



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

NICOLE MAJESKI
SECRETARY

September 13, 2022

Mr. D.J. Hughes, P.E.
Davis Bowen & Friedel, Inc.
1 Park Avenue
Milford, DE 19963

Dear Mr. Hughes,

The enclosed Traffic Impact Study (TIS) review letter for the **Southern Delaware Medical Center** (Tax Parcel: 334-6.00-511.02, 511.06, and 513) development 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 Development Coordination Manual and other accepted practices and procedures for such studies. DelDOT accepts this letter and concurs with the recommendations. If you have any questions concerning this letter or the enclosed review letter, please contact me at (302) 760-2124.

Sincerely,

Claudy Joinville
Project Engineer

CJ:km

Enclosures

cc with enclosures: Mr. Michael Glick, Lighthouse Construction, Inc.
Mr. Jamie Sechler, Davis, Bowen & Friedel, Inc.
Ms. Dawn Riggi, Davis, Bowen & Friedel, Inc.
Mr. Jamie Whitehouse, Sussex County Planning & Zoning
Mr. Mir Wahed, Johnson, Mirmiran, & Thompson, Inc.
Ms. Joanne Arellano, Johnson, Mirmiran, & Thompson, Inc.
DelDOT Distribution

DelDOT Distribution

Brad Eaby, Deputy Attorney General
Shanté Hastings, Deputy Secretary / Director of Transportation Solutions (DOTS)
Pamela Steinebach, Director, Planning
Mark Luszcz, Deputy Director, Traffic, DOTS
Peter Haag, Chief Traffic Engineer, Traffic, DOTS
Michael Simmons, Assistant Director, Project Development South, DOTS
Wendy Carpenter, Traffic Calming & Subdivision Relations Manager, DelDOT Traffic
Todd Sammons, Assistant Director, Development Coordination
Wendy Polasko, Subdivision Engineer, Development Coordination
Sarah Coakley, Principal Planner, Regional Systems Planning
Sireen Muhtaseb, TIS Section Manager, Development Coordination
Alistair Probert, South District Engineer, South District
Matthew Schlitter, South District Public Works Engineer, South District
Jared Kauffman, Service Development Planner, Delaware Transit Corporation
Tremica Cherry, Service Development Planner, Delaware Transit Corporation
Anthony Aglio, Planning Supervisor, Statewide & Regional Planning
Kevin Hickman, Acting Sussex Review Coordinator, Development Coordination
Brian Yates, Sussex County Subdivision Manager, Development Coordination
Mark Galipo, Traffic Engineer, Traffic, DOTS
Annamaria Furmato, Project Engineer, Development Coordination



September 13, 2022

Mr. Claudy Joinville
Project Engineer
Delaware Department of Transportation
Development Coordination, Division of Planning
800 Bay Road
Dover, DE 19901

RE: Agreement No. 1945F
Project Number T202069012
Traffic Impact Study Services
Task 5-8A –Southern Delaware Medical Center TIS

Dear Mr. Joinville:

Johnson, Mirmiran, and Thompson (JMT) has completed a review of the Traffic Impact Study (TIS) for the Southern Delaware Medical Center development, which was prepared by Davis, Bowen & Friedel, dated March 24, 2022. This review was assigned as Task Number 5-8A. The report is prepared in a manner generally consistent with DelDOT's *Development Coordination Manual*.

The TIS evaluates the impacts of a proposed development comprised of 32,960 square feet of medical office space in Sussex County, Delaware. The site is located on the south side of Shady Road (Sussex Road 276) between Plantation Road (Sussex Road 275) and Shady Nook Drive, near Five Points. The subject property is on an approximately 2.297-acre assemblage of parcels that is currently zoned as AR-1 (Agricultural Residential). The developer is seeking a Conditional Use approval to build the subject site. One full access point is proposed on Shady Road. Construction for the development is anticipated to be completed in 2023.

The proposed development is located within the boundary of the proposed Henlopen Transportation Improvement District (TID). DelDOT and Sussex County developed the TID and the formal creation of the TID was unanimously approved by Sussex County on October 27, 2020. The TID limits generally extend from the Georgetown to Lewes Trail and Delaware Route 1 to the north, Burton Pond and Herring Creek to the south, Arnell Creek and Rehoboth Bay to the east, and Beaver Dam Road to the west. The *Henlopen TID CTP Cost Development Report* was prepared in October 2019 by JMT and contained a summary of the traffic analysis conducted and the associated roadway concept plans and cost estimates for the TID. As part of the report, improvements were recommended at the Plantation Road/Shady Road intersection.

Although the subject property is within the Henlopen TID, the proposed plan for the development is not consistent with the Land Use and Transportation Plan (LUTP) that was developed for the TID. For developments that are consistent with the LUTP, the developer is required to pay a fee in lieu of performing a TIS and making off-site improvements in accordance with the TID. However, as the proposed development is not consistent, a TIS was required.



The purpose of the TIS is to identify any additional improvements beyond the TID improvements that the development would be required to contribute to. If no additional improvements are identified within the TIS, the development would still be required to participate in the TID. The TID fee would cover off-site improvements beyond their entrance improvements. The TID fee would be based on actual construction built, so the fee would be higher with more development. DelDOT would only require additional contributions beyond the TID fee for additional improvements needed beyond those in the TID.

The *Plantation Road Improvement, Robinsonville Road to US 9 (Phase 1)* (DelDOT Contract No. T202011201) project proposes to include operational improvements at the Belltown Road and US Route 9 intersection, a multi-lane roundabout at the intersection of Plantation Road, Belltown Road, and SR 23, and an additional southbound through lane on Plantation Road. Bicycle and pedestrian facilities will be upgraded throughout the corridor. This project begins at the Plantation Road and Robinsonville Road intersection, includes the Plantation Road and Shady Road/Salt Marsh Boulevard intersection, and ends near the Plantation Road/Belltown Road/US Route 9 intersection. This project proposes to preserve mobility for local residents and businesses while providing roadway improvements along Plantation Road to reduce congestion, improve safety, and accommodate anticipated growth in local and seasonal traffic. The latest project updates indicate that design and right-of-way acquisition are currently underway. Construction is anticipated to begin in Fall 2022 and end in 2024. More information about this project can be found at: <https://deldot.gov/projects/index.shtml?dc=details&projectNumber=T202011201>

The *Plantation Road Improvements, SR 24 to Robinsonville Road (Phase 2)* (DelDOT Contract No. T201911201) project consists of operational improvements including turn lanes and other intersection modifications, median turn lanes for residential entrances, and bicycle and pedestrian facilities throughout the corridor. This phase (Phase 2) of the project begins near the intersection of Plantation Road and Shady Road/Salt Marsh Boulevard and ends north of the intersection of Plantation Road and SR 24. Concept development is ongoing, and a construction start date has not been determined at this time. More information about this project can be found at: <https://deldot.gov/projects/index.shtml?dc=details&projectNumber=T201911201>

The *Shady Road (Plantation Road to SR 1) Improvements* DelDOT project was added to the Fiscal Year (FY) 2023 – FY 2028 Capital Transportation Program (CTP). Preliminary engineering is scheduled to start in FY 2028. A construction start date has not been determined at this time.

The *Five Points Transportation Study* is a joint effort developed by DelDOT and Sussex County to examine potential improvements to the area around the intersection of Delaware Route 1 and US Route 9 near Lewes, also known as Five Points. The Study seeks to reduce congestion and improve capacity on Delaware Route 1. Phase 1 of the Study involved the Working Group, which was comprised of public as well as state, county, and municipal agency members, to develop transportation recommendations for the area. The Study has moved into Phase 2 – Implementation, which involves the development and execution of studies, projects, and plans based on the Working Group's recommendations. Phase 1 was completed in Fall of 2018, and Phase 2 began in Spring of 2019. Recommendations from the Study that are within the area of study for the TIS include evaluating potential short-term safety and operational improvements at Route 9, Plantation Road, and Beaver Dam Road while longer-term improvements are under development. Additional



information can be found on the DelDOT project website at <https://deldot.gov/projects/Studies/fivepoints/>.

Based on our review of the traffic impact study, we have the following comments and recommendations:

All the study intersections operate at acceptable levels of service with the existing physical roadway and traffic control under 2023 future build conditions.

The TIS included an additional scenario for future 2045 conditions with the proposed development (Case 4). The signalized Shady Road and Plantation Road intersection under the PM peak hour Case 4 scenario would exhibit LOS deficiencies with a delay of 80.0 seconds per vehicle (LOS F). As part of the *Plantation Road Improvement, Robinsonville Road to US 9 (Phase 1)* project (DelDOT Contract No. T202011201), the intersection would be improved to provide two through lanes along the southbound Plantation Road approach. With these improvements the intersection would improve to operate at acceptable LOS during the PM peak hour under Case 4 conditions with 44.5 seconds of delay per vehicle (LOS D). Additionally, as part of the Henlopen TID the intersection would be improved to provide two through lanes along the northbound and southbound Plantation Road approaches. With these improvements, the intersection would operate at acceptable LOS with 24.4 seconds of delay per vehicle during the PM peak hour under Case 4 conditions.

Should Sussex County 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 shall improve Shady Road within the limits of their frontage to meet DelDOT's standards for their Functional Classification as found in Section 1.1 of the *Development Coordination Manual* and elsewhere therein. The improvements shall include both directions of travel, regardless of whether the developer's lands are on one or both sides of the road. Frontage is defined in Section 1 of the *Development Coordination Manual*, which states "This length includes the length of roadway perpendicular to lines created by the projection of the outside parcel corners to the roadway." Questions on or appeals of this requirement should be directed to the DelDOT Subdivision Review Coordinator in whose area the development is located.

To accommodate the *Shady Road (Plantation Road to SR 1) Improvements* DelDOT project, the developer should dedicate an additional five feet of right-of-way beyond the typical requirement for a local roadway. As a result, a 10-foot P.E. would be required. The value of the additional portion of right-of-way is deductible from the TID fee.

To the extent that the frontage improvements are not addressed by the site entrance construction (Item 2 below), the cost of the work completed to improve Shady Road to meet DelDOT's standards and the sidewalk, addressed in Item 4a below, are deductible



from the TID fee discussed in Item 3. It may be appropriate for DelDOT to require less than the work contemplated here to adjust the cost of the work with the amount of the TID fee.

2. The developer should construct an unsignalized full access for the proposed Southern Delaware Medical Center development along Shady Road. The intersection should be consistent with the lane configurations shown in the table below.

Approach	Current Configuration	Proposed Configuration
Eastbound Shady Road	One through lane	One through lane and one right turn lane
Westbound Shady Road	One through lane	One left turn lane and one through lane
Northbound Site Entrance	Approach does not exist	One shared left turn/right turn lane

Based on DelDOT’s *Development Coordination Manual*, the recommended minimum storage length (excluding taper) of the eastbound Shady Road right turn lane is 110 feet. Based on DelDOT’s *Development Coordination Manual*, the recommended minimum storage length (excluding taper) of the westbound Shady Road left turn lane is 120 feet. The projected queues from the HCS analysis can be accommodated within the recommended storage lengths. Per the Preliminary Site Plan prepared by DBF dated July 2021, the proposed entrance would be located approximately 575 feet east of the northeast point of tangency with Plantation Road. It is recommended that the proposed entrance be located towards the westernmost limits of the site frontage, approximately 515 feet east of the northeast point of tangency with Plantation Road, to accommodate the recommended westbound left turn storage length.

3. The developer should pay the appropriate portion of the Henlopen TID fee remaining after the value of the additional right-of-way dedication and the non-entrance frontage improvements has been credited against the total TID fees owed. The developer should coordinate with DelDOT Statewide Regional Planning section on the calculation of the fee.
4. The following bicycle, pedestrian, and transit improvements should be included:
 - a. A minimum of fifteen-foot wide permanent easement from the edge of the right-of-way should be dedicated to DelDOT along the Shady Road site frontage. Within the easement, the developer should construct a five-foot wide sidewalk. The sidewalk should be designed to meet current AASHTO and ADA standards. If feasible, the sidewalk should be placed behind utility poles and street trees should be provided within the buffer area. The developer should coordinate with DelDOT’s Development Coordination Section during the plan review process to identify the exact location of the sidewalk.



- b. ADA compliant curb ramps and marked crosswalks should be provided along the site entrance.
- c. Where internal sidewalks are located alongside of parking spaces, a buffer, physical barrier, or signage should be added to eliminate vehicular overhang onto the sidewalk.
- d. Minimum five-foot wide bicycle lanes should be incorporated in the right turn lane and shoulder along the Shady Road approaches to the site entrance.
- e. Utility covers should be moved outside of any designated bicycle lanes and any proposed sidewalks/SUP or should be flush with the pavement.

Please note that this review generally focuses on capacity and level of service issues; additional safety and operational issues will be further addressed through DeIDOT's Plan 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 https://www.deldot.gov//Publications/manuals/de_mutcd/index.shtml. For any additional information regarding the work zone impact and mitigation procedures during construction, please contact Mr. Jeff VanHorn, Assistant Director for Traffic Operations and Management. Mr. VanHorn can be reached at (302) 659-4606 or by email at Jeffrey.VanHorn@delaware.gov.

Additional details on our review of the TIS are attached. Please contact me at (302) 266-9600 if you have any questions concerning this review.

Sincerely,
Johnson, Mirmiran, and Thompson, Inc.

A handwritten signature in black ink, appearing to read 'Joanne M. Arellano'.

Joanne M. Arellano, P.E., PTOE

cc: Mir Wahed, P.E., PTOE
Janna Brown, E.I.T.

Enclosure

General Information

Report date: March 24, 2022

Prepared by: Davis, Bowen & Friedel, Inc. (DBF)

Prepared for: Lighthouse Construction, Inc.

Tax Parcels: 334-6.00-511.02, 511.06, and 513

Generally consistent with DelDOT's *Development Coordination Manual (DCM)*: Yes

Project Description and Background

Description: The proposed development consists of 32,960 square feet of medical office space.

Location: The land is located on the east side of Shady Road (Sussex Road 276) between Plantation Road (Sussex Road 275) and Shady Nook Drive near Five Points in Sussex County.

Amount of Land to be developed: An approximately 2.297-acre assemblage of parcels.

Land Use approval(s) needed: Entrance Plan, Conditional Use.

Proposed completion date: 2023.

Proposed access locations: One full access point on Shady Road between Plantation Road and Shady Nook Drive.

Daily Traffic Volumes:

- 2019 Average Annual Daily Traffic on Shady Road: 5,159

Site Map



**Graphic is an approximation based on the Preliminary Site Plan prepared by Davis, Bowen & Friedel, Inc (DBF) dated July 2021.*

Relevant and On-going Projects

The proposed development is located within the boundary of the proposed Henlopen Transportation Improvement District (TID). DelDOT and Sussex County developed the TID and the formal creation of the TID was unanimously approved by Sussex County on October 27, 2020. The TID limits generally extend from the Georgetown to Lewes Trail and Delaware Route 1 to the north, Burton Pond and Herring Creek to the south, Arnell Creek and Rehoboth Bay to the east, and Beaver Dam Road to the west. The *Henlopen TID CTP Cost Development Report* was prepared in October 2019 by JMT and contained a summary of the traffic analysis conducted and the associated roadway concept plans and cost estimates for the TID. As part of the report, improvements were recommended at the Plantation Road/Shady Road intersection.

Although the subject property is within the Henlopen TID, the proposed plan for the development is not consistent with the Land Use and Transportation Plan (LUTP) that was developed for the TID. For developments that are consistent with the LUTP, the developer is required to pay a fee per dwelling in lieu of performing a TIS and make off-site improvements in accordance with the TID. However, as the proposed development is not consistent, a TIS was required.

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transportation recommendations for the area. The Study has moved into Phase 2 – Implementation, which involves the development and execution of studies, projects, and plans based on the Working Group’s recommendations. Phase 1 was completed in Fall of 2018, and Phase 2 began in Spring of 2019. Recommendations from the Study that are within the area of study for the TIS include evaluating potential short-term safety and operational improvements at Route 9, Plantation Road, and Beaver Dam Road while longer-term improvements are under development. Additional information can be found on the DelDOT project website at <https://deldot.gov/projects/Studies/fivepoints/>.

Livable Delaware

(Source: Delaware Strategies for State Policies and Spending, 2020)

Location with respect to the Strategies for State Policies and Spending Map of Delaware:

The proposed development is located within Investment Level 1.

Investment Level 1

These areas are often municipalities, towns, or urban/urbanizing places in counties where density is generally higher than in surrounding areas. In Investment Level 1 Areas, state investments and policies should support and encourage a wide range of uses and densities, promote a variety of transportation options, foster efficient use of existing public and private investments, and enhance community identity and integrity. Overall, it is the state’s intent to use its spending and management tools to maintain and enhance community character, and to promote well-designed and efficient new growth in Investment Level 1 Areas.

In Level 1 Areas the state’s first priority will be for preserving existing facilities and making safety improvements. Level 1 areas will also be the highest priority for context sensitive transportation system capacity enhancements, transit-system enhancements, ADA accessibility, and for closing gaps in the pedestrian system, including the Safe Routes to School projects. Investment Level 1 Areas are ideal locations for Transportation Improvement Districts as well as Complete Community Enterprise Districts. Further, Level 1 areas are the first priority for planning projects and studies, bicycle facilities, signal-system enhancements, and the promotion of interconnectivity of neighborhoods and public facilities.

Proposed Development’s Compatibility with Livable Delaware:

Investment Level 1 areas typically aim to provide a range of uses, while maintaining community identity. The area surrounding the proposed development is largely residential with some commercial space. The proposed development is medical office space and would be located near the commercial space. Therefore, the proposed development is consistent with the 2020 update of the Livable Delaware “Strategies for State Policies and Spending.”

Comprehensive Plan

(Source: Sussex County 2019 Comprehensive Plan)

Sussex County Comprehensive Plan:

Per the *Sussex County Comprehensive Plan Zoning Map*, the proposed development is currently zoned as AR-1 – Agricultural Residential. Per the *Sussex County Comprehensive Plan Future Land Use Map*, the proposed development is in an area designated as a Coastal Area.

Proposed Development’s Compatibility with the Sussex County Comprehensive Plan:

The *Sussex County Comprehensive Plan* states that office uses are appropriate for Coastal Areas. Therefore, the development is generally consistent with the *Sussex County Comprehensive Plan*.

Trip Generation

The trip generation for the proposed development was determined by using the comparable land use and rates/equations contained in the *Trip Generation, 10th Edition: An ITE Informational Report*, published by the Institute of Transportation Engineers (ITE) for ITE Land Use Code 720 (Medical-Dental Office Building).

Table 1
Southern Delaware Medical Center Trip Generation

Land Use	ADT	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
32,960 SF Medical-Dental Office Building (ITE Code 720)	1,179	65	18	83	32	82	114

Overview of TIS

Intersections examined:

1. Site Entrance/Shady Road (Sussex Road 276)
2. Shady Road/Plantation Road (Sussex Road 275)

Conditions examined:

1. Case 1 – 2022 Existing.
2. Case 2 – 2023 without development.
3. Case 3 – 2023 with development.
4. Case 4 – 2045 with development.

Committed Developments considered: In coordination with DelDOT, no committed developments were incorporated in the analysis.

Peak hours evaluated: Weekday morning and weekday evening peak hours.

Intersection Descriptions

1. Site Entrance/Shady Road (Sussex Road 276)

Type of Control: Proposed two-way stop-controlled intersection (T-intersection)

Eastbound Approach: (Shady Road) Existing one through lane. Proposed one through lane and one right turn lane.

Westbound Approach: (Shady Road) Existing one through lane. Proposed one left turn lane and one through lane.

Northbound Approach: (Site Entrance) Proposed one shared left turn/right turn lane.

2. Shady Road/Plantation Road (Sussex Road 275)

Type of Control: Existing signalized intersection.

Eastbound Approach: (Salt Marsh Boulevard) Existing one shared left turn/through lane and one right turn lane.

Westbound Approach: (Shady Road) Existing one shared left turn/through lane and one right turn lane.

Northbound Approach: (Plantation Road) Existing one left turn lane, one through lane, and one right turn lane.

Southbound Approach: (Plantation Road) Existing one left turn lane, one through lane, and one right turn lane. Proposed one left turn lane, two through lanes, and one right turn lane.

Note: Proposed improvements at the Shady Road/Plantation Road intersection will be constructed as part of the Plantation Road Improvements, Robinsonville Road to US 9 DelDOT project (T202011201).

Transit, Pedestrian, and Bicycle Facilities

Existing transit service: Per DelDOT Gateway, there are four DART Routes that run through the project area, 204, 206, 305, and 307. All four routes traverse the study area along Plantation Road and Shady Road and stop at the Lewes Transit Center, located approximately 600 feet northeast from the proposed Southern Delaware Medical Center. Route 204 provides 33 round trips from 6:05 AM to 10:44 PM Monday through Saturday. Route 206 provides 11 round trips from 5:30 AM to 12:11 AM on weekdays, and eight round trips from 6:05 AM to 10:26 PM on Saturdays. Route 307 provides 5 round trips from 5:27 AM to 8:25 PM on weekdays. Route 305 is a beach bus from Wilmington to Rehoboth and the schedule has not been released for Summer 2022.

Planned transit service: Per email correspondence on April 7, 2022 with Mr. Jared Kauffman, Fixed-Route Planner for DART, the Delaware Transit Corporation recommends a direct pedestrian pathway to the Lewes Transit Center.

Existing bicycle and pedestrian facilities: According to DelDOT's Sussex County On-Road Bicycle Map, Plantation Road is a statewide bike route.

Planned bicycle and pedestrian facilities: Per email correspondence on March 31, 2022 with Mr. Anthony Aglio, DelDOT Bicycle Coordinator, sidewalks and bike lanes are recommended along the site frontage.

Bicycle Level of Traffic Stress in Delaware: Researchers with the Mineta Transportation Institute developed a framework to measure low-stress connectivity, which can be used to evaluate and guide bicycle network planning. Bicycle LTS analysis uses factors such as the speed of traffic, volume of traffic, and the number of lanes to rate each roadway segment on a scale of 1 to 4, where 1 is a low-stress place to ride and 4 is a high-stress place to ride. It analyzes the total connectivity of a network to evaluate how many destinations can be accessed using low-stress routes. Developed by planners at the Delaware Department of Transportation (DelDOT), the bicycle Level of Traffic Stress (LTS) model will be applied to bicycle system planning and evaluation throughout the state. The Bicycle LTS for the roadway under existing conditions along the site frontage are summarized below. The Bicycle LTS was determined utilizing a map developed by the University of Delaware.

- Shady Road LTS: 4

Crash Evaluation

No crash analysis was incorporated in the analysis.

Sight Distance Evaluation

No sight distance constraints were noted at the site entrances per a field visit conducted on April 11, 2022.

General HCS Analysis Comments

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

- 1) JMT and the TIS used version 7.9.6 of HCS7 to complete the analysis.
- 2) Per DelDOT's *Development Coordination Manual*, and due to the lack of available count data, JMT used a heavy vehicle percentage of 3% for each movement greater than 100 vph in the existing and future scenario analysis. The TIS used 3% for all scenarios.
- 3) Per DelDOT's *Development Coordination Manual* and coordination with DelDOT Planning, JMT used a heavy vehicle percentage of 5% for each movement less than 100 vph along roadways. The TIS used 3% for all scenarios.
- 4) Per DelDOT's *Development Coordination Manual*, and due to the lack of available count data, JMT utilized a PHF of 0.80 for roadways with less than 500 vph, 0.88 for roadways between 500 and 1,000 vph, and 0.92 for roadways with more than 1,000 vph. The TIS utilized 0.92 for all locations.
- 5) The following scenarios were analyzed:
 - a. Case 1 – 2016 Existing
 - b. Case 2 – 2023 without Development
 - c. Case 3 – 2023 with Development
 - d. Case 4 – 2045 with Development
 - e. Case 5 – 2029 with Development*

*Case 5 was analyzed for the Site Entrance along Shady Road only. Volumes were derived from collected ATR data.

Table 2
Peak Hour Levels Of Service (LOS)
Southern Delaware Medical Center TIS Review
Report Dated: March 24, 2022
Prepared by: Davis, Bowen & Friedel, Inc.

Signalized Intersection ¹	LOS per TIS		LOS per JMT	
	Weekday AM	Weekday PM	Weekday AM	Weekday PM
Shady Road / Plantation Road (Sussex Road 275)				
2016 Existing Conditions (Case 1) <i>with DelDOT Timing</i> ²	-	-	C (25.7)	C (27.1)
2016 Existing Conditions (Case 1) <i>with signal optimization</i> ³	B (12.6)	B (14.2)	B (17.5)	B (19.0)
2023 without Development (Case 2) <i>with signal optimization</i> ³	B (13.0)	B (14.8)	B (17.6)	B (19.0)
2023 with Development (Case 3) <i>with signal optimization</i> ³	B (13.0)	B (15.3)	B (17.7)	B (19.8)
2045 with Development (Case 4) <i>with signal optimization</i> ⁴	-	-	C (24.6)	F (80.0)
2045 with Development <i>with DelDOT Improvements</i> (Case 4) ⁵	-	-	C (21.4)	D (44.5)
2045 with Development <i>with Henlopen TID Improvements</i> (Case 4) ⁶ 5	B (15.0)	B (21.4)	C (22.0)	C (24.4)

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

² DelDOT Timing scenario includes utilizing the green split times consistent with DelDOT MAX 1 green times.

³ Signal Optimization scenario includes optimizing split and utilizing a cycle length of 90 seconds during the AM peak hour and 120 seconds during the PM peak hour.

⁴ Signal Optimization scenario includes optimizing split and utilizing a cycle length of 120 seconds during the AM and PM peak hours.

⁵ Scenario incorporates the improvements proposed as part of the *Plantation Road Improvement, Robinsonville Road to US 9 (Phase 1)* (DelDOT Contract No. T202011201). The intersection was modeled with an additional through lane along the southbound Plantation Road approach with a 90 second cycle length.

⁶ This scenario incorporates the improvements proposed as part of the DelDOT Henlopen TID project. The intersection was modeled with two through lanes along the northbound and southbound Planation Road approaches with a 90 second cycle length.

Table 3
Peak Hour Levels Of Service (LOS)
Southern Delaware Medical Center TIS Review
Report Dated: March 24, 2022
Prepared by: Davis, Bowen & Friedel, Inc.

Unsignalized Intersection Two-Way Stop Control (T-intersection)¹	LOS per TIS		LOS per JMT	
	Weekday AM	Weekday PM	Weekday AM	Weekday PM
Site Entrance / Shady Road (Sussex Road 276)				
2029 with Development (Case 5) ⁷				
Northbound Site Access Approach	B (14.9)	C (15.5)	B (14.7)	C (15.2)
Westbound Shady Road Left Turn	A (8.6)	A (8.0)	A (8.7)	A (8.0)

⁷ Per Coordination with DelDOT, site entrance analysis was performed for 2029. Volumes were developed by growing the 2019 AADT information for the roadway and incorporating the trip generation for the site. This is consistent with auxiliary lane worksheet methodology.