



STATE OF DELAWARE
EXECUTIVE DEPARTMENT
OFFICE OF STATE PLANNING COORDINATION

August 24, 2016

Ashton McLaughlin, P.E.
Davis, Bowen & Friedel, Inc.
23 North Walnut Street
Milford, DE 19963

RE: PLUS review 2016-07-05; Melanie's Ridge

Dear Ashton:

Thank you for meeting with State agency planners on July 27, 2016 to discuss the proposed plans for the Melanie's Ridge project. According to the information received, you are seeking review of a site plan for 288 residential units and 10,000 square feet of commercial space on 58.431 acres along Bridgeville Highway in Seaford.

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 Sussex County is the governing authority over this land, the developers will need to comply with any and all regulations/restrictions set forth by the County.**

Strategies for State Policies and Spending

- This project is located in Investment Level 1 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.

Code Requirements/Agency Permitting Requirements

Department of Transportation – Contact Bill Brockenbrough 760-2109

- The site access on Bridgeville Highway 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 internal streets should be designed in accordance with City of Seaford standards.
- Pursuant to Section P.3 of the Manual, a Pre-Submittal Meeting is required before plans are submitted for review. The form needed to request the meeting and guidance on what will be covered there and how to prepare for it is located at http://www.deldot.gov/information/business/subdivisions/Meeting_Request_Form.pdf.
- Referring to Sections P. 5 and also, respectively Sections 3.4.2 and 4.3 of the Development Coordination Manual, the Initial Stage review fee and the Construction Stage review fee shall be assessed to this project. DelDOT anticipates collecting the Initial Stage Fee when the record plan is submitted for review and the Construction Stage Fee when the entrance plan is submitted for review.
- Per Section 2.2.2.1 of the Development Coordination Manual, Traffic Impact Studies (TIS) are warranted for developments generating more than 500 vehicle trip ends per day or 50 vehicle trip ends per hour in any hour of the day. The 2,081 vehicle trip ends per day shown on the PLUS application suggests that the subject development would meet these warrants. A TIS scoping meeting was held with the applicant's traffic engineer on June 17, 2016, and the study is in progress.
- Section 3.2.4.2 of the Manual addresses the placement of right-of-way monuments (markers) along the roads on which a property fronts, in this case Bridgeville Highway. Monuments sufficient to re-establish the permanent rights-of-way after the dedication discussed below should be shown on the plan and provided in the field in accordance with this section.
- As necessary, in accordance with Section 3.2.5 and Figure 3.2.5-a of the Development Coordination Manual, DelDOT will require dedication of right-of-way along the site's frontage on Bridgeville Highway. By this regulation, this dedication is to provide a minimum of 40 feet of right-of-way from the physical centerline on Bridgeville Highway. The following right-of-way dedication note is required, "**An additional X-foot width is hereby dedicated to the State of Delaware, as per this plat.**"
- In accordance with Section 3.2.5.1.2 of the Development Coordination Manual, DelDOT will require the establishment of a 15-foot wide permanent easement across the property frontage on Bridgeville Highway. The location of the easement shall be outside the limits of the ultimate right-of-way. The easement area can be used as part of the open space

calculation for the site. The following note is required, “**A 15-foot wide permanent easement is hereby established to the State of Delaware, as per this plat.**”

- In accordance with Section 3.4 of the Development Coordination Manual, a record plan shall be prepared prior to issuing “Letter of No Objection”. The following information will be required for the “Letter of No Objection” review:
 - Initial Stage Fee Calculation Form
 - Initial Stage Review Fee
 - Gate-Keeping Checklist – Site Plan
 - Design Checklist - Record Plan
 - Sight Distance Spreadsheet
 - Owners and Engineers’ name and e-mail address
 - Record Plan
 - Conceptual Entrance Plan
 - Submission of the Area-Wide Study Fee (If applicable)

- Referring to Section 3.4.2.1 of the Development Coordination Manual, the following items, among other things, are required on the Record Plan:
 - A Traffic Generation Diagram. See Figure 3.4.2-a for the required format and content.
 - Depiction of all existing entrances on Bridgeville Highway within 300 feet of the property lines.
 - Notes identifying the type of off-site improvements, agreements (signal, letter) contributions and when the off-site improvements are warranted.

- Section 3.5.4.2 of the Development Coordination Manual addresses requirements for shared-use paths and sidewalks. Projects located in Level 1 and 2 Investment Areas are required to install a shared-use path or sidewalk along the State-maintained road frontage. Where a physical impossibility exists, we will accept a fee in lieu. While further review will be necessary, a impossibility may exist at the south end of the property frontage. From discussion at the PLUS meeting our requirement will likely be for a sidewalk, not a shared-use path.

- Referring to Section 4.3 of the Development Coordination Manual, an entrance plan shall be prepared prior to issuing entrance approval. The following information will be required for Entrance Plan review:
 - Construction Stage Fee Calculation Form
 - Construction Review Fee
 - Gate-Keeping Checklist – Entrance Plan
 - Design Checklist - Entrance Plan
 - Auxiliary Lane Spreadsheet

- Entrance Plan
 - Pipe/Angle Spreadsheet (If applicable)
 - SWM Report and Calculations (If applicable)
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- In accordance with Section 5.2.5.6 of the Development Coordination Manual, Turning Movement Diagrams shall be provided to verify vehicles can safely enter and exit the site entrance. As per Section 5.2.3 of the Manual, the entrance shall be designed for the largest vehicle using the entrance.
 - In accordance with Section 5.2.9 of the Development Coordination Manual, the Auxiliary Lane Worksheet should be used to determine whether auxiliary lanes are warranted at the site entrance and how long those lanes should be. The worksheet can be found at http://www.deldot.gov/information/business/subdivisions/Auxiliary_Lane_Worksheet.xls m?111215.
 - DelDOT anticipates that right and left turn lanes will be warranted at the site entrance and that it could be difficult to accommodate those lanes within the available right-of-way. They recommend that the developer's site engineer begin work on the entrance design early in the plan development process.
 - In accordance with Section 5.4 of the Development Coordination Manual, sight distance triangles are required and shall be established in accordance with American Association of State Highway and Transportation Officials (AASHTO) standards. A spreadsheet has been developed to assist with this task. It can be found at <http://www.deldot.gov/information/business/subdivisions/Intersection-Sight-Distance.xls>.
 - In accordance with Section 5.14 of the Development Coordination Manual, all existing utilities must be shown on the plan and a utility relocation plan will be required for any utilities that need to be relocated.
 - Section 7.7.2 of the Manual addresses the need to provide 20-foot wide drainage easements for all storm drainage systems, open or closed, that fall outside the existing right-of-way or the drainage/utility easement. In accordance with this section, metes and bounds and total areas need to be shown for any drainage easements. The easements should be shown and noted on the record plan.

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

Executive Summary

The proposed development will result in increased impervious surface and new sources of greenhouse gas emissions. Opportunities exist to preserve natural resources while reducing the environmental impact on-site and providing additional energy efficiency alternatives to business owners and clients. As discussed at the PLUS meeting, the Department recommends minimizing the amount of tree clearing and increasing buffers adjacent to the wetland habitats.

A significant area of the project falls within a wellhead protection area for the City of Seaford, with wet ponds sited within it. There are a number of concerns with this scenario and DNREC recommends relocating them outside of the protection area. Furthermore, portions of the planned development area lie within the floodplain.

The State of Delaware is threatened by climate change and has a goal of reducing greenhouse gas emissions by 30% by 2030. Appropriate development and re-development that provides access to public transportation, opportunities to walk and bike to shopping and recreation, and that employs energy efficient building standards are among key strategies to meet these goals. DNREC encourage the use of high performance building standards and consideration of alternative energy sources to promote clean sustainable energy and reduce greenhouse gas emissions. This could mean siting the buildings to take advantage of solar and geothermal systems, and/or including infrastructure for electric vehicle charging stations. They further recommend an abundant use of native vegetation and shade trees throughout the landscape, as well as pervious pavement and green infrastructure, where practicable, to absorb carbon dioxide, protect water quality and provide relief to residents on hot days.

The following pages provide information about applicable regulations and detailed recommendations associated with this project, from various DNREC Divisions. DNREC would like to be a partner in creating appropriate development that protects and highlights the environment as a natural amenity of the landscape. The Department has resources and expertise that are available to help make this a reality, often at no expense to the landowner.

TMDLs

- The project is located in the greater Chesapeake Bay drainage area. In this drainage the EPA and the State of Delaware have developed specific Total Maximum Daily Load (TMDL) pollutant reduction targets for nutrients (e.g., nitrogen & phosphorus), and bacteria (under the auspices of Section 303(d) of the Clean Water Act). The TMDL for nutrients and sediment in the Chesapeake Bay drainage have been recently revised and now requires a 60 percent reduction in nutrients (previously was 30 and 50 percent in N & P) and sediment from baseline conditions. The TMDL also calls for a 2 percent reduction in bacteria from baseline conditions. 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.

- The applicant should be made aware that EPA is requiring that the State of Delaware develop a Watershed Implementation Plan (WIP) and 2-year progress milestones for purposes of accelerating efforts to improve and restore waters of the Chesapeake Bay. The WIP and milestones will identify specific pollution reduction practices and programs to reduce nitrogen, phosphorus, and sediment from a variety of sources in the Chesapeake Bay drainage area. Moreover, efforts to develop the documents and assist in developing the required reductions will be provided through meetings and discussions with an interagency workgroup and various subcommittees recently convened by the State of Delaware. Included in the meetings and discussions are onsite wastewater disposal systems which are a known source of nutrient pollutants to groundwater. The WIP is being developed by an Interagency Workgroup, made up of representatives from DNREC, the Department of Agriculture, DeDOT, Office of State Planning Coordination, and other local, state, and federal partners and stakeholder groups.
- Development of the WIP is a 3 phases process, Phase I and II are currently available for review at: http://www.wr.dnrec.delaware.gov/Information/Pages/Chesapeake_WIP.aspx. The final phase is scheduled for 2017, and will allow for any mid-course adjustments and needed refinements to the existing Bay TMDL allocations.
- A nutrient management plan is required under the *Delaware Nutrient Management Law* (3 Del.C., Chapter 22) for all persons or entities who apply nutrients to lands or areas of open space in excess of 10 acres. Please contact the Delaware Nutrient Management Program at (302) 739-4811 for further information concerning compliance requirements, or view the following web link for additional information:
<http://dda.delaware.gov/nutrients/index.shtml>

Flood Management

- DNREC was unable to conduct a review of this site plan as no floodplain boundaries are indicated on the plans submitted. Looking at the current effective Flood Insurance Rate Maps (FIRMs) and the existing topography provided, it appears that structures will be built in the floodplain. The City of Seaford's Floodplain Ordinance will need to be followed if fill is being placed in the floodplain or the floodway. This may involve submitting a Conditional Letter of Map Revision based on Fill (CLOMR-F) request to FEMA. This portion of Herring Run has been revised by FEMA and there are currently preliminary FIRMs. These maps will likely become effective in the summer of 2017.

Water Supply

- The project information sheets state water will be provided to the project by the City of Seaford via a public water system. DNREC records indicate that the project is located

within the public water service area granted to the annexation of the City of Seaford under Certificate of Public Convenience and Necessity 95-CPCN-18.

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 the necessary time for processing the well permit applications into the construction schedule. Dewatering well permit applications 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

DNREC has determined that the parcel falls partially within a wellhead protection areas for the City of Seaford (see map). The wellhead protection area protects a well owned by the City. Wellhead protection areas are surface and subsurface areas surrounding a public water supply well where land use activities or impervious cover may adversely affect the quantity and quality of ground water moving toward such wells.

The site plan shows that wet ponds will be used for the management of stormwater (see map below). This type of stormwater facility intersects the water table aquifer and provides a direct pathway for contaminants, if present, to enter the aquifer.

Some research suggests that pollutant removal is reduced when ground water contributes substantially to the pool volume (Schueler, 1997). Wet ponds as a Better Management Practice (BMP) utilize a settling pond to remove particulates. This type of BMP reduces nutrients by the biological activity of alga. While these systems address the particulate and nutrient components of stormwater runoff, they do not address pathogens, petroleum hydrocarbons, pesticides, other organic compounds, and other inorganic compounds associated with residential land use (DNREC, 1999).

Stormwater run-off from roadways likely carry petroleum hydrocarbons, pesticides, other organic compounds, metals and other inorganic compounds associated with this land use (DNREC, 1999). Because this is a wellhead protection area, there exists the potential for these constituents to enter the aquifer and compromise water quality.

- DNREC recommends, moving the wet pond to an area outside the wellhead protection area.

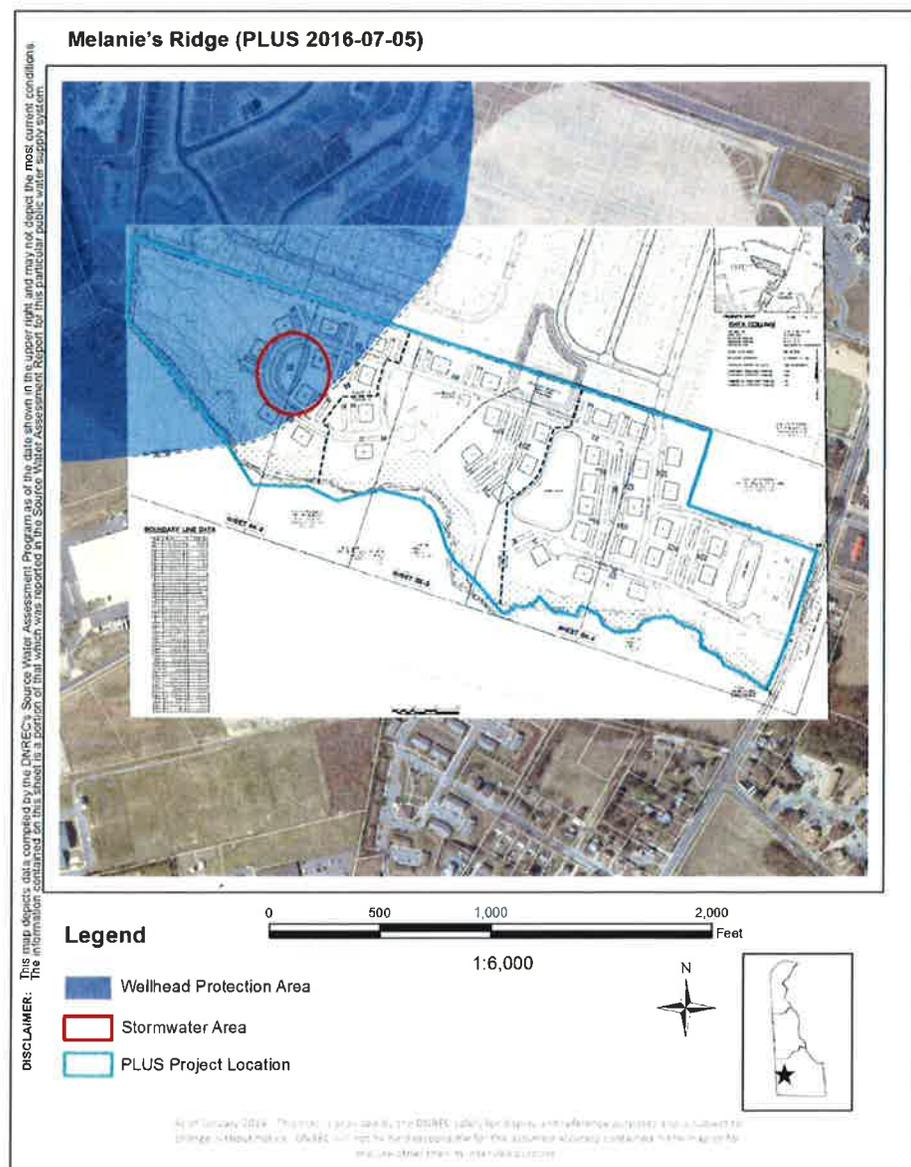
In addition, because the wellhead protection area is an existing source of public drinking water and the excellent ground-water recharge area so readily affects the underlying

aquifer, the storage of hazardous substances or wastes should not be allowed within these areas unless specific approval is obtained from the relevant state, federal, or local program.

References:

Delaware Department of Natural Resources and Environmental Control, 1999, The State of Delaware Source Water Assessment Plan: Dover, DE, p. 301.

Schueler, T. 1997. Influence of groundwater on performance of stormwater ponds in Florida. *Watershed Protection Techniques* 2(4):525.528.



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. Contact the reviewing agency 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. The plan review and approval as well as construction inspection will be coordinated through the Sussex Conservation District. Contact the Sussex Conservation District at (302) 856-7219 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:

Table 1: Potential Regulatory Requirements	
Regulation	Requirements
7 DE Admin. Code 1106 - Particulate Emissions from Construction and Materials Handling	<ul style="list-style-type: none"> • Use dust suppressants and measures to prevent transport of dust off-site from material stockpile, material movement and use of unpaved roads. • Use covers on trucks that transport material to and from site to prevent visible emissions.
7 DE Admin. Code 1113 – Open Burning	<ul style="list-style-type: none"> • Prohibit open burns statewide during the Ozone Season from May 1-Sept. 30 each year. • Prohibit the burning of land clearing debris. • Prohibit the burning of trash or building materials/debris.
7 DE Admin. Code 1135 – Conformity of General Federal Actions to the State Implementation Plan	<ul style="list-style-type: none"> • 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)
7 DE Admin. Code 1141 – Limiting Emissions of Volatile	<ul style="list-style-type: none"> • Use structural/ paint coatings that are low in Volatile Organic Compounds. • Use covers on paint containers when

Organic Compounds from Consumer and Commercial Products	paint containers are not in use.
7 DE Admin. Code 1144 – Control of Stationary Generator Emissions	<ul style="list-style-type: none"> • Ensure that emissions of nitrogen oxides (NO_x), non-methane hydrocarbons (NMHC), particulate matter (PM), sulfur dioxide (SO₂), carbon monoxide (CO), and carbon dioxide (CO₂) from emergency generators meet the emissions limits established. (See section 3.2). • Maintain recordkeeping and reporting requirements.
7 DE Admin. Code 1145 – Excessive Idling of Heavy Duty Vehicles	<ul style="list-style-type: none"> • Restrict idling time for trucks and buses having a gross 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>.

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.

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

For more information, please go online:

<http://www.dnrec.delaware.gov/tanks/Pages/default.aspx> or contact Ross D. Elliott at DNREC-TMS with further questions at (302) 395-2500, or by email: Ross.Elliott@state.de.us

Soils Assessment

- Based on soils survey mapping update, Rosedale (RoA), Fort Mott (FmB), and Longmarsh (LO) soil mapping units were mapped on subject parcel (Figure 1). Rosedale

Rare Species and Forested Buffers

- There are rare species associated with Herring Creek, so adequate buffers to protect water quality are important. As such, DNREC recommends retaining all of the forest between the project and Herring Run, intact.

State Historic Preservation Office – Contact Terrence Burns 736-7404

- There are no known archaeological sites or National Register listed property, on this parcel. However, the property contains a surveyed house and barn (S06275) that may date to the late 19th century. In addition, the parcel is adjacent to the former location of a historic house known as Lawrence (S-194). Lawrence was listed in the National Register of Historic Places, but the house was demolished. The 1937 aerial photograph shows outbuildings and a house, next to the road, at the east end of the parcel as well. To our knowledge the parcel has not been surveyed to determine if archaeological sites are present. There is moderate to high probability for the property to contain both pre-contact Native American sites and historic period sites. If this project or development proceeds, the developer should be aware of the Unmarked Human Burials and Skeletal Remains Law, in Title 7, Chapter 54, 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 go to the following websites for additional information: www.history.delaware.gov/preservation/umhr.shtml and www.history.delaware.gov/preservation/cemeteries.shtml.
- Prior to any demolition or ground-disturbing activities, the developer should hire an archaeological consultant, to examine the parcel for archaeological resources and plan to avoid those areas. If there is any federal involvement with the project, in the form of

licenses, permits, or funds, the federal agency 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. Furthermore, 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.

Delaware State Fire Marshall's Office – Contact Duane Fox 739-4394

- **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.
 - Where a water distribution system is proposed for mercantile sites, the infrastructure for fire protection water shall be provided, including the size of water mains for fire hydrants and sprinkler systems.

- **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, over 35 feet, or classified as High Hazard, are required to meet fire lane marking requirements.
 - Show Fire Lanes and Sign Detail as shown in DSFPR

- **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.
 - 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.
- **Gas Piping and System Information:**
 - Provide type of fuel proposed, and show locations of bulk containers on plan.
- **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”
 - 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)
 - 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

Recommendations/Additional Information

Department of Transportation – Contact Bill Brockenbrough 760-2109

- Section 3.5 of the Manual provides connectivity requirements for development projects having access to state roads or proposing DelDOT maintained public roads for subdivisions. Private driveways, as proposed for this project, should follow the local land use agency’s requirements for connectivity. That said, DelDOT supports the proposed connection of Wheatfields Drive to the Mearfield subdivision because it will help to integrate the proposed development with the rest of the community and provide for shorter trips between adjoining neighborhoods. Consideration should be given to dedicating Wheatfields Drive and the part of Lawrence Crossing Boulevard from Wheatfields Drive to Bridgeville Highway to public use and building them as City streets.
- Be advised that DelDOT utilizes two new checklists, one for Record Plans and one for Entrance/ Construction Plans, which are now required to be submitted with the project through the Planning and Development Coordination Application (PDCA). These checklists are a condensed version of the major requirements laid out in the Manual for each plan type respectively. The checklists offer the major topics, however they are not

conclusive for all requirements in the Manual. Accurate and thorough completion of the checklist should reduce the number of iterations of review that a project will need to go through. To find the checklists and more information about them, please visit <http://www.deldot.gov/information/business/subdivisions/>.

- Be advised that as of August 1, 2015, all new plan submittals and re-submittals, including major, minor and commercial plans, shall now be uploaded via the PDCA (Planning Development Coordination Application) with any review fee paid online via credit card or electronic check. Guidance on how to do this is available on our website at <http://www.deldot.gov/information/business/subdivisions/>
- Be advised that the Standard General Notes have been updated and posted to the DelDOT website. Please begin using the new versions and look for the revision date of January 28, 2016. The notes can be found at http://www.deldot.gov/information/business/subdivisions/Sheet_Notes.doc?012816.

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

Additional information on TMDLs and water quality

- Compliance with the TMDL nutrient and bacterial reduction requirements specified for the Chesapeake Bay drainage watershed can be facilitated through implementation of the following recommended BMPs:
 - Maintain as much of the much of the existing forest cover as possible. Additionally, we suggest additional native tree and/or native herbaceous plantings as a means to create more environmentally-friendly open space.
 - Establish a vegetated buffer of at least 100 feet from the adjoining wetlands and waterbodies. Based on a review of existing buffer research, 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 this aforementioned 100-foot buffer width (planted in native vegetation) from all waterbodies (including all ponds) and all non-tidal and tidal wetlands (i.e., a USACE approved field wetlands delineation for non-tidal wetlands and State approved wetlands delineation for tidal wetlands). It is clear from the information submitted that the applicant is proposing a buffer width considerably less than recommended 100-foot minimum buffer width that we recommend.
 - 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 result in an underestimate of 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 of 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, where it is practicable and is not in conflict with local ordinances such as source water protection, fire marshal codes, and/or sediment and stormwater regulations. This large commercial project will create additional impervious surface which will significantly increase the probability for increased impacts associated with onsite flooding and pollutant load runoff draining to the adjoining wetlands and waterways in the greater Chesapeake Bay Basin. We strongly recommend the use of pervious paving materials (e.g., pervious pavers) as a BMP (instead of conventional asphalt or concrete) to mitigate these impacts, where it is practicable and is not in conflict with local ordinances such as source water protection, fire marshal codes, and/or sediment and stormwater regulations. We especially recommend pervious pavers for all areas designated for parking.
- 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 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 tank management.

- When contamination is encountered, PVC pipe materials should be replaced with ductile steel and nitrile rubber gaskets in the contaminated areas.

If any aboveground storage tanks (ASTs) less than 12,500 gallons are installed, they must be registered with the TMS. If any ASTs greater than 12,500 gallons are installed, they are also subject to installation approval by the Tank Management Section.

Additional information on air quality.

- DNREC is pleased to see the inclusion of sidewalks in the development plan. It is recommended that both DeIDOT and the applicants pursue the opportunity to connect

gaps in the existing bicycle/pedestrian and sidewalk network in the near future in order to promote alternative travel methods in the area that reduce dependency on vehicular travel and encourage multi-modal transportation efforts.

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 and businesses 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 (Sussex County currently violates federal health-based 2008 air quality standards for ozone),
- The emission of greenhouse gases which are associated with climate change, and
- The emission of air toxics.

Air emissions generated from new homes and businesses 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 Residential Subdivision of Melanie’s Ridge may have on air quality.

Table 2: Projected Air Quality Emissions for Melanie’s Ridge					
Emissions Attributable to Peninsula Square (Tons per Year)	Volatile Organic Compounds (VOC)	Nitrogen Oxides (NOx)	Sulfur Dioxide (SO ₂)	Fine Particulate Matter (PM _{2.5})	Carbon Dioxide (CO ₂)
Area source emissions	8.9	1.0	0.8	1.1	36.1
Power emissions	*	3.5	12.3	*	1,812.7
Mobile emissions	13.2	13.8	0.4	0.2	8,511.8
Total emissions	22.1	18.3	13.5	1.3	10,360.6

(*) Indicates data is not available.

Note that emissions associated with the actual construction of the apartment 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 additional 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 percent 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 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. Several charging stations exist nearby in Millsboro, Lewes, and Rehoboth Beach.
- **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.**
- **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.** 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. (When selecting tree species, keep in mind their VOC emission rates, found here: <http://www.nrs.fs.fed.us/units/urban/local-resources/downloads/vocrates.pdf>)

This is a partial list, and there are additional things that can be done to reduce the impact of the development. The applicant can contact the DNREC Division of Air Quality (DAQ) to discuss the specific emission mitigation measures that will be incorporated into the Melanie's Ridge project. The DAQ point of contact is Lauren DeVore, and she may be reached at (302) 739-9437 or lauren.devore@state.de.us.

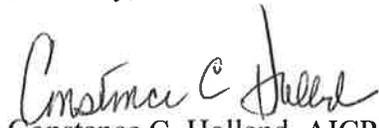
Delaware State Fire Marshall's Office – Contact Duane Fox 739-4394

- 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, technical services link, plan review, applications or brochures.

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 PLUS 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: City of Seaford