



STATE OF DELAWARE
EXECUTIVE DEPARTMENT
OFFICE OF
STATE PLANNING COORDINATION

August 23, 2005

Mr. Thomas Prusak
Landmark Engineering
One Corporate Commons, Ste. 301
New Castle, DE 19720

RE: PLUS review – PLUS 2005-06-15; La Grange

Dear Mr. Prusak

Thank you for meeting with State agency planners on August 3, 2005 to discuss the proposed plans for the LaGrange project to be located on the north side of Route 40, west of Old Route 896.

According to the information received, you are seeking approval for 232 residential units, 82,600 square foot of commercial, and a 135,000 sq. foot elementary/middle school on 236 acres.

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.

Executive Summary

The following section includes some site specific highlights from the agency comments found in this letter. This summary is provided for your convenience and reference. The full text of this letter represents the official state response to this project. ***Our office notes that the applicants are responsible for reading and responding to this letter and all comments contained within it in their entirety.***

State Strategies/Project Location

- The developer has conducted an archaeological survey to determine more specifically where the prehistoric archaeological sites are and if there are concentrations of Revolutionary War material. This is highly commendable. The DHCA needs a copy of the report when it is finished so that they can better determine the actual site areas affected and preserved.
- The DHCA also needs to see where the 18th-century road trace and 19th-century feeder canal still exist and what can be preserved of those. Any Revolutionary War site is likely to be highly ephemeral, since the British troops were encamped for only a night or two in this area. Even slight remains could be highly significant, however, because they have no archaeologically tested military encampments in this state and they would be associated with the only Revolutionary War battle to take place on Delaware's soil. Prehistoric sites in the woods may be unplowed and have very high integrity, which enhances the significance of such sites.

Street Design and Transportation

- DelDOT will require a TIS for this development.
- DelDOT encourages the developer to look for, and to the extent possible provide for, access to the north.
- A side path for bicycle and pedestrian use should be provided along the site frontage on Route 40.
- A bicycle and pedestrian path should be provided between the proposed residential development and the proposed school.
- DelDOT anticipates requiring that some of the 5 entrances on Route 40 be consolidated.
- It is recommended that the proposed cul-de-sac be eliminated in favor of a loop tying into the proposed collector road at the first internal intersection

Natural and Cultural Resources

- It should also be noted that this parcel is bounded by headwater or near headwater riparian wetlands associated with the Muddy Run Creek which eventually drain to the water quality impaired Christina River subwatershed of the Delaware Bay. In recognition of this concern, the DNREC strongly recommends that the applicant preserve the existing riparian buffer (where it still exists). Otherwise – as

- mentioned previously - a 100-foot buffer width is considered the minimum acceptable distance from all wetlands and water bodies (including ditches).
- Because there is strong evidence that federally regulated wetlands exist on site, a wetland delineation, in accordance with the methodology established by the Corps of Engineers Wetlands Delineation Manual, (Technical Report Y-87-1) should be conducted.
 - Given the environmentally sensitive nature of this watershed, the Department believes that the applicant should devote more effort to the implementation of innovative efforts or BMPs to reduce impervious cover.
 - The DNREC Water Supply Section has determined that the southeastern corner of the proposed development falls within an area of excellent groundwater recharge (see following map and attached map). The proposed school area impacts the excellent recharge area.
 - A review of the DNREC database has revealed that there may be suitable habitat for the federally listed bog turtle (*Glyptemys muhlenbergii*) within the proposed project area. Because the bog turtle is a federally listed species, protected under the Endangered Species Act, its presence can affect the scope of work. To ensure that the project will not impact bog turtles or their habitat, Phase I surveys for bog turtle habitat should be conducted.

The following are a complete list of comments received by State agencies:

Office of State Planning Coordination – Contact: Herb Inden 739-3090

This project is located in Levels 1, 2 and 3 areas of the **2004 State Strategies for Policies and Spending**. For Levels 1 and 2 areas, State policies support development activities that conform to the character of the area and comply with State and local regulations. However, we acknowledge the significant concerns raised by the State Historic Preservation Office (SHPO), and ask that the developer work with SHPO in this regard. A large portion of the back area is in a Level 3 area. The cautionary note about Level 3, is, that these are areas where growth is anticipated by local, county, and state plans in the longer term future, or are areas that may have environmental or other constraints to development. State investments may have other priorities in the near term future and thus may not support development activities currently.

As for other issues, we encourage the use of our **Better Models for Development in Delaware** book for design considerations. We also note that the inclusion of a school site is welcome and understand that the idea of linking this site with the Astro Middle school is being considered which we highly encourage.

Division of Historic and Cultural Affairs (DHCA) – Contact: Alice Guerrant 739-5685

The Division of Historic and Cultural Affairs is not in favor of this development, despite its location in the growth area for New Castle County. The whole parcel of La Grange (N-576) is listed in the National Register of Historic Places. The buildings, agricultural landscape, archaeological sites, and road and canal traces are all important elements of our history. The parcel is adjacent to the Aikens Tavern Historic District (N-3875). The development will have adverse effects on the La Grange property through destruction of some areas and through the change in setting and visual and noise intrusions in other areas. Aiken's Tavern Historic District will also be somewhat affected by visual and noise intrusions but to a lesser degree, since the current development plans buffer the district by siting the school on the far side of the La Grange buildings. The remainder of the development is visually blocked from the district by the wooded area being maintained around the new housing.

The developer has conducted an archaeological survey to determine more specifically where the prehistoric archaeological sites are and if there are concentrations of Revolutionary War material. This is highly commendable. The DHCA needs a copy of the report when it is finished so that they can better determine the actual site areas affected and preserved. They also need to see where the 18th-century road trace and 19th-century feeder canal still exist and what can be preserved of those. Any Revolutionary War site is likely to be highly ephemeral, since the British troops were encamped for only a night or two in this area. Even slight remains could be highly significant, however, because they have no archaeologically tested military encampments in this state and they would be associated with the only Revolutionary War battle to take place on Delaware's soil. Prehistoric sites in the woods may be unplowed and have very high integrity, which enhances the significance of such sites.

The entrance road into the housing development crosses a wetland. This may require an Army Corps of Engineers permit. If it does, the developer will be required to consult with this office about the project's effects on historic properties under Section 106 of the National Historic Preservation Act of 1966 (as amended). There may be additional survey or documentation work required, depending on the area of jurisdiction determined by the Corps. The DHCA will be happy to help the developer understand and meet the requirements of this process.

The buildings will be preserved as part of the school district's separate parcel. They will need to develop a use and maintenance plan, and the DHCA will be happy to give the school district technical advice on that. They can call Joan Larrivee or Robin Bodo at 302-739-5685 for assistance.

Department of Transportation – Contact: Bill Brockenbrough 760-2109

- 1) The proposed development exceeds both DelDOT and New Castle County traffic volume warrants for a traffic impact study (TIS). Accordingly, DelDOT will require a TIS for this development. Because these studies typically take 6 to 12 months from their initial scoping meeting to the completion of DelDOT's review, they recommend that the developer have their traffic engineer contact Mr. Todd Sammons of our Development Coordination Section as soon as possible to obtain a scope for this study. Mr. Sammons may be reached at (302) 760-2134.
- 2) DelDOT, in cooperation with New Castle County and WILMAPCO, has been engaged for some years in an ongoing study of the Route 40 Corridor between US Route 13 and Glasgow. Based on that study, we offer the following comments:
 - a) A frequent problem in the Route 40 Corridor has been a lack of connections between properties fronting on Route 40 and the adjacent properties to the north and south. Route 40 is an arterial highway, which means that its primary function is to serve through traffic. However, without those connections, much of its capacity must be used for local trips because the fronting properties have no other access. DelDOT recognizes that Muddy Run and the developed lots in the Pencader Corporate Center are obstacles, but they encourage the developer to look for, and to the extent possible provide for, access to the north.
 - b) A side path for bicycle and pedestrian use should be provided along the site frontage on Route 40.
 - c) A bicycle and pedestrian path should be provided between the proposed residential development and the proposed school.
 - d) More information regarding the Route 40 Corridor Study, including a typical section for the side path mentioned in item b above, is available from the manager of that study, Mr. Mark Tudor. He may be reached at (302) 760-2275.
- 3) There are five access points proposed along Route 40. Preliminarily, this number seems excessive. DelDOT anticipates requiring that some of these entrances be consolidated.
- 4) Because the proposed school would adjoin the proposed Astro Middle School, it is recommended that the feasibility of a pedestrian connection between the two school sites be investigated.

- 5) It is recommended that the proposed cul-de-sac be eliminated in favor of a loop tying into the proposed collector road at the first internal intersection. DelDOT understands that cul-de-sacs are necessary in some instances to make efficient use of the land where there are environmental constraints. However, they are not conducive to good traffic flow or a sense of community. Where possible they should be eliminated.
- 6) The response to Item 39 on the PLUS form indicates that the developer would be willing to discuss a street connection to the Allan P. Brown, Jr. property (Tax Parcel 11-025.00-010). DelDOT appreciates the developer's willingness in this regard and recommend that the feasibility and utility of such a connection be explored. The plan accompanying the PLUS form shows a connection to lands of the Alfred Congo Estate (Tax Parcel 11-021.00-003). DelDOT supports that connection too.
- 7) The developer's site engineer should contact the Subdivision Manager for New Castle County, Mr. John Schneider, regarding their requirements for access. Mr. Schneider may be reached at (302) 760-2263.

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

Green Infrastructure

Portions or all of the lands associated with this proposal are within the Livable Delaware Green Infrastructure area established under Governor Minner's Executive Order #61 that represents a network of ecologically important natural resource lands of special state conservation interest.

Green infrastructure is defined as Delaware's natural life support system of parks and preserves, woodlands and wildlife areas, wetlands and waterways, productive agricultural and forest land, greenways, cultural, historic and recreational sites and other natural areas all with conservation value. Preserving Delaware's Green Infrastructure network will support and enhance biodiversity and functional ecosystems, protect native plant and animal species, improve air and water quality, prevent flooding, lessen the disruption to natural landscapes, provide opportunities for profitable farming and forestry enterprises, limit invasive species, and foster ecotourism.

Voluntary stewardship by private landowners is essential to green infrastructure conservation in Delaware, since approximately 80 percent of the State's land base is in private hands. It is in that spirit of stewardship that the Department appeals to the landowner and development team to protect sensitive resources through an appropriate site design.

Soils

Based on the New Castle County soil survey, wetland associated (hydric) soils such as Fallsington and Mixed-alluvial were mapped on subject parcel. Fallsington and Mixed-alluvial soils are poorly-drained wetland associated (hydric) soils that have severe limitations for development.

Wetlands

Statewide Wetland Mapping Project (SWMP) maps indicate the presence of palustrine forested riparian wetlands along the Muddy Run Creek; isolated palustrine forested and palustrine emergent wetlands were scattered throughout the western portion of the parcel.

These wetlands provide water quality benefits, attenuate flooding and provide important habitat for plants and wildlife. Vegetated buffers of no less than 100 feet should be employed from the edge of the wetland complex. The developer should note that both DNREC and Army Corps of Engineers discourage allowing lot lines to contain wetlands to minimize potential cumulative impacts resulting from unauthorized and/or illegal activities and disturbances that can be caused by homeowners.

It should also be noted that this parcel is bounded by headwater or near headwater riparian wetlands associated with the Muddy Run Creek which eventually drain to the water quality impaired Christina River subwatershed of the Delaware Bay. Headwater riparian wetlands are important for the protection of water quality and the maintenance/integrity of the ecological functions throughout the length of the stream, including the floodplain system and/or water bodies further downstream. Since such streams are a major avenue for nutrient-laden stormwater and sediment runoff, their protection deserves the highest priority. **In recognition of this concern, the Department strongly recommends that the applicant preserve the existing riparian buffer (where it still exists). Otherwise – as mentioned previously - a 100-foot buffer width is considered the minimum acceptable distance from all wetlands and water bodies (including ditches).** In cases where natural buffer vegetation has been removed or reduced by past development or farming activities, the developer is encouraged to restore/establish to said buffer width or greater with native herbaceous and/or woody vegetation.

Wetland Permitting Information

Impacts to palustrine wetlands are regulated by the Army Corps of Engineers through Section 404 of the Clean Water Act. In addition, individual 404 permits and certain Nationwide Permits from the Army Corps of Engineers also require 401 Water Quality Certification from the DNREC Wetland and Subaqueous Land Section and Coastal Zone Federal Consistency Certification from the DNREC Division of Soil and Water

Conservation, Delaware Coastal Programs Section. Each of these certifications represents a separate permitting process.

Because there is strong evidence that federally regulated wetlands exist on site, a wetland delineation, in accordance with the methodology established by the Corps of Engineers Wetlands Delineation Manual, (Technical Report Y-87-1) should be conducted. Once complete, this delineation should be verified Corps of Engineers through the Jurisdictional Determination process.

To find out more about permitting requirements, the applicant is encouraged to attend a Joint Permit Process Meeting. These meetings are held monthly and are attended by federal and state resource agencies responsible for wetland permitting. Contact Denise Rawding at (302) 739-4691 to schedule a meeting.

Impervious Cover

Given the environmentally sensitive nature of this watershed, the Department believes that the applicant should devote more effort to the implementation of innovative efforts or BMPs to reduce impervious cover. The Department believes that the amount of imperviousness generated by this project (estimated average more than 50%) is excessive and should be reduced. Reducing the amount of impervious surfaces by planting more trees and/or the use of pervious paving surfaces (“pavers”) in lieu of asphalt or concrete, are examples of ways to reduce such impacts. Research has consistently shown that once a watershed exceeds a threshold of 10 percent imperviousness, water and habitat quality irreversibly decline.

TMDLs

Total Maximum Daily Loads (TMDLs) for enterococci have been developed for the Muddy River tributary – a headwater tributary to the Christina River watershed. A TMDL is the maximum level of pollution allowed for a given pollutant below which a “water quality limited water body” can assimilate and still meet water quality standards to the extent necessary to support use goals such as, swimming, fishing, drinking water and shell fish harvesting. Based on the prescribed TMDL for bacteria in the vicinity of this project, post-development discharge of enterococci must be reduced by 80 percent.

Nutrient TMDLs have been prescribed for Delaware’s portion of the Christina River subwatershed capping nutrients, specifically phosphorous at its current loading levels. Given the current land use on the site, any development will lead to increased levels of nutrient loading, thus, we highly recommend that all best management and site-design practices be used which are geared towards reducing land disturbance near waters or wetlands and reducing nutrient inputs to the ground and surfaces waters.

The applicant is encouraged to use BMPs such as buffers, pervious paving materials, and greater upland forest cover preservation efforts to mitigate the likely increases or impacts from bacteria and nutrient-laden surface runoff following the development of this parcel.

Water Resource Protection Areas

The DNREC Water Supply Section has determined that the southeastern corner of the proposed development falls within an area of excellent groundwater recharge (see following map and attached map). The proposed school area impacts the excellent recharge area.

According to the State law that created the Source Water Protection Program, county and municipal governments with more than 2,000 residents will be required to enact ordinances to protect Water Resource Protection Areas. Municipalities with fewer than 2,000 residents are encouraged to enact such ordinances. The following language has been excerpted from the Source Water Protection Guidance Manual for Local Governments, Supplement 1 - Ground-Water Recharge Design Methodology. While the local ordinances may not yet be in place, the developer may find the language useful in modifying the site plan to protect water resources.

Water Resource Protection Areas (WRPAs) are defined as (1) surface water areas such as floodplains, limestone aquifers, and reservoir watersheds, (2) wellhead areas, or (3) excellent recharge areas. The purpose of an impervious cover threshold is to minimize loss of recharge and protect the quality and quantity of ground and surface water supplies in WRPAs.

New development in WRPAs may exceed the 20% impervious cover threshold, but be no more than 50% impervious, provided the applicant submits an environmental assessment report recommending a climatic water budget and facilities to augment recharge. The environmental assessment must document that post-development recharge will be no less than predevelopment recharge when computed on an annual basis.

Commonly, the applicant offsets the loss of recharge due to impervious cover by constructing recharge basins that convey relatively pure rooftop runoff for infiltration to ground water.

The Department recommends the following (ranked in order of preference):

- 1) Preserve WRPAs as open space and parks by acquisition or conservation easement.
- 2) Limit impervious cover of new development to 20% by right within WRPAs.
- 3) Allow impervious cover of new development to exceed 20% within WRPAs (but no more than 50% impervious) provided the applicant develops recharge facilities that directly infiltrate rooftop runoff.

- 4) Allow impervious cover of new development to exceed 20% within WRPA's (but no more than 50% impervious) provided the applicant develops recharge facilities that infiltrate stormwater runoff from forested and/or grassed surfaces with pretreatment.

For more information, refer to:

Source Water Protection Guidance Manual for the Local Governments of Delaware at

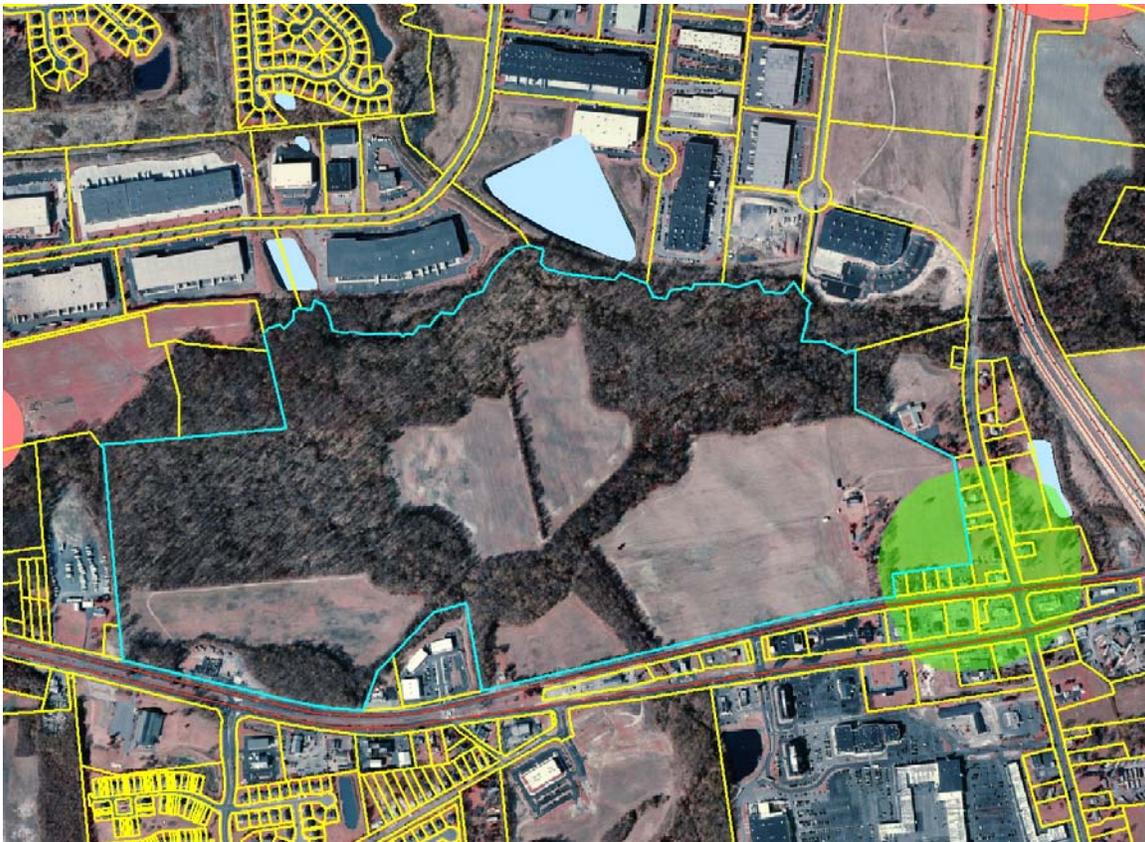
<http://www.wr.udel.edu/swaphome/phase2/SWPguidancemanual.html>

and

Ground-Water Recharge Design Methodology at

http://www.wr.udel.edu/swaphome/phase2/Publications/swapp_manual_final/swapp_guidance_manual_supp_1_2005_05_02.pdf

La Grange (PLUS 2005-06-15) with excellent recharge in green and affected parcels outlined in light blue.



Sediment and Erosion Control/Stormwater Management

A detailed sediment and stormwater plan will be required prior to any land disturbing activity taking place on the site. The plan review and approval as well as construction inspection for the commercial and residential portions of the site will be coordinated through New Castle County Dept. of Land Use. Contact New Castle County Dept. of Land Use at (302) 395-5470 for details regarding submittal requirements and fees. The school site, if it will be a public school on land owned by the State of Delaware, will be reviewed by the DNREC Sediment and Stormwater Program. Contact Elaine Webb with DNREC Sediment and Stormwater Program at (302) 739-9921.

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

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

Each stormwater management facility should have an adequate outlet for release of stormwater. Any drainage conveyed onto this site from neighboring properties must be adequately conveyed through the site to the discharge point without interruption. The stream crossings downstream of the site at Route 896BR and Route 896 should be investigated for adequacy in conveying the flows from the developed site.

The proposed locations for stormwater facilities have not been provided on the plan; however, please be aware that given some of the soil types found on the site, high water table may be encountered as well as soils that are not conducive to infiltration.

Forests

According to the application there are 119.7 acres of forest on this property and 25.4 acres is going to be removed. In reality, the amount of forest that will be removed is probably higher once this site is built out and homes, driveways, sidewalks, roadways, and stormwater management ponds are constructed. Future landowner activities (construction of playgrounds, sheds, swimming pools, etc.) also result in further clearing. Forest fragmentation caused by the current site plan greatly diminishes the value of this forest to a host of plant and animal species whether they are rare or not. Larger, connected areas of forest are more beneficial to wildlife than small, fragmented areas like those currently in the site plan. Forest fragmentation separates wildlife populations, increases road mortality, and increases "edge effects" that leave many forest dwelling species vulnerable to predation and allows the infiltration of invasive species. In addition, when forested areas are cleared, displaced wildlife must disperse into surrounding areas which often results in human/animal conflicts, including interactions on the roadways.

Rare Species

A review of the DNREC database has revealed that there may be suitable habitat for the federally listed bog turtle (*Glyptemys muhlenbergii*) within the proposed project area. Because the bog turtle is a federally listed species, protected under the Endangered Species Act, its presence can affect the scope of work. To ensure that the project will not impact bog turtles or their habitat, Phase I surveys for bog turtle habitat should be conducted. If potential bog turtle habitat is found during Phase I surveys, you are required to either:

- 1) Completely avoid all direct and indirect project impacts to the wetland, in consultation with the U.S. Fish and Wildlife Service and Delaware Division of Fish and Wildlife;
- OR
- 2) Have surveys conducted to determine if bog turtles are present. In accordance with Delaware's bog turtle site survey procedures, surveys must be conducted by a State-approved bog turtle surveyor between April 15 and June 15.

Phase I surveys can be conducted any time of year when snow cover is not present. If potential habitat is found, however, please note there is a time of year restriction during which Phase II surveys for bog turtles must be conducted. A Delaware approved bog turtle surveyor must be used to conduct the surveys. Please contact Holly Niederriter (302-653-2880) to obtain a list of contacts to conduct Phase I and, if necessary, Phase II surveys.

Recreation

It is recommended that sidewalks be built fronting at least one side of residential streets and stub streets. A complete system of sidewalks will: 1) fulfill the recreation need for walking and biking facilities, 2) provide opportunities for neighbors to interact in the community, and 3) facilitate safe, convenient off-road access to neighboring communities, parks, public mass transit stops, schools, stores, work, etc. It is also recommended that a pedestrian crossing over Muddy Run be constructed to connect the proposed community to the Astro Middle School location.

New Castle County is working to link community open spaces for greenway conservation corridors. Consideration should be given to protecting the community open space along Muddy Run with a conservation easement or donation of land. For more information on easements, please contact the Office of Nature Preserves at 739-9235. For information on Greenways please contact Susan Moerschel at 739-9235.

Underground Storage Tanks

There are two active and five inactive LUST site(s) located near the proposed project:

896 Deli, Facility # 3-000283, Project # N8505009
Amoco Glasgow Facility # 3-000374, Project # N0301003
Kohl's Glasgow Site, Facility # 3-002195, Project # N0207058
Glasgow Citgo, Facility # 3-000753, Project # N0312100
Glass Kitchen, Facility # 3-000588, Project # N9202031
Cumberland Farms, Facility # 3-000300, Project # N0405058
Cumberland Farms, Facility # 3-000238, Project # N0411119

No environmental impact is expected from the above inactive/active LUST site(s). However, should any underground storage tank or petroleum contaminated soil be discovered during construction, the Tank Management Branch must be notified as soon as possible. It is not anticipated that any construction specifications would be need to be changed due to petroleum contamination. However, should any unanticipated contamination be encountered and PVC pipe is being utilized, it will need to be changed to ductile steel in the contaminated areas.

Solid Waste

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

Air Quality

Once complete, vehicle emissions associated with this project are estimated to be 17.8 tons (35,609.6 pounds) per year of VOC (volatile organic compounds), 14.7 tons (29,482.3 pounds) per year of NOx (nitrogen oxides), 10.9 tons (21,752.6 pounds) per year of SO2 (sulfur dioxide), 1.0 ton (1,936.4 pounds) per year of fine particulates and 1,489.3 tons (2,978,695.9 pounds) per year of CO2 (carbon dioxide).

Emissions from area sources associated with this project are estimated to be 7.2 tons (14,363.0 pounds) per year of VOC (volatile organic compounds), 0.8 ton (1,580.4 pounds) per year of NOx (nitrogen oxides), 0.7 ton (1,311.5 pounds) per year of SO2 (sulfur dioxide), 0.8 ton (1,692.4 pounds) per year of fine particulates and 29.1 tons (58,224.2 pounds) per year of CO2 (carbon dioxide).

Emissions from electrical power generation associated with this project are estimated to be 2.8 tons (5,692.4 pounds) per year of NO_x (nitrogen oxides), 9.9 tons (19,799.8 pounds) per year of SO₂ (sulfur dioxide) and 1,460.2 tons (2,920,471.7 pounds) per year of CO₂ (carbon dioxide).

	VOC	NO _x	SO ₂	PM _{2.5}	CO ₂
Mobile	17.8	14.7	10.9	1.0	1489.3
Residential	7.2	0.8	0.7	0.8	29.1
Electrical Power		2.8	9.9		1460.2
TOTAL	25.0	18.3	21.5	1.8	2978.6

For this project the electrical usage via electric power plant generation alone totaled to produce an additional 2.8 tons of nitrogen oxides per year and 9.9 tons of sulfur dioxide per year.

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

“ENERGY STAR qualified homes are independently verified to be at least 30% more energy efficient than homes built to the 1993 national Model Energy Code or 15% more efficient than state energy code, whichever is more rigorous. These savings are based on heating, cooling, and hot water energy use and are typically achieved through a combination of:

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

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

State Fire Marshal's Office – Contact: John Rossiter 323-5365

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

- a. **Fire Protection Water Requirements:**
 - Water distribution system capable of delivering at least 1500 gpm for 2-hour duration, at 20-psi residual pressure is required. Fire hydrants with 800 feet spacing on centers. (Mercantile)
 - Water distribution system capable of delivering at least 1000 gpm for 1-hour duration, at 20-psi residual pressure is required. Fire hydrants with 800 feet spacing on centers. (Assembly and Townhouses)
 - Where a water distribution system is proposed for single family dwellings it shall be capable of delivering at least 500 gpm for 1-hour duration, at 20-psi residual pressure. Fire hydrants with 1000 feet spacing on centers are required. (One & Two- Family Dwelling)
 - Where a water distribution system is proposed for the site, the infrastructure for fire protection water shall be provided, including the size of water mains for fire hydrants and sprinkler systems.

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

- c. **Accessibility**
 - All premises which the fire department may be called upon to protect in case of fire, and which are not readily accessible from public roads, shall be provided with suitable gates and access roads, and fire lanes so that all buildings on the premises are accessible to fire apparatus. This means that the access road to the subdivision from Route 40 and Route 896 must be constructed so fire department apparatus may negotiate it.
 - Fire department access shall be provided in such a manner so that fire apparatus will be able to locate within 100 ft. of the front door.

- Any dead end road more than 300 feet in length shall be provided with a turn-around or cul-de-sac arranged such that fire apparatus will be able to turn around by making not more than one backing maneuver. The minimum paved radius of the cul-de-sac shall be 38 feet. The dimensions of the cul-de-sac or turn-around shall be shown on the final plans. Also, please be advised that parking is prohibited in the cul-de-sac or turn around.
 - The use of speed bumps or other methods of traffic speed reduction must be in accordance with Department of Transportation requirements.
 - The local Fire Chief, prior to any submission to our Agency, shall approve in writing the use of gates that limit fire department access into and out of the development or property.
- d. **Gas Piping and System Information:**
- Provide type of fuel proposed, and show locations of bulk containers on plan.
- e. **Required Notes:**
- Provide a note on the final plans submitted for review to read “ All fire lanes, fire hydrants, and fire department connections shall be marked in accordance with the Delaware State 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)
 - Townhouse 2-hr separation wall details shall be shown on site plans
 - Note indicating if building is to be sprinklered
 - Name of Water Provider
 - Letter from Water Provider approving the system layout
 - Provide Lock Box Note (as detailed in DSFPR) if Building is to be sprinklered
 - Provide Road Names, even for County Roads

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

Department of Agriculture - Contact: Milton Melendez 698-4500

The Delaware Department of Agriculture and the Delaware Forest Service have no objections to the LaGrange application. The site is located on a designated controlled

development area which is supportive of the *Strategies for State Policies and Spending* encouraging responsible development in areas within a Growth Level 3 Zone. The Delaware Department of Agriculture and the Delaware Forest Service supports both an environmentally and culturally sensitive design; one that will preserve the unique historical and environmental features of this site.

Improved Landscape Design

The Delaware Department of Agriculture Forest Service encourages the developer to use the “Right Tree for the Right Place” for any design considerations. This concept allows for the proper placement of trees to increase property values in upwards of 25% of appraised value and will reduce heating and cooling costs on average by 20 to 35 dollars per month. In addition, a landscape design that encompasses this approach will avoid future maintenance cost to the property owner and ensure a lasting forest resource.

Native Landscapes

The Delaware Department of Agriculture and the Delaware Forest Service encourages the developer to use native trees and shrubs to buffer the property from the adjacent land-use activities near this site. A properly designed forested buffer can create wildlife habitat corridors and improve air quality to the area by removing six to eight tons of carbon dioxide annually and will clean our rivers and creeks of storm-water run-off pollutants. To learn more about acceptable native trees and how to avoid plants considered invasive to our local landscapes, please contact the Delaware Department of Agriculture Plant Industry Section at (302) 698-4500.

New Castle County Unified Development Code Requirements

The Delaware Forest Service encourages the developer to coordinate its activities with the New Castle County Office of Land Planning in the development of this parcel. Presently, the Forest Service anticipates the county identifying the following forestry requirements; forest mitigation of trees lost during construction, the development of a landscape plan and a maintenance plan for public open space areas. The Delaware Forest Service may assist with the development of all of these aspects, please contact our office with questions regarding these potential requirements.

Public Service Commission - Contact: Andrea Maucher 739-4247

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

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

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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". The signature is written in black ink and is positioned above the printed name and title.

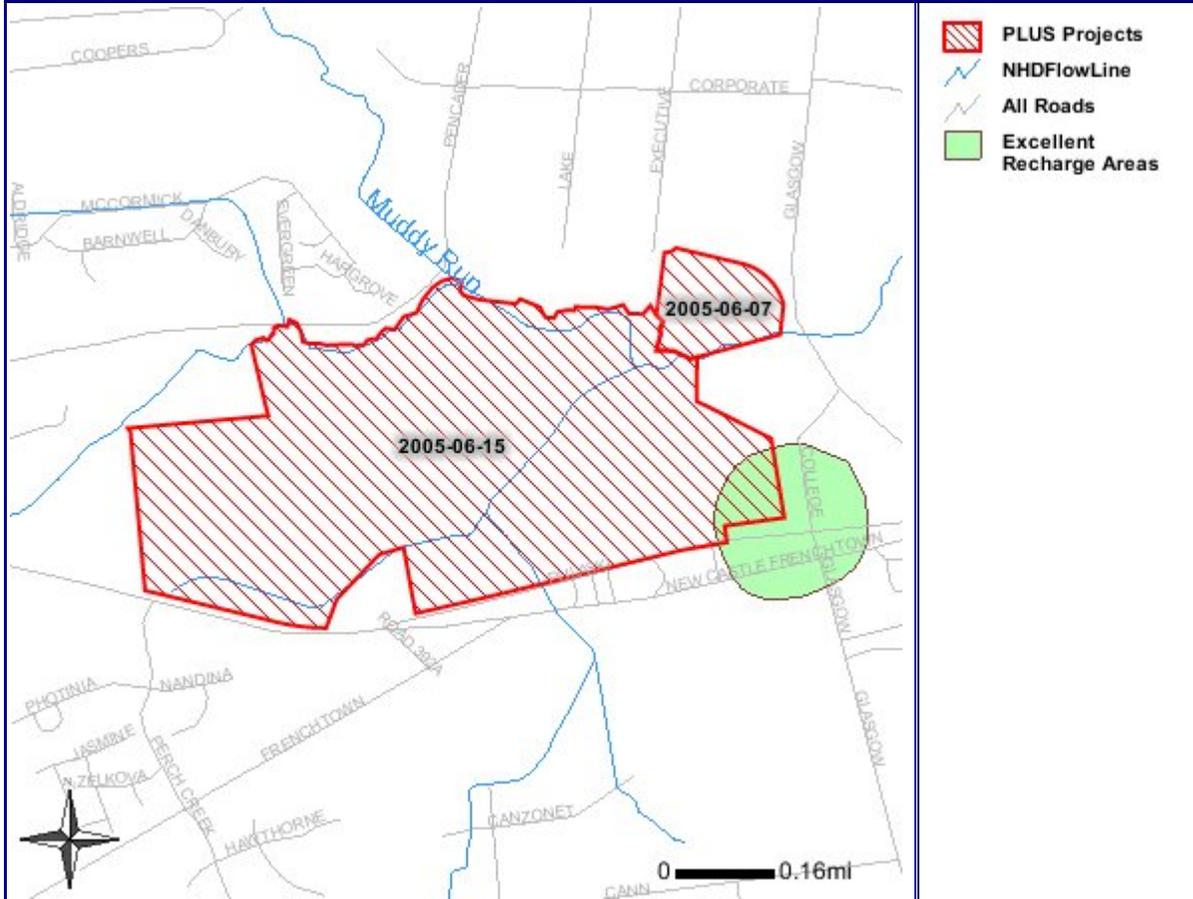
Constance C. Holland, AICP
Director

CC: New Castle County
Pam Scott



LaGrange

2005-06-15



This map was produced by the Delaware Department of Natural Resources and Environmental Control.

