



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

March 22, 2016

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

RE: PLUS review 2016-02-02; Our Lady of Grace

Dear Colm:

Thank you for meeting with State agency planners on February 24, 2016 to discuss the proposed plans for the Our Lady of Grace project. According to the information received, you are seeking review of a 269 unit subdivision on 181.5 acres along East Chestnut 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 (which in this case is New Castle County) regulations regarding this property.**

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

- 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 2,275 vehicle trip ends per day shown on the PLUS application suggests that the subject development would meet these warrants. Accordingly, DelDOT met with representatives of the applicant and New

Castle County and developed a scope of work for that study at a meeting on December 4, 2015.

- The subdivision streets and the site access on Delaware Route 4 must be designed in accordance with DeIDOT'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>.
 - While DeIDOT recognizes the value of alleys as a design feature, by definition they do not meet our standards for subdivision streets and we will not accept them for maintenance. A note concerning who will maintain the proposed alleys will need to be included on the subdivision plan.
 - Similarly, there are four large islands proposed on the plan: two in cul-de-sacs at the ends of A and F Streets, one at the corner of D and E Streets, and one in a circular design feature on D Street. The grass or other plantings would not be eligible for State maintenance and notes concerning who would maintain the islands would need to be included on the subdivision plan. From previous discussions with the applicant we understand that the two cul-de-sac islands will be redesigned using a turning template and that the other two islands will be eliminated.
- 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 Delaware Route 4 and Gender Road. 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, DeIDOT will require dedication of right-of-way along the site's frontage on Delaware Route 4 and Gender Road. By this regulation, this dedication is to provide a minimum of 30 feet of right-of-way from the outermost edge of the through lanes on Route 4 and 30 feet from the centerline on Gender Road. The following right-of-way dedication note is required, **"An additional X-foot width is hereby dedicated to Public Use, as per this plat."**
- In accordance with Section 3.2.5.1.2 of the Development Coordination Manual, DeIDOT will require the establishment of a 15-foot wide permanent easement across the property frontage on Delaware Route 4 and Gender Road. 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."**
- Referring to Section 3.4.2 of the Development Coordination Manual, the Initial Stage review fee shall be assessed to this project.

- 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 Delaware Route 4 within 200 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.
 - Sidewalk already exists along the site frontage on Delaware Route 4. While our current standards require a buffer strip between the curb and the sidewalk and no buffer presently exists, we will only require reconstruction where the curb and sidewalk will be removed for entrance construction; elsewhere we will consider the existing sidewalk sufficient.
 - The site has about 53 feet of heavily wooded frontage on Gender Road. We will not require sidewalk or path construction on that frontage.

- Section 3.5.6 of the Development Coordination Manual addresses requirements for subdivision street intra-connectivity and specifies a minimum Connectivity Ratio, the ratio of street sections to intersections, of 1.4 or greater. We calculate that the plan presented meets that requirement with a ratio of 1.42.

- Section 3.5.7.1 of the Development Coordination Manual addresses requirements for connections to existing adjacent developments that do not have linkage street stubs. In

this context, the Holy Family Church property is, in our view, potentially redevelopable. For this reason we anticipate requiring a linkage street stub extending C Street to the property line. If the church property is ever developed for residential use we will require a connection to this extension.

- Section 3.5.7.2 of the Development Coordination Manual addresses requirements for connections to streets in adjacent subdivisions. In this context, six linkage street stubs abut the subject property Four of the linkage street stubs, Pearson Drive, Oakdale Road, Arrowwood Drive and South Skyward Drive, abut wetlands and are therefore not suitable for interconnection.
 - That leaves two locations where this development could be connected to streets in adjacent subdivisions, Lynch Farm Drive in Todd Estates II and Waverly Drive in Breezewood. Given the narrow street widths and shortage of off-street parking in Todd Estates II, we find that a street connection there is undesirable. However we do anticipate requiring that a Shared Use Path be connected to Lynch Farm Drive to provide for a bicycle and pedestrian connection. Waverly Drive more nearly meets our current subdivision street standards and we anticipate requiring a street connection there.
- In accordance with Section 3.8 of the Development Coordination Manual, storm water facilities, excluding filter strips and bioswales, shall be located a minimum of 20 feet from the ultimate State right-of-way along Delaware Route 4 and Gender Road.
- Referring to Section 4.3 of the Development Coordination Manual, the Construction Stage review fee shall be assessed to this project.
- 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)
- 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.xlsm?111215. Based on the trip generation provided, a 400-foot right turn lane with a bike lane through the entrance will be required on Delaware Route 4.
- Section 5.3.1 of the Development Coordination Manual addresses placement of sidewalks and states that a five-foot buffer between the sidewalk and the curb is preferred. Presently there is an existing sidewalk immediately behind the curb along the site's entire frontage on Delaware Route 4. The existing sidewalk may remain as it is except where it needs to be removed to provide access. Where it is removed, it will need to be replaced in a way that meets our current standards.
- 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.
- This project is located within the regulated airspace zones of New Castle Airport (ILG), which is a public-use facility. Federal Aviation Regulation (FAR) Part 77 imposes height restrictions on any structures within these zones. DelDOT requires that the applicant for this project submits a "Proposed Construction/Alteration in Airport Zones Notification Form" in accordance with Delaware Code (2 *Del. C.* § 602).
 - This notification form can be submitted during the plan approval process with the local land use jurisdiction, but DelDOT's Office of Aeronautics is willing to test hypothetical height numbers to prevent any future project complications. Please contact Mr. Joshua Thomas with the Office of Aeronautics at (302) 760-4834 with any questions or concerns. A copy of the notification form can be found at this address:
http://www.deldot.gov/information/community_programs_and_services/airports/pdfs/aviation_obstruction_review_form.pdf

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

The Department envisions a Delaware that offers a healthy environment where people embrace a commitment to the protection, enhancement and enjoyment of the environment in their daily lives; where Delawareans' stewardship of natural resources ensures the sustainability of these resources for the appreciation and enjoyment of future generations; and where people recognize that a healthy environment and a strong economy support one another.

Executive Summary.

The Department recognizes and appreciates the efforts that have been expended by the developer to conserve and protect sensitive habitat in the eastern portion of the project parcel, including the seasonal coastal plain pond and its wildlife buffer area.

While the conservation and protection of this area will have benefit for wildlife, neighboring parcels, water quality and air quality, there remain several opportunities to conserve and protect important sensitive habitat, improve water quality, protect drinking water supplies and reduce greenhouse gas emissions.

The proposed development plan would place approximately 40 lots within a mature forested area that contains sensitive wetlands. Although the proposed project plans avoid both the large high quality coastal plain seasonal pond and valuable surrounding upland habitats on site, it is important to note that the wet woods that are proposed to be filled as a result of this project provide wetland functions and ecological value. Due to the presence of the spotted salamander, which is a state-rare species, this project is located within a designated State Natural Heritage Site. State Natural Heritage Sites are identified as "Designated Critical Resource Waters" by the U.S. Army Corps of Engineers (USACE), and as such can be subject to additional wetland permitting requirements.

As discussed at the PLUS meeting, the Department recommends that the number of single family lots in the southern portion of the project be reduced and/or the lots reconfigured to minimize or eliminate intrusion into this forested area, leaving the entirety of the Key Wildlife Habitat intact. This would also minimize or eliminate the need to fill wetlands and obtain wetland permits from the USACE and the State. The Department also encourages the developer to place the preserved forested areas in permanent protection either through dedicating the land to the State, creating a conservation easement, or seeking support from private conservation organizations. There are also tax advantages to placing the State Natural Heritage Site under permanent protection. The Department is available to provide assistance with selecting the most appropriate conservation mechanism and for developing a forest management plan that would provide guidance for invasive species management, monitoring of forest health and management of public access.

This site falls entirely within a Level 2 Source Water Protection Area; land uses in these areas have the potential to influence the quality and/or quantity of public drinking water. In addition, the site is within the Christina River Basin, which has an established Pollution Control Strategy

for Nitrogen, Phosphorus and bacteria. To maintain surface water quality and drinking water quality in the basin, the developer is encouraged to preserve and enhance the forest and wetlands on site, minimize impervious surfaces within developed areas and use green technologies where possible to meet stormwater management requirements.

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. We encourage the applicant to provide pedestrian, bike and vehicular access to adjacent neighborhoods where practical. We also encourage the use of high performance building standards and consideration of alternative energy sources to promote clean sustainable energy and reduce greenhouse gas emissions. We 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. We 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. Contact information for specific offices are listed below or you can contact Michael Tholstrup at (302) 735-3352.

Wetlands.

- DNREC has reviewed the proposed project and determined that State regulated wetlands are not located on this property and subaqueous lands are not likely to be located on this property, based on a review of the State wetland maps, aerial photographs, SWMP maps, Soil Surveys and/or USGS topographic maps. For more information, please contact the DNREC Wetlands and Subaqueous Lands Section at (302) 739-9943 or online at: <http://www.dnrec.delaware.gov/wr/Services/Pages/WetlandsAndSubaqueousLands.aspx>.

Waters of the U.S. regulated by the U.S. Army Corps of Engineers (USACE) are likely to be located on this property based on a review of aerial photographs, SWMP maps, Soil Surveys and/or USGS topographic maps. According to our GIS SWMP maps, there are considerable wetlands regulated by the U.S. Army Corps of Engineers on this parcel. A wetlands delineation should be done by a consultant to determine actual wetland borders for setbacks and Army Corps compliance.

Waters of the United States include the following: navigable waters of the United States; wetlands; tributaries to navigable waters of the United States, including adjacent wetlands and lakes and ponds; interstate waters and their tributaries, including adjacent wetlands; and all other waters of the United States not identified above, such as isolated wetlands, intermittent streams, and other waters that are not part of a tributary system to interstate

waters or to navigable waters of the United States, where the use, degradation or destruction of these waters could affect interstate or foreign commerce.

The extent of Federal jurisdiction over Waters of the United States is determined by the USACE and is based on site specific conditions. Therefore, an on-site inspection by an environmental consultant is recommended to determine if Waters of the U.S. are located on the property and the limits of Federal jurisdictional. The U.S. Army Corps of Engineers can be contacted at (215) 656-6728 or online at <http://www.nap.usace.army.mil/cenap-op/regulatory/regulatory.htm>.



TMDLs.

- This project is located in the greater Piedmont drainage area, specifically the Christina River Basin. In the Christina River Basin, post-development nitrogen and phosphorus loading must be capped at the pre-development or baseline loading rate to meet the required TMDL for each nutrient. 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. A reduction in bacteria that ranges from 29 percent to 95 percent (High Flow) is also required (depending upon location). The specific required nutrient and bacterial requirements for the various stream segments in the Basin, and background information is outlined in the report entitled “*Christina River Basin High-Flow TMDL*” by the EPA, and can be reviewed here:

http://www.epa.gov/reg3wapd/tmdl/pa_tmdl/ChristinaMeetingTMDL/index.htm

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. According to the submitted PLUS application, this project’s open space may exceed this 10-acre threshold. Please contact the Delaware Nutrient Management Program at (302) 739-4811 for further information concerning compliance requirements or view additional details here:

<http://dda.delaware.gov/nutrients/index.shtml>

Water Supply.

- The project information sheets state that water will be provided to the project by United Water via a public water system. DNREC’s records indicate that the project is located within the public water service area granted to United Water DE under Certificate of Public Convenience and Necessity 88-CPCN-03.

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 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 Areas.

- DNREC has determined that the project falls entirely within a Level 2 Source Water Protection Area for New Castle County, while no wellhead protection areas or excellent groundwater recharge areas were identified. Level 2 Source Water Protection Areas are the delineated watershed upstream from a surface water intake that supplies water to a drinking water system. Land Use or Land Activity within this area has the potential to negatively influence water quality or quantity to public drinking water systems.

DNREC recommends referring to the New Castle County Unified Development Code for regulations regarding specific protective measures for development in these areas.

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 New Castle County Department of Land Use Engineering Section. Contact the Department of Land Use at (302) 395-5470 for details regarding submittal requirements and fees.

Air Quality.

- DNREC encourages developers and builders to consider all sustainable growth practices in their design, but we believe, however, that the air quality impacts associated with the project should be completely considered. 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:

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 Organic Compounds from Consumer and Commercial Products	<ul style="list-style-type: none"> • Use structural/ paint coatings that are low in Volatile Organic Compounds. • Use covers on paint containers when 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.dnrec.delaware.gov/Air/Pages/Air-Regulations.aspx>.

Based on the information provided, the three air emissions components (i.e., area, electric power generation, and mobile sources) for this project were quantified. Table 2 – Projected Air Quality Emissions represents the actual impact the Our Lady of Grace project may have on air quality:

Emissions Attributable to Our Lady of Grace (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	8.3	0.9	0.8	1.0	33.8
Electric Power Generation	*	3.3	11.5	*	1693.1
Mobile Source Emissions	12.3	12.9	0.4	0.1	7950.3
Total Emissions	20.6	17.1	12.7	1.1	9677.2

(*) Indicates data is not available.

Note that emissions associated with the actual construction of the road, 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.

Hazardous Waste Sites.

- If it is determined by DNREC's Site Investigation and Restoration Section (SIRS), 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.

The proposed project is within half mile of one SIRS site:

Newark munitions Depot (DE-0259) is located adjacent west of the proposed project property

- The Site was used for transshipping and storage of munitions during World War II.
- A Preliminary Assessment was conducted in June 1992 and it was determined that the site did not pose a threat to human or environmental health.
- Another PA was conducted in May 2006 and it also determined that the site posed no threat and was given a No Further Action designation.

Tank Management.

- If a release of a Regulated Substance occurs at the proposed project site, compliance with 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 (LUST) projects are located within a quarter mile of the proposed project area:

- Little Sisters of the Poor Facility ID: 3-000222, Project: N9512283, (Inactive)
- Holy Family Church Facility ID: 3-001718, Project: N0910072 , (Inactive)

State Historic Preservation Office – Contact Terrence Burns 736-7404

- There are no known archaeological sites or National Register-listed property on this parcel. However, 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 go to the following websites for additional information: www.history.delaware.gov/preservation/umhr.shtml and www.history.delaware.gov/preservation/cemeteries.shtml.

Therefore, prior to any demolition or ground-disturbing activities, the developer may want hire an archaeological consultant, to examine the parcel for archaeological resources, as well 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. 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 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:**
 - 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.
 - Where a water distribution system is proposed for townhouse type dwelling sites, the infrastructure for fire protection water shall be provided, including the size of water mains.
- **Fire Protection Features:**
 - For townhouse and duplex buildings, provide a section / detail and the UL design number of the 2-hour fire rated separation wall on the Site plan
- **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 East Chestnut 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.
 - 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”
 - Proposed Use
 - Square footage of each structure (Total of all Floors)
 - National Fire Protection Association (NFPA) Construction Type
 - Maximum Height of Buildings (including number of stories)
 - Name of Water Provider
 - Letter from Water Provider approving the system layout
 - The details for the 2-hour separation wall for townhouses and duplexes shall be shown on site plans
 - 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

- Because the proposed development would generate more than 200 vehicle trips per day, a Pre-Submittal Meeting is required before plans are submitted for review. The form needed to request this 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.

- Please 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 – Contact Michael Tholstrup 735-3352

Soils Assessment.

- Based on the NRCS soil survey mapping update, the soil mapping units with specific limitations for development are Fallsington (FgA) and Ingleside-Hammonton-Fallsington complex (ImB). Fallsington and Ingleside-Hammonton-Fallsington complex soil mapping units contain poorly-drained wetland associated (hydric) soils (see map below). These soil mapping units are likely to contain soils with severe limitations for development (considered unsuitable).

DNREC strongly discourages building on hydric soils (e.g., Fallsington and Ingleside-Hammonton-Fallsington complex) because they are functionally important source of water storage (functions as 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 area increases over time. Moreover, destruction of hydric soils increases the amount of pollutant runoff (i.e., hydric soils sequester and detoxify pollutants) which contributes to lower observed water quality in regional waterbodies and wetlands. Therefore, we strongly recommend the applicant contact a 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 soil scientists can be obtained from the Ground Water Discharges Branch at (302) 739-9947.

Wildlife Habitat.

- There is a large Coastal Plain Seasonal Pond on the project parcel, as well as many vernal pools throughout the parcel. Although these wetland types are usually mapped as isolated wetlands and are not afforded regulatory protection, they have high ecological value. Coastal Plain Seasonal Ponds in particular provide breeding habitat for a variety of animals, often supports a unique assemblage of plants, and a high diversity of species, many of which are considered rare. The ecological integrity of a seasonal pond wetland is maintained by fluctuating levels of groundwater and by the flooding and drying cycles that are critical for the diversity of plant species that form the habitat in the pond. Fish are

typically absent from wetlands that dry down for part of the year which is why some rare amphibian species only breed in these types of wetlands. Because fish prey upon their eggs and larvae, a key characteristic of their breeding habitat is a lack of fish. Upland forest buffers around these seasonal ponds and vernal pools are necessary to not only protect water quality, but provide critical habitat for amphibians and reptiles that are dependent on the wetland for breeding.

Subdivided lots, on parcels adjacent to vernal pools, were to be pulled back from an earlier site design in order to increase the buffers surrounding these sensitive wetlands. We would like additional information to determine the extent of which this was done.

State Natural Heritage Site.

- Due to the presence of the spotted salamander, which is a state-rare species, this project is located within a State Natural Heritage Site. State Natural Heritage Sites are identified as "Designated Critical Resource Waters" by the U.S. Army Corps of Engineers (USACE), and as such are subject to the restrictions and limitations of Nationwide Permit General Condition No. 22.

Spotted Salamander.

- Spotted salamander, a state-rare species, has been documented on site. Salamanders spend most of their life cycle in the forest surrounding coastal plain seasonal pond wetlands, only using the wetland during brief breeding and developmental periods early in the spring before the wetland dries out for the summer and fall.

Forest preservation and stewardship.

- Given the benefit of trees toward erosion control and flood abatement, tree removal for stormwater management should be minimized. This could include site plan reconfiguration to locate stormwater management facilities to non-forested areas, reducing the number and/or size of ponds, or employing alternative methods that do not require tree removal. Options should be discussed with project engineers or with the appropriate Sediment and Stormwater Plan approval agency, to include managing site stormwater in a manner that does not adversely alter the hydrology and water quality of the site's wetlands.

Although the proposed project plans avoid both the large high quality coastal plain seasonal pond and valuable surrounding upland habitats on site, it is important to note that the wet woods, that are proposed to be filled as a result of this project, do provide wetland functions and ecological value. We recommend wetland restoration/management of the Coastal Plain Seasonal Ponds and vernal pools on site to offset the remaining impacts to a few of the site's wetlands. For example:

- Remove the *Salix nigra* (black willow) and other aggressive plant species from the large pond, open the canopies of the ponds that now have closed canopies, and remove trash from ponds.

- There is also an open area that was cut out of the existing forest that could be allowed to succeed, naturally.

There are many existing access points and a pattern of entry into the woods by local residents. Although it is not likely feasible to keep pedestrians out of the wooded areas beyond the proposed development's limit of disturbance, it would be best to prohibit the entry of off-road vehicles (e.g. bikes/ATV's), which are much more damaging. Additionally, we recommend posting educational signs to encourage stewardship of the site.

TMDL compliance and the PCS.

- A Pollution Control Strategy (PCS) to achieve the required TMDL nutrient and bacterial load reduction requirements has been established for the Christina River Basin. Additional information on the Christina watershed PCS strategies can be found here: <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 implementation of the following recommended BMPs:
 - Preserve and/or maintain as much of the existing forest cover and open space as possible. We suggest additional native tree, shrub and/or native herbaceous vegetation plantings in the available open space.
 - Hire a licensed soil scientist to conduct a field-based delineation of the hydric soils and/or wetlands on this site. Much of this parcel is likely to contain environmentally-sensitive jurisdictional wetlands (e.g., including coastal plain and vernal ponds). A list of licensed soil scientists can be obtained from the Ground Water Discharges Branch; the Branch can be reached by phone at (302) 739-9947. According to information submitted by the applicant, a wetlands delineation was conducted but not submitted to DNREC. The wetlands delineation was also not approved by the United States Army Corps of Engineers (USACE). We strongly recommend the applicant obtain USACE approval before commencing project construction.
 - Maintain an adequately-sized buffer that effectively protects wetlands and streams, in most circumstances this is about 100 feet in width. In recognition of the need to protect water quality, the 50-foot buffer width proposed by the applicant is insufficiently protective. The Watershed Assessment Section recommends that the applicant maintain/establish a minimum 100-foot vegetated buffer (planted in native vegetation) from all waterbodies (including ditches and 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 and other State-regulated wetlands).
 - 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 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 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; 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 design and implement the most effective BMPs. Please contact John Martin or Jen Walls of the Division of Watershed Stewardship, at (302) 739-9939 for more information.

Additional information on tank management.

- 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.

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 with 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.

- New homes may emit, or cause to be emitted, 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; two pollutants relative to which Delaware currently violates federal health-based air quality standards,
 - 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 needed to support the new homes, and
- All transportation activity.

Recommendations. 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 infrastructure for plug-in vehicles.** Such measure may entice a potential apartment owner/renter to purchase an electric vehicle if the electrical outlets are available as this will help minimize vehicle emissions.
- **Providing shade for parking lot 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.
- **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.

This is a partial list, and there are additional things that can be done to reduce the impact of the project. The applicant should submit a plan to the DNREC Division of Air Quality (DAQ) which addresses the above listed measures, and details all of the specific emission mitigation measures that will be incorporated into the Our Lady of Grace project. The DAQ point of contact is Deanna Cuccinello, (302) 739-9402.

Delaware State Housing Authority – Contact Karen Horton 739-4263

- DSHA strongly supports the Our Lady of Grace subdivision proposal which will result in 269 residential units on 181.5 acres on East Chestnut Hill Road in New Castle County for the following reasons:
 - The proposal will expand housing choice by providing a mix of housing types and densities that is responsive to a market shift that no longer supports large suburban homes that dominated development in Delaware for several decades. The Delaware Population Consortium (DPC) projections for the next ten years indicate that not only will there be a large amount of suburban homes placed on the market by baby boomers, but that there will be a *decline* in households in age ranges that typically seek large homes. These same

projections show growth in the younger age ranges most likely at stages in their life and income to support entry-level homes such as those included in this proposal.

- The proposal includes 60 rental units affordable to working families. DSHA's recently completed *2015-2020 Housing Needs Assessment* identified a growing demand for rental housing as more households wait to purchase a home, or have transitioned into the rental market due to the recent foreclosure crises. Projected housing demand over the next five years is greatest in New Castle County and the greatest rental demand is among renters earning less than 50% of the area median income. These units will be affordable for households earning at least 30% and up to 60% of the area median income.
 - Twenty-percent of these units will be fully ADA accessible, thereby providing affordable housing opportunities for persons with disabilities.
 - The site will include a community building to provide a variety of services and a state of the art security and surveillance system. The community building will also be accessible for persons with disabilities.
 - The 60 rental units will likely be the most energy efficient multi-family units in the State as it will meet, at a minimum, Energy Star[®] 3.0 Plus standards which include additional HERS rating requirements.
- The proposal is in an ideal location with immediate access to services, markets, educational opportunities, and employment opportunities. There will be an internal ADA compliant sidewalk network that connects to an improved transit stop on an existing transit route.
- The entire site plan is thoughtfully designed and preserves a large wooded portion of the site as a conservation area. Walking paths are integrated into the proposal as well as a community garden providing opportunities for recreation and access to healthy foods.

In summary, the approval of this subdivision proposal will be a huge step for true community inclusion for persons in need of affordable and accessible housing, as well as, opportunities for positive and healthy life outcomes provided by the location and subdivision proposal.

If you have any questions, please feel free to call me at (302) 739-4263 or via e-mail at karenh@destatehousing.com. Thank you.

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 elements 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 would offer the following recommendations for consideration to the Our Lady of Grace plan for development:

1. DPH is pleased to see the inclusion of proposed open space indicated, in part, for passive recreation. This will enable residents to incorporate leisure activity into their daily lives.
 - a. Because “passive recreation” was not clearly defined in the PLUS application, DPH would further recommend that Felician Sisters Joint Venture LLC 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>).
2. DPH recommends incorporating sidewalks and internal walkways including marked crosswalks.
 - a. 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.
 - b. 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.
3. 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.
4. 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

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, technical services link, plan review, applications or brochures.
- Although not a requirement of the State Fire Prevention Regulations, the Office of the State Fire Marshal encourages home builders to consider the benefits of home sprinkler protection in dwellings. The Office of the State Fire Marshal also reminds home builders of the requirements of Subchapter III of Chapter 36 of Title 6 of the Delaware Code which can be found at the following website:
<http://delcode.delaware.gov/title6/c036/sc03/index.shtml>

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,



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

CC: New Castle County