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

NICOLE MAJESKI
SECRETARY

June 5, 2024

Christopher Duke, P.E.
Becker Morgan Group, Inc.
100 Discovery Blvd, Suite 102
Newark, DE 19713

Dear Mr. Duke:

The enclosed Traffic Impact Study (TIS) review letter for the proposed **Nylon Capital Center (FKA Seaford Innovation Center)** (Tax Parcels:531-10.00-219.00, 531-10.00-218.00, 531-10.00219.01) multi-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 TOA 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
Enclosures
cc with enclosures: Robert Herrera, Ninth Street Development Co.
Johnathan Falkowski, Becker Morgan Group, Inc.
David L. Edgell, Office of State Planning Coordination
Jamie Whitehouse, Sussex County Planning & Zoning
Joanne M. Arellano, Johnson, Mirmiran, & Thompson, Inc.
Mir Wahed, Johnson, Mirmiran, & Thompson, 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
Philip Lindsey, TIS Group Project Engineer, Development Coordination, Planning
Anthony Aglio, Planning Supervisor, Statewide & Regional Planning, Planning
Steve Bayer, Regional Transportation Planner, Statewide & Regional Planning

June 4, 2024

Ms. Annamaria Furmato
Project Engineer
Delaware Department of Transportation
Development Coordination, Division of Planning
800 Bay Road
Dover, DE 19901

RE: Agreement No. 1945F
Project Number T202369005/PO#652973
TIS Support Services
Task 17-6 – Nylon Capital Center (a.k.a. Seaford Innovation Center) TOA

Dear Ms. Furmato:

Johnson, Mirmiran, and Thompson (JMT) has completed a review of the Traffic Operational Analysis (TOA) for the Nylon Capital Center (a.k.a. Seaford Innovation Center) development, which was prepared by Becker Morgan Group, Inc. dated November 2023. This review was assigned as Task Number 17-6. The report is prepared in a manner generally consistent with DelDOT's *Development Coordination Manual* and other Department standards.

The TOA evaluates the impacts of a proposed development which would be comprised of a 675 student junior/community college and a 207,525 square foot shopping plaza without supermarket in the City of Seaford, Sussex County, Delaware. The site is located along Delaware Route 20 (W. Stein Highway) between the intersections with Sussex Avenue and Atlanta Road (Sussex Road 30). The subject property is on an approximately 21.08-acre assemblage of parcels (Tax Parcel: 531-10.00-218.00 and 219.00). The land is currently zoned as C-2 (Medium Commercial), and the developer does not plan to rezone the land. Construction for the development is anticipated to be completed in 2025.

Six full access points are proposed onto state-maintained roads of which five are existing: three on Delaware Route 20 and three on Atlanta Road. The access along Atlanta Road across from Oak Street is not existing and was requested by DelDOT to be provided.

DelDOT has one relevant and ongoing improvement project within the study area, which is the *Pavement & Rehabilitation, Sussex II (Stein Hwy), 2023* project (DelDOT Contract No. T202306302). The pavement and rehabilitation project is along Delaware Route 20 from west of Hickory Lane to east of Dutton Avenue and includes five of the TOA study intersections (Delaware Route 20 with Atlanta Road, Sussex Avenue, Site Entrance D, Rite Aid Entrance, and the westernmost entrance before Sussex Avenue). Construction is anticipated to start Spring 2024. The latest draft plans depict that the existing lane configurations at the TOA study intersections will be maintained.

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

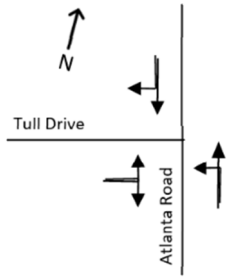
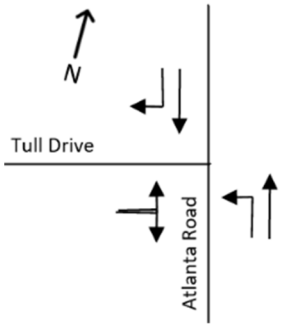
There are no intersections that exhibit level of service (LOS) deficiencies. However, it should be noted that the westbound approach along Delaware Route 20 at the Sussex Avenue (Site Entrance E) intersection is projected to exhibit a calculated 95th percentile queue length of approximately 315 feet, which would spillback onto the Delaware Route 20/Westernmost Entrance Before Sussex Avenue intersection. As such, it is recommended the developer restrict the access to a rights-in/rights-out only access.

Additionally, the southbound approach along Sussex Avenue (Site Entrance E) to Delaware Route 20 is projected to exhibit a calculated 95th percentile queue length of approximately 93 feet during the PM peak hour, which would extend into the existing site access along Sussex Avenue, which is approximately 45 feet north of the intersection. As such, it is recommended that the developer close the existing site access north of the Delaware Route 20/Sussex Avenue (Site Entrance E) intersection.

Should the City of Seaford approve the proposed development, the following items should be incorporated into the site design and reflected on the record plan, 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 at the same time as site construction once all agency approvals and permits are secured and completed in accordance with DelDOT's Standards and Specifications.

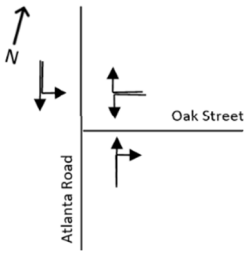
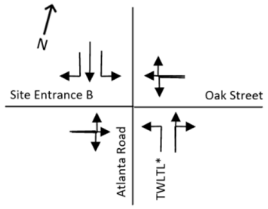
1. The developer shall improve Atlanta Road (Sussex Road 30) and Delaware Route 20 (W. Stein Highway), within the limits of their frontage. The improvements shall include both directions of travel, regardless of whether the developer's lands are on one or both sides of the road**.** "Frontage" means 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 improve the unsignalized Site Entrance A/Tull Drive full access along Atlanta Road, approximately 85 feet south of the intersection with Fleetwood Drive. The intersection should be consistent with the lane configurations shown in the table below.

| Approach | Current Configuration | | Approach | Proposed Configuration | |
|---|---|---|---|---|---|
| Eastbound Site Entrance A/Tull Drive | One shared left turn/right turn lane |  | Eastbound Site Entrance A/Tull Drive | No change |  |
| Northbound Atlanta Road | One shared left turn/through lane | | Northbound Atlanta Road | One left turn lane and one through lane | |
| Southbound Atlanta Road | One shared through/right turn lane | | Southbound Atlanta Road | One through lane and one right turn lane | |

Based on DelDOT's *Development Coordination Manual*, the recommended minimum storage length (excluding taper) of the northbound left turn lane is 85 feet and the southbound right turn lane is 100 feet. The projected queues from the HCS analysis can be accommodated within the recommended storage lengths.

3. The developer should construct an unsignalized Site Entrance B full access for the proposed Nylon Capital Center (a.k.a. Seaford Innovation Center) development along Atlanta Road directly across from Oak Street. The intersection should be consistent with the lane configurations shown in the table below.

| Approach | Current Configuration | | Approach | Proposed Configuration | |
|---|---|---|---|---|---|
| Eastbound Site Entrance B | Approach does not exist |  | Eastbound Site Entrance B | One shared left turn/through/right turn lane |  |
| Westbound Oak Street | One shared left turn/right turn lane | | Westbound Oak Street | One shared left turn/through/right turn lane | |
| Northbound Atlanta Road | One shared through/right turn lane | | Northbound Atlanta Road | One two-way left turn lane and one shared through/right turn lane | |
| Southbound Atlanta Road | One shared left turn/through lane | | Southbound Atlanta Road | One left turn lane, one through lane, and one right turn lane | |

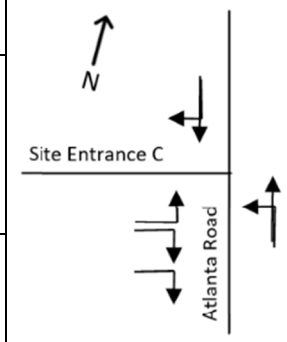
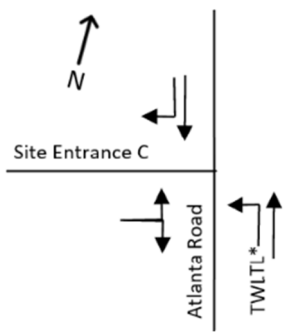
*TWLTL refers to two-way left-turn lane.

Based on DelDOT's *Development Coordination Manual*, the recommended minimum storage length (excluding taper) of the southbound left turn lane and right turn lane is 85 feet

and 100 feet, respectively. The projected queues from the HCS analysis can be accommodated within the recommended storage lengths.

4. The developer should construct a continuous two-way left turn lane along Atlanta Road from the existing Atlanta Road/Rite Aid Entrance intersection to the existing Site Entrance B/Atlanta Road/Oak Street intersection. The developer should coordinate with DelDOT's Development Coordination Section during the Entrance Plan review process to determine the design and implementation of the two-way left turn lane.

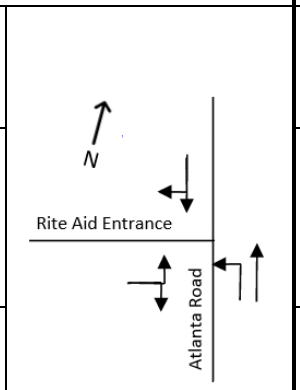
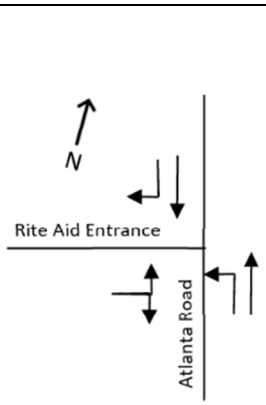
5. The developer should improve the existing unsignalized Site Entrance C full access along Atlanta Road, approximately 325 feet south of the intersection with Oak Street. The intersection should be consistent with the lane configurations shown in the table below.

| Approach | Current Configuration | | Approach | Proposed Configuration | |
|---|---|---|---|---|---|
| Eastbound Site Entrance C | One left turn lane and two right turn lanes |  | Eastbound Site Entrance C | One shared left turn/right turn lane |  |
| Northbound Atlanta Road | One shared left turn/through lane | | Northbound Atlanta Road | One two-way left turn lane and one through lane | |
| Southbound Atlanta Road | One shared through/right turn lane | | Southbound Atlanta Road | One through lane and one right turn lane | |

*TWLTL refers to two-way left-turn lane.

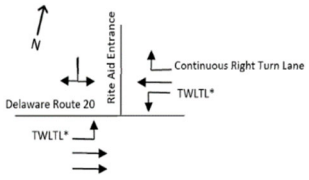
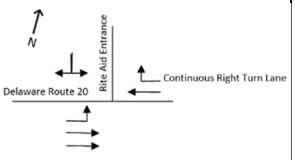
Based on DelDOT's *Development Coordination Manual*, the recommended minimum storage length (excluding taper) of the southbound right turn lane is 100 feet. The projected queues from the HCS analysis can be accommodated within the recommended storage lengths.

6. The developer should improve the existing unsignalized Rite Aid Entrance full access along Atlanta Road, approximately 200 feet north of the intersection with Delaware Route 20 (W. Stein Highway). The intersection should be consistent with the lane configurations shown in the table below.

| Approach | Current Configuration | | Approach | Proposed Configuration | |
|---|---|---|---|---|---|
| Eastbound Rite Aid Entrance | One shared left turn/right turn lane |  | Eastbound Rite Aid Entrance | No change |  |
| Northbound Atlanta Road | One left turn lane and one through lane | | Northbound Atlanta Road | No change | |
| Southbound Atlanta Road | One shared through/right turn lane | | Southbound Atlanta Road | One through lane and one right turn lane | |

Based on DelDOT's *Development Coordination Manual*, the recommended minimum storage length (excluding taper) of the northbound left turn lane is 85 feet and the southbound right turn lane is 100 feet. The projected queues from the HCS analysis can be accommodated within the recommended storage lengths.

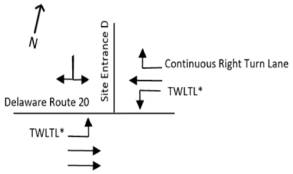
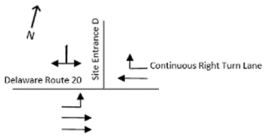
7. The developer should improve the existing unsignalized full access Rite Aid Entrance along Delaware Route 20 (W. Stein Highway), approximately 300 feet west of the intersection with Atlanta Road (Sussex Road 30). Specifically, the developer should restripe the two-way left turn lane at the Rite Aid Entrance along Delaware Route 20 (W. Stein Highway) to provide a separate eastbound left turn lane. The intersection should be consistent with the lane configurations shown in the table below.

| Approach | Current Configuration | | Approach | Proposed Configuration | |
|---|---|---|---|---|---|
| Eastbound Delaware Route 20 | One two-way left turn lane and two through lanes |  | Eastbound Delaware Route 20 | One left turn lane and two through lanes |  |
| Westbound Delaware Route 20 | One two-way left turn lane, one through lane, and one continuous right turn | | Westbound Delaware Route 20 | One through lane and one right turn lane | |
| Southbound Rite Aid Entrance | One shared left turn/right turn lane | | Southbound Rite Aid Entrance | No change | |

*TWLTL refers to two-way left-turn lane.

Based on DelDOT's *Development Coordination Manual*, the recommended minimum storage length (excluding taper) of the eastbound left turn lane is 110 feet. The projected queues from the HCS analysis can be accommodated within the recommended storage lengths.

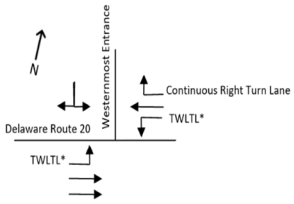
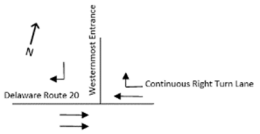
8. The developer should restripe the two-way left turn lane and the continuous right turn lane at the existing unsignalized Site Entrance D full access along Delaware Route 20 (W. Stein Highway), approximately 430 feet east of the intersection with Sussex Avenue to provide separate auxiliary turn lanes. The intersection should be consistent with the lane configurations shown in the table below.

| Approach | Current Configuration | | Approach | Proposed Configuration | |
|---|---|---|---|---|---|
| Eastbound Delaware Route 20 | One two-way left turn lane and two through lanes |  | Eastbound Delaware Route 20 | One left turn lane and two through lanes |  |
| Westbound Delaware Route 20 | One two-way left turn lane, one through lane, and one continuous right turn lane | | Westbound Delaware Route 20 | One through lane and one continuous right turn lane | |
| Southbound Site Entrance D | One shared left turn/right turn lane | | Southbound Site Entrance D | No change | |

*TWLTL refers to two-way left-turn lane.

Based on DelDOT's *Development Coordination Manual*, the recommended minimum storage length (excluding taper) of the eastbound left turn lane is 110 feet. The projected queues from the HCS analysis can be accommodated within the recommended storage lengths.

9. The developer should modify the existing unsignalized full access site entrance along Delaware Avenue east of Sussex Avenue (Site Entrance E), approximately 260 feet east of Sussex Avenue to be rights-in/rights-out. The intersection should be consistent with the lane configurations shown in the table below.

| Approach | Current Configuration | | Approach | Proposed Configuration | |
|---|---|---|---|---|---|
| Eastbound Delaware Route 20 | One two-way left turn lane and two through lanes |  | Eastbound Delaware Route 20 | Two through lanes |  |
| Westbound Delaware Route 20 | One two-way left turn lane, one through lane, and one continuous right turn | | Westbound Delaware Route 20 | One through lane and one continuous right turn lane | |
| Southbound Westernmost Entrance before Sussex Avenue | One shared left turn/right turn lane | | Southbound Westernmost Entrance before Sussex Avenue | One right turn lane | |

*TWLTL refers to two-way left-turn lane.

10. The developer should enter into a traffic signal agreement with DelDOT for the intersection of Delaware Route 20 and Sussex Avenue (Site Entrance E). The developer should coordinate with the DelDOT Development Coordination Section to execute the traffic signal agreement.

11. The developer should remove the existing site entrance along Sussex Avenue closest to the intersection of Delaware Route 20 and Sussex Avenue (Site Entrance E), approximately 30 feet north of Delaware Route 20.

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

    a. A minimum fifteen-foot-wide permanent easement from the edge of the right-of-way should be dedicated to DelDOT along the Atlanta Road (Sussex Road 30) and Delaware Route 20 (W. Stein Highway) site frontages. Within the easement, the developer should maintain the sidewalk where existing, or construct new sidewalk where not existing. The sidewalk should be designed to meet current AASHTO and ADA standards. If feasible, the sidewalk should be placed behind utility poles and street trees should be provided within the buffer area. The sidewalk should have a minimum five-foot-wide buffer from the back of curb, but if the sidewalk is at the back of the curb, the sidewalk width will need to be increased to six feet. The developer should coordinate with DelDOT's Development Coordination Section during the plan review process to identify the exact location of the sidewalk.

    b. An internal connection from the sidewalk into the site is required.

    c. Signalized pedestrian crossings should be installed at the eastbound approach of the Delaware Route 20 (W. Stein Highway) and Sussex Avenue intersection. The developer should coordinate with the project manager for the *Pavement and Rehabilitation, Sussex II, (Stein Highway)* project (DelDOT Contract No. (T202306302)) on the exact details of design.

d. A pedestrian crossing should be installed at the eastbound approach of the Atlanta Road (Sussex Road 30) and Tull Drive intersection. The developer should coordinate with DelDOT's Development Coordination Section during the plan review process to identify the exact location and design of the pedestrian crossing.

e. Any proposed pedestrian crossings along Atlanta Road (Sussex Road 30) should be analyzed using NCHRP 562. The developer should coordinate with DelDOT's Development Coordination Section during the plan review process to identify the exact location and design of the pedestrian crossing.

f. Where internal sidewalks are located alongside parking spaces, a buffer, physical barrier, or signage should be provided to eliminate vehicular overhang onto the sidewalk.

g. ADA-compliant curb ramps and marked crosswalks should be provided along the site entrances.

h. Minimum five-foot wide bicycle lanes should be incorporated in the right turn lane and shoulder along the Atlanta Road (Sussex Road 30) approach to the site entrances if dedicating right-of-way is feasible. The developer should coordinate with DelDOT's Development Coordination Section during the plan review process to identify the exact location and design of the bicycle lanes.

i. Utility covers should be moved outside of any designated bicycle lanes and any proposed sidewalks or should be flush with the pavement.

j. Internal bicycle racks should be provided near the building entrances. Where the building architecture provides for an awning or other overhang, the bicycle parking should be covered.

k. DART bus stops should be provided along the site frontage along Tull Drive and Delaware Route 20 (W. Stein Highway). The developer should coordinate with DelDOT's Development Coordination Section and DART during the plan review process to identify the exact location and design of the bus stops.

Please note that this review generally focuses on capacity and level of service issues; additional safety, operational, and constructability issues will be further addressed through DelDOT's Plan Review process.

Improvements in this TOA may be considered "significant" under DelDOT's Work Zone Safety and Mobility Procedures and Guidelines. These guidelines are available on DelDOT's website at https://www.deldot.gov/Publications/manuals/de_mutcd/index.shtml.

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

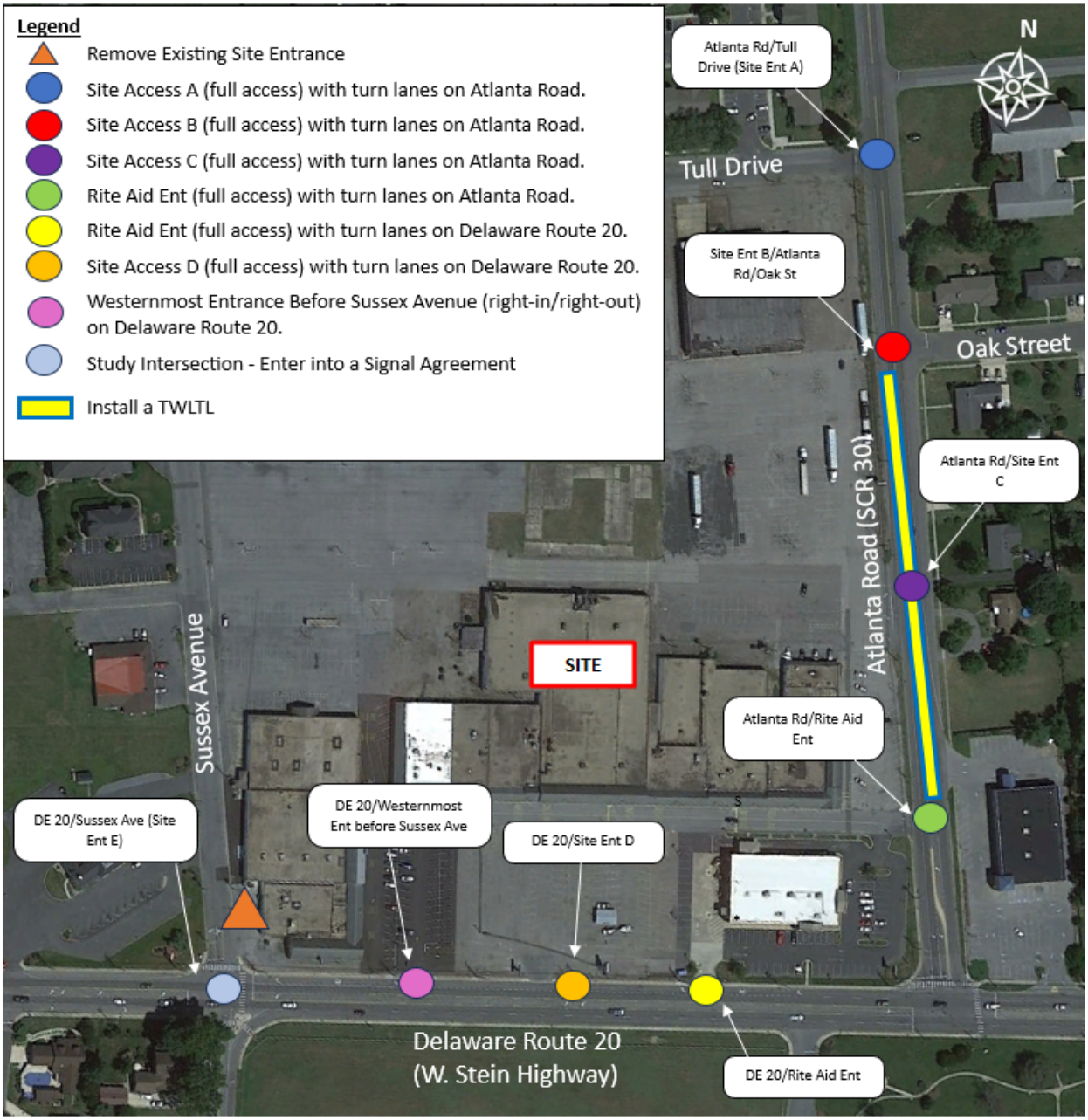
Sincerely,
Johnson, Mirmiran, and Thompson, Inc.

Joanne M. Arellano, P.E., PTOE

cc: Mir Wahed, P.E., PTOE
Tanner Chiamprasert, E.I.T.

Enclosure

## Recommendations Map



**General Information**
**Report date:** November 2023
**Prepared by:** Becker Morgan Group, Inc.
**Prepared for:** Nylon Capital Center (a.k.a. Seaford Innovation Center)
**Tax Parcels:** 531-10.00-218.00 and 513-10.00-219.00.
**Generally consistent with DelDOT's Development Coordination Manual (DCM):** Yes

**Project Description and Background**

**Description:** The proposed development is within the City of Seaford, Sussex County, Delaware, consisting of a 675-student junior/community college and a 207,525 square foot shopping plaza without supermarket.
**Location:** The site is located along Delaware Route 20 between the intersections of Sussex Avenue and Atlanta Road.
**Amount of Land to be developed:** An approximately 21.08-acre portion assemblage of parcels.
**Land Use approval(s) needed:** Entrance Plan.
**Proposed completion date:** 2025
**Proposed access locations:** Six full access points are proposed onto state-maintained roads of which five are existing: three on Delaware Route 20 and three on Atlanta Road.
**Daily Traffic Volumes:**

- 2022 Average Annual Daily Traffic on Atlanta Road: 3,912 vehicles per day
- 2022 Average Annual Daily Traffic on Delaware Route 20: 8,137 vehicles per day

*AADT is sourced from DelDOT Gateway.

## Site Map


**Graphic is an approximation based on the TIIF Exhibit Plan dated August 22, 2023 prepared by Becker Morgan Group.*
***The graphic depicts the proposed access improvements within the TOA and may differ from the recommendations within this review letter.*

## Relevant and On-going Projects

DelDOT has one relevant and ongoing improvement project within the study area, which is the *Pavement & Rehabilitation, Sussex II (Stein Hwy), 2023* project (DelDOT Contract No. T202306302). The pavement and rehabilitation project is along Delaware Route 20 from west of Hickory Lane to east of Dutton Avenue, and includes five of the TOA study intersections (Delaware Route 20 with Atlanta Road, Sussex Avenue, Site Entrance D, Rite Aid Entrance, and the westernmost entrance before Sussex Avenue). Construction is anticipated to start Spring 2024. The latest draft plans depict that the existing lane configurations at the TOA study intersections will be maintained.

## Livable Delaware

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

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

*Investment Level 1*

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

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

**Proposed Development's Compatibility with Livable Delaware:**
The proposed site is located within Investment Level 1. In Investment Level 1, the priority is to preserve existing facilities while making safety improvements. For the proposed site, renovation will be made along with changes in site entrances to enhance the transit system and make safety improvements. The property is within Investment Level 1 and the proposed development is consistent with the 2020 update of Livable Delaware Strategies for State Policies and Spending.

## Comprehensive Plan

*(Source: 2008 Seaford Comprehensive Plan)*

**Seaford Comprehensive Plan:**
Per the Existing Zoning, the development is zoned C-2 (Highway Commercial).

**Proposed Development's Compatibility with Seaford Comprehensive Plan:**
The Existing Land Use map indicates the property to be for highway commercial and is therefore consistent with the Seaford Comprehensive Plan Update.

## Trip Generation

The trip generation for the proposed development was determined by using the comparable land use and rates/equations contained in the 11$^{th}$ Edition of the ITE *Trip Generation Manual*, published by the Institute of Transportation Engineers (ITE) for ITE Land Use Code 820 (Shopping Center), ITE Land Use Code 540 (Junior/Community College). Trip generation was reviewed by DelDOT as part of the Preliminary TOA (PTOA) submission.

**Table 1**
Nylon Capital Center (a.k.a. Seaford Innovation Center) Trip Generation

| **Land Use** | | **ADT** | **AM Peak Hour** | | | **PM Peak Hour** | | |
|---|---|---|---|---|---|---|---|---|
| | | | In | Out | Total | In | Out | Total |
| Shopping Center (207,525 SF) | LUC 820 | 11282 | 159 | 97 | 256 | 458 | 497 | 955 |
| Junior/ Community College (675 students) | LUC 540 | 2069 | 180 | 42 | 222 | 106 | 83 | 189 |
| Internal Capture | | | 20 | 19 | 39 | 28 | 27 | 55 |
| **Total Trips** | | **13351** | **319** | **120** | **439** | **536** | **553** | **1089** |
| Pass-By Trip | Total | 0 | 0 | 0 | 0 | 128 | 141 | 269 |
| **New Trips** | | **13351** | **319** | **120** | **439** | **408** | **412** | **820** |

## Overview of TOA

**Intersections examined:**

1. Atlanta Road (Sussex Road 30) / Tull Drive (Site Entrance A)
2. Site Entrance B / Atlanta Road / Oak Street
3. Site Entrance C / Atlanta Road
4. Atlanta Road / Rite Aid Entrance
5. Site Entrance D / Delaware Route 20 (W. Stein Highway)
6. Site Entrance E / Delaware Route 20 / Sussex Avenue
7. Delaware Route 20 / Rite Aid Entrance
8. Delaware Route 20 / Westernmost Entrance Before Sussex Avenue
9. Delaware Route 20 / Atlanta Road

**Conditions Examined:**

1. Case 1 – 2023 existing
2. Case 2 – 2025 without development
    a. Existing + Background Growth + Committed Developments + 250k square foot shopping center (accounting for existing shopping center trips).

b. With 250,000 square foot shopping center (Exiting + Background Growth + Committed Developments + 250k square foot shopping center accounting for existing shopping center trips).

3. Case 3 – 2025 with development

**Committed Developments Considered:**

1. Mearfield Single Family (182 single family detached houses, 107 unbuilt, 75 built)
2. Mearfield Section 2 (153 condominiums/ townhouses, 145 unbuilt, 8 built)
3. Melanie's Ridge (280 apartment units, 264 unbuilt, 16 built, and 10,000 square foot retail)
4. Villages of Stoneybrook (150 townhouses)
5. Western Sussex Business Campus (a.k.a Ross Business Park) (488,766-foot business park)

* Committed development information provided supersedes the information provided by the June 15, 2023, DelDOT Scoping Meeting Memorandum.

**Peak Hours Evaluated:** Weekday AM and PM.

**Intersection Descriptions**

1. **Atlanta Road (Sussex Road 30) / Tull Drive (Site Entrance A)**

**Type of Control:** Existing two-way stop controlled intersection.
**Eastbound Approach:** (Tull Drive) Existing one shared left turn/right turn lane.
**Northbound Approach:** (Atlanta Road) Existing one left turn/through lane. Proposed one two-way left turn lane and one through lane.
**Southbound Approach:** (Atlanta Road) Existing one shared through/right turn lane. Proposed one through lane and one right turn lane.

2. **Site Entrance B / Atlanta Road / Oak Street**

**Type of Control:** Existing two-way stop controlled intersection.
**Eastbound Approach:** (Site Entrance B) Proposed one shared left turn/through/right turn lane.
**Westbound Approach:** (Oak Street) Existing one shared left turn/right turn lane. Proposed one shared left turn/through/right turn lane.
**Northbound Approach:** (Atlanta Road) Existing one shared left turn/through lane. Proposed one two-way left turn lane and one shared through/right turn lane.
**Southbound Approach:** (Atlanta Road) Existing one shared through/right turn lane. Proposed one left turn lane, one through lane, and one right turn lane.

3. **Site Entrance C / Atlanta Rd**

**Type of Control:** Existing two-way stop controlled intersection.
**Eastbound Approach:** (Site Entrance C) Existing one left turn lane and two right turn lanes. Proposed one shared left turn/right turn lane.

**Northbound Approach:** (Atlanta Road) Existing one shared left turn/through lane. Proposed one two-way left turn lane and one through lane.
**Southbound Approach:** (Atlanta Road) Existing one shared through/right turn lane. Proposed one through lane and one right turn lane.

**4. Atlanta Road / Rite Aid Entrance**
**Type of Control:** Existing two-way stop controlled intersection.
**Eastbound Approach:** (Rite Aid Entrance) Existing one shared left turn/right turn lane.
**Northbound Approach:** (Atlanta Road) Existing one left turn lane and one through lane.
**Southbound Approach:** (Atlanta Road) Existing one shared through/right turn lane. Proposed one through lane and one right turn lane.

**5. Site Entrance D / Delaware Route 20 (W. Stein Highway)**
**Type of Control:** Existing two-way stop-controlled intersection.
**Eastbound Approach:** (Delaware Route 20) Existing one two-way left turn lane, one through lane, and one right turn lane.
**Westbound Approach:** (Delaware Route 20) Existing one two-way left turn lane and two through lanes.
**Southbound Approach:** (Site Entrance D) Existing one shared left turn/right turn lane.

**6. Site Entrance E / Delaware Route 20 / Sussex Avenue**
**Type of Control:** Existing signalized intersection.
**Eastbound Approach:** (Delaware Route 20) Existing one left turn lane, one through lane, and one right turn lane.
**Westbound Approach:** (Delaware Route 20) Existing one left turn lane, one through lane, and one right turn lane.
**Northbound Approach:** (Sussex Avenue) Existing one shared left turn/through lane and one channelized right turn lane.
**Southbound Approach:** (Sussex Avenue) Existing one shared left turn/through lane and one right turn lane.

**7. Delaware Route 20 / Rite Aid Entrance**
**Type of Control:** Existing two-way stop-controlled intersection.
**Eastbound Approach:** (Delaware Route 20) Existing one two-way left turn lane and two through lanes.
**Westbound Approach:** (Delaware Route 20) Existing one two-way left turn lane, one through lane, and one right turn lane.
**Southbound Approach:** (Rite Aid Entrance) Existing one shared left turn/one right turn lane.

8. **Delaware Route 20 / Westernmost Entrance Before Sussex Avenue**

**Type of Control:** Existing two-way stop controlled intersection.
**Eastbound Approach:** (Delaware Route 20) Existing one two-way left-turn lane and two through lanes.
**Westbound Approach:** (Delaware Route 20) Existing one two-way left-turn lane, one through lane, and one right turn lane.
**Southbound Approach:** (Westernmost Entrance Before Sussex Avenue) Existing one shared left turn/right turn lane.

9. **Delaware Route 20 / Atlanta Road**

**Type of Control:** Existing signalized intersection.
**Eastbound Approach:** (Delaware Route 20) Existing one left turn lane and two through lanes.
**Westbound Approach:** (Delaware Route 20) Existing one left turn lane, one through lane, and one shared through/right turn lane.
**Southbound Approach:** (Atlanta Road) Existing two left turn lanes and one right turn lane.

**Transit, Pedestrian, and Bicycle Facilities**

**Existing transit service:** Per DelDOT Gateway, transit service exists within the study area. DART Bus Route 903 runs along Sussex Avenue, Tull Drive, Atlanta Road and Delaware Route 20. There is one existing bus stop at the intersection of South Tull Drive and West Tull Drive. DART Route 903 runs from 6:30am to 7:10 pm with 12 roundtrips per day.

**Planned transit service:** Per email correspondence on November 16, 2023, from William Williamson, DTC Coordinator, the following recommendations were made:

- Bus stop along the southerly side of Tull Drive
- Bus stop along the northerly side of Route 20

**Existing bicycle and pedestrian facilities:** According to DelDOT's Sussex County Bicycle Map, there is a connector bicycle route that runs along Atlanta Road and Sussex Avenue. There is also a regional bicycle route that runs along Delaware Route 20 but stops at the intersection with Sussex Avenue.

**Planned bicycle and pedestrian facilities:** Per email correspondence on November 15, 2023, from John Fiori, DelDOT's Bicycle Coordinator, the following recommendations were made:

- Referring to the State Strategies and Spending Map, this site is within Level 1. Per the DelDOT SUP/Sidewalk Policy a non-motorized facility is required unless there is a physical impossibility but if the site generates over 2000-AADT then a non-motorized facility is required. SR20 has an existing sidewalk, where it will need to be verified the existing condition, width and if it meets current ADA regulations. If not, the sidewalk

will need to be replaced with a 5' wide sidewalk. Atlanta Road has no facilities, where a 5' wide sidewalk will be provided along the entire roadway frontage. The sidewalk shall have a minimum 5' wide buffer from back of curb but if the sidewalk is at the back of curb, the sidewalk width will need to be increased to 6'.

- Provide an internal connection from the sidewalk.
- Provide internal bicycle racks.
- Where right turn lanes are warranted for this entire site, a separate 5' wide bike lane shall be provided along the limits of the right turn lane and follow the striping as per the DE MUTCD, Figure 9C-1E.
- At this time Active Transportation & Community Connections (ATCC) has no bicycle/pedestrian improvement projects within the area of this project.
- The site shall dedicate right-of-way per the roadway classification and establish a 15' wide permanent easement along all property roadway frontages and/or dedicate/reserve right-of-way that matches the right-of-way proposed under the DOTS projects..
- All entrance, roadway and/or intersection improvements required shall incorporate bicycle and pedestrian facilities. Per the DCM, if the right turn lane is warranted, then a separate bike lane shall be incorporated along the right turn lane; if a left turn lane is required any roadway improvements shall include a shoulder matching the roadway functional classification or existing conditions (minimum 5-feet).
- There could be additional and/or revised comments once project is discussed at a pre-submittal meeting and/or plans are submitted for LONO/ENT review/approval.

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

- Atlanta Road: 3,4
- Delaware Route 20: 3,4

## Crash Evaluation

Per the crash data included in the TOA from January 1st, 2020, to December 31st, 2022, provided by the Delaware Department of Transportation (DelDOT), a total of 18 crashes were reported along Delaware Route 20 and the Site Entrances along that Route. The data also identified 4 crashes with injuries. Of the reported crashes, six were front to rear crashes, six sideswipe crashes, three were angle crashes, two were front to front crashes and one was classified as other. There were no fatalities reported.

**Previous Comments**

All comments from the November 7, 2023, Preliminary TOA Review Letter were addressed in the Final TOA.

**Sight Distance Evaluation**

No sight distance constraints were noted at the proposed site entrance locations per a field visit conducted on November 28, 2023.

**General HCS Analysis Comments**

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

1) The TOA and JMT both utilized HCS 2023 to complete the analysis.

2) Per DelDOT's *Development Coordination Manual*, JMT and the TOA utilized the future intersection PHF of 0.80 for roadways with less than 500 vph, 0.88 for roadways between 500 and 1,000 vph, and 0.92 for roadways with more than 1,000 vph, or used the existing PHF if higher.

3) Per DelDOT's *Development Coordination Manual* and coordination with DelDOT Planning, JMT used a heavy vehicle percentage of 5% for each movement less than 100 vph along roadways in the analyses whereas the TOA utilized the existing heavy vehicle percentage.

4) Per DelDOT's *Development Coordination Manual*, JMT used a heavy vehicle percentage of 3% for each movement greater than 100 vph in the future scenario analysis, unless the existing heavy vehicle percentage was greater than 3% and there was no significant increase of vehicles along that movement, in which case the existing heavy vehicle percentage was used for the analysis of future scenarios, whereas the TOA used different values.

Table 2
Peak Hour Levels Of Service (LOS)
Based on Traffic Operational Analysis for
Nylon Capital Center (a.k.a. Seaford Innovation Center)
Report Dated: November 2023
Prepared by: Becker Morgan Group, Inc

| **Unsignalized Intersection Two-Way Stop Control (T-Intersection)[1]** | **LOS per TOA** | | **LOS per JMT** | |
|---|---|---|---|---|
| **Atlanta Road (Sussex Road 30)/ Tull Drive (Site Entrance A)** | Weekday AM | Weekday PM | Weekday AM | Weekday PM |
| 2025 with Development (Case 3) | | | | |
| Eastbound Tull Drive (Site Entrance A) Approach | B (10.3) | B (11.2) | B (10.2) | B (11.3) |
| Northbound Atlanta Road Left Turn | A (8.2) | A (8.0) | A (7.9) | A (8.0) |

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

Table 3
Peak Hour Levels Of Service (LOS)
Based on Traffic Operational Analysis for
Nylon Capital Center (a.k.a. Seaford Innovation Center)
Report Dated: November 2023
Prepared by: Becker Morgan Group, Inc

| **Unsignalized Intersection Two-Way Stop Control[1]** | **LOS per TOA** | | **LOS per JMT** | |
|---|---|---|---|---|
| **Site Entrance B/Atlanta Road/Oak Street** | Weekday AM | Weekday PM | Weekday AM | Weekday PM |
| 2025 with Development (Case 3) | | | | |
| Eastbound Site Entrance B Approach | B (10.3) | B (11.1) | B (10.2) | B (11.1) |
| Westbound Oak Street Approach | B (11.2) | B (11.3) | B (11.0) | B (11.2) |
| Northbound Atlanta Road Left Turn | A (7.8) | A (7.7) | A (7.8) | A (7.7) |
| Southbound Atlanta Road Left Turn | A (7.5) | A (7.6) | A (7.5) | A (7.6) |

Table 4
Peak Hour Levels Of Service (LOS)
Based on Traffic Operational Analysis for
Nylon Capital Center (a.k.a. Seaford Innovation Center)
Report Dated: November 2023
Prepared by: Becker Morgan Group, Inc

| **Unsignalized Intersection Two-Way Stop Control (T-Intersection)[1]** | **LOS per TOA** | | **LOS per JMT** | |
|---|---|---|---|---|
| **Atlanta Road/Site Entrance C** | Weekday AM | Weekday PM | Weekday AM | Weekday PM |
| 2025 with Development (Case 3) | | | | |
| Eastbound Site Entrance C Approach | A (10.0) | B (10.7) | A (10.0) | B (10.7) |
| Northbound Atlanta Road Left Turn | A (7.7) | A (7.8) | A (7.8) | A (7.8) |
| | | | | |
| 2025 with Development (Case 3) *with closure of Delaware Route 20/Rite Aid site access*[2] | | | | |
| Eastbound Site Entrance C Approach | - | - | B (10.1) | B (11.4) |
| Northbound Atlanta Road Left Turn | - | - | A (7.7) | A (7.8) |

[2] Left-in and right-out site traffic from the Atlanta Road/Rite Aid Entrance in this scenario would be redirected to this access.

Table 5
Peak Hour Levels Of Service (LOS)
Based on Traffic Operational Analysis for
Nylon Capital Center (a.k.a. Seaford Innovation Center)
Report Dated: November 2023
Prepared by: Becker Morgan Group, Inc

| **Unsignalized Intersection Two-Way Stop Control (T-Intersection)[1]** | **LOS per TOA** | | **LOS per JMT** | |
|---|---|---|---|---|
| **Atlanta Road/Rite Aid Entrance** | Weekday AM | Weekday PM | Weekday AM | Weekday PM |
| 2025 with Development (Case 3) | | | | |
| Eastbound Rite Aid Entrance Approach | A (9.9) | B (11.9) | A (9.9) | B (11.9) |
| Northbound Atlanta Road Left Turn | A (7.8) | A (8.0) | A (7.7) | A (8.0) |

Table 6
Peak Hour Levels Of Service (LOS)
Based on Traffic Operational Analysis for
Nylon Capital Center (a.k.a. Seaford Innovation Center)
Report Dated: November 2023
Prepared by: Becker Morgan Group, Inc

| **Unsignalized Intersection Two-Way Stop Control (T-Intersection)[1]** | **LOS per TOA** | | **LOS per JMT** | |
|---|---|---|---|---|
| **Delaware Route 20 (W. Stein Highway)/Site Entrance D** | Weekday AM | Weekday PM | Weekday AM | Weekday PM |
| 2025 with Development (Case 3) | | | | |
| Eastbound Delaware Route 20 Left Turn | A (8.5) | A (9.4) | A (8.6) | A (9.4) |
| Southbound Site Entrance D Approach | B (12.7) | C (19.5) | B (12.7) | C (19.5) |
| | | | | |
| 2025 with Development (Case 3) *with closure of westernmost site access*[3] | | | | |
| Eastbound Delaware Route 20 Left Turn | - | - | A (8.6) | A (9.5) |
| Southbound Site Entrance D Approach | - | - | B (13.6) | C (22.5) |

[3] All entering and exiting site traffic from Delaware Route 20/Westernmost Entrance in this scenario would be redirected to this access.

Table 7
Peak Hour Levels Of Service (LOS)
Based on Traffic Operational Analysis for
Nylon Capital Center (a.k.a. Seaford Innovation Center)
Report Dated: November 2023
Prepared by: Becker Morgan Group, Inc

| **Signalized Intersection[1]** | **LOS per TOA** | | **LOS per JMT** | |
|---|---|---|---|---|
| **Delaware Route 20/Sussex Avenue (Site Entrance E)** | Weekday AM | Weekday PM | Weekday AM | Weekday PM |
| 2025 with Development (Case 3) *with signal optimization*[4,5] | B (18.0) | D (47.7) | B (16.5) | C (20.4) |

[4] Signal optimization scenario includes optimizing green split times while maintaining the signal as coordinated. JMT modeled the intersection as a coordinated floating signal with a 90 second cycle length and dual entry on the northbound and southbound through movements, while the TOA modeled the intersection as coordinated fixed signal with a 90 second cycle length and dual entry on all through movements for all approaches.

[5] For the Weekday PM peak hour, JMT included 113 right turn on red vehicles for the northbound approach, while the TOA included 51 right turn on red vehicles for the northbound approach.

Table 8
Peak Hour Levels Of Service (LOS)
Based on Traffic Operational Analysis for
Nylon Capital Center (a.k.a. Seaford Innovation Center)
Report Dated: November 2023
Prepared by: Becker Morgan Group, Inc

| **Unsignalized Intersection Two-Way Stop Control (T-Intersection)** [1] | **LOS per TOA** | | **LOS per JMT** | |
|---|---|---|---|---|
| **Delaware Route 20/Rite Aid Entrance** | Weekday AM | Weekday PM | Weekday AM | Weekday PM |
| 2025 with Development (Case 3) | | | | |
| Eastbound Delaware Route 20 Left Turn | A (8.5) | A (9.3) | A (8.5) | A (9.3) |
| Southbound Rite Aid Approach | C (16.5) | C (18.1) | C (16.6) | C (18.0) |
| | | | | |
| 2025 with Development (Case 3) *with closure of Delaware Route 20/Rite Aid site access*[6] | | | | |
| Eastbound Delaware Route 20 Left Turn | - | - | A (8.6) | A (9.6) |
| Southbound Rite Aid Approach[7] | - | - | C (17.3) | D (31.1) |

[6] Right-in and left-out site traffic from the Atlanta Road/Rite Aid Entrance in this scenario would be redirected to this access.

[7] The southbound approach for this scenario was modeled as one left turn lane and one right turn lane.

Table 9
Peak Hour Levels Of Service (LOS)
Based on Traffic Operational Analysis for
Nylon Capital Center (a.k.a. Seaford Innovation Center)
Report Dated: November 2023
Prepared by: Becker Morgan Group, Inc

| **Unsignalized Intersection Two-Way Stop Control (T-Intersection)** [1] | **LOS per TOA** | | **LOS per JMT** | |
|---|---|---|---|---|
| **Delaware Route 20/Westernmost Entrance Before Sussex Avenue** | Weekday AM | Weekday PM | Weekday AM | Weekday PM |
| 2025 with Development (Case 3) | | | | |
| Eastbound Delaware Route 20 Left Turn | A (8.3) | A (9.0) | A (8.3) | A (9.0) |
| Southbound Westernmost Entrance Before Sussex Avenue Approach | B (14.5) | C (17.0) | B (14.5) | C (17.0) |

Table 10
Peak Hour Levels Of Service (LOS)
Based on Traffic Operational Analysis for
Nylon Capital Center (a.k.a. Seaford Innovation Center)
Report Dated: November 2023
Prepared by: Becker Morgan Group, Inc

| **Signalized Intersection [1]** | **LOS per TOA** | | **LOS per JMT** | |
|---|---|---|---|---|
| **Delaware Route 20/Atlanta Road** | Weekday AM | Weekday PM | Weekday AM | Weekday PM |
| 2025 with Development (Case 3) w*ith signal optimization*[8] | - | - | B (13.6) | B (15.6) |
| | | | | |
| 2025 with Development (Case 3) w*ith signal optimization and ped exclusive phase*[9] | B (13.5) | B (15.4) | C (24.5) | C (29.7) |
| | | | | |
| 2025 with Development (Case 3) w*ith signal optimization and ped exclusive phase*[10] | B (11.3) | B (13.7) | - | - |
| | | | | |
| 2025 with Development (Case 3) *with signal optimization and with closure of Delaware Route 20/Rite Aid site access*[11] | - | - | B (13.2) | B (14.0) |
| | | | | |
| 2025 with Development (Case 3) *with signal optimization, ped exclusive phase, and with closure of Delaware Route 20/Rite Aid site access* | - | - | C (23.2) | C (28.7) |

[8] Signal optimization scenario includes optimizing green split times while maintaining the signal as coordinated with a 90 second cycle length. The exclusive pedestrian phase was not modeled in this scenario.
[9] Signal optimization scenario includes optimizing green split times while maintaining the signal as coordinated with a 90 second cycle length. JMT modeled the ped exclusive phase as a northbound phase that would not operate concurrently with the southbound phase, adding one right turn vehicle to generate a LOS result for the northbound/pedestrian phase. The TOA modeled the ped exclusive phase as running concurrently with the southbound phase.
[10] The TOA included an additional scenario where the intersection was modeled as coordinated fixed with a 60 second cycle length to reduce queue lengths along the southbound left turn movement.
[11] Site traffic from the Atlanta Road/Rite Aid Entrance in this scenario would be redirected to different movements at this intersection.