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

JENNIFER COHAN
SECRETARY

January 23, 2019

Ms. Betty Tustin
The Traffic Group, Inc.
104 Kenwood Court
Berlin, MD 21236

Dear Ms. Tustin:

The Department has completed its review of the TIS for the proposed **Willow Run** residential development. The TIS was prepared by The Traffic Group (TTG), and is dated October, 2018. TTG prepared the report in a manner generally consistent with DelDOT's *Development Coordination Manual*.

The analysis evaluates the traffic impacts of the proposed development, which would be located on the west side of Bayard Road / Peppers Corner Road (Sussex Road 84 / 365), opposite of Central Avenue (Sussex Road 84) in Sussex County.

The proposed development would consist of 104 single-family detached units on an approximately 56.61-acre assemblage of parcels (Tax Parcels 134-18.00-55.00, 134-19.00-5.00 & 6.00). One full access is proposed on Bayard Road / Peppers Corner Road at the intersection of Central Avenue. Construction is expected to be complete in 2022.

The subject property is currently zoned as AR-1 (Agricultural Residential) and the developer does not plan to rezone the land.

Based on our review, we find that the intersection of Bayard Road / Peppers Corner Road / Central Avenue would operate at level of service (LOS) D or better during the a.m. and p.m. peak hours for both present and future conditions, and would meet the LOS criteria listed in Chapter 2 of the Development Coordination Manual.

DelDOT

Should Sussex County choose to approve the proposed development, the following items should be incorporated into the site design and reflected on the record plan by note or illustration. 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 reconstruct Bayard Road / Peppers Corner Road along the limits of the site frontage to provide eleven-foot travel lanes and six-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 construct the full site access on Bayard Road / Peppers Corner Road at the intersection of Central Avenue; the proposed configuration is shown in the table below:

Approach	Existing Configuration	Proposed Configuration
Eastbound Site Entrance	Approach does not exist	One shared left-turn / through / right-turn lane
Westbound Central Avenue	One left-turn lane, one right-turn lane	One shared left-turn / through lane, one right-turn lane
Northbound Bayard Road	One shared through / right-turn lane	One left-turn lane, one through lane, one right-turn lane
Southbound Peppers Corner Road	One shared left-turn / through lane	One left-turn lane, one through lane, one right-turn lane

Initial recommended minimum turn-lane lengths (excluding tapers) of the separate turn lanes along Bayard Road / Peppers Corner Road are listed below. Theses lengths were based on DelDOT's *Auxiliary Lane Worksheet* (version 5.1). The developer should coordinate with DelDOT's Development Coordination Section to determine final turn-lane lengths during the site plan review.

Approach	Left-Turn Lane	Right-Turn Lane
Northbound Bayard Road	210 feet	N/A
Southbound Peppers Corner Road	210 feet	240 feet

Regarding the Central Avenue approach, it will need to be realigned to form a 90-degree angle with Bayard Road / Peppers Corner Road. Additionally, a separate right-turn lane will need to be installed on the approach. The developer should coordinate with DelDOT's Development Coordination and Traffic Sections to determine the final design details of the intersection during the site plan review process.

3. The following bicycle, pedestrian, and transit improvements should be included:

   a. Where the right-turn lane is added at the site entrance along Bayard Road / Peppers Corner Road, a minimum of a five-foot bicycle lane should be dedicated and striped with appropriate markings for bicyclists through the turn-lane in order to facilitate safe and unimpeded bicycle travel. A right-turn yield to bikes sign should be added at the start of the lane.
   b. Appropriate bicycle symbols, directional arrows, pavement markings, and signing should be included along bicycle facilities and turn lanes within the project limits.
   c. A fifteen-foot wide easement from the edge of the right-of-way should be dedicated to DelDOT within the site frontage along Bayard Road / Peppers Corner Road. Within the easement, a minimum of a ten-foot wide shared-use path that meets current AASHTO and ADA standards should be constructed along the site frontage. The shared-use path should have a minimum of a five-foot buffer from the roadway. The developer should coordinate with DelDOT's Development Coordination section to determine exact locations and details of the shared-use path connections to the shoulders.
   d. ADA compliant curb ramps and crosswalks should be provided at all pedestrian crossings, including the site entrance. Type 3 curb ramps are discouraged.

Improvements in this TIS may be considered "significant" under DelDOT's *Work Zone Safety and Mobility Procedures and Guidelines*. These guidelines are available on DelDOT'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. Mark Buckalew of DelDOT's Traffic Section. Mr. Buckalew can be reached at (302) 894-6353 or by email at Mark.Buckalew@state.de.us.

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.

Level of service tables for the intersections studied are attached. If you have any questions concerning this review, please contact me at (302) 760-2167. My email is Troy.Brestel@state.de.us.

Sincerely,

Troy Brestel
Project Engineer

TWB:tbm
Enclosure
cc with enclosures: Ms. Janelle Cornwell, Sussex County Planning & Zoning
Mr. Robert McCleary, Director, Transportation Solutions (DOTS)
Mr. Drew Boyce, Director, Planning
Mr. Mark Luszcz, Chief Traffic Engineer, Traffic, DOTS
Mr. Michael Simmons, Assistant Director, Project Development South, DOTS
Mr. Alastair Probert, South District Engineer, DOTS
Mr. J. Marc Coté, Assistant Director, Development Coordination
Mr. T. William Brockenbrough, Jr., County Coordinator, Development Coordination
Mr. Peter Haag, Traffic Studies Manager, Traffic, DOTS
Mr. David Dooley, Service Development Planner, Delaware Transit Corporation
Mr. Robert Perrine, Constructability Review Engineer, DOTS
Mr. Anthony Aglio, Planning Supervisor, Statewide & Regional Planning
Mr. Stephen Sisson, Sussex County Subdivision Coordinator, Development Coordination
Mr. Mark Buckalew, Traffic Safety Engineer, DelDOT Traffic, DOTS
Mr. Claudy Joinville, Project Engineer, Development Coordination
Mr. Brian Yates, Johnson, Mirmiran & Thompson, Inc.

Table 1
PEAK HOUR LEVELS OF SERVICE (LOS)
Willow Run – TIS

Unsignalized Intersection[1]	**LOS per TIS**		**LOS per DelDOT**	
Bayard Road / Peppers Corner Road / Central Avenue / Site Entrance	Weekday AM	Weekday PM	Weekday AM	Weekday PM
2018 Existing				
Southbound Peppers Corner Road Left-Turn	A (7.7)	A (7.6)	A (7.7)	A (7.5)
Westbound Central Avenue	B (10.1)	B (10.3)	A (10.0)	B (10.1)
2022 without development				
Southbound Peppers Corner Road Left-Turn	A (7.8)	A (7.7)	A (7.6)	A (7.8)
Westbound Central Avenue	B (10.6)	B (11.5)	B (10.5)	B (11.5)
2022 with development				
Northbound Bayard Road Left-Turn	A (7.5)	A (7.5)	A (7.5)	A (7.5)
Southbound Peppers Corner Road Left-Turn	A (7.8)	A (7.7)	A (7.6)	A (7.8)
Eastbound Site Entrance	B (11.0)	B (11.4)	B (10.9)	B (11.4)
Westbound Central Avenue	B (11.7)	B (13.7)	B (11.5)	B (13.7)

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