



STATE OF DELAWARE
DEPARTMENT OF TRANSPORTATION
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DOVER, DELAWARE 19903

SHAILEN P. BHATT
SECRETARY

March 19, 2012

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

Dear Mr. Lank:

DeIDOT has completed its review of the traffic impact study (TIS) for the proposed **Balsamo Commercial Development (a.k.a. Balsamo & Norino Properties)** in Sussex County, prepared by Pennoni Associates, Inc. (PA) and dated October 26, 2011. While the TIS evaluated the impacts of two developments, located on the northwest and southeast corners of the intersection of US Route 13 and Delaware Route 18, this letter focuses solely on the commercial development southeast of the intersection of US Route 13 and Delaware Route 18.

The TIS evaluates the impact of the subject development, which is proposed to be located on a 21.60-acre assemblage of parcels in Sussex County, just south of Delaware Route 18 between US Route 13 and Camp Road. The land use consists of 162,000 square feet of commercial space. Two access points are proposed: one along US Route 13, and one along Camp Road. Construction is expected to be complete by 2015.

DeIDOT currently has one relevant project within the study area, which is a Hazard Elimination Program (HEP) project at the intersection of Delaware Route 18 and Delaware Route 404. This project will reconfigure the eastbound Delaware Route 18 and northbound Delaware Route 404 approaches to provide for a separate right-turn lane on the eastbound approach and a separate left-turn lane on the northbound approach. As the need for the project was identified in the 2011 December Task Report, a schedule for this project has not yet been developed.

It should be noted that, in our review of the TIS, DeIDOT developed a new set of future traffic volumes, labeled as Case IV. The future background traffic volumes used in Cases II and III were provided to the Consultant by DeIDOT, as they were derived from DeIDOT's 2009 Bridgeville Corridor Study. Since the completion of that study, development has slowed considerably in the project area. Most of the developments identified in that study will not be complete by 2015, and it seems that many of them may not begin construction by then. Therefore, to capture the change in projected impact on the study area, a new set of volumes was developed and considered for purposes of this study.



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

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

<i>Intersection</i>	<i>Situations for which deficiencies occur</i>
US Route 13 / Site Entrance	Case III (2015 with development), PM & Saturday; Case IV (2015 with development with new volumes), PM
US Route 13 / Delaware Route 18	Case II (2015 without development), PM & Saturday; Case III (2015 with development), PM & Saturday; Case IV (2015 with development with new volumes), PM & Saturday
Delaware Route 18 / Delaware Route 404	Case II (2015 without development), Saturday; Case III (2015 with development), Saturday

The site entrance on US Route 13 would exhibit LOS deficiencies during both peak hours upon completion of the site. However, this would be due to the large amount of through traffic on US Route 13 compared to the relatively lower volumes utilizing the site entrances. Thus, no recommendation has been made in this regard.

The intersection of US Route 13 & Delaware Route 18 also exhibits LOS deficiencies across multiple peak hours and multiple scenarios. However, traffic generated by the subject development would not affect the critical movements of this intersection that cause the LOS deficiencies. Thus, no recommendation has been made in this regard.

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.

- I. The developer should construct a rights-in, rights-out site entrance on US Route 13 to be consistent with the proposed lane configuration as shown in the table below.

Approach	Current Configuration	Proposed Configuration
Northbound US Route 13 approach	Two through lanes	Two through lanes, one right-turn lane
Westbound Site Entrance	Approach does not exist	One right-turn lane

The required right-turn lane on northbound US Route 13 should be constructed in conformance with the dimensional requirements mandated by DelDOT's Standards and Regulations for Subdivision Streets and State Highway Access.

2. The developer should construct a full site entrance on Camp Road to be consistent with the proposed lane configuration as shown in the table below.

Approach	Current Configuration	Proposed Configuration
Northbound Camp Road	One through lane	One through lane
Southbound Camp Road	One through lane	One through lane, one right-turn lane
Eastbound Site Entrance	Approach does not exist	One shared left-turn / right-turn lane

The required right-turn lane on southbound Camp Road should be constructed in conformance with the dimensional requirements mandated by DeIDOT's Standards and Regulations for Subdivision Streets and State Highway Access.

3. The developer should improve southbound Camp Road along the projected site frontage (includes the actual site frontage and the frontage of three lots previously subdivided from a larger parcel included in the site) to meet DeIDOT's local road standards. Local road standards include eleven-foot travel lanes and five-foot shoulders.
4. The developer should enter into an agreement with DeIDOT to fund an equitable portion of the DeIDOT Hazard Elimination Program project at the intersection of Delaware Route 18 and Delaware Route 404. The developer should coordinate with DeIDOT's Subdivision Section on the implementation and equitable cost sharing of this project.

At the time of this review, comments related to transit, bicycle and pedestrian facilities had not been received. Comments related to those facilities will be addressed during review of the site and entrance plans.

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

Improvements in this TIS may be considered "significant" under DeIDOT's *Work Zone Safety and Mobility Procedures and Guidelines*. These guidelines are available on DeIDOT's website at http://www.deldot.gov/information/pubs_forms/manuals/de_mutcd/index.shtml. For any additional information regarding the work zone impact and mitigation procedures during construction please contact Mr. Adam Weiser of DeIDOT's Traffic Section. Mr. Weiser can be reached at (302) 659-4073 or by email at Adam.Weiser@state.de.us.

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Additional details on our review of the TIS are attached. Please contact Mr. Troy Brestel at (302) 760-2167 if you have any questions concerning this review.

Sincerely,



T. William Brockenbrough, Jr.
County Coordinator

TWB:tbm

Enclosures

cc with enclosures:

Thomas Martin, Pennoni Associates, Inc.
Douglas Barry, Pennoni Associates, Inc.
Mark Davidson, Pennoni Associates, Inc.
Frederick H. Schranck, Deputy Attorney General
Terry Gorlich, Legislative Liaison, Public Relations
Nicole Majeski, Deputy Chief of Staff
Natalie Barnhart, Director, Transportation Solutions (DOTS)
Michael Strange, Director, Planning
Michael H. Simmons, Assistant Director, Project Development South, DOTS
Donald D. Weber, Chief Traffic Engineer, Traffic, DOTS
Cleon Cauley, Deputy Director, Planning
Jeff Reed, South District Engineer, Maintenance & Operations (M&O)
Mark Luszczyk, Assistant Chief Traffic Engineer, Traffic, DOTS
Adam Weiser, Safety Programs Engineer, Traffic, DOTS
Thomas E. Meyer, Traffic Studies Manager, Traffic, DOTS
Naa-Atswei Tetteh, Traffic Studies Engineer, Traffic, DOTS
Marvin Roberts, Public Works Manager, South District, M&O
Jennifer Pinkerton, Chief Materials Engineer, M&O
William J. Dryden, Transportation Planner, Project Development South, DOTS
Mark Harbeson, Project Manager, Project Development South, DOTS
Lisa Collins, Service Development Planner, Delaware Transit Corporation
Ann Gravatt, Bicycle & Pedestrian Reviewer, Statewide & Regional Planning
Marc Coté, Subdivision Engineer, Development Coordination
Leonard Massotti, Sussex County Subdivision Coordinator, Development
Coordination
Derek Sapp, Subdivision Manager, Development Coordination
Troy Brestel, Project Engineer, Development Coordination
W. Paul Hogge, Project Engineer, Development Coordination
Andrew J. Parker, McCormick Taylor

General Information

Report date: October 2011

Prepared by: Pennoni Associates, Inc.

Prepared for: Joseph Balsamo

Tax Parcels: 331-2.00-17.03, 331-2.00-18.03, 331-2.00-18.13

Generally consistent with DelDOT's *Standards and Regulations for Subdivision Streets and State Highway Access*: Yes

Project Description and Background

Description: 162,000 square foot shopping center

Location: South of Delaware Route 18 between US Route 13 and Camp Road

Amount of land to be developed: approximately 21.6 acres

Current zoning: AR-1 (Agricultural Residential), C-1 (General Commercial)

Proposed zoning: CR-1 (Commercial Regional)

Land use approval(s) needed: Subdivision approval, Sussex County Land Use approval

Proposed completion date: 2015

Proposed access locations: US Route 13, Camp Road

Livable Delaware

(Source: Delaware Strategies for State Policies and Spending, 2010 Update)

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

Description of Investment Level:

Investment Level 3

Investment Level 3 Areas generally fall into two categories. The first category covers lands that are in the long-term growth plans of counties or municipalities where development is not necessary to accommodate expected population growth during this five-year planning period (or longer). In these instances, development in Investment Level 3 may be least appropriate for new growth and development in the near term.

The second category includes lands that are adjacent to or intermingled with fast-growing areas within counties or municipalities that are otherwise categorized as Investment Levels 1 or 2. These lands are most often impacted by environmentally sensitive features, agricultural-preservation issues, or other infrastructure issues. In these instances, development and growth may be appropriate in the near term, but the resources on the site and in the surrounding area should be carefully considered and accommodated by state Agencies and local governments with land-use authority.

Investment Level 3 is further characterized by:

- Areas with leap frog development that is not contiguous with existing infrastructure;
- Areas that are experiencing some development pressure;
- Areas with existing but disconnected development; and
- Possible lack of adequate infrastructure.

Proposed Development's Compatibility with Livable Delaware: Based on the above description, it appears that this development proposal is generally consistent with the policies in the 2004 update of the Livable Delaware "Strategies for State Policies and Spending."

Comprehensive Plans

The proposed development is located within Sussex County.

Sussex County Comprehensive Plan: (Source: Sussex County Comprehensive Plan Update, 2007)

The site is located in an area with a Future Land Use designated as a Developing Area.

Developing Areas

The Developing Areas are newer, emerging growth areas. They are often located near main arterial roads that connect major destinations within the County. Most of the proposed Developing Areas are adjacent to municipalities and most are within potential future annexation areas of a municipality. In some cases, the developing areas are not yet served by sewer and water systems but have the potential to secure these services either from public or private providers that provide service to nearby locations.

Proposed Development's Compatibility with Comprehensive Plan: Based on the above descriptions of the Future Land Use plan for the area, the proposed development generally adheres to this section of the Sussex County Comprehensive Plan.

Trip Generation

Trip generation for the proposed development was computed based on rates and equations established in the Institute of Traffic Engineers (ITE) Trip Generation Manual (8th edition) and the ITE Trip Generation Handbook (2nd edition).

Delaware Hospice Trip Generation

Land Use	Evening Peak Hour			Saturday mid-day Peak Hour		
	In	Out	Total	In	Out	Total
<i>162,000 SF Shopping Center</i>	431	448	879	610	563	1173
<i>Pass-By Trips</i>	150	149	299	153	152	305
<i>Primary Trips</i>	281	299	580	457	411	868

Overview of TIS

Intersections examined:

- 1) US Route 13 / Site Entrance
- 2) Camp Road (Sussex Road 532) / Site Entrance
- 3) US Route 13 / Delaware Route 18
- 4) Delaware Route 18 / Camp Road
- 5) Delaware Route 404 / Delaware Route 18

Conditions examined:

- 1) Existing (2011);
- 2) 2015 without proposed development;
- 3) 2015 with proposed development using corridor study volumes; and
- 4) 2015 with proposed development using modified future volumes.

Peak hours evaluated: all intersections were examined during the weekday evening and Saturday mid-day peak hours.

Committed developments considered: Future developments in the area were considered in development of the 2009 Bridgeville Corridor Study traffic volumes.

Transit, Pedestrian, and Bicycle Facilities

Existing transit service: Currently, local transit service is provided along US Route 13 by DART Route 212.

Planned transit service: Since a formal site plan was not included with the TIS, comments relating to transit improvements will be made during DeIDOT's site plan review process.

Existing bicycle and pedestrian facilities: The Sussex County Bicycle Map indicates that both US Route 13 and Delaware Route 18 are considered Connector Bicycle Routes, with separate bikeways.

Planned bicycle and pedestrian facilities: Since a formal site plan was not included with the TIS, comments relating to bicycle and pedestrian improvements will be made during DeIDOT's site plan review process.

General HCS Analysis Comments

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

There were no general differences between the TIS and DeIDOT's review of it.

Table 1
 PEAK HOUR LEVELS OF SERVICE (LOS)
 Based on Traffic Impact Study for Balsamo / Norino Commercial Developments
 Report dated October 26, 2011
 Prepared by Pennoni Associates, Inc.

Unsignalized Intersection ¹	LOS per Analysis		LOS per DelDOT	
	Weekday PM	Saturday Mid-Day	Weekday PM	Saturday Mid-Day
US Route 13 / Site Entrance A ²				
2015 with development (Case III)				
Site Entrance Westbound	F (613.6)	F (*)	F (190.2)	F (*)
2016 with development (Case IV)				
Site Entrance Westbound	N/A	N/A	D (26.7)	F (86.0)

¹ For unsignalized and signalized analyses, the numbers in parentheses following levels of service are average delay per vehicle, measured in seconds.

² The lane configuration for this entrance was assumed to be one right-turn lane.

Table 2
 PEAK HOUR LEVELS OF SERVICE (LOS)
 Based on Traffic Impact Study for Balsamo / Norino Commercial Developments
 Report dated October 26, 2011
 Prepared by Pennoni Associates, Inc.

Unsignalized Intersection ¹	LOS per Analysis		LOS per DelDOT	
	Weekday PM	Saturday Mid-Day	Weekday PM	Saturday Mid-Day
Camp Road / Site Entrance B ²				
2015 with development (Case III)				
Camp Road Northbound Left-Turn	A (7.4)	A (7.4)	A (7.4)	A (7.4)
Site Entrance Eastbound	A (9.3)	A (9.3)	A (9.4)	A (9.4)
2016 with development (Case IV)				
Camp Road Northbound Left-Turn	N/A	N/A	A (7.4)	A (7.4)
Site Entrance Eastbound	N/A	N/A	A (9.4)	A (9.4)

¹ For unsignalized and signalized analyses, the numbers in parentheses following levels of service are average delay per vehicle, measured in seconds.

² The lane configuration for this entrance was assumed to be one shared left-turn / right-turn lane.

Table 3
 PEAK HOUR LEVELS OF SERVICE (LOS)
 Based on Traffic Impact Study for Balsamo / Norino Commercial Developments
 Report dated October 26, 2011
 Prepared by Pennoni Associates, Inc.

Signalized Intersection ¹	LOS per Analysis		LOS per DelDOT	
	Weekday PM	Saturday Mid-Day	Weekday PM	Saturday Mid-Day
US Route 13 / Delaware Route 18				
2010 existing (Case I)	C (28.0)	C (26.1)	C (22.8)	C (20.9)
2015 without development (Case II)	F (332.5)	F (861.3)	F (337.5)	F (516.1)
2015 without development (Case II) with improvements ²	N/A	N/A	C (32.4)	D (53.5)
2015 with development (Case III)	F (640.0)	F (*)	F (628.3)	F (*)
2015 with development (Case III) with improvements ^{2,3}	F (176.9)	F (794.3)	D (53.8)	F (101.7)
2015 with development (Case IV)	N/A	N/A	F (193.6)	F (238.0)
2015 with development (Case IV) with improvements ^{2,3}	N/A	N/A	C (30.4)	C (32.9)

¹ For unsignalized and signalized analyses, the numbers in parentheses following levels of service are average delay per vehicle, measured in seconds.

² Improvements for this intersection, as listed in the 2009 Bridgeville Corridor Study, would consist of changing the eastbound Delaware Route 18 approach to contain two exclusive left-turn lanes, one through lane, and one right-turn lane, and the westbound Delaware Route 18 approach to contain one exclusive left-turn lane and one shared through / right-turn lane.

³ DelDOT used a cycle length of 150 seconds during the weekday PM analysis and a cycle length of 180 seconds during the Saturday Mid-Day analysis. Additionally, DelDOT used different signal phasing in the analysis.

Table 4
 PEAK HOUR LEVELS OF SERVICE (LOS)
 Based on Traffic Impact Study for Balsamo / Norino Commercial Developments
 Report dated October 26, 2011
 Prepared by Pennoni Associates, Inc.

Unsignalized Intersection ¹	LOS per Analysis		LOS per DelDOT	
	Weekday PM	Saturday Mid-Day	Weekday PM	Saturday Mid-Day
Delaware Route 18 / Camp Road				
2010 existing (Case I)				
Delaware Route 18 Eastbound LT	A (7.5)	A (7.4)	A (7.5)	A (7.4)
Delaware Route 18 Westbound LT	A (7.6)	A (7.4)	A (7.6)	A (7.5)
Camp Road Northbound	B (11.0)	A (10.0)	B (11.1)	B (10.4)
Camp Road Southbound	B (11.3)	A (9.7)	B (11.8)	A (9.8)
2015 without development (Case II)				
Delaware Route 18 Eastbound LT	A (7.8)	A (7.8)	A (7.8)	A (7.9)
Delaware Route 18 Westbound LT	A (7.9)	A (7.8)	A (7.9)	A (7.9)
Camp Road Northbound	B (14.2)	B (13.1)	B (13.6)	B (13.7)
Camp Road Southbound	B (14.6)	B (12.5)	B (14.7)	B (12.8)
2015 with development (Case III)				
Delaware Route 18 Eastbound LT	A (7.9)	A (7.8)	A (7.9)	A (8.0)
Delaware Route 18 Westbound LT	A (8.1)	A (8.1)	A (8.1)	A (8.3)
Camp Road Northbound	B (14.8)	B (12.8)	B (13.9)	B (14.5)
Camp Road Southbound	C (19.5)	C (17.6)	C (19.4)	C (18.1)
2015 with development (Case IV)				
Delaware Route 18 Eastbound LT	N/A	N/A	A (7.6)	A (7.5)
Delaware Route 18 Westbound LT	N/A	N/A	A (7.8)	A (7.7)
Camp Road Northbound	N/A	N/A	B (11.4)	B (10.7)
Camp Road Southbound	N/A	N/A	B (14.3)	B (13.8)

¹ For unsignalized and signalized analyses, the numbers in parentheses following levels of service are average delay per vehicle, measured in seconds.

Table 5
 PEAK HOUR LEVELS OF SERVICE (LOS)
 Based on Traffic Impact Study for Balsamo / Norino Commercial Developments
 Report dated October 26, 2011
 Prepared by Pennoni Associates, Inc.

Unsignalized Intersection ¹	LOS per Analysis		LOS per DeIDOT	
	Weekday PM	Saturday Mid-Day	Weekday PM	Saturday Mid-Day
Delaware Route 18 / Delaware Route 404				
2010 existing (Case I)				
Delaware Route 18 Eastbound	B (11.3)	C (16.1)	B (11.7)	C (19.8)
Delaware Route 404 Northbound Left-Turn	A (8.2)	A (9.2)	A (8.4)	A (9.7)
2015 without development (Case II)				
Delaware Route 18 Eastbound	B (13.6)	E (38.6)	B (14.4)	E (49.0)
Delaware Route 404 Northbound Left-Turn	A (8.6)	B (10.7)	A (8.7)	B (11.0)
2015 without development (Case II) with improvements ²				
Delaware Route 18 Eastbound	N/A	N/A	B (13.6)	D (33.3)
Delaware Route 404 Northbound Left-Turn	N/A	N/A	A (8.7)	B (11.0)
2015 with development (Case III)				
Delaware Route 18 Eastbound	C (15.8)	F (191.1)	C (17.1)	F (151.0)
Delaware Route 404 Northbound Left-Turn	A (8.9)	B (12.0)	A (9.0)	B (12.6)
2015 with development (Case III) with improvements ²				
Delaware Route 18 Eastbound	N/A	N/A	C (15.6)	F (73.0)
Delaware Route 404 Northbound Left-Turn	N/A	N/A	A (9.0)	B (12.6)

¹ For unsignalized and signalized analyses, the numbers in parentheses following levels of service are average delay per vehicle, measured in seconds.

² The improvements, as listed under Site G in the 2011 Hazard Elimination Program Task II Report, consist of installing an eastbound right-turn lane on Delaware Route 18 and a northbound left-turn lane on Delaware Route 404.

Table 5 (continued)
 PEAK HOUR LEVELS OF SERVICE (LOS)
 Based on Traffic Impact Study for Balsamo / Norino Commercial Developments
 Report dated October 26, 2011
 Prepared by Pennoni Associates, Inc.

Unsignalized Intersection ¹	LOS per Analysis		LOS per DelDOT	
	Weekday PM	Saturday Mid-Day	Weekday PM	Saturday Mid-Day
Delaware Route 18 / Delaware Route 404				
2015 with development (Case IV)				
Delaware Route 18 Eastbound	N/A	N/A	B (13.1)	D (26.7)
Delaware Route 404 Northbound Left-Turn	N/A	N/A	A (8.6)	B (10.6)
2015 with development (Case IV) with improvements ²				
Delaware Route 18 Eastbound	N/A	N/A	B (12.8)	C (23.7)
Delaware Route 404 Northbound Left-Turn	N/A	N/A	A (8.6)	B (10.6)

¹ For unsignalized and signalized analyses, the numbers in parentheses following levels of service are average delay per vehicle, measured in seconds.

² The improvements, as listed under Site G in the 2011 Hazard Elimination Program Task II Report, consist of installing an eastbound right-turn lane on Delaware Route 18 and a northbound left-turn lane on Delaware Route 404.