



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

October 22, 2014

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

RE: PLUS review 2014-09-02, Linden Hill Station

Dear Mr. DeAscanis,

Thank you for meeting with State agency planners on September 24, 2014 to discuss the proposed plans for Linden Hill Station. According to the information received, you are seeking review of a site plan for 67 residential units and 58,200 sf commercial on 6.78 acres in New Castle County.

Please note that changes to the plan, other than those suggested in this letter, could result in additional comments from the State. Additionally, these comments reflect only issues that are the responsibility of the agencies represented at the meeting. **The developers will also need to comply with any Federal, State and local regulations regarding this property. We also note that as New Castle 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 *Strategies for State Policies and Spending*. This site is also located in the New Castle County Growth Zone. 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. This project is a mixed use project providing residential and commercial uses. Our office supports and encourages mixed use infill and redevelopment projects as essential to promoting our “complete communities” program and for helping to concentrate growth in and around existing communities and infrastructure.

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

### **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 there will be any development or construction project on this parcel, the developer should still be aware of the Unmarked Human Burials and Human Skeletal Remains Law, which is 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 (Delaware Code Title 7, Chapter 54), and such remains or discoveries can result in substantial delays while the procedures required under this law are carried out. If there is a discovery of any unmarked graves, burials or a cemetery, it is very costly to have them archaeologically excavated and the burials moved. The Division of Historical & Cultural Affairs recommends that owners and/or developers have a qualified archaeological consultant investigate their project area, to the full extent, to see if there is any unmarked cemetery, graves, or burial sites. In the event of such a discovery, the Division of Historical & Cultural Affairs also recommends that the plans be re-drawn to leave the full extent of the cemeteries or any burials on its own parcel or in the open space area of the development, with the responsibility for its maintenance lying with the landowner association or development. If you would like to know more information pertaining to unmarked human remains or cemeteries, please check the following websites for additional information:  
[www.history.delaware.gov/preservation/umhr.shtml](http://www.history.delaware.gov/preservation/umhr.shtml) and  
[www.history.delaware.gov/preservation/cemeteries.shtml](http://www.history.delaware.gov/preservation/cemeteries.shtml).

Prior to any demolition or ground-disturbing activities, the developer may want to hire an archaeological consultant to examine the parcel for any potential archaeological site (historic or pre-historic), historic cemetery or unmarked human remains.

- If there is any federal involvement with the project, in the form of licenses, permits, or funds, the federal agency, often through its client, is responsible for complying with Section 106 of the National Historic Preservation Act (36 CFR 800) and must consider their project's effects on any known or potential cultural or historic resources. Owners and developers who may plan to apply for an Army Corps of Engineers permit or for federal funding, such as HUD or USDA grants, should be aware of the National Historic Preservation Act of 1966 (as amended). Regulations promulgated for Section 106 of this Act stipulate that no ground-disturbing or demolition activities should take place before the Corps or other involved federal agency determines the area of potential effect of the project undertaking. These stipulations are in place to allow for comment from the public, the Delaware State Historic Preservation Office, and the Advisory Council for Historic Preservation about the project's

effects on historic properties. Any preconstruction activities without adherence to these stipulations may jeopardize the issuance of any permit or funds. If you need further information or additional details pertaining to the Section 106 process and the Advisory Council's role, please review the Advisory Council's website at [www.achp.gov](http://www.achp.gov).

Department of Transportation – Contact Bill Brockenbrough 760-2109

- By the developer's estimate on the PLUS application, the site would generate 1,894 vehicle trip ends per day. Therefore, in accordance with the traffic volume warrants found in Section 2.3.1 of the Standards and Regulations for Subdivision Streets and State Highway Access, the proposed development warrants a Traffic Impact Study (TIS). However, in accordance with Section 2.3.2, DeIDOT may accept a fee of \$10 per daily trip in lieu of a TIS for developments generating fewer than 2,000 vehicle trips per day and fewer than 200 vehicle trips per hour in the peak hours of the day. The payment of the fee would not exempt the developer from contributing toward off-site improvements or count toward those improvements.

Payment of the fee also would not exempt the developer from the requirement to perform a Traffic Operational Analysis (TOA) if DeIDOT should determine that one is needed. The need for a TOA would be determined at the Pre-Submittal Meeting. See the first item under DeIDOT recommendations below.

DeIDOT already discussed this matter with the developer and they would like to proceed on that basis. However, New Castle County has a peak hour warrant of 50 vehicle trips per hour and no provision for a fee-in-lieu. As DeIDOT understands it, the developer is still in discussions with the County regarding how they might be able to proceed without a TIS.

- The site entrance must be designed in accordance with DeIDOT's Standards and Regulations for Subdivision Streets and State Highway Access. A copy of the Standards and Regulations is available at [http://www.deldot.gov/information/pubs\\_forms/manuals/subdivisions/pdf/Subdivision\\_Manual\\_Revision\\_1\\_proposed\\_060110.pdf](http://www.deldot.gov/information/pubs_forms/manuals/subdivisions/pdf/Subdivision_Manual_Revision_1_proposed_060110.pdf).
- Please be advised that DeIDOT has advertised for comment a comprehensive revision of the Standards and Regulations. The comment period ran through June 30 and DeIDOT could adopt this revision as soon as November 2014. Implementation guidance has not been developed but DeIDOT recommends that the developer's engineer become familiar with the proposed changes and assess whether any of them could be relevant to this project. Information on the proposed revision is available in the Register of Regulations and at [http://www.deldot.gov/information/pubs\\_forms/revisions\\_to\\_ASR/index.shtml](http://www.deldot.gov/information/pubs_forms/revisions_to_ASR/index.shtml).
- DeIDOT will require the developer to improve the curb ramps at the site entrance on South Riding Boulevard and on both sides of South Riding Boulevard at New Linden Hill Road as necessary to meet current Americans with Disabilities Act standards.

Department of Natural Resources and Environmental Control – Contact Kevin Coyle 739-9071

### **TMDLs**

- Total Maximum Daily Loads (TMDLs) for nitrogen and phosphorus have been promulgated through regulation for the greater Christina River watershed. A TMDL is the maximum level of pollution allowed for a given pollutant below which a “water quality limited waterbody” can assimilate and still meet State water quality standards (e.g., dissolved oxygen, nutrients, and bacteria; *State of Delaware Surface Water Quality Standards, as amended July 11, 2004*) to the extent necessary to support use goals such as, swimming, fishing, drinking water and shell fish harvesting.
- TMDLs are required by federal law (Section 303(d) of the 1972 Clean Water Act), and the states are charged with developing and implementing specific land use practices that support these desired use goals. The project is located in the greater Christina River watershed. In the Christina River watershed, post-development nitrogen and phosphorus loading must be capped at the pre-development or baseline loading rate (or a 0% post-construction increase in N & P in Delaware’s portion of the Christina River Basin) to meet the required TMDL for each nutrient. Moreover, bacteria reductions that range from 29% to 95% are also required (depending upon location). The specific required nutrient and bacterial requirements for the various stream segments in the watershed, and background information is outlined in the report entitled “*Christina River Basin High-Flow TMDL*” by the EPA. This report can be retrieved from the following weblink:  
[http://www.epa.gov/reg3wapd/tmdl/pa\\_tmdl/ChristinaMeetingTMDL/index.htm](http://www.epa.gov/reg3wapd/tmdl/pa_tmdl/ChristinaMeetingTMDL/index.htm)

### **Water Supply**

- The project information sheets state water will be provided to the project by Artesian Water Company via a public water system. DNREC records indicate that the project is located within the public water service area granted to Artesian Water Company under Certificate of Public Convenience and Necessity 85-WS-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 typically take approximately four weeks to process, which allows the necessary time for technical review and advertising.

### **Source Water Protection Areas**

- The DNREC Ground-Water Protection Branch (GPB) has determined that it does not fall within any wellhead protection or excellent groundwater recharge potential areas. However,

the parcel falls entirely within the Red Clay Creek Drinking Water Watershed. This area is a Level 2 source water protection area for New Castle County (NCC). Level 2 Source Water Protection Areas are the delineated watershed upstream from public drinking water supply intakes. Land Use or Land Activity within these areas has the potential to influence water quality or quantity to the public drinking water systems. GPB recommends referring to NCC Unified Development Code for regulations regarding development in this water resource protection area.

- **Sediment and Stormwater**

A sediment and stormwater plan will be required for the site. Contact the reviewing agency to schedule a project application meeting to discuss the sediment and erosion control and stormwater management components of the plan as soon as possible. The site topography, soils mapping, pre- and post-development runoff, and proposed method(s) and location(s) of stormwater management should be brought to the meeting for discussion. The plan review and approval as well as construction inspection will be coordinated through the New Castle County Department of Land Use Engineering Section. Contact the Department of Land Use at (302) 395-5470 for details regarding submittal requirements and fees. (Title 7, Delaware Code, Chapter 40 and Delaware Regulations, Title 7, Administrative Code, 5101).

**Air Quality**

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

| <b>Table 1: Potential Regulatory Requirements</b>   |  |
|---|--|
| <b>Regulation</b>   | <b>Requirements</b>  |
| <b>7 DE Admin. Code 1106</b> - Particulate Emissions from Construction and Materials Handling                         | Use dust suppressants and measures to prevent transport of dust off-site from material stockpile, material movement and use of unpaved roads.<br>Use covers on trucks that transport material to and from site to prevent visible emissions. |
| <b>7 DE Admin. Code 1113</b> – Open Burning   | Prohibit open burns statewide during the Ozone Season from May 1-Sept. 30 each year.<br>Prohibit the burning of land clearing debris.<br>Prohibit the burning of trash or building materials/debris.   |
| <b>7 DE Admin. Code 1135</b> – Conformity of General Federal Actions to the State Implementation Plan                 | 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 minimum levels (See Section 3.2.1)                                     |
| <b>7 DE Admin. Code 1141</b> – Limiting Emissions of Volatile Organic Compounds from Consumer and Commercial Products | Use structural/ paint coatings that are low in Volatile Organic Compounds.<br>Use covers on paint containers when paint containers are not in use.   |

|   |   |
|---|---|
| <p><b>7 DE Admin. Code 1144 – Control of Stationary Generator Emissions</b></p> | <p>Ensure that emissions of nitrogen oxides (NO<sub>x</sub>), non-methane hydrocarbons (NMHC), particulate matter (PM), sulfur dioxide (SO<sub>2</sub>), carbon monoxide (CO), and carbon dioxide (CO<sub>2</sub>) from emergency generators meet the emissions limits established. (See section 3.2).<br/>Maintain recordkeeping and reporting requirements.</p> |
| <p><b>7 DE Admin. Code 1145 – Excessive Idling of Heavy Duty Vehicles</b></p>   | <p>Restrict idling time for trucks and buses having a gross vehicle weight of over 8,500 pounds to no more than three minutes.</p>  |

For a complete listing of all Delaware applicable regulations, please look at the website:

<http://www.awm.delaware.gov/AQM/Pages/AirRegulations.aspx>.

### **Hazardous Waste Sites**

- If it is determined by the Department 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.

### **Tank Management Section**

- If a release of a Regulated Substance occurs at the proposed project site, compliance of 7 Del.C., Chapter 60, 7 Del.C., Chapter 74 and DE Admin. Code 1351, State of Delaware *Regulations Governing Underground Storage Tank Systems* (the UST Regulations) is required.
- The following confirmed leaking underground storage tank (LUST) projects are located within a quarter mile from the proposed project area:
  - Faith Baptist Church, Facility: 3-001730, Project: N9610177 (Inactive)
- 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.

Delaware State Fire Marshall’s Office – Contact Duane Fox 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 (DSFPR):

### **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 (except for the 32 Town House buildings) will require automatic sprinkler protection installed.
- Buildings greater than 10,000 sqft, 3-stories or more, over 35 feet, or classified as High Hazard, are required to meet fire lane marking requirements
- Show Fire Department Connection location (Must be within 300 feet of fire hydrant), and detail as shown in the DSFPR.
- Show Fire Lanes and Sign Detail as shown in DSFPR
- For townhouse buildings, provide a section / detail and the UL design number of the 2-hour fire rated separation wall on the Site plan

### **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.
- Fire department access shall be provided in such a manner so that fire apparatus will be able to locate within 100 ft. of the front door.
- Any dead end road more than 300 feet in length shall be provided with a turn-around or cul-de-sac arranged such that fire apparatus will be able to turn around by making not more than one backing maneuver. The minimum paved radius of the cul-de-sac shall be 38 feet. The dimensions of the cul-de-sac or turn-around shall be shown on the final plans. Also, please be advised that parking is prohibited in the cul-de-sac or turn around.
- The use of speed bumps or other methods of traffic speed reduction must be in accordance with Department of Transportation requirements.
- The local Fire Chief, prior to any submission to our Agency, shall approve in writing the use of gates that limit fire department access into and out of the development or property.

### **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
- Townhouse 2-hr separation wall details shall be shown on site plans
- Provide Lock Box Note (as detailed in DSFPR) if Building is to be sprinklered
- Provide Road Names, even for County Roads

Department of Education-Contact Despina Wilson 735-4040

- This development will be subject to the New Castle Voluntary School Assessment Statutes 9 Del. C. Chapter 26, § 2661 and 14 Del. C. § 103(c).

**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. Guidance on what will be covered at this meeting and how to prepare for it is located at [http://www.deldot.gov/information/business/subdivisions/Pre-Submittal\\_Meeting\\_Requirements.doc](http://www.deldot.gov/information/business/subdivisions/Pre-Submittal_Meeting_Requirements.doc). The form needed to request this meeting is available at [http://www.deldot.gov/information/business/subdivisions/Meeting\\_Request\\_Form.doc](http://www.deldot.gov/information/business/subdivisions/Meeting_Request_Form.doc).
- Expect a requirement for a separate turning template plan that verifies vehicles can enter and exit safely. The entrance shall be designed for the largest vehicle using the entrance.
- 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 May 21, 2014 for the Record/Site Plan and Construction Plan general notes and the Temporary Traffic Control general notes. The notes can be found at [http://www.deldot.gov/information/business/subdivisions/DelDOT\\_Development\\_Coordination\\_Plan\\_Sheet\\_Notes.doc](http://www.deldot.gov/information/business/subdivisions/DelDOT_Development_Coordination_Plan_Sheet_Notes.doc)

- Please check to determine whether any utilities will need to be relocated as part of this project.

Department of Natural Resources and Environmental Control – Contact Kevin Coyle 739-9071

### **Use of Native Plants**

- DNREC suggests native tree and native herbaceous planting wherever practicable. Program botanist Bill McAvoy would gladly assist in drafting a list of plants suitable for this site. Bill can be contacted at (302) 735-8668 or [William.McAvoy@state.de.us](mailto:William.McAvoy@state.de.us).

### **Bat Survey**

- According to the information sent with your request there are buildings to be demolished prior to development. Given this scope of work, DNREC wants to provide you with information regarding our current bat survey work and concerns for several bat species.
- The Division of Fish and Wildlife has been involved with monitoring White Nose Syndrome, a disease that has been killing large numbers of cave bat species in the northeastern United States (for more information see: [http://www.fw.delaware.gov/bats/Pages/Bats\\_WNS.aspx](http://www.fw.delaware.gov/bats/Pages/Bats_WNS.aspx) and <http://www.fws.gov/WhiteNoseSyndrome/>). In Delaware, cave dwelling bats have been known to utilize man-made structures. DNREC scientists have been conducting surveys throughout the state at various maternal and hibernation colonies. However, there are many areas in which there is minimal data.
- If the building(s) to be demolished are unoccupied or abandoned, DNREC would like to request an opportunity to survey for the presence of bats before the structures are removed. If the buildings are accessible, the survey can be conducted anytime as it simply involves a visual survey for bats or signs of bat presence.

If the buildings are not accessible, emergence surveys at dusk during the maternity season (May-August) would be best. This type of survey would entail an emergence count at dusk and the possible use of acoustic equipment in the vicinity of the building to record bat calls. These typically on take a couple hours for a night or two. If bats are located, DNREC can provide best management practices that would minimize impacts when the structures are removed. This request is non-regulatory but is part of an effort to collect data throughout the state on bat populations and gain a better understanding of WNS. Please get in touch with Holly Niederriter if a bat survey for the presence of bats is permitted. Holly can be contacted at: 302-735-8670 or [Holly.Niederriter@state.de.us](mailto:Holly.Niederriter@state.de.us).

### **Soils Assessment**

- According the soil survey mapping update, the soil mapping unit in the immediate vicinity of the proposed project is Glenelg-Wheaton Urban Land complex (GhB & GhD; Figure 1).



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

### Additional information on TMDLs and water quality

- DNREC strongly encourages the applicant to reduce nutrient and bacterial pollutants on their parcel through voluntary implementation of the following recommended BMPs:
  - Expand/maintain as much of the existing open space as possible; DNREC further suggests additional native tree and native herbaceous planting wherever practicable.
  - 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, and roads) included in the calculation.
  - Encourage the use of pervious paving materials (instead of conventional asphalt and concrete) as a BMP to mitigate the impacts associated with surface imperviousness. The

large amount of impervious surface proposed for this project makes this site an especially good candidate for the installation of pervious paving material.

- Use of green-technology storm water management (in lieu of open-water management structures) and raingardens as BMPs for mitigating nutrient and bacterial pollutant runoff from increases in surface imperviousness. Please contact Lara Allison at 739-9939 for further information about the possibility for installing a raingarden(s) on this parcel.
- Voluntarily 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) that result from the conversion of individual or combined land parcels to a different land use(s), while providing applicants with quantitative information about their project’s impact(s) on baseline water quality. DNREC strongly encourages the applicant/developer use this protocol to help them design and implement the most effective BMPs. Please contact John Martin or Jen Walls 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 TMS

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

- DNREC strongly recommends that the land owner perform environmental due diligence of the property by performing a Phase I Environmental Site Assessment (including a title search to identify environmental covenants) in accordance to Section 9105(c) (2) of the Delaware Hazardous Substance Cleanup Act (HSCA). While this is not a requirement under HSCA, it is good business practice and failure to do so will prevent a person from being able to qualify for a potential affirmative defense under Section 9105(c) (2) of HSCA. Additional remediation may be required if the project property or site is re-zoned by the county.
- Should a release or imminent threat of a release of hazardous substances be discovered during the course of development (e.g., contaminated water or soil), construction activities should be discontinued immediately and DNREC should be notified at the 24-hour emergency number (800-662-8802). DNREC’s Site Investigation Restoration Section (SIRS) should also be contacted as soon as possible at 302-395-2600 for further instructions.

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

- 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; 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 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) for the project could not be quantified. The Division of Air Quality (DAQ) was able, however, to quantify the mobile emissions based on the proposed daily trip data presented in the application and data taken from the ITE Trip Generation Manual, 8<sup>th</sup> Edition. Table 2 represents the actual impact the Linden Hill Station project may have on air quality.

| <b>Table 2: Projected Air Quality Emissions for Linden Hill Station</b> |                                  |                       |                                   |  |                                   |
|---|----------------------------------|-----------------------|-----------------------------------|--|-----------------------------------|
| Emissions Attributable to Linden Hill Station (Tons per Year)           | Volatile Organic Compounds (VOC) | Nitrogen Oxides (NOx) | Sulfur Dioxide (SO <sub>2</sub> ) | Fine Particulate Matter (PM <sub>2.5</sub> ) | Carbon Dioxide (CO <sub>2</sub> ) |
| Mobile  | 6.29                             | 8.30                  | *                                 | *  | 1980.2                            |

(\*) Indicates data is not available.

- Note that emissions associated with the actual construction of the mixed use development, including automobile and truck traffic from working in, or delivering products to the site, as well as site preparation, earth moving activities, road paving and other miscellaneous air emissions, are not reflected in the table above.
- DNREC encourages sustainable growth practices that:
  - Control sprawl;
  - Preserve rural and forested areas;
  - Identify conflicting land use priorities;
  - Encourage growth on previously developed sites and denser communities while at the same time protect our diminishing land base;
  - Coordinate transportation, housing, environment, and climate protection plans with land use plans; and demonstrate that communities can achieve the qualities of privacy, community, and contact with nature without degrading the natural environment or generating unacceptable environmental costs in terms of congestion, use of natural resources, or pollution.
- Additional measures may be taken to substantially reduce the air emissions identified above. These measures include:

- Constructing with only energy efficient products. Energy Star qualified products are up to 30% more energy efficient. Savings come from building envelope upgrades, high performance windows, controlled air infiltration, upgraded heating and air conditioning systems, tight duct systems and upgraded water-heating equipment. Every percentage of energy efficiency translates into a percent reduction in pollution. The Energy Star Program is 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.
- 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, bike path, or mass transit, 7 pounds of VOC and 11.5 pounds of NOx are reduced each year. There is an opportunity to connect to the transit system via an existing DART bus stop located within walking distance of the property at the intersection of New Linden Hill Road and South Riding Road. This stop has a shelter and is served by route 19, covering points along Limestone Road and New Linden Hill Road and going as far as King Street.
- Using retrofitted diesel engines during construction. This includes equipment that is on-site as well as equipment used to transport materials to and from site.
- Using pre-painted/pre-coated flooring, cabinets, fencing, etc. These measures can significantly reduce the emission of VOCs from typical architectural coating operations.
- Planting trees in vegetative buffer areas, particularly those between the site and adjacent residential areas. Trees reduce energy emissions by cooling during the summer and by providing wind breaks in the winter, whereby reducing air conditioning needs by up to 30 percent and saving 20 to 50 percent on fuel costs.

This is a partial list, and there are additional things that can be done to reduce the impact of the development. The applicant should submit a plan to the DNREC DAQ which address the above listed measures, and that details all of the specific emission mitigation measures that will be incorporated into the Linden Hill Station project.

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

- In support of the local Fire Company's preference, the Office of the State Fire Marshal encourages the developer to strongly consider the installation of sprinkler protection in the

four (4) townhouse buildings. Presently, sprinkler protection is not required in single family dwellings by the State Fire Prevention Regulations. The Office of the State Fire Marshal encourages installation of sprinklers in all buildings.

- Preliminary meetings with fire protection specialists are encouraged prior to formal submittal. Please call for appointment. Applications and brochures can be downloaded from the website: [www.statefiremarshal.delaware.gov](http://www.statefiremarshal.delaware.gov), technical services link, plan review, applications or brochures.

Division 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, physical activity has a direct correlation to many chronic diseases, including hypertension, diabetes and obesity. In 2012, 39.1% of Delawareans reported a BMI of "overweight," and 26.9% 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.

- DPH is pleased to see the inclusion of sidewalks and marked crosswalks in the Linden Hill subdivision. Additionally, because the location of the development has ample opportunity for interconnectivity (location is within a reasonable distance to many commercial, mixed-use, schools, parks, entertainment, restaurants, and local transit options) residents may incorporate physical activity into daily routines through active transportation. Finally, these walking, jogging and biking opportunities align with the SCORP regional priorities, and furthering engagement in active recreation.
- DPH feels the Linden Hill Subdivision has the opportunity to increase positive health behaviors for its residents by incorporating the following recommendations into its land development proposal:
  - The inclusion of complete streets; accommodations for pedestrians, bicyclists and transit users along the roadway.
  - Include pedestrian lighting on all paths and walkways to enhance the usability of active transportation options.
  - Include crosswalks at all key intersections.
  - Include bicycle facilities, such as bike lanes, signage and parking to enhance non-motorized options.
  - Include opportunities for passive recreation into open space areas marked "Landscaping use" if available.

Department of Education-Contact Despina Wilson 735-4040

- DOE requests developer work with the affected school district transportation department to establish developer supplied bus stop shelter ROW and shelter structures, either at the entrance to the development or interspersed throughout the development as determined and recommended by the school district.

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

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

Sincerely,

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

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

CC: New Castle County