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

January 11, 2021

Mr. Christopher Duke
Becker Morgan Group, Inc.
The Tower at STAR Campus
100 Discovery Boulevard
Suite 102
Newark, Delaware 19713

Dear Mr. Duke:

The enclosed Traffic Impact Study (TIS) review letter for the **7-Eleven - Seaford** (Protocol Tax Parcel 331-05.00-63.00) development has been completed under the responsible charge of a registered professional engineer whose firm is authorized to work in the State of Delaware. They have found the TIS to conform to DelDOT's Development Coordination Manual and other accepted practices and procedures for such studies. DelDOT accepts this letter and concurs with the recommendations. If you have any questions concerning this letter or the enclosed review letter, please contact me at (302) 760-2167.

Sincerely,

Troy Brestel

Troy Brestel
Project Engineer

TEB:km
Enclosures
cc with enclosures: Mr. Michael Riemann, Becker Morgan Group, Inc.
Ms. Constance C. Holland, Office of State Planning Coordination
Mr. Charles Anderson, City of Seaford
Mr. Andrew Parker, McCormick Taylor, Inc.
DelDOT Distribution

DelDOT

DelDOT Distribution

Brad Eaby, Deputy Attorney General
J. Marc Coté, Director, Planning
Shanté Hastings, Director, Transportation Solutions (DOTS)
Mark Luszcz, Deputy Director, Traffic, DOTS
Michael Simmons, Assistant Director, Project Development South, DOTS
Todd Sammons, Assistant Director, Development Coordination
T. William Brockenbrough, Jr., County Coordinator, Development Coordination
Peter Haag, Chief Traffic Engineer, Traffic, DOTS
Chris Sylvester, Traffic Studies Manager, Traffic, DOTS
Kerry Yost, Traffic Calming and Subdivision Relations Manager, Traffic, DOTS
Alistair Probert, South District Engineer, South District
Gemez Norwood, South District Public Works Manager, South District
Jared Kauffman, Service Development Planner, Delaware Transit Corporation
Tremica Cherry, Service Development Planner, Delaware Transit Corporation
Anthony Aglio, Planning Supervisor, Statewide & Regional Planning
Wendy Polasko, Subdivision Engineer, Development Coordination
Richard McCabe, Sussex Review Coordinator, Development Coordination
Mark Galipo, Traffic Engineer, Traffic, DOTS
John Andrescavage, Subdivision Manager, Development Coordination
Claudy Joinville, Project Engineer, Development Coordination
Annamaria Furmato, Project Engineer, Development Coordination

January 7, 2021

Mr. Troy E. Brestel
Project Engineer
DelDOT Division of Planning
P.O. Box 778
Dover, DE 19903

RE: Agreement No. 1773
Traffic Impact Study Services
Task No. 1A Subtask 19A – 7-11 Seaford

Dear Mr. Brestel:

McCormick Taylor has completed its review of the Traffic Impact Study (TIS) for the 7-11 Seaford development prepared by Traffic Planning and Design, Inc. (TPD), dated March 13, 2019. TPD prepared the report in a manner generally consistent with DelDOT's Development Coordination Manual.

The TIS evaluates the impacts of the 7-11 Seaford development, proposed to be located on the east side of US Route 13, north of the intersection of Delaware Route 20 and Beaver Dam Road, in the City of Seaford, Sussex County, Delaware. The proposed commercial development would consist of redeveloping an existing pool service and retail center into a 4,950 square-foot super convenience market with gas pumps. Two direct access points are proposed along US Route 13, with the south access as rights-in only and the north access as rights-in/rights-out. (Note the originally proposed south rights-in only access has since been replaced with a proposed rights-in/rights-out access that combines with the existing rights-in access for Taco Bell to the south.) There is an additional interconnection proposed to a planned extension of an existing service road ("Preservation Drive") on the east side of the land. Construction of the convenience market was anticipated to be complete by 2020, but now expected for 2021.

The subject land consists of one parcel totaling 2.56 acres. The parcel is currently zoned as C-2 (Highway Commercial) in the City of Seaford. No rezoning is needed or sought to permit the proposed development.

Currently, there are no active DelDOT projects within the study area.

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

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

Intersection	***Existing Traffic Control***	***Situations for which deficiencies occur***
US Route 13 and First Crossover North of Site	Unsignalized	2018 existing weekday PM and Saturday (Case 1); 2020 without 7-11 weekday PM and Saturday (Case 2); 2020 with 7-11 weekday PM and Saturday (Case 3)

US Route 13 and First Crossover North of Site

This unsignalized crossover intersection experiences LOS deficiencies in the weekday PM and Saturday midday peak hours under all existing and future scenarios. The deficiencies are for the northbound and southbound yield-controlled u-turn movements. The u-turn movements in both directions operate at LOS E during existing conditions (both PM and Saturday), with delays anticipated to increase as the u-turn and through movement volumes increase in the future. In the future without 7-11 scenario, the northbound u-turn movement would reach LOS F in the PM peak hour (everything else remains at LOS E). In the future with 7-11 scenario, the northbound u-turn movement would operate at LOS F in both the PM and Saturday scenarios, while the southbound u-turn movement would remain at LOS E for both scenarios.

Northbound u-turn volumes are less than 60 vehicles per hour in all scenarios, and southbound u-turns are less than 50 vehicles per hour. Looking at the increase in u-turn volumes from existing conditions to future with development conditions, the northbound u-turns will increase by less than 10 vehicles per hour in all three peak hours, while the southbound u-turns will increase by no more than 2 vehicles per hour in all three peak hours. 95th percentile queue lengths for both the northbound and southbound u-turn movements are projected to be less than three vehicles. The existing dedicated turn lanes are more than adequate to handle queues of this length.

These LOS deficiencies occurs even without the 7-11 development, and the resulting queue lengths are relatively short. There are no viable options to mitigate these LOS deficiencies other than perhaps closing the crossover and redistributing the u-turn traffic to the next intersection in either direction. However, that would impact the nearby existing businesses who are served by this crossover, and would add to delays at the other intersections. For all these reasons, no mitigation is recommended at this intersection.

Should the City of Seaford choose to approve the proposed development, the following items should be incorporated into the site design and reflected on the record plan by note or illustration. All applicable agreements (i.e. letter agreements for off-site improvements and traffic signal agreements) should be executed prior to entrance plan approval for the proposed development.

1. The developer should construct the rights-in/rights-out North Site Access on US Route 13. The proposed configuration for the northern site entrance is shown in the table below.

Approach	Current Configuration	Proposed Configuration
Northbound US Route 13	Two through lanes	Two through lanes and one right-turn lane
Westbound North Site Access	One through lane (existing warehouse driveway)	One right-turn only lane

   The right-turn lane on northbound US Route 13 for the North Site Access should be provided by restriping the existing shoulder for as long a distance as possible so that the upstream end of the taper begins north of the proposed South Site Access on US Route 13 (see Item No. 2 below). The developer should coordinate with DelDOT's Development Coordination Section to determine the final turn-lane length and other design details for this site driveway.

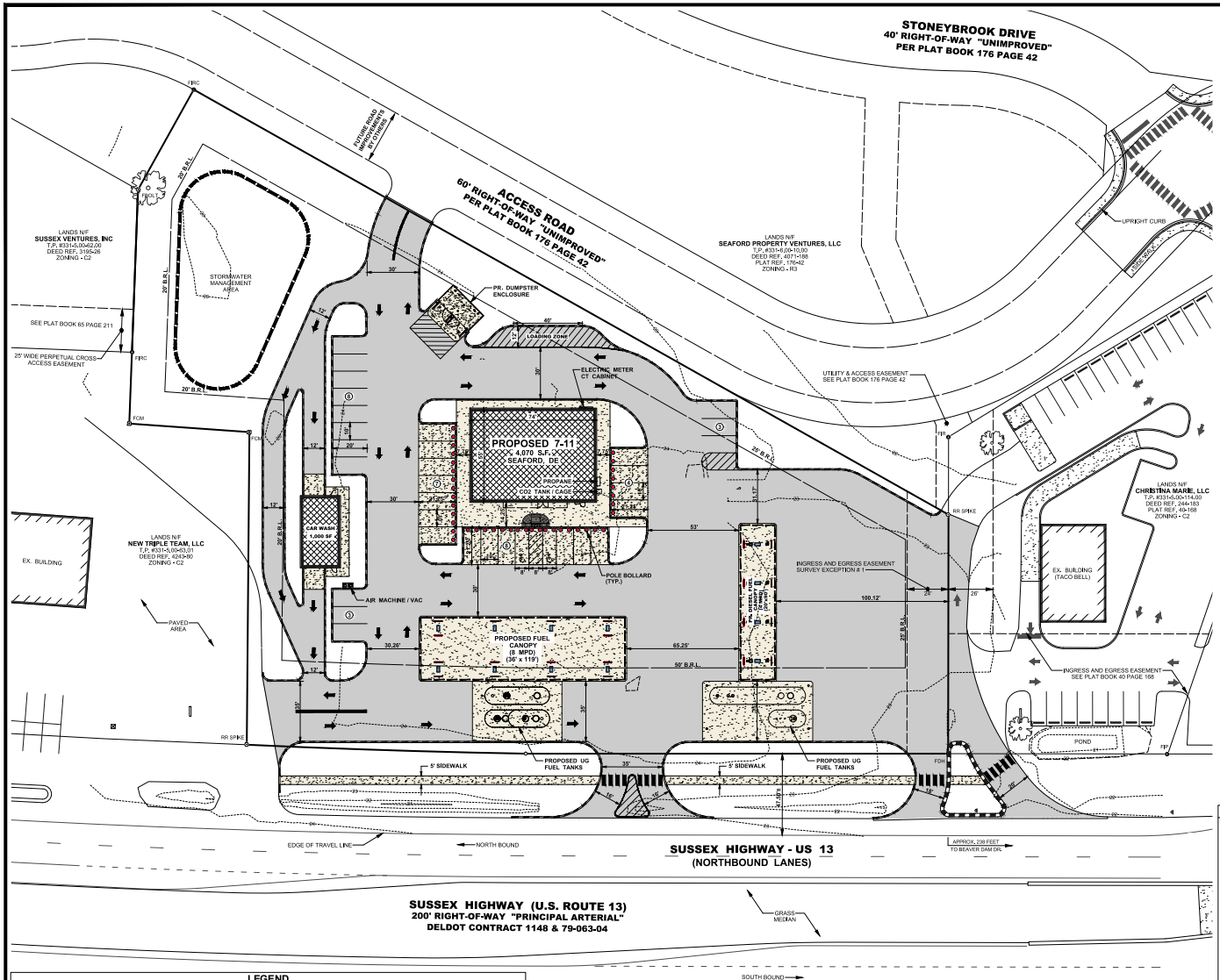
2. Regarding the proposed South Site Access on US Route 13, the developer should combine the 7-11 south site access with access for the existing Taco Bell restaurant via a new rights-in/rights-out access. This new access should be located near the south end of the 7-11 property, north of the existing Taco Bell rights-in access. The new access would be shared by 7-11 and Taco Bell, and the existing Taco Bell rights-in access should be closed. The South Site Access would not have a striped right-turn lane along US Route 13. The developer should coordinate with DelDOT's Development Coordination Section to determine design details for the South Site Access.

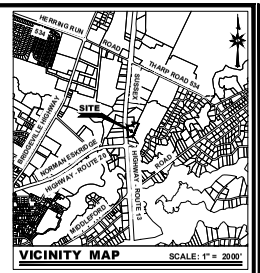
3. The developer should obtain an access easement for an area going from the southeast corner of the 7-11 property and along the Taco Bell drive aisle (between the Taco Bell building and dumpster area) to the existing access driveway that presently connects Taco Bell with Preservation Drive. A portion of Preservation Drive is already constructed from Beaver Dam Road to just north of the Taco Bell access driveway. Note that this access easement will require agreements with the property owners to the east (Seaford Property Ventures LLC) and to the south (Christina Marie LLC / Taco Bell).

4. The developer should provide a driveway stub for a future connection to Preservation Drive, to be located between the 7-11 building and the stormwater management area similar to that shown on the Cover Sheet and Sketch Plan dated April 17, 2020 (included on page 5 of this letter), except the stub should also include a pedestrian connection out to Preservation Drive. The stub should be labeled on the plan as to its purpose and should be

free of conflicting features such as parking spaces or dumpster pads. Preservation Drive will be extended to meet the stub by others at a date yet to be determined.

The developer should coordinate with DelDOT's Development Coordination Section and the City of Seaford regarding design and construction details for the new driveway stub that would connect 7-11 with the future Preservation Drive.





VICINITY MAP SCALE: 1" = 2000'

SITE DATA

1.	OWNER OF RECORD:	CNI MANAGEMENT INC. 1255 SOUTH STATE STREET DOVER, DE 19901 302-730-3713
2.	EQUITABLE OWNER:	PTV 1125, LLC (AGREEMENT TO OWN) 400 PENN CENTER BLVD. BLDG. 4, SUITE 1000 PITTSBURGH, PA 15235 724-420-5367
3.	ENGINEER / SURVEYOR:	BECKER MORGAN GROUP, INC. 309 SOUTH GOVERNORS AVENUE DOVER, DE 19904 302-734-7950
4.	PROPERTY MAP NUMBER:	331-5.00-63.00
5.	PROPERTY ADDRESS:	23463 SUSSEX HIGHWAY SEAFORD, DE 19973
5.	ZONING CLASSIFICATION:	EXISTING: C-2 / (HIGHWAY COMMERCIAL) PROPOSED: C-2 / (HIGHWAY COMMERCIAL)
6.	DEED SUMMARY:	2229/331
7.	PLAT REFERENCE:	BOOK 28 PAGE 242
8.	PRESENT USE:	SWIMMING POOL RETAIL - DOVER POOLS
9.	PROPOSED USE:	CONVENIENCE STORE, GAS PUMPS, CAR WASH
10.	TOTAL SITE AREA:	2.643 ACRES ±
11.	PROPOSED BUILDING:	BUILDING: 4,070 S. F. ± ACCESSORY: 991 S.F. ±
14.	SETBACKS:	RETAIL FRONT: 40 FT. SIDE: 20 FT. REAR: 25 FT.

SHEET INDEX

GENERAL NOTES:

1. TOPOGRAPHIC AND BOUNDARY RETRACEMENT SURVEY WAS PREPARED BY BECKER MORGAN GROUP, DOVER, DE., IN APRIL OF 2020. THE BOUNDARY LINES PORTRAYED HEREON HAVE BEEN ESTABLISHED BASED SOLELY ON PHYSICAL EVIDENCE DISCOVERED IN THE FIELD IN CONJUNCTION WITH DETERMINATIONS DERIVED FROM SOURCE OF TITLE AND ADJACENT DEED RECORD INFORMATION. NO TITLE EXAMINATION PERFORMED.
2. THE EXISTING UTILITIES SHOWN WERE TAKEN FROM THE BEST AVAILABLE RECORDS. THE CONTRACTOR SHALL CONTACT MISS UTILITY OF DELMARVA (1-800-282-8555) TO VERIFY THEIR EXACT LOCATION PRIOR TO THE START OF ANY CONSTRUCTION. ANY DAMAGE INCURRED TO ANY UTILITIES SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTORS EXPENSE. IF THE CONTRACTOR RELIES ON THE UTILITY LOCATIONS SHOWN HEREON, HE DOES SO AT HIS OWN RISK AND WILL NOT BE ENTITLED TO ADDITIONAL COMPENSATION DUE TO TIME DELAYS FROM SAID RELIANCE.
3. THIS AREA OF DEVELOPMENT IS NOT IMPACTED BY THE 100 YEAR FLOOD PLAIN AS SHOWN ON FIRM 10005C0263L (6-20-2018).
4. BECKER MORGAN GROUP CERTIFIES THAT THERE ARE NO FRESH WATER WETLANDS LOCATED WITHIN THE IMPROVED AREA.
5. ALL ROADS, PARKING AND OTHER PAVED AREAS WILL BE PRIVATELY OWNED AND MAINTAINED AND ARE NOT INTENDED FOR DEDICATION.
6. DELAWARE REGULATIONS PROHIBIT THE BURIAL OF CONSTRUCTION DEMOLITION DEBRIS, INCLUDING TREES AND STUMPS ON CONSTRUCTION SITES. ANY SOLID WASTE FOUND DURING EXCAVATION MUST BE REMOVED AND PROPERLY DISCARDED.
7. ALL HANDICAPPED PARKING DEMARCATION, STALLS, AND BUILDING ACCESSIBLE ROUTES SHALL COMPLY WITH THE "AMERICAN WITH DISABILITIES ACT".
8. THIS DRAWING DOES NOT INCLUDE NECESSARY COMPONENT FOR CONSTRUCTION SAFETY. ALL CONSTRUCTION MUST BE DONE IN COMPLIANCE WITH THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970 AND ALL RULES AND REGULATIONS THERETO APPURTENANT.
9. BEFORE THE CONTRACTOR CAN BEGIN CONSTRUCTION HE MUST OBTAIN THE PROPER PERMITS AND/OR APPROVALS FROM THE CITY OF SEAFORD, SUSSEX CONSERVATION DISTRICT, DELAWARE DEPARTMENT OF TRANSPORTATION (DELDOT), CITY OF SEAFORD DEPARTMENT OF PUBLIC WORKS AND APPROPRIATE STATE AND COUNTY AGENCIES.
10. ALL CONSTRUCTION METHODS AND MATERIALS SHALL BE ACCORDING TO THE CITY OF SEAFORD AND THE STATE OF DELAWARE STANDARDS, CITY OF SEAFORD DEPARTMENT OF PUBLIC WORKS AND CONSTRUCTION SPECIFICATIONS.

ENGINEERS CERTIFICATION

I, JONATHAN S. FALKOWSKI, HEREBY CERTIFY THAT I AM A REGISTERED ENGINEER IN THE STATE OF DELAWARE, THAT THE INFORMATION SHOWN HEREON HAS BEEN PREPARED UNDER MY SUPERVISION AND TO MY BEST KNOWLEDGE AND BELIEF REPRESENTS GOOD ENGINEERING PRACTICES AS REQUIRED BY THE APPLICABLE LAWS OF THE STATE OF DELAWARE.

JONATHAN S. FALKOWSKI P.E. NO. 16828 DATE

OWNERS CERTIFICATION

WE, PTV 1125, LLC, HEREBY CERTIFY THAT WE ARE THE OWNER OF THE PROPERTY DESCRIBED AND SHOWN ON THIS PLAN, THAT THE PLAN WAS MADE AT OUR DIRECTION, AND THAT WE ACKNOWLEDGE THE SAME TO BE OUR ACT AND DESIRE THE PLAN TO BE DEVELOPED AS SHOWN IN ACCORDANCE WITH ALL APPLICABLE LAWS AND REGULATIONS.

SIGNATURE DATE

LEGEND

ITEM	EXISTING	PROPOSED	ITEM	EXISTING	PROPOSED
CONCRETE CURB & GUTTER			SANITARY GRAVITY SEWER LINE, SIZE & FLOW DIRECTION	EX. 10"S	10" S
CONCRETE SIDEWALK, SLAB / PAVING			SANITARY SEWER FORCE MAIN, SIZE & FLOW DIRECTION	EX. 10" F.M.	12" F.M.
IMPERVIOUS SURFACED ROAD, DRIVE OR PARKING LOT			SANITARY SEWER MANHOLE (S.M.H.)		
INDIVIDUAL TREE OR BUSH	EVERGREEN DECIDUOUS	N/A	SANITARY SEWER CLEANOUT		
WIRE FENCE	x x x	x x x	WATER MAIN & SIZE	EX. 10" W	12" W
CHAIN LINK FENCE			FIRE HYDRANT	F.H.	F.H.
STOCKADE FENCE			WATER VALVE (W.V.) OR METER (W.M.)	W.M. W.V.	W.M. W.V.
STRUCTURE (CONCRETE, WOOD, METAL, ETC.)			STORM DRAIN MANHOLE (S.D.M.H.)		
DRAINAGE DITCH OR SWALE			STORM DRAIN LINE (CMP OR RCP)		
EMBANKMENT SIDESLOPES (DOWN)			CATCH BASIN		
CONTOUR	40	40	UTILITY POLE W/ OVERHEAD SERVICE (TELEPHONE OR ELECTRIC OR BOTH)		
ELEVATION SPOT SHOT	43.5	25.15	UNDERGROUND ELECTRIC	U.E.	U.E.
BENCHMARK		N/A	UNDERGROUND TELEPHONE	U.T.	U.T.
PROPERTY OR RIGHT OF WAY LINE			UNDERGROUND GAS MAIN	EX. 2"G	2"
CENTERLINE			PAVEMENT TO BE REMOVED	N/A	
LIGHT POLE					

BECKER MORGAN GROUP

ARCHITECTURE
ENGINEERING

Dover, DE
309 S. Governors Ave.
Dover, DE 19904
Ph. 302.734.7950
Fax 302.734.7965

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3333 Jaeckle Drive, Suite 120
Wilmington, North Carolina 28403
Ph. 910.341.7600
Fax 910.341.7506

www.beckermorgan.com

PROJECT TITLE

7-ELEVEN SEAFORD

23463 SUSSEX HIGHWAY
SEAFORD
SUSSEX COUNTY, DE

SHEET TITLE

COVER SHEET & SKETCH PLAN

0 15 30 60

SCALE: 1" = 30'

ISSUE BLOCK

MARK	DATE	DESCRIPTION

PROJECT NO.:	2019334.00
DATE:	04-17-2020
SCALE:	1"=30'
DRAWN BY: J.G.A.	PROJ. MGR.: J.S.F.

SHEET
C-001

P:\AutoCAD\Projects\2019\2019334.00\DWG\2019334-SITE-C3018.dwg, Apr 17, 2020 - 1:04pm

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

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

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

   c. Bicycle parking (rack) should be provided near the building entrance.

   d. A minimum 15-foot wide easement from the edge of the right-of-way should be dedicated to DelDOT within the site frontage along US Route 13.

   e. Within the easement along US Route 13, a minimum of a five-foot wide sidewalk that meets current AASHTO and ADA standards should be constructed along the site frontage. The sidewalk should have a minimum of a five-foot buffer from the roadway. At both ends of the site frontage, the sidewalk should connect to the adjacent property or to the shoulder of US Route 13 in accordance with DelDOT's *Shared Use Path and/or Sidewalk Termination Reference Guide* dated August 1, 2018. The developer should coordinate with DelDOT's Development Coordination Section to determine details of the sidewalk connections at the property boundaries.

   f. ADA compliant curb ramps and crosswalks should be provided at all pedestrian crossings within the development. Type 3 curb ramps are discouraged.

   g. Internal sidewalks for pedestrian safety and to promote walking as a viable transportation alternative should be constructed within the development. These sidewalks should each be a minimum of five feet wide (with a minimum of a five-foot buffer from the roadway) and should meet current AASHTO and ADA standards. These internal sidewalks should connect to the proposed sidewalks along US Route 13 and future Preservation Drive.

   h. Where internal sidewalks are located alongside of parking spaces, a buffer should be added to prevent vehicular overhang onto the sidewalk.

   i. The developer should coordinate with the Delaware Transit Corporation (DTC) regarding the possibility of including a bus stop to be located within the site frontage along US Route 13.

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 subdivision review process.

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

Sincerely,

McCormick Taylor, Inc.

Andrew J. Parker, P.E., PTOE
Project Manager

Enclosure

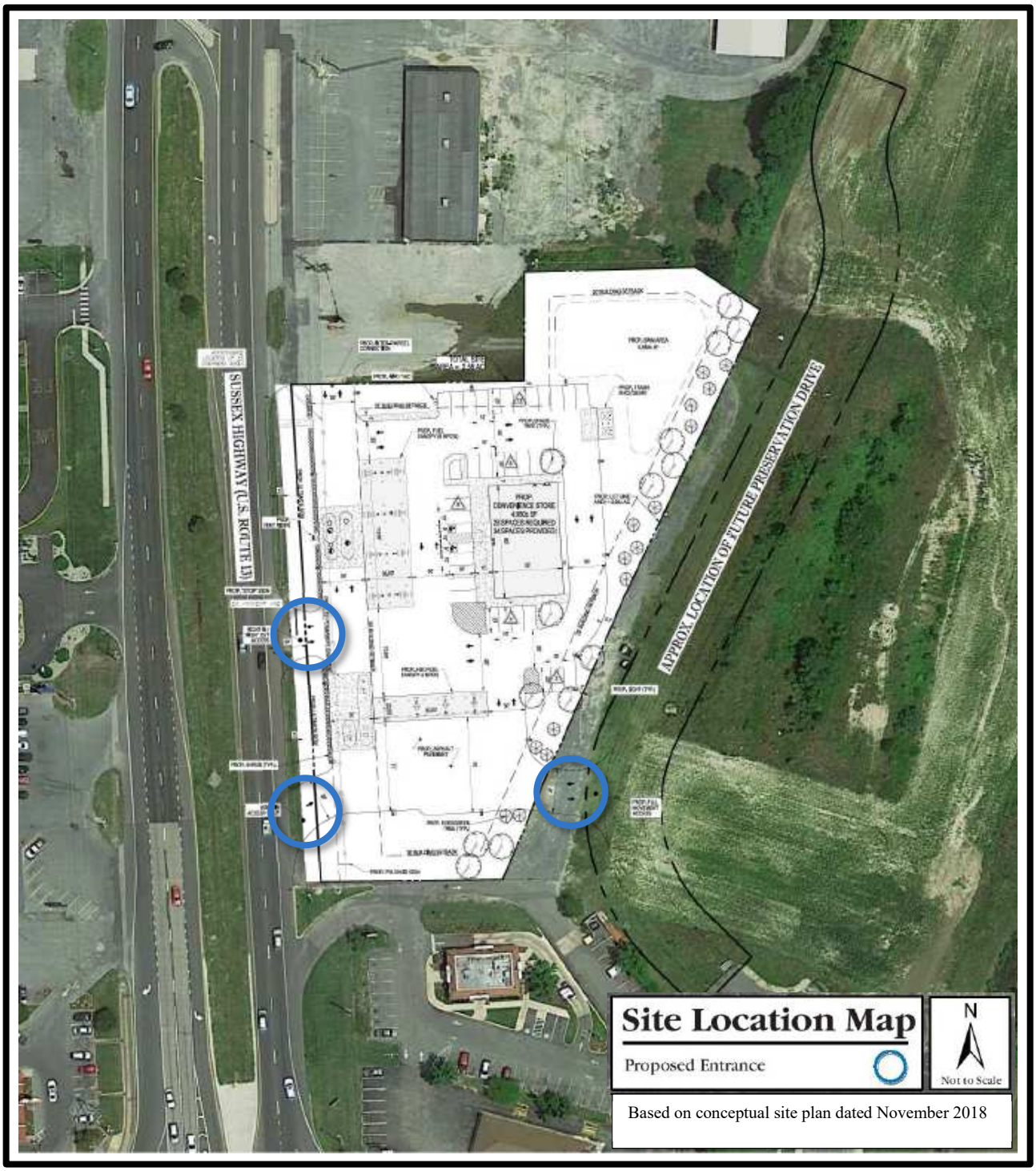
General Information

Report date: March 13, 2019
Prepared by: Traffic Planning and Design, Inc
Prepared for: Bohler Engineering
Tax parcel: 331-05.00-63.00
Generally consistent with DelDOT's Development Coordination Manual: Yes

Project Description and Background

Description: The proposed commercial development would consist of redeveloping an existing pool service and retail center into a 4,950 square-foot super convenience market with gas pumps.
Location: The 7-11 Seaford development is proposed to be located on the east side of US Route 13, north of the intersection of Delaware Route 20 and Beaver Dam Road, in the City of Seaford, Sussex County. A site location map provided in the March 2019 TIS is included on page 9 of this letter, although the proposed access and other site details shown on that plan are now outdated. An updated Sketch Plan dated April 17, 2020 in included on page 5 of this letter.
Amount of land to be developed: approximately 2.56 acres of land
Land use approval(s) needed: Subdivision approval. The parcel is currently zoned as C-2 (Highway Commercial) with the City of Seaford. No rezoning is needed or sought to permit the proposed development.
Proposed completion date: was 2020 per TIS, now expected for 2021
Proposed access locations: Two direct access points are proposed along US Route 13, with the south access as rights-in only and the north access as rights-in/rights-out. (Note the originally proposed south rights-in only access has since been replaced with a proposed rights-in/rights-out access that combines with the existing rights-in access for Taco Bell to the south). There is an additional interconnection proposed to a planned extension of an existing service road ("Preservation Drive") on the east side of the land.
Daily Traffic Volumes (per DelDOT Traffic Summary 2018):

- 2018 Average Annual Daily Traffic on US Route 13: 26,726 vpd


SUSSEX HIGHWAY (U.S. ROUTE 13)
APPROX. LOCATION OF FUTURE PRESERVATION DRIVE
Site Location Map
Proposed Entrance
N
Not to Scale
Based on conceptual site plan dated November 2018

2015 Delaware Strategies for State Policies and Spending

Location with respect to the Strategies for State Policies and Spending Map of Delaware: The proposed 7-11 Seaford development is located within an Investment Level 1 area.

Investment Level 1

Areas of the state designated as Investment Level 1 are most prepared for growth and are where the state can make cost-effective infrastructure investments in schools, roads, and public safety. In these 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. Investment Level 1 areas are often municipalities, towns, or urban/urbanizing places. Density is generally higher than in the surrounding areas. Overall, it is the state's intent to use its spending and management tools to maintain and enhance community character, to promote well-designed and efficient new growth, and to facilitate redevelopment in Investment Level 1 Areas.

Proposed Development's Compatibility with Strategies for State Policies and Spending: The proposed development is comprised of a 4,950 square-foot super convenience market with gas pumps on a 2.56-acre parcel located within an Investment Level 1 area. Investment Level 1 reflects areas where growth is anticipated by local, county, and State plans in the near-term future. As such, the proposed development generally appears to comply with the guidelines of Investment Level 1 areas as described in the 2015 "Strategies for State Policies and Spending."

Comprehensive Plan

Sussex County Comprehensive Plan:
(Source: Sussex County Comprehensive Plan Update, June 2008)

The Sussex County Comprehensive Plan Future Land Use Map indicates that the proposed 7-11 Seaford development is in the City of Seaford, a municipality. Sussex County strongly favors directing development to municipalities that desire it. The specific permitted uses and densities governing new construction within an incorporated municipality will continue to be governed by the zoning ordinance for that municipality, its public water and sewer capacities, and its comprehensive planning policies.

City of Seaford Comprehensive Plan:
(Source: City of Seaford Comprehensive Plan 2008)

The City of Seaford Comprehensive Plan Land Use Map indicates that the site is planned for commercial land use. The City of Seaford Zoning Map shows the site is zoned C-2 (Highway Commercial). Based on the City of Seaford Zoning Ordinance, the proposed land use appears to be appropriate within the existing zoning.

Proposed Development's Compatibility with Comprehensive Plan: The proposed development is planned to be developed as a 4,950 square-foot super convenience market with gas pumps on a

2.56-acre parcel. The site is currently zoned C-2 (Highway Commercial), and the developer does not plan to rezone the land. The purpose of the C-2 zoning district is to provide primarily for retail and service uses mainly along highways. Highway Commercial Areas include highway commercial corridors, shopping centers, and other large commercial vicinities geared towards vehicular traffic. The proposed development appears to comply with the characteristics of Seaford's future land use plan and current zoning designation.

Relevant Projects in the DelDOT Capital Transportation Program

Currently, there are no DelDOT capital projects within the area of study.

Trip Generation

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

- Warehousing (ITE Land Use Code 150) – existing land use to be removed
- Hardware/Paint Store (ITE Land Use Code 816) – existing land use to be removed
- Convenience Market with Gasoline Pumps (ITE Land Use Code 853) – proposed land use

Table 1
Seaford 7-11 PEAK HOUR TRIP GENERATION

Land Use	**Weekday AM Peak Hour**			**Weekday PM Peak Hour**			**SAT Peak Hour**		
	In	Out	Total	In	Out	Total	In	Out	Total
Convenience Market with Gasoline Pumps	105	105	210	120	120	240	113	112	225
Existing trips to be removed	*-29*	*-18*	*-47*	*-11*	*-26*	*-37*	*N/A*	*N/A*	*N/A*
TOTAL EXTERNAL TRIPS	**76**	**87**	**163**	**109**	**94**	**203**	**113**	**112**	**225**

Table 2
Seaford 7-11 DAILY TRIP GENERATION

Land Use	**Weekday Daily**		
	In	Out	Total
Convenience Market with Gasoline Pumps	1291	1291	2582
Existing trips to be removed	*-84*	*-84*	*-168*
TOTAL TRIPS	**1207**	**1207**	**2414**

Overview of TIS

Intersections examined:

1) South Site Entrance (right-in only) & US Route 13
2) North Site Entrance (right-ins/right-outs) & US Route 13
3) US Route 13 & Delaware Route 20/Beaver Dam Drive
4) US Route 13 & First Crossover North of the Site
5) US Route 13 & Herring Run Road/Tharp Road (Sussex Road 534)
6) Beaver Dam Drive & Corridor Preservation Road (Count only. Not included in Analysis)

Conditions examined:

1) 2018 existing conditions (Case 1)
2) 2020 without development (Case 2)
3) 2020 with development (Case 3)

Peak hours evaluated: Weekday morning and evening and Saturday mid-day peak hours

Committed developments considered:

1) Ayers Property (5,585 square foot convenience store with gas pumps)
2) Mearfield – Section 1 (182 single-family detached homes)
3) Mearfield – Section 2 (324 apartment units)
4) Melanie's Ridge (280 apartment units)
5) Villages of Stoneybrook (150 townhouses (unbuilt), 192 apartments (already built))

Intersection Descriptions

1) South Site Entrance & US Route 13
Type of Control: proposed right-in only
Northbound approach: (US Route 13) existing two through lanes; proposed two through lanes and one right-turn lane
Note: As there are no vehicular conflicts, no traffic analysis is conducted for a rights-in-only driveway.

2) North Site Entrance & US Route 13
Type of Control: proposed one-way stop (T-intersection)
Northbound approach: (US Route 13) existing two through lanes; proposed two through lanes and one right-turn lane
Westbound approach: (Proposed Site Access) proposed one right-turn-only lane, stop-controlled

3) US Route 13 & Delaware Route 20/Beaver Dam Drive
Type of Control: signalized four-leg intersection
Northbound approach: (US Route 13) two left-turn lanes, two through lanes, and one right-turn lane
Southbound approach: (US Route 13) one left-turn lane, two through lanes, and one right-turn lane
Eastbound approach: (Delaware Route 20) two left-turn lanes, one through lane, and one right-turn lane
Westbound approach: (Beaver Dam Drive) one left-turn lane, one through lane, and one right-turn lane
Note: The above configuration is correct for the eastbound Delaware Route 20 approach (and was analyzed as such by McCormick Taylor), but the TIS analyzed it as one exclusive left-turn lane, one shared left/through lane, and one right-turn lane.

4) US Route 13 & First Crossover North of the Site
Type of Control: yield
Northbound approach: (US Route 13) one left/U-turn lane and two through lanes
Southbound approach: (US Route 13) one left/U-turn lane and two through lanes

5) US Route 13 & Herring Run Road/Tharp Road
Type of Control: signalized four-leg intersection
Northbound approach: (US Route 13) two left-turn lanes, two through lanes, and one right-turn lane
Southbound approach: (US Route 13) one left-turn lane, two through lanes, and one right-turn lane
Eastbound approach: (Herring Run Road) two left-turn lanes, one through lane, and one right-turn lane
Westbound approach: (Tharp Road) two left-turn lanes, one through lane, and one right-turn lane
Note: The above configuration is correct for the westbound Tharp Road approach (and was analyzed as such by McCormick Taylor), but the TIS analyzed it as one exclusive left-turn lane, one shared left/through lane, and one right-turn lane.

6) Beaver Dam Drive & Corridor Preservation Road
Type of Control: one-way stop (T-intersection)
Southbound approach: (Corridor Preservation Road) one shared left/right-turn lane, stop-controlled
Eastbound approach: (Beaver Dam Drive) one shared left/through/right-turn lane
Westbound approach: (Beaver Dame Drive) one shared left/through/right-turn lane
Note: Analysis of this intersection not required; only included for traffic count purposes.

Safety Evaluation

Crash Data: Crash data is not reviewed at this time.

Sight Distance: Sight distance is not anticipated to be a problem at this location, but as always adequacy of available sight distance should be confirmed during the site plan review process for all proposed movements at the site access.

The study area generally consists of straight and flat roadways and there are few potential visual obstructions. Sight distance appears adequate throughout the study area. No problematic sight distance issues have been reported or indicated by crash data.

Transit, Pedestrian, and Bicycle Facilities

Existing transit service: There are two existing bus stops within 1,000 feet of the proposed site. One, for DART Bus Route 903 and 212, is along US Route 13 northbound, approximately 340 feet north of the site. The other, for DART Bus Route 903 and 212, is along Delaware Route 20 westbound approximately 750 feet southwest of the site.

Planned transit service: TPD and McCormick Taylor contacted David Dooley, a Senior Planner with the Delaware Transit Corporation (DTC) to determine existing and planned transit services near the proposed development. Neither has received a response from DTC regarding transit services.

Existing bicycle and pedestrian facilities: US Route 13 is identified as a designated bicycle route on the *Sussex County Bicycle Map* published by DelDOT. It is a Connector Bike Route with bikeway (shoulder) and has over 5,000 vehicles daily. There are no marked bicycle lanes on US Route 13 in this area. Marked bike lanes exist on Herring Run Road, on the westbound Tharp Road approach to US Route 13, and on the eastbound Delaware Route 20 approach to US Route 13.

There are existing sidewalks along the south side of Herring Run Road and Tharp Road, and along the south side of the intersection of US Route 13 and Delaware Route 20/Beaver Dam Drive. At the two signalized intersections, there are crosswalks with pedestrian signals and pushbuttons across the south leg (of US Route 13) of each intersection. There are no other pedestrian facilities along US Route 13 aside from short sections of sidewalk in front of two businesses on the west side of US Route 13.

Planned bicycle and pedestrian facilities: McCormick Taylor contacted a representative of DelDOT's Local Systems Planning Section to determine pedestrian and bicycle accommodations for the proposed development. John Fiori requested a 5' sidewalk along the US Route 13 site frontage, and a sidewalk along the interconnection roadway to the service road (Preservation Drive). He requested that entrance improvements incorporate bicycle and pedestrian facilities, including a 5' wide bike lane along the right-turn lane on US Route 13. He requested an internal sidewalk/path connection be provided to/from the sidewalk on US Route 13. He also indicated

that easements would be required along the frontages. Finally, he recommended combining the two rights-in accesses for the site and the existing Taco Bell driveway on US Route 13.

Previous Comments

Comments from DelDOT's scoping letter and other correspondence appear to be addressed in the final TIS submission. No documentation was provided regarding a Preliminary TIS Review by DelDOT. Further coordination regarding access/turn lane design and future transit service will be needed with the appropriate agencies.

It is noted that projected future volumes did not account for pass-by trips, and that ITE Land Use 960 may have been a more appropriate type of land use for determination of trip generation for this site.

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

1) For all intersections, the TIS applied 2% heavy vehicles (HV) for existing and future movements. McCormick Taylor applied heavy vehicle factors (HV) by lane group using existing data for existing and future movements. McCormick Taylor assumed 3% HV for future movements to and from the proposed site access points (as per DelDOT's Development Coordination Manual), and for the intersection of US Route 13 & Herring Run Road / Tharp Road (detailed count data was not provided for that intersection).

2) The TIS and McCormick Taylor used different peak hour factors (PHF) in some cases. The TIS assumed a 0.92 PHF for all existing and future cases. McCormick Taylor determined and utilized overall intersection peak hour factors (PHF) for the existing weekday and Saturday peak hours. For future conditions, McCormick Taylor assumed existing PHF or 0.92, whichever was greater.

3) For analyses of all intersections, the TIS used a base saturation flow rate of 1,900 pc/hr/ln. McCormick Taylor used a base saturation flow rate of 1,750 pc/hr/ln at the signalized intersections, per DelDOT's Development Coordination Manual.

4) The TIS and McCormick Taylor used different signal timings when analyzing the signalized intersections in some cases.

5) The TIS and McCormick Taylor conducted the analyses using Synchro 10 software and reported HCM 6th Edition results, unless otherwise noted.

Table 3
PEAK HOUR LEVELS OF SERVICE (LOS)
based on Traffic Impact Study for 7-11 Seaford
Report dated March 13, 2019
Prepared by Traffic Planning and Design, Inc.

Signalized Intersection [1]	**LOS per TIS**			**LOS per McCormick Taylor**		
US Route 13 & Delaware Route 20/Beaver Dam Drive	Weekday AM	Weekday PM	Saturday Mid-Day	Weekday AM	Weekday PM	Saturday Mid-Day
2018 Existing (case 1)	C (21.4)	C (30.5)	C (29.2)	C (23.3)	C (41.3)	D (42.3)
2020 without 7-11 Seaford (case 2)	C (23.3)	C (33.0)	C (31.4)	C (26.7)	D (45.8)	D (50.9)
2020 with 7-11 Seaford (case 3)	C (24.4)	D (35.4)	C (33.3)	C (26.0)	D (48.3)	D (51.0)

[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 4
PEAK HOUR LEVELS OF SERVICE (LOS)
based on Traffic Impact Study for 7-11 Seaford
Report dated March 13, 2019
Prepared by Traffic Planning and Design, Inc.

Signalized Intersection [2]	**LOS per TIS** [3]			**LOS per McCormick Taylor**		
US Route 13 & Herring Run Road/Tharp Road	Weekday AM	Weekday PM	Saturday Mid-Day	Weekday AM	Weekday PM	Saturday Mid-Day
2018 Existing (case 1)	C (29.4)	D (41.2)	D (40.9)	C (26.3)	D (36.9)	C (34.0)
2020 without 7-11 Seaford (case 2)	D (41.4)	D (47.7)	D (48.2)	C (30.1)	D (47.6)	D (45.0)
2020 with 7-11 Seaford (case 3)	D (44.3)	D (51.4)	D (50.9)	C (32.7)	D (53.9)	D (49.5)

[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.
[3] The TIS analyzed this intersection with an incorrect lane configuration on the westbound approach of Tharp Road. They coded it as one exclusive left-turn lane, one shared left/through lane, and one right-turn lane. In fact, and as analyzed by McCormick Taylor, there are two left-turn lanes, one through lane, and one right-turn lane.

Table 5
PEAK HOUR LEVELS OF SERVICE (LOS)
based on Traffic Impact Study for 7-11 Seaford
Report dated March 13, 2019
Prepared by Traffic Planning and Design, Inc.

Unsignalized Intersection [4] **Yield-Controlled U-Turns**	**LOS per TIS** [5]			**LOS per McCormick Taylor**		
US Route 13 & First Crossover North of the Site	Weekday AM	Weekday PM	Saturday Mid-Day	Weekday AM	Weekday PM	Saturday Mid-Day
2018 Existing (case 1)						
Northbound US Route 13 – U-turns	-	-	-	C (23.5)	E (45.2)	E (38.0)
Southbound US Route 13 – U-turns	-	-	-	C (18.9)	E (35.4)	E (35.7)
2020 without 7-11 Seaford (case 2)						
Northbound US Route 13 – U-turns	-	-	-	C (23.8)	F (51.8)	E (42.0)
Southbound US Route 13 – U-turns	-	-	-	C (19.0)	E (41.9)	E (41.2)
2020 with 7-11 Seaford (case 3)						
Northbound US Route 13 – U-turns	-	-	-	D (27.3)	F (67.1) [6]	F (51.8) [6]
Southbound US Route 13 – U-turns	-	-	-	C (20.6)	E (46.1) [6]	E (47.0) [6]

[4] For both unsignalized and signalized analyses, the numbers in parentheses following levels of service are average delay per vehicle, measured in seconds. For signalized analyses, LOS analysis results are given for only the overall intersection delay.
[5] Analyses provided in the TIS did not show any delay for the u-turn movements, although certainly these movements would experience delay. It appears that this error was the result of a coding discrepancy and/or using an incorrect output report. McCormick Taylor analyses produced delay results from HCM 6th Edition as shown in this table.
[6] 95th percentile queue length is anticipated to be approximately 2 vehicles (50 feet) long.

Table 6
PEAK HOUR LEVELS OF SERVICE (LOS)
based on Traffic Impact Study for 7-11 Seaford
Report dated March 13, 2019
Prepared by Traffic Planning and Design, Inc.

Unsignalized Intersection [7] **One-Way Stop Control (Right-in/Right-out)**	**LOS per TIS**			**LOS per McCormick Taylor**		
US Route 13 & North Site Entrance	Weekday AM	Weekday PM	Saturday Mid-Day	Weekday AM	Weekday PM	Saturday Mid-Day
2020 with 7-11 Seaford (case 3)						
Westbound Site Driveway – Right	B (14.9)	C (21.0)	C (20.5)	B (14.9)	C (21.1)	C (20.6)

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