



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

JENNIFER COHAN
SECRETARY

December 20, 2016

Mr. Christopher Duke
Becker Morgan Group, Inc.
250 South Main Street
Suite 109
Newark, DE 19711

Dear Mr. Duke:

The enclosed Traffic Impact Study (TIS) review letter for the **Royal Farms #256 Retail Site** (Tax Parcel 135-11.00-78.00) 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 review 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
Project Engineer

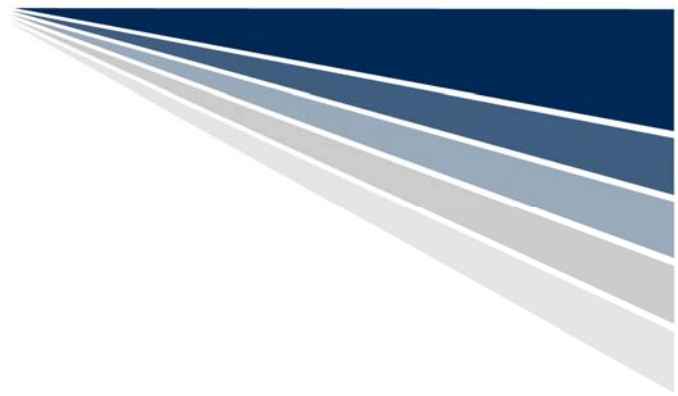
TEB:km

Enclosures

cc with enclosures: Mr. J. Michael Riemann, Becker Morgan Group, Inc.
Ms. Constance C. Holland, Office of State Planning Coordination
Mr. Lawrence Lank, Sussex County Planning and Zoning
Ms. Janelle Cornwell, Sussex County Planning and Zoning
Mr. Mir Wahed, Johnson, Mirmiran & Thompson, Inc.
Ms. Joanne Arellano, Johnson, Mirmiran & Thompson, Inc.
DelDOT Distribution

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Ms. Annie Cordo, Deputy Attorney General
Mr. Robert McCleary, Director, Transportation Solutions (DOTS)
Mr. Drew Boyce, Director, Planning
Mr. Mark Luszcz, Chief Traffic Engineer, Traffic, DOTS
Mr. Michael Simmons, Assistant Director, Project Development South
Mr. J. Marc Coté, Assistant Director, Development Coordination
Mr. T. William Brockenbrough, Jr., County Coordinator, Development Coordination
Mr. Peter Haag, Traffic Studies Manager, Traffic, DOTS
Mr. Adam Weiser, Safety Engineer, Traffic, DOTS
Mr. David Dooley, Service Development Planner, Delaware Transit Corporation
Mr. Anthony Aglio, Planning Supervisor, Statewide & Regional Planning
Mr. Steven Sisson, Sussex County Subdivision Coordinator, Development Coordination
Mr. Derek Sapp, Subdivision Manager, Development Coordination
Mr. Mark Galipo, Traffic Engineer, Traffic, DOTS
Mr. Claudy Joinville, Project Engineer, Development Coordination



December 20, 2016

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

RE: Agreement No. 1774
Project Number T201769002
Traffic Impact Study Services
Task 1A-Royal Farms No. 256 Retail

Dear Mr. Brestel:

Johnson, Mirmiran and Thompson (JMT) has completed the review of the Traffic Impact Study (TIS) for the Royal Farms No. 256 Retail development, prepared by Becker Morgan Group, Inc. This task was assigned Task Number 1A. Becker Morgan Group, Inc. prepared the report in a manner generally consistent with DelDOT's *Development Coordination Manual*.

Subsequent to the November 18, 2015 DelDOT scoping meeting memorandum and during the process of developing the TIS, the developer has changed the proposed land use from a 5,166 square-foot convenience store with gas pumps to a 14,950 square-foot shopping center. The TIS evaluates the impacts of the shopping center, which is proposed on the southeast corner of the US Route 9 (Sussex Road 18) and Delaware Route 30 (Sussex Road 248) intersection. The subject property is on an approximately 3.20-acre assemblage of parcels currently zoned AR-1 (Agricultural Residential). The land is proposed to be rezoned to C-1 (General Commercial).

Two access points are proposed for the shopping center: one right-in/right-out access on US Route 9 and one full movement access on Delaware Route 30. Construction is anticipated to be completed by 2018.

DelDOT currently does not have any relevant or ongoing capital projects within the study area. However, DelDOT's 2011 HEP (Hazard Elimination Program) included Site Y, which is within the study area. Site Y is a 0.40-mile corridor located along US Route 9 from 0.15 miles west of Delaware Route 30 to 0.24 miles east of Delaware Route 30. The Site Y Task I report included a crash summary, a review of the US Route 9 and Delaware Route 30 intersection, and an assessment of the proposed improvements to the US Route 9 and Delaware Route 30 intersection as part of the *HSIP (Highway Safety Improvement Program) Sussex County US 9 Project* (DelDOT Contract No. T200800901). As part of the *HSIP Sussex County US 9 Project*, separate left-turn, through, and channelized right-turn lanes were proposed along each approach of the US Route 9 and Delaware Route 30 intersection. Geometric and lighting improvements were also proposed at the



intersection. The construction of the *HSIP Sussex County US 9 Project* was completed in November 2015. As this HSIP project significantly reduces the potential for crashes, no additional studies for Site Y were recommended.

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

None of the intersections within the study area experience level of service (LOS) deficiencies in the existing scenario, nor are they anticipated to experience LOS deficiencies in 2018 with or without the proposed shopping center. Based on DelDOT's *Development Coordination Manual*, a 290-foot right turn lane (including a 50-foot taper) is needed for the eastbound right turn lane at the US Route 9 rights-in/rights-out site entrance. However, due to site constraints and the close proximity to the signalized intersection of US Route 9 and Delaware Route 30, it is recommended that a 150-foot right turn lane (including a 50-foot taper) be provided. Additionally, a concrete island should be constructed at the US Route 9 entrance to prevent westbound left turning vehicles from entering the site and northbound left turning vehicles from exiting the site.

Should Sussex County approve the proposed development, the following items should be incorporated into the site design and reflected on the record plan. All applicable agreements (i.e. letter agreements for off-site improvements and traffic signal agreements) should be executed prior to entrance plan approval for the proposed development.

1. The developer should provide a bituminous concrete overlay, as needed to address restriping and pavement damage associated with the site entrance construction, to the US Route 9 existing eastbound travel lanes, from the Delaware Route 30 intersection to the site frontage limit at DelDOT's discretion. DelDOT should analyze the existing lanes' pavement section and recommend an overlay thickness to the developer's engineer, if necessary.
2. The developer should provide a bituminous concrete overlay, as needed to address restriping and pavement damage associated with the site entrance construction, to the existing travel lanes along Delaware Route 30 from the US Route 9 intersection to the site frontage limit at DelDOT's discretion. DelDOT should analyze the existing lanes' pavement section and recommend an overlay thickness to the developer's engineer, if necessary.
3. The developer should construct a rights-in/rights-out only entrance for the proposed development on eastbound US Route 9 along the northerly side of the property limits, approximately 280 feet east of the US Route 9 intersection with Delaware Route 30, to be consistent with the proposed lane configurations as shown in the table below:



Approach	Current Configuration	Proposed Configuration
Eastbound US Route 9	One through lane	One through lane and one right turn lane
Westbound US Route 9	One left turn lane for Delaware Route 30 intersection, one through lane, and one right turn lane for Delaware Route 30 intersection	No Change
Northbound Site Access	Approach does not exist	One right turn lane

It is recommended that 100 feet of storage and a 50-foot taper be provided for the eastbound right turn lane. The calculated queue lengths from the HCS analysis can be accommodated within the recommended storage lengths.

4. The developer should construct a channelized island at the US Route 9 entrance to prohibit vehicles from executing left-turning movements at the access point to be consistent with Recommendation No. 3.
5. The developer should construct a full movement entrance for the proposed development on northbound Delaware Route 30 along the westerly side of the property limits, approximately 385 feet south of the US Route 9 intersection with Delaware Route 30, to be consistent with the proposed lane configurations as shown in the table below:

Approach	Current Configuration	Proposed Configuration
Westbound Site Access	Approach does not exist	One shared left turn/right turn lane
Northbound Delaware Route 30	One through lane	One through lane and one right turn lane
Southbound Delaware Route 30	One through lane	One left turn lane and one through lane

Based on DelDOT's *Development Coordination Manual*, the recommended minimum storage length is 95 feet (excluding a 100-foot taper) for the southbound Delaware Route 30 left turn lane and 100 feet (excluding a 50-foot taper) for the northbound Delaware Route 30 right turn lane.

6. 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 US Route 9 site frontage. Within this easement, the developer should construct a ten-foot wide shared-use path that meets



- current AASHTO and ADA standards. A minimum five-foot setback should be maintained from the edge of the pavement to the shared-use path. If feasible, the shared-use path should be placed behind utility poles and street trees should be provided within the buffer area.
- b. A five-foot wide ADA compliant sidewalk with a five-foot setback from the roadway should be constructed (and maintained) along the Delaware Route 30 site frontage. The sidewalk should be within a fifteen-foot wide dedicated permanent easement to DelDOT and/or State right of way. If feasible, the sidewalk should be placed behind utility poles and street trees should be provided within the buffer area.
 - c. When a right turn lane is added along eastbound US Route 9 and northbound Delaware Route 30, a five-foot wide bicycle lane should be maintained through the right turn lane to facilitate safe and unimpeded bicycle travel. A RIGHT TURN YIELD TO BIKES sign (MUTCD R4-4) should be added before the start of each right turn lane.
 - d. ADA compliant curb ramps and marked crosswalks should be provided at the site entrances. The use of diagonal curb ramps is discouraged.
 - e. Bike parking racks should be provided near the building entrances. Where the building architecture provides for an awning or other overhang, the bike parking should be covered.
 - f. Utility covers should be moved outside of any designated bicycle lanes or should be flush with the pavement.
 - g. The developer should coordinate with DART to relocate the existing bus stop on the westerly side of the US Route 9 intersection with Delaware Route 30 to the US Route 9 site frontage. Coordination should include provisions for appropriate amenities (bus pad, shelter, etc.). The shared-use path should provide a connection to the bus stop.

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 Plan Review process.

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://www.deldot.gov/information/pubs_forms/manuals/de_mutcd/index.shtml. For any additional information regarding the work zone impact and mitigation procedures during construction please contact Mr. Adam Weiser of DelDOT's Traffic Section. Mr. Weiser can be reached at (302) 659-4073 or by email at Adam.Weiser@state.de.us.



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

Sincerely,
Johnson, Mirmiran, and Thompson, Inc.

Mir Wahed,

Mir Wahed, P.E., PTOE

cc: Joanne Arellano, P.E., PTOE

Enclosure

General Information

Report date: October 2016

Prepared by: Becker Morgan Group, Inc.

Prepared for: Bendler Realty, Inc.

Tax Parcel: 135-11.00-78.00

Generally consistent with DelDOT's *Development Coordination Manual*: Yes.

Project Description and Background

Description: The development will consist of a 14,950 square foot shopping center.

Location: The subject site is on the southeast corner of US Route 9 and Delaware Route 30 in Sussex County.

Amount of Land to be developed: The subject property is a 3.20-acre parcel.

Land Use approval(s) needed: Rezoning to C-1 (General Commercial).

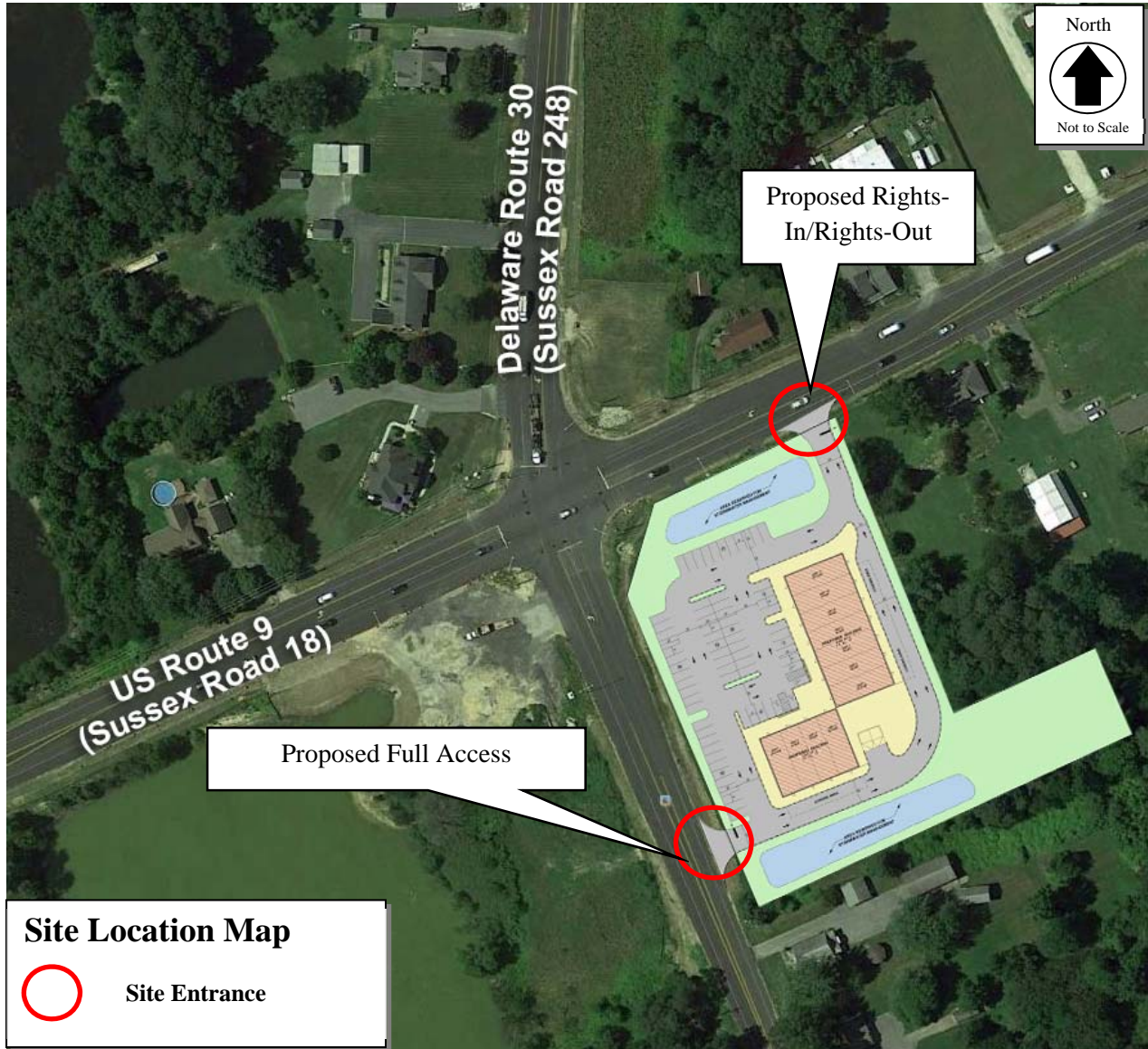
Proposed completion date: 2018.

Proposed access locations: One rights-in/rights-out entrance on US Route 9 and one full movement entrance on Delaware Route 30.

Daily Traffic Volumes:

- 2015 Average Annual Daily Traffic on US Route 9: 16,131 vehicles per day.
- 2015 Average Annual Daily Traffic on Delaware Route 30: 3,836 vehicles per day.

Site Map



**Graphic is an approximation based on the Auxiliary Lane Concept Improvements plan prepared by Becker Morgan Group, Inc. dated August 25, 2016.*

Relevant and On-going Projects

DelDOT currently does not have any relevant or ongoing capital projects within the study area. However, DelDOT's 2011 HEP (Hazard Elimination Program) included Site Y, which is within the study area. Site Y is a 0.40-mile corridor located along US Route 9 from 0.15 miles west of Delaware Route 30 to 0.24 miles east of Delaware Route 30. The Site Y Task I report included a crash summary, a review of the US Route 9 and Delaware Route 30 intersection, and an assessment of the proposed improvements to the US Route 9 and Delaware Route 30 intersection as part of the *HSIP (Highway Safety Improvement Program) Sussex County US 9 Project* (DelDOT Contract No. T200800901). As part of the *HSIP Sussex County US 9 Project*, separate left-turn, through,

and channelized right-turn lanes were proposed along each approach of the US Route 9 and Delaware Route 30 intersection. Geometric and lighting improvements were also proposed at the intersection. The construction of the *HSIP Sussex County US 9 Project* was completed in November 2015. As this HSIP project significantly reduces the potential for crashes, no additional studies for Site Y were recommended.

Livable Delaware

(Source: Delaware Strategies for State Policies and Spending, 2015)

Location with respect to the Strategies for State Policies and Spending Map of Delaware:
Royal Farms No. 256 Retail is located within the Investment Level 4 area.

Investment Level 4

Delaware's Investment Level 4 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. Delaware's Investment Level 4 Areas are also the location of scattered residential uses, featuring almost entirely single-family detached residential structures. Delaware's Investment Level 4 Areas also include many unincorporated communities, typically with their own distinctive character and identity. Investment Level 4 Areas depend on a transportation system primarily of secondary roads linked to roadways used as regional thoroughfares for commuting and trucking.

It is the state's intent to discourage additional urban and suburban development in Investment Level 4 Areas unrelated to agriculture and to the areas' needs. In Investment Level 4 Areas, the state's investments and policies should retain the rural landscape and preserve open spaces and farmlands, support farmland-related industries, and establish defined edges to more concentrated development. The focus for the Level 4 Areas will be to preserve and maintain existing facilities in safe working order, corridor-capacity preservation, and the enhancement of transportation facilities to support agricultural business.

Proposed Development's Compatibility with Livable Delaware:

The proposed development is located in Investment Level 4 Areas. According to Livable Delaware, Level 4 reflects areas that are mainly agricultural and rural in nature where additional urban and suburban development is discouraged unless related to agriculture and to the area's needs. Therefore, if the proposed development provides retail that is expected to support farmland-related industries, than it is generally consistent with the 2015 update of the Livable Delaware "Strategies for State Policies and Spending."

Comprehensive Plans

(Source: Sussex County, 2008 Comprehensive Plan)

Sussex County Comprehensive Plan:

The subject property is zoned as AR-1 (Agricultural Residential). The proposed development plans to rezone the AR-1 as C-1 (General Commercial). According to the Sussex County Comprehensive Plan, the future land use of the property would be within the Low Density area.

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

Per the Sussex County Comprehensive Plan, the focus of retail and office uses in Low Density Areas should be providing convenience goods and services to nearby residents. The proposed development consists of commercial retail uses that will provide residents with convenience goods and services. As such, the development is generally compatible with the Sussex County Comprehensive Plan.

Trip Generation

The trip generation for the proposed development was determined by using the comparable land use and rates/equations contained in the *Trip Generation, 9th Edition: An ITE Informational Report*, published by the Institute of Transportation Engineers (ITE) for ITE Land Use Code 820 (Shopping Center). Note, contrary to the November 18, 2015 DelDOT scoping meeting memorandum, the proposed development has been changed from a 5,166 square-foot convenience store with gas pumps to a 14,950 square-foot shopping center.

The peak period trip generation for the Royal Farms No. 256 Retail development is included in Table 1.

Table 1
ROYAL FARMS NO. 256 Retail

Land Use	ADT	AM Peak Hour			PM Peak Hour			SAT Peak Hour		
		In	Out	Total	In	Out	Total	In	Out	Total
14,950 Square Feet Shopping Center	638	30	19	49	81	87	168	132	122	254
Pass-By Trips		0	0	0	55	59	114	50	46	96
Net New Trips		30	19	49	26	28	54	82	76	158

Overview of TIS

Intersections examined:

1. Site Access / US Route 9 (Sussex Road 18)
2. Site Access / Delaware Route 30 (Sussex Road 248)
3. US Route 9 / Delaware Route 30

Conditions examined:

1. Case 1 – 2015 Existing conditions
2. Case 2 – 2018 No Build conditions
3. Case 3 – 2018 Build conditions

Peak hours evaluated: Weekday morning, weekday evening, and summer Saturday mid-day peak hours.

Committed Developments considered: None

Intersection Descriptions

1. Site Access / US Route 9 (Sussex Road 18)

Type of Control: proposed stop controlled intersection (T-intersection)

Northbound Approach: (Proposed Site Access) proposed one right turn lane, stop controlled

Eastbound Approach: (US Route 9) existing one through lane; proposed one through lane and one right turn lane

Westbound Approach: (US Route 9) existing one left turn lane for the Delaware Route 30 intersection, one through lane, and one right turn lane for the Delaware Route 30 intersection

2. Site Access / Delaware Route 30 (Sussex Road 248)

Type of Control: proposed stop controlled intersection (T-intersection)

Northbound Approach: (Delaware Route 30) existing one through lane

Southbound Approach: (Delaware Route 30) existing one through lane; proposed one left turn lane and one through lane

Westbound Approach: (Proposed Site Access) proposed one shared left turn/right turn lane, stop controlled

3. US Route 9 / Delaware Route 30

Type of Control: existing signal controlled intersection

Northbound Approach: (Delaware Route 30) existing one left turn lane, one through lane, and one right turn lane

Southbound Approach: (Delaware Route 30) existing one left turn lane, one through lane, and one right turn lane

Eastbound Approach: (US Route 9) existing one left turn lane, one through lane, and one right turn lane

Westbound Approach: (US Route 9) existing one left turn lane, one through lane, and one right turn lane

Transit, Pedestrian, and Bicycle Facilities

Existing transit service: Delaware Transit Corporation (DTC) currently provides existing services via DART Route 206 and Route 303 within the study area. The designated bus stop for both Route 206 and Route 303 that exists within the study area is located along US Route 9 at the

intersection of US Route 9 and Delaware Route 30. Additionally, DART Route 206 provides 10 round trips Monday through Friday from 6:04 a.m. to 11:47 p.m. Route 206 does not run on Saturdays. DART Route 303 provides 5 round trips Monday through Friday from 5:53 a.m. to 8:41 p.m. Route 303 does not run on Saturdays.

Planned transit service: JMT contacted Ms. Tremica Cherry, Planner at the DTC. In a November 16, 2016 email, Ms. Cherry recommended that the bus stop along US Route 9 located west of Delaware Route 30 be relocated to the northerly site frontage.

Existing bicycle and pedestrian facilities: According to DelDOT's *Delaware Bicycle Facility Master Plan* (October 2005) and the *Sussex County Bicycle Map*, regional bicycle routes exist within the study area. The regional bicycle routes run along US Route 9 and Delaware Route 30 and traverse through three of the project's study intersections (the US Route 9 intersections with Delaware Route 30 and the Site Access, and the Delaware Route 30 intersection with the Site Access).

Planned bicycle and pedestrian facilities: JMT contacted Mr. John Fiori and Ms. Sarah Coakley, DelDOT's Bicycle and Pedestrian Coordinators. In a November 7, 2016 email from Mr. Fiori, it was requested that a shared-use path be constructed along the site frontage on US Route 9 and a sidewalk be constructed along the site frontage on Delaware Route 30. Furthermore, it was recommended that the site provide an internal bicycle rack. It was also noted that all entrance, roadway, and/or off-site improvements required shall incorporate bicycle and pedestrian facilities and the site should dedicate or establish the required right-of-way and permanent easement per the *Development Coordination Manual*.

Mr. Fiori also stated that a planned bicycle and pedestrian facility project does exist in the area of the proposed development called the Georgetown to Lewes Rail with Trail project. This project is located approximately 1,300' south of the proposed site. There is no timetable for either design or construction of the project.

Bicycle Level of Service and Bicycle Compatibility Index: According to the League of Illinois Bicyclists (LIB), Bicycle Level of Service (BLOS) is an emerging national standard for quantifying the bike-friendliness of a roadway by measuring on-road bicyclist comfort levels for specific roadway geometries and traffic conditions. Utilizing the 10-year projected AADT along the site frontages, the BLOS with the construction of the proposed development are summarized below. Five-foot bike lanes are provided along both US Route 9 and Delaware Route 30. The BLOS was determined utilizing the calculators published on the LIB website:

<http://www.bikelib.org/roads/blos/blosform.htm>

- US Route 9 – BLOS: C
- Delaware Route 30 – BLOS: C

Previous Comments

None.

General HCS Analysis Comments

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

1. The TIS and JMT performed analysis using HCS 2010, Version 6.80.
2. Per DelDOT's *Development Coordination Manual*, JMT utilized the future 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 the existing PHF, whichever was higher, whereas the TIS did not at some locations.
3. Per DelDOT's *Development Coordination Manual*, the TIS and JMT used a heavy vehicle percentage of 3% for each movement in 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 analysis of future scenarios.

Table 2
PEAK HOUR LEVELS OF SERVICE (LOS)
Based on Traffic Impact Study for Royal Farms No. 256 Retail
Report Dated October 2016
Prepared by Becker Morgan Group, Inc.

Unsignalized Intersection ¹ Two-Way Stop Control (T-intersection)	LOS per TIS			LOS per JMT		
	Weekday AM	Weekday PM	Saturday Midday	Weekday AM	Weekday PM	Saturday Midday
2018 with development of Royal Farms No. 256 Retail (Case 3) ²						
Northbound Site Access Right Turn	B (11.3)	B (12.0)	B (12.6)	B (11.5)	B (12.0)	B (12.6)

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

² JMT utilized a PHF of 0.88 during AM peak hour consistent with the DelDOT *Development Coordination Manual* whereas the TIS did not.

Table 3
PEAK HOUR LEVELS OF SERVICE (LOS)
Based on Traffic Impact Study for Royal Farms No. 256 Retail
Report Dated October 2016
Prepared by Becker Morgan Group, Inc.

Unsignalized Intersection ³ Two-Way Stop Control (T-intersection)	LOS per TIS			LOS per JMT		
	Weekday AM	Weekday PM	Saturday Midday	Weekday AM	Weekday PM	Saturday Midday
Site Access / Delaware Route 30 ⁴						
2018 with development of Royal Farms No. 256 Retail (Case 3)						
Westbound Site Access Approach	A (9.6)	B (10.5)	B (10.8)	A (9.9)	B (11.0)	B (11.0)
Southbound Delaware Route 30 Left Turn	A (7.6)	A (7.7)	A (7.8)	A (7.7)	A (7.8)	A (7.8)

³ For signalized and unsignalized analyses, the numbers in parentheses following levels of service are average delay per vehicle, measured in seconds.

⁴ JMT utilized a PHF of 0.80 during the weekday AM and PM peak hours and a PHF of 0.88 during the Saturday peak hour consistent with the DelDOT *Development Coordination Manual* whereas the TIS did not.

Table 4
PEAK HOUR LEVELS OF SERVICE (LOS)
Based on Traffic Impact Study for Royal Farms No. 256 Retail
Report Dated October 2016
Prepared by Becker Morgan Group, Inc.

Signalized Intersection ⁵	LOS per TIS			LOS per JMT		
	Weekday AM	Weekday PM	Saturday Middy	Weekday AM	Weekday PM	Saturday Middy
US Route 9/Delaware Route 30^{6,7,8,9,10}						
Existing (Case 1)	B (18.1)	C (24.8)	C (21.0)	C (21.1)	C (24.2)	C (23.7)
2018 without development of Royal Farms No. 256 Retail (Case 2)	B (18.3)	C (24.9)	C (21.7)	C (21.2)	C (24.2)	C (24.1)
2018 with development of Royal Farms No. 256 Retail (Case 3)	C (19.3)	C (28.4)	C (29.5)	C (21.6)	C (24.5)	C (25.3)

⁵ For signalized and unsignalized analyses, the numbers in parentheses following levels of service are average delay per vehicle, measured in seconds.

⁶ JMT utilized a cycle length of 90 seconds, consistent with field observations, whereas the TIS utilized a cycle length of 60 seconds.

⁷ JMT utilized lane widths consistent with field measurements, whereas the TIS utilized 12 feet for all lane widths.

⁸ JMT utilized storage lengths consistent with field measurements, whereas the TIS utilized arbitrary lengths.

⁹ The TIS utilized right turn on red volumes directly from the turning movement counts, whereas JMT utilized right turn on red volumes based on the turning movement counts and the seasonally adjusted volumes.

¹⁰ For PM analyses, JMT incorporated pedestrian and bicycle volumes whereas the TIS did not.