



**STATE OF DELAWARE  
EXECUTIVE DEPARTMENT  
OFFICE OF STATE PLANNING COORDINATION**

November 30, 2015

Mr. Colm DeAscanis  
CDA Engineering, Inc.  
6 Larch Ave, Suite 401  
Wilmington, DE 19804

RE: PLUS review 2015-10-06; The Reserves at Polly Drummond

Dear Mr. DeAscanis:

Thank you for meeting with State agency planners on October 28, 2015 to discuss the proposed plans for The Reserves at Polly Drummond. According to the information received, you are seeking review of a subdivision for 6 units on 9.8 acres along Polly Drummond Hill Road in New Castle County.

Please note that changes to the plan, other than those suggested in this letter, could result in additional comments from the State. Additionally, these comments reflect only issues that are the responsibility of the agencies represented at the meeting. **The developers will also need to comply with any Federal, State and local regulations regarding this property. We also note that as the New Castle County the governing authority over this land, the developers will need to comply with any and all regulations/restrictions set forth by New Castle County.**

**Strategies for State Policies and Spending**

- This project is located in Investment Level 1 and 2 according to the *Strategies for State Policies and Spending*. Investment Level 1 reflects areas that are already developed in an urban or suburban fashion, where infrastructure is existing or readily available, and where future redevelopment or infill projects are expected and encouraged by State policy. Investment Level 2 reflects areas where growth is anticipated by local, county, and State plans in the near term future. State investments will support growth in these areas.

## **Code Requirements/Agency Permitting Requirements**

### **Department of Transportation – Contact Bill Brockenbrough 760-2109**

- The proposed development’s subdivision plan and subdivision street construction plan must be designed in accordance with DelDOT’s Development Coordination Manual (formerly the Standards and Regulations for Subdivision Streets and State Highway Access), which is available at <http://www.deldot.gov/information/business/subdivisions/changes/index.shtml>.

The site is located along a right turn lane serving a commercial development opposite Sheldon Drive and the proposed access would require shortening both that right turn lane and the left turn lane serving Sheldon Drive. Therefore to obtain approvals for the present plan, the developer will need to demonstrate that those turning lanes can reasonably be shortened by the distance needed to accommodate their proposed access.

- The proposed development would not meet DelDOT’s volume-based criteria, found in Section 2.2.2.1 of the Manual, for recommending that a Traffic Impact Study (TIS) be required (500 vehicle trips per day or 50 vehicle trips per hour).
- Polly Drummond Hill Road is classified as a Minor Arterial. Therefore, in accordance with Section 3.2.5 of the Manual, DelDOT will require the dedication of 40 feet of right-of-way, measured from the centerline of the road. In accordance with the same section, DelDOT will also require the dedication of a 15-foot wide permanent easement beyond the right-of-way.
- The proposed development is in Investment Level 1 and 2 areas with regard to the Strategies for State Policies and Spending. Therefore, in accordance with Section 3.5.4.2.A. of the Manual, DelDOT will require a sidewalk or Shared-Use Path in the aforementioned permanent easement along the site frontage on Polly Drummond Hill Road.

### **Department of Natural Resources and Environmental Control – Contact Michael Tholstrup 735-3352**

#### **TMDLs**

- Total Maximum Daily Loads (TMDLs) for nitrogen and phosphorus have been promulgated through regulation for the greater Christina River watershed. A TMDL is the maximum level of pollution allowed for a given pollutant below which a “water quality limited waterbody” can assimilate and still meet State water quality standards (e.g., dissolved oxygen, nutrients, and bacteria; *State of Delaware Surface Water Quality Standards, as amended July 11, 2004*) to the extent necessary to support use goals such as, swimming, fishing, drinking water and shell fish harvesting. TMDLs are required by

federal law (Section 303(d) of the 1972 Clean Water Act), and the states are charged with developing and implementing specific land use practices that support these desired use goals. This project is located in the greater Christina River watershed. In the Christina River watershed, post-development nitrogen and phosphorus loading must be capped at the pre-development or baseline loading rate (or a 0% post-construction increase in N & P in Delaware's portion of the Christina River Basin) to meet the required TMDL for each nutrient. Moreover, bacteria reductions that range from 29% to 95% are also required (depending upon location). The specific required nutrient and bacterial requirements for the various stream segments in the watershed, and background information is outlined in the report entitled "*Christina River Basin High-Flow TMDL*" by the EPA. This report can be retrieved from the following weblink:

[http://www.epa.gov/reg3wapd/tmdl/pa\\_tmdl/ChristinaMeetingTMDL/index.htm](http://www.epa.gov/reg3wapd/tmdl/pa_tmdl/ChristinaMeetingTMDL/index.htm)

### **Water Supply**

- The project information sheets state water will be provided to the project by Artesian Water Company via a public water system. DNREC 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 92-CPCN-08.

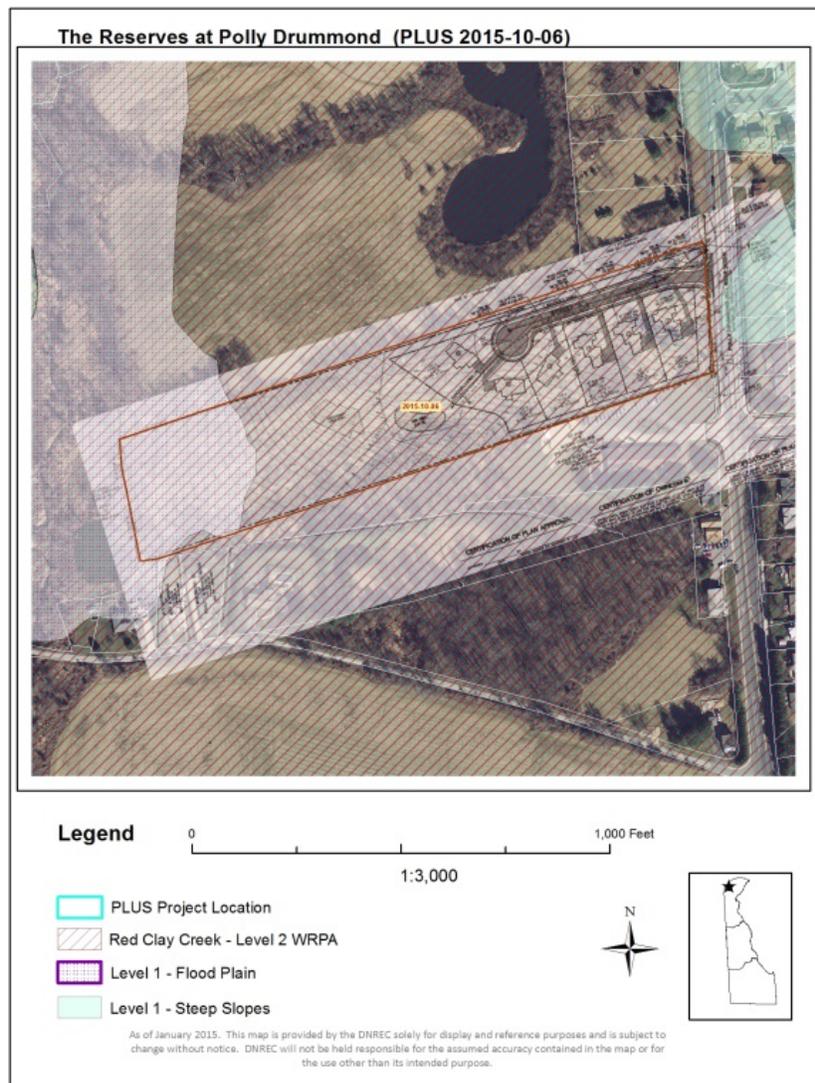
Should dewatering points be needed during any phase of construction, a dewatering well construction permit must be obtained from the Water Supply Section prior to construction of the well points. In addition, a water allocation permit will be needed if the pumping rate will exceed 50,000 gallons per 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. Should you have any questions concerning these comments, please contact Rick Rios at (302) 739-9944.

### **Source Water Protection**

- The DNREC Ground-Water Protection Branch (GPB) has determined that it does not fall within any wellhead protection or excellent groundwater recharge potential areas. However, the parcel falls entirely within the Red Clay Creek Drinking Water Watershed. This area is a Level 2 water resource protection area for New Castle County. The western portion of the project falls within a Level 1 water resource protection area (see map).
- Level 2 Source Water Protection Areas are the delineated watershed upstream from public drinking water supply intakes. Land Use or Land Activity within these areas has the potential to influence water quality or quantity to the public drinking water systems.

- Level 1 Source Water Protection Areas are defined as flood plains. Land Use or Land Activity within this area has the potential to influence water quality or quantity to the system.
- DNREC recommends referring to New Castle County Unified Development Code for regulations regarding development in these water resource protection areas.



### Sediment and Stormwater Management

- A sediment and stormwater plan will be required for the site. Contact the reviewing agency to schedule a project application meeting to discuss the sediment and erosion

control and stormwater management components of the plan as soon as possible. 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. The plan review and approval as well as construction inspection will be coordinated through the New Castle County Department of Land Use Engineering Section. Contact Department of Land Use at (302) 395-5470 for details regarding submittal requirements and fees.

**Air Quality**

- The applicant shall comply with all applicable Delaware air quality regulations. Please note that the following regulations in Table 1 – Potential Regulatory Requirements may apply to your project:

| <b>Table 1: Potential Regulatory Requirements</b>   |   |
|---|---|
| <b>Regulation</b>   | <b>Requirements</b>   |
| <b>7 DE Admin. Code 1106 - Particulate Emissions from Construction and Materials Handling</b>                         | <ul style="list-style-type: none"> <li>• Use dust suppressants and measures to prevent transport of dust off-site from material stockpile, material movement and use of unpaved roads.</li> <li>• Use covers on trucks that transport material to and from site to prevent visible emissions.</li> </ul>  |
| <b>7 DE Admin. Code 1113 – Open Burning</b>   | <ul style="list-style-type: none"> <li>• Prohibit open burns statewide during the Ozone Season from May 1-Sept. 30 each year.</li> <li>• Prohibit the burning of land clearing debris.</li> <li>• Prohibit the burning of trash or building materials/debris.</li> </ul>  |
| <b>7 DE Admin. Code 1135 – Conformity of General Federal Actions to the State Implementation Plan</b>                 | <ul style="list-style-type: none"> <li>• Require, for any “federal action,” a conformity determination for each pollutant where the total of direct and indirect emissions would equal or exceed any of the de minimus levels (See Section 3.2.1)</li> </ul>  |
| <b>7 DE Admin. Code 1141 – Limiting Emissions of Volatile Organic Compounds from Consumer and Commercial Products</b> | <ul style="list-style-type: none"> <li>• Use structural/ paint coatings that are low in Volatile Organic Compounds.</li> <li>• Use covers on paint containers when paint containers are not in use.</li> </ul>  |
| <b>7 DE Admin. Code 1144 – Control of Stationary Generator Emissions</b>  | <ul style="list-style-type: none"> <li>• Ensure that emissions of nitrogen oxides (NO<sub>x</sub>), non-methane hydrocarbons (NMHC), particulate matter (PM), sulfur dioxide (SO<sub>2</sub>), carbon monoxide (CO), and carbon dioxide (CO<sub>2</sub>) from emergency generators meet the emissions limits established. (See section 3.2).</li> <li>• Maintain recordkeeping and reporting requirements.</li> </ul> |
| <b>7 DE Admin. Code 1145 – Excessive Idling of Heavy</b>  | <ul style="list-style-type: none"> <li>• Restrict idling time for trucks and buses having a gross</li> </ul>  |

|               |  |
|---------------|--|
| Duty Vehicles | vehicle weight of over 8,500 pounds to no more than three minutes. |
|---------------|--|

For a complete listing of all Delaware applicable regulations, please look at our website: <http://www.awm.delaware.gov/AQM/Pages/AirRegulations.aspx>.

### Hazardous Waste Sites

- If it is determined by DNREC that there was a release of a hazardous substance on the property in question and the Department requires remediation pursuant to the Hazardous Substance Cleanup Act, the provisions of 7 Del.C., Chapter 91, Delaware Hazardous Substance Cleanup Act and the Delaware Regulations Governing Hazardous Substance Cleanup shall be followed.

There are no DNREC Site Investigation and Restoration Section (SIRS) sites or salvage yards found within a 1/2-mile radius of the proposed project.

### Tank Management

- If a release of a Regulated Substance occurs at the proposed project site, compliance of 7 Del.C., Chapter 60; 7 Del.C., Chapter 74; and DE Admin. Code 1351, State of Delaware *Regulations Governing Underground Storage Tank Systems* (the UST Regulations) is required.
- The following confirmed leaking underground storage tank (LUST) project is **located within a quarter mile of the proposed project area**:
  - Little's Garage, Facility: 3-001771, Project: N9708130 (Inactive)

No environmental impacts are anticipated; however, per the UST Regulations: Part E, § 1. Reporting Requirements:

Any indication of a Release of a Regulated Substance that is discovered by any Person, including but not limited to environmental consultants, contractors, utility companies, financial institutions, real estate transfer companies, UST Owners or Operators, or Responsible Parties shall be reported within 24 hours to:

- The Department's 24-hour Release Hot Line by calling (800) 662-8802; and
- The DNREC Tank Management Section by calling (302) 395-2500.

### State Historic Preservation Office – Contact Terrence Burns 736-7404

- There was a late 19th or early 20th century agricultural complex on this parcel, known as the Samuel Worrell Farm (N-10094). This farm was demolished, including the outbuildings as well. If any development or construction project proceeds, the developer should be aware of the Unmarked Human Burials and Human Skeletal Remains Law, which is in, Chapter 54, of Title 7, of the Delaware Code.

Abandoned or unmarked family cemeteries are very common in the State of Delaware. They are usually in rural or open space areas, and sometimes near or within the boundary of an historic farm site. Even a marked cemetery can frequently have unmarked graves or burials outside of the known boundary line or limit. Disturbing unmarked graves or burials triggers the Delaware's Unmarked Human Burials and Human Skeletal Remains Law (7 Del. C. Ch. 54), and such remains or discoveries can result in substantial delays while the procedures required under this law are carried out. If there is a discovery of any unmarked graves, burials or a cemetery, it is very costly to have them archaeologically excavated and the burials moved. The Division of Historical & Cultural Affairs recommends that owners and/or developers have a qualified archaeological consultant investigate their project area, to the full extent, to see if there is any unmarked cemetery, graves, or burial sites. In the event of such a discovery, the Division of Historical & Cultural Affairs also recommends that the plans be re-drawn to leave the full extent of the cemeteries or any burials on its own parcel or in the open space area of the development, with the responsibility for its maintenance lying with the landowner association or development. If you would like to know more information pertaining to unmarked human remains or cemeteries, please check the following websites for additional information: [www.history.delaware.gov/preservation/umhr.shtml](http://www.history.delaware.gov/preservation/umhr.shtml) and [www.history.delaware.gov/preservation/cemeteries.shtml](http://www.history.delaware.gov/preservation/cemeteries.shtml).

Prior to any demolition or ground-disturbing activities, the developer might want an archaeological consultant, to examine the parcel for archaeological resources, including a cemetery or unmarked human remains.

- If there is any federal involvement with the project, in the form of licenses, permits, or funds, the federal agency, often through its client, is responsible for complying with Section 106 of the National Historic Preservation Act (36 CFR 800) and must consider their project's effects on any known or potential cultural or historic resources. Owners and developers who may plan to apply for an Army Corps of Engineers permit or for federal funding, such as HUD or USDA grants, should be aware of the National Historic Preservation Act of 1966 (as amended). Regulations promulgated for Section 106 of this Act stipulate that no ground-disturbing or demolition activities should take place before the Corps or other involved federal agency determines the area of potential effect of the project undertaking. These stipulations are in place to allow for comment from the public, the Delaware State Historic Preservation Office, and the Advisory Council for Historic Preservation about the project's effects on historic properties.
- Any preconstruction activities without adherence to these stipulations may jeopardize the issuance of any permit or funds. If you need further information or additional details pertaining to the Section 106 process and the Advisory Council's role, please review the Advisory Council's website at [www.achp.gov](http://www.achp.gov).

**Delaware State Fire Marshall's Office – Contact John Rudd 739-4394**

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:

**Fire Protection Water Requirements:**

- Where a water distribution system is proposed for single family dwellings it shall be capable of delivering at least 500 gpm for 1-hour duration, at 20-psi residual pressure. Fire hydrants with 1000 feet spacing on centers are required.
- The infrastructure for fire protection water shall be provided, including the size of water mains.

**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 to the subdivision from Polly Drummond Hill Road must be constructed so fire department apparatus may negotiate it. If a “center island” is placed at an entrance into the subdivision, it shall be arranged in such a manner that it will not adversely affect quick and unimpeded travel of fire apparatus into the subdivision.
- 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.

**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 Fire Prevention Regulations”
- Name of Water Supplier
- Proposed Use
- Provide Road Names, even for County Roads

## **Recommendations/Additional Information**

This section includes a list of site specific suggestions that are intended to enhance the project. These suggestions have been generated by the State Agencies based on their expertise and subject area knowledge. **These suggestions do not represent State code requirements.** They are offered here in order to provide proactive ideas to help the applicant enhance the site design, and it is hoped (**but in no way required**) that the applicant will open a dialogue with the relevant agencies to discuss how these suggestions can benefit the project.

### **Department of Transportation – Contact Bill Brockenbrough 760-2109**

- While the size and trip generation of the proposed development do not warrant a pre-submittal meeting, considering its location and the access issue mentioned above, one would be appropriate. Such a meeting was held on October 19.
- If the turning lanes mentioned above cannot be shortened, one alternative may be for the applicant to negotiate access through the adjacent property to the signal at Sheldon Drive. While we cannot intervene on their behalf in this regard, from a transportation perspective, that would be a better access configuration.

### **Department of Natural Resources and Environmental Control – Contact Michael Tholstrup 735-3352**

#### **Soils Assessment**

- According the soil survey mapping update, the soil mapping unit of concern is the Hatboro-Codorus complex. The Hatboro-Codorus complex (Hw) is a poorly-drained wetland associated (hydric) soil mapping unit that has severe limitations for development (considered unsuitable).

DNREC strongly discourages building on hydric soils because they are a functionally important source of water storage (functionally analogous to a “natural sponge”); the loss of water storage through excavation, filling, or grading of intact native hydric soils increases the probability for more frequent and destructive flooding events. The probability for flooding is further compounded by increases in surface imperviousness as building density in the project area increases over time. Moreover, the destruction of hydric soils increases the amount of pollutant runoff (i.e., hydric soils sequester and detoxify pollutants) thus contributing to lower observed water quality in regional waterbodies and wetlands. To minimize these impacts, we strongly recommend the applicant contact a Delaware licensed (Delaware Class D) soil scientist to make a site specific assessment (i.e., soil survey mapping) of the soils on this site. A list of licensed Class D soil scientists can be obtained at the following weblink:

<http://www.dnrec.delaware.gov/wr/Information/GWDInfo/Pages/GroundWaterDischargeLicensesandLicensees.aspx>

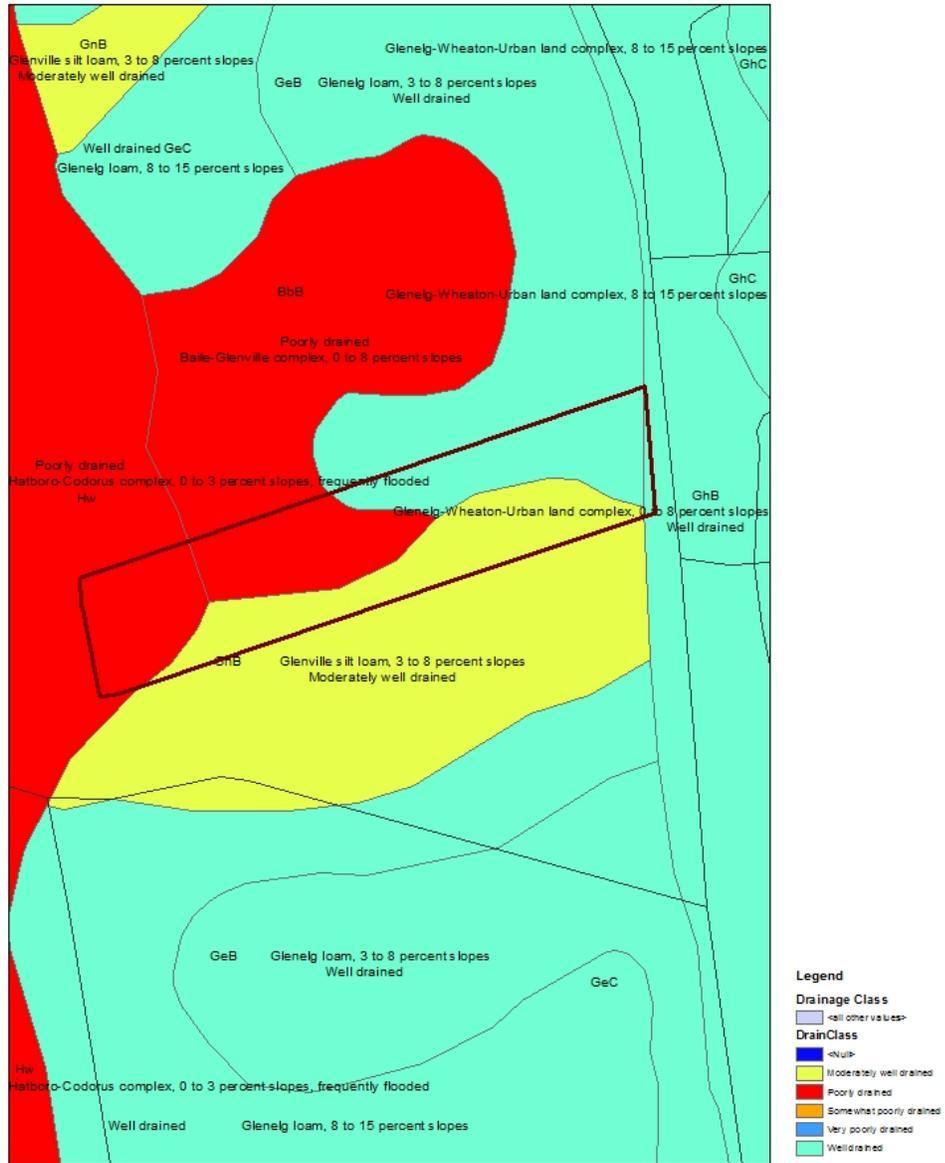


Figure 1: NRCS soil survey mapping update in the immediate vicinity of the proposed construction

## **Bog Turtle**

- A review of our database has revealed that there may be suitable habitat for the federally listed bog turtle (*Glyptemys muhlenbergii*) within the vicinity of the proposed project area, although not directly on site. Bog turtles typically occur in freshwater wetlands with open canopies, mucky soils, and tussock vegetation. However, they can occur in more marginal habitats as well. Because the bog turtle is a federally listed species, protected under the Endangered Species Act efforts should be made to ensure that the project does not impact the hydrology of the wetlands near the site, as this can impact bog turtle habitat.

## **White Clay Creek National Wild and Scenic River**

- This project is within or near the area designated as the White Clay Creek National Wild and Scenic River, as administered by the National Park Service (NPS). The Wild and Scenic Rivers Act states that designated rivers possess outstandingly remarkable natural, cultural and other values, that they are to be preserved in free-flowing condition, and that they and their immediate environments are to be protected. The White Clay Creek watershed was designated as a National Wild & Scenic Rivers system because of its exceptional hydro-geologic, botanic, fish and wildlife, and historical resources. The watershed is one of only a few relatively intact and ecologically functioning river systems remaining in the highly congested and developed corridor linking Philadelphia, Pennsylvania, with Newark, Delaware. Please contact the NPS Northeast Region office (200 Chestnut Street, 3<sup>rd</sup> Floor, Philadelphia, PA 19106; fax: 215-597-0932) to determine whether or not your project needs to be reviewed by the NPS:
  - Chuck Barszcz, Manager, NPS NER Wild & Scenic Rivers (phone: 215-597-6482, [Charles\\_barszcz@nps.gov](mailto:Charles_barszcz@nps.gov))
  - Julie Bell, River Manager, NPS NER Wild & Scenic Rivers (phone: 215-597-6473, [julie\\_bell@nps.gov](mailto:julie_bell@nps.gov)).

## **Open Space/Natural Resource Protection**

- The applicant has indicated that some of the open space may be maintained for natural resource protection. Not knowing what the specific plans are, we make the following recommendations:
  - It would be best if protection extends from the crest of the slope to the end of the property
  - The applicant may consider maintaining the protected area as early successional habitat. This would require an initial effort to remove existing invasive species, and then would only require mowing once a year. This would be much cheaper than re-planting the area with appropriate native species, although if that is desired, please feel free to contact our plant biologist, Bill McAvoy, who can offer guidance on appropriate species for the site. Bill can be reached at [William.McAvoy@state.de.us](mailto:William.McAvoy@state.de.us) or (302) 735-8668. Moreover, if a management plan is developed, we can provide technical assistance to help develop that plan.

- It will be important to ensure that the stormwater pond is engineered in a way that it does not overflow onto the steep slope, which connects to a waterway.

### **Additional information on TMDLs and water quality**

- A Pollution Control Strategy (PCS) to achieve the required TMDL nutrient and bacterial load reduction requirements has been established for the Christina watershed. The web link for the Christina watershed PCS strategies is as follows:  
<http://www.dnrec.delaware.gov/swc/wa/Pages/WatershedManagementPlans.aspx>
- DNREC strongly encourages the applicant to reduce nutrient and bacterial pollutants on their parcel through voluntary implementation of the following BMPs, which would:
  - Preserve and/or maintain as much of the existing open space as possible; we further suggest additional native tree, shrub and/or native herbaceous vegetation plantings, wherever possible.
  - Have a site-specific soils evaluation conducted by a Licensed Class D soil scientist to assess and identify the hydric soils in this site prior to commencing any construction activities.
  - Conduct a United States Army Corps of Engineers (USACE) approved field wetlands delineation is strongly recommended before commencing any development activities on this parcel(s). The USACE can be reached by phone at (302) 736-9763. According to the PLUS application, a wetlands delineation was conducted but not approved by the USACE nor was the delineation submitted to DNREC.
  - Maintain an adequate buffer width. Based on a review of existing buffer research by Castelle et al. (Castelle, A. J., A. W. Johnson and C. Conolly. 1994. *Wetland and Stream Buffer Requirements – A Review*. J. Environ. Qual. 23: 878-882.), an adequately-sized buffer that effectively protects wetlands and streams, in most circumstances, is about 100 feet in width. In recognition of this research and the need to protect water quality, the Watershed Assessment Section recommends that the applicant maintain/establish a minimum 100-foot upland buffer (planted in native vegetation) from all waterbodies (including ditches) and wetlands (field delineated and approved by the USACE and the Subaqueous Lands Section where applicable).
  - Calculate post-construction surface imperviousness with all forms of created (or constructed) surface imperviousness (e.g., rooftops, driveways, parking lots, sidewalks, open-water storm water management structures, ponds, and roads) included in the calculation. Omission of any of the above-stated forms of surface imperviousness will underestimate both the actual post-development surface imperviousness and the associated environmental impacts.

- Employ green-technology storm water management and a rain gardens (in lieu of open-water management structures) as BMPs to mitigate or reduce nutrient and bacterial pollutant runoff. Please contact Lara Allison at (302) 739-9939 for further information about the possibility for installing rain gardens on this parcel.
- Use pervious paving materials instead of conventional paving materials (e.g., asphalt or concrete) to help reduce the amount of water and pollutant runoff draining to adjoining streams and wetlands. Pervious pavers are especially recommended for all designated parking areas.
- Assess nutrient and bacterial pollutant loading at the preliminary project design phase. To this end, the Watershed Assessment Section has developed a methodology known as the “Nutrient Load Assessment protocol.” The protocol is a tool used to assess changes in nutrient loading (e.g., nitrogen and phosphorus) resulting from the conversion of individual or combined land parcels to a changed land use(s); thus providing applicants and governmental entities with quantitative information about the project’s impact(s) on baseline water quality. We strongly encourage the applicant/developer use this protocol to help them design and implement the most effective BMPs. Please contact John Martin or Jen Walls in the Division of Watershed Stewardship at (302) 739-9939 for more information on the protocol.

#### **Additional information on hazardous waste sites**

- DNREC strongly recommends that the land owner perform environmental due diligence of the property by performing a Phase I Environmental Site Assessment (including a title search to identify environmental covenants) in accordance to Section 9105(c) (2) of the Delaware Hazardous Substance Cleanup Act (HSCA). While this is not a requirement under HSCA, it is good business practice and failure to do so will prevent a person from being able to qualify for a potential affirmative defense under Section 9105(c) (2) of HSCA.

Additional remediation may be required if the project property or site is re-zoned by the county.

- Should a release or imminent threat of a release of hazardous substances be discovered during the course of development (e.g., contaminated water or soil), construction activities should be discontinued immediately and DNREC should be notified at the 24-hour emergency number (800) 662-8802. SIRS should also be contacted as soon as possible at (302) 395-2600 for further instructions.

#### **Additional information on air quality**

- The overall scope includes 9.8 acres, with 0.5 acres of mature forest. The applicant states that no forest removal will occur as part of this project; however, the site plan appears to

suggest that the trees may need to be removed in order to accommodate an internal street. According to the application, 5.99 acres of “open space” will remain after the project is complete. This represents about 61 percent land coverage. DNREC encourages the applicant to maintain the existing forest, where possible, and to replant on open space at least the number of trees that may need to be cleared.

The existing property lacks shoulders and marked bike paths; although, there is a contiguous sidewalk opposite the property on Polly Drummond Hill Road. This sidewalk ends at a shopping center about 0.5 miles south of the property, where there is an existing DART bus stop. This stop is served by routes 18 and 30, which connect Newark to Wilmington. The applicant states that sidewalks will be added as part of this project but does not indicate whether bike paths will be addressed. DNREC encourages the applicant to consider opportunities to make safe and accessible connections for pedestrians traveling to/from the Sheldon Drive intersection which is located immediately south of the property.

DNREC encourages developers and builders to consider all sustainable growth practices in their design, and we believe that the air quality impacts associated with the project should be completely considered. New homes may emit, or cause to be emitted, additional air contaminants into Delaware’s air, which will negatively impact public health, safety and welfare. These negative impacts are attributable to:

- Emissions that form ozone and fine particulate matter; Delaware currently violates federal health-based air quality standards for ozone. New Castle County, Delaware is classified as non-attainment for not meeting federal and state 8-hour ozone standards. Compared to Kent and Sussex Counties, short term 1-hour average peak ozone levels are usually highest in New Castle County, as well,
- The emission of greenhouse gases which are associated with climate change, and
- The emission of air toxics.

Air emissions generated from new homes include emissions from the following activities:

- Area sources such as painting, maintenance equipment and the use of consumer products like roof coatings and roof primers.
- The generation of electricity, and
- All transportation activity.

Based on the information provided, the three air emissions components (i.e., area, electric power generation, and mobile sources) were quantified. Table 2 – Projected Air Quality Emissions represents the actual impact The Reserves at Polly Drummond may have on air quality.

| <b>Table 2: Projected Air Quality Emissions for The Reserves at Polly Drummond</b> |                                  |                       |                                   |  |                                   |
|--|----------------------------------|-----------------------|-----------------------------------|--|-----------------------------------|
| Emissions Attributable to The Reserves at Polly Drummond (Tons per Year)           | Volatile Organic Compounds (VOC) | Nitrogen Oxides (NOx) | Sulfur Dioxide (SO <sub>2</sub> ) | Fine Particulate Matter (PM <sub>2.5</sub> ) | Carbon Dioxide (CO <sub>2</sub> ) |
| Area source emissions  | 0.2                              | *                     | *                                 | *  | *                                 |
| Power emissions  | *                                | 0.1                   | 0.3                               | *  | 37.8                              |
| Mobile emissions   | 0.3                              | 0.3                   | *                                 | *  | 177.3                             |
| Total emissions  | 0.5                              | 0.4                   | 0.3                               | *  | 215.1                             |

(\*) Indicates data is not available.

Note that emissions associated with the actual construction of the residential community, including automobile and truck traffic from working in, or delivering products to the site, as well as site preparation, earth moving activities, road paving and other miscellaneous air emissions, are not reflected in the table above.

- DNREC encourages sustainable growth practices that:
  - Control sprawl;
  - Preserve rural and forested areas;
  - Identify conflicting land use priorities;
  - Encourage growth on previously developed sites and denser communities while at the same time protect our diminishing land base;
  - Coordinate transportation, housing, environment, and climate protection plans with land use plans; and
  - Demonstrate that communities can achieve the qualities of privacy, community, and contact with nature without degrading the natural environment or generating unacceptable environmental costs in terms of congestion, use of natural resources, or pollution.

- Additional measures may be taken to substantially reduce the air emissions identified above. These measures include:
  - Constructing with only energy efficient products. Energy Star qualified products are up to 30% more energy efficient. Savings come from building envelope upgrades, high performance windows, controlled air infiltration, upgraded heating and air conditioning systems, tight duct systems and upgraded water-heating equipment. Every percentage of energy efficiency translates into a percent reduction in pollution. The Energy Star Program is an excellent way to save on energy costs and reduce air pollution.
  - Offering geothermal and/or photo voltaic energy options. These systems can significantly reduce emissions from electrical generation and from the use of oil or gas heating equipment.
  - Constructing with high albedo, high solar reflectance materials. This includes roofing and hardscape. These materials help to reduce heat island impacts and, by extension, help to minimize the potential for localized ground-level ozone formation. These materials also help reduce demands on air conditioning systems and save on energy costs.
  - Providing shade for parking areas. Approaches may include architectural devices, vegetation, or solar panels. Providing shade for parking areas helps to reduce heat island impacts, and, by extension, helps to minimize the potential for localized ground-level ozone formation. Such measures can also have the additional benefit of channeling or infiltrating stormwater.
  - Providing charging stations for plug-in electric vehicles. This measure helps to reduce localized air pollution by supporting the use of non-gasoline powered vehicles. Please refer to the US Department of Energy's website for electric vehicle readiness information:  
[http://www1.eere.energy.gov/cleancities/electric\\_vehicle\\_projects.html](http://www1.eere.energy.gov/cleancities/electric_vehicle_projects.html). Several charging stations already exist in Newark.
  - Encouraging the use of safe multimodal transportation. This measure can significantly reduce mobile source emissions. For every vehicle trip that is replaced by the use of a sidewalk or bike path, 7 pounds of VOC and 11.5 pounds of NOx are reduced each year. There is an opportunity to connect the site to the transit network, via an existing DART bus stop located at the Polly Drummond Shopping Center. This stop is served by routes 18 and 30, which connect Newark to Wilmington.
  - Using retrofitted diesel engines during construction. This includes equipment that is on-site as well as equipment used to transport materials to and from site.

- Using pre-painted/pre-coated flooring, cabinets, fencing, etc. These measures can significantly reduce the emission of VOCs from typical architectural coating operations.
- Planting trees in vegetative buffer areas, particularly those between the site and nearby residential areas. Native trees reduce emissions by trapping dust particles and replenishing oxygen. Trees also reduce energy emissions by cooling during the summer and by providing wind breaks in the winter, whereby reducing air conditioning needs by up to 30 percent and saving 20 to 50 percent on fuel costs.

This is a partial list, and there are additional things that can be done to reduce the impact of the development. The applicant should submit a plan to the DNREC Division of Air Quality which address the above listed measures, and that details all of the specific emission mitigation measures that will be incorporated into The Reserves at Polly Drummond project. The DAQ point of contact is Deanna Morozowich, and she may be reached at (302) 739-9402 or [Deanna.Morozowich@state.de.us](mailto:Deanna.Morozowich@state.de.us).

#### **Delaware State Fire Marshall's Office – Contact John Rudd 739-4394**

- 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.statefiremarshal.delaware.gov](http://www.statefiremarshal.delaware.gov), technical services link, plan review, applications or brochures.

#### **Department of Public Health – Contact: Laura Saperstein 744-1011**

The Delaware Division of Public Health (DPH) is pleased to be able to participate in the PLUS application process. In keeping with its mission to protect and promote the health of all people in Delaware, DPH looks for opportunities to encourage and enhance our population's health behaviors that will result in healthy people and healthy communities.

Community design can impact the health of a population. Studies show that persons in lower-income communities, the elderly, and children often suffer more from consequences of inadequate land-use and transportation. Additionally, we know physical activity has a direct correlation to many chronic diseases, including hypertension, diabetes and obesity. In 2013, 33.6% of Delawareans reported a BMI of "overweight;" and an additional 31% reported a BMI as "obese." To that end, DPH looks to make recommendations for land-use that can empower Delawareans to make good health behaviors a part of their daily lives. A recent study by Sallis, et.al., "Is your Neighborhood Designed to Support Physical Activity? A Brief Streetscape Audit Tool," identified that modifiable microscale element of the environment may affect an individual's physical activity levels. An example of a microscale environment factor might be including crosswalks, or curb cuts at crossings and intersections, and/or including streetscape characteristics like street lights, benches, sidewalk buffers, trees and overhead coverage as part of the community design.

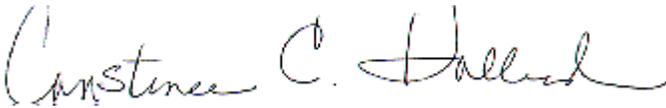
DPH offers the following recommendations for consideration to The Reserves at Polly Drummond plan for development:

1. DPH is pleased to see the inclusion of proposed open space indicated, in part, for recreation. This will enable residents to incorporate leisure activity into their daily lives.
  - a. Because recreation was not clearly defined in the PLUS application, DPH would further recommend that The Reserves at Polly Drummond review the recreational needs and priorities identified through Statewide Comprehensive Outdoor Recreation Plan, or SCORP, for that specific area.  
<http://www.dnrec.delaware.gov/parks/information/Pages/2013Scorp.aspx>.
  - b. DPH also commends the incorporation of proposed sidewalks. Sidewalks are basic attributes for supporting pedestrian activity. Additionally, curb cuts improve this access for older adults, people with disabilities, and parents with baby strollers. By adding internal walkways and/or including marked crosswalks, the presence of these attributes could be particularly important for improving the experience of pedestrians, and according to recent research, are indicators of a broader pattern of activity-supportive design features.
2. Consider including bike facilities into the land use plan, such as bike lanes, particularly across the frontage, turn lanes in/out at entrance, bike signage bike parking.
  - a. Bicycling is a low-cost and efficient means of active transportation that effectively improves the built environment by including non-motorized options to the transportation systems. Moreover, active transportation is of fundamental importance to healthy living.
3. Include lighting features such as streetlights, lit open spaces and low-level lighting for sidewalks and/or paths.
  - a. Street lighting is needed for safety during nighttime activity and increased feelings of security.
  - b. multi-use pathways and internal connections to adjacent land, proposed open spaces, or future land developments to accommodate pedestrians and bicycles

**Following receipt of this letter and upon filing of an application with the local jurisdiction, the applicant shall provide to the local jurisdiction and the Office of State Planning Coordination a written response to comments received as a result of the pre-application process, noting whether comments were incorporated into the project design or not and the reason therefore.**

Thank you for the opportunity to review this project. If you have any questions, please contact me at 302-739-3090.

Sincerely,

A handwritten signature in cursive script that reads "Constance C. Holland".

Constance C. Holland, AICP  
Director, Office of State Planning Coordination

CC: New Castle County