



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

SHAILEN P. BHATT
SECRETARY

MEMORANDUM

TO: Steve Sisson, Sussex County Subdivision Coordinator

FROM: Troy Brestel, Project Engineer 

DATE: July 1, 2014
Revised July 17, 2014

**SUBJECT: Peninsula Lakes
Results of Traffic Operational Analysis (TOA) Review**

(Note Concerning Revision: The revised document corrects a mistake in the limits of roadway improvement in Item 1.)

We have reviewed the traffic operational analysis (TOA) for the proposed Peninsula Lakes mixed-use development on Tax Parcels 234-29.00-248.00, 249.00, 249.01, 249.02, 256.00, and 259.00 in Sussex County, prepared by The Traffic Group, Inc. (TTG) dated June 11, 2014. The analysis evaluates the traffic impacts of the mixed-use development, proposed to be located on both sides of Legion Road (Sussex Road 298), east of Delaware Route 24. The proposed development would consist of 588 single-family detached houses, 72 multi-family attached houses, and 15,000 square feet of commercial space. Access is proposed at multiple locations on Legion Road. Construction is expected to be complete by 2025.

Based on our review, we find that the intersections of Bay Farm Road (Sussex Road 299) / School Lane and Delaware Route 24 / Legion Road would operate at lower than level of service (LOS) D during the future p.m. peak hours, and would not meet the LOS criteria listed in Chapter 2 of the Standards and Regulations for Subdivision Streets and State Highway Access.

In the case of Delaware Route 24 / Legion Road, the failing LOS is for the approach of Legion Road. This intersection is unsignalized, and due to the heavier through volumes on Delaware Route 24, vehicles on Legion Road waiting to access Delaware Route 24 must wait for an acceptable gap in traffic to maneuver. However, the traffic queues on Legion Road are projected to be less than 200 feet during the future p.m. peak hour, and traffic operating along Delaware Route 24 functions acceptably. Therefore, we do not recommend any improvements to this intersection. Should the developer choose to develop the property per the proposed land use listed above, we offer the following comments:

- 1) The developer should improve Legion Road from Delaware Route 24 to the site entrance to meet DelDOT's local road standards. These standards include, but are not limited to, eleven-foot travel lanes and five-foot shoulders. The developer should provide a bituminous concrete overlay to the existing travel lanes, at DelDOT's discretion. DelDOT should analyze the existing lanes' pavement section and recommend an overlay thickness to the developer's engineer if necessary.
- 2) The developer should enter into a signal agreement for the intersection of Delaware Route 24 / Bay Farm Road. The developer may use the Traffic Signal Revolving Fund in executing the agreement. The developer should contact DelDOT's Traffic Section on the details of the signal agreement.
- 3) The developer should make an equitable contribution to DelDOT's Hazard Elimination Project (HEP) from Delaware Route 24 / Mount Joy Road to Delaware Route 24 / Bay Farm Road. The developer should contact DelDOT's Subdivision Section for the details on the project and amount of the contribution.
- 4) The developer should enter into a signal agreement for the intersection of Bay Farm Road / School Lane. The developer may use the Traffic Signal Revolving Fund in executing the agreement. The developer should contact DelDOT's Traffic Section on the details of the signal agreement.

Please note that this analysis generally focuses on capacity and level of service issues. Level of Service tables for the existing and future cases are attached with this memorandum.

In addition, further comments related to the design of the site entrance, as well as comments relating to traffic, transit, and bicycle improvements, may be made during the site plan review process.

TB:km

cc: Betty Tustin, The Traffic Group, Inc.
Lawrence Lank, Sussex County Planning and Zoning
J. Marc Coté, Assistant Director, Development Coordination
T. William Brockenbrough, Jr., County Coordinator, Development Coordination
Jeff Reed, South District Engineer, South District, DOTS
Marvin Roberts, South District Public Works Manager, South District, DOTS
Wayne Henderson, Service Development Planner, DTC
Marco Boyce, Supervisor, Statewide and Regional Planning
Derek Sapp, Subdivision Manager, Development Coordination
Chris Sylvester, Sussex County Traffic Engineer, Traffic, DOTS
Claudy Joinville, Project Engineer, Development Coordination

Table 1
PEAK HOUR LEVELS OF SERVICE (LOS)
Peninsula Lakes TOA Review
Prepared by The Traffic Group, Inc.

Unsignalized Intersection¹	LOS per TOA		LOS per DelDOT	
	Weekday AM	Weekday PM	Weekday AM	Weekday PM
Delaware Route 24 / Legion Road				
2014 existing				
Westbound Delaware Route 24 left-turn	A (8.4)	A (8.8)	A (8.4)	A (8.8)
Northbound Legion Road approach	C (15.3)	C (20.3)	C (15.1)	C (20.9)
2025 without development				
Westbound Delaware Route 24 left-turn	A (8.9)	A (9.7)	A (8.9)	A (9.8)
Northbound Legion Road approach	C (21.1)	E (37.6)	C (20.6)	E (39.7)
2025 with development				
Westbound Delaware Route 24 left-turn	A (9.2)	B (10.4)	A (9.1)	B (10.5)
Northbound Legion Road approach	D (28.4)	F (137.1)	D (27.0)	F (152.4)

¹ The numbers in parentheses following levels of service are average delay per vehicle, measured in seconds.

Table 2
PEAK HOUR LEVELS OF SERVICE (LOS)
Peninsula Lakes TOA Review
Prepared by The Traffic Group, Inc.

Unsignalized Intersection¹	LOS per TOA		LOS per DelDOT	
	Weekday AM	Weekday PM	Weekday AM	Weekday PM
Bay Farm Road / School Lane				
2014 existing				
Eastbound Bay Farm Road left-turn	N/A	N/A	A (7.6)	A (8.2)
Southbound School Lane approach	N/A	N/A	A (9.8)	B (11.8)
2025 without development				
Eastbound Bay Farm Road left-turn	N/A	N/A	A (8.3)	A (9.1)
Southbound School Lane approach	N/A	N/A	B (14.5)	F (101.6)
2025 with development				
Eastbound Bay Farm Road left-turn	N/A	N/A	A (8.8)	A (9.8)
Southbound School Lane approach	N/A	N/A	C (17.9)	F (556.5)

Table 3
Improvement Option 1 – Signalization – Bay Farm Road / School Lane

Signalized Intersection¹	LOS per TOA		LOS per DelDOT	
	Weekday AM	Weekday PM	Weekday AM	Weekday PM
Bay Farm Road / School Lane				
2025 with development	N/A	N/A	B (10.7)	B (15.2)

¹ The numbers in parentheses following levels of service are average delay per vehicle, measured in seconds.

Table 4
PEAK HOUR LEVELS OF SERVICE (LOS)
Peninsula Lakes TOA Review
Prepared by The Traffic Group, Inc.

Signalized Intersection ¹	LOS per TOA		LOS per DelDOT	
	Weekday AM	Weekday PM	Weekday AM	Weekday PM
Delaware Route 24 / Bay Farm Road				
2014 existing	B (17.1)	B (18.8)	C (20.3)	C (20.7)
2025 without development	C (21.8)	C (26.4)	C (25.3)	C (25.4)
2025 with development	C (25.1)	C (34.7)	C (27.0)	C (28.8)
2025 with development (with HEP Project improvements ²)	N/A	N/A	C (26.8)	C (28.0)

¹ The numbers in parentheses following levels of service are average delay per vehicle, measured in seconds.

² The improvements consist of reconfiguring each approach to have an exclusive left-turn lane, and exclusive through lane, and an exclusive right-turn lane.