



STATE OF DELAWARE
EXECUTIVE DEPARTMENT
OFFICE OF MANAGEMENT AND BUDGET
Budget Development, Planning and Administration
State Planning Coordination

October 22, 2008

Mr. Lawton Myrick
George, Miles & Buhr, LLC
206 West Main Street
Salisbury, MD 21801

RE: PLUS 2008-09-05; The Evans Farm

Dear Mr. Myrick:

Thank you for meeting with State agency planners on September 24, 2008 to discuss the proposed plans for the Evans Farm project to be located on the northwesterly corner of the intersection with Railway Road and Old Mill Road.

According to the information received, you are seeking site plan approval through Sussex County for 200 residential condominiums.

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

- The proposed project is located within Investment Levels 2 and 3 as defined by the State Strategies for Policy and Spending and is within the Environmental Sensitive Developing Area as defined by Sussex County's 2003 Certified Comprehensive Land Use Plan near the Town of Millville.

Street Design and Transportation

- DelDOT appreciates and supports the proposed future linkage road to other lands of the developer, but we recommend that the road south and west of it be realigned so that extending the road does not create an intersection on a curve.
- The placement of the garages across the internal street from the residences necessarily be significant pedestrian traffic crossing the street all along it. This arrangement, combined with the long, straight sections of street that are proposed could create a safety problem. DelDOT recommends that traffic calming, and perhaps street lights, be provided.
- Again for safety, DelDOT recommends that the site be redesigned to avoid placing parking spaces on curves

Natural and Cultural Resources

- Although there are no blue line features on the property, there are two drainages visible on the aerial photography that should be checked to see if they fall under the jurisdiction of the Subaqueous Lands Act.
- Because of the parcel's location in an impaired watershed and the amount of impervious surface, green technology BMPs and low impact development practices should be considered a priority to reduce stormwater flow and to meet water quality goals.
- Lot lines and infrastructure may be within 100 feet of wetlands. It is recommended that at least a 100-foot buffer be left intact between the wetlands and lot lines/infrastructure. Upland buffers around wetlands protect the function and integrity of the wetlands and provide critical habitat for wetland dependent species. Scientific research indicates that buffers need to be at least 100 feet in width to be effective at protecting water quality.

This office has received the following comments from State agencies:

Office of State Planning Coordination – Contact: Bryan Hall 739-3090

The proposed project is located within Investment Levels 2 and 3 as defined by the State Strategies for Policy and Spending and is within the Environmental Sensitive Developing Area as defined by Sussex County's 2003 Certified Comprehensive Land Use Plan. This plan calls for the construction of 200 condo units on 50 acres of land near the Town of Millville. Although this project is within a growth area as defined by both the State and County plans, the proposed design is not without challenges. The applicant should consider revising the plan to improve access to community amenities, traffic concerns within the community and the impact to the environmental features on or near the site.

The State has no objections to this project, provided it meets the rules and regulations of the County, however, the State would ask the applicant to review the enclosed "Better Models for Development in Delaware" design and pattern book to address concerns from this office and other PLUS Reviewers.

State Historic Preservation Office (SHPO) – Contact: Terrence Burns 739-5685

No comments received.

Department of Transportation – Contact: Bill Brockenbrough 760-2109

- 1) Previously, the subject land was part of a proposal for a development of about 600 condominiums on Railway Road. A traffic impact study (TIS) was prepared for that proposal in 2005 and our consultant, McCormick Taylor, completed a review of that TIS in June 2006. In 2007, DelDOT learned that the development had been reduced to the present proposal and in March 2008 DelDOT sent Sussex County a revised review letter, reflecting the change in development size. A copy of the March 2008 letter is enclosed.
- 2) DelDOT appreciates and supports the proposed future linkage road to other lands of the developer, but we recommend that the road south and west of it be realigned so that extending the road does not create an intersection on a curve.
- 3) The placement of the garages across the internal street from the residences necessarily be significant pedestrian traffic crossing the street all along it. This arrangement, combined with the long, straight sections of street that are proposed could create a safety problem. DelDOT recommends that traffic calming, and perhaps street lights, be provided.
- 4) Again for safety, DelDOT recommends that the site be redesigned to avoid placing parking spaces on curves.

- 5) The applicant's site engineer should contact the DeIDOT Subdivision Manager for eastern Sussex County, Mr. John Fiori, for detailed comments on the proposed access on Old Mill Road. Mr. Fiori may be reached at (302) 760-2260.

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

Soils

Based on the NRCS soil survey update, Rosedale (RoA), Rumford (RuA), Fort Mott (FmA), Hambrook (HmA), Pepperbox-Rosedale complex (PsA), and Klej (KsA) were mapped in the immediate vicinity of the proposed construction (See figure 1). Rosedale, Rumford, Fort Mott and Hambrook are well-drained upland soils that, generally, have few limitations for development. Pepperbox-Rosedale complex is a moderately well to well-drained upland soil that has moderate to few limitations for development. Klej is a somewhat poorly-drained transitional soil that is likely to have both wetland and upland soil components.

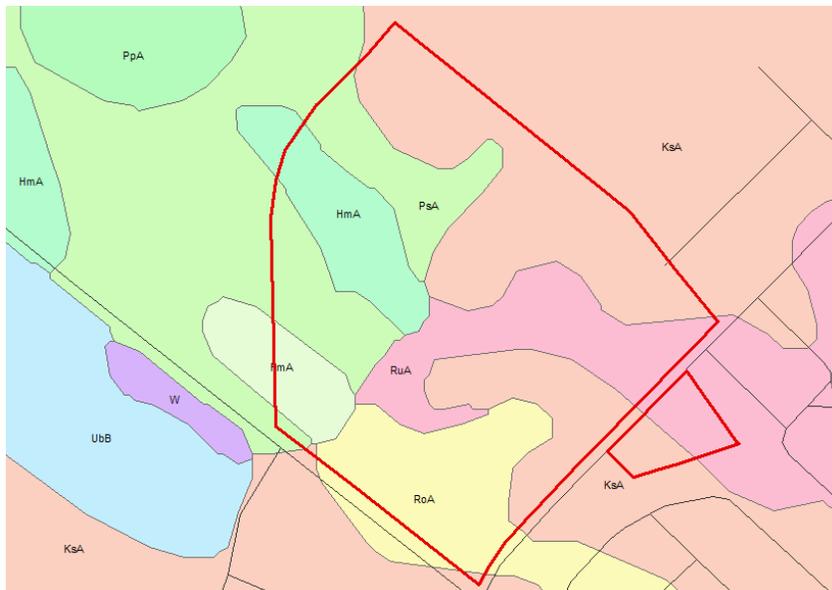


Figure 1: NRCS soil survey update mapping in the immediate vicinity of the Evans Farm

Wetlands

Based on the Statewide Wetland Mapping Project (SWMP) maps, palustrine forested wetlands (PF01/4A) were mapped in the far northern portion of the area proposed for construction (See figure 2).

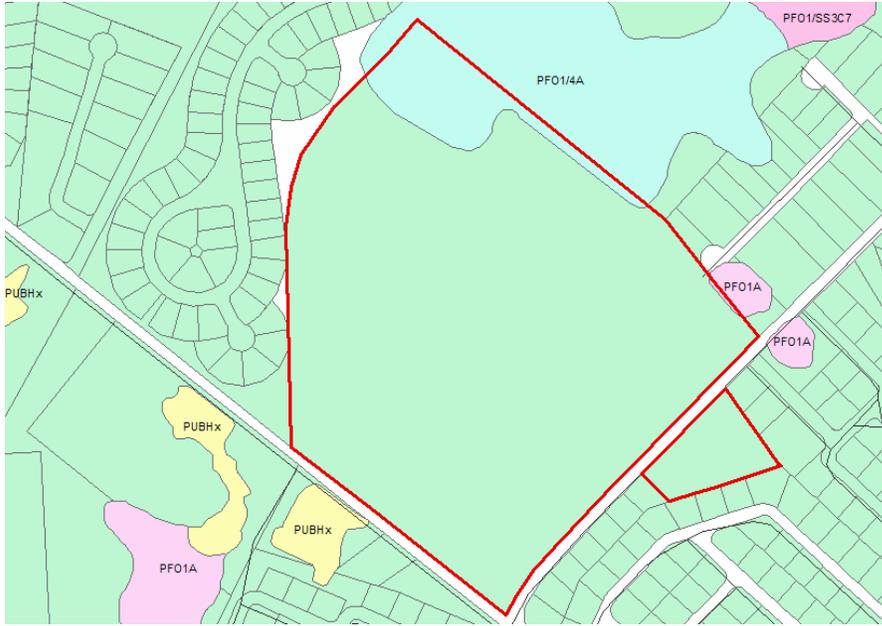


Figure 2: SWMP mapping in the immediate vicinity of the Evan Farm

Although there are no blue line features on the property, there are two drainages visible on the aerial photography that should be checked to see if they fall under the jurisdiction of the Subaqueous Lands Act. These two drainages flow to Collins Creek. The Wetlands and Subaqueous Lands office should be contacted to determine if the drainages are jurisdictional. Additionally, the SWMP map shows wetlands regulated by the Corps of Engineers on the north-northwest part of the property. The developer should contact the Corps of Engineers to get a jurisdictional determination for the property.

The applicant is responsible for determining whether any State-regulated wetlands (regulated pursuant to 7 Del.C. Chapter 66 and the Wetlands Regulations) are present on the property. This determination can only be made by contacting the Division of Water Resources' Wetlands and Subaqueous Lands Section at 302/739-9943 and consulting the State's official wetland regulatory maps, which depict the extent of State jurisdiction. The area regulated by State law may be very different from the area under federal authority. No activity may take place in State-regulated wetlands without a permit from DNREC's Wetlands Section.

In addition, most perennial streams and ditches and many intermittent streams and ditches are regulated pursuant to the Subaqueous Lands Act (7 Del.C. Chapter 72) and the Regulations Governing the Use of Subaqueous Lands. Ponds which are connected to other waters are also regulated, while isolated ponds are not. Any work in regulated streams, ditches or ponds requires a permit from the Wetlands and Subaqueous Lands Section. An on-site jurisdictional determination is recommended in order to determine whether any regulated watercourses exist on the property. Please contact the Wetlands and Subaqueous Lands Section at 302/739-9943 to schedule an on-site visit. Such appointments can usually be scheduled within 2 to 3 weeks.

The applicant should also be reminded that they must avoid construction/filling activities in those areas containing wetlands or wetland associated hydric soils as they are subject to regulatory jurisdiction under Federal 404 provisions of the Clean Water Act. A site-specific field wetlands delineation using the methodology described in the 1987 United States Army Corps of Engineers (USACE, or “the Corps”) manual is the only acceptable basis for making a jurisdictional wetland determination for nontidal wetlands in Delaware. The applicant is forewarned that the Corps views the use of the National Wetlands Inventory (NWI) mapping or the Statewide Wetlands Mapping Project (SWMP) mapping as an unacceptable substitute for making such delineations. To ensure compliance with said Corps regulatory requirements, it is strongly recommended that a field wetlands delineation using the above-referenced methodology be performed on this parcel before commencing any construction activities. It is further recommended that the Corps be given the opportunity to officially approve the completed delineation. In circumstances where the applicant or applicant’s consultant delineates what they believe are nonjurisdictional isolated (SWANCC) wetlands, the Corps must be contacted to evaluate and assess the jurisdictional validity of such a delineation. The final jurisdictional authority for making isolated wetlands determinations rests with the Corps; they can be reached by phone at 736-9763.

Based on a review of existing buffer research by Castelle et al. (Castelle, A. J., A. W. Johnson and C. Conolly. 1994. *Wetland and Stream Buffer Requirements – A Review*. J. Environ. Qual. 23: 878-882), an adequately-sized buffer that effectively protects wetlands and streams, in most circumstances, is about 100 feet in width. In recognition of this research and the need to protect water quality, the Watershed Assessment Section recommends that the applicant maintain/establish a minimum 100-foot upland buffer (planted in native vegetation) from all water bodies (including ditches) and wetlands.

Impervious Cover

The applicant estimates this project’s post-construction surface imperviousness to reach only 17 percent. However, given the scope and density of this project this estimate appears to be a significant underestimate. When calculating surface imperviousness, it is important to include all forms of constructed surface imperviousness, such as all paved surfaces including rooftops, sidewalks, driveways, and roads; open-water stormwater management structures and/or ponds; and community wastewater systems. This will ensure a realistic assessment of this project’s likely post-construction environmental impacts. Surface imperviousness should be recalculated to include all of the above-mentioned forms of surface imperviousness in the finalized calculation for surface imperviousness. Failure to do so will significantly understate this project’s true environmental impacts. Therefore, the calculation for surface imperviousness should be corrected and/or recalculated to reflect all the above-mentioned concerns.

Studies have shown a strong relationship between increases in impervious cover to decreases in a watershed’s overall water quality. It is strongly recommended that the applicant implement best management practices (BMPs) that reduce or mitigate some of

this project's most likely adverse impacts. Reducing the amount of surface imperviousness through the use of pervious paving materials ("pervious pavers") in lieu of asphalt or concrete in conjunction with an increase in forest cover preservation or additional tree plantings are some examples of practical BMPs that could easily be implemented to help reduce surface imperviousness.

ERES Waters

This project is located adjacent to receiving waters of the 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 5.6 of Delaware's "Surface Water Quality Standards" (as amended July 11, 2004), specify that all designated ERES waters and receiving tributaries develop a "pollution control strategy" to reduce non-point sources of pollutants through implementation of Best Management Practices (BMPs). Best Management Practices as defined in subsection 5.6.3.5 of this section, expressly authorizes the Department to provide standards for controlling the addition of pollutants and reducing them to the greatest degree achievable and, where practicable, implementation of 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 nutrient reduction area requiring a 40 percent reduction in nitrogen and phosphorus. Additionally, 40 percent reduction in bacteria is also required.

Compliance with TMDLs through the PCS

As stated above, TMDLs for nitrogen and phosphorus have been promulgated through regulation for the Inland Bays Watershed. The TMDL calls for a 40 percent reduction in nitrogen and phosphorus from baseline conditions. Additionally, a 40 percent reduction in bacteria will also be required from baseline conditions. A Pollution Control Strategy (PCS) will provide the regulatory framework for achieving them. Additional nutrient reductions may be possible through the implementation of Best Management Practices such as wider vegetated buffers along watercourses (and wetlands), increasing passive, wooded open space, use of pervious paving materials to reduce surface imperviousness (i.e., pervious pavers), and the use of green-technology stormwater management technologies.

The Department has developed an assessment tool to evaluate how your proposed development may reduce nutrients to meet the TMDL requirements. Contact Lyle Jones at 302-739-9939 for more information on the assessment tool.

Water Resource Protection Areas

The Water Supply Section determined that the lower portion of northeastern border of the proposed development falls within a wellhead protection area for Tidewater Bethany Bay District, Public Water Supply System DE0000221. The review did not find any excellent groundwater recharge areas, (see following map and attached map).

Wellhead protection areas are surface and subsurface areas surrounding a public water supply well where land use activities or impervious cover may adversely affect the quantity and quality of ground water moving toward such wells.

The site plan shows that the portion of the development within the wellhead protection area is designated as a “Planted Perimeter Buffer”. GPB applauds the developer’s intentions to create this type of buffer.

GPB recommends:

- The developer plants species of plants that avoid intensive maintenance including but not limited to the application of pesticides, herbicides, and nutrients.

The site plan is overlain on the parcel under review. Wellhead Protection Areas are shown in red.



Water Supply

The project information sheets state water will be provided to the project by Tidewater Utilities via a central water system. Our records indicate that the project is located within the public water service area granted to Public Water Supply (a.k.a. Tidewater Utilities) under Certificate of Public Convenience and Necessity 83-W-6.

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.

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

Sediment and Erosion Control/Stormwater Management

- A detailed sediment and stormwater plan will be required prior to any land disturbing activity taking place on the site. Contact the reviewing agency to schedule a pre-application meeting to discuss the sediment and erosion control and stormwater management components of the plan as soon as practicable. The site topography, soils mapping, pre- and post-development runoff, and proposed method(s) and location(s) of stormwater management should be brought to the meeting for discussion. The plan review and approval as well as construction inspection will be coordinated through the Sussex Conservation District. Contact Jessica Watson at the Sussex Conservation District at (302) 856-2105 for details regarding submittal requirements and fees.
- Because of the parcel's location in an impaired watershed and the amount of impervious surface, green technology BMPs and low impact development practices should be considered a priority to reduce stormwater flow and to meet water quality goals. The Sediment and Stormwater Management Program ensures that sediment and erosion control plans and stormwater plans comply with local land use ordinances and policies, including the siting of stormwater management facilities. However, we do not support placement in resource protection areas or the removal of trees for the sole purpose of placement of a stormwater management facility/practice.

Drainage

- The Drainage Program requests that the engineer take precautions 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 Program requests that the engineer check existing downstream ditches and pipes for function and blockages prior to the construction. Notify downstream landowners of the change in volume of water released on them.
- Have all drainage easements recorded on deeds and place restrictions on obstructions within the easements to ensure access for periodic maintenance or future re-construction. Future property owners may not be aware of a drainage easement on their property if the easement is only on the record plan. However, by recording the drainage easement on the deed, the second owner, and any subsequent owner of the property, will be fully aware of the drainage easement on their property.

Floodplains

A portion of this property is located in the 0.2% annual chance floodplain (500 year). This is considered a low to moderate risk flood zone. Mitigation should be done to decrease the potential of flood damage to these proposed homes and their impact to adjoining properties.

Rare Species/Forested Wetlands

DNREC has not surveyed this parcel; therefore, it is unknown if there are State-rare or federally listed plants, animals or natural communities at this project site. According to the GIS database and state wetland maps, there are forested wetlands on this parcel.

Forested wetlands can support an array of plant and animal species. According to the application, the forested wetlands are going to be left intact.

Recommendation:

1. Lot lines and infrastructure may be within 100 feet of wetlands. It is recommended that at least a 100-foot buffer be left intact between the wetlands and lot lines/infrastructure. Upland buffers around wetlands protect the function and integrity of the wetlands and provide critical habitat for wetland dependent species. Scientific research indicates that buffers need to be at least 100 feet in width to be effective at protecting water quality.

Stormwater Pond/Nuisance Geese

This plan includes a very large stormwater management pond that may attract resident Canada geese and mute swans that will create a nuisance for community residents. 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.

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 a reduction in the size/number of ponds, proper landscaping, monitoring, and other techniques, geese problems can be minimized.

Recommendations:

- 1) Consider reducing the size of the pond.

- 2) It was indicated on the application that ‘native seed mixes, including taller grasses will be planted along the pond edge to reduce the desirability of Canada geese to use the pond as habitat’. This type of landscape modification is the most effective and environmentally sound method of deterrence. To ensure that the plantings are effective, they should be planted to a width of 15-30 feet around the pond. This buffer will restrict their ability to move between water and land and will block the view of the surrounding area. Geese typically avoid areas where the approach of predators can’t be seen and where it is difficult to reach foraging areas. The plantings should be conducted as soon as possible as it is easier to deter geese than to try and remove them once they become plentiful.

Fountains are not effective at deterring geese.

At this time, DNREC does not recommend using monofilament grids due to the potential for birds and other wildlife to become entangled if the grids are not properly installed and maintained. In addition, the on-going maintenance (removing entangled trash, etc.) may become a burden to the homeowners association or land manager.

Recreation

The site plan indicates a mulched walking trail that runs along the proposed pond edge with connector trails extending to the multifamily condominiums. A realignment of the trail and trail connectors is recommended to reduce the number of social trails from the condominiums to the pond. A simple redesign of the trail layout (bringing the trail closer to the back of the condominiums) will provide both safe and easy access to the proposed trail system.

Additionally, mulched trails are not accessible to all residents and are not sustainable. A packed earth surface of the trail is recommended. For more information on trail design, alignment or trail sustainability, please contact David Bartoo @ 302-739-9235.

Site Investigation and Restoration

Two (2) Site Investigation & Restoration Branch (SIRB) sites were found within a half mile radius of the proposed site: Millville Dump (DE-1363) located 0.20 miles south-west and Quillen Pit (DE-1170) located 0.16 miles west of the proposed project. Millville Dump received a No Further Action designation in 2007, and Quillen Pit received a No Further Action designation in 2000.

Based on the previous agricultural use of the proposed project site, which may have involved the use of pesticides and herbicides, and the location of the SIRB site, SIRB recommends that a Phase I Environmental Site Assessment be performed prior to development. In addition, 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). SIRB should also be contacted as soon as possible at 302-395-2600 for further instructions.

Air Quality

Housing developments may unnecessarily emit, or cause to be emitted, significant amounts of 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 housing developments include emissions from:

- Area sources like painting, lawn and garden equipment and the use of consumer products like roof coatings and roof primers.
- The generation of electricity needed to support the homes in your development, and
- Car and truck activity associated with the homes in your new development.

These three air emissions components (i.e., area, electric power generation, and mobile sources) are quantified below, based on a per household/residential unit emission factor that was developed using 2002 Delaware data. These emissions in the table represent the actual impact the Evans Farm development may have.

Emissions Attributable to Evans Farm Subdivision (Tons per Year)

	Volatile Organic Compounds (VOC)	Nitrogen Oxides (NOx)	Sulfur Dioxide (SO ₂)	Fine Particulate Matter (PM _{2.5})	Carbon Dioxide (CO ₂)

Direct Residential	6.2	0.7	0.6	0.7	25.1
Electrical Power Generation	ND*	2.5	8.5	ND*	1,258.8
Mobile	15.3	12.7	9.4	0.8	1,283.9
Total	21.5	15.9	18.5	1.5	2,567.8

(*) Indicates data is not available.

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

Recommendations:

The applicant shall comply with all applicable Delaware air quality regulations. These regulations include:

Regulation 6 - Particulate Emissions from Construction and Materials Handling	<ul style="list-style-type: none"> • Using dust suppressants and measures to prevent transport of dust off-site from material stockpile, material movement and use of unpaved roads. • Using covers on trucks that transport material to and from site to prevent visible emissions.
Regulation 1113 – Open Burning	<ul style="list-style-type: none"> • Prohibiting open burns statewide during the Ozone Season from May 1-Sept. 30 each year. • Prohibiting the burning of land clearing debris. • Prohibiting the burning of trash or building materials/debris.
Regulation 1145 – Excessive Idling of Heavy Duty Vehicles	<ul style="list-style-type: none"> • Restricting idling time for trucks and buses having a gross vehicle weight of over 8,500 pounds to no more than three minutes.

Additional measures may be taken to substantially reduce the air emissions identified above. These measures include:

- **Constructing only energy efficient homes.** Energy Star qualified homes are up to 30% more energy efficient than typical homes. These 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 increased 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.

- **Providing tie-ins to the nearest bike paths and links to any nearby mass transport system.** These measures can significantly reduce mobile source emissions.
- **Funding a lawnmower exchange program.** New lawn and garden equipment emits significantly less than equipment as little as 7 years old, and may significantly reduce emissions from this new development. The builder could fund such a program for the new occupants.

Additionally, the following measures will reduce emissions associated with the actual construction phase of the development:

- **Using retrofitted diesel engines during construction.** This includes equipment that are 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 at residential units and in vegetative buffer areas.** Trees reduce emissions by trapping dust particles and by replenishing oxygen. Trees also reduce energy emissions by cooling during the summer and by providing wind breaks in the winter, whereby reducing air conditioning needs by up to 30 percent and saving 20 to 50 percent on fuel costs.

This is a partial list, and there are additional things that can be done to reduce the impact of the development on air quality. The applicant should submit a plan to the DNREC Air Quality Management Section which address the above listed measures, and that details all of the specific emission mitigation measures that will be incorporated into the Evans Farm development. Air Quality Management Section points of contact are Phil Wheeler and Deanna Morozowich, and they may be reached at (302) 739-9402.

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.

- Where a water distribution system is proposed for multi-family sites, 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, 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

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 the main thoroughfares 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)
- 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.statefiremarshal.delaware.gov technical services link, plan review, applications or brochures.

Department of Agriculture - Contact: Scott Blaier 739-4811

The Delaware Department of Agriculture has no objections to the proposed development. The *Strategies for State Policies and Spending* encourages environmentally responsible development in Investment Level 2 and 3 areas.

Right Tree for the Right Place

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.

Do Not Plant List

Due to the high risk of mortality from insects and disease, the Delaware Forest Service does not recommend planting any of the following species:

Callery Pear
Leyland Cypress
Red Oak (except for Willow Oak)
Ash Trees

Please contact the Delaware Forest Service for more information at (302) 698-4500.

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.

Delaware Division of Public Health- Health Promotion Bureau- contact Michelle Eichinger (302) 744-1011

Ensuring that new residential and commercial development incorporates pedestrian- and bicycle-friendly features allows people to travel by foot or by bicycle and promotes physical activity as part of daily routines. Regular physical activity offers a number of health benefits, including maintenance of weight and prevention of heart disease, type 2 diabetes and other chronic diseases.¹ Research shows that incorporating physical activity into daily routines has the potential to be a more effective and sustainable public health strategy than structured exercise programs.² This is particularly important considering about 65% of adult Delawareans are either overweight or obese.³ This current obesity crisis is also affecting children. Approximately 37% of Delaware's children are overweight or obese⁴, which places them at risk for a range of health consequences that include abnormal cholesterol, high blood pressure, type 2 diabetes, asthma, depression and anxiety.¹

In Delaware, as in other states across the nation, certain patterns of land use can act as a barrier to physical activity and healthy eating for children and adults alike. Examples of such barriers include neighborhoods constructed without sidewalks or parks and shopping centers with full-service grocery stores situated too far from residential areas to allow for walking or biking between them.

This proposed development is in a Level 2 area. Developing in such an area is consistent with the *Strategies for State Policies and Spending*. DPH is committed to the *Strategies* and therefore, does support development in the proposed area.

DPH supports new development in and around existing towns and municipalities where compact and mixed land use patterns facilitate physical activity. As a way to promote physical activity and access to healthy foods, we recommend that the following amenities be included in the Evans Farm:

Amenities to encourage active transportation

- Designate bike paths to supplement the sidewalks and walking trails that are already proposed in the plan so that residents can travel by foot or by bicycle. In addition, install bike racks in convenient locations throughout the development.
- Avoid mulch for walking trails, since they are not conducive for individuals with wheelchairs or those with physical disabilities that affect walking.
- Ensure there are sidewalks, crosswalks and walking and/or bike paths that facilitate connectivity to the larger multimodal trail proposed along Railway Road (CR 350) as well as the clubhouse.
- If feasible, consider including a walking path around the playground area so that adults and children can participate in recreational activities in the same space.

Increase opportunities for healthy eating

- Utilize some of the open space around the proposed clubhouse area to host a seasonal farm stand or mini farmer's market to promote the sale of fruits and vegetables.

¹Nemours Health and Prevention Services (2005). *Delaware Children's Health Chartbook*, Newark, DE.

²Active Living by Design. *Transportation Fact Sheet*. Retrieved May 17, 2007, from http://www.activelivingbydesign.org/fileadmin/template/documents/factsheets/Transportation_Factsheet.pdf.

³Delaware Health and Social Services (2008), *Division of Public Health, Behavioral Risk Factor Surveillance System (BRFSS), 1990-2007*.

⁴Nemours Health and Prevention Services (2007). *2006 Delaware Survey of Children's Health Descriptive Statistics Summary, Volume 1*.

Delaware State Housing Authority – Contact Vicki Powers 739-4263

This proposal is for a site plan review of 200 residential units on 50 acres located on the northwesterly corner of the intersection of Railway Road and Old Mill Road near Bethany. According to the *State Strategies Map*, the proposal is located in an Investment Level 2, 3, and an Environmentally Sensitive Developing area. DSHA supports this proposal because residents will have proximity to existing services, markets, and employment opportunities. Furthermore, the proposal targets units for first time homebuyers. For informational purposes, the most recent real estate data collected by DSHA shows the median home price in Sussex County to be \$260,000. However, households earning respectively 100% of Sussex County's median income only qualify for mortgages of \$164,791, thus creating an affordability gap of \$95,209. Households that cannot afford to live in the coastal resort area have been displaced to western Sussex County. The provision of units within reach of households earning at least 100% of Sussex County's median income would help increase their housing opportunities.

Department of Education – Contact: John Marinucci 735-4055

No comments received.

Sussex County – Contact: Richard Kautz 855-7878

The preliminary subdivision plat should provide details of how/when the required forested buffer will be planted.

Page 3-17 of the Comprehensive Plan notes that developments in the Environmentally Sensitive Developing Area should "provide information that analyzes the development's potential environmental impacts, including effects on stormwater runoff, nitrogen and phosphorous loading, wetlands, woodlands, wastewater treatment, water systems, and other matters that affect the ecological sensitivity of the inland bays." Use of Low Impact Design principals and Green Technology could help address the environmental issues.

All sidewalks and trails within the development and any constructed at the request of DelDOT should tie together internally and with adjacent development or roads so that persons using wheelchairs or pushing strollers can navigate without hindrance.

The Sussex County Engineer Comments:

The project is within the boundary of the Millville Expansion of the Bethany Beach Sanitary Sewer District and connection to the sewer system is mandatory. The proposed project is in a recent expansion area and sanitary sewer service has been extended to the parcel. Sussex County has undertaken construction to provide sewer service to the area and the parcel's connection point is to the sewer main in Old Mill Road. The proposed project is within planning study assumptions for sewer service and there will be adequate capacity for the project as proposed.

Sussex County requires design and construction of the collection and transmission system to meet Sussex County Engineering Department's requirements and procedures. The Sussex County Engineer must approve the connection point. A sewer concept plan must be submitted for review and approval prior to any sewer construction. Attached is a checklist for preparing sewer concept plans. All costs associated with extending sewer service will be the sole responsibility of the developer.

One-time system connection charges will apply. Please contact Ms. Denise Burns at 302 854-5017 for additional information on charges.

Sussex County recently adopted new road standards. The standard becomes affective January 1, 2009 and will apply to this project.

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,

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

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

CC: Sussex County



Evans Farm

2008-09-05



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





March 10, 2008

Mr. Todd J. Sammons
Project Engineer
DelDOT Division of Planning
P.O. Box 778
Dover, DE 19903

RE: Agreement No. 1294
Traffic Impact Study Review Services
Task No. 61 -- Proposed Residential Project on Railway Road

Dear Mr. Sammons,

McCormick Taylor has completed its review of the Traffic Impact Study (TIS) for the proposed residential project on Railway Road prepared by Orth Rodgers & Associates, Inc. (ORA) dated July 29, 2005 and November 16, 2005 (addendum). This review was assigned as Task Number 61. Orth-Rodgers prepared the report in a manner generally consistent with DelDOT's *Rules and Regulations for Subdivision Streets*.

On October 9, 2007, the developer and its traffic engineer, ORA, met with DelDOT to discuss the status of the project. At that meeting, the developer stated that the proposed development would be scaled back from 600 condominiums to 204 condominiums. As such, the TIS and McCormick Taylor's review that follows (originally completed in 2006) were based on development details that are now outdated. The proposed development as evaluated by the TIS and McCormick Taylor is described in a later paragraph. The development as it is now proposed would consist of 204 units of condominiums on approximately 50 acres, and it would have only one access point on Old Mill Road (Sussex Road 349). Although the development as evaluated and the development as it is now proposed are different, we believe our recommendations, based on a review of the TIS as submitted, are still valid.

For the 2015 build scenario, the traffic volumes generated by the development as evaluated in the TIS and this review letter would be higher than the volumes generated by the development as it is now proposed. As such, the delay and X-critical values shown in this letter are higher than we would now expect, and some levels of service (LOS) are worse than we would now expect, but the recommended improvements described below would still be needed.

In addition, while we did not specifically evaluate the Old Mill Road access point, we do not expect any LOS deficiencies at this point.

As evaluated by the TIS dated July 29, 2005 and November 16, 2005 (addendum) and McCormick Taylor's review, the development of the Residential Project on Railway Road (Sussex Road 350), in Sussex County, Delaware was to include 600 units of condominiums on approximately 175 acres. The number of proposed residential condominiums had increased from 480 units to 600 units due to the developer acquiring 50.19 additional acres. This development is

proposed for the north side of Railway Road in Sussex County adjacent to the existing Bethany Bay development. One unsignalized access was proposed along Railway Road, and a second access point would have been located at the current terminus of Railway Road. Construction is expected to be complete by 2015.

DelDOT currently has two relevant projects within the study area. The first project is *SR 26, Detour Routes* (State Contract No. 21-112-04). Improvements include pavement widening to include eleven-foot wide lanes and five-foot wide shoulders, and the addition of turn lanes at various intersections. Design plans are essentially complete for this project, and funding for right-of-way acquisition is available. There is currently no state funding available for construction. Should funding become available, construction is anticipated to begin in 2008 and be completed by 2009.

The second project is *SR 26, Atlantic Avenue, from Clarksville to Assawoman Canal* (State Contract 24-112-10). A concept plan exists for this project, and DelDOT is currently working on the design. Improvements include a continuous center left-turn lane the length of the corridor, plus additional turn lanes at certain intersections. There is currently no state funding for right-of-way acquisition or construction. Should funding become available, construction is anticipated to begin in 2009 and be completed by 2012. These improvements are assumed to be in place for all future cases of our analysis.

Based on our review, we have the following comments and recommendations:

The following intersections exhibit level of service deficiencies without the implementation of physical roadway and/or traffic control improvements:

<i>Intersection</i>	<i>Situation For Which Deficiency Occurs</i>
Delaware Route 26 and Delaware Route 17	2015 Saturday with and without development
Delaware Route 26 and Railway Road	2015 PM and Saturday with and without development
Delaware Route 26 and Old Mill Road	2015 PM and Saturday with and without development
Delaware Route 26 and Central Avenue (Sussex Road 84)	2015 PM and Saturday with and without development

This area has significant levels of seasonal traffic, particularly along the main roads. If this development is approved as currently proposed, the improvements required to achieve acceptable Levels of Service for Saturday conditions, at some of the intersections along Delaware Route 26 are beyond what is already planned for the *SR 26, Atlantic Avenue, from Clarksville to Assawoman Canal* project. These additional capacity improvements will likely be infeasible based on physical limitations, right-of-way constraints, and public opposition.

Should the County choose to approve the proposed development, the following items should be incorporated into the site design and reflected on the record plan. All applicable agreements (i.e.

letter agreements for off-site improvements and traffic signal agreements) should be executed prior to entrance plan approval for the proposed development.

1. The developer should enter into an agreement with DeIDOT to fund an equitable portion of the local matching funds for the project *SR 26, Atlantic Avenue, from Clarksville to Assawoman Canal* (State Contract 24-112-10). At this time, it is expected that this agreement will be required of at least three other developments in this area. DeIDOT expects to determine the cost sharing based on each development's projected p.m. peak hour traffic volume, compared to the total projected 2020 p.m. peak hour traffic volume.
2. The developer should enter into an agreement with DeIDOT to fund an equitable portion of the local matching funds for the project *SR 26, Detour Routes* (State Contract No. 21-112-04). At this time, it is expected that this agreement will be required of at least three other developments in this area. DeIDOT expects to determine the cost sharing based on each development's projected p.m. peak hour traffic volume, compared to the total projected 2020 p.m. peak hour traffic volume.
3. The developer should improve Railway Road along the site frontage in order to meet DeIDOT's local road standards. These standards include two eleven-foot travel lanes and two five-foot shoulders. The developer should provide a bituminous concrete overlay to the existing travel lanes, at DeIDOT's discretion. DeIDOT should analyze the existing lanes' pavement section and recommend an overlay thickness to the developer's engineer if necessary.
4. The developer should improve Old Mill Road along the site frontage in order to meet DeIDOT's local road standards. These standards include two eleven-foot travel lanes and two five-foot shoulders. The developer should provide a bituminous concrete overlay to the existing travel lanes, at DeIDOT's discretion. DeIDOT should analyze the existing lanes' pavement section and recommend an overlay thickness to the developer's engineer if necessary.
5. The following bicycle and pedestrian improvements should be included:
 - a. A minimum of a ten-foot wide multi-use path (with a minimum of a five-foot buffer from the roadway) that meets current AASHTO and ADA standards should be included along the site frontages on both Old Mill Road and Railway Road. This multi-use path should connect to the shoulders at the end limits of the site frontages.
 - b. Internal sidewalks to promote walking as a viable transportation alternative should be constructed within the development. These internal sidewalks should connect to the frontage multi-use path.
 - c. Internal roadways that provide access any adjacent development(s) should include sidewalks that lead into the other development(s) to allow for safe pedestrian travel.
 - d. An additional pedestrian access point to internal streets and sidewalks should be provided along Railway Road near the northern limit of the site frontage.



Please note that this review generally focuses on capacity and level of service issues; additional safety and operational issues will be further addressed through DelDOT's subdivision review process.

Additional details on our review of the TIS are attached. Please contact me at (302) 738-0203 or through e-mail at ajparker@MTmail.biz if you have any questions concerning this review.

Sincerely,

McCormick Taylor, Inc.

A handwritten signature in black ink, appearing to read 'Andrew J. Parker'.

Andrew J. Parker, P.E., PTOE
Project Manager

Enclosure

General Information

Report date: July 29, 2005 and November 16, 2005 (Addendum)

Prepared by: Orth Rodgers & Associates, Inc.

Prepared for: Linder & Company, Inc.

Tax parcel: 1-34-8.00-42.00, 1-34-12.00-74.00

Generally consistent with DeIDOT's Rules and Regulations for Subdivision Streets: Yes

Project Description and Background

Description: As evaluated in the TIS and McCormick Taylor's review, the proposed development would consist of 600 units of residential condominiums. The development is now proposed as 204 condominiums.

Location: Proposed development to be located north of Delaware Route 26, directly west of Railway Road (Sussex Road 350) and adjacent to the existing Bethany Bay development

Amount of land to be developed: approximately 175 acres (updated to approximately 50 acres)

Land use approval(s) needed: subdivision approval, currently AR-1 (Agricultural Residential) and GR-1 (General Residential), rezoning to MR-2 Residential Planned Community desired

Proposed completion date: 2015

Proposed access locations: As evaluated in the TIS, there would be one unsignalized access point on Railway Road and another access point at the existing terminus of Railway Road. The development as it is now proposed would have only one access point on Old Mill Road (Sussex Road 349).

Livable Delaware

(Source: Delaware Strategies for State Policies and Spending, July 2004)

Location with respect to the Strategies for State Policies and Spending Map of Delaware:
The proposed Railway Road Property is located within Investment Level 3.

Description of Investment Level 3:

These areas are portions of the county designated for growth, development districts, or long-term annexation. Areas classified as an Investment Level 3 will be considered for state investing after the Level 1 and 2 areas are substantially built out or when the facilities are logical extensions of existing systems and deemed appropriate to serve a particular area. Many of the areas within the Investment Level 3 designation include important farmland and natural resources along with portions of roadways that are designated for corridor capacity protection. Therefore the character pattern and timing of growth along with federally mandated air and water quality goals should be considered on a case-by-case basis for areas within this designation.

In Investment Level 3 Areas, the state will continue to invest in the regional roadway network and roadway safety while continuing to protect the capacity of major transportation corridors, such as Route 13. Roadway improvements to support new development are not encouraged in Investment Level 3 and funds will not be allocated for these types of improvements until they have been allocated to Level 1 and 2 areas.

Proposed Development's Compatibility with Livable Delaware:

The Proposed Railway Road Property falls within Investment Level 3. Since the proposed location of this development is near (and in some cases, adjacent) to existing residential areas, this property would adhere to Livable Delaware guidelines.

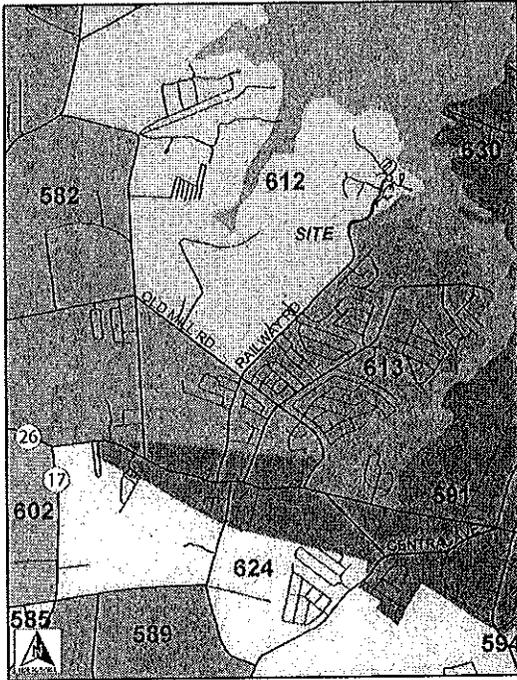
Comprehensive Plans

Sussex County Comprehensive Plan: Existing land use of the proposed development is designated as being in an area designated as forest and agricultural. Future land use designates this area as being located within an environmentally sensitive, developing area. Environmentally Sensitive Developing Areas are defined as a Developing District with special environmental design and protection requirements. New regulations are in place in these areas to control the density of development, preserve open space and valuable habitat and to prevent excessive levels of sediments and nutrients in waterways. Regulated areas include Indian River, Indian River Bay and Rehoboth Bay. Residential Planned Communities and Village Style development is encouraged in these areas to provide open space and protect habitat. If a central wastewater system is provided, residential density would be permitted up to the maximum allowable density of the underlying zoning districts. Industrial uses in these areas are regulated by the Delaware Coastal Zone Act, however they do not regulate commercial, residential warehousing or distribution activities.

Proposed Development's Compatibility with Comprehensive Plans: This proposed development will likely be compatible with Sussex County's Comprehensive Plan. The developer is proposing a rezoning to Residential Planned Community, which the Developing District generally supports.

Transportation Analysis Zones (TAZ) where development would be located: 612

TAZ Boundaries:



Current employment estimate for TAZ:

0 jobs in 2005

Future employment estimate for TAZ:

0 jobs in 2030

Current population estimate for TAZ:

565 people in 2005

Future population estimate for TAZ:

783 people in 2030

Current household estimate for TAZ:

252 houses in 2005

Future household estimate for TAZ:

369 houses in 2030

Relevant committed developments in the TAZ: Bay Forest Club, Bethany Bay

Would the addition of committed developments to current estimates exceed future projections: Yes

Would the addition of committed developments and the proposed development to current estimates exceed future projections: Yes

Relevant Projects in the DelDOT Capital Transportation Program (FY 2008 – FY 2013)

DelDOT currently has two relevant projects within the study area. The first project is *SR 26, Detour Routes* (State Contract No. 21-112-04). Improvements include pavement widening to include eleven-foot wide lanes and five-foot wide shoulders, and the addition of turn lanes at various intersections. Design plans are essentially complete for this project, and funding for right-of-way acquisition is available. There is currently no state funding available for construction. Should funding become available, construction is anticipated to begin in 2008 and be completed by 2009.

The second project is *SR 26, Atlantic Avenue, from Clarksville to Assawoman Canal* (State Contract 24-112-10). A concept plan exists for this project, and DelDOT is currently working on the design. Improvements include a continuous center left-turn lane the length of the corridor, plus additional turn lanes at certain intersections. There is currently no state funding for right-of-way acquisition or construction. Should funding become available, construction is anticipated to begin in 2009 and be completed by 2012. These improvements are assumed to be in place for all future cases of our analysis.

Trip Generation

Trip generation for the proposed development was computed using comparable land uses and equations contained in Trip Generation, Seventh Edition, published by the Institute of Transportation Engineers (ITE). The following land uses were utilized to estimate the amount of new traffic generated for this development:

- Residential Condominiums (ITE Land Use Code 230)

Table 1. Proposed Residential Property on Railway Road – Trip Generation

Land Use	AM Peak Hour			PM Peak Hour			Saturday Mid-Day		
	In	Out	Total	In	Out	Total	In	Out	Total
600 Residential Condominium Units	37	180	217	175	86	261	117	100	217

Overview of TIS

Intersections examined:

- 1) Old Mill Road & Railway Road
- 2) Old Mill Road & Clubhouse Road (Sussex Road 351)
- 3) Delaware Route 26 & Delaware Route 17
- 4) Delaware Route 26 & Railway Road
- 5) Delaware Route 26 & Old Mill Road
- 6) Delaware Route 26 & Central Avenue (Sussex Road 84/357)

Conditions examined:

- 1) 2004 existing conditions
- 2) 2015 without Railway Road Development
- 3) 2015 with Railway Road Development

Peak hours evaluated: Weekday morning and evening peak hours, Saturday mid-day

Committed developments considered:

- Silver Woods (ITE Land Use Code 210) – 400 single-family detached homes
- Bethany Meadows (ITE Land Use Code 210) – 2 single-family detached homes
- Waterside (ITE Land Use Codes 210, 230) – 13 single-family detached homes and 8 townhouses
- Southampton (ITE Land Use Codes 210, 230, 151) – 2 single-family detached homes, 21 townhouses and 132 mini-storage units
- Bear Trap Dunes (ITE Land Use Codes 210, 230, 820) – 49 single-family detached homes, 55 townhouses/condos and 20,000 square feet of retail
- Wedgefield/Avon Park (ITE Land Use Codes 210, 230) – 100 single-family homes,

- Bay Forest Club (ITE Land Use Code 210, 230) – 475 single-family detached homes, 326 townhouses/condominiums
- Forest Landing (ITE Land Use Code 210) – 444 single-family detached homes
- Fairway Village (ITE Land Use Code 210) – 312 single-family detached homes
- Windmill Property (ITE Land Use Code 230) – 106 townhouses
- Doves Landing (ITE Land Use Codes 210, 220, 230, 820) – 140 single-family detached homes, 120 apartments, 142 townhouses and 147,500 square feet of retail
- Barrington Park (ITE Land Use Codes 210, 230) – 150 single-family detached homes, 300 condominiums
- Millville Town Center (ITE Land Use Codes 230, 820) – 68 townhouses and 106,500 square feet of retail
- Bethany Bay (ITE Land Use Code 230) – 100 condominiums

Intersection Descriptions

1) Old Mill Road & Railway Road

Type of Control: All way stop controlled intersection

Northbound approach: (Railway Road) one shared left/through/right lane

Southbound approach: (Railway Road) one shared left/through/right lane

Eastbound approach: (Old Mill Road) one shared left/through/right lane

Westbound approach: (Old Mill Road) one shared left/through/right lane

2) Old Mill Road & Clubhouse Road

Type of Control: All-way stop controlled unsignalized intersection

Northbound approach: (Clubhouse Road) one shared left/through/right lane

Southbound approach: (Clubhouse Road) one shared left/through/right lane

Eastbound approach: (Old Mill Road) one shared left/through/right lane

Westbound approach: (Old Mill Road) one shared left/through/right lane

3) Delaware Route 26 & Delaware Route 17:

Type of Control: three-way signalized intersection

Northbound approach: (Delaware Route 17) exclusive left-turn lane, channelized right-turn lane (yield condition)

Eastbound approach: (Delaware Route 26) one shared through/right-turn lane

Westbound approach: (Delaware Route 26) exclusive left-turn lane, one through lane

4) Delaware Route 26 & Railway Road

Type of Control: three-way unsignalized intersection

Southbound approach: (Railway Road) one stop controlled shared left/right lane

Eastbound approach: (Delaware Route 26) one shared left/through lane

Westbound approach: (Delaware Route 26) one shared through/right lane

5) Delaware Route 26 & Old Mill Road

Type of Control: four-way signalized intersection

Northbound approach: (Old Mill Road) under construction, one shared left/through lane, one right-turn lane

Southbound approach: (Old Mill Road) one exclusive left-turn lane, one shared through/right lane

Eastbound approach: (Delaware Route 26) one exclusive left-turn lane, one shared through/right lane

Westbound approach: (Delaware Route 26) one shared left/through turn lane, one exclusive right-turn lane

6) Delaware Route 26 & Central Avenue

Type of Control: four-way signalized intersection

Northbound approach: (Central Avenue) one shared left/through/right lane

Southbound approach: (Central Avenue) one shared left/through lane and an exclusive right-turn lane

Eastbound approach: (Delaware Route 26) one exclusive left-turn lane, one shared through/right lane

Westbound approach: (Delaware Route 26) one exclusive left-turn lane, one shared through/right lane

Transit, Pedestrian, and Bicycle Facilities

Existing transit service: There are no known existing transit facilities in the project area.

Planned transit service: There are no planned expansions of DeIDOT service in the area.

Existing bicycle and pedestrian facilities: The *Delaware Kent and Sussex Counties Bicycle Touring Map* designates all roadways within the project area as having above average cycling conditions with the exception of the section of Central Avenue just south of Delaware Route 26. This portion is rated as having below average bicycling conditions.

Planned bicycle and pedestrian facilities: No planned bicycle or pedestrian facilities are currently known to exist for the area.

Previous Comments

All comments from DeIDOT's Scoping Letter and Preliminary TIS (PTIS) Review were addressed in the Final TIS submission. However, there were no HCS printouts to reference. In addition, it appears that although the submitter included the HCS files for the original FTIS, there are no files to reference for the addendum, which makes it impossible to determine if the enclosed LOS tables are correct and to compare McCormick Taylor's HCS with Orth Rodgers HCS.

General HCS Analysis Comments

(see table footnotes on the following pages for specific comments)

- 1) McCormick Taylor used a minimum peak hour factor of 0.92 in all cases. The TIS used 0.88 for some intersections.
- 2) The level of service results in the TIS are not consistent with DelDOT level of service criteria, which utilizes both the HCS reported level of service and the X-critical value. The levels of service shown in this review letter (both “per TIS” and “per McCormick Taylor” review are consistent with DelDOT level of service criteria as noted in the *Rules & Regulations for Subdivision Streets*.
- 3) Although the submitter included the HCS files for the original FTIS, there are no files to reference for the addendum, which makes it impossible to determine if the enclosed LOS tables are correct and to compare McCormick Taylor’s HCS with Orth Rodgers HCS.
- 4) The TIS used HCS version 4.1e for their analysis, McCormick Taylor used 4.1f for their analysis.

Table 2
PEAK HOUR LEVELS OF SERVICE (LOS)
based on Traffic Impact Study for Proposed Residential Project on Railway Road
Report dated November 2005
Prepared by Orth-Rodgers Associates, Inc.

Unsignalized Intersection ¹ All-Way Stop Control	LOS per TIS			LOS per McCormick Taylor		
	Weekday AM	Weekday PM	Saturday Mid-Day	Weekday AM	Weekday PM	Saturday Mid-Day
Old Mill Road and Railway Road						
2004 Existing (Case 1)						
Eastbound Old Mill Road	A (8.0)	A (7.8)	A (9.4)	A (8.0)	A (7.8)	A (9.4)
Westbound Old Mill Road	A (7.7)	A (8.1)	A (9.1)	A (7.7)	A (8.1)	A (9.1)
Northbound Railway Road	A (7.8)	A (7.6)	A (8.5)	A (7.8)	A (7.6)	A (8.5)
Southbound Railway Road	A (7.8)	A (8.0)	A (9.2)	A (7.8)	A (8.0)	A (9.2)
Overall Intersection Delay	A (7.9)	A (7.9)	A (9.1)	A (7.9)	A (7.9)	A (9.1)
2015 Without Development (Case 2)						
Eastbound Old Mill Road	B (12.1)	B (10.6)	C (18.6)	B (11.7)	B (10.6)	C (17.0)
Westbound Old Mill Road	A (8.9)	B (11.9)	C (15.5)	A (8.8)	B (11.6)	B (14.5)
Northbound Railway Road	A (8.8)	A (9.1)	B (11.4)	A (8.8)	A (9.1)	B (11.0)
Southbound Railway Road	A (9.3)	A (9.6)	B (13.2)	A (9.3)	A (9.5)	B (12.7)
Overall Intersection Delay	B (10.8)	B (10.9)	C (15.8)	B (10.5)	B (10.8)	B (14.7)
2015 With Development (Case 3)						
Eastbound Old Mill Road	C (16.0)	B (14.8)	E (39.9)	C (15.1)	B (14.5)	D (31.9)
Westbound Old Mill Road	B (10.4)	C (19.0)	D (30.0)	B (10.3)	C (17.6)	D (25.0)
Northbound Railway Road	B (10.0)	B (12.6)	C (17.4)	A (9.8)	B (12.3)	C (16.0)
Southbound Railway Road	B (13.4)	B (13.1)	C (24.6)	B (13.3)	B (12.7)	C (22.4)
Overall Intersection Delay	B (13.8)	C (15.7)	D (30.0)	B (13.3)	C (15.0)	D (25.2)

Note: Case 3 HCS analyses by the TIS and McCormick Taylor are based on outdated proposed development of 600 condominiums, as evaluated by the TIS dated July 29, 2005 and November 16, 2005 (addendum).

¹ For unsignalized analyses, the numbers in parentheses following levels of service are average delay per vehicle, measured in seconds. For signalized analyses, those numbers are X-critical, a composite volume-to-capacity ratio.

Table 3
PEAK HOUR LEVELS OF SERVICE (LOS)
based on Traffic Impact Study for Proposed Residential Project on Railway Road
Report dated November 2005
Prepared by Orth-Rodgers Associates, Inc.

Unsignalized Intersection ² All-Way Stop Control	LOS per TIS			LOS per McCormick Taylor		
	Weekday AM	Weekday PM	Saturday Mid-Day	Weekday AM	Weekday PM	Saturday Mid-Day
Old Mill Road and Club House Road						
2004 Existing (Case 1)						
Eastbound Old Mill Road	A (8.7)	A (8.1)	A (9.9)	A (8.7)	A (8.1)	A (9.9)
Westbound Old Mill Road	A (8.3)	A (8.5)	A (9.0)	A (8.3)	A (8.5)	A (9.0)
Northbound Club House Road	A (7.7)	A (7.8)	A (8.2)	A (7.7)	A (7.8)	A (8.2)
Southbound Club House Road	A (8.7)	A (8.1)	A (9.0)	A (8.7)	A (8.1)	A (9.0)
Overall Intersection Delay	A (8.5)	A (8.3)	A (9.3)	A (8.5)	A (8.3)	A (9.3)
2015 Without Development (Case 2)						
Eastbound Old Mill Road	B (13.3)	B (11.0)	C (20.3)	B (12.6)	B (10.8)	C (18.6)
Westbound Old Mill Road	A (9.5)	B (12.6)	B (13.8)	A (9.3)	B (12.6)	B (13.5)
Northbound Club House Road	A (8.6)	A (9.0)	A (9.7)	A (8.5)	A (9.0)	A (9.6)
Southbound Club House Road	A (9.7)	A (9.4)	B (10.9)	A (9.6)	A (9.4)	B (10.7)
Overall Intersection Delay	B (11.6)	B (11.5)	C (16.5)	B (11.2)	B (11.5)	C (15.5)
2015 With Development (Case 3)						
Eastbound Old Mill Road	C (16.3)	B (11.9)	D (25.3)	C (15.1)	B (11.7)	C (22.5)
Westbound Old Mill Road	A (9.9)	B (14.5)	C (15.5)	A (9.7)	B (14.4)	C (15.1)
Northbound Club House Road	A (8.9)	A (9.3)	A (9.9)	A (8.8)	A (9.3)	A (9.8)
Southbound Club House Road	B (10.0)	A (9.7)	B (11.2)	A (9.9)	A (9.7)	B (11.0)
Overall Intersection Delay	B (13.6)	B (12.9)	C (19.7)	B (12.9)	B (12.8)	C (18.1)

Note: Case 3 HCS analyses by the TIS and McCormick Taylor are based on outdated proposed development of 600 condominiums, as evaluated by the TIS dated July 29, 2005 and November 16, 2005 (addendum).

² For unsignalized analyses, the numbers in parentheses following levels of service are average delay per vehicle, measured in seconds. For signalized analyses, those numbers are X-critical, a composite volume-to-capacity ratio.

Table 4
PEAK HOUR LEVELS OF SERVICE (LOS)
based on Traffic Impact Study for Proposed Residential Project on Railway Road
Report dated November 2005
Prepared by Orth-Rodgers Associates, Inc.

Signalized Intersection ³	LOS per TIS			LOS per McCormick Taylor		
	Weekday AM	Weekday PM	Saturday Mid-Day	Weekday AM	Weekday PM	Saturday Mid-Day
Delaware Route 26 and Delaware Route 17						
2004 Existing (Case 1)	B (0.46)	B (0.50)	C (0.89)	B (0.49)	B (0.54)	B (0.78)
2015 Without Development (Case 2) ⁴	C (0.93)	D (0.94)	F (1.75)	B (0.72)	C (0.90)	F (1.20)
2015 With Development (Case 3) ⁴	C (0.94)	E (0.97)	F (1.96)	C (0.71)	D (0.90)	F (1.26)
2015 With Development (Case 3) with Improvement Options ^{5,6}	NA	NA	NA	C (0.65)	C (0.75)	D (0.92)

Note: Case 3 HCS analyses by the TIS and McCormick Taylor are based on outdated proposed development of 600 condominiums, as evaluated by the TIS dated July 29, 2005 and November 16, 2005 (addendum).

³ For unsignalized analyses, the numbers in parentheses following levels of service are average delay per vehicle, measured in seconds. For signalized analyses, those numbers are X-critical, a composite volume-to-capacity ratio.

⁴ McCormick Taylor's analysis for Cases 2 and 3 include committed improvements for the Route 26 Planning Study. This includes an exclusive eastbound right-turn lane along Route 26 that the TIS did not have in their analysis. It is likely that these improvements were not committed at the time of analysis.

⁵ Improvement option includes converting the eastbound right-turn lane into a shared through/right lane along with a second receiving lane on Route 26, and a second northbound left-turn lane along Route 17 along with a second receiving lane on Route 26.

⁶ The TIS did not recommend improvements for this intersection citing that DelDOT's Route 26 Improvement Project will address the future unacceptable levels of service.

Table 5
PEAK HOUR LEVELS OF SERVICE (LOS)
based on Traffic Impact Study for Proposed Residential Project on Railway Road
Report dated November 2005
Prepared by Orth-Rodgers Associates, Inc.

Unsignalized Intersection ⁷ One-Way Stop Control	LOS per TIS ⁸			LOS per McCormick Taylor		
	Weekday AM	Weekday PM	Saturday Mid-Day	Weekday AM	Weekday PM	Saturday Mid-Day
Delaware Route 26 and Railway Road						
2004 Existing (Case 1)						
Eastbound Route 26 - Left	A (8.0)	A (8.7)	A (10.0)	A (8.0)	A (8.7)	A (10.0)
Southbound Railway Road	B (11.9)	C (15.3)	D (27.8)	B (11.9)	C (15.3)	D (27.8)
2015 Without Development (Case 2) ⁹						
Eastbound Route 26 - Left	A (8.6)	B (10.8)	B (14.6)	A (8.7)	B (10.9)	B (14.5)
Southbound Railway Road	C (16.7)	E (42.5)	F (454.0)	C (16.7)	E (41.4)	F (389.6)
2015 With Development (Case 3) ⁹						
Eastbound Route 26 - Left	A (8.7)	B (12.0)	C (16.6)	A (8.8)	B (12.1)	C (16.4)
Southbound Railway Road	C (18.8)	F (73.3)	F (768.3)	C (18.7)	F (68.4)	F (768.3)
2015 With Development (Case 3) with Improvement Options ¹⁰						
Eastbound Route 26 - Left	A (8.7)	B (12.0)	C (16.6)	A (8.8)	B (12.1)	C (16.4)
Southbound Railway Road - Right	C (16.6)	E (39.3)	F (172.2)	C (15.1)	D (25.7)	F (75.0)

Note: Case 3 HCS analyses by the TIS and McCormick Taylor are based on outdated proposed development of 600 condominiums, as evaluated by the TIS dated July 29, 2005 and November 16, 2005 (addendum).

⁷ For unsignalized analyses, the numbers in parentheses following levels of service are average delay per vehicle, measured in seconds. For signalized analyses, those numbers are X-critical, a composite volume-to-capacity ratio.

⁸ The TIS and McCormick Taylor had differing truck percentages in their analysis. It appears that the TIS dropped or raised their truck percentages occasionally without a logical pattern.

⁹ McCormick Taylor's analysis for Cases 2 and 3 include committed improvements for the Route 26 Planning Study. This includes an exclusive westbound right-turn lane along Route 26 that the TIS did not have in their analysis. It is likely that these improvements were not committed at the time of analysis.

¹⁰ Orth Rodgers' improvement option includes an exclusive southbound left-turn lane. McCormick Taylor's improvement option includes restricting southbound left-turning traffic from Railway Road onto Route 26. Traffic wishing to travel west on Route 26 should travel southwest on Old Mill Road and use the signal at Route 26 instead.

Table 6
PEAK HOUR LEVELS OF SERVICE (LOS)
based on Traffic Impact Study for Proposed Residential Project on Railway Road
Report dated November 2005
Prepared by Orth-Rodgers Associates, Inc.

Signalized Intersection ¹¹	LOS per TIS			LOS per McCormick Taylor		
	Weekday AM	Weekday PM	Saturday Mid-Day	Weekday AM	Weekday PM	Saturday Mid-Day
Delaware Route 26 and Old Mill Road						
2004 Existing (Case 1) ^{12, 13}	C (0.51)	C (0.64)	C (0.87)	C (0.48)	C (0.57)	D (0.79)
2015 Without Development (Case 2) ¹⁴	D (0.86)	F (1.04)	F (1.14)	D (0.86)	F (1.06)	F (1.31)
2015 With Development (Case 3) ¹³	D (0.91)	F (1.06)	F (1.16)	D (0.91)	F (1.09)	F (1.33)
2015 With Development (Case 3) with Improvement Option 1 ¹⁵	NA	NA	NA	D (0.70)	D (0.93)	F (1.15)
2015 With Development (Case 3) with Improvement Option 2 ¹⁶	NA	NA	NA	C (0.50)	C (0.71)	D (0.87)

Note: Case 3 HCS analyses by the TIS and McCormick Taylor are based on outdated proposed development of 600 condominiums, as evaluated by the TIS dated July 29, 2005 and November 16, 2005 (addendum).

¹¹ For unsignalized analyses, the numbers in parentheses following levels of service are average delay per vehicle, measured in seconds. For signalized analyses, those numbers are X-critical, a composite volume-to-capacity ratio.
¹² McCormick Taylor used the more recent lane configuration for analysis, which was observed in the field during the field view. This lane configuration includes a separate left, through and right-turn lane along northbound Old Mill Road, and an exclusive right-turn lane along eastbound Route 26. These improvements were likely not in place at the time of Orth Rodgers' field view.
¹³ McCormick Taylor used the signal timings dated 8-18-05 for this intersection. They included the new lane configuration as well as indicating that it is a coordinated signal. Orth Rodgers used old signal timings from 3-4-03.
¹⁴ McCormick Taylor's analysis for Cases 2 and 3 include committed improvements for the Route 26 Planning Study. This includes an exclusive southbound right-turn lane along Old Mill Road that the TIS did not have in their analysis. It is likely that these improvements were not committed at the time of analysis.
¹⁵ Improvement option 1 consists of adding an additional southbound left-turn lane on Old Mill Road and a corresponding receiving lane on eastbound Route 26.
¹⁶ Improvement option 2 includes converting the eastbound right-turn lane to a shared through/right lane along Route 26, reconfiguring the southbound Old Mill Road approach to a dual left-turn lane and a through/right-turn lane, and adding an additional westbound through lane along Route 26.

Table 7
PEAK HOUR LEVELS OF SERVICE (LOS)
based on Traffic Impact Study for Proposed Residential Project on Railway Road
Report dated November 2005
Prepared by Orth-Rodgers Associates, Inc.

Signalized Intersection ¹⁷	LOS per TIS			LOS per McCormick Taylor		
	Weekday AM	Weekday PM	Saturday Mid-Day	Weekday AM	Weekday PM	Saturday Mid-Day
Delaware Route 26 and Central Avenue						
2004 Existing (Case 1) ^{18, 19}	B (0.48)	B (0.68)	D (0.94)	C (0.50)	C (0.54)	E (0.97)
2015 Without Development (Case 2) ¹⁹	C (0.67)	D (0.90)	F (1.50)	D (0.85)	E (1.09)	F (2.19)
2015 With Development (Case 3) ¹⁹	C (0.70)	D (0.92)	F (1.56)	D (0.88)	F (1.16)	F (2.57)
2015 With Development (Case 3) with Improvement Option 1 ²⁰	NA	NA	NA	D (0.84)	D (0.94)	F (1.19)
2015 With Development (Case 3) with Improvement Option 2 ²¹	NA	NA	NA	C (0.65)	C (0.78)	D (0.95)

Note: Case 3 HCS analyses by the TIS and McCormick Taylor are based on outdated proposed development of 600 condominiums, as evaluated by the TIS dated July 29, 2005 and November 16, 2005 (addendum).

¹⁷ For unsignalized analyses, the numbers in parentheses following levels of service are average delay per vehicle, measured in seconds. For signalized analyses, those numbers are X-critical, a composite volume-to-capacity ratio.

¹⁸ McCormick Taylor used the more recent lane configuration for analysis, which was observed in the field during the field view. This lane configuration includes a separate right-turn lane along southbound Central Avenue. These improvements were likely not in place at the time of Orth Rodgers' field view.

¹⁹ For the Existing Case and Cases 2 and 3 Orth Rodgers used concurrent phasing and did not coordinate the signal. McCormick Taylor kept it as split phasing and coordinated the signal as consisted with DelDOT's most recent signal timing plan. In addition, as consistent with the Route 26 Mainline improvement plans, McCormick Taylor assumed committed improvements that included an exclusive left and right turning lanes for northbound Central Avenue, a southbound left turn lane on southbound Central Avenue and a westbound right turn lane on Route 26.

²⁰ Improvement option 1 includes an additional eastbound left-turn lane on Route 26 and subsequent receiving lane on northbound Central Avenue. The phasing for the northbound and southbound movements was changed to concurrent phasing.

²¹ Improvement option 2 consists of adding an additional eastbound through lane on Route 26, and converting the westbound right-lane into a shared through/right-turn lane, along with subsequent receiving lanes on both directions. The phasing for the northbound and southbound movements was changed to concurrent phasing.

Table 8
PEAK HOUR LEVELS OF SERVICE (LOS)
based on Traffic Impact Study for Proposed Residential Project on Railway Road
Report dated November 2005
Prepared by Orth-Rodgers Associates, Inc.

Unsignalized Intersection ²² One-Way Stop Control	LOS per TIS			LOS per McCormick Taylor		
	Weekday AM	Weekday PM	Saturday Mid-Day	Weekday AM	Weekday PM	Saturday Mid-Day
2015 With Development (Case 3)						
Eastbound Site Access	A (10.0)	A (9.3)	B (10.0)	A (9.9)	A (9.2)	B (10.0)
Northbound Railway Road - Left	A (7.7)	A (7.7)	A (7.9)	A (7.7)	A (7.7)	A (7.9)

Note: Case 3 HCS analyses by the TIS and McCormick Taylor are based on outdated proposed development of 600 condominiums, as evaluated by the TIS dated July 29, 2005 and November 16, 2005 (addendum).

²² For unsignalized analyses, the numbers in parentheses following levels of service are average delay per vehicle, measured in seconds. For signalized analyses, those numbers are X-critical, a composite volume-to-capacity ratio.



STATE OF DELAWARE
DEPARTMENT OF TRANSPORTATION
800 BAY ROAD
P.O. BOX 778
DOVER, DELAWARE 19903

CAROLANN WIGGS, P.E.
SECRETARY

March 11, 2008

Mr. Lawrence B. Lank
Director
Sussex County Planning & Zoning Commission
P.O. Box 417
Georgetown, DE 19947

Dear Mr. Lank:

The attached revised Traffic Impact Study (TIS) review letter for the **Proposed Residential Project on Railway Road** has been completed under the responsible charge of a registered professional engineer whose firm is authorized to work in the State of Delaware. They have found the TIS to conform to DelDOT's Rules and Regulations for Subdivision Streets and other accepted practices and procedures for such studies. DelDOT accepts this TIS review and concurs with the recommendations. We are providing it to you in fulfillment of our joint agreement regarding the review of TIS.

The revised review letter was the result of an October 9, 2007 meeting, requested by Orth-Rodgers & Associates, Inc., which is the company that prepared the TIS. The meeting was held at DelDOT, to review the recommendations presented in the Proposed Residential Project on Railway Road TIS. At that meeting the developer stated that the proposed development would be scaled back from 600 condominiums to 204 condominiums. Based on that meeting and the information provided, it was necessary for us to revise the original TIS review letter, dated June 21, 2006. If you have any questions concerning this letter or the attached review letter, please contact me at (302) 760-2134.

Sincerely,

Todd J. Sammons
Project Engineer

TS:tsm
Enclosures
cc with enclosures:

Ms. Constance C. Holland, Office of State Planning Coordination
Mr. Derrick Kennedy, Orth-Rodgers & Associates, Inc.
Mr. Andrew J. Parker, McCormick Taylor
DelDOT Distribution



DelDOT Distribution

Frederick H. Schranck, Deputy Attorney General
Darrel Cole, Chief of Community Relations, Public Relations
Robert Taylor, Director, Transportation Solutions (DOTS)
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Lisa Collins, Service Development Planner, Delaware Transit Corporation
Marc Côté, Subdivision Engineer, Development Coordination
T. William Brockenbrough, Jr., County Coordinator, Development Coordination
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John T. Fiori, Subdivision Manager, Development Coordination
Anthony Aglio, Bicycle and Pedestrian Coordinator, Statewide & Regional Planning
Troy Brestel, Project Engineer, Development Coordination