach on the Expanded Buffer.
- A detailed Sediment and Erosion Control (SEC) Plan will be prepared and then approved by the Queen Anne's County Soil Conservation District (SCD). This plan will detail measures and a sequence of construction to be used to minimize sediment and erosion while the site is under construction and before it is properly stabilized.
- Queen Anne's County Department of Public Works will issue a grading permit and all sediment and erosion control devices will be subject to posting of a surety.
- A pre-construction meeting is required with Town, County and State officials to confirm sediment and erosion control methods to be used and the sequence of construction.
- During construction there are regular reporting and inspection requirements with the Maryland Department of Environment.

Lot/Site Coverage

- Lot/site coverage limitations will not apply to the IDA portion of the development.
- If the Expanded Buffer is excluded from the Growth Allocation area and remains designated LDA then the lot coverage within that area will be limited to 15 percent of the total area. This equates to a maximum of 1.868 acres of lot coverage permitted on 12.404 acres.
- The only lot coverage proposed within the expanded Buffer is the proposed Public Path and Community Path. Conceptual design for the Public Path is an 8 ft. wide wood chip path totaling approximately 27,000 SF of which 18,500 SF is located in the Expanded Buffer and 8,500 SF is located outside of the Expanded Buffer. The concept for the Community Path to the observation pier from the Public Path is a 1,258 SF 3 ft. wide crushed stone path located entirely within the Expanded Buffer. It is anticipated that the Public Path will need to be constructed to Town of Centreville Municipal Parks Design Guidelines.

Mitigation for Forest Clearing

- Mitigation for limited clearing for the Public Path and Community Path will be required based on amount of clearing proposed for these paths within and outside of the Expanded Buffer.
- Mitigation planting amounts will be determined with the final design of the proposed paths as designed in coordination with the Town of Centreville.

Proposed Afforestation

- No afforestation is required for IDA development other than that which is required within the Expanded Buffer as part of an approved Buffer Management Plan. The proposed development will be required to comply with Town Landscaping and Tree Canopy regulations.

Local Zoning

- The property is currently Zoned Residential R-1.
- The Town Commissioners recently adopted TND Zoning District Regulations (Attachment #4) intended to apply specifically to the project site and recently amended the zoning map designation of the property from Residential R-1 to Traditional Neighborhood Development District (TND) in accordance with specific recommendations contained in the Adopted Centreville Community (Comprehensive) Plan. The proposed project is designed to be consistent with the recently adopted TND regulations. Maximum density permitted is 5 dwelling units per acre. Proposed density is 3.1 dwelling units per acre (138 units/44.75 AC).
- The TND District is intended to allow development consistent with design principles of a traditional neighborhood. A traditional neighborhood is compact; is designed for the human and pedestrian scale; provides a mix of residential uses including civic, small scale retail and open space uses in close proximity to one another in the neighborhood; is architecturally integrated; provides a mix of housing styles, types and sizes to accommodate a variety of households; is integrated into the surrounding communities; incorporates interconnected streets with sidewalks and bikeways and transit that offer multiple routes for motorists, pedestrians, and bicyclists and provide for the connections of those streets to existing and future developments and incorporates significant environmental features into the design.

Buffer Management Plan

- The Buffer Management Plan for this project will require complete afforestation/establishment of the expanded Buffer except for areas used for the Public and Community Paths. There are a few small areas where the Expanded Buffer extends into the existing farm field. These Buffer Areas will be required to be afforested using native species plantings and per the quantities and plant mixes as prescribed by Critical Area Buffer Management Plan regulations.
- The Buffer Management Plan planting amounts will be determined with the final design of the proposed paths as designed in coordination with the Town of Centreville.

Habitat Protection Plan

- The Maryland Department of Natural Resources Wildlife Heritage Service has determined that there are no State or Federal records for rare, threatened or endangered species within the boundaries of the project site as delineated. Open waters that are adjacent to or part of the site are known historic waterfowl concentration areas. (see Attachment #9 - DNR letter dated 12/19/13)
- Virginia Institute of Marine Sciences (VIMS) mapping indicates no submerged aquatic vegetation (SAV) in waters adjacent to this site.
- Figure 7, Natural Resources Map from the 2009 Centreville Community Plan identifies the area of Yellow Bank Stream on the western edge of the site as anadromous fish propagation waters.
- Based on the above information a Habitat Protection Plan should not be required with this proposed Growth Allocation request. The developer should consult with the Maryland Department of Natural Resources before proceeding with any marine permit and construction activity related to the proposed observation pier.

Attachments

- Attachment #1 - Jurisdictional Determination Verification Map
- Attachment #2 - Future Town Land Use Map, Figure 11
- Attachment #3 - Centreville Community Plan Page 4-5
- Attachment #4 - TND Zoning District Regulations
- Attachment #5 - Future Town Growth Area and Greenbelt, Figure 12
- Attachment #6 - Centreville Community Plan Page 5-6
- Attachment #7 - Critical Area Map
- Attachment #8 - SWM Concept Plan and Report
- Attachment #9 - DNR letter dated 12/19/13

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, EASTON FIELD OFFICE
218 NORTH WASHINGTON STREET, SUITE 304
EASTON, MD 21601

1 April 2014

Clayton C. Carter Trustees
c/o Lane Engineering LLC
Mr. Sean Callahan
117 Bay Street
Easton, Maryland 21601

Dear Gentlemen:

This is in response to your letter dated 7 January 2014 requesting a preliminary determination of the presence of waters of the United States, including jurisdictional wetlands adjacent and abutting Corsica River on your approximately 46.869 acre property, Tax Map 351, Parcel 1288, 408 Chesterfield Avenue, Centreville, Queen Anne's County, Maryland. Your request has been assigned the file name, **CENABOP-RMS (Carter, Clayton C. Trustees) 2014-00500-M13.**

Field inspections with representatives of the Maryland Department of the Environment were conducted on 12 /December 2013 and 28 March 2014. This preliminary jurisdictional determination finds that there are waters of the United States, including jurisdictional wetlands within the review area as correctly indicated within the review area on the enclosed drawing dated 30 December 2013 and correctly identifies all potential jurisdictional waters and wetlands within the review area. These areas may be regulated by this office pursuant to Section 10 of the Rivers and Harbors Act of 1899 and/or Section 404 of the Clean Water Act.

This preliminary jurisdictional determination is based on the information included on the enclosed Preliminary Jurisdictional Determination Form and is not appealable. If you do not agree with the extent of waters or wetlands and this preliminary JD, you are hereby advised of your option to request and obtain an approved JD from this office at the address above. An approved JD is an official, written Corps determination stating the presence or absence of jurisdictional waters of the United States and identifies the limits of waters of the Unites States on a project site. An approved JD can be relied upon for a period of 5 years and can be appealed through the Corps' administrative appeal process set out at 33 CFR Part 331.

You are reminded that any grading or filling of waters of the United States, including jurisdictional wetlands, is subject to Department of the Army authorization. State and local authorizations may be required to conduct activities in these locations. Wetlands under the jurisdiction of the Maryland Department of the Environment (MDE) may be located on the parcel. You may contact the MDE for information regarding jurisdiction and permitting requirements at (410) 537-3768. In addition, the Interstate Land Sales Full Disclosure Act may require that prospective buyers be made aware, by the seller, of the Federal authority over any waters of the United States, including wetlands, being purchased.

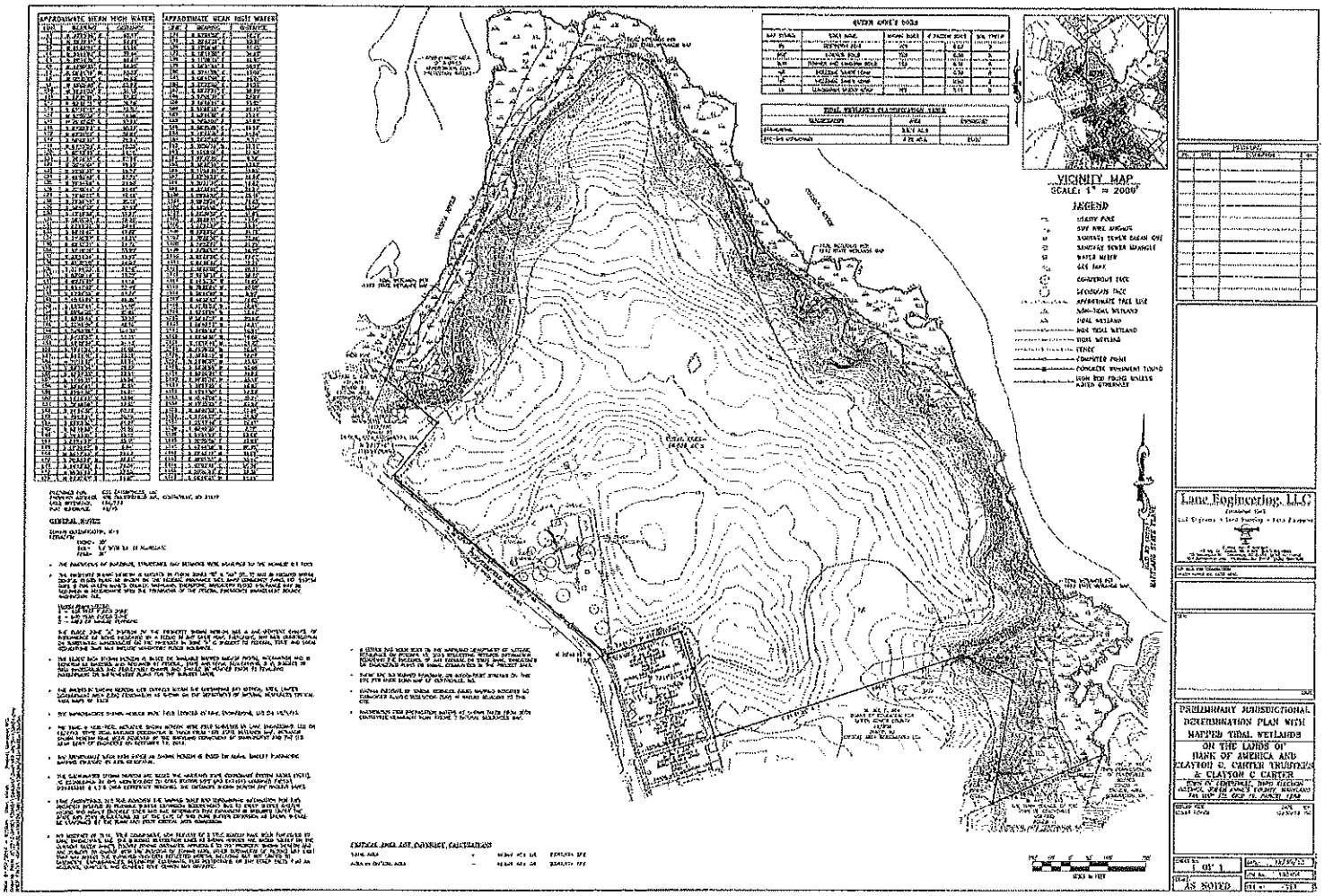
In future correspondence and permit applications regarding this parcel please include the file number located in the first paragraph of this letter. A copy of this letter will be furnished to MDE for informational purposes. If you have any questions concerning this matter, please call Rod Schwarm of the Easton Field Office at 410-820-8550. Please direct any written correspondence to the Easton Field Office at:

US Army Corps of Engineers
Easton Field Office
Talbottown Shopping Center
218 North Washington Street, Suite 304
Easton, Maryland 21601

Sincerely,

Rod Schwarm, PWS
Maryland Section Southern

Enclosures



JURISDICTIONAL DETERMINATION
VERIFICATION MAP

FOR: Clayton C. Carter Trustees

CENAB-OP-R MS2014-00500 in DB

COE SIGNATURE [signature] **DATE:** 12/2/2014

U.S. ARMY ENGINEER DISTRICT, BALTIMORE

ATTACHMENT
PRELIMINARY JURISDICTIONAL DETERMINATION FORM

BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR PRELIMINARY JURISDICTIONAL DETERMINATION (JD): 1 April 2014

B. NAME AND ADDRESS OF PERSON REQUESTING PRELIMINARY JD:

Clayton C. Carter Trustees
c/o Lane Engineering, LLC
117 Bay Street
Easton, Maryland 21601

C. FILE NAME: CENABOP-RMS (CARTER, CLAYTON C. TRUSTEES) 2014-00500-M13

D. PROJECT LOCATION(S) AND BACKGROUND INFORMATION: (USE THE ATTACHED TABLE TO DOCUMENT MULTIPLE WATERBODIES AT DIFFERENT SITES)

State: MD County: Queen Anne's City: Centreville

Center coordinates of site (lat/long in degree decimal format):
Lat. 39.051906°, Long. -76.068899°

Name of waterbody: Corsica River

Identify (estimate) amount of waters in the review area:

Non-wetland waters: Corsica River
Cowardin Class:
Stream Flow: tidal
Wetlands: 6.396 acres
Cowardin Class:

Name of any water bodies on the site that have been identified as Section 10 waters:
Tidal: Corsica River
Non-Tidal:

E. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

☐ Office (Desk) Determination. Date:
☒ Field Determination. Date(s): 12 December 2013 & 28 March 2014

1. The Corps of Engineers believes that there may be jurisdictional waters of the United States on the subject site, and the permit applicant or other affected party who requested this preliminary JD is hereby advised of his or her option to request and obtain an approved jurisdictional determination (JD) for that site. Nevertheless, the permit applicant or other person who requested this preliminary JD has declined to exercise the option to obtain an approved JD in this instance and at this time.

2. In any circumstance where a permit applicant obtains an individual permit, or a Nationwide General Permit (NWP) or other general permit verification requiring "pre-construction notification" (PCN), or requests verification for a non-reporting NWP or other general permit, and the permit applicant has not requested an approved JD for the activity, the permit applicant is hereby made aware of the following: (1) the permit applicant has elected to seek a permit authorization based on a preliminary JD, which does not make an official determination of jurisdictional waters; (2) that the applicant has the option to request an approved JD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an approved JD could possibly result in less compensatory mitigation being required or different special conditions; (3) that the applicant has the right to request an individual permit rather than accepting the terms and conditions of the NWP or other general permit authorization; (4) that the applicant can accept a permit authorization and thereby agree to comply with all the terms and conditions of that permit, including whatever mitigation requirements the Corps has determined to be necessary; (5) that undertaking any activity in reliance upon the subject permit authorization without requesting an approved JD constitutes the applicant's acceptance of the use of the preliminary JD, but that either form of JD will be processed as soon as is practicable; (6) accepting a permit authorization (e.g., signing a proffered individual permit) or undertaking any activity in reliance on any form of Corps permit authorization based on a preliminary JD constitutes agreement that all wetlands and other water bodies on the site affected in any way by that activity are jurisdictional waters of the United States, and precludes any challenge to such jurisdiction in any administrative or judicial compliance or enforcement action, or in any administrative appeal or in any Federal court; and (7) whether the applicant elects to use either an approved JD or a preliminary JD, that JD will be processed as soon as is practicable. Further, an approved JD, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 C.F.R. Part 331, and that in any administrative appeal, jurisdictional issues can be raised (see 33 C.F.R. 331.5(a)(2)). If, during that administrative appeal, it becomes necessary to make an official determination whether CWA jurisdiction exists over a site, or to provide an official delineation of jurisdictional waters on the site, the Corps will provide an approved JD to accomplish that result, as soon as is practicable.

This preliminary JD finds that there *"may be"* waters of the United States on the subject project site, and identifies all aquatic features on the site that could be affected by the proposed activity, based on the following information:

SUPPORTING DATA. Data reviewed for preliminary JD (check all that apply - checked items should be included in case file and, where checked and requested, appropriately reference sources below):

☒ Maps, plans, revised plat submitted by Lane Engineering LLC dated 30 December 2013
☐ Data sheets prepared/submitted by or on behalf of the applicant/consultant by
  ☐ Office concurs with data sheets/delineation report.
  ☐ Office does not concur with data sheets/delineation report.
☐ Data sheets prepared by the Corps:
☐ Corps navigable waters' study:
☐ U.S. Geological Survey Hydrologic Atlas:
  ☐ USGS NHD data.
  ☐ USGS 8 and 12 digit HUC maps.
☐ U.S. Geological Survey map(s). Cite scale & quad name:
☐ USDA Natural Resources Conservation Service Soil Survey. Citation:
☐ National wetlands inventory map(s). Cite name:
☐ State/Local wetland inventory map(s):
☐ FEMA/FIRM maps:
☐ 100-year Floodplain Elevation is: (National Geodetic Vertical Datum of 1929)
☒ Photographs: ☒ Aerial (Name & Date): Google Earth 1995, 2005 & 2007.
☐ Previous determination(s). File no. and date of response letter:
☒ Other information (please specify): Field inspections 12 December 2013 & 28 March 2014

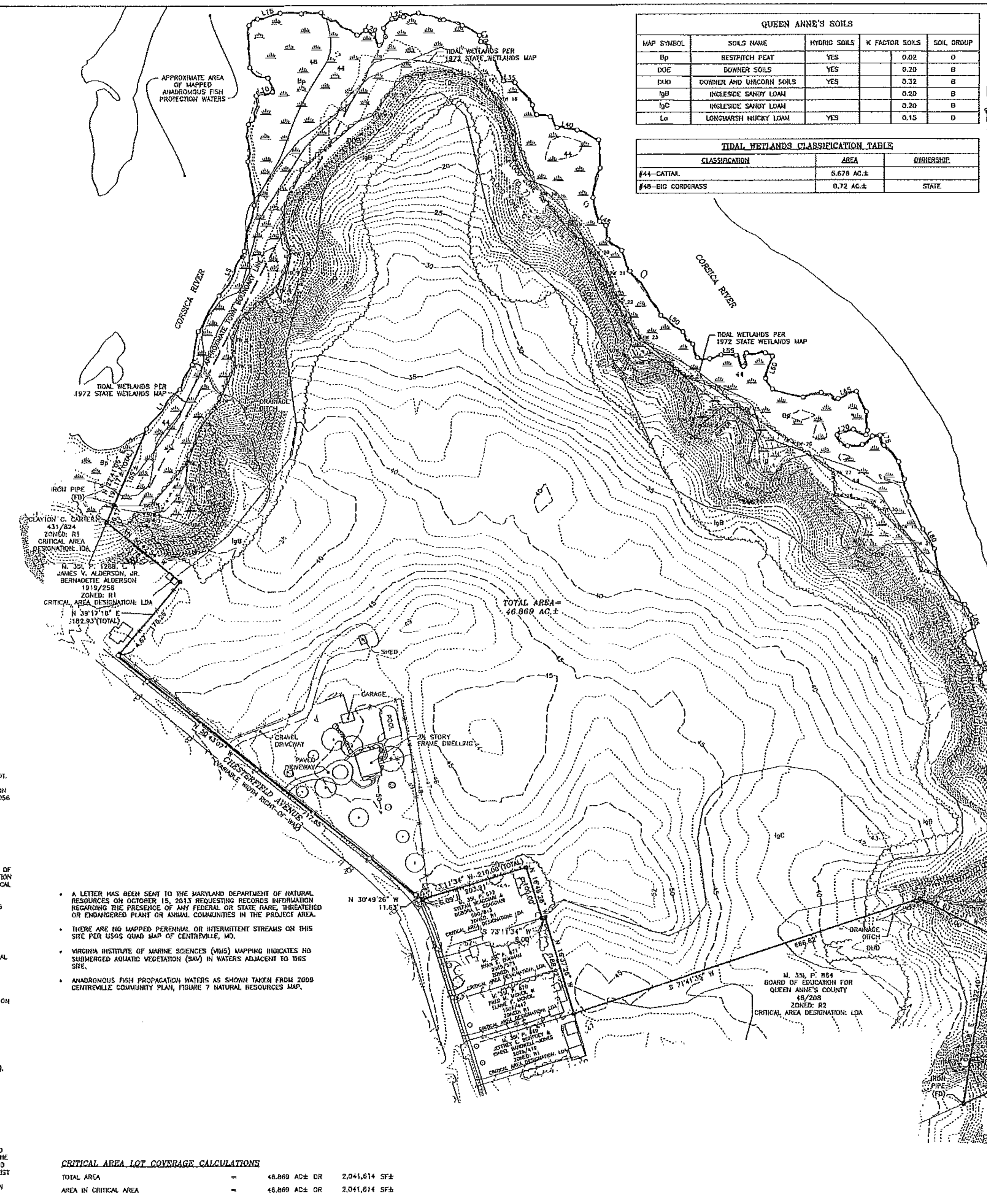
IMPORTANT NOTE: The information recorded on this form has been verified by the Corps and can be relied upon for later jurisdictional determinations.

Rod Schwarm, PWS,
Regulatory Project Manager

1 April 2014

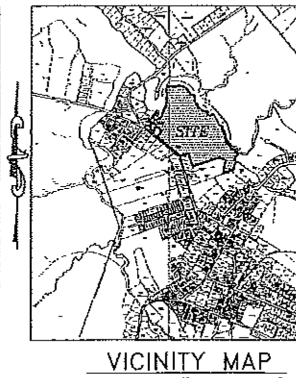
APPROXIMATE MEAN HIGH WATER		
LINE	BEARING	DISTANCE
L1	N 40°05'49" E	97.17'
L2	N 26°12'11" E	52.25'
L3	N 09°52'44" E	63.16'
L4	N 30°11'02" E	77.44'
L5	N 29°14'39" E	98.61'
L6	N 12°00'33" E	88.26'
L7	N 08°31'18" W	83.23'
L8	N 00°35'02" E	69.85'
L9	N 15°05'48" E	55.93'
L10	N 76°34'30" E	31.13'
L11	N 17°35'49" W	27.35'
L12	N 60°32'15" W	39.56'
L13	N 01°12'15" W	78.70'
L14	N 53°05'36" E	19.98'
L15	N 75°47'03" E	43.95'
L16	S 87°28'02" E	40.26'
L17	N 87°01'57" E	36.82'
L18	S 58°05'41" E	78.94'
L19	N 61°15'50" E	18.25'
L20	S 65°12'45" E	18.15'
L21	S 26°19'15" E	23.18'
L22	N 35°10'44" E	19.53'
L23	N 10°26'37" W	15.77'
L24	N 41°60'49" E	23.51'
L25	N 79°54'04" E	21.60'
L26	N 75°48'44" E	29.42'
L27	S 74°40'17" E	48.40'
L28	S 72°26'17" E	36.16'
L29	S 59°46'32" E	37.43'
L30	S 12°13'36" E	11.97'
L31	S 58°10'30" E	18.20'
L32	S 23°12'03" W	22.40'
L33	S 85°18'47" E	19.62'
L34	S 21°40'27" E	45.22'
L35	S 82°43'31" E	21.79'
L36	S 37°18'26" E	53.60'
L37	S 23°14'56" E	19.92'
L38	S 81°35'50" E	26.00'
L39	S 31°44'23" E	24.18'
L40	S 83°08'10" E	37.76'
L41	S 65°34'40" E	44.18'
L42	S 03°11'02" E	53.40'
L43	S 13°27'38" W	57.27'
L44	S 15°43'24" E	46.38'
L45	S 55°57'41" E	14.40'
L46	S 08°04'02" E	25.82'
L47	S 50°19'44" E	33.35'
L48	S 21°45'09" E	42.10'
L49	S 34°53'28" E	101.33'
L50	S 54°12'33" E	52.21'
L51	S 40°29'34" E	31.13'
L52	S 19°41'22" E	26.69'
L53	S 84°24'40" E	23.19'
L54	N 71°15'47" E	22.74'
L55	S 89°12'54" E	29.27'
L56	S 32°37'33" E	25.51'
L57	N 11°49'31" E	25.95'
L58	N 89°46'41" E	35.61'
L59	S 65°04'36" E	14.81'
L60	S 17°19'42" W	43.66'
L61	S 32°48'08" E	23.65'
L62	S 74°54'32" E	60.13'
L63	N 75°53'31" E	35.19'
L64	S 69°53'30" E	34.07'
L65	N 68°19'62" E	38.99'
L66	S 26°40'20" E	43.12'
L67	S 02°54'27" E	35.45'
L68	S 18°34'57" W	8.64'
L69	N 66°17'53" W	26.02'
L70	S 70°53'27" W	32.64'
L71	S 44°12'33" E	28.54'
L72	N 84°31'43" E	27.95'
L73	N 50°37'07" E	24.80'

APPROXIMATE MEAN HIGH WATER		
LINE	BEARING	DISTANCE
L74	N 83°01'52" E	14.21'
L75	S 20°43'23" E	20.31'
L76	S 42°06'48" E	41.45'
L77	S 18°11'05" E	34.97'
L78	S 11°09'14" E	42.90'
L79	S 26°31'51" E	58.57'
L80	S 30°41'09" E	43.08'
L81	S 09°41'04" E	44.79'
L82	S 27°22'00" E	54.51'
L83	S 82°32'21" E	28.69'
L84	S 27°04'37" E	23.22'
L85	S 14°19'21" E	23.65'
L86	S 51°03'12" W	23.15'
L87	S 00°14'48" E	13.24'
L88	S 39°50'07" E	31.03'
L89	S 08°25'09" E	18.69'
L90	S 76°33'26" E	14.84'
L91	S 27°37'13" E	6.31'
L92	S 32°50'15" W	17.71'
L93	S 11°08'06" E	17.40'
L94	S 87°47'20" E	8.36'
L95	S 32°37'11" E	20.83'
L96	S 11°58'31" E	15.65'
L97	S 22°34'25" E	29.84'
L98	S 10°21'37" E	15.62'
L99	S 30°32'16" E	22.81'
L100	S 08°26'57" E	28.46'
L101	S 08°56'28" E	26.82'
L102	S 43°54'05" E	63.58'
L103	S 52°39'55" E	41.85'
L104	S 39°28'41" E	14.59'
L105	S 37°12'17" E	23.11'
L106	N 73°23'50" E	34.78'
L107	S 70°55'50" E	32.44'
L108	S 19°52'07" E	21.75'
L109	S 84°28'57" E	18.76'
L110	S 81°26'59" E	23.07'
L111	S 67°44'17" E	32.25'
L112	S 46°26'05" E	28.33'
L113	S 03°12'16" E	38.73'
L114	S 44°32'32" W	11.95'
L115	N 78°22'54" W	20.08'
L116	S 34°14'10" W	8.50'
L117	S 44°38'45" E	14.65'
L118	S 15°32'53" W	18.96'
L119	S 87°14'04" W	12.12'
L120	N 55°12'21" W	20.40'
L121	S 58°42'52" W	14.11'
L122	S 21°09'43" E	10.91'
L123	S 52°48'50" W	19.69'
L124	S 16°19'44" W	24.70'
L125	N 71°08'28" W	10.04'
L126	S 35°53'19" W	18.07'
L127	N 54°26'57" W	23.43'
L128	S 55°39'06" W	42.66'
L129	S 60°00'34" E	34.83'
L130	S 29°25'36" W	35.19'
L131	S 37°57'25" E	16.63'
L132	S 15°54'40" E	14.20'
L133	N 45°40'04" E	25.24'
L134	N 19°35'25" E	32.52'
L135	N 48°07'03" E	13.89'
L136	S 81°06'07" E	21.60'
L137	S 21°47'46" E	29.91'
L138	S 80°49'39" E	7.77'
L139	S 51°51'20" E	12.62'
L140	S 20°20'59" E	23.93'
L141	S 49°44'10" W	28.25'
L142	S 29°43'17" W	32.07'
L143	S 39°01'53" W	30.12'
L144	S 07°07'49" E	20.36'
L145	S 50°20'53" E	32.38'
L146	S 06°46'33" W	11.21'



QUEEN ANNE'S SOILS				
MAP SYMBOL	SOILS NAME	HYDRIC SOILS	K FACTOR SOILS	SOIL GROUP
Bp	BESTPITCH PEAT	YES	0.02	D
DOE	DOWNER SOILS	YES	0.20	B
DUO	DOWNER AND UNICORN SOILS	YES	0.32	B
IgB	INGLESIDE SANDY LOAM		0.20	B
IgC	INGLESIDE SANDY LOAM		0.20	B
Lo	LONGMARSH MUCKY LOAM	YES	0.15	D

TIDAL WETLANDS CLASSIFICATION TABLE		
CLASSIFICATION	AREA	OWNERSHIP
#44–CATTAIL	5.678 AC.±	
#48–BIG CORDGRASS	0.72 AC.±	STATE



VICINITY MAP
SCALE: 1" = 2000'

LEGEND

- UTILITY POLE
- GUY WIRE ANCHOR
- SANITARY SEWER CLEAN OUT
- SANITARY SEWER MANHOLE
- WATER METER
- GAS TANK
- CONIFEROUS TREE
- DECIDUOUS TREE
- APPROXIMATE TREE LINE
- NON-TIDAL WETLAND
- TIDAL WETLAND
- NON TIDAL WETLAND
- TIDAL WETLAND
- FENCE
- COMPUTED POINT
- CONCRETE MONUMENT FOUND
- IRON ROD FOUND UNLESS NOTED OTHERWISE

PREPARED FOR: DGS ENTERPRISES, LLC
PROPERTY ADDRESS: 408 CHESTERFIELD AVE, CENTREVILLE, MD 21617
DEED REFERENCE: 166/573
PLAT REFERENCE: 40/75

GENERAL NOTES

ZONING CLASSIFICATION: R-1
SETBACKS:
FRONT- 35'
SIDE- 10' WITH 25' IN AGGREGATE
REAR- 35'

- THE DIMENSIONS OF BUILDINGS, STRUCTURES AND SETBACKS WERE MEASURED TO THE NEAREST 0.1 FOOT.
- THE PROPERTY SHOWN HEREON IS LOCATED IN FLOOD ZONES "C" & "A6" (EL 7) AND IS LOCATED WITHIN COASTAL FLOOD PLAIN AS SHOWN ON THE FEDERAL INSURANCE RATE MAPS COMMUNITY PANEL NO. 240056 0001 B FOR QUEEN ANNE'S COUNTY, MARYLAND. THEREFORE, MANDATORY FLOOD INSURANCE MAY BE REQUIRED IN ACCORDANCE WITH THE PROVISIONS OF THE FEDERAL EMERGENCY MANAGEMENT AGENCY, WASHINGTON, D.C.

FLOOD PLAIN LEGEND
A – 100 YEAR FLOOD ZONE
B – 500 YEAR FLOOD ZONE
C – AREA OF MINIMAL FLOODING

THE FLOOD ZONE "A" PORTION OF THE PROPERTY SHOWN HEREON HAS A ONE-PERCENT CHANCE OF OCCURRENCE OF BEING INUNDATED BY A FLOOD IN ANY GIVEN YEAR. THEREFORE, ANY NEW CONSTRUCTION OR SUBSTANTIAL IMPROVEMENT ON THE PROPERTY IN ZONE "A" IS SUBJECT TO FEDERAL, STATE AND LOCAL REGULATIONS THAT MAY INCLUDE MANDATORY FLOOD INSURANCE.

- THE FLOOD DATA SHOWN HEREON IS BASED ON AVAILABLE MAPPED AND/OR DIGITAL INFORMATION AND IS DEPICTED AS DIRECTED AND REQUIRED BY FEDERAL, STATE AND LOCAL REGULATIONS. IT IS SUBJECT TO DATA INACCURACIES AND REGULATORY CHANGE AND SHOULD BE VERIFIED PRIOR TO FINALIZING DEVELOPMENT OR IMPROVEMENT PLANS FOR THE SUBJECT LANDS.
- THE PROPERTY SHOWN HEREON LIES ENTIRELY WITHIN THE CHESAPEAKE BAY CRITICAL AREA, LIMITED DEVELOPMENT AREA (LDA) DESIGNATION AS SHOWN ON THE DEPARTMENT OF NATURAL RESOURCES CRITICAL AREA MAPS OF 1972.
- THE IMPROVEMENTS SHOWN HEREON WERE FIELD LOCATED BY LANE ENGINEERING, LLC ON 10/4/13.
- THE TIDAL & NON-TIDAL WETLANDS SHOWN HEREON WERE FIELD SURVEYED BY LANE ENGINEERING, LLC ON 10/4/13. STATE TIDAL WETLAND DESIGNATION IS TAKEN FROM 1972 STATE WETLANDS MAP. WETLANDS SHOWN HEREON HAVE BEEN REVIEWED BY THE MARYLAND DEPARTMENT OF ENVIRONMENT AND THE U.S. ARMY CORP OF ENGINEERS ON DECEMBER 12, 2013.
- THE APPROXIMATE MEAN HIGH WATER AS SHOWN HEREON IS BASED ON AERIAL IMAGERY PLANIMETRIC MAPPING PROVIDED BY AXIS GEOSPATIAL.
- THE COORDINATES SHOWN HEREON ARE BASED THE MARYLAND STATE COORDINATE SYSTEM NAD83 (2011), AS ESTABLISHED BY GPS METHODOLOGY TO CORS STATION LOYF (PID DX7414) COMBINED FACTOR: 0.99995360 & LOYG (NGS CERTIFICATE PENDING). THE DISTANCES SHOWN HEREON ARE GROUND BASED.
- LANE ENGINEERING, LLC HAS REVIEWED THE MAPPED SOILS AND TOPOGRAPHIC INFORMATION FOR THIS PROPERTY RELATED TO POSSIBLE BUFFER EXPANSION REQUIREMENTS DUE TO STEEP SLOPES AND/OR HYDRIC AND HIGHLY ERODIBLE SOILS AND HAS DETERMINED THAT EXPANSION IS REQUIRED UNDER THE STATE AND TOWN REGULATIONS AS OF THE DATE OF THIS PLAN. BUFFER EXPANSION AS SHOWN SHOULD BE CONFIRMED BY THE TOWN AND STATE CRITICAL AREA COMMISSION.
- NO ABSTRACT OF TITLE, TITLE COMMITMENT, NOR RESULTS OF A TITLE SEARCH HAVE BEEN FURNISHED TO LANE ENGINEERING, LLC. THE BUILDING RESTRICTION LINES AS SHOWN HEREON ARE BASED SOLELY ON THE CURRENT QUEEN ANNE'S COUNTY ZONING ORDINANCE APPLICABLE TO THE PROPERTY SHOWN HEREON AND ARE SUBJECT TO CHANGE WITH THE REVISION OF ZONING LAWS. OTHER DOCUMENTS OF RECORD MAY EXIST THAT MAY AFFECT THE SURVEYED PROPERTY REFLECTED HEREON, INCLUDING BUT NOT LIMITED TO EASEMENTS, ENCUMBRANCES, RESTRICTIVE COVENANTS, PLAT RESTRICTIONS OR ANY OTHER FACTS THAT AN ACCURATE, COMPLETE AND CURRENT TITLE SEARCH MAY DISCLOSE.
- A LETTER HAS BEEN SENT TO THE MARYLAND DEPARTMENT OF NATURAL RESOURCES ON OCTOBER 15, 2013 REQUESTING RECORDS INFORMATION REGARDING THE PRESENCE OF ANY FEDERAL OR STATE RARE, THREATENED OR ENDANGERED PLANT OR ANIMAL COMMUNITIES IN THE PROJECT AREA.
- THERE ARE NO MAPPED PERENNIAL OR INTERMITTENT STREAMS ON THIS SITE PER USGS QUAD MAP OF CENTREVILLE, MD.
- VIRGINIA INSTITUTE OF MARINE SCIENCES (VIMS) MAPPING INDICATES NO SUBMERGED AQUATIC VEGETATION (SAV) IN WATERS ADJACENT TO THIS SITE.
- ANADROMOUS FISH PROPAGATION WATERS AS SHOWN TAKEN FROM 2009 CENTREVILLE COMMUNITY PLAN, FIGURE 7 NATURAL RESOURCES MAP.

CRITICAL AREA LOT COVERAGE CALCULATIONS

TOTAL AREA	=	46.869 AC± OR	2,041,614 SF±
AREA IN CRITICAL AREA	=	46.869 AC± OR	2,041,614 SF±

REVISIONS			
No.	DATE	DESCRIPTION	BY

Lane Engineering, LLC
Established 1986
Civil Engineers • Land Planning • Land Surveyors

NOT VALID FOR CONSTRUCTION UNLESS SIGNED AND DATED HERE

SEAL

JURISDICTIONAL DETERMINATION VERIFICATION MAP
FOR: Clayton Carter, Trustees
CENAB OP-R
COE SIGNATURE: DATE:
U.S. ARMY ENGINEER DISTRICT, BALTIMORE

DATE

PRELIMINARY JURISDICTIONAL DETERMINATION PLAN WITH MAPPED TIDAL WETLANDS

ON THE LANDS OF BANK OF AMERICA AND CLAYTON C. CARTER TRUSTEES & CLAYTON C CARTER

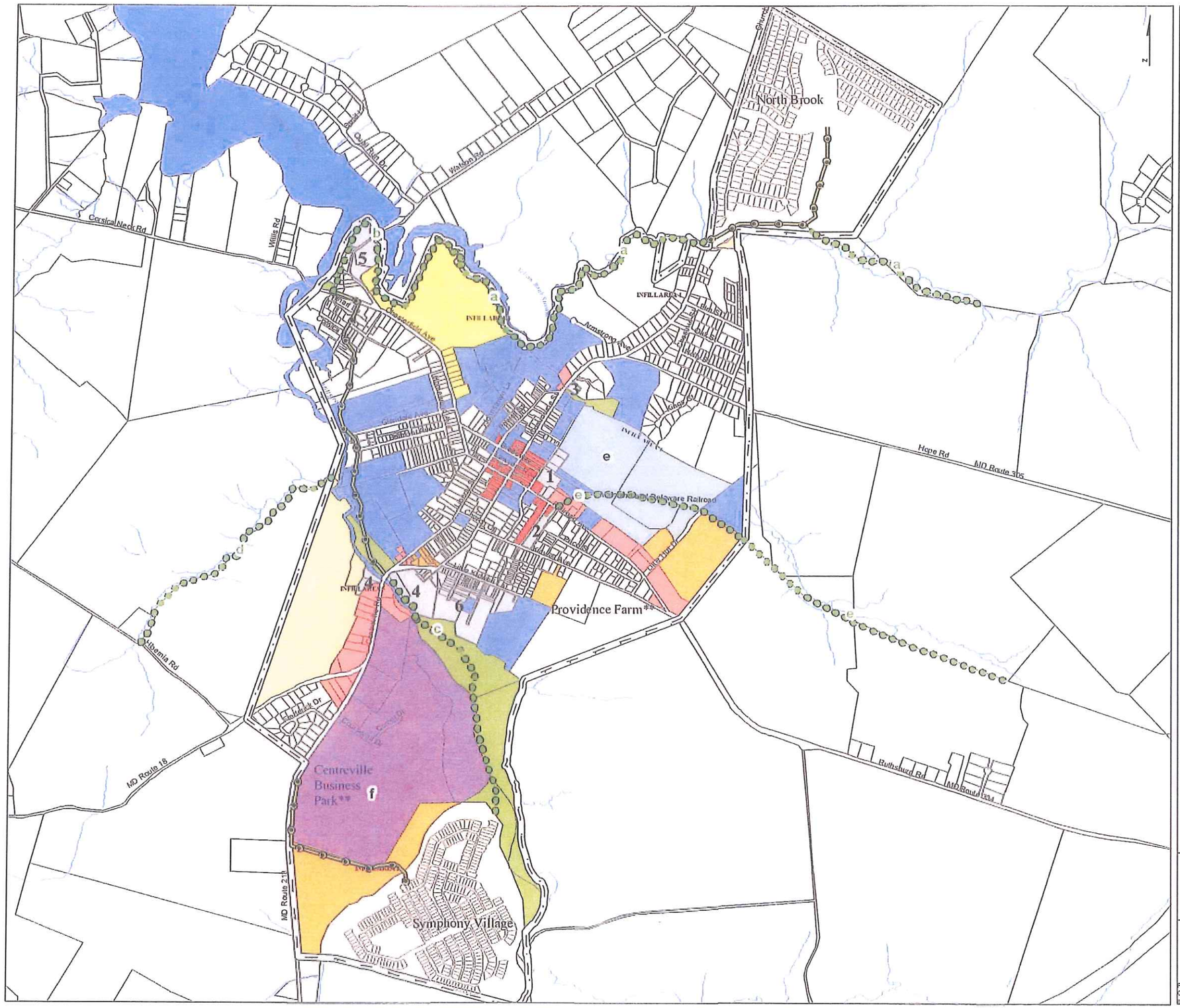
TOWN OF CENTREVILLE, THIRD ELECTION DISTRICT, QUEEN ANNE'S COUNTY, MARYLAND TAX MAP 35I, GRID 19, PARCEL 1288

ISSUED FOR:	DATE:	BY:
CLIENT REVIEW	12/30/13	JSC

SHEET No. 1 OF 1	DATE: 12/30/13
	JOB No. 130454
SCALE: AS NOTED	FILE No. C923

Centreville Community Plan

Figure 11
Future Town Land Use



Legend

- Town Limits
- Parcels
- Water
- Streams

Future Land Use

- Single-Family Residential
- Traditional Neighborhood Development
- Planned Unit Development (PUD)
- Multi-Family Residential
- Central Business District
- Roadside Commercial
- Town Planned Business Park
- County Planned Business Park
- Public, Quasi-Public, Institutional
- Park, Open Space, Resource Protection Area
- Redevelopment Area***
- Mixed-Use Development
- Existing Greenway
- Proposed Greenway*
- Proposed Road*

* Letter designations are described in Chapter 5.
**Subdivision is currently building out. Map data is based on most current available information as of 12/12/2007. Maps will be updated as new information becomes available.
***See Chapter 4 for description.

0 1500 3000 Feet

1 inch = 1,500 feet

BASE MAP SOURCE: Queen Anne's County; MdProperty View, Maryland Department of Planning. 2005

File Name: G:\Community_plans\CentrevillePlan_2008\Update to 2008\figure11_futurelanduse_town11x17_ammdment1_122308.mxd DATE: March 2009

Attachment #2

A second multi-family residential area is proposed on the south side of Town, east of Rte. 213. This location has access to Rte. 301 and is adjacent to stores and businesses.

3. Traditional Neighborhood Development (TND). This form of development is based on a grid street pattern and single-family detached houses with shallow front yards, rear access from alleys, and a strong pedestrian orientation. It is recommended that the Town Zoning Ordinance be amended to include a TND base zoning district that includes design standards. An example of a location where a TND form of development is appropriate is the historic Chesterfield property on Chesterfield Avenue. If developed, this parcel could provide a TND form of development that would relate to the surrounding community as well as the nearby Central Business District.

   This property is the location of "Chesterfield," the 17th century land grant from which Centreville was carved. The original house and remaining property are on the banks of the Yellow Bank Stream, which joins the Corsica River immediately to the west. The property around the historic site of Chesterfield provides a glimpse of the origins of Centreville. Approximately 43 gross acres of land make up the potential area, of which 26 acres are exclusive of the Chesterfield house and areas associated with Yellow Bank Stream. Any future development of the property presents a unique opportunity for replicating historic land patterns found within the Town of Centreville while preserving a special piece of the Town's history.

   The concept of a TND is that of a residential community built on a grid system of streets and alleys with a strong pedestrian orientation. Houses are close to the street lines on the public side and private access is from the rear on alleys. Front yards are shallow and usually abut a front porch. Design standards control these features as well as landscaping, street furniture, lighting, and signage. Such standards would need to be created if the Town were to adopt a TND zoning district. Implicit in the design standards is a need to assure continuity between the existing fabric of the Town and proposed development.

4. Mixed-Use Development (MUD). Locust Hill Farm is a viable agricultural operation currently and should remain so as long as the owners are willing to continue farming. In the future, its ultimate use offers a chance to provide a mixture of housing types and some retail in a controlled design on the edge of the Central Business District. A collector road is proposed through the site for internal circulation and as a connection between Banjo Lane and Little Hut Drive. This proposed collector road should be aligned so as to avoid the farmhouse and the associated cemetery. The

TOWN OF CENTREVILLE
TRADITIONAL NEIGHBORHOOD DEVELOPMENT (TND) DISTRICT
DRAFT *November 12, 2013*

ARTICLE IV
District Regulations

§ 170-XX. Traditional Neighborhood Development District - TND.

The TND District is intended to allow development consistent with design principles of a traditional neighborhood. A traditional neighborhood is compact; is designed for the human and pedestrian scale; provides a mix of residential uses including civic, small scale retail and open space uses in close proximity to one another in the neighborhood; is architecturally integrated; provides a mix of housing styles, types and sizes to accommodate a variety of households; is integrated into the surrounding communities; incorporates interconnected streets with sidewalks and bikeways and transit that offer multiple routes for motorists, pedestrians and bicyclists and provide for the connections of those streets to existing and future developments and incorporates significant environmental features into the design.

A. Minimum Criteria

(1) TND developments shall only be permitted on parcels of forty (40) acres or greater. Parcels less than the minimum acreage may be developed as TND if they are contiguous to an existing TND zoned area and development on said parcels or tracts can be harmoniously integrated consistent with the requirements and purposes of this zone.

(2) The TND development shall have access to an existing or planned arterial or collector road;

(3) The TND development shall be served by adequate existing or planned infrastructure;

(4) No land shall be classified as TND District unless it is so designated in the Town Comprehensive Plan.

B. Review Procedures and Guidelines

(1) TND developments shall be submitted in accordance with the Town Subdivision Regulations and Zoning Ordinance.

(2) A tentative sketch plan for the entire TND development shall be submitted to the Planning Commission in accordance with the Town Subdivision Regulations. In addition to the information required of the subdivision regulations, the tentative sketch plan shall be accompanied by architectural renderings, a street hierarchy, conceptual street cross-sections and other such information as may be required by the Planning Commission to determine consistency with these regulations and the Comprehensive Plan.

(3) A preliminary plat for the entire TND development shall be submitted to the Planning Commission in accordance with the Town Subdivision Regulations. In addition to the information required of the subdivision regulations, the preliminary plat shall be accompanied by preliminary architectural elevations, preliminary street cross-sections and other such information as may be required by the Planning Commission to determine consistency with these regulations and the Comprehensive Plan. The preliminary plat for the

TND shall include site specific topography and the surveyed location of adjacent streets, sidewalks and water and sewer facilities.

(4) If the preliminary plat is approved by the Planning Commission, a site plan shall be submitted to the Planning Commission in accordance with the Town Zoning Ordinance. The site plan shall include the final construction drawings and final architectural plans.

(5) A TND may be developed in phases. If developed in phases, the Planning Commission shall require such information and mechanisms as they deem necessary to assure that the entire development is developed in accordance with the TND principles as indicated on the preliminary plat and tentative sketch plan. Said information and mechanisms may include but is not limited to deed restrictions, easements, financial sureties and a "palette book" that provides a range of building choices consistent with the TND principles approved by the Planning Commission.

(6) The requirements of this section apply to all proposed development within the TND zoning district. The Planning Commission may approve minor variations to the standards in this section as deemed appropriate; provided that the Planning Commission finds that the minor variations will still produce a development that complies with the intent of this zoning district, the Development Design Standards and the Comprehensive Plan.

(7) When the provisions of these regulations conflict with other standards found in the Code of the Town of Centreville and/ or the Development Design Standards, the more restrictive regulation shall apply.

C. Permitted Uses. Permitted uses shall be as follows:

(1) Single-family detached dwellings.

(2) Single-family attached

(a) Two-family dwellings.

(b) Semi-attached dwellings.

(c) Townhouses.

(3) Multi-family dwellings.

(4) Secondary dwelling units in conjunction with single-family detached dwellings.

(5) Churches and parish halls, temples, convents and monasteries.

(6) Small-scale retail and service uses located on the ground floor.

(7) Residential above retail and service uses.

D. Accessory uses shall be as permitted in the R-2 District.

E. Special Exceptions shall be as follows:

(1) Special needs housing, such as community living arrangements and assisted living facilities.

(2) Colleges and schools, public or private, having a curriculum and conditions under which teaching is conducted equivalent to a public school, and institutions of higher learning, subject to plan review.

(3) Bed and Breakfasts.

(4) Public and private noncommercial parks and recreation areas, including clubs, parks and swimming pools.

(5) Institutional buildings

(6) Office buildings.

(7) Day-care centers.

F. Density & Dimensional Standards.

(1) Number of Dwelling Units Permitted. The number of residential dwelling units and the amount of nonresidential development (excluding open spaces) shall be determined as follows:

(a) The maximum residential density shall not exceed 5 dwelling units per acre.

(b) Secondary dwelling units shall be permissible in addition to the number of dwelling units authorized under this section. However, the total number of secondary dwelling units shall not be more than 10 percent of the total number of single-family attached and detached units.

(c) A maximum of one secondary dwelling unit shall be permitted per lot.

(d) Dwelling units constructed above retail and service uses shall be permissible in addition to the number of dwelling units authorized under this section. However, the total number of dwelling units constructed above retail and service uses shall not be more than 10 percent of the total number of single-family attached and detached units.

(2) The total floor area of retail and service buildings shall not exceed 50 square feet per approved residential dwelling unit. For example, if 150 dwelling units are proposed, a maximum of 7500 square feet of retail and service uses shall be permitted.

(3) Retail and service buildings shall be of similar scale and massing as residential structures and shall not exceed 3,000 square foot ground floor area for each retail or service business. The scale and massing of an institutional or office building permitted by special exception shall be reviewed and approved by the Planning Commission on a case-by-case basis.

(4) See Schedule of Zone Regulations for minimum lot size, lot widths, required yards, etc.

(5) Special regulations for two-family dwellings and townhouses shall be as regulated in the R-3 District.

(6) No more than twelve (12) dwelling units in one multi-family building are permitted.

G. Design Requirements

(1) **General Design Requirements.**

(a) A mix of residential dwelling types is required within a TND; however, not less than 50 percent of the total dwelling units must be single-family detached dwellings. No more than 50 percent of the single-family detached dwellings provided shall be cottage dwellings.

(b) A minimum of at least three of the following permitted housing types must be provided: Single-family dwellings; two-family dwellings, townhouses, and multi-family dwellings.

(c) The Planning Commission may, through the development review process, require the reasonable provision of screening in order to shield adjacent residential uses from commercial, office, civic and institutional uses or structures.

(2) **Lot and Block Standards.**

(a) All lots shall have frontage on a street or, square. All buildings, except accessory structures, shall have their main entrance onto a street or square.

(b) Commercial, office, civic, institutional and mixed-use structures should abut sidewalks.

(c) Lot and building widths should create a relatively symmetrical street cross section that reinforces the public space of the street as a simple, unified public space.

(d) Street layouts shall provide for perimeter blocks that are generally in the range of 200-400 feet deep by 400-800 feet long.

(e) A variety of lot sizes shall be provided to facilitate housing diversity and choice and meet the projected requirements of people with different housing needs.

(3) **Circulation Standards.** The circulation system shall provide adequate traffic capacity, provide connected pedestrian and bicycle routes, control but not prohibit through traffic, limit lot access to streets of lower traffic volumes, provide secondary access to parking and service areas with alleys, and promote safe and efficient mobility through the Traditional Neighborhood Development.

(a) Pedestrian Circulation. Convenient pedestrian circulation systems that minimize pedestrian-motor vehicle conflicts shall be provided continuously throughout the Traditional Neighborhood Development. Where feasible, any existing pedestrian

routes through the site shall be preserved, extended and enhanced. All streets, except for alleys, shall be bordered by sidewalks on both sides in accordance with the Subdivision Regulations.

(b) Motor Vehicle Circulation.

[1] Motor vehicle circulation shall be designed to minimize conflicts with pedestrians and bicycles. Traffic calming features such as "queuing streets," curb extensions, traffic circles, and medians may be used to encourage slow traffic speeds.

[2] A street hierarchy shall be established for the TND development and shall be indicated on the tentative sketch plan. Each street shall be classified and designed according to the Centreville Street Specifications as provided in Section 138-39 of the Town Subdivision Regulations. Only Collector (minor), Secondary, and alley street types are permitted in the TND District, as approved by the Town Engineer.

[3] The use of alleys is encouraged. Alleys provide secondary access to residential properties where street frontages are narrow, where the street is designed with a narrow width to provide limited on-street parking, or where alley access development is desired to increase residential densities. Alleys may also provide delivery access or alternate parking access to non-residential properties.

[4] Private streets in a TND shall be discouraged.

[5] For any street in a TND, alternative right-of-way and pavement widths from that required by the Subdivision Regulations may be approved by the Planning Commission with prior approval by the Town Council.

(4) **Street Layout Standards.** The TND should extend the existing street grid, where present, and restore any disrupted street grid where feasible. In addition:

(a) Corner radii. The roadway edge at street intersections shall be rounded by a tangential arc with a maximum radius of [15 feet] for secondary streets and [20 feet] for intersections involving collector streets. The intersection of a local street and an access lane or alley shall be rounded by a tangential arc with a maximum radius of 10 feet.

(b) Curb cuts for driveways to individual residential lots shall be discouraged along collector streets. Curb cuts shall be limited to intersections with other streets or access drives to parking lots for commercial, civic or multifamily residential uses

(c) The orientation of streets should enhance the visual impact of common open spaces and prominent buildings, create lots that facilitate passive solar design, and minimize street gradients. All streets shall terminate at other streets or at public land, except secondary streets may terminate in stub streets when such streets act as connections to future phases of the development. Secondary streets may terminate other than at other streets or public land when there is a connection to the pedestrian and bicycle path network at the terminus.

(5) **Parking.** Off-street parking lots in a TND shall comply with the Subdivision Regulations and the Development Design Standards. In addition:

(a) Adjacent on-street parking may apply toward the minimum parking requirements.

(b) A parking lot or garage may not be adjacent to or opposite a street intersection.

(c) One off-street parking space with unrestricted ingress and egress shall be provided for each secondary dwelling unit.

(d) The maximum number of parking spaces provided shall not exceed the minimum number required by more than ten (10) percent. Reduction of impervious surfaces through the use of interlocking pavers is strongly encouraged for areas such as remote parking lots and overflow parking areas for developments that have only periodic parking demand.

(e) Access for service vehicles should provide a direct route to service and loading dock areas, while avoiding movement through parking lots.

(f) Parking shall be accessed by alley or rear lane, when available.

(g) Pedestrian entrances to all parking lots and parking structures shall be directly from a frontage line.

(h) The vehicular entrance of a parking lot or garage from a public street shall be no wider than 30 feet.

(i) Parking lots shall have direct pedestrian connection to the building entry points, especially if the parking is located along the side and/or behind the buildings. Designated pedestrian access shall be provided from all parking lots to the primary building entrances.

(j) Parking lots shall be designed to avoid dead-end aisles.

(k) Parking lots shall be separated from buildings by a landscaped strip whenever possible or a raised concrete walkway or pedestrian plaza.

(l) The maximum length of any row of parking shall be 10 parking spaces.

(m) Shared parking is encouraged between different uses with staggered peak parking demand in order to reduce the total number of spaces within the development.

(n) Parking lot screening and landscaping standards shall be provided in accordance with the Development Design Standards.

(o) 55+ Multifamily units shall be provided with 2 spaces per unit.

(6) **Building Location and Orientation.**

(a) The front facade of the principal building on any lot in a Traditional Neighborhood Development shall face a public street or square.

(b) The front facade of any building shall not be oriented to face directly toward a parking lot.

(c) Non-residential development:

[1] Multiple buildings in a single project shall create a positive functional relationship to one another. Where possible, multiple buildings shall be clustered to achieve a "village" scale. This creates opportunities for plazas and pedestrian areas while preventing long "barracks-like" rows of buildings. When clustering is impractical, a visual link shall be established between buildings with the use of an arcade system, trellis, colonnade, covered walkways, landscaping, enhanced paving, building articulation and detailing, or similar features.

[2] Orienting buildings closer to the street to screen parking in the interior of the site and provide strong pedestrian connections to buildings is encouraged where appropriate (e.g. does not negatively impact any abutting residential areas).

H. Architectural Standards. A variety of architectural features and building materials is encouraged to give each building or group of buildings a distinct character. Site and building design standards are set forth in the Town of Centreville Development Design Standards. In addition:

(1) **Entries, Facades, Scale and Form**

(a) The architectural features, materials, and the articulation of a facade of a building shall be continued on all sides visible from a public street or square.

(b) Porches, pent roofs, roof overhangs, hooded front doors or other similar architectural elements shall define the front entrance to all residences.

(2) **Residential Garages.**

(a) Front loading and garages attached to the front of the main structure are prohibited.

(b) Permitted garage access locations on a single-family housing lot include:

[1] Detached rear garage accessed from a local street or alley;

[2] Attached side garage accessed from the local street or alley;

[3] Attached rear garage accessed from the local street or alley;

[4] Detached rear garage, behind the house, accessed from the local street or alley.

(3) **Signage.**

(a) A comprehensive sign program is required for the entire Traditional Neighborhood Development which establishes a uniform sign theme.

(b) All signs shall be wall signs or cantilever signs. Cantilever signs shall be mounted perpendicular to the building face and shall not exceed 8 square feet.

(c) Monument signs displaying the name of the community shall be prohibited.

(4) **Lighting.**

(a) Street lighting shall be provided on both sides of all streets at intervals of no greater than 75 feet.

(b) Parking lot poles should be located in medians or perimeter buffer areas wherever possible. Landscaping improvements should not conflict with the location of poles.

(c) Lighting should be provided to highlight entrances, art, terraces, and special landscape features; however fixtures should be concealed to prevent glare.

(5) **Storage, Loading, and Service Areas.**

(a) Loading docks, storage and service areas shall be located away from any public street in areas of low visibility such as the rear of buildings.

(b) Loading docks and service areas shall be combined to the extent feasible between multiple sites.

(c) Service entrances shall be clearly marked with signs to discourage the use of main entrances for deliveries.

I. Buffers, Street Trees, and Landscaping Standards.

(1) All uses are subject to the buffer and screening provisions of the Zoning Ordinance.

(2) Street trees shall be planted in accordance with the Subdivision Regulations.

J. Open Space and Recreation.

(1) **Purpose.** To ensure that open space and recreation areas are provided as an integral design element within TND developments and that such areas and facilities are of an adequate scale in relation to the size of the TND development and which provide residents a variety of active recreational pursuits and passive open space benefits.

(2) **Area required.** At least 20 percent of the gross acreage of the Traditional Neighborhood Development must be common open space. At least 25 percent of the minimum required common open space shall be dedicated as active open space.

(a) The following are illustrative of the types of civic/ recreation areas and subsequent facilities that shall be deemed to serve active recreational needs and therefore count towards satisfaction of the active open space area requirements of the TND: village

greens, plazas, squares, community gardens, play fields, ball courts, swings, pocket parks, playgrounds/tot lots, developed walking, jogging or biking trails, and similar civic / recreational uses.

(b) Permanent amenities in active open space areas include, but are not limited to, benches, picnic tables, amphitheaters, kiosks, fountains, monuments, bike racks, trash receptacles, and similar fixtures may be included.

(c) The areas used for stormwater management ponds, drainage swales, rain gardens or other BMPs for the retention, water quality improvement or release of stormwater shall not be considered active recreation areas; however, the Town encourages attractive integration of such BMPs into the TND design.

(3) **Design Requirements.**

(a) The open space shall be consistent with the Town's plans for its park and open space system as set forth in the Comprehensive Plan, including the establishment of greenways.

(b) All residential lots shall be within a ¼ mile (an approximate 5 minute walk) from common active open space.

(c) Active open space areas shall be designed as a public gathering place and shall be located in a manner which affords reasonable access to all residents within the development. Active open space areas can be dispersed throughout the development, provided that each location is accessible.

(d) Active open space should be integrated with passive open space and natural areas whenever practical.

(e) Open space and recreation areas shall be pedestrian oriented and designed with linkages to existing and planned public walkways and with other planned recreation areas.

(f) Features that may be used to create open space areas acceptable to the Planning Commission may include, but are not limited to, fixed benches, fixed tables, fountains, pathways, bikeways, bicycle racks, period lighting, shade trees, perennial gardens, and/or picnic areas.

(g) Recreation facilities shall be designed and installed using National Recreation and Park Association (NRPA) standards, and in accordance with Accessible Recreation Facilities Guidelines.

ARTICLE IX
Definitions

§ 170-68. Definitions.

ALLEY – A public or private way permanently reserved as a secondary means of access to abutting property and not intended for general traffic circulation.

BLOCK – A unit of land bounded by streets or by a combination of streets and public land, railroad rights-of-way, waterways, or any other barrier to the continuity of development.

BUILDING MASS – The three-dimensional bulk of a structure: height, width, and depth.

BUILDING SCALE – The proportional relationship between the mass and shape of a building and its surroundings, including the width of street, open space, and surrounding buildings.

COMMON OPEN SPACE – Open areas set aside for public use as part of a coordinated site development process

> Active Open Space. Land set aside as a part of a development project that is intended and designed to be used for active recreational activities. Active open space must be free of wetlands or other site constraints that would restrict the use and enjoyment of the open space by the community. Active open space is often improved with playground equipment, playing fields, walkways and the like.
>
> Passive Open Space. Land set aside as part of a development project that is intended to be left in its natural state, and enjoyed for its aesthetic and ecological values. Any public use of the passive open space should be consistent with the preservation of ecological functions of the open space.

QUEUING AREAS – An area within a street where parking is prohibited in order to allow cars to pass or for emergency vehicle use.

QUEUING STREET – A narrowed street which contains a single travel lane and which may occasionally require an opposing driver to pull over to allow an oncoming vehicle to pass.

PATTERN BOOK – A compilation of conceptual renderings which shall accompany a Tentative Site Plan, when required. A Pattern Book displays the architectural and site design styles of a proposed development. The architectural style is conveyed with conceptual drawings of typical proposed building elevations, including dimensions of building height and width, and façade treatment. Multiple options of typical elevations for various housing styles may be provided. The site design style shall be conveyed with conceptual street cross sections and plan view details showing example block and building location patterns.

SECONDARY DWELLING UNIT – A separate, complete housekeeping unit with a separate entrance, kitchen, sleeping area, and full bathroom facilities, which is an attached or detached extension to an existing single-family structure.

DWELLING, COTTAGE - A single-family detached dwelling type with a smaller living area, yard and lot area than standard single-family dwellings.

TRADITIONAL NEIGHBORHOOD – A compact, walkable neighborhood with mixed residential housing types integrated with small scale retail, public open space and civic uses.

Amend § 138-17 (General street standards) of the Subdivision Regulations by striking subsection I. "Alleys are prohibited in developments of single-family detached residences."

Amend Article IV Supplemental Regulations § 170-39 (Accessory uses and structures) of the Zoning ordinance as follows:

> "All ~~**necessary**~~ **accessory** uses and structures shall be located outside the required front or side yard in any residential or commercial district, unless part of or attached to the main building. Accessory uses and structures that are part of or attached to the main building require the same minimum yard setbacks as the main building. Accessory uses and structures must be set back from side and rear yard lines three feet when located in or adjacent to the R-1, R-2, R-3, **TND** Residential Districts."

Town of Centreville
Traditional Neighborhood Development (TND) District
Schedule of Zone Regulations
DRAFT December 2, 2013

District	Minimum Lot Area and Dimensions			Minimum Yard Requirements				Height		Lot Coverage (maximum)	Density/ Intensity	Minimum OSR	Minimum LSR
	Area	Width	Depth	Front	Side	Aggregate	Rear	Feet	Stories				
TND													
Residential											5 du/ac		
Single-Family	3,500	30	80	5 min; 15 max	5 min; 10 max	15 min; 20 max	30	35	2.5	65%	--	--	--
Cottage	2,000	30	60	5 min; 15 max	5 min; 10 max	-	30	35	2.5	65%	--	--	--
Two-Family	3,500	30	100	5 min; 15 max	5 min; 10 max	-	30	35	2.5	65%	--	--	--
Townhouse	1,600	20	80	5 min; 15 max	-	-	30	45	3.5	85%	--	--	0.10
Multi-Family		[17, 18]		[17, 18]	20		30	45	3.5	100%	--	--	0.15
Non-Residential	2,500	[17, 18]	100	[17, 18]	[19]	[19]	[20]	45	3.5	85%	--	--	0.15

[17] Lot and building widths should create a relatively symmetrical street cross section that reinforces the public space of the street as a simple, unified public space. The maximum building length shall be 150'. Minimum Distance Between Buildings on Same Lot is 20'

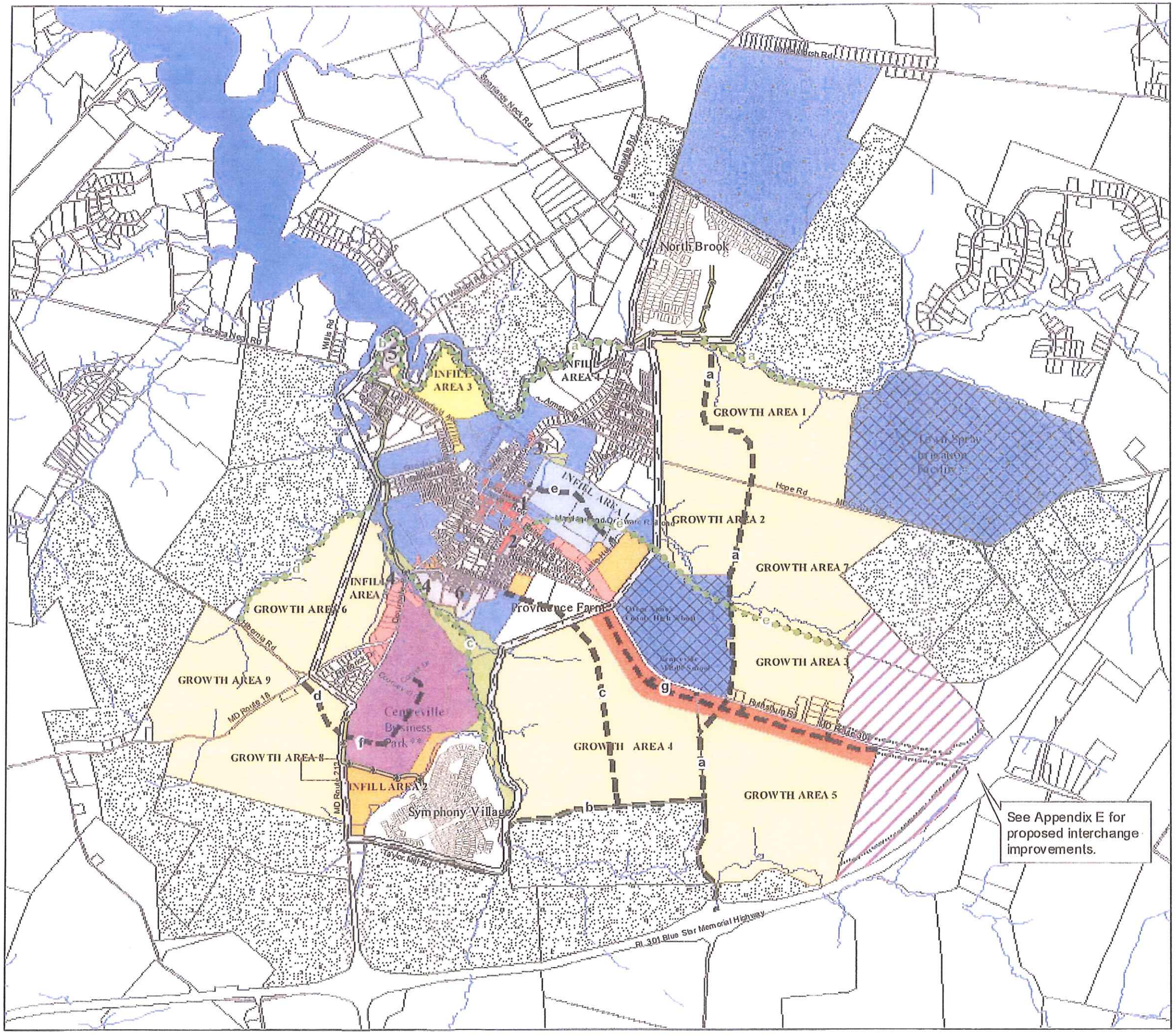
[18] Frontage lines shall be relatively constant for a street, and should abut sidewalks.

[19] When the TND zoned property abuts a Residential use, the minimum side setback shall be the same as required for the abutting residential use.

[20] When the TND zoned property abuts Residential use, the minimum rear setback shall be 30 feet.

Centreville Community Plan

Figure 12
Future Town Growth Area and Greenbelt



Legend

- Town Limits
- Parcels
- Water
- Streams

Future Land Use

- Single-Family Residential
- Traditional Neighborhood Development
- Planned Unit Development (PUD)
- Multi-Family Residential
- Central Business District
- Roadside Commercial
- Town Planned Business Park
- County Planned Business Park
- Public, Quasi-Public, Institutional
- Park, Open Space, Resource Protection Area
- Redevelopment Area***
- Mixed-Use Development
- Mixed-Use Corridor
- Other Potential Annexation Areas
- Existing Greenway
- Proposed Greenway*
- Proposed Road*
- Greenbelt

*Letter designations are described in Chapter 5.
**Subdivision is currently building out. Map data is based on most current available information as of 12/12/2007. Maps will be updated as new information becomes available.
***See Chapter 4 for description.

1 inch = 2,250 feet

BASE MAP SOURCE: Queen Anne's County; MdProperty View, Maryland Department of Planning, 2005

File Name: G:\Community_plans\CentrevillePlan_2008\Updates2008\figure11_future_town_growth_area_and_greenbelt_11x17_amendment1_022508.mxd DATE: March 2008

Attachment #5

h) The Maryland State Highway Administration has approved a preferred alternative for future improvements to the Rte. 301 and MD Rte. 304 intersection to include an overpass. The plan for this proposed interchange is shown on Appendix E.

Greenways

a) Yellow Bank Stream – A greenway should be provided from the Wharf property to Rte. 213 north of Town. As the undeveloped parcels along the path of the greenway are developed, the area along Yellow Bank Stream should be dedicated to the Town as open space. Some of the parcels along this proposed greenway have already been developed or are too small to be developed with open space. The Town will need to negotiate with these property owners to provide for the completion of the greenway. This greenway will link with the greenway and trail already provided along the Yellow Bank Stream in the North Brook development on the east side to Rte. 213.

b) Centreville Wharf – Any development of the Wharf property should include public access and should be integrated into a broader plan that links the existing Mill Stream trail, the Town lands along the stream, the Wharf, and the Yellow Bank Stream greenway.

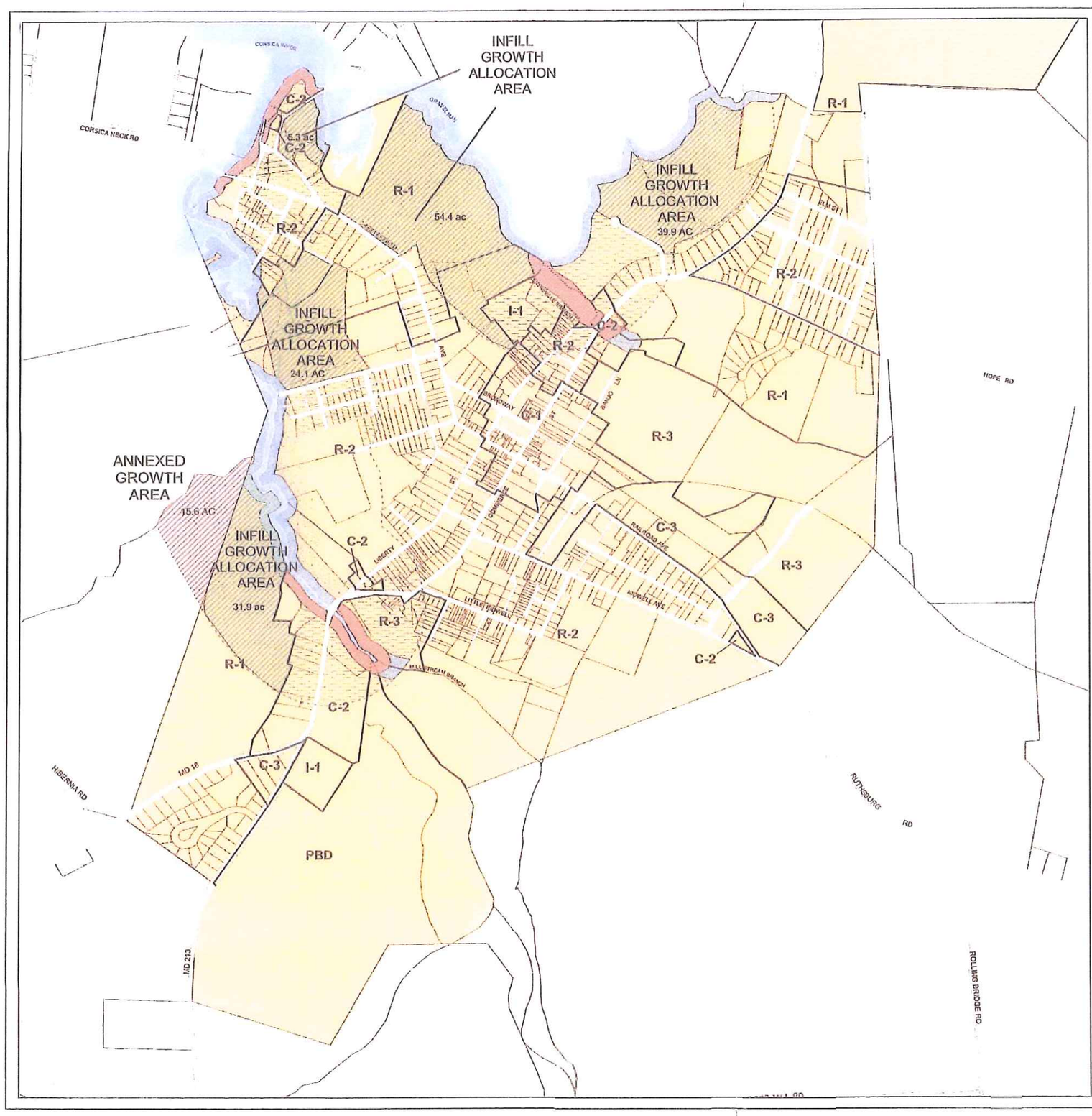
c) Mill Stream South – The Mill Stream path should be extended from Symphony Village to the existing Mill Stream path. A large portion of this area is already owned by the Town. Where the path would extend onto private property, the land and path should be made part of new development or transferred to the Town through negotiations.

d) Mill Stream West – A greenway and trail should be provided along this western tributary of the Mill Stream as part of the development of Growth Area 6. This greenway and path should connect to, and be made an integral part of, the existing Mill Stream path.

e) Rails-to-Trails – The Town should work with the railroad to create a trail along the railroad line. This trail would create a pedestrian link from the outer growth area into the CBD.

Water and Wastewater Needs Analysis

Table 5-1, located at the end of this chapter, identifies the future water and wastewater needs of the Town based on the development potential for significant lands within the current Town Limits and on the residential development potential of the Growth Areas as identified in Chapter 4. Table 5-1 also includes 200,000 gallons per day (gpd) of wastewater flow as an



TOWN OF CENTREVILLE
CRITICAL AREA & GROWTH AREAS

LEGEND

ZONING

R-1	RESIDENTIAL
R-1	RESIDENTIAL
R-3	RESIDENTIAL
C-1	LIMITED COMMERCIAL
C-2	GENERAL COMMERCIAL
C-3	INTENSE COMMERCIAL
I-1	LIGHT INDUSTRIAL
PUD	PLANNED UNIT DEVELOPMENT
PBD	PLANNED BUSINESS DEVELOPMENT
PRA	PLANNED REDEVELOPMENT AREA

CRITICAL AREA

- 1000' CRITICAL AREA LINE
- INTENSELY DEVELOPED AREA
- LIMITED DEVELOPMENT AREA
- RESOURCE CONSERVATION AREA
- 100' buffer (for demonstration purposes only field varification required)
- BUFFER EXEMPTION AREA

The Corsica River and its tributaries in town have been documented to be spawning areas for Yellow Perch, Herring, and White Perch. These areas extend upstream to headwaters or barriers.

SIGNATURE BLOCK

TOWN COUNCIL

TOWN COUNCIL

TOWN COUNCIL

TOWN MANAGER

SCALE 1" = 400'

QUEEN ANNE'S COUNTY GIS DIVISION

Final

Attachment #7

Lane Engineering, LLC

Established 1986

Civil Engineering • Land Planning • Land Surveyors

15 Washington Street
Cambridge, Maryland 21613
Tel 410-221-0818
Fax 410-476-9942

117 Bay Street
P.O. Box 1767
Easton, Maryland 21601
Tel 410-822-8003
Fax 410-822-2024

354 Pennsylvania Avenue
Centreville, Maryland 21617
Tel 410-758-2095
Fax 410-758-4422

CARTER FARM SUBDIVISON
STORMWATER MANAGEMENT CONCEPT PLAN
REPORT
OCTOBER 2014

INTRODUCTION

Stormwater management must be addressed to satisfy both the County Stormwater Management Ordinance as well as the Chesapeake Bay Critical Area 10% Rule. This project will require growth allocation which means the Critical Area Commission may require additional stormwater treatment and will not be determined until an application is made.

STORMWATER CONCEPT

Stormwater management is best addressed using Bio-Swales around the perimeter of the project, in the boulevard median area, and in the common open space adjacent to proposed roads. The goal is to provide stormwater management without the need for on lot practices.

A Bio-Swale in the boulevard median requires a minimum 10 foot top width to accommodate a 4 foot flat bottom, 3:1 side slopes, and 1 foot of depth.

Bio-Swales behind lots and along the perimeter will have a variable width as much as possible to provide a more natural geometry. The bio-swales will have a 3:1 side slope (or less steep), a 1 foot depth, and will vary from 2 feet to 8 feet flat bottoms, resulting in a 8 feet to 14 feet top width. Bio-swales will require an easement on lots but need to be checked to confirm enough room is provided for the house footprint.

Bio-Swale pool areas are also proposed as an amenity in common open space. Pool areas will also provide additional treatment.

Bio-Swales must have a surface area equal to at least 2% of the contributing drainage area. Calculations for this project assume 2.75% surface area, 4 feet of planting soil, and 1 foot of ponding.

Pocket Wetlands are "structural practices" proposed at all outfalls where possible. Pocket Wetlands will serve two (2) purposes. The first is to provide any additional stormwater *quality* management necessary. The second is to provide a stable outfall for all runoff. Pocket Wetlands will be as shallow as possible and will have a broad level spreader outfall to ensure stormwater runoff enters the buffer as Sheetflow.

Bio-Swales alone provide the ESD volume required; however, the Pocket Wetlands provide much more additional treatment. Refer to the following table for a summary of the treatment.

Summary

Total Parcel Area =	27.968	acres
Site Area (Area in Growth Allocation) =	12.325	acres
Impervious Area =	46.5	%
ESD Required =	**85,615**	**cf**
ESDv Micro-Scale Practice Treatment		
Bio-Swale Treatment =	**87,107**	**cf**
Additional ESDv Treatment		
Wetland =	128,124	cf
Total ESDv Treatment		
Micro-Scale Practice =	87,107	cf
Additional =	128,124	cf
Total ESDv Treated =	**215,231**	**cf**

The following is a list of each available ESD method of treating stormwater with a description of why it was used or not.

1. **ALTERNATIVE SURFACES**

   A-1 Green Roofs - Not applicable.

   A-2 Permeable Pavement - Permeable pavement/pavers may be used in residential driveways to provide additional treatment if needed, but is not proposed in this concept.

   A-3 Reinforced Turf – Not applicable - Reinforced turf is intended for emergency vehicle access and overflow parking.

2. **NON STRUCTURAL PRACTICES**

   N-1 Disconnection of Rooftop Runoff - Not applicable for high density residential development.

   N-2 Disconnection of Non-Rooftop Runoff - Not applicable for high density residential development.

   N-3 Sheetflow to Conservation Areas - Not applicable – may only be used if 100 feet is provided between the rear lot line and the buffer.

3. **MICRO-SCALE PRACTICES**

   M-1 Rainwater Harvesting - Rain barrels are difficult to maintain and have proven to be impractical in proposed high density residential subdivisions.

   M-2 Submerged Gravel Wetlands - The Design Manual indicates "this practice is not recommended for individual lot in a residential subdivision.

   M-3 Landscape Infiltration - Landscape Infiltration does not work well because the drainage area to any one practice cannot be more than 10,000 square feet.

   M-4 Infiltration Berms - Infiltration Berms require relatively small drainage areas and will not likely work in a high density subdivision.

   M-5 Dry Wells - Municipalities discourage the use of Dry Wells on individual lots.

   M-6 Micro-Bioretention - The drainage area to each cannot exceed ½ acre, which ultimately make them difficult to implement on this project.

   M-7 Rain Gardens - Rain Gardens are not recommended in residential subdivisions.

   M-8 Swales - Bio-Swales are proposed. A 10 foot wide strip will accommodate a 4 foot flat bottom and a 1 foot deep swale.

DRAFT

Maryland ESD Calculations - Draft 09/27/12

Project Name:	Carter Farm
Date:	27-Oct

data input cells
calculation cells

Step 1: Complete ESD Implementation Checklist

Check all of the Following ESD Practices That Were Implemented at Site	*Yes - No - N/A*
Environmental Mapping Was Conducted at Site Prior to Layout	YES
Natural Areas Were Conserved (e.g., forests, wetlands, steep slopes, floodplains)	YES
Stream, Wetland and Shoreline Buffers Were Reserved	YES
Disturbance of Permeable Soils Was Minimized	YES
Natural Flow Paths Were Maintained Across the Site	YES
Building Layout Was Fingerprinted to Reduce Clearing and Grading at Site	YES
Site Grading Promoted Sheetflow From Impervious Areas to Pervious Ones	YES
Site Design Was Evaluated to Reduce Creation of Needless Impervious Cover	YES
Site Design Was Evaluated to Maximize Disconnection of Impervious Cover	YES
Site Design Was Evaluated to Identify Potential Hotspot Generating Area for Stormwater Treatment	YES
Erosion and Sediment Control Practices and Post Construction Stormwater Management Practices Were Integrated into a Comprehensive Plan	YES
Tree PlantingWas Used at the Site to Convert Turf Areas into Forest	N/A

Step 2: Calculate Site Imperviousness and Water Quality Volume, WQv (for redevelopment)

Site Area, A (acres)	27.9680
Existing Impervious Surface Area (acres)	0.3392
Proposed Impervious Surface Area (acres)	13.0853
Rainfall Depth, P (in)	1.0
Existing Imperviousness, I_{pre}	1.2%
Proposed Imperviousness, I_{post}	46.5%
Development Category	**New Development**

Water Quality Calculation for Redevelopment Only

Required Treatment Area (acres)	0.00
Runoff Coefficient, Rv	0.95
Water Quality Volume, WQv (cf)	**0**

Step 3: Calculate Phosphorous Removal Requirement, RR for Critical Area Sites

New Development

Average Annual Predevelopment Load, Lpre (lbs P / yr)	8.39

Redevelopment:

Predevelopment Runoff Coefficient, Rv_{pre}	0.06
Phosphorous Mean Concentration, C (mg/L)	0.3
Average Annual Predevelopment Load, L_{pre} (lbs P / yr)	4.17
Post-Development Runoff Coefficient, Rv_{post}	0.47
Average Annual Post-Development Load, L_{post} (lbs P / yr)	32.08
Removal Requirement, RR (lbs P / yr)	**23.69**

Step 4: Calculate Environmental Site Design (ESD) Rainfall Target, P_E

% Soil Type A	0%
% Soil Type B	100%
% Soil Type C	0%
% Soil Type D	0%
Pre-Developed Condition, RCN_{Noaa}	55

9.6

Soil Type A ESD Rainfall Target, P_E (in)	0.00
Soil Type B ESD Rainfall Target, P_E (in)	1.80
Soil Type C ESD Rainfall Target, P_E (in)	0.00
Soil Type D ESD Rainfall Target, P_E (in)	0.00
Maximum P_E (in)	2.7
Site ESD Rainfall Target, P_E (in)	**1.80**
ESD Runoff Depth, Q_E (in)	0.84
ESD Runoff Volume, ESDv (cf)	**85,615**
Total Treatment Volume (cf)	**85,615**

Step 5: Select Nonstructural Practices to Treat the ESD Rainfall Target

Nonstructural Practices	P_E Credit Description	Contributing Drainage Area (sf)	Direct WQv or ESDv Received by Practice (cf)	WQv or ESDv from Up-Gradient Practices (cf)	P_E Credit (in)	WQV or ESDv credit (cf)	Runoff Volume Remaining (cf)	*Critical Area Credits* Baseline Phosphorous Removal Efficiency	Adjusted Removal Efficiency Rate	P Load to Practice (lbs/yr)	Load Reduction (lbs/yr)	Remaining Load (lbs/yr)
Disconnection of Rooftop Runoff (A/B Soils)	Up to 1 inch credit provided based upon disconnection flow length.	0	0	0	0.00	0	0	50%	0%	0.00	0.00	0.00
Disconnection of Rooftop Runoff (C/D Soils)	Up to 1 inch credit provided based upon disconnection flow length.	0	0	0	0.00	0	0	25%	0%	0.00	0.00	0.00
Disconnection of Non-Rooftop Runoff (A/B Soils)	Up to 1 inch credit provided based upon disconnection and contributing flow lengths.	0	0	0	0	0	0	50%	0%	0.00	0.00	0.00
Disconnection of Non-Rooftop Runoff (C/D Soils)	disconnection and contributing flow lengths.	0	0	0	0	0	0	25%	0%	0.00	0.00	0.00
Sheetflow to Conservation Areas (A/B Soils)	Up to 1 inch credit provided based upon conservation area width.	0	0	0	0	0	0	50%	0%	0.00	0.00	0.00
Sheetflow to Conservation Areas (C/D Soils)	Up to 1 inch credit provided based upon conservation area width.	1,218,286	85,616	0	0	0	85,616	25%	#NUM!	32.08	#NUM!	#NUM!

Step 6: Select Micro-Scale Practices to Treat the ESD Rainfall Target

Micro-Scale Practices	P_E Credit Description	Contributing Drainage Area (sf)	Direct ESDv Received by Practice (cf)	WQv or ESDv from Up-Gradient Practices (cf)	WQv or ESDv credit (cf)	Runoff Volume Remaining (cf)	Baseline Phosphorous Removal Efficiency	Average Adjusted Removal Efficiency Rate	P Load to Practice (lbs/yr)	Load Reduction (lbs/yr)	Remaining Load (lbs/yr)
Green Roof (Level 1)	ESDv credit is based on roof thickness	0	0	N/A	0	0	45%	0%	0.00	0.00	0.00
Green Roof (Level 2)	ESDv credit is based on roof thickness	0	0	N/A	0	0	60%	0%	0.00	0.00	0.00
Pemeable Pavement (A Soils)	ESDv credit is based on subbase thickness	0	0	N/A	0	0	80%	0%	0.00	0.00	0.00
Pemeable Pavement (B Soils)	ESDv credit is based on subbase thickness	0	0	N/A	0	0	80%	0%	0.00	0.00	0.00
Pemeable Pavement (C Soils)	ESDv credit is based on subbase thickness	0	0	N/A	0	0	40%	0%	0.00	0.00	0.00
Rainwater Harvesting	ESDv credit is based on design storage volume and annual use	0	0	0	0	0	45%	0%	0.00	0.00	0.00
Submerged Gravel Wetlands	ESDv credit is based on design storage volume	1,218,286	128,424	0	22	128,402	60%	0%	32.08	-26.93	59.01
Micro-Infiltration	ESDv credit is based on design storage volume	0	0	0	0	0	65%	0%	0.00	0.00	0.00
Rain Gardens (A/B Soils)	ESDv credit is based on design storage volume	0	0	0	0	0	65%	0%	0.00	0.00	0.00
Rain Gardens (C/D Soils)	ESDv credit is based on design storage volume	0	0	0	0	0	25%	0%	0.00	0.00	0.00
Micro-Bioretention (A/B Soils)	ESDv credit is based on design storage volume	0	0	0	0	0	75%	0%	0.00	0.00	0.00
Micro-Bioretention (C/D Soils)	ESDv credit is based on design storage volume	0	0	0	0	0	50%	0%	0.00	0.00	0.00
Landscape Infiltration	ESDv credit is based on design storage volume	0	0	0	0	0	75%	0%	0.00	0.00	0.00
Grass Swales (A/B Soils)	ESDv credit is based on design storage volume	0	0	0	0	0	40%	0%	0.00	0.00	0.00
Grass Swales (C/D Soils)	ESDv credit is based on design storage volume	0	0	0	0	0	20%	0%	0.00	0.00	0.00
Bio-swales (A/B Soils)	ESDv credit is based on design storage volume	1,218,286	128,424	0	87,107	41,316	75%	89%	32.08	28.61	3.47
Bio-swales (C/D Soils)	ESDv credit is based on design storage volume	0	0	0	0	0	50%	0%	0.00	0.00	0.00
Wet Swales	ESDv credit is based on design storage volume	0	0	0	0	0	40%	0%	0.00	0.00	0.00

Step 7: Check for ESDv to MEP compliance and Revise Site If Necessary

Drainage Area Treated (sf)	3,654,858

WQv or ESDv Treated (cf)	87,129
P_E achieved (inches)	1.83
Entire ESDv Treated Through Environmental Site Design?	YES
ESDv Remaining? (cf)	0
If ESDV is not fully treated, is ESD to MEP achieved?	

Total Load Reduction (lbs P / year	#NUM!
Total Load Reduction Remaining (lbs P / yr	#NUM!

New Development Water Quality Volume Requirements

Required Treatment Area (acres)	27.97
Runoff Coefficient, Rv	0.47
Water Quality Volume, WQv (cf)	47,564

Redevelopment WQv Requirements Met Through Environmental Site Design?	N/A
WQv Remaining? (cf)	0
New Development WQv Requirements Met Through Environmental Site Design?	YES
WQv Remaining? (cf)	0

Step 8: Determine Reduced RCN and Volume Management Requirements Based Upon P_E Achieved

Reduced RCN for Type A Soils	N/A
Reduced RCN for Type B Soils	N/A
Reduced RCN for Type C Soils	N/A
Reduced RCN for Type D Soils	N/A
Composite Reduced RCN	N/A
Q_E (in) for Reduced RCN	N/A
V (ft^3) for Reduced RCN	N/A
Volume Management Required (cf)	0

Q_E (in) for RCN of 55	0.12
V (ft^3) for RCN of 55	12559

Step 9: Select Structural Practices to Meet Volume Management Requirements

Structural Practices	Contributing Drainage Area (sf)	% Impervious Cover	Direct ESDv Received by Practice (cf)	ESDv from Upstream Practices (cf)	Treatment Volume (cf)
Stormwater Ponds (Level 1)	0	0%	0	0	0
Stormwater Ponds (Level 2)	0	0%	0	0	0
Stormwater Wetlands (Level 1)	1218286	0%	128,424	0	0
Stormwater Wetlands (Level 2)	1218286	0%	128,424	0	0
Stormwater Filtering Systems (Level 1)	0	0%	0	0	0
Stormwater Filtering Systems (Level 2)	0	0%	0	0	0
Stormwater Infiltration (Level 1)	0	0%	0	0	0
Stormwater Infiltration (Level 2)	0	0%	0	0	0

Total structural CPv provided	0
Management Requirement Met?	YES
Volume Remaining (cf)	0

Critical Area Credits

Phosphorous Removal Efficiency	Adjusted Phosphorus Removal Efficiency	P Load to Practice (lbs/yr)	Load Reduction (lbs/yr)	Remaining Load (lbs/yr)
50%	0%	0.00	0.00	0.00
50%	0%	0.00	0.00	0.00
50%	#NUM!	32.08	0.00	32.08
50%	#NUM!	32.08	0.00	32.08
50%	0%	0.00	0.00	0.00
50%	0%	0.00	0.00	0.00
50%	0%	0.00	0.00	0.00
50%	0%	0.00	0.00	0.00

Total Load Reduction (lbs P / year)	#NUM!
Total Load Reduction Remaining (lbs P / yr	#NUM!

Micro-Scale Practices	P_E Credit Description	Contributing Drainage Area (sf)	% Impervious Cover	Direct ESDv Received by Practice (cf)	WQv or ESDv from Up-Gradient Practices (cf)	Practice Specific Parameter(s)			WQv or ESDv credit (cf)	Runoff Volume Remaining (cf)	Down-Gradient Practice
Bio-swales (A/B Soils)	ESDv credit is based on design storage volume	1,218,286	47%	128,424	0	Surface Area (sf) 33,503	Ponding Depth (ft) 1	Media Depth (ft) 4	87,107	41,316	
Bio-swales (A/B Soils)	ESDv credit is based on design storage volume			0	0	Surface Area (sf)	Ponding Depth (ft)	Media Depth (ft)	0	0	
Bio-swales (A/B Soils)	ESDv credit is based on design storage volume			0	0	Surface Area (sf)	Ponding Depth (ft)	Media Depth (ft)	0	0	
Bio-swales (A/B Soils)	ESDv credit is based on design storage volume			0	0	Surface Area (sf)	Ponding Depth (ft)	Media Depth (ft)	0	0	
Bio-swales (A/B Soils)	ESDv credit is based on design storage volume			0	0	Surface Area (sf)	Ponding Depth (ft)	Media Depth (ft)	0	0	
Total		1,218,286		128,424	0				87,107	41,316	

Structural Practices	Contributing Drainage Area (sf)	% Impervious Cover	Direct ESDv Received by Practice (cf)	ESDv from Upstream Practices (cf)	Treatment Volume (cf)
Stormwater Wetlands (Level 2)	1218286	47%	128,424	0	
Stormwater Wetlands (Level 2)			0	0	
Stormwater Wetlands (Level 2)			0	0	
Stormwater Wetlands (Level 2)			0	0	
Stormwater Wetlands (Level 2)			0	0	
Total	1218286		128424	0	0

POCKET WETLAND (TYPICAL)

BIO-SWALE (TYPICAL)

BIO-SWALE POOL AREAS FOR ADDITIONAL TREATMENT

POOL AREA

BIO-SWALE POOL AREAS

12'

BIO-SWALE IN MEDIAN

BIO-SWALE

REVISIONS			
No.	DATE	DESCRIPTION	BY

60 30 0 30 60 120

SCALE IN FEET

Lane Engineering, LLC

Established 1986

Civil Engineers • Land Planning • Land Surveyors

Fenwick Hall & Associates

117 Bay St. Easton, MD 21601 (410) 822-7063
15 Washington St. Cambridge, MD 21613 (410) 221-0818
334 Pennsylvania Ave. Centreville, MD 21617 (410) 758-2095

NOT VALID FOR CONSTRUCTION UNLESS SIGNED AND DATED HERE

SEAL

DATE

STORMWATER MANAGEMENT CONCEPT PLAN

CARTER FARM

IN THE TOWN OF CENTREVILLE
QUEEN ANNE'S COUNTY, MARYLAND

ISSUED FOR: DATE: BY:

SHEET No. 1 OF 1

SCALE AS NOTED

DATE: –

JOB No. 130454

FILE No. C923

Date: 10/27/2014 – 11:46pm User: rohrenburg@Project Manager: BFG
Drawing Path: J:\2013\130454\CadData\Dwg\CSW-PLTS-130454.dwg
XREF Files:

MARYLAND
DEPARTMENT OF
NATURAL RESOURCES

Martin O'Malley, Governor
Anthony G. Brown, Lt. Governor
Joseph P. Gill, Secretary
Frank W. Dawson III, Deputy Secretary

December 19, 2013

Ms. Marsha Usilton
Lane Engineering, LLC
354 Pennsylvania Avenue
Centreville, MD 21617

RE: Environmental Review for 408 Chesterfield Avenue, Centreville, Tax Map 35I, Parcel 1288, Lane Engineering, LLC Job #130454 File C923, Queen Anne's County, Maryland.

Dear Ms. Usilton:

The Wildlife and Heritage Service has determined that there are no State or Federal records for rare, threatened or endangered species within the boundaries of the project site as delineated. This statement should not be interpreted however as meaning that rare, threatened or endangered species are not in fact present. If appropriate habitat is available, certain species could be present without documentation because adequate surveys have not been conducted.

We would also like to point out that the open waters that are adjacent to or part of the site are known historic waterfowl concentration areas. If there is to be any construction of water-dependent facilities please contact Larry Hindman of the WHS Service at (410) 221-8838 ext. 105 for further technical assistance regarding waterfowl. Please note that the utilization of state funds, or the need to obtain a state-authorized permit, may warrant additional evaluations that could lead to protection or survey recommendations by the Wildlife and Heritage Service.

Thank you for allowing us the opportunity to review this project. If you should have any further questions regarding this information, please contact me at (410) 260-8573.

Sincerely,

Lori A. Byrne

Lori A. Byrne,
Environmental Review Coordinator
Wildlife and Heritage Service
MD Dept. of Natural Resources

ER# 2013.1619.qa
Cc: K. Charbonneau, CAC
L. Hindman, DNR