

Preliminary land Use Service (PLUS)

Delaware State Planning Coordination

122 William Penn Street • Dover, DE 19901 • Phone: 302-739-3090 • Fax: 302-739-6958

Please complete this "PLUS application in its entirety. **All questions must be answered. If a question is unknown at this time or not applicable, please explain.** Unanswered questions on this form could lead to delays in scheduling your review. This form will enable the state staff to review the project before the scheduled meeting and to have beneficial information available for the applicant and/or developer at the time of review. If you need assistance or clarification, please call the State Planning Office at (302) 739-3090. Possible resources for completing the required information are as follows:

www.state.de.us/planning
datamil.delaware.gov

1. Project Title/Name: Twin Cedars Apartments

2. Location (please be specific): Zion Church Rd./S.R. 20; 3500' West of Bayard/Johnson Rd.

3. Parcel Identification #: 533-11.00-42.00

4. County or Local Jurisdiction Name: Sussex

5. Owner's Name: Twin Cedars, L.L.C.

Address: 7820 Penn Western Court, Suite B-1

City: Upper Marlboro

State: MD

Zip: 20772

Phone: (301)568-5700

Fax:

Email:

6. Applicant's Name: Charles Black Companies, L.L.C.

Address: 7820 Penn Western Court, Suite B-1

City: Upper Marlboro

State: MD

Zip: 20772

Phone: (301)568-5700

Fax:

Email:

7. Project Designer/Engineer: McCrone, Inc.

Address: 111 South West Street, Suite 6

City: Dover

State: DE

Zip: 19904

Phone: (302) 730-4600

Fax: (302) 730-0608

Email: dspeakman@mccrone-inc.com

8. Please Designate a Contact Person, including phone number, for this Project: Dan Speakman - (302) 730-4600

Information Regarding Site:

9. Type of Review: Rezoning Comp. Plan Amendment (Kent County Only) Site Plan Review
 Subdivision

10. Brief Explanation of Project being reviewed:
 224 Unit Mixed Residential Subdivision with 35,000 ft²+/- Commercial - Retail space.

11. Area of Project(Acres +/-): 64.34

12. According to the State Strategies Map, in what Investment Strategy Level is the project located? Investment Level 1
 Investment Level 2 Investment Level 3 Investment Level 4 Environmentally Sensitive Developing (Sussex Only)

13. If this property has been the subject of a previous LUPA or PLUS review, please provide the name(s) and date(s) of those applications.
 PLUS 2006-04-11

14. Present Zoning: C-1/GR

15. Proposed Zoning: CR-1/GR (RPC)

16. Present Use: Frame Apartments

17. Proposed Use: Mixed Use Residential/ Light Commercial

18. If known, please list the historical and former uses of the property, and any known use of chemicals or hazardous substances: unknown

19. Comprehensive Plan recommendation: Mixed Residential
 If in the County, which area, according to their comprehensive plan, is the project located in:
 New Castle Kent Sussex
 Suburban Inside growth zone Town Center Low Density
 Suburban reserve Outside growth zone Developing
 Other Environ. Sensitive Dev. District

20. Water: Central (Community system) Individual On-Site Public (Utility)
 Service Provider Name: Artesian Water Company

Will a new public well be located on the site? Yes No What is the estimated water demand for this project?
 (300 gpd/unit x 224 Units) + (0.5 gpd x 35,000 SF) = 84,700 gpd

How will this demand be met? Service will be met by a new main and distribution system by Artesian Water Company.

21. Wastewater: Central (Community system) Individual On-Site Public (Utility)
 Service Provider Name: Proposed Johnson Corner Sewer District

22. If a site plan please indicate gross floor area:

23. If a subdivision: Commercial Residential Mixed Use

24. If residential, indicated the number of number of Lots/units: 224 Gross Density of Project: 3.83 Units/AC Net Density 8.64 Units/AC
 Gross density should include wetlands and net density should exclude wetlands, roads, easements, etc..

25. If residential, please indicate the following:

Number of renter-occupied units: 120

Number of owner-occupied units: 104

Target Population (check all that apply):

Renter-occupied units

Family

Active Adult (check only if entire project is restricted to persons over 55)

Owner-occupied units

First-time homebuyer – if checked, how many units 80

Move-up buyer – if checked, how many units 24

Second home buyer – if checked, how many units

Active Adult (Check only if entire project is restricted to persons over 55)

26. Present Use: % of Impervious Surfaces: 1.89%
Square Feet:

Proposed Use: % of Impervious Surfaces: 40%
Square Feet:

27. What are the environmental impacts this project will have? Non-jurisdictional wetlands will be developed. BMPs will reduce amount and improve quality of storm run-off. TMDL amounts will be reduced. Stream Restoration will provide Riparian Buffer.

How much forest land is presently on-site? 38.07 AC How much forest land will be removed? 22.10 AC

Are there known rare, threatened, or endangered species on-site? Yes No

Is the site in a sourcewater (for example, an excellent groundwater recharge) protection area? Yes No

Recharge potential maps are available at

Kent County

<http://www.udel.edu/dqs/Publications/pubsonline/hydromap11.pdf>

Sussex County

<http://www.udel.edu/dqs/Publications/pubsonline/hydromap12.pdf>

New Castle County has a map viewer that shows the Wellhead protection areas and excellent recharge areas under Natural Features – Water Resources.

<http://dmz-arcims02.co.new-castle.de.us/website/nccparcelmap2/viewer.htm>

Does it have the potential to impact a sourcewater protection area? Yes No

28. Is any portion of construction located in a Special Flood Hazard Area as defined by the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM)? Yes No

Will this project contribute more rainwater runoff to flood hazard areas than prior to development? Yes No If "Yes," please include this information on the site map.

29. Are there any wetlands, as defined by the U.S. Army Corps of Engineers or the Department of Natural Resources and Environmental Control, on the site? Yes No

Are the wetlands: Tidal Acres

Non-tidal Acres 7.19

If "Yes", have the wetlands been delineated? Yes No

Has the Army Corp of Engineers signed off on the delineation? Yes No

Will the wetlands be directly impacted and/or do you anticipate the need for wetland permits? Yes No If "Yes", describe the impacts: Existing waters of the U.S. that drain the interior of the site will be filled and will be replaced by culverts, swales, and Stormwater management ponds where possible. Interior wetlands will not be disturbed. Off-site run-off that passes through the site will be managed through the alternative methods stated above.

Will there be ground disturbance within 100 feet of wetlands Yes No

30. Are there streams, lakes, or other natural water bodies on the site? Yes No

If the water body is a stream, is it: Perennial (permanent) Intermittent Ephemeral (Seasonal)

If "Yes", have the water bodies been identified? Yes No

Will there be ground disturbance within 100 feet of the water bodies Yes No If "Yes", please describe :

31. Does this activity encroach on or impact any tax ditch, public ditch, or private ditch (ditch that directs water off-site)?
 Yes No

If yes, please list name: Batson Branch

32. List the proposed method(s) of stormwater management for the site: Stormwater management ponds, swales

Define the anticipated outlet location(s) for stormwater generated by the site (for example, perennial stream, tax ditch, roadside swale, storm drain system, infiltration, etc.): Tax Ditch

Will development of the proposed site create or worsen flooding upstream or downstream of the site? Yes No

33. Is open space proposed? Yes No If "Yes," how much? 26.60 Acres Square Feet

Open space proposed (not including stormwater management ponds and waste water disposal areas) 22.74 acres/Sq ft.

What is the intended use of the open space (for example, active recreation, passive recreation, stormwater management, wildlife habitat, historical or archeological protection)? Active and passive recreation, sormwater management, woodland conservation

Where is the open space located? Southern boundary of site and in central locations

Are you considering dedicating any land for community use (e.g., police, fire, school)? Yes No

34. Does it border existing natural habitat or preserved (for example, an agricultural preservation district or protected State Resource Area) land? Yes No If "Yes," what are they? Agricultural Preservation

35. Is any developer funding for infrastructure improvement anticipated? Yes No If "Yes," what are they? Developer will assist in the road improvements as directed by DeIDOT

36. Are any environmental mitigation measures included or anticipated with this project? Yes No

Acres on-site that will be permanently protected 15.97 AC of remaing forested area

Acres on-site that will be restored 3.58 AC (Riparian Buffer Area)

Acres of required wetland mitigation N/A Wetlands are isolated, non-jurisdictional

Stormwater, erosion and sediment control, and construction best management practices (BMPs) that will be employed Wet Ponds, Bio-Swales, Riparian Buffer Creation, woodland retention, and S & S plan

Buffers from wetlands, streams, lakes, and other natural water bodies Creating Riparian Buffer around relocated drainage/habitat corridor

37. Has any consideration been given to nuisance species (for example, mosquitoes or Canada geese)? Yes No

38. Will this project generate additional traffic? Yes No

How many vehicle trips will this project generate on an average weekday? A trip is a vehicle entering or exiting. If traffic is seasonal, assume the peak season 2527 ADT

What percentage of those trips will be trucks, excluding vans and pick-up trucks? 2%

39. If the project will connect to public roads, please specify the number and location of those connections. Please describe those roads in terms of number of lanes, width (in feet) of the lanes and any shoulders. The project will have one entrance to Zion Church Road (SCR 382/ SR 20). Zion Church Road is classified as a Major Collector by the Sussex County Functional Classification Map dated 8/2005. Existing travel lanes are 11' wide and shoulders are 8' wide.

40. Will the street rights of way be public, private, or town? private

41. Is any of the project's road frontage subject to the Corridor Capacity Preservation Program? Yes No

42. Please list any locations where this project physically could be connected to existing or future development on adjacent lands and indicate your willingness to discuss making these connections. Connections to neighboring parcels would further interfere with existing environmental conditions

43. Are there existing or proposed sidewalks? Yes No; bike paths Yes No

Is there an opportunity to connect to a larger bike/pedestrian network? Yes No

44. Is this site in the vicinity of any known historic/cultural resources or sites Yes No

Has this site been evaluated for historic and/or cultural resources? Yes No

Will this project affect, physically or visually, any historic or cultural resources? Yes No
If "Yes," please indicate what will be affected (Check all that apply)

- Buildings/Structures (house, barn, bridge, etc.)
- Sites (archaeological)
- Cemetery

Would you be open to a site evaluation by the State Historic Preservation Office? Yes No

42. Are any federal permits, licensing, or funding anticipated? Yes No

43. Will this project generate any solid waste or require any special permits within State agencies to the best of your knowledge?
 Yes No If yes, please List them: Approval from Sussex County Engineering

45. Please make note of the time-line for this project: Begin construction as soon as possible. (mid-2010)

From: McCrone, Inc. Dover

302 730 0608

04/17/2008 16:43 #001 P.007/007

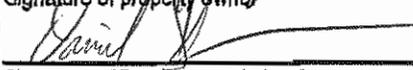
Preliminary Land Use Service Application • Page 6 of 6
Effective 10-05

I hereby certify that the information on this application is complete, true and correct, to the best of my knowledge.



Signature of property owner

4/17/08
Date



Signature of Person completing form
(If different than property owner)

4/18/08
Date

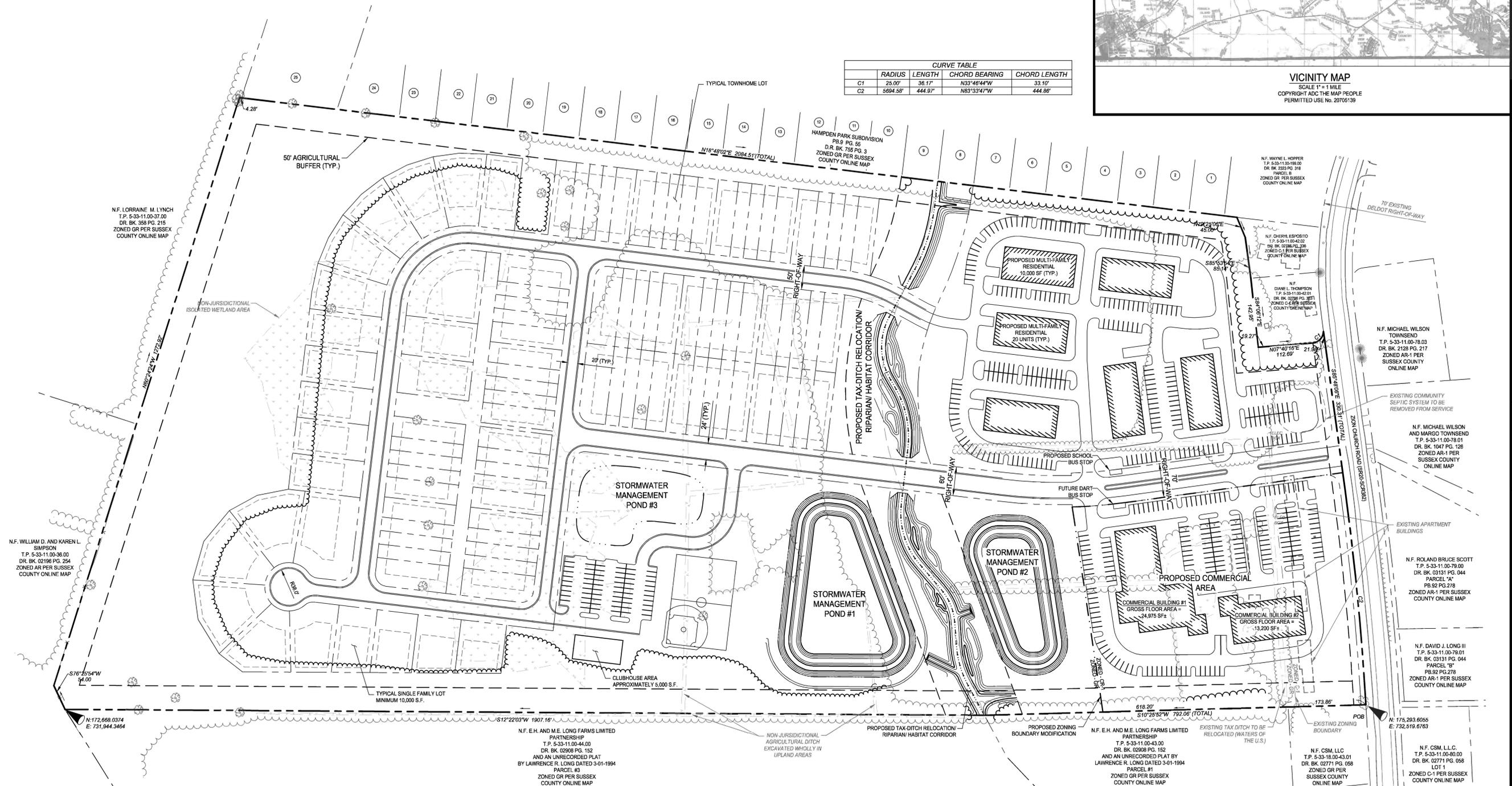
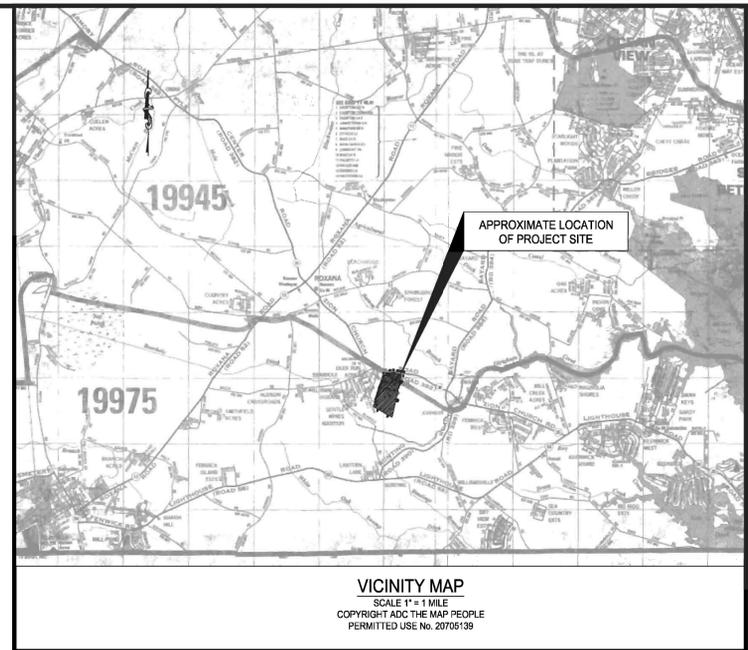
Signed application must be received before application is scheduled for PLUS review.

This form should be returned to the Office of State Planning electronically at Dorothy.morris@state.de.us along with an electronic copy of any site plans and development plans for this site. Site Plans, drawings, and location maps should be submitted as image files (JPEG, GIF, TIF, etc.) or as PDF files. GIS data sets and CAD drawings may also be submitted. If electronic copy of the plan is not available, contact Dorothy at (302) 739-3090 for further instructions. A signed copy should be forwarded to the Office of State Planning, 122 William Penn Street, Suite 302, Haslet Building, Third Floor, Dover, DE 19901. Thank you for this input. Your request will be researched thoroughly. Please be sure to note the contact person so we may schedule your request in a timely manner.

SITE DATA

- OWNER:**
TWIN CEDARS, L.L.C.
7820 PENN WEST COURT, SUITE B-1
UPPER MARLBORO, MD 20772
302-668-6700
CONTACT: ROGER BLACK
- ENGINEER/SURVEYOR:**
MICRONE, INC.
111 S. WEST STREET, SUITE 6
DOVER, DE 19904
302-730-4600, FAX 302-730-0608
CONTACT: KEITH RUDY, P.E.
- TAX PARCEL ID:** 5-33-11.00-42.00
DEED BOOK/PAGE: 3204/3
- EXISTING ZONING:** GR: 61.82 AC±
C-1: 2.52 AC±
- PROPOSED ZONING:** GR(RPC): 58.55 AC±
CR-1: 5.79 AC±
- SINGLE FAMILY LOTS = 24**
TOWNHOME LOTS = 80
MULTI-FAMILY UNITS = 120
- AREAS:**
MIN. LOT AREA = 10,000 S.F. (SINGLE FAMILY); 3,000 S.F. (TOWNHOUSE)
MIN. LOT WIDTH = 75' (SINGLE FAMILY); 16' (TOWNHOUSE)
MAX. BUILDING HEIGHT = 42'
MINIMUM = 10,033 SQ. FT./0.23 AC (SINGLE FAMILY); 4,200 SQ. FT./0.10 AC (TOWNHOUSE)
MAXIMUM = 20,015 SQ. FT./0.46 AC (SINGLE FAMILY); 9,128 SQ. FT./0.21 AC (TOWNHOUSE)
AVERAGE = 12,885 SQ. FT./0.30 AC (SINGLE FAMILY); 5,381 SQ. FT./0.12 AC (TOWNHOUSE)
COMMERCIAL AREA = 35,000 S.F.
COMMERCIAL ZONING ACREAGE = 5.79 AC±
OPEN SPACE PROVIDED = 24.38 AC±
WOODLAND EXISTING = 38.07 AC±
WOODLAND PROPOSED = 18.97 AC±
- DENSITY:**
PROPOSED LOT AREA AVERAGE = 7,118 SQ. FT./0.16 AC (TOTAL SITE)
224 LOTS/ 58.55 ACRES = 3.83 LOTS/AC
- NO PORTION OF THIS SITE FALLS WITHIN THE 100-YEAR FLOOD ZONE PER FEMA PANEL: 1000500635F**
- SITE CONTAINS:** -8.41 AC OF NON-JURISDICTIONAL ISOLATED WETLANDS
-0.67 AC OF NON-JURISDICTIONAL DITCHES
-0.11 AC OF WATERS OF THE U.S.
THESE AREAS WERE DELINEATED BY JCM/ECI IN JANUARY 2008.
- TOPOGRAPHY REFERENCE:** DELAWARE STATE PLANE NAVD 88
- SEWER PROVIDED BY SUSSEX COUNTY**
THE SITE IS LOCATED WITHIN THE JOHNSONS CORNER SANITARY SEWER DISTRICT
- WATER PROVIDED BY ARTESIAN WATER COMPANY**
- SITE SOILS:**
1974 SOIL SURVEY
- Pm - Pocomoke Sandy Loam
- EvB - Evesboro Loamy Sand, Loamy Substratum, 2 to 5 percent slopes
- Fa - Falsington Sandy Loam
- Bd - Berryland Loamy Sand
CURRENT SOIL SURVEY
- KsA - Key loamy sand, 0 to 2 percent slopes
- HuA - Hurlock loamy sand, 0 to 2 percent slopes
- MuA - Mullica-Berryland complex, 0 to 2 percent slopes

CURVE TABLE			
	RADIUS	LENGTH	CHORD BEARING
C1	25.00'	36.17'	N33°46'44"W
C2	5694.58'	444.97'	N83°3'47"W



REV. #	DATE	DESCRIPTION

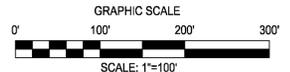
MICRONE
 • Engineering
 • Environmental Sciences
 • Land Planning & Surveying
 • Construction Services
 ANNA POLIS • CENTREVILLE • DOVER • ELKTON • SALISBURY

111 S. WEST STREET, SUITE 6
DOVER, DE 19904
PHONE: 302-730-4600 • FAX: 302-730-0608
www.microne-inc.com Copyright © 2008

DATE:	5-29-2007
JOB NUMBER:	D5070018
SCALE:	1"=100'
DRAWN BY:	REM
DESIGNED BY:	REM
APPROVED BY:	KAR
FOLDER REFERENCE:	N/A

SITE LAYOUT

FOR
TWIN CEDARS
PLUS APPLICATION
 SELBYVILLE, SUSSEX COUNTY, DELAWARE
 Prepared For: CLARKEHOWE, LLC



McCCRONE

- Engineering
- Environmental Sciences
- Construction Services
- Land Planning & Surveying

April 22, 2008

Ms. Constance C. Holland, AICP
Director
Delaware Office of State Planning and Coordination
540 S. DuPont Highway – Third Floor, Suite 7
Dover, DE 19901

RE: **Response to PLUS Comments / Re-Application
Twin Cedars Apartments (PLUS 2006-04-11)
McCrone Project #D5070018**

Dear Ms. Holland:

We are in receipt of State PLUS Comments dated May 25, 2006, for the above referenced project. Accordingly, we have made major revisions to the above referenced plan pursuant to these comments. Due to the extensive revisions to the previously submitted plans, we therefore submit a revised application to your office to be scheduled for review at the next available hearing date. Nonetheless, we have responded in detail to the comments provided on the previous plan. Our point-by-point responses to these previous comments are enclosed below:

Office of State Planning Coordination

This project represents a major land development that will result in 246 residential units in an Investment Level 4 area according to the *2004 Strategies for State Policies and Spending*. This project is also located outside of a designated growth area in relevant municipal and county certified comprehensive plans. Investment Level 4 where State investments will support agricultural preservation, natural resource protection, and the continuation of the rural nature of these areas. New development activities and suburban development are not supported in Investment Level 4 areas. These areas are comprised of prime agricultural lands and environmentally sensitive wetlands and wildlife habitats, which should be, and in many cases have been preserved.

inefficient and wasteful use of the State's fiscal resources. The project as proposed is likely to bring more than 615 new residents to an area where the State has no plans to invest in infrastructure upgrades or additional services. These residents will need access to such services and infrastructure as schools, police, and transportation. To provide some examples, the State government funds 100% of road maintenance and drainage improvements for the transportation system, 100% of school transportation and paratransit services, up to 80% of school construction costs, and about 90 % of the cost of police protection in the unincorporated portion of Sussex County where this development is proposed. Over the longer term, the unseen negative ramifications of this development will become even more evident as the community matures and the cost of maintaining infrastructure and providing services increases.

Because the development is inconsistent with the *Strategies for State Policies and Spending*, the State is opposed to this proposed subdivision.

- **The applicant understands the State's position on development in level 4 investment areas, and appreciates the State's concerns regarding preservation of natural resources and regarding infrastructure and associated service institutions. However, the State's comments do not reflect the current and future growth plans of the County in the subject area and are somewhat contradictory. First, and foremost, this area is zoned GR and C-1 (discussed in detail below). Clearly, GR and C-1 zoning does not reflect the County position of no or low growth. Secondly, the County has recently created the Johnsons Corner Sanitary Sewer District encompassing the area of the subject site laying the groundwork for the provision of sanitary sewer at this project site along with other future development areas along Route 20. The creation of the Johnsons Corner Sanitary Sewer District, enacted with the support of the Delaware Department of Natural Resources and Environmental Control (DNREC) and by a referendum of the residents within the area, is another broader indication that the subject site area is not anticipated to be either a no or low growth area. The applicant intends to develop this property meeting all requirements of the current codes and regulations, and with all applicable permits and approvals.**
- **The current zoning of the property (C-1 and GR) allows for growth in this area. GR, General Residential zoning, per Chapter 115, Article VI 115-36 states that "the purpose of this district is to provide for medium density residential use..." C-1, General Commercial District, per Chapter 115, Article XI 115-76 states that "the purpose of this district is to provide for retail shopping, personal services and a wide variety of commercial and miscellaneous service activities generally serving a community-wide area. Such uses are generally located along major arterial roadways where a general mixture of commercial and service activity now exists..." The uses shown on the Preliminary Plan are consistent with the purposes outlined in the zoning ordinance of Sussex County.**

Division of Historic and Cultural Affairs

The Division of Historical and Cultural Affairs (DHCA) are not in favor of this development in Level 4, because it will further damage the historic agricultural landscape of this area and lead to the destruction of historic properties, as well as introduce adverse visual and noise effects on nearby historic properties. The W. Hickman House (S-2017)

is across Zion Church Rd. from this parcel, and another house (S-2024, possibly the N. Tunnel House shown on Beers Atlas of 1868) is just to the north of the parcel. The USGS 15' topographic map for Ocean City 1901 shows two buildings, one on the road and one in the middle of the parcel. There may be archaeological remains for the one in the middle. The area on the road has been built over, but it is possible that the building sat in the area within the parcel on the road. The area has generally only a low potential for prehistoric archaeological sites.

Small, rural, family cemeteries often are found in relation to historic farm complexes, such as the unnamed ones here, usually a good distance behind or to the side of the house. The developer should be aware of Delaware's Unmarked Human Remains Act of 1987, which governs the discovery and disposition of such remains. The unexpected discovery of unmarked human remains during construction can result in significant delays while the process is carried out. The DHCA will be happy to discuss these issues with the developer; the contact person for this program is Faye Stocum, 302-736-7400.

If this development does move forward, they would appreciate the opportunity to look for archaeological sites and learn something about their location, nature, and extent prior to any ground-disturbing activities. The DHCA requests that the developer include sufficient landscaping to block any visual and noise effects on the surround historic properties.

- **The applicant thanks the Department for this information. The applicant also is sensitive to the impact of development on adjacent historic properties and disagrees that the development of this parcel will lead to the destruction of historic properties. By its own admission, DHCA lists only two currently existing historic structures in the vicinity of this project. Neither structure is within the boundaries of this project. Aerial photographs from Delaware DataMIL reveal that the structure which existed in the middle of the parcel was completely demolished sometime between 1992 and 1997. As a result, further development in that area will not cause the destruction of this historic resource. However, the applicant shares the Department's concern and will take necessary precautions to place landscaping buffers to shield noise and break up the visual impacts of the development and will work to identify potential areas containing archaeological resources during the planning stages of this project. The applicant invites the Department to conduct a search for archaeological sites prior to any ground-disturbing activities. A large vegetated buffer has been left between the developed portion of the site and the agricultural uses to the south. A 50' Buffer has been included surrounding the site and all adjacent parcels. Final design will be in accordance with all applicable codes and regulations. The applicant is aware of the Act and the potential for delays due to discovery and disposition of human remains. The applicant thanks the Department for this information.**
- **This plan will eliminate the existing apartment building structures and associated parking directly along Zion Church Road. The C-1 zoning line will be reconfigured to move the proposed commercial and residential development further into the parcel and away from Zion Church Road. This reconfiguration combined with the proposed landscaping buffers should improve the overall visual and audible aesthetics of the surrounding area.**
- **The DHCA declined to perform the site survey due to staff time obligations in a letter dated October 30, 2006.**

Department of Transportation

Clarke/Howe seeks to develop 246 townhouses and 12,730 square feet of commercial space on an approximately 64.22-acre parcel (Tax Parcel 5-33-11.00-42.00). The subject land is located on the south side of Delaware Route 20 between Deer Run Road (Sussex Road 388) and Bayard Road (Sussex Road 384). Three existing apartment buildings along Route 20 would be eliminated. The land is zoned C-1 (2.68 acres) and GR (61.55 acres) in Sussex County and it would be developed by right.

This development is proposed for an area designated as Level 4 under the *Strategies for State Policies and Spending*. The *Strategies for State Policies and Spending* and the County's Comprehensive Plan have deemed this type of development being proposed inappropriate for this area. As part of their commitment to support the *Strategies*, DelDOT refrains from participating in the cost of any road improvements needed to support this development and is opposed to any road improvements that will substantially increase the transportation system capacity in this area. DelDOT will only support taking the steps necessary to preserve the existing transportation infrastructure and make whatever safety and drainage related improvements are deemed appropriate and necessary. The intent is to preserve the open space, agricultural lands, natural habits and forestlands that are typically found in Level 4 areas while avoiding the creation of isolated development areas that cannot be served effectively or efficiently by public transportation, emergency responders, and other public services.

DelDOT strongly supports new development in and around existing towns and municipalities and in areas designated as growth zones in approved Comprehensive Plans. They encourage the use of transfer of development rights where this growth management tool is available.

If this development proposal is approved, notwithstanding inconsistencies with the relevant plans and policies, DelDOT will provide technical review and comments.

- **The applicant repeats its position regarding the anticipated growth potential of this project site as recited above in its comments responding to the Office of State Planning Coordination, yet understands DelDOT's position on development in Level 4 areas and the Department's unwillingness to participate in cost sharing or participation of infrastructure upgrades in a level 4 area.**
- **The applicant will work with DelDOT to improve the existing infrastructure only to the extent necessary to handle the additional traffic created by the development of this site. As part of revising the plan, the number of residential units proposed for this project has been reduced from 246 to 224. In addition, no frontage for individual lots or commercial units on Sussex Road 382 is proposed.**
- **The reconfiguration of the C-1 zone to access from the proposed boulevard entrance will reduce the number of future potential entrances onto Zion Church Road.**
- **This development is not "isolated" as there is a recorded subdivision on the wooded parcel immediately to the west of the subject property. To the east there**

are at least two residential subdivisions of similar size. In addition, this development is a mere 5 miles from Fenwick Island and 6 miles from Bethany Beach. From a brief review of the surrounding area, this development would be consistent with character of the area.

- A final traffic impact study has been prepared and submitted to DelDOT.

The Department of Natural Resources and Environmental Control

Investment Level 4 Policy Statement

This project is proposed for an Investment Level 4 area as defined by the *Strategies for State Policies and Spending* and is also located outside of a designated growth area in the relevant municipal and county certified comprehensive plans. According to the *Strategies* this project is inappropriate in this location. In Investment Level 4 areas, the State's investments and policies, from DNREC's perspective, should retain the rural landscape and preserve open spaces and farmlands. Open space investments should emphasize the protection of critical natural habitat and wildlife to support a diversity of species, and the protection of present and future water supplies. Open space investments should also provide for recreational activities, while helping to define growth areas. Additional state investments in water and wastewater systems should be limited to existing or imminent public health, safety or environmental risks only, with little provision for additional capacity to accommodate further development.

- **While this development lies within a Level 4 area, the proposed use and density is in accordance with the zoning prescribed by the County. The proposed use will meet the intentions outlined above by the following means:**
 - **Both active and passive open space is being created by this project.**
 - **The existing Tax Ditch drainage system in this area is fragmented and inefficient. The proposed reconfiguration will improve drainage, provide in-line storage, create a riparian buffer, and create valuable habitat far in excess of the functional ability of the existing piecemeal tax ditch system currently in place. It will emphasize the protection of critical natural habitat and wildlife to support a diversity of species, and the protection of present and future water supplies.**
 - **An existing community septic system serving three 2-story apartment buildings will be taken out of service. This non-point source of pollution to the watershed will be replaced by sanitary sewerage from a planned conveyance system currently under design. As mentioned earlier in our comments, this area is included in the Johnson's Corner Sanitary District.**

With continued development in Investment Level 4 areas, the State will have a difficult, if not impossible, time attaining water quality (e.g., TMDLs) and air quality (e.g., non-attainment areas for ozone and fine particulates) goals. Present and future investments in green infrastructure, as defined in Governor Minner's Executive Order No. 61, will be threatened. DNREC strongly supports new development in and around existing towns and municipalities and in areas designated as growth zones in certified Comprehensive Plans. DNREC encourages the use of transfer of development rights where this growth management tool is available.

- **A TMDL analysis has been performed for this proposed development. The model shows that the pollutant reductions necessary for this watershed will be attained through use of BMP's.**
- **This development, while not immediately adjacent to a town or municipality, is surrounded by Selbyville, Fenwick Island, Bethany Beach, Ocean View, and Millville.**
- **There is no transfer of development rights ordinance in place in Sussex County.**

This particular development certainly compromises the integrity of the State Strategies and the preservation goals inherent in many of DNREC's programs. Of particular concern are: the extent of hydric soils on the property, a significant increase in the amount of impervious cover, and the loss/fragmentation of 14 out of 37 acres of forest. While mitigating measure such as conservation design, central wastewater systems instead of individual on-site septic systems, and other best management practices may help mitigate impacts from this project, not doing the project at all is the best avenue for avoiding negative impacts. As such, this project will receive no financial, technical or other support of any kind from DNREC. Any required permits or other authorizations for this project shall be considered in light of the project's conflict with our State growth strategies.

- **The applicant acknowledges DNREC's position on this development but notes that the policy of State Strategies defining the subject area as a Level 4 is at odds with the property's zoning designation and the creation of the Johnsons Corner Sewer District encompassing this property and the surrounding area.**

Soils

According to the Sussex County soil survey mapping update Klej, Hurlock, Mullica-Berryland were mapped on subject parcel. Klej is a somewhat poorly-drained transitional soil that is likely to contain both wetland (hydric) and upland soil components. Hurlock and Mullica are poorly to very poorly-drained wetland associated (hydric) soils that have severe limitations for development. Most of the soils (estimated at +/- 95%) mapped on this parcel are wetland associated (hydric) soils.

- **The applicant acknowledges the soils indicated in the updated soil survey mapping, but submits that the prior mapping showed the site containing a majority of Pocomoke Sandy Loam. The applicant will have extensive geotechnical exploration performed and the design will be based on the findings and recommendations contained in the report.**

It should also be noted that a majority of the soils on this parcel are likely to have a seasonal high water table within one-foot of the soil surface. Building in such soils is likely to leave prospective residents of this and adjoining properties susceptible to future flooding problems from groundwater-driven surface water ponding, especially during extended periods of high-intensity rainfall events such as tropical storms/hurricanes or "nor'easters." This is in addition to increased flooding likely from surface water runoff

emanating from future created forms of structural imperviousness (roof tops, roads, and sidewalks).

- **The applicant anticipates significant earthwork and storm drainage conveyance to prevent flooding conditions from surface and sub-surface drainage. Stormwater quantity management facilities will be employed to maintain pre-development discharge rates. The improved drainage corridor will improve drainage of the parcel and provide substantial in-line storage to mitigate the effects of flooding.**

Wetlands

According to the Statewide Wetland Mapping Project Mapping (SWMP) maps, palustrine wetlands were mapped extensively over much of the parcel.

- **A wetlands investigation report was performed by Stephens Environmental Consulting, Inc. in July, 2006 and was field verified by JCM-ECI in February, 2008. Many of the areas indicated as palustrine wetlands on the SWMP maps were delineated as non-jurisdictional isolated wetlands.**

These wetlands provide water quality benefits, attenuate flooding and provide important habitat for plants and wildlife. A 100-foot vegetated buffer should be implemented from the edge of the wetland complex. The developer should note that both DNREC and Army Corps of Engineers discourage allowing lot lines to contain wetlands to minimize potential cumulative impacts resulting from unauthorized and/or illegal activities and disturbances that can be caused by homeowners.

- **As the wetlands found on the site were delineated as non-jurisdictional and isolated, the applicant believes that these areas may be developed and are not subject to the requested 100 foot vegetated buffer. A jurisdictional determination is being sought to verify this belief. Any jurisdictional non-tidal wetlands will not be disturbed and will not be included within subdivision lot lines.**

This project is located directly adjacent to Little Assawoman Bay and sensitive headwater wetlands that ultimately drain into the greater Little Assawoman Bay watershed. This greatly increases the probability of harmful impacts to both surface and groundwater quality of all waters within this watershed which will make it more difficult for the State to achieve future required TMDL nutrient reductions. In recognition of the likely impacts to water and habitat quality and the necessity to protect it for long-term sustainable use, the Watershed Assessment Section strongly urges the applicant to consider a minimum 100-foot buffer from all wetlands and water bodies. In cases where natural buffer vegetation has been removed or reduced by past development or farming activities, the developer is encouraged to restore/establish to said buffer width or create with native herbaceous and/or woody vegetation.

- **Though many of the non-jurisdictional wetland areas are proposed to be filled, some will be preserved in the undisturbed woodlands. The proposed reconfiguration of the site tax ditches will improve drainage, provide in-line storage, create a riparian buffer, and create valuable habitat far in excess of the**

functional ability of the existing piecemeal tax ditch system currently in place. It will emphasize the protection of critical natural habitat and wildlife to support a diversity of species, and the protection of present and future water supplies. The establishment of this habitat corridor and riparian buffer zone is intended to offset the filling of the non-jurisdictional wetlands.

Wetland Permitting

PLUS application materials indicate that wetlands have been delineated (presumably field delineation). This delineation should be verified by the Army Corps of Engineers through Jurisdictional Determination process. Please note that impacts to palustrine wetlands are regulated by the Army Corps of Engineers through Section 404 of the Clean Water Act. In situations where the applicant believes that the delineated wetlands on their parcel are non-jurisdictional isolated wetlands, the Corps must be contacted to make the final jurisdictional assessment. They can be reached by phone at 736-9763. A State of Delaware Subaqueous Lands Jurisdictional Determination should also be conducted.

- **As the wetlands found on the site were field delineated as non-jurisdictional and isolated, the applicant believes that these areas may be developed. A jurisdictional determination is being sought to verify this belief. A request for jurisdictional determination by the ACOE has been filed on behalf of the applicant by JCM-ECI on February 13, 2008. A State of Delaware Subaqueous Lands Jurisdictional Determination will also be conducted.**

In addition, individual 404 permits and certain Nationwide Permits from the Army Corps of Engineers also require 401 Water Quality Certification from the DNREC Wetland and Subaqueous Land Section and Coastal Zone Federal Consistency Certification from the DNREC Division of Soil and Water Conservation, Delaware Coastal Programs Section. Each of these certifications represents a separate permitting process.

- **The applicant acknowledges these separate permitting processes.**

To find out more about permitting requirements, the applicant is encouraged to attend a Joint Permit Process Meeting. These meetings are held monthly and are attended by federal and state resource agencies responsible for wetland permitting. Contact Denise Rawding at (302) 739-9943 to schedule a meeting.

- **A Joint Permit Process Meeting will be attended, if necessary.**

Impervious Cover

Based on a review of the submitted PLUS application, the applicant projects that only about 17.8% (calculated from information in PLUS application) of this parcel will be rendered impervious following this parcel's development. However, this figure is likely a significant underestimate given the scope and density of this project. The applicant should be made aware that all forms of constructed surface imperviousness (i.e., rooftops, sidewalks and roads) should be included in the impervious surface calculation. It is

strongly recommended that the applicant recalculate this figure to include all forms of created surface imperviousness within the finalized project design plans.

Research has consistently shown that once a watershed exceeds a threshold of 10 percent imperviousness, water and habitat quality irreversibly decline. Based on the analyses of 2002 aerial photography by the University of Delaware, the Little Assawoman Bay watershed, at that time had about 9.7 percent impervious cover. Although this data is about 4 years old and likely an underestimate, it illustrates the importance of a proactive strategy to mitigate for predictable and cumulative environmental impacts. Since this project will further increase the watershed's level of imperviousness, the applicant is strongly advised to pursue best management practices (BMPs) that mitigate or reduce some of its most likely adverse impacts. Reducing the amount of surface imperviousness through the use of pervious paving materials ("pervious pavers") in lieu of asphalt or concrete in conjunction with retention of existing forest cover or additional tree plantings are examples of practical BMPs that could easily be implemented to reduce surface imperviousness.

- **The amount of impervious cover has been revised to a more conservative estimate of 40% of the entire parcel. This estimate was developed using the maximum predicted impervious area for each use.**
- **The site's design will incorporate BMP's to reduce the impacts of the proposed impervious areas. BMP's such as bioswales and extended detention SWM facilities will be coupled with the creation of a riparian buffer along the proposed stream corridor to offset created impervious area and treat stormwater runoff. The site design will retain a portion of the existing forest cover and tree plantings will be incorporated into the landscaping design and riparian buffer layout.**

ERES Waters

This project is located adjacent to receiving waters of Little Assawoman Bay designated as waters having Exceptional Recreational or Ecological Significance (ERES). ERES waters are recognized as special assets of the State, and shall be protected and/or restored, to the maximum extent practicable, to their natural condition. Provisions in Section 5.6 of Delaware's "Surface Water Quality Standards" (as amended July 11, 2004), specify that all designated ERES waters and receiving tributaries develop a "pollution control strategy" to reduce non-point sources of pollutants through implementation of Best Management Practices (BMPs). Moreover, provisions defined in subsection 5.6.3.5 of same section, specially authorize the Department to mandate BMPs to meet standards for controlling the addition of pollutants and reducing them to the greatest degree achievable and, where practicable, implementation of a standard requiring no discharge of pollutants.

- **This project is proposing to relocate and enhance an existing tax ditch which contributes to the receiving waters of Little Assawoman Bay in an effort to uphold the standards of being designated as ERES. The ditch will be widened and landscaped with vegetation of native species in an effort to provide both stormwater management and aesthetic appeal. Run-off due to additional impervious areas on the developed portion of the site will be managed and treated in two stormwater management ponds before discharging into the enhanced tax ditch.**

TMDLs

Total Maximum Daily Loads (TMDLs) for nitrogen and phosphorus have been promulgated through regulation for the Little Assawoman Bay watershed. A TMDL is the maximum level of pollution allowed for a given pollutant below which a “water quality limited water body” can assimilate and still meet water quality standards to the extent necessary to support use goals such as, swimming, fishing, drinking water and shell fish harvesting. Although TMDLs are required by federal law, states are charged with developing and implementing standards to support these desired use goals. TMDL nutrient reductions of 40 percent will be required for the Little Assawoman Bay watershed.

- **A TMDL analysis has been conducted using the spreadsheet developed by DNREC. The results indicate that the post-development condition will meet the nutrient and bacteria reduction required.**

TMDL Compliance through the PCS

The proposed pollution control strategy will require the completion of a nutrient budget to estimate nutrient load changes following development; documentation of these load changes will be assessed through a nutrient budget protocol. The nutrient budget protocol is a computer-based model that quantifies post-development nutrient loading under a variety of land use scenarios in combination with a variety (or absence) of BMP types and intensities. The post-development loading rate is then compared with the pre-development loading rate to assess whether the project meets the prescribed TMDL nutrient load reductions. Based on a preliminary evaluation of this project using said model (with the applicants’ assumptions as reported in the PLUS application), the development as currently conceived will not meet the Little Assawoman Bay watershed TMDL nutrient reduction requirements for nitrogen and phosphorus. The applicant is strongly advised to consider the use of appropriate BMPs and Best Available Technologies (BATs) to ensure compliance. Examples of BMPs or BATs that should be used to significantly reduce or minimize created surface imperviousness, maintenance/restoration of recommended wetland buffer widths, reducing the amount of overall forest cover removal, utilization of performance-based wastewater disposal systems or - better yet - connection to public sewer (if available), and use of innovative “green-technology” stormwater methodologies rather than conventional open-water stormwater management structures. As mentioned previously, the impervious cover figure should be recalculated to include all forms of created surface imperviousness (i.e., rooftops, sidewalks, and roads); otherwise, this project’s true environmental impacts will be underestimated. We also suggest that the applicant verify their project’s compliance with the specified TMDL loading rates by running the model themselves (with the more realistic impervious cover figure). Please contact Lyle Jones of Watershed Section at 739-9939 for the acceptable model protocol.

- **The TMDL assessment tool has been utilized using an appropriate amount of impervious area and has demonstrated that the proposed stormwater management approach will provide the required overall reduction in the amount of TMDLs in post-development conditions.**

Water Supply

The project information sheets state water will be provided to the project by Artesian Water Company via a central water system. Our records indicate that the project is located within the public water service area granted to Artesian Water Company under Certificate of Public Convenience and Necessity 03-CPCN-26.

Should dewatering points be needed during any phase of construction, a dewatering well construction permit must be obtained from the Water Supply Section prior to construction of the well points. In addition, a water allocation permit will be needed if the pumping rate will exceed 50,000 gallons per day at any time during operation.

All well permit applications must be prepared and signed by licensed water well contractors, and only licensed well drillers may construct the wells. Please factor in the necessary time for processing the well permit applications into the construction schedule. Dewatering well permit applications typically take approximately four weeks to process, which allows the necessary time for technical review and advertising.

Potential Contamination Sources exist in the area, and any well permit applications will undergo a detailed review that may increase turnaround time and may require site specific conditions/recommendations. In this case, there is a Large On-Site septic system called Twin Cedars Apartment located within 1000 feet of the project.

Should you have any questions concerning these comments, please contact Rick Rios at 302-739-9944.

- **The applicant and site engineer have noted the criteria listed for construction of on-site wells and the potential hazards that exist due to nearby potential contamination sources. In addition, the large on-site septic system will be removed from service as a part of this project in accordance with appropriate regulations.**

Sediment and Erosion Control/Stormwater Management

A detailed sediment and stormwater plan will be required prior to any land disturbing activity taking place on the site. The plan review and approval as well as construction inspection will be coordinated through the Sussex Conservation District. Contact Jessica Watson, Program Manager, at (302) 856-7219 for details regarding submittal requirements and fees.

- **The site engineer will provide the detailed sediment and stormwater plan and is prepared to work with the Sussex Conservation District for review and approval.**

It is strongly recommended that you contact the Sussex Conservation District to schedule a pre-application meeting to discuss the sediment and erosion control and stormwater management components of the plan. The site topography, soils mapping, pre- and post-development runoff, and proposed method(s) and location(s) of stormwater management should be brought to the meeting for discussion.

It is strongly recommended that you contact the Drainage Section to discuss any tax ditch easement and right-of-way requirements for any tax ditches on or adjacent to the property in question. If the project is proposing to discharge into any tax ditch, then a letter of no objection will need to be submitted from the Drainage Section for the encroachment into the right-of-way.

- **The site engineer has contacted DNREC and is aware of the current right-of-ways associated with the Batson Branch Tax Ditch watershed.**

A Notice of Intent (NOI) for Stormwater Discharges Associated with Construction Activity must be submitted to DNREC Division of Soil and Water Conservation along with the \$195 NOI fee prior to plan approval.

Applying practices to mimic the pre-development hydrology on the site, promote recharge, maximize the use of existing natural features on the site, and limit the reliance on stormwater components, such as maintaining open spaces, should be considered in the overall design of the project as a stormwater management technique.

Each stormwater management facility should have adequate outlet for release of stormwater. Any drainage conveyed onto this site from neighboring properties must be adequately conveyed through the site to the discharge point without interruption.

Clearly address how Stormwater Quality and Quantity Treatment will be provided. If this project is eligible for a Quantity Waiver, please make the request in the stormwater narrative citing the specific regulation.

Please indicate on the sediment and stormwater management plan who shall be responsible for maintenance of the stormwater management facilities both during construction and after. During the design of the sediment control and stormwater management plan, considerations should be made for maintenance (i.e. access, easements, etc.) of any structures or facilities.

If a stormwater management pond is going to be utilized as a sediment trap/basin during construction, it must be designed to accommodate 3600 cubic feet of storage per acre of contributing drainage area until project stabilization is complete.

All ponds are required to be constructed per Pond Code 378.

Please note that if the stormwater facilities will impact wetlands, a permit must be provided to the District prior to receiving approval. Please address.

A Certified Construction Reviewer (CCR) is required for any project that is 50 acres or greater.

DNREC regulations require no more than 20 acres to be disturbed at one time. A phased erosion and sediment control plan and sequence of construction will be required.

Under the DNREC Health and Safety Memo of 2000, all wet ponds are required to have an open space depth of 3 feet or more that comprises 50-75 percent of the area of the pond.

Consideration should be made for any adjacent properties during the design of the project, including drainage and erosion/sediment control.

If any waivers and variances are sought for the project in question, these items should be addressed at the preliminary meeting. Any requests for waivers and variances should be included in the stormwater report narrative.

The District recommends that any existing farm pond have all safety features implemented as stated in Delaware Small Pond Code 378.

- **These requests will be incorporated into the Sediment and Stormwater Plan for this project.**

Drainage

This project is within a tax ditch and our program is in contact with the project engineers on addressing the concerns of the tax ditch rights-of-way.

- **McCrone, Inc. has met with DNREC regarding the proposed realignment of the tax ditch and creation of the habitat corridor. The applicant and engineer will continue to consult with DNREC and other agencies regarding the Tax Ditches and their associated rights-of-way.**

Site Visit Request

We have not surveyed this property, therefore, it is unknown if there are state-rare or federally listed plants, animals or natural communities at this project site that would be affected by project activities.

In order to provide more informed comments and to make reasonable recommendations, our program botanist and zoologist request the opportunity to survey the forested and wetland resources which could potentially be impacted by the project. This would also allow the applicant the opportunity to reduce potential impacts to rare species and to

ensure that the project is environmentally sensitive. Please contact Bill McAvoy or Kitt Heckscher at (302) 653-2880 to set up a site visit.

- **The owner has met with Bill McAvoy onsite as suggested. Mr. McAvoy “found no State rare plant species of concern or federally listed plants ... and the potential for future discoveries is low,” as stated in his letter dated September 29, 2006.**

Forest Preservation

According to the application 13.7 out of 37.4 acres of forest will be removed by this project and a greater effort to preserve the forest on this property should be made. The current site plan will fragment the forest which separates wildlife populations, increases road mortality and increases “edge effects” that leave many forest dwelling species vulnerable to predation and allows the infiltration of invasive species. In addition, those species currently inhabiting the forest will have to disperse into the surrounding area and this could lead to an increase in human/animal conflicts. Therefore, we recommend that the site plan be changed to allow for greater forest preservation.

First of all, there are numerous stormwater management ponds in the site plan, some of which may not be necessary. Space saved by omitting some of the ponds could be used for housing units removed out of the forested area.

Secondly, the housing units and infrastructure within the forested area should be omitted or reduced, and possibly moved to other areas of the plan where open space is not forested (or in areas currently set aside as stormwater management ponds, if deemed unnecessary). At the very least, those units and roadways that are essentially separated from the rest of the development on the other side of “resource areas 100 and 200” should be removed. There is a ‘cul-de-sac’ or circular road feature that will also result in unnecessary forest loss. The larger area of forest preserved by the suggest changes would be usable to the resident wildlife as well as the entire community.

Lastly, if a large percentage of forest loss is still going to occur despite recommendations to the contrary, then we recommend that trees not be cleared from April 1st to July 31st to minimize impacts to birds and other wildlife that utilize forest for breeding.

- **The revised plan shall preserve 14.3 of 38.1 acres of forest. This does not include the addition of the proposed corridor as part of the tax-ditch re-alignment. The remaining forest will be part of one contiguous forested area. Notes will be added to the construction plans limiting clearing between April 1 and July 31 to minimize impacts to breeding wildlife. If a reduction in the number of stormwater management ponds is recommended by the Sussex Conservation District, then the applicant will consider a reduction. disapproval**

Plant Rescue

Because there is forest loss and wetland impacts associated with this project, we recommend that the developer/landowner contact the Delaware Native Plant Society to

initiate a plant rescue. Selected plants from the site of disturbance will be collected by Society members and transplanted to the Society's nursery. Plants will then be used in restoration projects and/or sold at the Society's annual native plant sale. This can be done at no expense or liability to the developer/landowner. Please contact Lynn Redding at (302) 736-7726 or lynn_redding@ml.com.

- **The site will be available for plant rescue. The Delaware Native Plant Society will be contacted as requested. The applicant will consider relocation, as feasible, selected plants for incorporation into the proposed corridor, as appropriate.**

Nuisance Waterfowl

Stormwater management ponds that remain in the site plan may attract waterfowl like resident Canada geese and mute swans that will create a nuisance for community residents. High concentrations of waterfowl in ponds create water-quality problems, leave droppings on lawn and paved areas and can become aggressive during the nesting season. Short manicured lawns around ponds provide an attractive habitat for these species. However, native plantings, including tall grasses, wildflowers, shrubs, and trees at the edge and within a buffer area (at least 50 feet) around ponds, are not as attractive to geese because they do not feel safe from predators and other disturbance when their view of the area is blocked. The Division of Fish and Wildlife does not provide goose control services, and if problems arise, residents or the home-owners association will have to accept the burden of dealing with these species (e.g., permit applications, costs, securing services of certified wildlife professionals). Solutions can be costly and labor intensive; however, with a reduction in the number of ponds, proper landscaping, monitoring, and other techniques, geese problems can be minimized.

- **The applicant acknowledges the potential for nuisance geese due to the two proposed ponds. To extents practical, the design considerations suggested will be implemented in the Stormwater management facility maintenance specifications. The site landscaping will be maintained by the applicant as part of the proposed facilities' operations.**

Solid Waste

Each Delaware household generates approximately 3,600 pounds of solid waste per year. On average, each new house constructed generates an additional 10,000 pounds of construction waste. Due to Delaware's present rate of growth and the impact that growth will have on the state's existing landfill capacity, the applicant is requested to be aware of the impact this project will have on the State's limited landfill resources and, to the extent possible, take steps to minimize the amount of construction waste associated with this development.

- **The applicant will take steps to minimize the amount of construction waste generated with this development. Waste materials will be recycled to the extents practical.**

Air Quality

Once complete, vehicle emissions associated with this project are estimated to be 18.9 tons (37,758.4 pounds) per year of VOC (volatile organic compounds), 15.6 tons (31,261.4 pounds) per year of NOx (nitrogen oxides), 11.5 tons (23,065.3 pounds) per year of SO2 (sulfur dioxide), 1.0 ton (2,053.2 pounds) per year of fine particulates and 1,579.2 tons (3,158,444.8 pounds) per year of CO2 (carbon dioxide).

However, because this project is in a level 4 area, mobile emission calculations should be increased by 118 pounds for VOC emissions for each mile outside the designated growth areas per household unit; by 154 pounds for NOx; and by 2 pounds for particulate emissions. A typical development of 100 units that is planned 10 miles outside the growth areas will have additional 59 tons per year of VOC emissions, 77 tons per year of NOx emissions and 1 ton per year of particulate emissions versus the same development built in a growth area (level 1,2 or 3).

Emissions from area sources associated with this project are estimated to be 7.6 tons (15,229.7 pounds) per year of VOC (volatile organic compounds), 0.8 ton (1,675.7 pounds) per year of NOx (nitrogen oxides), 0.7 ton (1,390.6 pounds) per year of SO2 (sulfur dioxide), 0.9 ton (1,794.5 pounds) per year of fine particulates and 30.9 tons (61,737.8 pounds) per year of CO2 (carbon dioxide).

Emissions from electrical power generation associated with this project are estimated to be 3.0 tons (6,036.0 pounds) per year of NOx (nitrogen oxides), 10.5 tons (20,994.6 pounds) per year of SO2 (sulfur dioxide) and 1,548.4 tons (3,096,707.0 pounds) per year of CO2 (carbon dioxide).

	VOC	NOx	SO2	PM2.5	CO2
Mobile	18.9	15.6	11.5	1.0	1579.2
Residential	7.6	0.8	0.7	0.9	30.9
Electrical Power		3.0	10.5		1548.4
TOTAL	26.5	19.4	22.7	1.9	3158.5

For this project the electrical usage via electric power plant generation alone totaled to produce an additional 3.0 tons of nitrogen oxides per year and 10.5 tons of sulfur dioxide per year

A significant method to mitigate this impact would be to require the builder to construct Energy Star qualified homes. Every percentage of increased energy efficiency translates into a percent reduction in pollution. Quoting from their webpage, <http://www.energystar.gov/>:

“ENERGY STAR qualified homes are independently verified to be at least 30% more energy efficient than homes built to the 1993 national Model Energy Code or 15% more efficient than state energy code, whichever is more rigorous. These savings are based on

heating, cooling, and hot water energy use and are typically achieved through a combination of:

building envelope upgrades,
high performance windows,
controlled air infiltration,
upgraded heating and air conditioning systems,
tight ducts systems and
upgraded water-heating equipment.”

The Energy office in DNREC is in the process of training builders in making their structures more energy efficient. The Energy Star Program is an excellent way to save on energy costs and reduce air pollution. They highly recommend this project development and other residential proposals increase the energy efficiency of their homes.

They also recommend that the home builders offer geothermal and photo voltaic energy options. Applicable vehicles should use retrofitted diesel engines during construction. The development should provide tie-ins to the nearest bike paths, links to mass transit, and fund lawnmower exchange program for their new occupants.

- **The recommendations for energy efficiency will be incorporated to the extents practical. It is the common interests of the owner, residents, and community that the project be energy efficient.**

State Fire Marshal’s Office – Contact: Duane Fox 856-5298

These comments are intended for informational use only and do not constitute any type of approval from the Delaware State Fire Marshal’s Office. At the time of formal submittal, the applicant shall provide; completed application, fee, and three sets of plans depicting the following in accordance with the Delaware State Fire Prevention Regulation (DSFPR):

- a. **Fire Protection Water Requirements:**
 - Water distribution system capable of delivering at least 1500 gpm for 2-hour duration, at 20-psi residual pressure is required. Fire hydrants with 800 feet spacing on centers. (Mercantile)
 - Water distribution system capable of delivering at least 1000 gpm for 1-hour duration, at 20-psi residual pressure is required. Fire hydrants with 800 feet spacing on centers. (Apartments and Townhouses)
 - Where a water distribution system is proposed for the site, the infrastructure for fire protection water shall be provided, including the size of water mains for fire hydrants and sprinkler systems.

- b. **Fire Protection Features:**
 - All structures over 10,000 sq. ft. aggregate will require automatic sprinkler protection installed.

- Buildings greater than 10,000 sq. ft., 3-stories or more or over 35 feet, or classified as High Hazard, are required to meet fire lane marking requirements.
- Show Fire Department Connection location (Must be within 300 feet of fire hydrant), and detail as shown in the DSFPR.
- Show Fire Lanes and Sign Detail as shown in DSFPR
- For townhouse buildings, provide a section / detail and the UL design number of the 2-hour fire rated separation wall on the Site plan.

c. **Accessibility**

- All premises, which the fire department may be called upon to protect in case of fire, and which are not readily accessible from public roads, shall be provided with suitable gates and access roads, and fire lanes so that all buildings on the premises are accessible to fire apparatus. This means that the access road to the subdivision from Zion Church Rd. must be constructed so fire department apparatus may negotiate it.
- Fire department access shall be provided in such a manner so that fire apparatus will be able to locate within 100 ft. of the front door.
- Any dead end road more than 300 feet in length shall be provided with a turn-around or cul-de-sac arranged such that fire apparatus will be able to turn around by making not more than one backing maneuver. The minimum paved radius of the cul-de-sac shall be 38 feet. The dimensions of the cul-de-sac or turn-around shall be shown on the final plans. Also, please be advised that parking is prohibited in the cul-de-sac or turn around.
- The use of speed bumps or other methods of traffic speed reduction must be in accordance with Department of Transportation requirements.
- The local Fire Chief, prior to any submission to our Agency, shall approve in writing the use of gates that limit fire department access into and out of the development or property.

d. **Gas Piping and System Information:**

- Provide type of fuel proposed, and show locations of bulk containers on plan.

e. **Required Notes:**

- Provide a note on the final plans submitted for review to read “All fire lanes, fire hydrants, and fire department connections shall be marked in accordance with the Delaware State Prevention Regulations”
- Proposed Use
- Alpha or Numerical Labels for each building/unit for sites with multiple buildings/units
- Square footage of each structure (Total of all Floors)
- National Fire Protection Association (NFPA) Construction Type
- Maximum Height of Buildings (including number of stories)
- Townhouse 2-hr separation wall details shall be shown on site plans

- Note indicating if building is to be sprinklered
- Name of Water Provider
- Letter from water Provider approving the system layout
- Provide Lock Box Note (as detailed in DSFPR) if Building is to be sprinklered
- Provide Road Names, even for County Roads

Preliminary meetings with fire protection specialists are encouraged prior to formal submittal. Please call for appointment. Applications and brochures can be downloaded from our website: www.delawarestatefiremarshal.com, technical services link, plan review, applications or brochures.

- **The applicant acknowledges the requirements for submittal to the State Fire Marshal's office and intends to submit code-compliant plans to meet these requirements.**

Department of Agriculture – Contact: Milton Melendez 698-4500

The proposed development is in an area designated as Level 4 under the *Strategies for State Policies and Spending*. The *Strategies* do not support this type of isolated development in this area. The intent of this plan is to preserve the agricultural lands, forestlands, recreational uses, and open spaces that are preferred uses in Level 4 areas. The Department of Agriculture opposes the proposed development which conflicts with the preferred land uses, make it more difficult for agriculture and forestry to succeed, and increases the cost to the public for services and facilities.

More importantly, the Department of Agriculture opposes this project because it negatively impacts those land uses that are the backbone of Delaware's resource industries – agriculture, forestry, horticulture – and the related industries they support. Often new residents of developments like this one, with little understanding or appreciation for modern agriculture and forestry, find their own lifestyles in direct conflict with the demands of these industries. Often these conflicts result in compromised health and safety; one example being decreased highway safety with farm equipment and cars competing on rural roads. The crucial economic, environmental and open space benefits of agriculture and forestry are compromised by such development. The Department of Agriculture opposes the creation of isolated development areas that are inefficient in terms of the full range of public facilities and services funded with public dollars. Public investments in areas such as this are best directed to agricultural and forestry preservation.

A portion of this site is also part of a designated “Wellhead Protection” area. Wellhead protection areas have been established to protect the areas that provide ground-water recharge for drinking water wells. Wellhead protection is important to ensure both ground-water quantity and quality. Increasing impervious surface in a wellhead protection area can reduce the quantity of water available to supply drinking water. Instituting activities that can contribute to ground-water pollution in a wellhead protection area can adversely affect the quality of the drinking water. The Department

recommends that any development have the minimum adverse impact possible on wellhead protection areas.

Additionally, this site overlaps with the State's Green Infrastructure Investment Strategy Plan. The Crop Land layer is present on this site; this designation identifies areas that possess unique natural features that are valuable for preservation.

The Delaware Department of Agriculture supports growth which expands and builds on existing urban areas and growth zones in approved State, county and local plans. Where additional land preservation can occur through the use of transfer of development rights, and other land use measures, we will support these efforts and work with developers to implement these measures. If this project is approved we will work with the developers to minimize impacts to the agricultural and forestry industries.

- **The applicant understands the Department of Agriculture's position on development in Level 4 investment areas, but reiterates its position regarding the anticipated growth potential of this project site as recited above in its comments responding to the Office of State Planning Coordination. The applicant recognizes the agricultural sensitivity of the area and assures the Department that all construction will be carried out in accordance with current regulations and with all applicable permits obtained. Drinking water will be provided by Artesian Water Co. and will not draw upon ground-water in the immediate vicinity of the project site. The revised plan attempts to preserve as much forested land as possible and will maintain a forested buffer between the developed areas and surrounding agricultural parcels. Any re-planting of vegetation shall consist of native species to the extents practical.**

Public Service Commission – Contact: Andrea Maucher 739-4247

Any expansion of natural gas or installation of a closed propane system must fall within Pipeline Safety guidelines. Contact: Malak Michael at (302) 739-4247.

- **The applicant acknowledges this requirement and shall follow these guidelines should natural gas or propane systems be expanded.**

Delaware State Housing Authority – Contact: Karen Horton 739-4263

The proposal is to develop 246 Townhomes + Commercial (Condominium Act) located on the south side of Delaware Route 20 (Zion Church Road), west of the Bayard Road/Johnson Road intersection. According to the *State Strategies Map*, the proposal is located in an Investment Level 4 area. As a general planning practice, DSHA encourages residential development only in areas where residents will have proximity to services, markets, and employment opportunities, such as Investment Level 1 and 2 areas outlined in the State Strategies Map. Since the proposal is located in an area targeted for agricultural and natural resource protection, and therefore inconsistent with where the State would like to see new residential development; DSHA does not support this proposal.

- **The applicant understands the Delaware State Housing Authority's position on development in Level 4 investment areas however, DSHA's response does not appear to take into account the currently existing apartment buildings (three buildings) on the subject site or the current zoning of the property as GR and C-1. As part of the development plan, there will be employment opportunities for employment within the subdivision's commercial zone. Medical services could be provided by the nearby by the proposed Fenwick Medical Complex.**

Department of Education – Contact: John Marinucci 739-4658

DOE recognizes that this development project is in level 4 of the State Strategies for Policies and Spending and as such, DOE does not support the approval of this project.

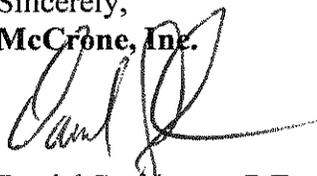
DOE offers the following comments on behalf of the Indian River School District.

1. Using the DOE standard formula, this development will generate an estimate 123 students.
 2. DOE records indicate that the Indian River School District's *elementary schools are at or beyond 100% of current capacity* based on September 30, 2005 elementary enrollment.
 3. DOE records indicated that the Indian River School Districts' *secondary schools are not at or beyond 100% of current capacity* based on September 30, 2005 secondary enrollment.
 4. This development will create additional elementary student population growth which will further compound the existing shortage of space. The developer is strongly encouraged to contact the Indian River School District Administration to address the issue to elementary school over-crowding that this development will exacerbate.
 5. DOE requests developer work with the Indian River School District transportation department to establish developer supplied bus stop shelter ROW and shelter structures, interspersed throughout the development as determined and recommended by the local school district.
- **The applicant will work with DOE to address these issues. A letter will be sent to the school district as requested.**

Thank you again for your review of this project. We believe we have addressed your comments to-date. If you have any questions, please contact us at 302-730-4600.

Sincerely,

McCrone, Inc.



Daniel Speakman, P.E.
Project Manager

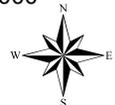
Preliminary Land Use Service (PLUS)

Twin Cedars Apts.
2008-05-01

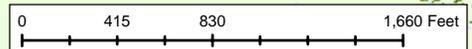
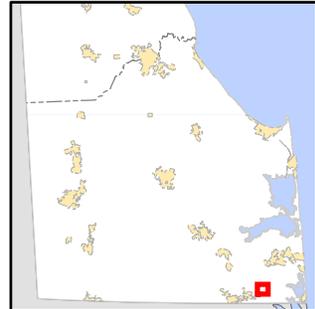


- Project Areas
- Municipalities
- Purchased Dev. Rights
- Ag District
- Public Owned/Protected
- Forestry Easements
- Delaware State Forests
- Working Forests
- Highest Value Agriculture
- State Strategies**
- Level 1
- Level 2
- Level 3
- Level 4
- Nat. Res. & Rec. Priorities
- Out of Play
- Area of Dispute
- Area of Study
- Env. Sens. Dev. (Sussex)

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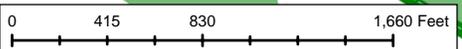
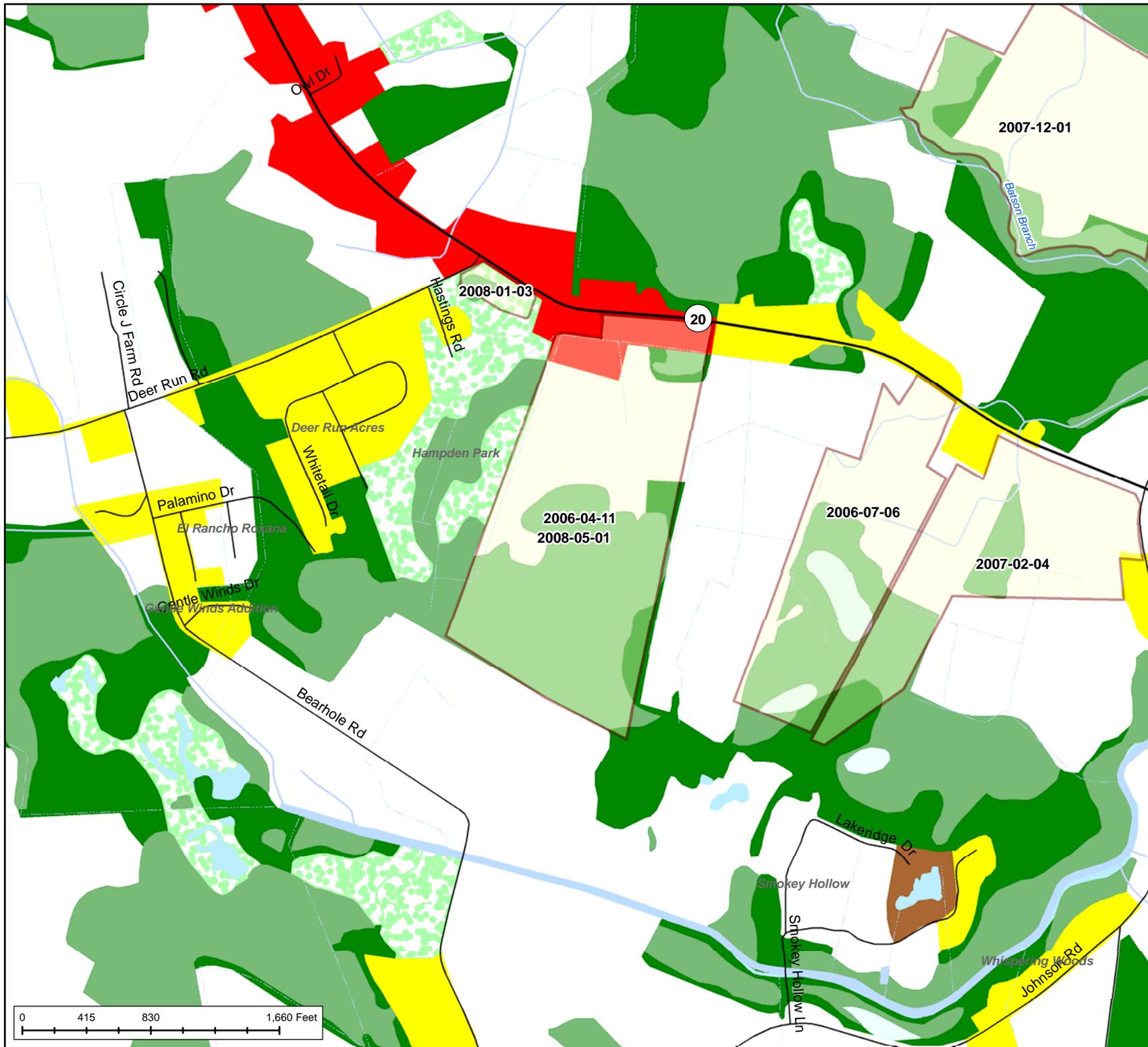
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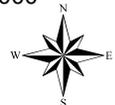
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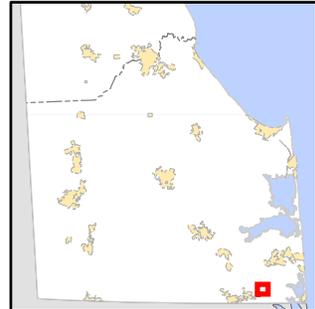
-  Project Areas
-  Municipalities
- 2002 Land Use/Land Cover**
-  Residential
-  Commercial/Urban
-  Industrial
-  Trans./Comm./Utilities
-  Institutional/Governmental
-  Recreational
-  Agriculture
-  Scrub/Clear Cut
-  Forest
-  Water
-  Wetlands/Wet Woods
-  Beach/Sandy Area
-  Extraction/Transition



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Preliminary Land Use Service (PLUS)

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-  Project Areas
-  Municipalities



2007 Aerial Photography:
Provided by State of Delaware

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