STATE OF DELAWARE
EXECUTIVE DEPARTMENT
OFFICE OF
STATE PLANNING COORDINATION

August 18, 2005

Jeff Clark
Land Tech Land Planning
118 Atlantic Avenue, Ste. 101
Ocean View, DE 19970

RE: PLUS review – PLUS 2005-07-07; Massey's Landing

Dear Mr. Clark:

Thank you for meeting with State agency planners on August 3, 2005 to discuss the proposed plans for the Massey's Landing project to be located on the north and south side of Delaware Route 23.

According to the information received, you are seeking a rezoning from AR to AR-RPC for 51 single family detached houses, 2 semi-detached dwellings and 72 townhouses.

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

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

- According to the *Strategies for State Policies and Spending*, the site is located within Investment Level 2, 3 and 4 areas. The presence of Investment Levels 3 and 4 is indicative of environmental sensitivity on the site that should be protected in the site design.

Street Design and Transportation

- Right-of-way dedication will be required along the frontage of Long Neck Road.

- A sidewalk or paved multi-modal path will be required along the frontage of the site on Long Neck Road.

- The traffic impact study in progress may identify other off-site improvements needed to support the proposed development.

- Stormwater management ponds must be located at least 20 feet from the ultimate right-of-way; however DelDOT would prefer that ponds be placed further from the road.

- The cul-de-sac at the east end of the site's road frontage should be eliminated by connecting it back to the subdivision street to the west of it.

- DelDOT recommends using miniature roundabouts at the site entrances as an alternative to standard designs.

Natural and Cultural Resources

- The site is located within the 100-year floodplain, is flood prone, and in an area which is cut off by road flooding during coastal storms. There are evacuation issues that could be exacerbated by any increase in density.

- The PLUS application submitted states that 15 acres of the existing 32 acres of forest on the site will be removed. Preserving and enhancing forested areas on the site is encouraged.

- A vegetated buffer of at least 100 feet from the edge of the wetland should be included.

- The western side of the northern parcel should be landscaped to block the view from the adjacent 19th-century house.

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

Office of State Planning Coordination – Contact: Ann Marie Townshend 739-3090

This site is located within Investment Level 2, 3 and 4 areas according to the *Strategies for State Policies and Spending*. Investment Level 2 is located on the portion of the site south of Long Neck Road, and Investment 4 is located on the northern edge of the site along the wetland. The remainder of the site is Investment Level 3. In this case, where Investment Level 4 is located in the Environmentally Sensitive Developing Area, it is indicative of environmental sensitivity on the site. Investment Level 3 on this site also indicates that, while development may be appropriate, environmental constraints exist that should be protected in the site's design. Investment Level 2 reflects areas where the State generally supports growth.

The DNREC and Department of Agriculture comments detail the environmental constraints on the site and present suggestions for achieving a more sensitive design. The Office of State Planning Coordination encourages the developer to preserve existing trees to the extent practicable and to consider relocation or removal of the two oddly-shaped isolated lots located in the "fingers" on the northern portion of the property.

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

This parcel has a known prehistoric-period archaeological site on it (S-627). There are other areas of high potential for prehistoric-period archaeological sites as well. This point has a high potential for early historic-period archaeological sites as well. Beers Atlas of 1868 shows the S. Boon House at the end of the point, in the approximate location of the current residence. Beers also shows the P. Goslee House to the west and the W.J.R. Burton House to the southwest, which are probably outside of the parcel. The USGS 1918 Rehoboth quadrangle map shows two buildings at the end of the road on the north side, possibly the Boon House, and buildings to the west and south, possibly the Goslee and Burton houses. There may be archaeological resources associated with the Boon House still remaining. There is a 19th-century house (S-3047) just outside of the parcel on the north side of the road, possibly the Goslee House or a later replacement.

The DHCA asks that the western side of the northern parcel be landscaped to block the view of the development from this house. They would also like the opportunity to check the parcel for other archaeological sites to learn something about their location and character prior to any ground-disturbing activities.

The developer mentioned the presence of dredge spoil from Massey's Landing channel deposited from 1987-2002, and that most of the spoil would be removed from the site. Dredging projects require an Army Corps of Engineers permit, which involves consultation with this office on historic properties. So this disposal site would have been part of that permit and consultation. DHCA is unsure if the removal of spoil from an

approved federal disposal site to be disposed of elsewhere would require a review by their office under Section 106 of the National Historic Preservation Act of 1966 (as amended). The developer promised to look into this. The contact person for Corps projects in this office is now Joan Larrivee (302-739-5686), who would be happy to discuss this issue with the developer

Department of Transportation – Contact: Bill Brockenbrough 760-2109

1) Long Neck Road is classified as a local road. Local roads in Delaware typically have right-of-way widths ranging from 33 to 50 feet. DelDOT's policy is to require dedication of sufficient land to provide a minimum right-of-way width of 30 feet from the centerline on local roads. Therefore DelDOT will require right-of-way dedication along the frontage to provide any additional width needed from this project.

2) DelDOT will also require that a sidewalk or a paved multi-modal path be provided across the frontage of the site. The developer's site engineer should contact the project manager for Sussex County, Mr. John Fiori, regarding their specific requirements. Mr. Fiori may be reached at (302) 760-2260.

3) Presently there is a traffic impact study (TIS) in progress for this development. This study may identify other off-site improvements, in addition to the sidewalk or path mentioned above, that would be needed to support the proposed development.

4) The plan accompanying the PLUS form shows two storm water management ponds that are quite close to Long Neck Road. Such ponds would be acceptable if the developer provides a 20-foot minimum buffer between the ultimate right-of-way and the top of slopes of the ponds and the runoff from the site are managed such that the rate and volume of the post-development runoff would not exceed the rate and volume of the pre-development runoff. However, DelDOT would prefer that the ponds be placed farther from the road.

5) It is recommended that the proposed cul-de-sac at the east end of the site's road frontage be eliminated by connecting it back to the subdivision street to the west of it. 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) DelDOT recommends that the use of miniature roundabouts be considered at the site entrances as an alternative to standard designs.

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

Soils

According to the soil survey update, Evesboro, Runclint, Klej, Broadkill Urban-Land complex, and Broadkill mucky silt loam were mapped on subject parcel. Evesboro and Runclint are well to excessively well-drained soils that have limitations associated with rapid permeability. Klej is a somewhat poorly drained wetland associated (hydric) transitional soil that is likely to contain both hydric (wetland associated) and non-hydric (upland) soil components and, therefore, likely to have moderate to severe limitations for development. Broadkill Urban-Land complex and Broadkill mucky silt loam are very poorly-drained wetland associated hydric soils that have the highest severity level for development.

Wetlands

Statewide Wetland Mapping Project (SWMP) maps indicate the presence of estuarine and palustrine wetlands on this parcel.

The developer and County should note that impacts to these wetlands are regulated by both the DNREC Wetlands and Subaqueous Lands Section and the Army Corps of Engineers through the Delaware Subaqueous Lands Act and Section 404 of the Federal 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.

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.

Particularly because of the environmental sensitivity of this area, lots should be removed in their entirety from both the wetland and the forested areas. Vegetated buffers comprised of native trees, shrubs or no-mow grasses, of no less than 100 feet should be employed from the edge of the wetland complex; however wider buffers would be preferred. 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.

Impervious Cover

Since residential development significantly increases the amount of impervious cover - leading to large volumes of contaminant-laden runoff which ultimately drain into streams or waterways - the applicant is strongly urged to pursue both natural and constructed Best Management Practices (BMPs) to reduce such impacts. 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.

ERES Waters

This project is located adjacent to receiving waters of Inland Bays designated as waters having Exceptional Recreational or Ecological Significance (ERES). ERES waters are recognized as special assets of the State, and shall be protected and/ or restored, to the maximum extent practicable, to their natural condition. Provisions in Section 11.5 of Delaware's "Surface Water Quality Standards" (as amended August 11, 1999), specify that all designated ERES waters and receiving tributaries develop a "pollution control strategy" to reduce non-point sources of nutrient runoff through implementation of Best Management Practices (BMPs). Best Management Practices as defined in subsection 11.5(e) of this section, expressly authorizes the Department to provide standards for controlling the addition of pollutants and reducing them to the greatest degree practicable, or where attainable, a standard requiring no discharge of pollutants.

TMDLs

Total Maximum Daily Loads (TMDLs) for nitrogen and phosphorus have been promulgated through regulation for the Inland Bays 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. Although TMDLs are required by federal law, states are charged with developing and implementing standards to support these desired use goals. This project is located in the low reduction area requiring a 40 percent reduction in both nitrogen and phosphorus.

Currently, it is requested that in order to verify your project's compliance with specified TMDL loading rates, a full nutrient budget be calculated. Please contact Lyle Jones of Watershed Section at 739-4590 for the acceptable protocol.

The proposed Pollution Control Strategy would also require the completion of a nutrient budget for the proposed project in order to estimate how nutrient loads will change with the development of the parcel. The applicant should be made aware that the inclusion of stormwater management, wastewater treatment, buffers and wetlands as metrics for open

space calculations, may understate the actual nutrient runoff as calculated from the nutrient budget.

Water Supply

The project information sheets state water will be provided to the project by Long Neck Water Company via a central water system. DNREC records indicate that the project is located within the public water service area granted to Long Neck Water Company under Certificate of Public Convenience and Necessity 94-CPCN-29.

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.

Potential Contamination Sources do exist in the area, and any well permit applications will undergo a detailed review that may increase turnaround time and may require site specific conditions/recommendations. In this case, there is a Massey Landing Boat Ramp within 1,000 feet from the proposed project.

Should you have any questions concerning these comments, please contact Rick Rios at 302-739-9944.

Water Access

The applicant should provide a clear indication of what water access structures may already exist at the site and what structures, if any, they intend to provide for the finished development.

Any docks, piers, ramps or other water access structures, or any dredging associated with this project will require a permit from the Wetlands and Subaqueous Lands Section.

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 will be coordinated through **Sussex Conservation District**. Contact Jessica Watson at (302) 856-7219 for details regarding submittal requirements and fees.

As of April 11, 2005, stormwater best management practices must also consider water quality as well as quantity in impaired water bodies.

Drainage

The Drainage Section requests all existing ditches on the property be checked for function and cleaned if needed prior to the construction of homes. Wetland permits may be required before cleaning ditches.

The Drainage Section requests that all precautions be taken to ensure the project does not hinder any off site drainage upstream of the project or create any off site drainage problems downstream by the release of on site storm water.

The Drainage Section strongly recommends any drainage conveyance between two parcels within a subdivision be dedicated as a drainage easement and such easement be designated as passive open space, not owned by individual landowners. The easement should be of sufficient width to allow for future drainage maintenance as described below.

- Along an open ditch or swale, the Drainage Section recommends a maintenance equipment zone of 25 feet measured from the top of bank on the maintenance side, and a 10-foot setback zone measured from top of bank on the non-maintenance side. These zones should be maintained as buffers to aid in the reduction of sediment and nutrients entering into the drainage conveyance. Grasses, forbs and sedges planted within these zones should be native species, selected for their height, ease of maintenance, erosion control, and nutrient uptake capabilities. Trees and shrubs planted within the maintenance zone should be native species spaced to allow for drainage maintenance at maturity. Trees should not be planted within 5 feet of the top of ditch to avoid future blockages from roots.

- Along a stormwater pipe, the Drainage Section recommends a maintenance equipment zone of 15 feet on each side of the pipe as measured from the pipe centerline. This zone should be maintained as buffers to aid in the reduction of sediment and nutrients entering into the drainage conveyance. Grasses, forbs and sedges planted within these zones should be native species selected for their height, ease of maintenance, erosion control, and nutrient uptake capabilities. Trees and shrubs planted within the maintenance zone should be spaced to allow for drainage maintenance at maturity.

The Drainage Section recommends any drainage/utility easement owned by a individual landowner should not have structures, decks, buildings, sheds, kennels, fences or trees within the drainage easement to allow for future drainage maintenance.

Floodplains

This site is located in the 100-year floodplain, is flood prone, and in an area which is cut off by road flooding during coastal storms. There are evacuation issues in this area. Any type of rezoning which would lead to higher density will exacerbate these problems. Any construction activities on this site must be designed to withstand predicted 100-year flood elevations and wave action. Filling of land is discouraged and if necessary, should be done in a manner that maintains rainwater drainage and does not worsen flooding problems to adjacent areas.

Dredge Materials

DNREC previously constructed a 3.0 acre confined disposal facility on the eastern side of the project site adjacent to Massey's Ditch. The area was filled with material dredged from the Massey's Ditch channel and Indian River channel during four dredging episodes from 1987 to 2002. The material consisted of 95 percent sand.

Forests

According to 2002 aerial photos there is a forested area within this parcel. Also, PLUS packet materials indicate that 32 acres of forest are on site and 15 acres of this forested area will be removed. This forest provides important habitat, wildlife connectors, and air quality and water quality benefits. This forest tract is extremely beneficial to the region. Fragmentation of this forest can have irreversible effects to the regional ecosystem.

Lot lines should be redesigned to avoid all impacts to the forested area. This developed site will produce dramatically more surface runoff due to impervious surfaces and soil compaction. Curbs, gutters, and sewers used to convey water away will only flush accumulating stormwater runoff downstream further contributing to increased flooding and destabilization of downstream channel systems. A vegetated buffer of at least 100 feet from the wetland complex is highly recommended; however a wider buffer of 300 feet would provide additional habitat and water quality benefit. Therefore, the developer is strongly encouraged to preserve, and where possible, enhance forested resources on site. This includes removing lots and infrastructure (such as storm water management ponds) from forested areas to the extent possible and minimizing any clearing activities and revegetating portions of the site, especially around the wetland complex.

The forested areas on-site should be viewed as a community asset and managed appropriately.

Where possible, the developer should seriously consider habitat improvements such as revegetating portions of the site. Forested areas on-site set aside for conservation purposes should be placed into a permanent conservation easement or other binding protection. These areas should be clearly marked and delineated so that residents

understand their importance and so that homeowner activities do not infringe upon these areas.

Open Space

Efforts should be made to implement a buffer zone, comprised of coastal grasses, like coastal panic grass, and native shrubs. The developer should consider increasing the amount of open space along the waterfront, especially along the eastern portion of the property. These areas should be clearly marked to avoid infringement by homeowners. Any lands set aside for conservation purposes should be placed into a permanent conservation easement or other binding protection mechanism. These areas should be clearly marked and delineated so that residents understand their importance and so that homeowner activities do not infringe upon these areas.

Rare Species and Wetland Buffers

DNREC has not surveyed this project site, therefore, it is unknown if there are state-rare or federally listed plants, animals or natural communities on the land-based portion of this project site. Their program zoologist requests the opportunity to survey the forested and wetland resources which could potentially be impacted by the project. His observations would allow them to make more informed comments on this project and would allow the applicant the opportunity to reduce potential impacts to rare species. Please contact Kitt Heckscher at (302) 653-2880 to set up a site visit.

There are records of Apeltes quadracus (fourspine stickleback) within Whites Creek and Roman T. Pond. There is also an active heronry in the Wildlife Area just to the north and the wetlands at this project site likely serve as foraging habitat for these species, which are protected by the federal Migratory Bird Treaty Act. Because of the presence of these species, this project lies within a State Natural Heritage Site. This is one of the criteria used to determine the presence of Critical Resource Waters. The final decision regarding Critical Resource Waters – if this is an issue – will be made by the U.S. Army Corps of Engineers (ACOE). The information above will aid the ACOE in their determination.

To protect species dependent on wetlands and to protect water quality, structures should not be permitted to be built on wetlands. There should also be a minimum of 100 feet buffers between the edge of all wetlands (not the proposed 50 feet) and lot lines and infrastructure. In addition, this buffer should be placed in permanent conservation to prevent future clearing for water access. Adequate buffers are especially important as run-off from this development will ultimately end up in the Inland Bays water system which already has water quality issues.

Massey's Landing Public Boat Access

This project is adjacent to the Masseys Landing Boating Access Area at the end of Long Neck and the state is concerned about potential user conflicts between public ramp users

and new residents. These conflicts could generate complaints regarding after hour use, trash, noise, and extra boat traffic. There is also an area just to the north of this property that may become a public boater pull-off site. This information should be disclosed to potential buyers so that they are aware of the use by the public of the adjacent boat ramp.

Mosquito Control

Development projects that result in increased housing densities, along with concomitant residents or visitors, within 2 miles of large expanses of salt marshes or brackish wetlands, can often lead to increased demands by the public (and their elected officials) for mosquito control services, going beyond what DNREC's Mosquito Control Section currently has the budget or resources to provide. Adverse impacts upon the State's allocation of public funds for mosquito control services must be realistically recognized as the frequent consequence of approving these types of development projects; and State and local governments should then be prepared to deal with the increased budget demands for mosquito control services. Additionally, even though the EPA has scientifically determined that EPA-registered mosquito control insecticides can be applied "without posing any unreasonable risks to human health, wildlife or the environment" (when used in accordance with all product label instructions), avoiding or reducing the use of such pesticides should be employed whenever possible. Limiting development that is too close to wetlands will aide in achieving a reduction in pesticide use.

Nuisance Waterfowl

Ponds that remain in the site plan may attract waterfowl like resident Canada geese and mute swans. Although small numbers of these species are enjoyed by residents, geese and swans can quickly multiply and overwhelm the area. High concentrations of waterfowl in ponds create water-quality problems, leave droppings on lawn and paved areas and can become aggressive during the nesting season. Short manicured lawns around ponds provide an attractive habitat for these species. We recommend native plantings of tall grasses, wildflowers, shrubs, and trees at the edge and within a buffer area (50 feet) around the perimeter. Waterfowl do not feel safe when they can not see the surrounding area for possible predators. These plantings should be completed as soon as possible as it is easier to deter geese when there are only a few than it is to remove them once they become plentiful. The Division of Fish and Wildlife does not provide goose control services, and if problems arise, residents or the home-owners association will have to accept the burden of dealing with these species (e.g., permit applications, costs, securing services of certified wildlife professionals). Solutions can be costly and labor intensive; however, with proper landscaping, monitoring, and other techniques, geese problems can be minimized.

Recreation

It is recommended that sidewalks be built fronting at least one side of residential streets and entrances. 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.

DNREC appreciates the road buffer along the eastern edge for all to enjoy the view. They recommend a walking path along the perimeter be incorporated into the plan. For trail design/construction specifications, contact Susan Moerschel at (302) 739-9235.

It is also recommended that the two isolated units on the northwest portion of the property be relocated or removed. As mentioned in the meeting, these two locations have a terrific view of the area and could be a spectacular setting for a park for all to enjoy.

Because of the proximity to a publicly accessible boat launch, no additional docks or boat launches should be considered in this design and we recommend that the deed restrictions reflect this.

The Division of Parks and Recreation conducted a telephone survey of Delaware residents to gather information on outdoor recreation patterns and preferences as well as other information on their landscape perception. These findings are the foundation of the 2003-2008 Statewide Comprehensive Outdoor Recreation Plan (SCORP) providing guidance for investments in needed outdoor recreation facilities. The high facility needs in Eastern Sussex County are Walking and Jogging, Bike Paths and Fishing Areas. The moderate facility needs are Picnic Areas, Skate Facilities, Canoe/Kayak Access, Hiking Trails, Swimming Pools, Playgrounds, Soccer Fields, Tennis Courts, Power Boat Access and Baseball/Softball Fields. Consideration should be given to incorporate some of these recreation opportunities into the project. For additional information about the outdoor recreation priorities, contact Bob Ehemann at 739-9235.

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.

Underground Storage Tanks

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

DNREC - Massey's Landing Facility # 5-000632, Project # S9205152
Hardscrapple Store, Facility # 5-000128, Project # S9205145

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.

Air Quality

Once complete, vehicle emissions associated with this project are estimated to be 9.6 tons (19,186.2 pounds) per year of VOC (volatile organic compounds), 7.9 tons (15,884.9 pounds) per year of NOx (nitrogen oxides), 5.9 tons (11,720.2 pounds) per year of SO2 (sulfur dioxide), 0.5 ton (1,043.3 pounds) per year of fine particulates and 802.5 tons (1,604,900.8 pounds) per year of CO2 (carbon dioxide).

Emissions from area sources associated with this project are estimated to be 3.9 tons (7,738.7 pounds) per year of VOC (volatile organic compounds), 0.4 ton (851.5 pounds) per year of NOx (nitrogen oxides), 0.4 ton (706.6 pounds) per year of SO2 (sulfur dioxide), 0.5 ton (911.9 pounds) per year of fine particulates and 15.7 tons (31,370.8 pounds) per year of CO2 (carbon dioxide).

Emissions from electrical power generation associated with this project are estimated to be 1.5 tons (3,067.1 pounds) per year of NOx (nitrogen oxides), 5.3 tons (10,668.0 pounds) per year of SO2 (sulfur dioxide) and 786.8 tons (1,573,530.0 pounds) per year of CO2 (carbon dioxide).

	VOC	NOx	SO_2	$PM_{2.5}$	CO_2
Mobile	9.6	7.9	5.9	0.5	802.5
Residential	3.9	0.4	0.4	0.5	15.7
Electrical Power		1.5	5.3		786.8
TOTAL	13.5	9.8	11.6	1.0	1605.0

For this project the electrical usage via electric power plant generation alone totaled to produce an additional 1.5 tons of nitrogen oxides per year and 5.3 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. They highly recommend this project development and other residential proposals increase the energy efficiency of their homes.

They also recommend that the home builders offer geothermal and photo voltaic energy options. Applicable vehicles should use retrofitted diesel engines during construction. The development should provide tie-ins to the nearest bike paths and links to mass transport system, and fund a lawnmower exchange program for their new occupants.

State Fire Marshal's Office – Contact: Duane Fox 856-5298

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 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 of 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 Longneck Road 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 Massey's Landing application. The site is located on a designated development area which is supportive of the *Strategies for State Policies and Spending* encouraging responsible development in areas within an Investment Level 3 area. The Delaware Department of Agriculture and the Delaware Forest Service however recommend an environmentally 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.

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.

Susssex County – Contact: Richard Kautz 855-7878

This project is situated in an Environmentally Sensitive Development Area. The required report should include how the PLUS comments have been addressed and how the plan has been revised accordingly.
The Sussex County Engineer Comments:

The proposed project is within the Long Neck Sanitary Sewer District and connection to the sewer system is mandatory. The project is within planning study and system design assumptions for sewer service. The proposed project can receive service in accordance with the attached letter from Sussex County to Mr. Jeffery Clark, Land Tech, dated May 21, 2005. The proposed project adds part of a parcel to the project that was not considered or addressed in the attached letter. Sussex County will consider approving capacity for the additional units after we review the capacity evaluation report to be undertaken by the developer and provided to the Sussex County Engineering Department. Approval will be based on a density not to exceed 4.0 dwelling units per acre after deducting State of Delaware Regulated wetlands. Dorothy, I will fax a copy of the letter this afternoon.

Onetime System Connection Charges will apply. Please contact Mrs. Christine Fletcher at 302 854-5086 for additional information on charges. A disconnection permit including Sussex County onsite inspection and payment of System Connection Charges is required prior to issuance of a building permit.

Submission and approval of a sewer Concept Plan is required before submission and review of construction plans.

For questions regarding these comments, contact Rob Davis, Sussex County Engineering Department at (302) 855-7820.

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

CC: Sussex County