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

NICOLE MAJESKI
SECRETARY

July 24, 2023

Mr. Carl R. Wilson Jr., PE, PTOE, RSP
The Traffic Group
9900 Franklin Square Drive, Suite H
Baltimore, MD 21236

Dear Mr. Wilson:

The enclosed Traffic Impact Study (TIS) review letter for the proposed **Preston Millsboro** (Tax Parcels: 133-16.00-133.00 and 134.00) commercial 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 Annamaria.Furmato@delaware.gov.

Sincerely,

Annamaria Furmato
TIS Group Project Engineer

AF:km
Enclosure
cc with enclosure:
Chris Schaffner, DHW Holdings
Casey Rauch, Rauch Inc.
David L. Edgell, Office of State Planning Coordination
Jamie Whitehouse, Sussex County Planning & Zoning
Andrew J. Parker, McCormick Taylor, Inc.
Tucker Smith, McCormick Taylor, Inc.
DelDOT Distribution

DelDOT Distribution

Brad Eaby, Deputy Attorney General
Shanté Hastings, Deputy Secretary / Director of Transportation Solutions (DOTS)
Mark Luszcz, Deputy Director, DelDOT Traffic, DOTS
Michael Simmons, Assistant Director, Project Development South, DOTS
Peter Haag, Chief Traffic Engineer, DelDOT Traffic, DOTS
Wendy Carpenter, Traffic Calming & Subdivision Relations Manager, DelDOT Traffic, DOTS
Sean Humphrey, Traffic Engineer, DelDOT Traffic, DOTS
Matt Schlitter, South District Public Works Engineer, Maintenance & Operations
Jared Kauffman, Service Development Planner, Delaware Transit Corporation
Tremica Cherry, Service Development Planner, Delaware Transit Corporation
Pamela Steinebach, Director, Planning
Todd Sammons, Assistant Director, Development Coordination, Planning
Wendy Polasko, Subdivision Engineer, Development Coordination, Planning
Susanne Laws, Expedited Review Coordinator, Development Coordination, Planning
Ryan Schroder, Expedited Subdivision Reviewer, Development Coordination, Planning
Sireen Muhtaseb, TIS Group Manager, Development Coordination, Planning
Annamaria Furmato, TIS Group Project Engineer, Development Coordination, Planning
Anthony Aglio, Planning Supervisor, Statewide & Regional Planning, Planning
Jennifer Cinelli, Transportation Planner, Statewide & Regional Planning

July 24, 2023

Ms. Annamaria Furmato
Project Engineer
DelDOT Division of Planning
P.O. Box 778
Dover, DE 19903

RE: Agreement No. 1946F
Traffic Impact Study Services
Task No. 4A Subtask 08A – Preston-Millsboro

Dear Ms. Furmato:

McCormick Taylor has completed its review of the Traffic Impact Study (TIS) for the Preston-Millsboro development prepared by The Traffic Group, Inc. dated December 15, 2022. The Traffic Group, Inc. prepared the report in a manner generally consistent with DelDOT's Development Coordination Manual.

The TIS evaluates the impacts of the proposed Preston-Millsboro development, to be located on the west side of Delaware Avenue, just south of US Route 113, in the Town of Millsboro, Sussex County, Delaware. The proposed development would be an expansion of the existing Preston car dealership. The expansion would consist of 66,250 square feet of car dealership and a 7,200 square-foot car wash. It is noted that this project was initially scoped for a 39,000 square foot increase in car dealership area. This review of the final TIS includes the expansion to 66,250 square feet. Three access points are proposed: a full access on Delaware Avenue, a rights-in/rights-out access on US Route 113, and a full access on Oak Drive. The access points on US Route 113 and Oak Road are existing and serve the existing car dealership. Construction is anticipated to be completed in 2024.

Calculations to determine the developer's contributions to mitigate traffic impacts use a reduced square footage compared to the amount used for trip generation and capacity analysis. DelDOT granted this reduction to the developer due to the circumstances that led to the redevelopment of the site. The contributions are based on a 15,000 square-foot car dealership, a 12,565 square-foot car dealership, a 5,850 square-foot showroom, and a 9,930 square-foot car wash facility.

The subject land is located on an approximately 12.5-acre assemblage of parcels. The subject land is currently zoned HC (Highway Commercial) in the Town of Millsboro, and the developer does not plan to rezone the land.

Currently, there are four active DelDOT projects and one active program within the study area: The *US 113 & DE 24 Intersection* project is part of DelDOT's 2020 Hazard Elimination Program (HEP). The intersection is currently under review to determine what improvements are needed to address safety and operational concerns. Interim improvements have been made at the intersection including signal retiming, signing, pavement markings, and minor widening.

The *North Millsboro Bypass, US 113 to SR 24* project (DelDOT Contract No. T202112701 and T202112702) aims to improve safety and reduce congestion through the Town of Millsboro. This project will consist of a grade-separated interchange at the intersection of US Route 113 and Delaware Route 20 (Hardscrabble Road), and a two-lane connector road between US Route 113 and Delaware Route 24, north of Millsboro. The latest project updates indicate that design and right-of-way acquisition are currently underway. Construction is anticipated to being in 2023 and end in 2025. More details, including concept plans for this project, are available at the following link: https://deldot.gov/projects/index.shtml?dc=details&projectNumber=T201912701.

The *US 113 3rd Lane Widening* project would involve widening US Route 113 to include a third through lane in each direction from Dagsboro Road/Handy Road, north to a point just south of Hardscrabble Road. Per coordination with DelDOT, a signal is being contemplated at the intersection of US Route 113 and Delaware Avenue. More details are available at the following link: https://deldot.gov/projects/index.shtml?dc=details&projectNumber=T202312701.

DelDOT recently converted the intersection of US Route 113 and Avenue of Honor from two-way stop control to a traffic signal in an effort to improve safety at the intersection and improve overall network operations. This project was initiated by a DelDOT Traffic Study in 2021 that found the intersection met several warrants for a traffic signal and recommended the installation of a traffic signal with flashing red arrow (FRA) phasing. Construction occurred in Spring 2023. To provide long-term mitigation at the intersection, the *US 113 and Avenue of Honor/E. Piney Grove Road GSI* project would include a new grade separated intersection (GSI) at Avenue of Honor crossing US Route 113 to E. Piney Grove Road. The project is funded to begin engineering design in FY 27. A DelDOT contract number has not yet been assigned to this project.

DelDOT's Corridor Capacity Preservation Program (CCPP), a statewide program intended to sustain the through capacity of adopted highway corridors by various means such as limiting access points and using service roads for local vehicle trips. The general purpose of the program is to ensure that existing principal arterial roadways, including this section of US Route 113, are able to efficiently carry regional traffic without impedance from the effects of local development. The Preston Millsboro development proposes three site entrances in an area identified as Investment Level 1 in the Strategies for State Policies and Spending. The entrances include a full access on Delaware Avenue, an existing rights-in/rights-out access on US Route 113, and an existing full access on Oak Drive.

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:

Intersection	***Existing Traffic Control***	***Situations for which deficiencies occur***
US Route 113 and Delaware Avenue	Unsignalized	2024 with development Saturday (Case 3)
US Route 113 and Delaware Route 24	Signal	2022 existing AM/PM/Saturday (Case 1) 2024 without development AM/PM/Saturday (Case 2) 2024 with development AM/PM/Saturday (Case 3)
Delaware Route 24 and Delaware Avenue	Unsignalized	2022 existing AM/PM/Saturday (Case 1) 2024 without development AM/PM/Saturday (Case 2) 2024 with development AM/PM/Saturday (Case 3)
US Route 113 and Hardscrabble Road	Signal	2022 existing AM (Case 1) 2024 without development AM/PM/Saturday (Case 2) 2024 with development AM/PM/Saturday (Case 3)
US Route 113 and Avenue of Honor	Unsignalized	2022 existing AM/PM (Case 1) 2024 without development AM/PM/Saturday (Case 2) 2024 with development AM/PM/Saturday (Case 3)
US Route 113 and Old Landing Road	Unsignalized	2024 without development AM/PM (Case 2) 2024 with development AM/PM (Case 3)

US Route 113 and Delaware Avenue

This unsignalized intersection experiences LOS deficiencies during the Summer Saturday peak hour for Case 3. The eastbound right-turn is expected to operate at LOS E with queues over 62 feet long. The anticipated widening of US Route 113 is expected to install a traffic signal at this intersection which would mitigate the LOS deficiencies and therefore, no mitigation is recommended. However, the developer should make an equitable contribution to the *US 113 3rd Lane Widening* project.

US Route 113 and Delaware Route 24

This signalized intersection experiences LOS deficiencies during the AM, PM, and Saturday peak hours for Cases 1, 2, and 3. The highest delay is expected during the Summer Saturday peak hour with LOS F and 195.1 seconds of delay. The anticipated widening of US Route 113 will add capacity to the intersection and decrease the delay. However, the intersection will still operate with LOS deficiencies during all three peak hours. As the *US 113 & DE 24 Intersection* project has not established proposed recommendations at this intersection, The developer should make an equitable contribution to the *US 113 3rd Lane Widening* project.

Delaware Route 24 and Delaware Avenue

This unsignalized intersection experiences LOS deficiencies during the AM, PM, and Saturday peak hours for Cases 1, 2, and 3. In Case 1 the northbound Delaware Avenue approach is expected to operate at LOS F with 283.1 seconds of delay. In Case 2, the delay increases to over 1,000 seconds and in Case 3, there is expected to be over 5,000 seconds of delay. As a traffic signal would mitigate the LOS deficiencies at this intersection, the developer should enter into an agreement with DelDOT to contribute to the Traffic Signal Revolving Fund (TSRF).

US Route 113 and Hardscrabble Road

This signalized intersection experiences LOS deficiencies during the AM peak hour in Case 1 and during the AM, PM, and Saturday peak hours for Cases 2 and 3. In Case 2, during the Summer Saturday peak hour, the intersection is expected to operate at LOS F with 235.1 seconds of delay. In Case 3 the delay increases to 239.8 seconds. The *North Millsboro Bypass, US 113 to SR 24* project is expected to mitigate the LOS deficiencies at this intersection. Because this project is already under construction, the developer is not asked to make mitigating improvements at this intersection.

US Route 113 and Avenue of Honor

This unsignalized intersection experiences LOS deficiencies during the AM and PM peak hours in Cases 1, 2, and 3. LOS deficiencies are also experienced during the summer Saturday peak hour in Cases 2 and 3. During the AM peak hour, the westbound Avenue of Honor approach is expected to operate at LOS F with 1,404.1 seconds of delay in Case 2 and 1,605.3 seconds of delay in Case 3. DelDOT recently constructed a traffic signal at this intersection as part of a Traffic Engineering project. A traffic signal will mitigate all LOS deficiencies. The developer should make an equitable contribution to the aforementioned project.

US Route 113 and Old Landing Road

This unsignalized intersection experiences LOS deficiencies during the AM and PM peak hours in Cases 2 and 3. The westbound Old Landing Road approach is expected to operate at LOS E with 45.7 seconds of delay in the PM peak hour in Case 2 and 47.7 seconds of delay in Case 3. The anticipated widening of US Route 113 is expected to mitigate the LOS deficiencies at this intersection and therefore, no mitigation is recommended. The developer should make an equitable contribution to the *US 113 3rd Lane Widening* project.

Should the Town of Millsboro 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 shall improve the State-maintained road(s) on which they front (US Route 113, Oak Road, and Delaware Avenue) 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.

2. The developer should construct the full-movement Site Access A on Delaware Avenue. The proposed configuration is shown in the table below.

Approach	Existing Configuration	Proposed Configuration
Eastbound Site Entrance A	Approach does not exist	One shared left / right-turn lane
Northbound Delaware Avenue	One through lane	One left-turn lane and one through lane
Southbound Delaware Avenue	One through lane	One through lane and one right-turn lane

Initial recommended minimum turn-lane lengths (excluding tapers) of the separate turn lanes are listed below. This access should be located further south along Delaware Avenue, at a point far enough from the intersection of Delaware Avenue and US Route 113, such that it will allow for alignment with a future development's site access on the parcel across Delaware Avenue. The developer should coordinate with DelDOT's Development Coordination Section to determine final turn-lane lengths and other design details during the site plan review.

Approach	Left-Turn Lane	Right-Turn Lane
Eastbound Site Entrance A	N/A	N/A
Northbound Delaware Avenue	95 feet *	N/A
Southbound Delaware Avenue	N/A	110 feet *

* Initial turn-lane length based on DelDOT's *Auxiliary Lane Worksheet*

3. The developer should maintain the full-movement Site Access B on US Route 113. The proposed configuration is shown in the table below.

Approach	Existing Configuration	Proposed Configuration
Eastbound US Route 113	Two through lanes and one right-turn lane	Two through lanes and one right-turn lane
Westbound US Route 113	Divided Roadway	Divided Roadway
Northbound Site Entrance B	One right-turn lane	One right-turn lane

Initial recommended minimum turn-lane lengths (excluding tapers) of the separate turn lanes are listed below. The developer should design and construct a raised median along US Route 113 separating the eastbound left-turn lane from the two eastbound through lanes adjacent to Site Entrance B. The median should extend far enough west, beyond Site Entrance B, to discourage drivers from cutting across US Route 113 to access the left-turn lane. To accomplish this, the developer will need to extend the length of the turn-lane to provide sufficient merging distance. The developer should coordinate with DelDOT's Development Coordination Section to determine final turn-lane lengths and other design details during the site plan review.

Approach	Left-Turn Lane	Right-Turn Lane
Eastbound US Route 113	N/A	345 feet *
Westbound US Route 113	N/A	N/A
Northbound Site Entrance B	N/A	N/A

* Initial turn-lane length based on DelDOT's *Auxiliary Lane Worksheet. Existing turn-lane length is more than the recommended minimum turn-lane length. Therefore, the existing eastbound right-turn lane does not need to be lengthened.*

4. The developer should maintain the full-movement Site Access C on Oak Drive.

5. The developer should enter into an agreement with DelDOT to fund an equitable portion of the improvement proposed as part of the *US 113 3rd Lane Widening* project. The cost contribution is $85,918.25. The developer should coordinate with the DelDOT Subdivision Section on the equitable cost payment terms.

6. The developer should enter into a traffic signal agreement with DelDOT for the intersection of Delaware Route 24 and Delaware Avenue. At DelDOT's discretion, the developer may contribute to the Traffic Signal Revolving Fund (TSRF) in lieu of a traffic signal agreement. The Traffic Signal Revolving Fund contribution is $4,479.00.

7. The developer should enter into an agreement with DelDOT to fund an equitable portion of the improvements occurring with the signalization of the US Route 113 and Avenue of Honor intersection. The developer should coordinate with DelDOT on the implementation and equitable cost sharing of the improvements. At DelDOT's discretion, the developer may contribute to the Traffic Signal Revolving Fund in lieu of a traffic signal agreement. The Traffic Signal Revolving Fund contribution is $12,091.00.

8. The following bicycle and pedestrian improvements should be included:

    a. Per the DelDOT Development Coordination Manual section 5.2.9.2, bicycle lanes are required where right turn lanes are being installed.

    b. Appropriate bicycle symbols, directional arrows, pavement markings, and signing should be included along bicycle facilities and turn lanes within the project limits.

    c. Utility covers should be made flush with the pavement.

    d. A minimum 15-foot wide permanent easement from the edge of the right-of-way should be dedicated to DelDOT within the site frontage along Delaware Avenue. Within the easement, a minimum of a 10-foot wide shared-use path that meets current AASHTO and ADA standards should be constructed. The shared-use path should meet AASHTO and ADA standards and should have a minimum of a five-foot buffer from the roadway. At the property boundaries, the shared-use path should connect to the adjacent property or to the shoulder in accordance with DelDOT's Shared-Use Path and/or Sidewalk Termination Reference Guide dated August 1, 2018. The developer shall coordinate with DelDOT's Development Coordination Section through the plan review process to determine the details of the shared-use path design and connections/terminations at or before both boundaries of the property.

    e. A crosswalk should be installed across the proposed site access off Delaware Avenue that connects to the shared-use path described in Item 9.d. The location of the crossing

should be determined through coordination with DelDOT's Development Coordination Section and Traffic Section.

f. ADA compliant curb ramps and crosswalks should be provided at all pedestrian crossings, including all site entrances. Type 3 curb ramps are discouraged.

g. Internal sidewalks for pedestrian safety and to promote walking as a viable transportation alternative should be constructed within the development. These sidewalks should each be a minimum of five-feet wide (with a minimum of a five-foot buffer from the roadway) and should meet current AASHTO and ADA standards. Internal sidewalks in the development should connect to the proposed shared-use path along Delaware Avenue.

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://deldot.gov/Publications/manuals/de_mutcd/index.shtml.

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 site plan review process.

Additional details on our review of this TIS are attached. Please contact me at (610) 640-3500 or through e-mail at ajparker@mccormicktaylor.com if you have any questions concerning this review.

Sincerely,

McCormick Taylor, Inc.

Andrew J. Parker, PE, PTOE
Project Manager

Enclosure

General Information

Report date: December 15, 2022
Prepared by: The Traffic Group, Inc.
Prepared for: DHW Holdings
Tax parcel: 133-16.00-133.00 and 133-16.00-134.00
Generally consistent with DelDOT's Development Coordination Manual: Yes

Project Description and Background

Description: The proposed development would be an expansion of the existing Preston car dealership. The expansion would consist of 66,250 square feet of car dealership and a 7,200 square-foot car wash. Note that calculations to determine the developer's contributions to mitigate traffic impacts use a reduced square footage, including a 15,000 square foot car dealership, a 12,565 square foot car dealership, a 5,850 square foot showroom, and a 9,930 square foot car wash facility.
Location: The site is located on the west side of Delaware Avenue, just south of US Route 113, in the Town of Millsboro, Sussex County, Delaware. A site location map is included on page 10.
Amount of land to be developed: approximately 12.5 acres.
Land use approval(s) needed: Commercial approval. The subject land is currently zoned HC (Highway Commercial), and the developer does not plan to rezone the land.
Proposed completion year: 2024
Proposed access locations: Three access points are proposed: a full access on Delaware Avenue, a rights-in/rights-out access on US Route 113, and a full access on Oak Drive. The access points on US Route 113 and Oak Road are existing and serve the existing car dealership.
Average Daily Traffic Volumes (per DelDOT Traffic Summary 2021):

- US Route 113: 25,959 vehicles/day
- Delaware Avenue (Sussex Road 82): 916 vehicles/day


N
Oak Drive
US Route 113
Delaware Avenue
Delaware Route 24
C
B
A
Site Location Map
Proposed Entrance

2020 Delaware Strategies for State Policies and Spending

Location with respect to the Strategies for State Policies and Spending Map of Delaware: The proposed Preston Millsboro development is located within Investment Level 1.

Investment Level 1
Investment Level 1 areas are often municipalities, towns, or urban/urbanizing places in counties. Density is generally higher than in the surrounding areas. There are a variety of transportation opportunities available. Buildings may have mixed uses, such as a business on the first floor and apartments above.

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, to promote well-designed and efficient new growth, and to facilitate redevelopment in Investment Level 1 areas. These areas would be a prime location for designating "pre-permitted areas" to help steer development where the local government and citizens are most prepared to accept it.

Proposed Development's Compatibility with Strategies for State Policies and Spending:
The proposed Preston Millsboro development includes the expansion of the existing Preston car dealership to include 66,250 square feet of additional car dealership space and a single tunnel car wash that would fall entirely within Investment Level 1. The proposed development is located along US Route 113 in the Town of Millsboro. The site has existing direct access to US Route 113 and Oak Road and the developer proposes an additional site entrance onto Delaware Avenue. There are existing shared use paths along the existing frontages of Oak Road and US Route 113, however these paths do not connect to any adjacent pedestrian or bicycle facilities. There are no transit stops within one mile of the site. As such, the proposed development generally appears to comply with the guidelines for Investment Levels as described in the 2020 "Strategies for State Policies and Spending."

Comprehensive Plan

Sussex County Comprehensive Plan:
(Source: Sussex County Comprehensive Plan, March 2019)

The Sussex County Comprehensive Plan Future Land Use Map indicates that the proposed development is in the Town of Millsboro, a municipality. Sussex County strongly favors directing development to municipalities that desire it. The specific permitted uses and densities governing new construction within an incorporated municipality will continue to be governed by the zoning ordinance for that municipality, its public water and sewer capacities, and its comprehensive planning policies.

Town of Millsboro Comprehensive Land Use Plan:
(Source: Millsboro Comprehensive Plan, February 2020)

The Town of Millsboro's Comprehensive Plan indicates that the proposed Preston Millsboro development is within the municipal boundary and is identified for Commercial use on the Future Land Use and Annexation map.

Proposed Development's Compatibility with Comprehensive Plan: The proposed expansion of the existing Preston car dealership would consist of an additional 66,250 square feet of car dealership and a 7,200 square-foot car wash. The subject land is located on an approximately 12.5-acre assemblage of parcels and is currently zoned HC (Highway Commercial) and the developer does not plan to rezone the land.

Relevant Projects in the DelDOT Capital Transportation Program

Currently, there are four active DelDOT projects and one active program within the study area: The *US 113 & DE 24 Intersection* project is part of DelDOT's 2020 Hazard Elimination Program (HEP). The intersection is currently under review to determine what improvements are needed to address safety and operational concerns. Interim improvements have been made at the intersection including signal retiming, signing, pavement markings, and minor widening.

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DelDOT recently converted the intersection of US Route 113 and Avenue of Honor from two-way stop control to a traffic signal in an effort to improve safety at the intersection and improve overall network operations. This project was initiated by a DelDOT Traffic Study in 2021 that found the intersection met several warrants for a traffic signal and recommended the installation of a traffic signal with flashing red arrow (FRA) phasing. Construction occurred in Spring 2023. To provide long-term mitigation at the intersection, the *US 113 and Avenue of Honor/E. Piney Grove Road GSI* project would include a new grade separated intersection (GSI) at Avenue of Honor crossing US Route 113 to E. Piney Grove Road. The project is funded to begin engineering design in FY 27. A DelDOT contract number has not yet been assigned to this project.

DelDOT's Corridor Capacity Preservation Program (CCPP), a statewide program intended to sustain the through capacity of adopted highway corridors by various means such as limiting access points and using service roads for local vehicle trips. The general purpose of the program is to ensure that existing principal arterial roadways, including this section of US Route 113, are able to efficiently carry regional traffic without impedance from the effects of local development. The Preston Millsboro development proposes three site entrances in an area identified as Investment Level 1 in the Strategies for State Policies and Spending. The entrances include a full access on Delaware Avenue, an existing rights-in/rights-out access on US Route 113, and an existing full access on Oak Drive.

Trip Generation

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

- 66,250 sq. ft. Car Dealership (ITE Land Use Code 840)
- 1 Automated Carwash Tunnel (ITE Land Use Code 948)

Table 1
Preston-Millsboro Peak Hour Trip Generation

Land Use	Weekday AM Peak Hour			Weekday PM Peak Hour			Saturday Peak Hour		
	In	Out	Total	In	Out	Total	In	Out	Total
Car Dealership	91	33	124	56	85	141	133	133	266
Automated Carwash Tunnel	--	--	--	39	39	78	20	21	41
Total Trips	**91**	**33**	**124**	**95**	**124**	**219**	**153**	**154**	**307**

Overview of TIS

Intersections examined:

1) Site Entrance A and Delaware Avenue (Sussex Road 82)
2) Site Entrance B and US Route 113 (Existing Entrance)
3) Site Entrance C and Oak Drive (Existing Entrance)
4) US Route 113 and Oak Drive
5) US Route 113 and Delaware Avenue (Sussex Road 82)
6) US Route 113 and Delaware Route 24
7) Delaware Route 24 and Delaware Avenue (Sussex Road 82)
8) US Route 113 and Hardscrabble Road (Sussex Road 20)
9) US Route 113 and Patriots Way (Sussex Road 328)
10) US Route 113 and Avenue of Honor (Sussex Road 86)
11) US Route 113 and Old Landing Road (Sussex Road 339)

Conditions examined:

1) 2021 Existing (Case 1)
2) 2024 without development (Case 2)
3) 2024 with development (Case 3)

Peak hours evaluated: Weekday morning and evening peak hours, Saturday peak hour

Committed developments considered:

1) Title Health – Millsboro Medical Campus (160,000 sq. ft. ambulatory hospital)
2) Howard T. Ennis School (157,000 sq. ft. special needs school)
3) Sussex Central Schools (a 2,200-student high school, an 850-student middle school)
4) Plantation Lakes (613 single-family detached houses, 819 townhouses/condominiums, and 478,000 sq. ft. of retail space)
5) Alderleaf Meadows f.k.a. Homestead Phase 2 (163 single-family detached houses)
6) Foster Commons (60 units of multi-family low-rise housing)
7) Westtown Village f.k.a. Millwood Phase 2 (92 single-family detached houses)

Intersection Descriptions

1) **Site Entrance A and Delaware Avenue (Sussex Road 82)**
   Type of Control: minor stop-controlled T-intersection
   Northbound Approach: (Delaware Avenue) proposed left-turn lane and through lane
   Southbound Approach: (Delaware Avenue) proposed through lane and right-turn lane
   Eastbound Approach: (Site Entrance A) proposed shared left/right-turn lane, stop controlled

2) **Site Entrance B and US Route 113 (Existing Entrance)**
   Type of Control: minor stop-controlled intersection
   Northbound Approach: (Site Entrance B) right-turn only lane, stop controlled
   Eastbound Approach: (US 113) two through lanes and one right-turn lane

3) **Site Entrance C and Oak Drive (Existing Entrance)**
   Type of Control: two way stop-controlled intersection
   Northbound Approach (Oak Drive) shared left/through/right-turn lane
   Southbound Approach: (Oak Drive) shared left/through/right-turn lane
   Eastbound Approach: (Preston-Jeep Driveway) shared left/through/right-turn lane, stop controlled
   Westbound Approach: (Site Entrance C) shared left/through/right-turn lane, stop controlled

4) **US Route 113 and Oak Drive**
   Type of Control: minor stop-controlled T-intersection
   Northbound Approach: (Oak Drive) right-turn only lane, stop controlled
   Eastbound Approach: (US 113) two through lanes and one right-turn lane

5) **US Route 113 and Delaware Avenue (Sussex Road 82)**
Type of Control: two way stop-controlled
Northbound Approach (US 113) one left-turn lane (stop controlled), two through lanes, and one right-turn lane
Southbound Approach: (US 113) one left-turn lane (stop controlled), one through lane, and one shared through/right-turn lane
Eastbound Approach: (Delaware Avenue) right-turn only lane (yield control)
Westbound Approach: (Delaware Avenue) right-turn only lane (yield control)

6) **US Route 113 and Delaware Route 24**
Type of Control: signalized intersection
Northbound Approach: (US 113) one left-turn lane, two through lanes, and one right-turn lane
Southbound Approach: (US 113) one left-turn lane, two through lanes, and one right-turn lane
Eastbound Approach: (DE 24) left-turn lane, through lane, and right-turn lane
Westbound Approach: (DE 24) left turn lane and one shared through/right-turn lane

7) **Delaware Route 24 and Delaware Avenue (Sussex Road 82)**
Type of Control: two way stop-controlled
Northbound Approach (Delaware Avenue) shared left/through/right-turn lane
Southbound Approach: (Delaware Avenue) shared left/through/right-turn lane
Eastbound Approach: (DE 24) shared left/through/right-turn lane
Westbound Approach: (DE 24) shared left/through/right-turn lane

8) **US Route 113 and Hardscrabble Road (Sussex Road 20)**
Type of Control: signalized intersection
Northbound Approach (US 113) one left-turn lane, two through lanes, and one right-turn lane
Southbound Approach: (US 113) one left-turn lane, two existing through lanes, and one right-turn lane
Eastbound Approach: (SR 20) shared left/through/right-turn lane
Westbound Approach: (SR 20) shared left/through/right-turn lane

9) **US Route 113 and Patriots Way (Sussex Road 328)/Sheep Pen Road**
Type of Control: two way stop-controlled
Northbound Approach: (US 113) two through lanes and one right-turn lane
Southbound Approach: (US 113) two through lanes and one right-turn lane
Eastbound Approach: (Sheep Pen Road) right-turn only lane
Westbound Approach: (Patriots Way) right-turn only lane

10) **US Route 113 and Avenue of Honor (Sussex Road 86)**
Type of Control: two-way stop controlled
Northbound Approach: (US 113) U-turn lane, two through lanes, and one right-turn lane
Southbound Approach: (US 113) one right-turn lane and two through lanes
Eastbound Approach: (Avenue of Honor) shared left/right-turn lane

11) US Route 113 and Old Landing Road (Sussex Road 339)

Type of Control: two way stop-controlled
Northbound Approach: (US 113) left-turn lane, through lane, and through/right-turn lane
Southbound Approach: (US 113) left-turn lane, through lane, and through/right-turn lane
Eastbound Approach: (SR 339) right-turn lane
Westbound Approach: (SR 339) right-turn lane

Safety Evaluation

Crash Data: Delaware Crash Analysis Reporting System (CARS) data was provided in the TIS for the three-year period from January 1, 2019, through December 31, 2021. The TIS did not include the three additional study intersections that were added to the study area in November 2022. A total of 225 crashes were reported within the three-year period at the six intersections included in the study area. Of those 225 crashes, 118 (52 percent) crashes occurred at the intersection of US Route 113 and Delaware Route 24. Front-to-rear crashes were the most common type, accounting for 46 percent followed by angle crashes (36 percent). The second highest number of crashes were observed at the intersection of US Route 113 and Hardscrabble Road, where 73 crashes were reported in three years. Front-to rear crashes were again the most common crash type at this intersection (70 percent). There were no fatalities in the three-year window.

Sight Distance: The study area generally consists of relatively flat roadways and there are few visual obstructions. Sight distance appears adequate throughout the study area. No problematic sight distance issues have been reported or indicated by crash data. As always, adequacy of available sight distance should be confirmed during the site plan review process for all proposed movements at the site accesses.

Transit, Pedestrian, and Bicycle Facilities

Existing transit service: Based on the current DART Bus Stop Map, the Delaware Transit Corporation (DTC) currently does not operate any bus routes in the study area. The nearest bus stop is located one mile southeast of the site and serves Route 215 (Rehoboth/Millsboro).

Planned transit service: Jared Kaufmann, representing DTC, was contacted regarding existing and planned transit service in the area. He stated that DTC has no transit-specific comments regarding this site.

Existing bicycle and pedestrian facilities: According to DelDOT's Sussex County Bicycle Map, US Route 113 and Delaware Route 24 are both classified as a High Traffic Regional Bicycle Route with a bikeway. On US Route 113, the wide paved shoulders are considered the bikeway. Delaware Route 24 has marked bicycle lanes. Delaware Avenue is classified as a Suggested Connector Bicycle Route without bikeway. Additionally, there are existing shared use paths along the existing frontages of Oak Road and US Route 113, however these paths do not connect to any adjacent pedestrian or bicycle facilities.

Planned bicycle and pedestrian facilities: DelDOT has not provided any comments about planned bicycle or pedestrian facilities near the site. The developer has not proposed any additional bicycle or pedestrian facilities.

Previous Comments

In a review letter dated April 8, 2022, DelDOT indicated that the traffic counts and seasonally adjusted volumes were acceptable, but requested revisions to the committed development distribution figures. The Traffic Group was directed to proceed with the Preliminary TIS after addressing the review comments.

In a second review letter dated June 29, 2022, DelDOT requested revisions to the trip generation for committed developments.

In a third review letter dated July 28, 2022, DelDOT requested additional revisions to the trip generation and distribution for committed developments.

In a fourth review letter dated August 4, 2022, DelDOT indicated that the Preliminary TIS was acceptable as submitted and directed The Traffic Group to proceed with the Final TIS.

On October 18, 2022, The Traffic Group informed DelDOT, via email, that the developer was modifying the site plan and that there would be an increase in the trip generation.

In a fifth review letter dated November 2, 2022, DelDOT directed The Traffic Group to expand the area of influence in the TIS by three intersections. DelDOT provided existing turning movement count data for those additional intersections and directed The Traffic Group to resubmit the Preliminary TIS.

In a sixth review letter dated November 30, 2022, DelDOT requested revisions to the traffic volumes used in the revised Preliminary TIS, including growth rate and seasonal adjustment. Following these changes, The Traffic Group was directed to proceed with the Final TIS.

It appears that all substantive comments from DelDOT's TIS Scoping Memorandum, Traffic Count Review, Preliminary TIS Review, and other correspondence were addressed in the Final TIS submission.

General HCS Analysis Comments
(See table footnotes on the following pages for specific comments)

1) The TIS and McCormick Taylor used Highway Capacity Software (HCS) version 2022 to complete the traffic analyses.

2) The TIS and McCormick Taylor applied heavy vehicle factors (HV) by lane group using existing data. The TIS and McCormick Taylor generally assumed future HV to be the same as existing HV at all intersections. Both the TIS and McCormick Taylor assumed 3% HV for future movements to and from the proposed site access point as per the DelDOT Development Coordination Manual section 2.2.8.11.6.H.

3) For existing conditions, the TIS and McCormick Taylor determined overall intersection peak hour factors (PHF) for each intersection based on the turning movement counts that were available. In future conditions, the TIS selectively applied alternative PHFs following the guidance in the DelDOT Development Coordination Manual section 2.2.8.11.6.F.

4) For analyses of all intersections, McCormick Taylor and the TIS assumed 0% grade for all movements.

Table 2
Peak Hour Levels of Service (LOS)
Based on Preston-Millsboro Traffic Impact Study – December 2022
Prepared by The Traffic Group, Inc.

Unsignalized Intersection [1] **One-Way Stop (T-Intersection)**	**LOS per TIS**			**LOS per McCormick Taylor**		
1 - Site Entrance A and Delaware Avenue	Weekday AM	Weekday PM	Summer Saturday	Weekday AM	Weekday PM	Summer Saturday
2022 Existing Condition (Case 1)						
Eastbound Site Entrance A	--	--	--	--	--	--
Northbound Delaware Avenue - Lefts	--	--	--	--	--	--
2024 No Build Condition (Case 2)						
Eastbound Site Entrance A	--	--	--	--	--	--
Northbound Delaware Avenue - Lefts	--	--	--	--	--	--
2024 Build Condition (Case 3)						
Eastbound Site Entrance A	A (9.8)	B (10.4)	B (12.3)	A (9.8)	B (10.4)	B (12.3)
Northbound Delaware Avenue - Lefts	A (7.7)	A (7.7)	A (8.1)	A (7.7)	A (7.7)	A (8.1)

[1] For both unsignalized and signalized analyses, the numbers in parentheses following levels of service are average delay per vehicle, measured in seconds. For signalized analyses, LOS analysis results are given for only the overall intersection delay.

Table 3
Peak Hour Levels of Service (LOS)
Based on Preston-Millsboro Traffic Impact Study – December 2022
Prepared by The Traffic Group, Inc.

Unsignalized Intersection [2] **One-Way Stop (Rights-In/Rights-Out)**	**LOS per TIS**			**LOS per McCormick Taylor**		
2 - Site Entrance B and US Route 113	Weekday AM	Weekday PM	Summer Saturday	Weekday AM	Weekday PM	Summer Saturday
2022 Existing Condition (Case 1)						
Northbound Site Entrance B - Rights	C (16.5)	B (13.7)	C (17.9)	B (14.7)	C (17.0)	C (17.5)
2024 No Build Condition (Case 2)						
Northbound Site Entrance B - Rights	C (18.4)	C (16.7)	C (21.5)	C (18.4)	C (16.7)	C (21.5)
2024 Build Condition (Case 3)						
Northbound Site Entrance B - Rights	C (18.8)	C (17.6)	C (23.8)	C (18.8)	C (17.6)	C (23.8)

[2] For both unsignalized and signalized analyses, the numbers in parentheses following levels of service are average delay per vehicle, measured in seconds. For signalized analyses, LOS analysis results are given for only the overall intersection delay.

Table 4
Peak Hour Levels of Service (LOS)
Based on Preston-Millsboro Traffic Impact Study – December 2022
Prepared by The Traffic Group, Inc.

Unsignalized Intersection [3] Two-Way Stop Controlled (TWSC)	**LOS per TIS**			**LOS per McCormick Taylor**		
3 - Site Entrance C and Oak Drive	Weekday AM	Weekday PM	Summer Saturday	Weekday AM	Weekday PM	Summer Saturday
2022 Existing Condition (Case 1)						
Eastbound Preston Driveway	A (9.1)	A (9.4)	A (9.6)	A (9.1)	A (9.4)	A (9.6)
Westbound Site Entrance C	A (8.7)	A (8.7)	A (8.9)	A (8.7)	A (8.7)	A (8.9)
Northbound Oak Drive - Lefts	A (7.2)	A (7.2)	A (7.2)	A (7.2)	A (7.2)	A (7.2)
Southbound Oak Drive - Lefts	A (7.3)	A (7.2)	A (7.3)	A (7.3)	A (7.2)	A (7.3)
2024 No Build Condition (Case 2)						
Eastbound Preston Driveway	A (9.1)	A (9.4)	A (9.4)	A (9.1)	A (9.4)	A (9.4)
Westbound Site Entrance C	A (8.7)	A (8.7)	A (8.8)	A (8.7)	A (8.7)	A (8.8)
Northbound Oak Drive - Lefts	A (7.2)	A (7.2)	A (7.2)	A (7.2)	A (7.2)	A (7.2)
Southbound Oak Drive - Lefts	A (7.3)	A (7.2)	A (7.3)	A (7.3)	A (7.2)	A (7.3)
2024 Build Condition (Case 3)						
Eastbound Preston Driveway	A (9.1)	A (9.4)	A (9.4)	A (9.1)	A (9.4)	A (9.4)
Westbound Site Entrance C	A (8.7)	A (8.7)	A (8.8)	A (8.7)	A (8.7)	A (8.8)
Northbound Oak Drive - Lefts	A (7.2)	A (7.2)	A (7.2)	A (7.2)	A (7.2)	A (7.2)
Southbound Oak Drive - Lefts	A (7.3)	A (7.2)	A (7.3)	A (7.3)	A (7.2)	A (7.3)

[3] For both unsignalized and signalized analyses, the numbers in parentheses following levels of service are average delay per vehicle, measured in seconds. For signalized analyses, LOS analysis results are given for only the overall intersection delay.

Table 5
Peak Hour Levels of Service (LOS)
Based on Preston-Millsboro Traffic Impact Study – December 2022
Prepared by The Traffic Group, Inc.

Unsignalized Intersection [4] **One-Way Stop (T-intersection)**	**LOS per TIS**			**LOS per McCormick Taylor**		
4 - US Route 113 and Oak Drive	Weekday AM	Weekday PM	Summer Saturday	Weekday AM	Weekday PM	Summer Saturday
2022 Existing Condition (Case 1)						
Northbound Oak Road - Rights	C (16.6)	B (13.6)	C (18.7)	C (16.2)	B (13.6)	C (18.7)
2024 No Build Condition (Case 2)						
Northbound Oak Road - Rights	C (17.9)	C (16.7)	C (23.4)	C (19.3)	C (16.7)	C (24.2)
2024 Build Condition (Case 3)						
Northbound Oak Road - Rights	C (18.3)	C (16.3)	C (24.4)	C (19.8)	C (17.1)	D (25.3)

[4] For both unsignalized and signalized analyses, the numbers in parentheses following levels of service are average delay per vehicle, measured in seconds. For signalized analyses, LOS analysis results are given for only the overall intersection delay.

Table 6
Peak Hour Levels of Service (LOS)
Based on Preston-Millsboro Traffic Impact Study – December 2022
Prepared by The Traffic Group, Inc.

Unsignalized Intersection [5] Two-Way Stop Control (TWSC)	**LOS per TIS**			**LOS per McCormick Taylor**		
5 - US Route 113 and Delaware Avenue	Weekday AM	Weekday PM	Summer Saturday	Weekday AM	Weekday PM	Summer Saturday
2022 Existing Condition (Case 1)						
Eastbound Delaware Avenue - Rights	C (17.8)	B (14.6)	C (17.7)	C (18.1)	B (14.6)	C (17.7)
Westbound Delaware Avenue - Rights	C (15.8)	B (12.3)	C (16.3)	C (16.0)	B (12.3)	C (16.3)
Northbound US Route 113 - Lefts	B (14.5)	B (11.9)	B (14.6)	C (15.9)	B (13.9)	B (14.6)
Southbound US Route 113 - Lefts	B (12.6)	B (10.6)	B (15.0)	B (13.1)	B (10.6)	C (15.3)
2024 No Build Condition (Case 2)						
Eastbound Delaware Avenue - Rights	C (18.9)	C (17.2)	C (22.3)	C (21.9)	C (18.0)	C (22.3)
Westbound Delaware Avenue - Rights	C (16.6)	B (14.1)	C (21.9)	C (24.2)	B (14.5)	C (21.9)
Northbound US Route 113 - Lefts	C (15.5)	B (14.0)	C (18.3)	C (19.5)	C (18.0)	C (18.3)
Southbound US Route 113 - Lefts	B (14.3)	B (12.3)	C (20.2)	C (18.0)	B (12.8)	C (21.7)
2024 Build Condition (Case 3)						
Eastbound Delaware Avenue - Rights	C (20.4)	C (21.5)	E (35.2)	C (24.3)	C (23.1)	E (35.2)
Westbound Delaware Avenue - Rights	C (16.8)	B (14.4)	C (22.9)	C (24.8)	B (14.9)	C (22.9)
Northbound US Route 113 - Lefts	C (16.6)	B (15.0)	C (21.6)	C (22.0)	C (20.1)	C (21.6)
Southbound US Route 113 - Lefts	B (14.5)	B (12.7)	C (21.7)	C (18.4)	B (13.2)	C (23.4)
2024 Build Condition (Case 3) w/ Improvements [6]						
Eastbound Delaware Avenue - Rights	C (16.1)	C (16.8)	C (22.7)	B (14.3)	B (14.3)	C (20.1)
Westbound Delaware Avenue - Rights	B (14.1)	C (16.1)	C (16.7)	B (12.6)	B (11.7)	C (15.3)
Northbound US Route 113 - Lefts	D (34.4)	D (27.9)	F (57.8)	B (11.6)	B (11.3)	B (14.1)
Southbound US Route 113 - Lefts	D (26.2)	C (21.1)	F (55.7)	B (10.7)	B (10.2)	B (14.1)

[5] For both unsignalized and signalized analyses, the numbers in parentheses following levels of service are average delay per vehicle, measured in seconds. For signalized analyses, LOS analysis results are given for only the overall intersection delay.
[6] Improvements include widening to three through lanes on US Route 113 as part of the *US 113 3rd Lane Widening* project. HCS modeling utilizes a modified approach to calculate delay within the parameters of the HCM. US Route 113 is modeled with 2 through lanes and 66 percent of the through volume in Case 3 with improvements.

Table 7
Peak Hour Levels of Service (LOS)
Based on Preston-Millsboro Traffic Impact Study – December 2022
Prepared by The Traffic Group, Inc.

Signalized Intersection [7]	**LOS per TIS**			**LOS per McCormick Taylor**		
6 - US Route 113 and Delaware Route 24	Weekday AM	Weekday PM	Summer Saturday	Weekday AM	Weekday PM	Summer Saturday
2022 Existing Condition (Case 1)						
Overall	F (82.0)	E (76.5)	E (79.9)	F (84.7)	F (86.5)	F (104.1)
2024 No Build Condition (Case 2)						
Overall	F (131.7)	F (118.2)	F (174.9)	F (119.9)	F (113.6)	F (186.9)
2024 Build Condition (Case 3)						
Overall	F (136.2)	F (128.2)	F (194.5)	F (123.4)	F (120.7)	F (195.1)
2024 Build Condition (Case 3) w/ Improvements [8]						
Overall	F (82.8)	F (88.3)	E (72.3)	F (81.8)	F (93.6)	E (79.3)

[7] For both unsignalized and signalized analyses, the numbers in parentheses following levels of service are average delay per vehicle, measured in seconds. For signalized analyses, LOS analysis results are given for only the overall intersection delay.
[8] Improvements include widening to three through lanes on US Route 113 as part of the *US 113 3rd Lane Widening* project.

Table 8
Peak Hour Levels of Service (LOS)
Based on Preston-Millsboro Traffic Impact Study – December 2022
Prepared by The Traffic Group, Inc.

Unsignalized Intersection [9] Two-Way Stop (TWSC)	**LOS per TIS**			**LOS per McCormick Taylor**		
7 - Delaware Route 24 and Delaware Avenue	Weekday AM	Weekday PM	Summer Saturday	Weekday AM	Weekday PM	Summer Saturday
2022 Existing Condition (Case 1)						
Eastbound Delaware Route 24 - Lefts	A (7.9)	A (8.5)	A (7.8)	A (7.9)	A (8.5)	A (7.8)
Westbound Delaware Route 24 - Lefts	A (9.6)	A (8.2)	A (8.5)	A (9.7)	A (8.2)	A (8.5)
Northbound Delaware Avenue	E (38.8)	F (67.3)	F (300.5)	E (46.6)	F (72.9)	F (283.1)
Southbound Delaware Avenue	B (13.3)	C (16.3)	D (34.5)	B (13.6)	C (16.4)	D (34.1)
2024 No Build Condition (Case 2)						
Eastbound Delaware Route 24 - Lefts	A (8.0)	A (8.7)	A (7.9)	A (8.1)	A (8.7)	A (7.9)
Westbound Delaware Route 24 - Lefts	B (10.7)	A (8.6)	A (9.0)	B (11.0)	A (8.6)	A (9.0)
Northbound Delaware Avenue	F (169.2)	F (295.7)	F (1262.5)	F (250.5)	F (335.5)	F (1178.3)
Southbound Delaware Avenue	B (14.5)	C (18.6)	F (67.7)	C (15.2)	C (18.8)	F (66.4)
2024 Build Condition (Case 3)						
Eastbound Delaware Route 24 - Lefts	A (8.1)	A (8.8)	A (8.0)	A (8.1)	A (8.8)	A (8.0)
Westbound Delaware Route 24 - Lefts	B (10.7)	A (8.6)	A (9.0)	B (10.9)	A (8.6)	A (9.0)
Northbound Delaware Avenue	F (290.3)	F (576.2)	F (7534.7)	F (377.0)	F (587.6)	F (5084.2)
Southbound Delaware Avenue	C (19.8)	D (30.6)	F (216.0)	C (21.7)	D (31.0)	F (180.7)
2024 Build Condition (Case 3) w/ Improvements (Signal)						
Overall	C (25.0)	B (13.7)	B (14.5)	C (29.1)	B (18.6)	C (26.0)
2024 Build Condition (Case 3) w/ Improvements (Roundabout)						
Overall	C (15.6)	A (9.2)	A (10.0)	C (19.7)	A (9.1)	A (10.0)

[9] For both unsignalized and signalized analyses, the numbers in parentheses following levels of service are average delay per vehicle, measured in seconds. For signalized analyses, LOS analysis results are given for only the overall intersection delay.

Table 9
Peak Hour Levels of Service (LOS)
Based on Preston-Millsboro Traffic Impact Study – December 2022
Prepared by The Traffic Group, Inc.

Signalized Intersection [10]	**LOS per TIS**			**LOS per McCormick Taylor**		
8 - US Route 113 and Hardscrabble Road	Weekday AM	Weekday PM	Summer Saturday	Weekday AM	Weekday PM	Summer Saturday
2022 Existing Condition (Case 1)						
Overall	E (57.3)	D (37.9)	C (30.1)	E (57.5)	D (52.3)	D (36.1)
2024 No Build Condition (Case 2)						
Overall	F (124.9)	F (146.6)	F (230.2)	F (128.8)	F (162.2)	F (235.1)
2024 Build Condition (Case 3)						
Overall	F (128.1)	F (151.0)	F (242.6)	F (122.4)	F (158.2)	F (239.8)
2024 Build Condition (Case 3) w/ Improvements [11]						
8a. Signal						
US 113 NB Ramp at DE 20 (overall)	B (15.4)	C (22.6)	B (16.6)	B (14.7)	C (21.6)	B (17.4)
8b. TWSC						
westbound new alignment - lefts	B (11.3)	A (9.3)	A (9.1)	B (11.3)	A (9.3)	A (9.1)
northbound US 113 SB Ramp (stop control)	B (13.2)	B (14.4)	B (12.3)	B (13.2)	B (14.4)	B (12.6)

[10] For both unsignalized and signalized analyses, the numbers in parentheses following levels of service are average delay per vehicle, measured in seconds. For signalized analyses, LOS analysis results are given for only the overall intersection delay.
[11] Improvements include construction of a grade separated intersection with two nodes (8a and 8b) as part of the *North Millsboro Bypass, US 113 to SR 24 (T202112701 and T202112702) project*.

Table 10
Peak Hour Levels of Service (LOS)
Based on Preston-Millsboro Traffic Impact Study – December 2022
Prepared by The Traffic Group, Inc.

Unsignalized Intersection [12] Two-Way Stop (TWSC)	**LOS per TIS**			**LOS per McCormick Taylor**		
9 - US Route 113 and Patriots Way / Sheep Pen Road	Weekday AM	Weekday PM	Summer Saturday	Weekday AM	Weekday PM	Summer Saturday
2022 Existing Condition (Case 1)						
Eastbound Sheep Pen Rd	B (14.0)	B (14.1)	C (15.4)	B (14.2)	B (14.1)	C (15.4)
Westbound Patriots Way	B (14.5)	B (13.2)	C (16.2)	B (14.7)	B (13.2)	C (16.2)
2024 No Build Condition (Case 2)						
Eastbound Sheep Pen Rd	C (15.3)	C (15.2)	C (17.4)	C (15.8)	B (14.4)	C (17.4)
Westbound Patriots Way	C (19.4)	B (14.5)	C (20.7)	C (20.3)	B (14.5)	C (20.7)
2024 Build Condition (Case 3)						
Eastbound Sheep Pen Rd	C (15.5)	C (15.4)	C (17.8)	C (16.0)	C (15.4)	C (17.8)
Westbound Patriots Way	C (19.5)	B (14.8)	C (21.2)	C (20.5)	B (14.6)	C (21.2)

[12] For both unsignalized and signalized analyses, the numbers in parentheses following levels of service are average delay per vehicle, measured in seconds. For signalized analyses, LOS analysis results are given for only the overall intersection delay.

Table 11
Peak Hour Levels of Service (LOS)
Based on Preston-Millsboro Traffic Impact Study – December 2022
Prepared by The Traffic Group, Inc.

Unsignalized Intersection [13] Two-Way Stop (TWSC)	**LOS per TIS**			**LOS per McCormick Taylor**		
10 - US Route 113 and Avenue of Honor	Weekday AM	Weekday PM	Saturday Midday	Weekday AM	Weekday PM	Saturday Midday
2022 Existing Condition (Case 1)						
Westbound Avenue of Honor	C (24.4)	D (34.1)	C (22.1)	E (37.6)	F (53.6)	D (28.4)
Northbound US 113 – U-turn	C (18.2)	C (24.5)	D (27.1)	C (18.6)	C (24.5)	D (26.6)
Southbound US 113 – Left	B (13.8)	B (12.6)	C (15.3)	B (13.8)	B (12.6)	C (15.1)
2024 No Build Condition (Case 2)						
Westbound Avenue of Honor	F (1233.9)	F (453.0)	--	F (1404.1)	F (547.8)	F (772.4)
Northbound US 113 – U-turn	E (37.8)	E (41.3)	F (338.8)	E (37.8)	E (41.3)	F (491.7)
Southbound US 113 – Left	C (21.2)	B (14.4)	C (20.6)	C (21.2)	B (14.4)	C (22.4)
2024 Build Condition (Case 3)						
Westbound Avenue of Honor	F (1305.2)	F (496.8)	--	F (1605.3)	F (587.9)	F (850.2)
Northbound US 113 – U-turn	E (39.9)	E (43.2)	F (379.4)	E (39.9)	E (43.2)	F (546.0)
Southbound US 113 – Left	C (21.4)	B (14.7)	C (21.3)	C (21.4)	B (14.7)	C (23.2)

Signalized Intersection	**LOS per TIS**			**LOS per McCormick Taylor**		
10 - US Route 113 and Avenue of Honor	Weekday AM	Weekday PM	Saturday Midday	Weekday AM	Weekday PM	Saturday Midday
2024 Build Condition (Case 3) w/ Improvements [14]						
Overall	--	--	--	B (18.5)	B (18.6)	C (21.6)

[13] For both unsignalized and signalized analyses, the numbers in parentheses following levels of service are average delay per vehicle, measured in seconds. For signalized analyses, LOS analysis results are given for only the overall intersection delay.
[14] Improvements include construction of a Traffic signal as part of a DelDOT Traffic Engineering project. Construction expected 2023-2024.

Table 12
Peak Hour Levels of Service (LOS)
Based on Preston-Millsboro Traffic Impact Study – December 2022
Prepared by The Traffic Group, Inc.

Unsignalized Intersection [15] Two-Way Stop (TWSC)	**LOS per TIS**			**LOS per McCormick Taylor**		
11 - US Route 113 and Old Landing Road	Weekday AM	Weekday PM	Saturday Midday	Weekday AM	Weekday PM	Saturday Midday
2022 Existing Condition (Case 1)						
Eastbound Old Landing Rd	C (23.9)	C (16.4)	B (13.9)	C (23.9)	C (16.4)	B (13.8)
Westbound Old Landing Rd	D (27.4)	D (28.2)	C (17.5)	D (28.3)	D (28.2)	C (17.2)
Northbound US 113 – Left	C (16.1)	B (14.5)	B (12.2)	C (16.1)	B (14.5)	B (12.1)
Southbound US 113 – Left	C (23.1)	C (17.0)	B (13.3)	C (23.1)	C (17.0)	B (13.1)
2024 No Build Condition (Case 2)						
Eastbound Old Landing Rd	E (38.6)	C (21.6)	C (17.9)	E (39.2)	C (21.6)	C (17.7)
Westbound Old Landing Rd	E (41.8)	E (45.7)	C (24.5)	E (43.9)	E (45.7)	C (23.9)
Northbound US 113 – Left	C (20.0)	C (19.3)	C (15.8)	C (20.0)	C (19.3)	C (15.6)
Southbound US 113 – Left	E (36.4)	C (23.0)	C (17.7)	E (36.4)	C (23.0)	C (17.4)
2024 Build Condition (Case 3)						
Eastbound Old Landing Rd	E (39.2)	C (22.2)	C (18.4)	E (39.7)	C (22.2)	C (18.2)
Westbound Old Landing Rd	E (43.7)	E (47.7)	D (25.6)	E (45.9)	E (47.7)	C (24.9)
Northbound US 113 – Left	C (20.2)	C (20.0)	C (16.3)	C (20.2)	C (20.0)	C (16.1)
Southbound US 113 – Left	E (38.4)	C (23.6)	C (18.4)	E (38.4)	C (23.6)	C (18.0)

[15] For both unsignalized and signalized analyses, the numbers in parentheses following levels of service are average delay per vehicle, measured in seconds. For signalized analyses, LOS analysis results are given for only the overall intersection delay.