



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

SHANTÉ A. HASTINGS
SECRETARY

April 15, 2026

Ms. Nicole Kline-Elsier PE, PTOE
Bowman Consulting Group, Ltd.
835 Springdale Drive, suite 200
Exton, PA 19341

Dear Ms. Kline-Elsier,

The enclosed Traffic Impact Study (TIS) review letter for the **Cedar Creek Station (aka Enclave at Starwood)** (Tax Parcel: 230-26.00-15.00) mixed use 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 Review Engineer

AF:lw

Enclosures

cc with enclosures: Michael Scali, Apennine Development Co LLC
Alan Hill, A.H. Davenport LLC
Braden Garrison, Bowman Consulting Group, Ltd.
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

Mark Luszczyk, Chief Engineer, Transportation Solutions (DOTS)
Brad Eaby, Deputy Attorney General, DOTS
Michael Simmons, Chief Project Development South, DOTS
Peter Haag, Chief Traffic Engineer, DOTS
Wendy Carpenter, Traffic Calming & Subdivision Relations Manager, Traffic, DOTS
Sean Humphrey, Traffic Engineer, Traffic, DOTS
Alistair Probert, South District Engineer, M&O
Jared Kauffman, Service Development Planner, DTC
Tremica Cherry, Service Development Planner, DTC
Austin Gray, Assistant Director, Statewide & Regional Planning, Planning
Anthony Aglio, Planning Supervisor, Active Transportation & Community Connections, Planning
Anson Gock, Planner, Statewide & Regional Planning, Planning
Jeff Van Horn, Director, Economic Development Coordination (EDC)
Matt Schlitter, South District Public Works Engineer, EDC
Wendy Polasko, Subdivision Engineer, EDC
Brian Yates, Process and Quality Control Engineer, EDC
Brian Urbanek, Acting Sussex Review Coordinator, EDC
Derek Sapp, Sussex Review Engineer, EDC
Sireen Muhtaseb, TIS Engineer, EDC
Ben Fisher, TIS Review Engineer, EDC



April 13, 2026

Ms. Sireen Muhtaseb, PE
TIS Group Manager
DelDOT Economic Development Coordination
800 S. Bay Road
Dover, DE 19903

RE: Agreement No. 1946F
Traffic Impact Study Services
Task No. 5A Subtask 18A – Cedar Creek Station (aka Enclave at Starwood)

Dear Ms. Muhtaseb:

McCormick Taylor has completed its review of the Traffic Impact Study (TIS) for the Cedar Creek Station (aka Enclave at Starwood) development prepared by Bowman Consulting Group, Ltd., dated November 1, 2024. Bowman prepared the report in a manner generally consistent with DelDOT's Development Coordination Manual.

The TIS evaluates the impacts of the proposed Cedar Creek Station (aka Enclave at Starwood) development to be located on the west side of US Route 113, north of Delaware Route 16, and northeast of Webbs Road in the Town of Ellendale in Sussex County, Delaware. The proposed development would consist of 154 single family detached homes, 202 single family attached homes, 620 mid-rise multi-family dwelling units, 127,800 square feet of retail, 45,000 square feet of industrial flex space, and 93,650 square feet of self-storage. Access to the site is proposed along Delaware Route 16 via one full-movement roundabout entrance and along US Route 113 via two right-in/right-out entrances. Construction is anticipated to be completed in 2036.

The subject land is located on an approximately 190-acre parcel. The land was re-zoned from AR-1 (Agricultural Residential) to R-3 (Residential) and C-3 (Commercial) with a Large Parcel Development overlay at the time that the parcel was annexed into the Town of Ellendale.

Relevant and On-Going Projects and Studies

Currently, DelDOT has several relevant and ongoing projects within the area of study.

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 Cedar Creek Station (aka Enclave at Starwood) development proposes direct access to US Route 113 via two right-in/right-out entrances in an area identified as Investment Level 2 and 3 in the Strategies for State Policies and Spending.



The *US 113 at SR 16 (Ellendale) Grade Separated Intersection* (State Contract No. T201212701) project will replace the existing traffic signal with a grade-separated intersection at US Route 113 and Delaware Route 16. This project will improve safety and operations and reduce congestion at the intersection. The proposed improvements were recommended as part of the Ellendale Area portion of the overall US 113 North/South Study. The project need is a result of expected future land development and economic growth in Sussex County, and the significant projected increase in daily traffic volumes on US 113 in the Ellendale area. Additionally, the intersections of US Route 113 at Delaware 16 and Delaware Route 16 at Webbs Road are included in DelDOT's 2023 Hazard Elimination Program, and the GSI project is expected to address safety concerns at these intersections. The funding for design of the interchange is planned to begin in FY 2027. The project could potentially start earlier if additional funding becomes available. More details about this project are available at the following link: <https://deldot.gov/projects/index.shtml?dc=details&projectNumber=T201212701>.

As part of the US 113 North/South Study, two Preferred Alternative designs for the GSI (Options 1 and 2) were included in the 2009 Environmental Assessment project review and approval. These figures are included as pages 14 and 15 of this review letter. These figures show the most recent roadway alignments that could be further developed. Both designs have significant conflicts with the proposed Cedar Creek Station (aka Enclave at Starwood) layout. The Department intends to move forward with Option 1. The proposed GSI ramps would present challenges to providing development access along US Route 113, and the proposed realignment of Delaware Route 16 as part of the GSI project may require relocation of the proposed development access on Delaware Route 16. More details about DelDOT's North/South Study are available at the following link: <https://deldot.gov/projects/Studies/us113/>

Summary of Analysis Results

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

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

<i>Intersection</i>	<i>Existing Traffic Control</i>	<i>Situations for which deficiencies occur</i>
4. Site Entrance D / US Route 113	Unsignalized	2036 with development SAT (Case 3)
5. US Route 113 / Delaware Route 16	Signalized	2036 without development SAT (Case 2) 2036 with development AM, PM, and SAT (Case 3)
7. Delaware Route 16 / N. Old State Road / S. Old State Road	Unsignalized	2036 without development AM, PM, and SAT (Case 2) 2036 with development AM, PM, and SAT (Case 3)
9. US Route 113 / VFW Road	Unsignalized	2024 existing SAT (Case 1) 2036 without development SAT (Case 2) 2036 with development AM and SAT (Case 3)
10. US Route 113 / Staytonville Road / Fleatown Road	Unsignalized	2036 with development SAT (Case 3)
12. US Route 113 / Clendaniel Road / Haflinger Road	Unsignalized	2036 with development SAT (Case 3)

3. Site Entrance C / US Route 113 (See Table 4, Page 30)

The proposed Site entrance C right-in/right-out entrance onto US Route 113 would operate at acceptable LOS during all peak hours under future condition with the proposed development. However, the proposed site is located within an Investment Level 2 area, and per the CCPP, direct access may be permitted along US Route 113 if providing access to only Delaware Route 16 would degrade operations and capacity at the US Route 113 and Delaware Route 16 intersection. To limit the interruptions to the flow of traffic in this CCPP corridor, DelDOT recommends that direct access on US Route 113 be limited to one location. As such, the proposed Site Entrance C on US Route 113 should not be constructed.

4. Site Entrance D / US Route 113 (See Recommendations 3 and 4 & Table 5, Page 31)

This unsignalized site entrance intersection experiences LOS deficiencies in Case 3 on the northbound US Route 113 U-turn at Site Entrance D. In Case 3 during the Saturday peak hour the northbound U-turn is expected to operate at LOS F with 51 seconds of delay. The developer is not proposing any improvements to mitigate this LOS deficiency. Acceptable LOS can be achieved by closing the existing median crossover located approximately 2,000 feet north of the existing intersection of US Route 113 and Delaware Route 16, and diverting the northbound U-turns to the existing median crossover located approximately 1,800 feet north of future Site Entrance D. As such, the developer should design and construct the closure of the existing median crossover,

including the northbound U-turn lane and the southbound U-turn lane, located approximately 2,000 feet north of Delaware Route 16. This would include completely removing any existing pavement and modifying the existing striping along US Route 113 to accommodate the closures. The proposed right-in/right-out, Site Entrance D, on US Route 113 would operate at acceptable LOS during all peak hours under future conditions with the proposed development and closure of the median crossover, as described above. The single access point at Site Entrance D on US Route 113 should have a dedicated southbound right-turn lane and a free eastbound right-turn continuing onto an auxiliary southbound acceleration lane. Site Entrance D should be located approximately 2,000 feet north of the existing intersection of US Route 113 and Delaware Route 16.

In accordance with the CCPP, the Department will grant the proposed development temporary direct access to US Route 113 near the existing median crossover. This access is an interim measure and shall remain valid only until the commencement of construction for the US 113 at SR 16 Grade Separated Intersection (GSI).

5. US Route 113 / Delaware Route 16 (See Recommendation 5 & Table 6, Page 32)

This signalized intersection experiences LOS deficiencies in Case 2 during the Saturday peak hour and in Case 3 during the AM, PM, and Saturday peaks. In Case 2 during the Saturday peak the intersection is expected to operate at LOS E with 74 seconds of delay. In Case 3 during the Saturday peak hour the intersection is expected to operate at LOS F with 149 seconds of delay with queues over 850 feet long for the northbound left-turn and 820 feet long for the eastbound left-turn. Both of these queues are significantly longer than the existing turn lanes. However, mitigation improvements are not recommended at the intersection due to the overall changes to the roadway network as part of the *US 113 at SR 16 (Ellendale) Grade Separated Intersection* project which proposes a Grade Separated Intersection (GSI) at this location which would mitigate this LOS deficiencies. The project has not started design and the completion date is unknown at this time. It is recommended that the developer make an equitable share contribution to the *US 113 at SR 16 (Ellendale) Grade Separated Intersection* project.

7. Delaware Route 16 / N. Old State Road (See Recommendation 5 & Table 8, Page 34)

This unsignalized intersection experiences LOS deficiencies in Case 2 and 3 during the AM, PM, and Saturday peaks. In Case 2 during the Saturday peak the southbound approach is expected to operate at LOS F with 590 seconds of delay. In Case 3 during the Saturday peak the southbound approach is expected to operate at LOS F with 1,366 seconds of delay. A traffic signal will mitigate these deficiencies. With a traffic signal, the intersection is expected to operate at LOS B in Cases 2 and 3 during the AM, PM, and Saturday peaks. A Traffic Signal Justification Study (TSJS) was previously completed by McCormick Taylor and approved by DelDOT. Other developers of pending developments in the area have been asked to contribute to or construct a traffic signal at this intersection. As such, the Cedar Creek Station (aka Enclave at Starwood) developer should make an equitable share contribution to the Traffic Signal Revolving Fund (TSRF).

9. US Route 113 / VFW Road (See Table 10, Page 36)

This unsignalized intersection experiences LOS deficiencies in Cases 1 and 2 during the Saturday peak period and in Case 3 during the AM and Saturday peak periods. In Case 2 during the Saturday peak the eastbound minor approach is expected to operate at LOS F with 70 seconds of delay. In Case 3 during the Saturday peak the eastbound approach is expected to operate at LOS F with 85 seconds of delay and queues less than one vehicle long. The total approach volume on the eastbound VFW Road approach is less than 10 vehicles per hour in all cases and peak hours. The developer is not required to mitigate this LOS deficiency based on section 2.2.8.12.5 of DelDOT's Development Coordination Manual.

10. US Route 113 / Staytonville Road / Fleatown Road (See Table 11, Page 37)

This unsignalized intersection experiences LOS deficiencies during the Saturday peak in Case 3, for which the westbound Fleatown Road approach is expected to operate at LOS E with 38 seconds of delay. The deficiencies are limited to the westbound Fleatown Road approach. This intersection has an unusual configuration that includes no left-turns on the northbound US Route 113 approach, no through movement on the westbound Fleatown Road approach, and right-turns-only on the eastbound Staytonville Road approach. It also includes a 1,000-foot long dedicated receiving/acceleration lane for westbound left turns onto southbound US Route 113. The westbound left-turn LOS deficiencies that occur only on Saturday can be mitigated by either signalizing the intersection or removing the westbound left-turn movement completely, but neither of these are desirable mitigation measures. For these reasons, we recommend that the developer make no improvements at this intersection.

12. US Route 113 / Clendaniel Road / Haflinger Road (See Table 13, Page 39)

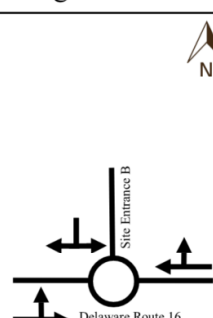
This unsignalized intersection experiences LOS deficiencies during the Saturday peak in Case 3, for which the eastbound Clendaniel Road and westbound Haflinger Road westbound Fleatown Road approaches are expected to operate at LOS E with 39 seconds of delay and LOS F with 72 seconds of delay, respectively. McCormick Taylor investigated geometric improvements at this intersection as potential mitigation, including a Restricted Crossing U-Turn (RCUT) concept. An RCUT intersection restricts left-turn and through movements from the minor approaches and redirects the vehicles to an adjacent median crossover to make a U-Turn and continue their intended path. In Case 3 during the Saturday peak with an RCUT concept, there is no longer an LOS deficiency on the minor approaches. However, the northbound and southbound U-Turn movements at the adjacent crossovers would both be expected to operate at LOS E with 48 seconds of delay. Considering that a traffic signal at this intersection is not desirable and an RCUT will not fully mitigate the LOS deficiency, we recommend that the developer make no improvements at this intersection.

Development Improvements

Should the Town of Ellendale approve the proposed development, the following items should be incorporated into the site design and reflected on the record plan, entrance plans or construction plans by note or illustration, unless a Design Deviation is requested and approved by the Department. 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. The following items should be implemented once all agency approvals and permits are secured and completed in accordance with DelDOT's Standards and Specifications and the developer proceeds with site construction.

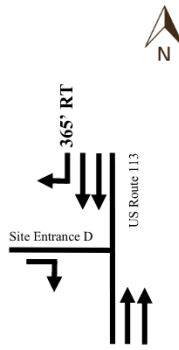
1. The developer shall improve Delaware Route 16 within the limits of their frontage. The improvements shall include both directions of travel, regardless of whether the developer's lands are on one or both sides of the road. "Frontage" means the length along the state right-of-way of a single property tract where an entrance is proposed or required. If a single property tract has frontage along multiple roadways, any segment of roadway including an entrance shall be improved to meet DelDOT's Functional Classification criteria as found in Section 1.1 of the Development Coordination Manual and elsewhere therein, and/or improvements established in the Traffic Operational Analysis and/or Traffic Impact Study. "Secondary Frontage" means the length along the state right-of-way of a single property tract where no entrance is proposed or required. The segment of roadway may be upgraded by improving the pavement condition of the existing roadway width. The Pavement Management Section and Subdivision Section will determine the requirements to improve the pavement condition.

2. The developer should construct the roundabout Site Entrance B on Delaware Route 16. The proposed configuration is shown in the table below.

Approach	Current Configuration		Approach	Proposed Configuration	
Eastbound DE 16	One through lane.		Eastbound DE 16	One shared left-turn/through lane.	
Westbound DE 16	One through lane.		Westbound DE 16	One shared through/right-turn lane.	
Northbound	Approach does not exist.		Northbound	No change	
Southbound	Approach does not exist.		Southbound Site Entrance B	One shared left-turn/right-turn lane.	

At the proposed Site Entrance B intersection, the developer should design and construct a single lane roundabout. Pedestrian crossings and bicycle lanes should be provided on all approaches to the roundabout. The developer should coordinate with DelDOT's Development Coordination Section to determine other design details during the site plan review.

- The developer should construct the temporary right-in/right-out Site Entrance D on US Route 113 at a point approximately 2,000 feet north of its existing intersection with Delaware Route 16. The proposed configuration is shown in the table below.

Approach	Current Configuration		Approach	Proposed Configuration	
Eastbound	Approach does not exist.		Eastbound Site Entrance D	One right turn lane with southbound acceleration lane.	
Westbound	Approach does not exist.		Westbound	No change.	
Northbound US Route 113	Two through lanes. Divided roadway.		Northbound US Route 113	No change.	
Southbound US Route 113	Two through lanes. Divided roadway.		Southbound US Route 113	Two through lanes and one right turn lane. Divided roadway.	

At the proposed Site Entrance D intersection, a southbound right-turn lane is warranted on US Route 113 based on DelDOT's Auxiliary Lane Worksheet. Initial recommended minimum turn lane length (excluding taper) is a 365-foot right-turn lane on southbound US Route 113. Additionally, the developer should design and construct a southbound auxiliary acceleration lane for vehicles exiting the site and merging onto US Route 113 southbound. The acceleration lane should extend from Site Entrance D to the existing right-turn lane for the Royal Farms on the northwest corner of the intersection of US Route 113 and Delaware Route 16. The developer should coordinate with DelDOT's Development Coordination and Traffic Sections to determine final turn lane lengths and other design details during the site plan review.

- The developer should design and construct the closure of the existing median crossover, including the northbound U-turn lane and the southbound U-turn lane, located on US Route 113 approximately 2,000 feet north of its existing intersection with Delaware Route 16. The developer should coordinate with DelDOT's Traffic and Development Coordination Sections to determine final design details during the site plan review, but this would include completely removing any existing pavement and modifying the existing striping along US Route 113 to accommodate the closures.
- The developer should enter into an agreement with DelDOT to contribute funds in place of physical mitigation for some traffic impacts. The funds would cover three components: an equitable contribution to *DelDOT's US 113 at SR 16 (Ellendale) Grade Separated Intersection* (State Contract No. T201212701) project, a contribution to the Traffic Signal

Revolving Fund (TSRF) for a future traffic signal at the intersection of Delaware Route 16 and N. Old State Road, and a shared use path fee in lieu. The *US 113 at SR 16 GSI* project is funded in Fiscal Year 2027 for design. For that project, the Department intends to move forward with Option 1, which would impact commercial pad sites C through J of Cedar Creek Station (the proposed commercial pad sites adjacent to US Route 113, see the Site Location Map on page 13). The right of way will be acquired through the acquisition process. The developer's total contribution amount for the three components listed above will be \$650,000, based upon trip generation from the subject development, presented in Table 1 on Page 19 of this letter. In the event that DelDOT proceeds with the GSI or such other improvements, and by virtue thereof, the subject property changes density of site development therefrom, the total contribution amount shall be adjusted for the change in trips caused by the change in density at the subject property. The developer's total contribution should be paid in three equal amounts corresponding to issuance of building permits as such: one-third is due upon the issuance of the first building permit, one-third is due upon the issuance of the 187th building permit, and one-third is due upon the issuance of any building permit in the apartments, pad site, and industrial section of the project. The developer should coordinate with DelDOT's Subdivision Section on the cost payment terms.

6. 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. A minimum 15-foot-wide permanent easement from the edge of the final determined right-of-way should be dedicated to DelDOT within the site frontages along US Route 113, Delaware Route 16, and Webbs Road.
 - d. ADA compliant curb ramps and crosswalks should be provided at all pedestrian crossings, including all site entrances. 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://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.

A handwritten signature in black ink, appearing to read "Andrew J. Parker", with a long, sweeping horizontal line extending from the end of the signature.

Andrew J. Parker, PE, PTOE
Project Manager

Enclosure

Scope of Improvements Figure
Cedar Creek Station (fka Enclave at Starwood) TIS

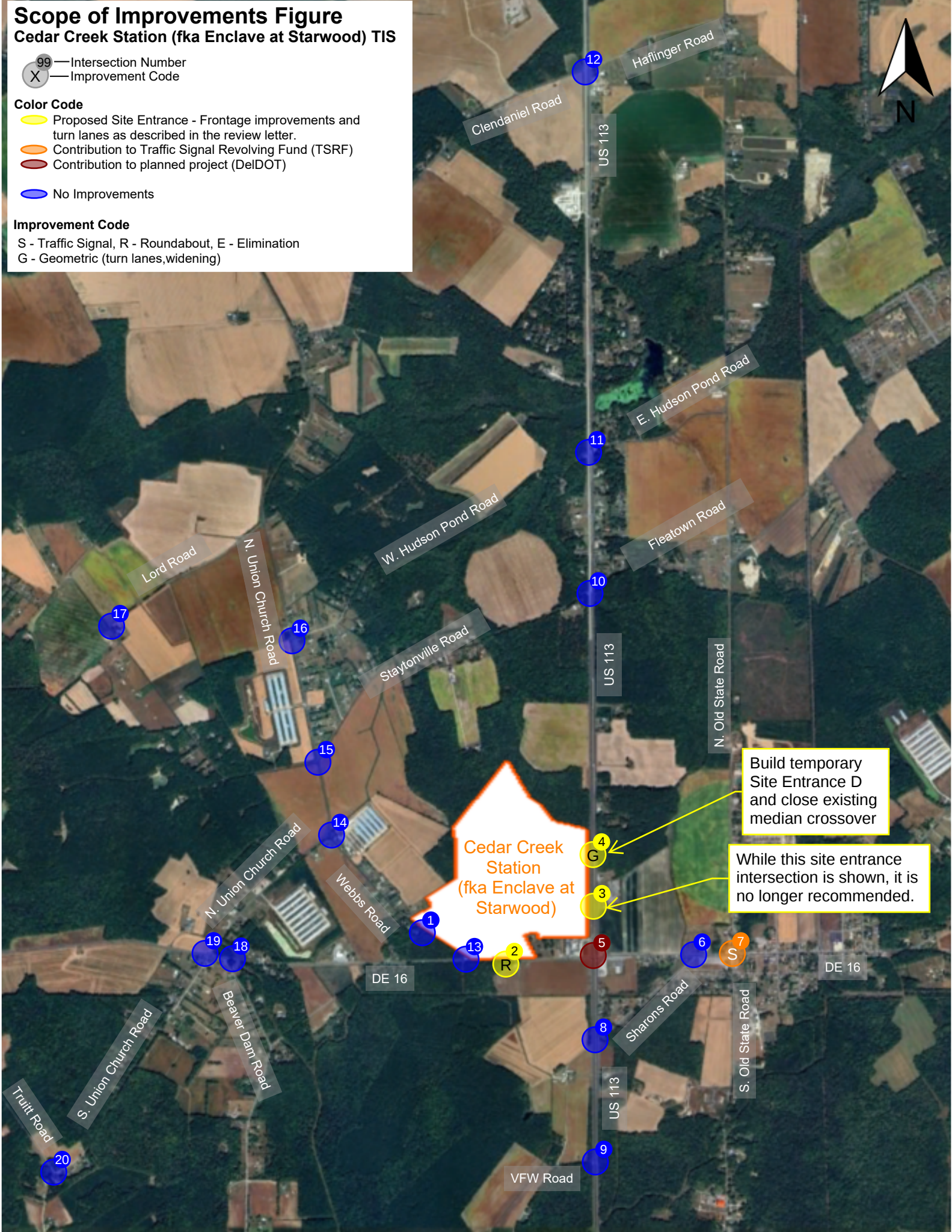
99 — Intersection Number
X — Improvement Code

Color Code

- Proposed Site Entrance - Frontage improvements and turn lanes as described in the review letter.
- Contribution to Traffic Signal Revolving Fund (TSRF)
- Contribution to planned project (DelDOT)
- No Improvements

Improvement Code

- S - Traffic Signal, R - Roundabout, E - Elimination
- G - Geometric (turn lanes, widening)



General Information

Report date: November 1, 2024

Prepared by: Bowman Consulting Group, Ltd.

Prepared for: Ellendale Development Co, LLC

Tax parcel: 230-26.00-15.00

Generally consistent with DelDOT's Development Coordination Manual: Yes

Project Description and Background

Description: The proposed Cedar Creek Station (aka Enclave at Starwood) development consists of 154 single family detached homes, 202 single family attached homes, 620 mid-rise multi-family dwelling units, 127,800 square feet of retail, 45,000 square feet of industrial flex space, and 93,650 square feet of self-storage.

Location: The site is located on the west side of US Route 113, north of Delaware Route 16, and northeast of Webbs Road in the Town of Ellendale in Sussex County, Delaware. A site location map is included on page 13.

Amount of land to be developed: an approximately 190-acre parcel.

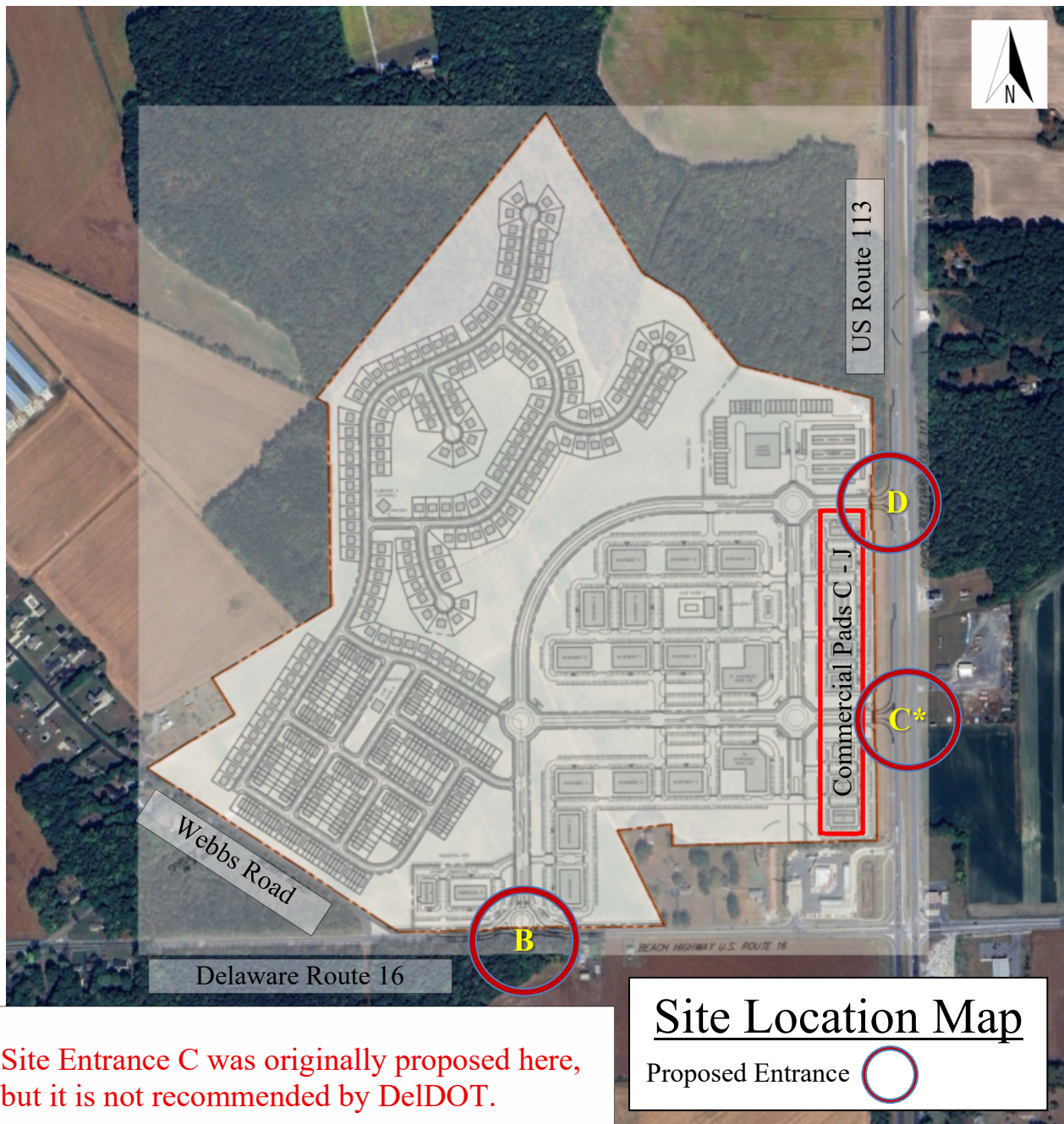
Land use approval(s) needed: The property was recently annexed into the Town of Ellendale with zoning of R-3 (Residential) and C-3 (Commercial) with a Large Parcel Development overlay.

Proposed completion year: 2036

Proposed access locations: Access to the site is proposed along Delaware Route 16 via one full-movement roundabout entrance and along US Route 113 via two right-in/right-out entrances. An additional site entrance was proposed at the scoping meeting for this TIS and included in the Preliminary TIS. Site Entrance A was proposed as the eastern leg of the intersection of Webbs Road / Spruce Road. However, the developer no longer proposes this site entrance.

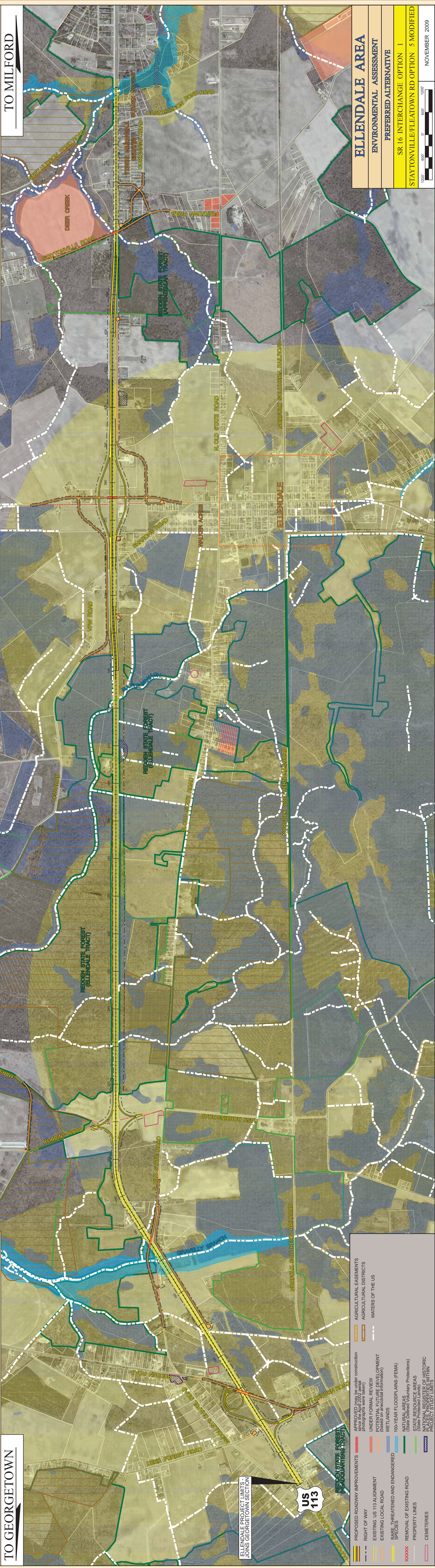
Average Daily Traffic Volumes (per DelDOT Traffic Summary 2023):

- US Route 113: 18,505 vehicles/day
- Delaware Route 16: 6,879 vehicles/day
- Webbs Road: 1,484 vehicles/day



TO GEORGETOWN

TO MILFORD



APPROVED (may be under construction since the April 2002 aerial photographs were taken)

PROPOSED ROADWAY IMPROVEMENTS

RIGHT OF WAY

EXISTING US 113 ALIGNMENT

EXISTING LOCAL ROAD

RARE, THREATENED AND ENDANGERED SPECIES

REMOVAL OF EXISTING ROAD

PROPERTY LINES

CEMETERIES

AGRICULTURAL EASEMENTS

AGRICULTURAL DISTRICTS

WATERS OF THE US

UNDER FORMAL REVIEW

POTENTIAL FUTURE DEVELOPMENT (based on anecdotal information)

WETLANDS

100-YEAR FLOODPLAINS (FEMA)

NATURAL AREAS (State Defined Voluntary Protections)

STATE RESOURCE AREAS (State Protected Lands)

NATIONAL REGISTER OF HISTORIC PLACES

PROJECT STUDY LIMITS

ELLENDALE AREA

ENVIRONMENTAL ASSESSMENT

PREFERRED ALTERNATIVE

SR 16 INTERCHANGE OPTION 1

STAYTONVILLE/FLEATOWN RD OPTION 5 MODIFIED

1200' 600' 0' 600' 1200'

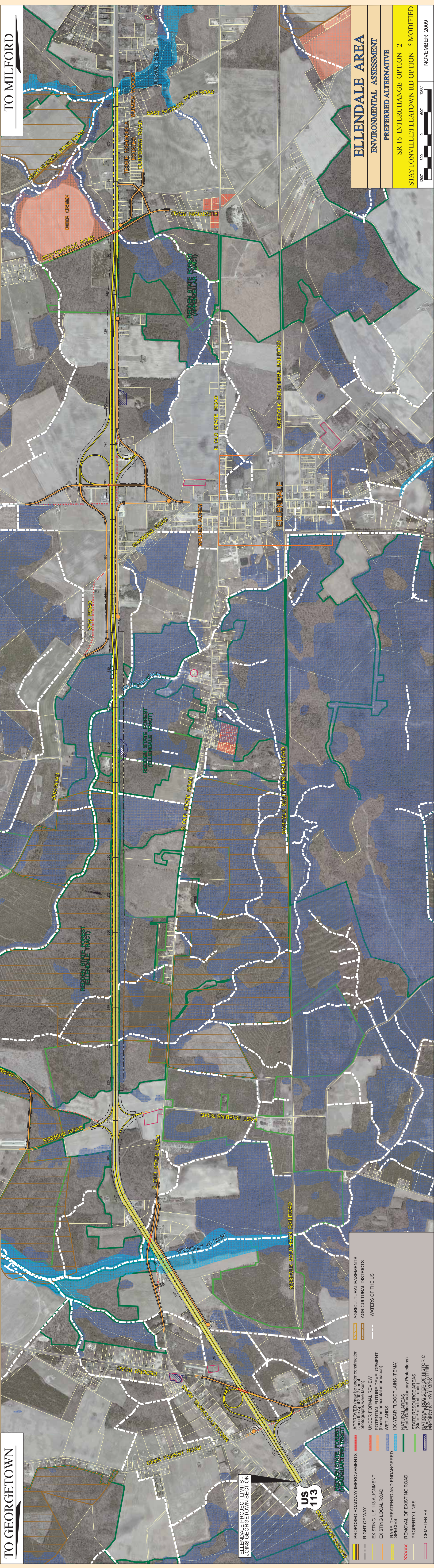
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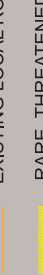
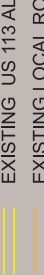


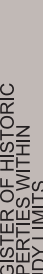
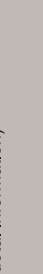
TO GEORGETOWN

US 113 NORTH / SOUTH STUDY

TO MILFORD







APPROVED (may be under construction since the April 2002 aerial photographs were taken)

UNDER FORMAL REVIEW

POTENTIAL FUTURE DEVELOPMENT (based on anecdotal information)

ELLEDALE AREA

ENVIRONMENTAL ASSESSMENT

PREFERRED ALTERNATIVE

SR 16 INTERCHANGE OPTION 2

STAYTONVILLE/FLEATOWN RD OPTION 5 MODIFIED

1200' 600' 0' 600' 1200'

NOVEMBER 2009

2025 Delaware Strategies for State Policies and Spending

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

The proposed Cedar Creek Station (aka Enclave at Starwood) development is located within Investment Level 2 and 3.

Investment Level 2

Delaware's Investment Level 2 Areas are suburban growth zones located near municipalities or within rapidly developing corridors. These areas feature a mix of mid-to-low density residential neighborhoods, commercial centers, and office parks that are generally supported by public water and wastewater systems.

It is the State's intent to prioritize Level 2 Areas for near-term growth and reinvestment. State policies focus on the efficient use of existing infrastructure, the promotion of diverse housing types, and the enhancement of transportation options to support well-planned, compact development.

Investment Level 3

Delaware's Investment Level 3 Areas are rural in nature and are where the bulk of the state's open space/natural areas and agricultural industry is located. These areas contain agribusiness activities, farm complexes, and small settlements. They typically include historic crossroads or points of trade, often with rich cultural ties (for example, unincorporated areas like Clarksville in Sussex County and Port Penn in New Castle County).

Proposed Development's Compatibility with Strategies for State Policies and Spending:

The proposed Cedar Creek Station development (formerly Enclave at Starwood) is located within Investment Level 2 and 3 Areas under the 2025 State Strategies. The project which includes a mix of 154 single-family detached homes, 202 single-family attached homes, 620 multi-family units, and over 260,000 square feet of retail, industrial flex, and self-storage space aligns more closely with these updated designations than previous versions.

The high-density residential and commercial components are largely consistent with Investment Level 2 goals, which prioritize near-term growth, a diversity of housing types, and the efficient use of existing infrastructure. However, for the portions of the project falling within Investment Level 3, the State generally views development as a longer-term transition. In these areas, state investment is typically deferred until infrastructure can be logically extended from Level 1 and 2 zones.

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 Cedar Creek Station (aka Enclave at Starwood) development is proposed on land designated as a “Developing Area” per the Future Land Use Map. The Developing Areas are newer, emerging growth areas that demonstrate the characteristics of developmental pressures. Most of the proposed Developing Areas are adjacent to municipalities, within or adjacent to potential future annexation areas of a municipality, or adjacent to Town Centers. A range of housing types are appropriate in Developing Areas, including single family homes, townhouses, and multi-family units. In selected areas and at appropriate intersections, commercial uses should be allowed.

Proposed Development’s Compatibility with Comprehensive Plan:

The proposed development project includes 154 single family detached homes, 202 single family attached homes, 620 mid-rise multi-family dwelling units, 127,800 square feet of retail, 45,000 square feet of industrial flex space, and 93,650 square feet of self-storage on an approximately 190-acre parcel. The property was recently annexed into the Town of Ellendale with zoning of R-3 (Residential) and C-3 (Commercial) with a Large Parcel Development overlay. If the density and other aspects of the proposed development satisfy Ellendale’s R-3 and C-3 zoning requirements, it would appear that the proposed Cedar Creek Station (aka Enclave at Starwood) development fits within the intended land use for this location.

Relevant Projects in the DelDOT Capital Transportation Program

Currently, DelDOT has several relevant and ongoing projects within the area of study.

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 Cedar Creek Station (aka Enclave at Starwood) development proposes direct access to US Route 113 via two right-in/right-out entrances in an area identified as Investment Level 2 and 3 in the Strategies for State Policies and Spending.

The *US 113 at SR 16 (Ellendale) Grade Separated Intersection* (State Contract No. T201212701) project will replace the existing traffic signal with a grade-separated intersection at US Route 113 and Delaware Route 16. This project will improve safety and operations and reduce congestion at the intersection. The proposed improvements were recommended as part of the Ellendale Area portion of the overall US 113 North/South Study. The project need is a result of expected future land development and economic growth in Sussex County, and the significant projected increase in daily traffic volumes on US 113 in the Ellendale area. Additionally, the intersections of US

Route 113 at Delaware 16 and Delaware Route 16 at Webbs Road are included in DelDOT's 2023 Hazard Elimination Program, and the GSI project is expected to address safety concerns at these intersections. The funding for design of the interchange is planned to begin in FY 2027. The project could potentially start earlier if additional funding becomes available. More details about this project are available at the following link: <https://deldot.gov/projects/index.shtml?dc=details&projectNumber=T201212701>.

As part of the US 113 North/South Study, two Preferred Alternative designs for the GSI (Options 1 and 2) were included in the 2009 Environmental Assessment project review and approval. These figures are included as pages 14 and 15 of this review letter. These figures show the most recent roadway alignments that could be further developed. Both designs have significant conflicts with the proposed Cedar Creek Station (aka Enclave at Starwood) layout. The proposed GSI ramps would present challenges to providing development access along US Route 113, and the proposed realignment of Delaware Route 16 as part of the GSI project may require relocation of the proposed development access on Delaware Route 16. More details about DelDOT's North/South Study are available at the following link: <https://deldot.gov/projects/Studies/us113/>

Trip Generation

Trip generation for the proposed development was computed using comparable land uses and equations contained in Trip Generation, Eleventh 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:

- Single-Family Detached Housing (ITE Land Use Code 210)
- Single-Family Attached Housing (ITE Land Use Code 215)
- Multi-family Housing (Mid-Rise) (ITE Land Use Code 221)
- Shopping Plaza (ITE Land Use Code 821)
- Mini-Warehouse (ITE Land Use Code 151)
- Business Park (ITE Land Use Code 770)

Table 1
Peak Hour Trip Generation

ITE Land Use Codes	Trip Type	Daily	Weekday AM Peak Hour			Weekday PM Peak Hour			Saturday Peak Hour		
			In	Out	Total	In	Out	Total	In	Out	Total
210 215 221	Gross	5,901	113	357	470	311	197	508	261	250	511
	Internal/Pass-by		-2	-6	-8	-144	-61	-205	-121	-66	-187
821	Gross	12,076	280	171	451	528	571	1,099	559	537	1,096
	Internal/Pass-by		-8	-4	-12	-250	-319	-569	-264	-292	-556
151 770	Gross	696	60	13	73	26	60	86	29	59	88
	Internal/Pass-by		-4	-4	-8	-16	-13	-29	-19	-13	-32
Total Trips		18,673	439	527	966	455	435	890	445	475	920

Overview of TIS

Intersections examined:

- 1) Webbs Road (Sussex Road 43) / Spruce Road (Sussex Road 595A)
- 2) Site Entrance B / Delaware Route 16
- 3) Site Entrance C / US Route 113*
- 4) Site Entrance D / US Route 113*
- 5) US Route 113 / Delaware Route 16*
- 6) Delaware Route 16 / Sharons Road (Sussex Road 641)*
- 7) Delaware Route 16 / N. Old State Road (Sussex Road 213)*
- 8) US Route 113 / Sharons Road*
- 9) US Route 113 / VFW Road (Sussex Road 607)
- 10) US Route 113 / Staytonville Road (Sussex Road 224) / Fleatown Road (Sussex Road 224)*
- 11) US Route 113 / W. Hudson Pond Road (Sussex Road 623) / E. Hudson Pond Road (Sussex Road 623)*
- 12) US Route 113 / Clendaniel Road (Sussex Road 625) / Haflinger Road (Sussex Road 625)*
- 13) Delaware Route 16 / Webbs Road
- 14) Webbs Road / N. Union Church Road (Sussex Road 42)
- 15) N. Union Church Road / Staytonville Road
- 16) N. Union Church Road / W. Hudson Pond Road
- 17) Staytonville Road / Lord Road (Sussex Road 624)
- 18) Delaware Route 16 / Beaver Dam Road (Sussex Road 595)
- 19) Delaware Route 16 / N. Union Church Road / S. Union Church Road
- 20) S. Union Church Road (Sussex Road 42) / Truitt Road (Sussex Road 604)

Note: Intersections with an asterisk (*) were analyzed during the summer Saturday peak period.

Conditions examined:

- 1) 2024 existing (Case 1)
- 2) 2036 without development (Case 2)
- 3) 2036 with development (Case 3)

Peak hours evaluated: Weekday morning, evening, and summer Saturday peak hours. Select intersections that were analyzed during the summer Saturday peak period are identified in the section above.

Committed developments considered:

- 1) Forest Landing (199 single-family detached homes and 112 apartments)
- 2) Ingram Village (255 single-family detached homes and 125 single-family attached homes)
- 3) Newdale Acres (fka Walker Property – 224 single-family detached homes and 72 single-family attached homes)
- 4) Ellendale Subdivision (153 single-family detached homes, 108 single-family attached homes, and 264 apartments)
- 5) Ellendale Convenience Market with Gas (5,585 square foot convenience market with 16 fueling positions)

Intersection Descriptions

1) Webbs Road / Spruce Road

Type of Control: Stop-controlled three-leg intersection.

Westbound Approach: (Spruce Road) one shared left/right-turn lane; stop controlled.

Northbound Approach: (Webbs Road) one shared left-turn/through lane.

Southbound Approach: (Webbs Road) one shared through/right-turn lane.

Note: At the scoping meeting for this TIS, Site Entrance A was proposed as the eastern leg of this intersection (extension of Spruce Road). The developer no longer proposes this site entrance, and is therefore not included in this review.

2) Site Entrance B / Delaware Route 16

Type of Control: Proposed roundabout (three-leg intersection).

Eastbound Approach: (DE 16) one shared left-turn/through lane.

Westbound Approach: (DE 16) one shared through/right-turn lane.

Southbound Approach: (Site Entrance B) one shared left/right-turn lane.

3) Site Entrance C / US Route 113

Type of Control: Proposed right-in/right-out, stop-controlled intersection.

Eastbound Approach: (Site Entrance C) one right-turn lane; stop-controlled.

Southbound Approach: (US 113) existing two through lanes; proposed two through lanes and one right-turn lane.

4) Site Entrance D / US Route 113

Type of Control: Proposed right-in/right-out, stop-controlled intersection.

Eastbound Approach: (Site Entrance D) one right-turn lane; stop-controlled.

Southbound Approach: (US 113) existing two through lanes; proposed two through lanes and one right-turn lane.

5) US Route 113 / Delaware Route 16

Type of Control: Signalized four-leg intersection.

Eastbound Approach: (DE 16) one left-turn lane, one through lane, and one right-turn lane.

Westbound Approach: (DE 16) one left-turn lane, one through lane, and one right-turn lane.

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.

6) Delaware Route 16 / Sharons Road

Type of Control: Stop-controlled three-leg intersection with channelization.

Eastbound Approach: (DE 16) one shared through/right-turn lane.

Westbound Approach: (DE 16) one shared left-turn/through lane.

Northbound Approach: (Sharons Road) one left-turn lane (channelized) and one right-turn lane; stop controlled.

7) Delaware Route 16 / N. Old State Road

Type of Control: Stop-controlled four-leg intersection.

Eastbound Approach: (DE 16) one shared left/through/right-turn lane.

Westbound Approach: (DE 16) one shared left/through/right-turn lane.

Northbound Approach: (S. Old State Road) one shared left/through/right-turn lane; stop controlled.

Southbound Approach: (N. Old State Road) one shared left/through/right-turn lane; stop controlled.

8) US Route 113 / Sharons Road

Type of Control: Right-in/right-out, stop-controlled intersection.

Westbound Approach: (Sharons Road) one right-turn lane; stop-controlled.

Northbound Approach: (US 113) two through lanes and one right-turn lane.

9) US Route 113 / VFW Road

Type of Control: Stop-controlled three-leg intersection.

Eastbound Approach: (VFW Road) one left-turn lane (stop controlled) and one right-turn lane (yield controlled).

Northbound Approach: (US 113) one left-turn lane and two through lanes.

Southbound Approach: (US 113) one U-turn lane, two through lanes, and one right-turn lane.

10) US Route 113 / Staytonville Road / Fleatown Road

Type of Control: Stop-controlled four-leg intersection with restricted movements.

Eastbound Approach: (Staytonville Road) one right-turn lane; yield controlled.

Westbound Approach: (Fleatown Road) one left-turn lane (stop controlled with southbound acceleration lane) and one right-turn lane (yield controlled).

Northbound Approach: (US 113) two through lanes and one right-turn lane.

Southbound Approach: (US 113) one left-turn lane (stop controlled), two through lanes, and one right-turn lane.

11) US Route 113 / W. Hudson Pond Road / E. Hudson Pond Road

Type of Control: Stop-controlled four-leg intersection.

Eastbound Approach: (W. Hudson Pond Road) one shared left/through lane (stop controlled) and one right-turn lane (yield controlled).

Westbound Approach: (E. Hudson Pond Road) one shared left/through lane (stop controlled) and one right-turn lane (yield controlled).

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.

12) US Route 113 / Clendaniel Road / Haflinger Road

Type of Control: Stop-controlled four-leg intersection.

Eastbound Approach: (Clendaniel Road) one shared left/through lane (stop controlled) and one right-turn lane (yield controlled).

Westbound Approach: (Haflinger Road) one shared left/through lane (stop controlled) and one right-turn lane (yield controlled).

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.

13) Delaware Route 16 / Webbs Road

Type of Control: Stop-controlled three-leg intersection.

Eastbound Approach: (DE 16) one shared left/through lane and one bypass lane.

Westbound Approach: (DE 16) one through lane and one right-turn lane.

Southbound Approach: (Webbs Road) one shared left/right-turn lane; stop controlled.

14) Webbs Road / N. Union Church Road

Type of Control: Stop-controlled three-leg intersection with channelized movements.

Northeast bound Approach: (N. Union Church Road) one through lane and one right-turn lane (channelized); yield controlled.

Northwest bound Approach: (Webbs Road) one left-turn lane (channelized) and one right-turn lane; stop controlled.

Southbound Approach: (N. Union Church Road) one shared left-turn/through lane.

15) N. Union Church Road / Staytonville Road

Type of Control: Stop-controlled four-leg intersection.

Eastbound Approach: (Staytonville Road) one shared left/through/right-turn lane; stop controlled.

Westbound Approach: (Staytonville Road) one shared left/through/right-turn lane; stop controlled.

Northbound Approach: (N. Union Church Road) one shared left/through/right-turn lane.

Southbound Approach: (N. Union Church Road) one shared left/through/right-turn lane.

16) N. Union Church Road / W. Hudson Pond Road

Type of Control: Stop-controlled three-leg intersection.

Westbound Approach: (W. Hudson Pond Road) one shared left/through/right-turn lane; stop controlled.

Northbound Approach: (N. Union Church Road) one shared through/right-turn lane.

Southbound Approach: (N. Union Church Road) one shared left-turn/through lane.

17) Staytonville Road / Lord Road

Type of Control: Stop-controlled three-leg intersection.

Westbound Approach: (Lord Road) one shared left/through/right-turn lane; stop controlled.

Northbound Approach: (Staytonville Road) one shared through/right-turn lane.

Southbound Approach: (Staytonville Road) one shared left-turn/through lane.

18) Delaware Route 16 / Beaver Dam Road

Type of Control: Stop-controlled three-leg intersection.

Eastbound Approach: (DE 16) one through lane and one right-turn lane.

Westbound Approach: (DE 16) one shared left-turn/through lane and one bypass lane.

Northbound Approach: (Beaver Dam Road) one shared left-turn/right-turn lane; stop controlled.

19) Delaware Route 16 / N. Union Church Road / S. Union Church Road

Type of Control: Stop-controlled four-leg intersection.

Eastbound Approach: (DE 16) one shared left-turn/through lane and one right-turn lane.

Westbound Approach: (DE 16) one shared left-turn/through lane and one right-turn lane.

Northbound Approach: (S. Union Church Road) one shared left/through/right-turn lane; stop controlled.

Southbound Approach: (N. Union Church Road) one shared left/through/right-turn lane; stop controlled.

20) S. Union Church Road / Truitt Road

Type of Control: Stop-controlled three-leg intersection.

Eastbound Approach: (Truitt Road) one shared left/through/right-turn lane; stop controlled.

Northbound Approach: (S. Union Church Road) one shared left-turn/through lane.

Southbound Approach: (S. Union Church Road) one shared through/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 July 1, 2021, through June 30, 2024. The crash data indicates that 148 crashes occurred within the study area over that timeframe, with 77 of those crashes occurring at the intersection of US Route 113 / Delaware Route 16. There were no fatalities within the crash data.

At the intersection of Delaware Route 16 / N. Union Church Road / S. Union Church Road, there were 18 crashes within a three-year period, of which 10 were angle crashes and seven (7) resulted in personal injury.

Sight Distance: The study area generally consists of relatively flat roadways and there are few visual obstructions. As always, the 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 operates one fixed-route transit bus service in the area of the proposed Cedar Creek Station (aka Enclave at Starwood) development. Route 303 runs along US Route 113 and Delaware Route 16, providing service between Dover and Georgetown with approximately eight trips in each direction on weekdays only. The nearest stops to the proposed development are on the east side of US Route 113 approximately 200 feet north of Delaware Route 16 and on Delaware Route 16 approximately 275 feet east of US Route 113.

Planned transit service: Delaware Transit Corporation (DTC) has requested that the developer construct bus shelter pads along the east and west side of US Route 113 within the limits of the site frontage. Additionally, DTC requested signalized mid-block pedestrian crossings to assist passengers crossing US Route 113 between the stops. However, DelDOT does not support such a signalized mid-block pedestrian crossing over safety and operational concerns. The developer should continue to work with DTC to identify potential on site locations for transit stops away from US Route 113.

Existing bicycle and pedestrian facilities: According to DelDOT's Sussex County Bicycle Map, Delaware Route 16 is designated as a High-Traffic Regional Bicycle Route with a Bikeway. Old State Road is designated as a Statewide Bicycle Route without a Bikeway. There are limited sections of sidewalk throughout the study area including one along the northern side of Delaware Route 16 and the western side of US Route 113 within the Royal Farms frontage.

Planned bicycle and pedestrian facilities: The developer is expected to construct 10-foot-wide shared use paths along their frontages and around the proposed roundabout at Site Entrance B.

Previous Comments

The initial scoping memorandum between the developer and DelDOT was dated April 16, 2024. The scoping memorandum was revised on April 24, 2024.

In a review letter dated July 22, 2024, DelDOT commented on the traffic counts and seasonally adjusted traffic volumes. The developer was asked to provide additional information about the data collection, address all comments, and resubmit the traffic counts.

In a second review letter dated August 7, 2023, DelDOT made additional comments on the traffic counts and seasonally adjusted traffic volumes. DelDOT directed the developer to revise the volume figures and then proceed with the Preliminary TIS.

In a third review letter dated September 3, 2024, DelDOT commented on the Preliminary TIS. The developer was asked to provide additional details about the trip distribution of background developments in the TIS, update trip generation for the Ellendale Convenience Market to use the 11th Edition of the ITE Trip Generation Manual, and revise a volume figure. The developer was expected to resubmit the Preliminary TIS.

In a fourth review letter dated September 27, 2024, DelDOT provided additional comments on the Preliminary TIS. The developer was asked to revise several volume figures and then resubmit the Preliminary TIS.

In a fifth review letter dated October 18, 2024, DelDOT provided additional comments on the Preliminary TIS. The developer was asked to make corrections to the Site Trip Generation table and revise additional volume figures. The developer was then 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.

It should be noted that the developer removed the study intersection of Site Entrance A at Webbs Road / Spruce Road from the TIS in their submission of the Final TIS. The developer notes that "the residential trip distributions have been modified from those provided in DelDOT's scoping memo to shift residential traffic from the Webbs Road entrance to the proposed entrance along DE 16."

General HCM (Synchro) Analysis Comments

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

- 1) Both the TIS and McCormick Taylor utilized Synchro to complete the traffic analyses.
- 2) The TIS and McCormick Taylor generally used heavy vehicle percentages (HV%) from turning movement counts for existing and future conditions (as per DelDOT's Development Coordination Manual section 2.2.8.11.6.H). McCormick Taylor and the TIS assumed 3% HV for future movements and at the proposed site entrance.
- 3) The TIS and McCormick Taylor determined overall intersection peak hour factors (PHF) for each intersection based on the turning movement counts. Future PHFs were determined as per the DelDOT Development Coordination Manual section 2.2.8.11.6.F where applicable.
- 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 the Cedar Creek Station (aka Enclave at Starwood) Traffic Impact Study
Prepared by Bowman Consulting Group, Ltd. – November 2024

Unsignalized Intersection ¹ One-Way Stop (T-Intersection)	LOS per TIS		LOS per McCormick Taylor	
	Weekday AM	Weekday PM	Weekday AM	Weekday PM
1. Webbs Road / Spruce Road				
2024 Existing (Case 1)				
Northbound Webbs Road - Left	A (0.0)	A (0.0)	A (0.0)	A (0.0)
Eastbound Spruce Road	A (9.7)	B (10.6)	A (9.7)	B (10.6)
2036 No Build (Case 2)				
Northbound Webbs Road - Left	A (0.0)	A (0.0)	A (0.0)	A (0.0)
Eastbound Spruce Road	A (9.8)	B (10.8)	A (9.8)	B (10.8)
2036 Build (Case 3)				
Northbound Webbs Road - Left	A (0.0)	A (0.0)	A (0.0)	A (0.0)
Eastbound Spruce Road	B (10.8)	B (12.2)	B (10.8)	B (12.2)

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 the Cedar Creek Station (aka Enclave at Starwood) Traffic Impact Study
Prepared by Bowman Consulting Group, Ltd. – November 2024*

Unsignalized Intersection ² Roundabout	LOS per TIS		LOS per McCormick Taylor	
	Weekday AM	Weekday PM	Weekday AM	Weekday PM
2. Site Entrance B / DE 16				
2036 Build (Case 3)				
Eastbound DE 16	C (16.0)	B (21.1)	B (12.7)	B (11.6)
Westbound DE 16	A (9.8)	C (21.8)	A (8.7)	C (19.4)
Southbound Site Entrance B	A (9.7)	B (14.3)	A (9.0)	B (13.4)
Overall	B (12.3)	C (17.2)	B (10.4)	C (15.7)

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 the Cedar Creek Station (aka Enclave at Starwood) Traffic Impact Study
Prepared by Bowman Consulting Group, Ltd. – November 2024*

Unsignalized Intersection ³ One-Way Stop (T-Intersection)	LOS per TIS			LOS per McCormick Taylor		
	Weekday AM	Weekday PM	Summer Saturday	Weekday AM	Weekday PM	Summer Saturday
3. Site Entrance C / US 113						
2036 Build (Case 3)						
Eastbound Site Entrance C ⁴	C (16.6)	C (16.3)	C (23.2)	C (16.1)	C (15.4)	C (21.6)

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.

⁴ This site entrance is not recommended.

Table 5
Peak Hour Levels of Service (LOS)
Based on the Cedar Creek Station (aka Enclave at Starwood) Traffic Impact Study
Prepared by Bowman Consulting Group, Ltd. – November 2024

Unsignalized Intersection ⁵ One-Way Stop (T-intersection)	LOS per TIS			LOS per McCormick Taylor		
4. Site Entrance D / US 113	Weekday AM	Weekday PM	Summer Saturday	Weekday AM	Weekday PM	Summer Saturday
2024 Existing (Case 1)						
Northbound US 113 – U-turn	B (14.6)	B (13.4)	C (21.2)	B (14.6)	B (13.5)	C (21.2)
2036 No Build (Case 2)						
Northbound US 113 – U-turn	C (17.4)	C (16.5)	D (29.3)	C (17.4)	C (16.5)	D (29.3)
2036 Build (Case 3)						
Northbound US 113 – U-turn	C (23.0)	D (27.1)	F (71.6)	C (21.4)	C (22.4)	F (50.6)
Eastbound Site Entrance D	C (15.4)	C (17.0)	D (26.2)	B (14.5)	C (15.4)	C (23.2)
2036 Build (Case 3) – Mitigation ⁶						
Eastbound Site Entrance D	--	--	--	B (14.5)	C (15.5)	C (23.5)
2036 Build (Case 3) Without Site Entrance C ⁷						
Eastbound Site Entrance D	--	--	--	A (0.0)	A (0.0)	A (0.0)

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 Proposed mitigation includes the closure of the existing median crossover.

⁷ This scenario was added to evaluate a single right-in/right-out entrance on US Route 113. Site trips were redistributed from Site Entrance C to Site Entrance D. Improvements at the intersection in this scenario include a southbound right-turn lane and a free eastbound right-turn lane continuing into a southbound acceleration lane on US Route 113.

Table 6
Peak Hour Levels of Service (LOS)
Based on the Cedar Creek Station (aka Enclave at Starwood) Traffic Impact Study
Prepared by Bowman Consulting Group, Ltd. – November 2024

Signalized Intersection ⁸	LOS per TIS			LOS per McCormick Taylor		
5. US 113 / DE 16	Weekday AM	Weekday PM	Summer Saturday	Weekday AM	Weekday PM	Summer Saturday
2024 Existing (Case 1)						
Overall	D (35.9)	D (39.2)	D (54.1)	C (25.6)	C (28.6)	D (38.0)
2036 No Build (Case 2)						
Overall	E (63.1)	E (68.7)	F (98.5)	D (37.2)	D (39.4)	E (73.9)
2036 Build (Case 3)						
Overall	F (110.6)	F (155.1)	F (168.7)	F (81.4)	F (91.7)	F (148.6)
2036 Build (Case 3) – Mitigation ⁹						
Overall	--	--	--	C (34.2)	D (38.4)	E (59.1)

⁸ 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.

⁹ Proposed mitigation includes dual left-turn lanes with protected phasing on all approaches and widening of Delaware Route 16 to include two through lanes and two receiving lanes.

Table 7
Peak Hour Levels of Service (LOS)
Based on the Cedar Creek Station (aka Enclave at Starwood) Traffic Impact Study
Prepared by Bowman Consulting Group, Ltd. – November 2024

Unsignalized Intersection ¹⁰ One-Way Stop (T-Intersection)	LOS per TIS			LOS per McCormick Taylor		
	Weekday AM	Weekday PM	Summer Saturday	Weekday AM	Weekday PM	Summer Saturday
6. DE 16 / Sharons Road						
2024 Existing (Case 1)						
Westbound DE 16 - Left	A (7.9)	A (7.9)	A (8.5)	A (7.9)	A (7.9)	A (8.5)
Northbound Sharons Road	B (10.7)	B (10.7)	C (15.5)	B (10.7)	B (10.7)	C (15.5)
2036 No Build (Case 2)						
Westbound DE 16 - Left	A (8.2)	A (8.5)	A (9.2)	A (8.2)	A (8.5)	A (9.2)
Northbound Sharons Road	B (11.9)	B (13.2)	C (18.7)	B (11.9)	B (13.2)	C (18.5)
2036 Build (Case 3)						
Westbound DE 16 - Left	A (8.5)	A (8.8)	A (9.6)	A (8.5)	A (8.8)	A (9.6)
Northbound Sharons Road	B (13.4)	B (14.9)	C (22.4)	B (13.4)	B (14.9)	C (22.3)

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.

Table 8
Peak Hour Levels of Service (LOS)
Based on the Cedar Creek Station (aka Enclave at Starwood) Traffic Impact Study
Prepared by Bowman Consulting Group, Ltd. – November 2024

Unsignalized Intersection ¹¹ Two-Way Stop-Control	LOS per TIS			LOS per McCormick Taylor		
7. DE 16 / Old State Road	Weekday AM	Weekday PM	Summer Saturday	Weekday AM	Weekday PM	Summer Saturday
2024 Existing (Case 1)						
Eastbound DE 16 – Left	A (7.8)	A (7.9)	A (8.2)	A (7.8)	A (7.9)	A (8.2)
Westbound DE 16 – Left	A (7.8)	A (7.9)	A (8.5)	A (7.8)	A (7.9)	A (8.5)
Northbound S. Old State Road	B (13.4)	B (15.0)	C (22.7)	B (13.4)	C (15.1)	C (22.7)
Southbound N. Old State Road	B (13.1)	B (14.1)	C (20.2)	B (13.1)	B (14.2)	C (20.1)
2036 No Build (Case 2) – TWSC						
Eastbound DE 16 – Left	A (8.1)	A (8.7)	A (9.1)	A (8.1)	A (8.7)	A (9.1)
Westbound DE 16 – Left	A (8.0)	A (8.2)	A (8.9)	A (8.0)	A (8.2)	A (8.9)
Northbound S. Old State Road	C (23.5)	F (72.1)	F (254.7)	D (25.2)	F (80.1)	F (269.4)
Southbound N. Old State Road	E (44.1)	F (147.3)	F (1626.4)	E (44.8)	F (138.9)	F (589.7)
2036 No Build (Case 2) – Signal ¹²						
Overall	--	--	--	B (15.3)	B (15.1)	B (16.1)
2036 Build (Case 3) – TWSC						
Eastbound DE 16 – Left	A (8.5)	A (9.1)	A (9.5)	A (8.5)	A (9.2)	A (9.5)
Westbound DE 16 – Left	A (8.3)	A (8.5)	A (9.3)	A (8.3)	A (8.5)	A (9.3)
Northbound S. Old State Road	E (39.2)	F (199.3)	F (614.9)	E (42.8)	F (216.7)	F (607.8)
Southbound N. Old State Road	F (130.0)	F (392.2)	F (1626.4)	F (130.6)	F (370.9)	F (1366.1)
2036 Build (Case 3) – Signal						
Overall	--	--	--	B (16.1)	B (15.7)	B (18.3)

¹¹ 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.

¹² Proposed mitigation includes signalization constructed by others. Signal design includes dedicated right turn lanes on N. Old State Road approaches, dedicated left and right-turn lanes on each Delaware Route 16 approach, and side street split phasing.

Table 9
Peak Hour Levels of Service (LOS)
*Based on the Cedar Creek Station (aka Enclave at Starwood) Traffic Impact Study
Prepared by Bowman Consulting Group, Ltd. – November 2024*

Unsignalized Intersection ¹³ One-Way Stop (T-intersection)	LOS per TIS			LOS per McCormick Taylor		
	Weekday AM	Weekday PM	Summer Saturday	Weekday AM	Weekday PM	Summer Saturday
8. US 113 / Sharons Road						
2024 Existing (Case 1)						
Westbound Sharons Road	B (11.1)	B (12.2)	B (13.0)	B (11.1)	B (12.2)	B (13.0)
2036 No Build (Case 2)						
Westbound Sharons Road	B (13.0)	B (14.8)	C (16.8)	B (13.0)	B (14.8)	C (16.7)
2036 Build (Case 3)						
Westbound Sharons Road	B (13.8)	C (15.7)	C (17.7)	B (13.8)	C (15.7)	C (17.7)

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.

Table 10
Peak Hour Levels of Service (LOS)
Based on the Cedar Creek Station (aka Enclave at Starwood) Traffic Impact Study
Prepared by Bowman Consulting Group, Ltd. – November 2024

Unsignalized Intersection ¹⁴ One-Way Stop (T-Intersection)	LOS per TIS			LOS per McCormick Taylor		
	Weekday AM	Weekday PM	Summer Saturday	Weekday AM	Weekday PM	Summer Saturday
9. US 113 / VFW Road						
2024 Existing (Case 1)						
Northbound US 113 – Left	A (0.0)	A (0.0)	A (0.0)	A (0)	A (0.0)	A (0.0)
Southbound US 113 – U-Turn	B (11.5)	A (0.0)	A (0.0)	B (11.5)	A (0.0)	A (0.0)
Eastbound VFW Road	D (28.9)	A (0.0)	E (40.5)	D (28.8)	A (0.0)	E (40.4)
2036 No Build (Case 2)						
Northbound US 113 – Left	A (0.0)	A (0.0)	A (0.0)	A (0.0)	A (0.0)	A (0.0)
Southbound US 113 – U-Turn	B (12.9)	A (0.0)	A (0.0)	B (12.9)	A (0.0)	A (0.0)
Eastbound VFW Road	E (45.0)	A (0.0)	F (69.7)	D (33.9)	A (0.0)	F (69.5)
2036 Build (Case 3)						
Northbound US 113 – Left	A (0.0)	A (0.0)	A (0.0)	A (0.0)	A (0.0)	A (0.0)
Southbound US 113 – U-Turn	B (14.0)	A (0.0)	A (0.0)	B (14.0)	A (0.0)	A (0.0)
Eastbound VFW Road ¹⁵	F (56.7)	A (0.0)	F (85.7)	F (56.8)	A (0.0)	F (85.3)

¹⁴ 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.

¹⁵ Total approach volume is less than 10 vehicles per hour in all cases and peak hours. The developer is not required to mitigate this LOS deficiency based on section 2.2.8.12.5 of the Development Coordination Manual.

Table 11
Peak Hour Levels of Service (LOS)
Based on the Cedar Creek Station (aka Enclave at Starwood) Traffic Impact Study
Prepared by Bowman Consulting Group, Ltd. – November 2024

Unsignalized Intersection ¹⁶ Two-Way Stop Control	LOS per TIS			LOS per McCormick Taylor		
10. US 113 / Staytonville Road / Fleatown Road	Weekday AM	Weekday PM	Summer Saturday	Weekday AM	Weekday PM	Summer Saturday
2024 Existing (Case 1)						
Southbound US 113 – Left	A (9.8)	A (9.8)	B (12.8)	A (9.8)	B (10.0)	B (12.6)
Eastbound Staytonville Road	B (11.7)	B (11.2)	B (12.6)	B (11.7)	B (11.2)	B (12.6)
Westbound Fleatown Road	C (16.0)	C (15.1)	C (21.6)	C (15.9)	C (15.0)	C (21.1)
2036 No Build (Case 2)						
Southbound US 113 – Left	B (11.0)	B (11.7)	C (17.3)	B (11.0)	B (12.0)	C (17.3)
Eastbound Staytonville Road	B (12.5)	B (12.2)	B (14.0)	B (12.5)	B (12.2)	B (14.0)
Westbound Fleatown Road	C (17.3)	C (16.8)	D (31.8)	C (15.5)	C (15.6)	D (26.4)
2036 Build (Case 3)						
Southbound US 113 – Left	B (12.4)	B (12.8)	C (19.7)	B (12.4)	B (13.2)	C (19.7)
Eastbound Staytonville Road	B (13.4)	B (13.1)	C (15.1)	B (13.4)	B (13.1)	C (15.1)
Westbound Fleatown Road	C (24.0)	C (20.2)	E (45.5)	C (21.4)	C (18.7)	E (37.7)

¹⁶ 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 12
Peak Hour Levels of Service (LOS)
Based on the Cedar Creek Station (aka Enclave at Starwood) Traffic Impact Study
Prepared by Bowman Consulting Group, Ltd. – November 2024

Unsignalized Intersection ¹⁷ Two-Way Stop Control	LOS per TIS			LOS per McCormick Taylor		
11. US 113 / W. Hudson Pond Road / E. Hudson Pond Road	Weekday AM	Weekday PM	Summer Saturday	Weekday AM	Weekday PM	Summer Saturday
2024 Existing (Case 1)						
Northbound US 113 – Left	A (0.0)	B (12.7)	A (0.0)	A (0.0)	B (12.7)	A (0.0)
Southbound US 113 – Left	B (11.0)	A (0.0)	C (15.1)	A (7.7)	A (0.0)	C (15.8)
Eastbound W. Hudson Pond Road	B (11.4)	C (15.0)	B (12.5)	B (10.3)	C (15.0)	B (12.5)
Westbound E. Hudson Pond Road	B (11.4)	B (11.1)	B (14.0)	A (8.1)	B (10.9)	B (12.0)
2036 No Build (Case 2)						
Northbound US 113 – Left	A (0.0)	C (16.8)	A (0.0)	A (0.0)	C (16.8)	A (0.0)
Southbound US 113 – Left	B (14.9)	A (0.0)	C (20.3)	B (14.9)	A (0.0)	C (20.2)
Eastbound W. Hudson Pond Road	B (12.8)	C (19.8)	B (14.4)	B (11.9)	C (19.9)	B (14.4)
Westbound E. Hudson Pond Road	B (13.9)	B (12.5)	C (17.4)	B (13.5)	B (12.3)	B (14.3)
2036 Build (Case 3)						
Northbound US 113 – Left	A (0.0)	C (19.9)	A (0.0)	A (0.0)	C (19.8)	A (0.0)
Southbound US 113 – Left	C (18.2)	A (0.0)	C (23.4)	C (18.1)	A (0.0)	C (23.4)
Eastbound W. Hudson Pond Road	B (14.4)	C (23.1)	C (15.4)	B (13.4)	C (23.2)	C (15.4)
Westbound E. Hudson Pond Road	C (16.6)	B (13.5)	C (19.7)	C (16.2)	B (13.2)	C (16.7)

¹⁷ 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 13
Peak Hour Levels of Service (LOS)
Based on the Cedar Creek Station (aka Enclave at Starwood) Traffic Impact Study
Prepared by Bowman Consulting Group, Ltd. – November 2024

Unsignalized Intersection ¹⁸ Two-Way Stop-Control	LOS per TIS			LOS per McCormick Taylor		
12. US 113 / Clendaniel Road / Haflinger Road	Weekday AM	Weekday PM	Summer Saturday	Weekday AM	Weekday PM	Summer Saturday
2024 Existing (Case 1)						
Northbound US 113 – Left	C (15.6)	B (11.2)	B (13.0)	B (12.4)	B (11.2)	B (13.7)
Southbound US 113 – Left	A (9.0)	A (9.6)	B (11.9)	A (9.0)	A (9.6)	B (11.9)
Eastbound Clendaniel Road	B (12.5)	B (14.8)	C (23.2)	C (17.0)	B (14.8)	C (23.7)
Westbound Haflinger Road	C (17.0)	B (14.3)	C (16.6)	C (15.5)	B (14.3)	C (15.6)
2036 No Build (Case 2)						
Northbound US 113 – Left	B (14.3)	B (13.6)	C (17.1)	B (14.3)	B (13.7)	C (17.1)
Southbound US 113 – Left	B (10.1)	B (10.6)	B (14.1)	B (10.1)	B (10.6)	B (14.1)
Eastbound Clendaniel Road	C (20.8)	C (18.7)	D (32.0)	C (20.8)	C (18.6)	D (33.2)
Westbound Haflinger Road	C (21.1)	C (19.2)	D (25.6)	C (21.1)	C (19.1)	C (24.9)
2036 Build (Case 3)						
Northbound US 113 – Left	C (15.7)	C (15.1)	C (19.1)	C (15.6)	C (15.1)	C (19.0)
Southbound US 113 – Left	B (11.0)	B (11.3)	C (15.4)	B (11.0)	B (11.3)	C (15.4)
Eastbound Clendaniel Road	C (23.9)	C (21.0)	E (37.2)	C (24.0)	C (21.0)	E (38.7)
Westbound Haflinger Road	D (31.8)	D (29.2)	F (73.6)	D (31.9)	D (29.2)	F (72.2)
2036 Build (Case 3) – RCUT Intersection						
Northbound US 113 – Left	--	--	--	--	--	--
Southbound US 113 – Left	--	--	--	--	--	--
Eastbound Clendaniel Road – Right	--	--	--	B (13.7)	B (13.1)	C (16.5)
Westbound Haflinger Road – Right	--	--	--	B (14.5)	B (14.8)	C (21.2)
Northbound U-Turn	--	--	--	C (24.9)	C (21.8)	E (47.6)
Southbound U-Turn	--	--	--	C (21.0)	C (23.2)	E (47.2)

¹⁸ 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 14
Peak Hour Levels of Service (LOS)
Based on the Cedar Creek Station (aka Enclave at Starwood) Traffic Impact Study
Prepared by Bowman Consulting Group, Ltd. – November 2024

Unsignalized Intersection ¹⁹ One-Way Stop (T-intersection)	LOS per TIS		LOS per McCormick Taylor	
	Weekday AM	Weekday PM	Weekday AM	Weekday PM
13. DE 16 / Webbs Road				
2024 Existing (Case 1)				
Eastbound DE 16 – Left	A (0.0)	A (0.0)	A (0.0)	A (0.0)
Southbound Webbs Road	B (14.9)	B (15.0)	B (14.9)	C (15.0)
2036 No Build (Case 2)				
Eastbound DE 16 – Left	A (0.0)	A (0.0)	A (0.0)	A (0.0)
Southbound Webbs Road	C (19.3)	C (19.5)	C (19.3)	C (19.4)
2036 Build (Case 3)				
Eastbound DE 16 – Left	A (0.0)	A (0.0)	A (0.0)	A (0.0)
Southbound Webbs Road	D (33.0)	D (30.8)	D (33.0)	D (30.7)

¹⁹ 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 15
Peak Hour Levels of Service (LOS)
Based on the Cedar Creek Station (aka Enclave at Starwood) Traffic Impact Study
Prepared by Bowman Consulting Group, Ltd. – November 2024

Unsignalized Intersection ²⁰ Two-Way Stop-Control with Channelization	LOS per TIS		LOS per McCormick Taylor	
	Weekday AM	Weekday PM	Weekday AM	Weekday PM
14. Webbs Road / N. Union Church Road				
2024 Existing (Case 1)				
Northwest Bound Webbs Road – Left to Channelization	A (8.3)	A (7.9)	A (8.3)	A (7.9)
Northwest Bound Webbs Road – Channelized Left	A (9.8)	A (9.6)	A (9.8)	A (9.6)
Northwest Bound Webbs Road – Right	A (8.5)	A (8.9)	A (8.5)	A (8.9)
Southbound N. Union Church Road – Left	A (7.4)	A (7.5)	A (7.4)	A (7.5)
Northeast Bound N. Union Church Road – Channelized Right	A (9.2)	A (8.8)	A (9.2)	A (8.8)
2036 No Build (Case 2)				
Northwest Bound Webbs Road – Left to Channelization	A (8.4)	A (8.0)	A (8.4)	A (8.0)
Northwest Bound Webbs Road – Channelized Left	A (9.9)	A (9.6)	A (9.9)	A (9.6)
Northwest Bound Webbs Road – Right	A (8.6)	A (9.0)	A (8.6)	A (9.0)
Southbound N. Union Church Road – Left	A (7.5)	A (7.5)	A (7.5)	A (7.5)
Northeast Bound N. Union Church Road – Channelized Right	A (9.2)	A (8.8)	A (9.2)	A (8.8)
2036 Build (Case 3)				
Northwest Bound Webbs Road – Left to Channelization	A (8.6)	A (8.2)	A (8.6)	A (8.2)
Northwest Bound Webbs Road – Channelized Left	A (9.9)	A (9.6)	A (9.9)	A (9.6)
Northwest Bound Webbs Road - Right	A (8.8)	A (9.3)	A (8.8)	A (9.3)
Southbound N. Union Church Road – Left	A (7.6)	A (7.7)	A (7.6)	A (7.7)
Northeast Bound N. Union Church Road – Channelized Right	A (9.7)	A (9.2)	A (9.7)	A (9.2)

²⁰ 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 16
Peak Hour Levels of Service (LOS)
Based on the Cedar Creek Station (aka Enclave at Starwood) Traffic Impact Study
Prepared by Bowman Consulting Group, Ltd. – November 2024

Unsignalized Intersection ²¹ Two-Way Stop-Control	LOS per TIS		LOS per McCormick Taylor	
	Weekday AM	Weekday PM	Weekday AM	Weekday PM
15. N. Union Church Road / Staytonville Road				
2024 Existing (Case 1)				
Northbound N. Union Church Road – Left	A (7.3)	A (7.5)	A (7.3)	A (7.5)
Southbound N. Union Church Road – Left	A (7.7)	A (7.8)	A (7.7)	A (7.5)
Eastbound Staytonville Road	A (8.8)	A (8.9)	A (8.9)	A (8.9)
Westbound Staytonville Road	A (9.7)	B (10.7)	A (9.8)	B (10.7)
2036 No Build (Case 2)				
Northbound N. Union Church Road – Left	A (7.3)	A (7.5)	A (7.3)	A (7.5)
Southbound N. Union Church Road – Left	A (7.8)	A (7.8)	A (7.8)	A (7.8)
Eastbound Staytonville Road	A (8.9)	A (9.0)	A (9.2)	A (9.0)
Westbound Staytonville Road	A (9.9)	B (11.0)	A (9.8)	B (11.1)
2036 Build (Case 3)				
Northbound N. Union Church Road – Left	A (7.5)	A (7.7)	A (7.5)	A (7.7)
Southbound N. Union Church Road – Left	A (7.8)	A (7.9)	A (7.8)	A (7.6)
Eastbound Staytonville Road	A (9.2)	A (9.4)	A (9.2)	A (9.4)
Westbound Staytonville Road	B (11.3)	B (13.1)	B (10.8)	B (13.4)

²¹ 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 17
Peak Hour Levels of Service (LOS)
Based on the Cedar Creek Station (aka Enclave at Starwood) Traffic Impact Study
Prepared by Bowman Consulting Group, Ltd. – November 2024

Unsignalized Intersection ²² One-Way Stop (T-Intersection)	LOS per TIS		LOS per McCormick Taylor	
	Weekday AM	Weekday PM	Weekday AM	Weekday PM
16. N. Union Church Road / W. Hudson Pond Road				
2024 Existing (Case 1)				
Southbound N. Union Church Road – Left	A (9.1)	A (7.3)	A (8.3)	A (7.3)
Westbound W. Hudson Pond Road	A (8.3)	A (9.2)	A (9.1)	A (9.1)
2036 No Build (Case 2)				
Southbound N. Union Church Road – Left	A (8.3)	A (7.3)	A (8.3)	A (7.3)
Westbound W. Hudson Pond Road	A (9.2)	A (9.2)	A (9.2)	A (9.2)
2036 Build (Case 3)				
Southbound N. Union Church Road – Left	A (8.4)	A (7.4)	A (8.4)	A (7.4)
Westbound W. Hudson Pond Road	A (9.5)	A (9.6)	A (9.5)	A (9.6)

²² 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 18
Peak Hour Levels of Service (LOS)
Based on the Cedar Creek Station (aka Enclave at Starwood) Traffic Impact Study
Prepared by Bowman Consulting Group, Ltd. – November 2024

Unsignalized Intersection ²³ One-Way Stop (T-intersection)	LOS per TIS		LOS per McCormick Taylor	
	Weekday AM	Weekday PM	Weekday AM	Weekday PM
17. Staytonville Road / Lord Road				
2024 Existing (Case 1)				
Southbound Staytonville Road – Left	A (7.2)	A (7.3)	A (7.2)	A (7.3)
Westbound Lord Road	A (8.4)	A (8.6)	A (8.4)	A (8.6)
2036 No Build (Case 2)				
Southbound Staytonville Road – Left	A (7.3)	A (7.3)	A (7.3)	A (7.3)
Westbound Lord Road	A (8.4)	A (8.6)	A (8.4)	A (8.6)
2036 Build (Case 3)				
Southbound Staytonville Road – Left	A (7.4)	A (7.4)	A (7.4)	A (7.4)
Westbound Lord Road	A (8.6)	A (8.9)	A (8.7)	A (8.9)

²³ 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 19
Peak Hour Levels of Service (LOS)
Based on the Cedar Creek Station (aka Enclave at Starwood) Traffic Impact Study
Prepared by Bowman Consulting Group, Ltd. – November 2024

Unsignalized Intersection ²⁴ One-Way Stop (T-Intersection)	LOS per TIS		LOS per McCormick Taylor	
	Weekday AM	Weekday PM	Weekday AM	Weekday PM
18. DE 16 / Beaver Dam Road				
2024 Existing (Case 1)				
Westbound DE 16 – Left	A (8.5)	A (8.1)	A (8.5)	A (8.1)
Northbound Beaver Dam Road	B (11.8)	B (12.5)	B (11.8)	B (12.4)
2036 No Build (Case 2)				
Westbound DE 16 – Left	A (8.7)	A (8.4)	A (8.7)	A (8.5)
Northbound Beaver Dam Road	B (13.1)	B (14.7)	B (12.9)	C (15.0)
2036 Build (Case 3)				
Westbound DE 16 – Left	A (8.9)	A (8.6)	A (8.9)	A (8.6)
Northbound Beaver Dam Road	B (14.3)	C (16.2)	B (14.1)	C (16.2)

²⁴ 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 20
Peak Hour Levels of Service (LOS)
Based on the Cedar Creek Station (aka Enclave at Starwood) Traffic Impact Study
Prepared by Bowman Consulting Group, Ltd. – November 2024

Unsignalized Intersection ²⁵ Two-Way Stop-Control	LOS per TIS		LOS per McCormick Taylor	
	Weekday AM	Weekday PM	Weekday AM	Weekday PM
19. DE 16 / N. Union Church Road / S. Union Church Road				
2024 Existing (Case 1)				
Northbound S. Union Church Road	B (12.2)	B (11.3)	B (12.2)	B (11.3)
Southbound N. Union Church Road	B (14.4)	C (15.6)	B (14.4)	C (15.4)
Eastbound DE 16 Road - Left	A (8.2)	A (8.0)	A (8.2)	A (7.8)
Westbound DE 16 Road - Left	A (8.1)	A (8.2)	A (8.1)	A (7.9)
2036 No Build (Case 2)				
Northbound S. Union Church Road	B (14.0)	B (12.7)	B (10.1)	B (12.7)
Southbound N. Union Church Road	C (18.6)	C (20.2)	B (13.3)	C (20.2)
Eastbound DE 16 Road - Left	A (8.3)	A (8.1)	A (8.3)	A (8.1)
Westbound DE 16 Road - Left	A (8.4)	A (8.2)	A (7.5)	A (8.2)
2036 Build (Case 3)				
Northbound S. Union Church Road	C (15.6)	C (13.7)	C (15.6)	B (13.7)
Southbound N. Union Church Road	C (22.6)	C (24.3)	C (22.8)	C (24.5)
Eastbound DE 16 Road - Left	A (8.4)	A (8.2)	A (8.4)	A (8.2)
Westbound DE 16 Road - Left	A (8.6)	A (8.3)	A (8.6)	A (8.3)

²⁵ 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 21
Peak Hour Levels of Service (LOS)
Based on the Cedar Creek Station (aka Enclave at Starwood) Traffic Impact Study
Prepared by Bowman Consulting Group, Ltd. – November 2024

Unsignalized Intersection ²⁶ One-Way Stop (T-Intersection)	LOS per TIS		LOS per McCormick Taylor	
	Weekday AM	Weekday PM	Weekday AM	Weekday PM
20. S. Union Church Road / Truitt Road				
2024 Existing (Case 1)				
Northbound S. Union Church Road – Left	A (8.4)	A (0.0)	A (8.4)	A (0.0)
Eastbound Truitt Road	A (9.3)	A (9.5)	A (9.6)	A (9.5)
2036 No Build (Case 2)				
Northbound S. Union Church Road – Left	A (8.5)	A (0.0)	A (8.5)	A (0.0)
Eastbound Truitt Road	A (9.7)	A (10.1)	B (10.0)	A (10.1)
2036 Build (Case 3)				
Northbound S. Union Church Road – Left	A (8.7)	A (0.0)	A (8.7)	A (0.0)
Eastbound Truitt Road	A (10.1)	B (10.6)	B (10.4)	B (10.6)

²⁶ 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.