



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

NICOLE MAJESKI
SECRETARY

March 20, 2024

Ms. Betty H. Tustin, PE
The Traffic Group, Inc.
104 Kenwood Court
Berlin, Maryland 21811

Dear Ms. Tustin:

The enclosed Traffic Impact Study (TIS) Addendum review letter for the proposed **Parsons and Cress Properties** (Tax Parcel: 533-1.00-38.00, 533-4.00-28.00, 28.01) residential 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 Addendum 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: Mr. Bobby Horsey, Double H Development, LLC
Mr. Zac Crouch, Davis, Bowen & Friedel, Inc.
Mr. David L. Edgell, Office of State Planning Coordination
Mr. Jamie Whitehouse, Sussex County Planning & Zoning
Ms. Joanne M. Arellano, Johnson, Mirmiran, & Thompson, Inc.
Mr. Mir Wahed, Johnson, Mirmiran, & Thompson, Inc.
DelDOT Distribution

DelDOT Distribution

Brad Eaby, Deputy Attorney General
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Matt Schlitter, South District Public Works Engineer, Maintenance & Operations
Mark Luszcz, Deputy Director, DelDOT Traffic, DOTS
Michael Simmons, Assistant Director, Project Development South, DOTS
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Wendy Carpenter, Traffic Calming & Subdivision Relations Manager, DelDOT Traffic, DOTS
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Thomas Gagnon, Sussex County Subdivision Reviewer, Development Coordination, Planning
Sireen Muhtaseb, TIS Group Manager, Development Coordination, Planning
Annamaria Furmato, TIS Group Project Engineer, Development Coordination, Planning
Philip Lindsey, TIS Group Project Engineer, Development Coordination, Planning
Steve Bayer, Regional Transportation Planner, Statewide & Regional Planning
Anthony Aglio, Planning Supervisor, Statewide & Regional Planning, Planning
Jared Kauffman, Service Development Planner, Delaware Transit Corporation
Tremica Cherry, Service Development Planner, Delaware Transit Corporation



Revised March 20, 2024

June 1, 2023

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

RE: Agreement No. 1945F
Project Number T202069012/PO#611882
Traffic Impact Study Services
Task 11-16A – Parsons and Cress Properties TIS
Task 17-7 – Parsons and Cress Properties TIS Addendum

Dear Ms. Furrato:

Johnson, Mirmiran, and Thompson (JMT) has completed a review of the Traffic Impact Study (TIS) for the Parsons Cress Property, which was prepared by The Traffic Group, Inc. dated April 17, 2023 and the TIS Addendum which was prepared by The Traffic Group, Inc. dated November 28, 2023. The TIS review was assigned as Task Number 11-16A and the TIS addendum review was assigned as Task Number 17-7. The report is prepared in a manner generally consistent with DelDOT's *Development Coordination Manual*.

The TIS and the TIS Addendum evaluate the impacts of a proposed residential development in Sussex County, Delaware. The proposed development would consist of 200 single-family detached houses and 385 townhomes on an approximately 152.32-acre assemblage of parcels. The land is currently split-zoned as AR-2 (Agricultural Residential) and HR-1 (High-Density Residential) in Sussex County and the developer plans to seek annexation into the Town of Frankford, with a Residential Planned Community (RPC) overlay.

The development is located on the northeast side of Pepper Road (Sussex Road 376) and south of Frankford School Road (Sussex Road 92), just north of Gum Road (Sussex Road 392). Two full access points are proposed: one on Pepper Road and one on Frankford School Road. Construction is expected to be completed in 2030.

The TIS Addendum was conducted to evaluate the Summer Saturday midday peak hour which was not included in the TIS and required per the September 2, 2022 DeIDOT Scoping Meeting Memorandum. Three of the study intersections were required to be evaluated during the Summer Saturday midday peak hour:

- US Route 113 / Daisey Road / Blueberry Lane (Sussex Road 402)
- US Route 113 / Lazy Lagoon Road / Parker Road (Sussex Road 380)
- Frankford School Road / Pyle Center Road (Sussex Road 382)



DelDOT has a relevant and ongoing project within the study area including the *Corridor Capacity Preservation Program* (CCPP), which aims to maintain the regional importance and preserve the intended function and capacity of existing designated transportation routes within the Program. The main objectives of the program are listed below:

- Prevent the need to build an entirely new road
- Minimize the transportation impacts of increased economic growth
- Maintain an existing road’s ability to handle traffic efficiently and safely
- Preserve the ability to make future improvements
- Sort local and through traffic

US Route 113 is one of the highways included in the CCPP. More information regarding the CCPP can be found at https://deldot.gov/Programs/corr_cap/index.shtml.

The *US 113 at Daisey St/Blueberry Lane* intersection improvement project was identified in a Traffic Safety Study titled *US 113 @ Daisey St/Blueberry Ln and Adjacent Intersections* conducted by DelDOT in December 2020 for the Town of Frankford. As part of this study, it was determined that a traffic signal met the volume signal warrants at the US Route 113 / Daisey Road / Blueberry Lane intersection. Under DelDOT Contract No. T02304001, the intersection improvements were implemented in April 2023 and the two-way stop-controlled intersection was converted to a signalized intersection. The study also recommended improvements for the US Route 113 / Lazy Lagoon Road / Parker Road intersection to be modified to restrict the eastbound Parker Road and westbound Lazy Lagoon Road left turn and through movements. These improvements have not been implemented at this time. A further evaluation of the US Route 113 and Lazy Lagoon intersection is currently underway by DelDOT. DelDOT is also working with the Town of Frankford on lighting improvements along US Route 113.

Based on our review of the TIS and the TIS Addendum, 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. The table below does not include any signalized intersections that exhibit LOS deficiencies that can be mitigated with signal timing optimization as optimization would not be the responsibility of the developer.

Intersection	LOS Deficiencies Occur			Case
	AM	PM	SAT	
US Route 113 / Lazy Lagoon Road / Parker Road (Sussex Road 380)	-	-	X	Case 1 – 2022 Existing
	-	-	X	Case 2 – 2030 without Development
	-	-	X	Case 3 – 2030 with Development

The US Route 113 intersection with Lazy Lagoon Road/Parker Road (Table 14, page 35) exhibits LOS deficiencies during the Summer Saturday midday peak hour along the eastbound Parker Road



approach under existing and future conditions, with or without the proposed development. The intersection also exhibits LOS deficiencies during the Summer Saturday midday peak hour along the westbound Lazy Lagoon Road approach under future conditions with the proposed development. Under Case 3 conditions during the Summer Saturday peak hour, the eastbound Parker Road approach would operate at LOS F (61.2 seconds of delay per vehicle) with a calculated 95th percentile queue length of approximately 40 feet. The westbound Lazy Lagoon Road approach would operate at LOS E (48.1 seconds of delay per vehicle) with a calculated 95th percentile queue length of approximately 60 feet.

As part of the DelDOT Traffic Safety Study titled *US 113 @ Daisey St/Blueberry Ln and Adjacent Intersections*, it was recommended that the US Route 113 and Lazy Lagoon Road/Parker Road intersection be altered to prohibit eastbound Parker Road and westbound Lazy Lagoon Road left turn and through movements. With the implementation of these restrictions, it is assumed that eastbound Parker Road left turn and through movements would be rerouted to turn right at US Route 113, travel southbound approximately 1,300 feet, and u-turn onto northbound US Route 113. It is assumed that the westbound Lazy Lagoon Road left turn and through movements would be rerouted to turn right at US Route 113, travel northbound approximately 500 feet, and u-turn onto southbound US Route 113. With these restrictions, the intersection would improve to operate at acceptable LOS C (17.1 seconds of delay per vehicle) along the eastbound Parker Road approach and acceptable LOS B (14.8 seconds of delay per vehicle) along the westbound Lazy Lagoon Road approach during the Summer Saturday peak hour under Case 3 conditions.

Additionally, per the crash data included in the TIS from March 15, 2020, to March 15, 2023, provided by the Delaware Department of Transportation (DelDOT), 21 crashes were reported at the intersection, including 10 angle crashes. The restriction of left turn and through movements along the minor approaches to the intersection may reduce the number of angle crashes.

A further evaluation of the US Route 113 and Lazy Lagoon intersection is currently underway by DelDOT. DelDOT is also working with the Town of Frankford on lighting improvements along US Route 113. As such, it is recommended that the developer not be required to implement any improvements at the intersection.

Should the Town of Frankford 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 the State-maintained Roads on which they front (Pepper Road and Frankford School Road), 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.

- The developer should construct an unsignalized Site Entrance A full access for the proposed Parsons and Cress Properties development along Pepper Road, approximately 850 feet north of the intersection with Gum Road. The intersection should be consistent with the lane configurations shown in the table below.

Approach	Current Configuration	Approach	Proposed Configuration
Westbound Site Entrance A	Approach does not exist	Westbound Site Entrance A	One shared left turn/right turn lane
Northbound Pepper Road	One through lane	Northbound Pepper Road	One through lane and one right turn lane
Southbound Pepper Road	One through lane	Southbound Pepper Road	One left turn lane and one through lane

Based on DelDOT’s *Development Coordination Manual*, the recommended minimum storage length (excluding taper) of the northbound right turn lane is 240 feet and the southbound left turn lane is 135 feet. The projected queues from the HCS analysis can be accommodated within the recommended storage lengths.

- The developer should construct an unsignalized Site Entrance B full access for the proposed Parsons and Cress Properties development along Frankford School Road, approximately 1,200 feet east of the intersection with Omar Road. The design of the intersection should take into consideration the George Washington Carver Academy as parking for the school is located along the Frankford School Road site frontage. The intersection should be consistent with the lane configurations shown in the table below.



Approach	Current Configuration	Approach	Proposed Configuration
Eastbound Frankford School Road	One through lane	Eastbound Frankford School Road	One through lane and one right turn lane
Westbound Frankford School Road	One through lane	Westbound Frankford School Road	One shared left turn/through lane
Northbound Site Entrance B	Approach does not exist	Northbound Site Entrance B	One shared left turn/right turn lane

Based on DelDOT’s *Development Coordination Manual*, the recommended minimum storage length (excluding taper) of the eastbound right turn lane is 50 feet. The projected queues from the HCS analysis can be accommodated within the recommended storage lengths.

4. The following bicycle, pedestrian, and transit improvements should be included:
 - a. A minimum of fifteen-foot wide permanent easement from the edge of the right-of-way should be dedicated to DelDOT along the Pepper Road and Frankford School Road site frontages. Within the easement, the developer should construct a five-foot wide sidewalk. The sidewalk should be designed to meet current AASHTO and ADA standards. A minimum five-foot setback should be maintained from the edge of the pavement to the sidewalk. If feasible, the sidewalk should be placed behind utility poles and street trees should be provided within the buffer area. The developer should coordinate with DelDOT’s Development Coordination Section during the plan review process to identify the exact location of the sidewalk.
 - b. ADA compliant curb ramps and marked crosswalks should be provided along the site entrances.
 - c. Minimum five-foot wide bicycle lanes should be incorporated in the right turn lane and shoulder along the Pepper Road and Frankford School Road approaches to the site entrances.
 - d. Utility covers should be moved outside of any designated bicycle lanes and any proposed sidewalks or should be flush with the pavement.
 - e. Pedestrian connectivity should be reviewed further during the entrance plan review process, such as a crossing to the George Washington Carver Academy on Frankford School Road. A marked crossing with a concrete median island may be required.



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

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

Sincerely,
Johnson, Mirmiran, and Thompson, Inc.

A handwritten signature in black ink, appearing to read 'Joanne M. Arellano', is written above the printed name.

Joanne M. Arellano, P.E., PTOE

cc: Mir Wahed, P.E., PTOE
Janna Brown, P.E., PTOE
Enclosure



Recommendations Map



General Information

Report date: April 17, 2023; **TIS Addendum date:** November 28, 2023

Prepared by: The Traffic Group, Inc.

Prepared for: Double H Development, LLC

Tax Parcels: 533-1.00-38.00, 533-4.00-28.00, 533-4.00-28.01

Generally consistent with DelDOT's Development Coordination Manual (DCM): Yes

Project Description and Background

Description: The proposed residential development consists of 200 single-family detached houses and 385 townhomes.

Location: The land is located on the northeast side of Pepper Road (Sussex Road 376) and south of Frankford School Road (Sussex Road 92), just north of Gum Road (Sussex Road 392), in Sussex County, Delaware.

Amount of Land to be developed: An approximately 152.32-acre assemblage of parcels.

Land Use approval(s) needed: Entrance Plan. The developer plans to seek annexation in the Town of Frankford with a Residential Planned Community (RPC) overlay.

Proposed completion date: 2030.

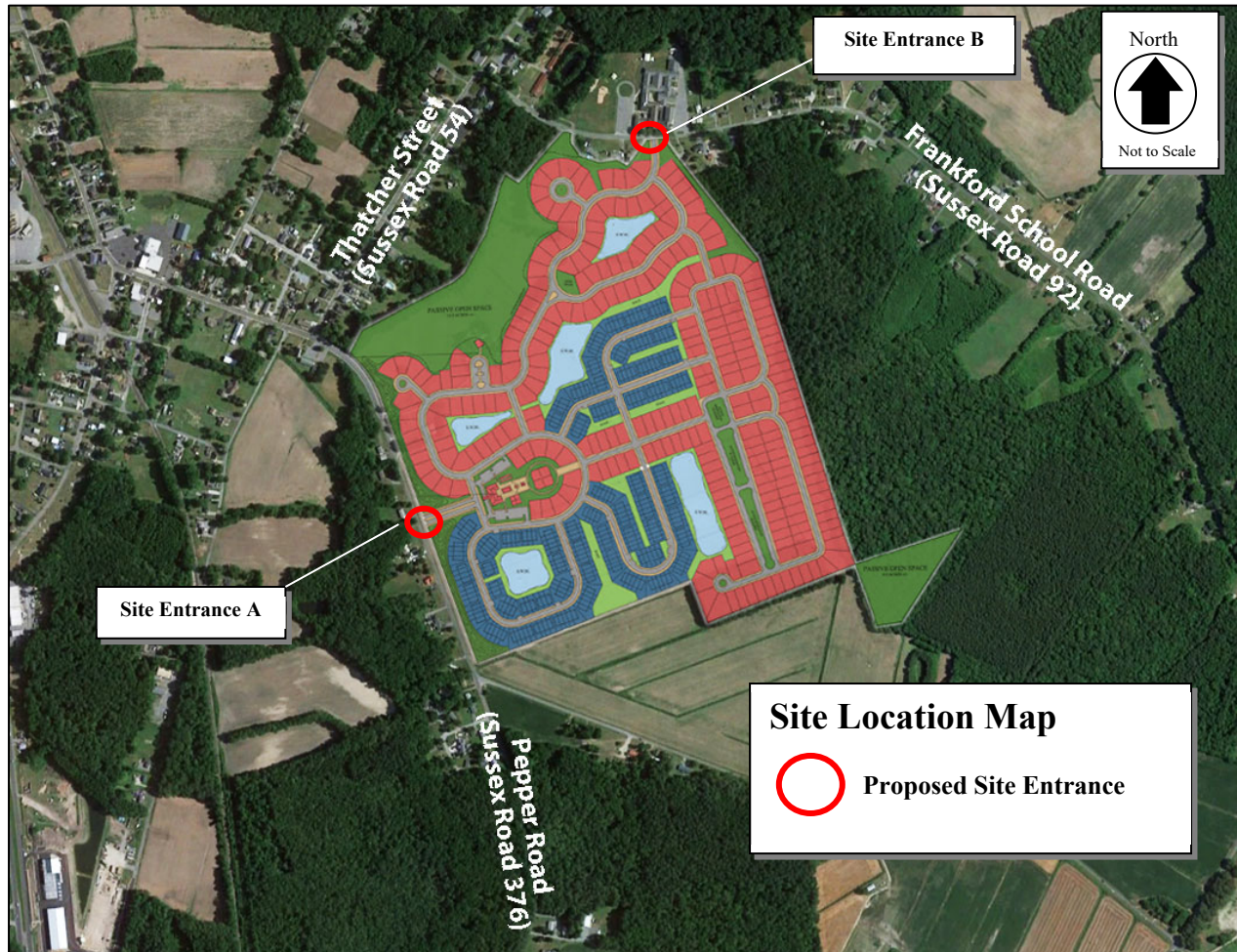
Proposed access locations: Two full access points are proposed: one on Pepper Road and one on Frankford School Road.

Daily Traffic Volumes:

- 2022 Average Annual Daily Traffic on Pepper Road: 3,357 vehicles per day
- 2022 Average Annual Daily Traffic on Frankford School Road: 901 vehicles per day

*AADT is sourced from ATR data provided by the TIS report. Data taken from seven full days starting December 5, 2022.

Site Map



*Graphic is an approximation based on the Figure 1 Preliminary Concept Plan from the TIS report dated April 17, 2023 prepared by The Traffic Group, Inc.

Relevant and On-going Projects

DelDOT has a relevant and ongoing project within the study area including the *Corridor Capacity Preservation Program* (CCPP), which aims to maintain the regional importance and preserve the intended function and capacity of existing designated transportation routes within the Program. The main objectives of the program are listed below:

- Prevent the need to build an entirely new road
- Minimize the transportation impacts of increased economic growth
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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 Levels 2, 3, and 4.

Investment Level 2

These areas can be composed of less developed areas within municipalities, rapidly growing areas in the counties that have or will have public water and wastewater services and utilities, areas that are generally adjacent to or near Investment Level 1 Areas, smaller towns and rural villages that should grow consistently with their historic character, and suburban areas with public water, wastewater, and utility services. They serve as transition areas between Level 1 and the state's more open, less populated areas. They generally contain a limited variety of housing types, predominantly detached single-family dwellings.

In Investment Level 2 Areas, like Investment Level 1 Areas, state investments and policies should support and encourage a wide range of uses and densities, promote other transportation options, foster efficient use of existing public and private investments, and enhance community identity and integrity. Investments should encourage departure from the typical single-family-dwelling developments and promote a broader mix of housing types and commercial sites encouraging compact, mixed-use development where applicable. Overall, the State's intent is to use its spending and management tools to promote well-designed development in these areas. Such development provides for a variety of housing types, user-friendly transportation systems, essential open spaces and recreational facilities, other public facilities, and services to promote a sense of community.

Level 2 Areas share similar priorities as with the Level 1 Areas where the aim remains to: make context sensitive transportation system capacity enhancements, preserve existing facilities, make safety enhancements, make transportation system capacity improvements, create transit system enhancements, ensure ADA accessibility, and close gaps in the pedestrian system, including the

Safe Routes to School projects. Investment Level 2 Areas are ideal locations for Transportation Improvement Districts and Complete Community Enterprise Districts. Other priorities for Level 2 Areas include: Corridor Capacity Preservation, off-alignment multi-use paths, interconnectivity of neighborhoods and public facilities, and signal-system enhancements.

Investment Level 3

Investment Level 3 Areas generally fall into two categories. The first category covers lands that are in the long-term growth plans of counties or municipalities where development is not necessary to accommodate expected population growth during a five-year planning period (or longer). In these instances, development in Investment Level 3 may be least appropriate for new growth and development in the near term. The second category includes lands that are adjacent to or intermingled with fast-growing areas within counties or municipalities that are otherwise categorized as Investment Levels 1 or 2. Environmentally sensitive features, agricultural-preservation issues, or other infrastructure issues most often impact these lands. In these instances, development and growth may be appropriate in the near term, but the resources on the site and in the surrounding area should be carefully considered and accommodated by state agencies and local government with land-use authority. Investment Level 3 is further characterized by areas with new development separated from existing development by a substantial amount of vacant land that is not contiguous with existing infrastructure, areas that are experiencing some development pressure, areas with existing but disconnected development, and possible lack of adequate infrastructure.

The state will consider investing in infrastructure within Investment Level 3 Areas once the Investment Level 1 and 2 Areas are substantially built out, or when the infrastructure or facilities are logical extensions of existing systems and deemed appropriate to serve a particular area. The priorities in the Level 3 Areas are for DelDOT to focus on regional movements between towns and other population centers. DelDOT also supports the development and implementation of Transportation Improvement Districts in Investment Level 3 areas. Local roadway improvements will be made by developers and property owners as development occurs. Lower priority is given to transportation system–capacity improvements and transit-system enhancements.

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. The lowest priority is given to transit system enhancements.

Proposed Development's Compatibility with Livable Delaware:

The proposed site is located within Investment Level 2, 3, and 4. In Investment Level 2, the priority is for creating and sustaining a variety of housing types. The second category of Investment Level 3 includes areas adjacent to fast-growing areas within areas categorized at Investment Levels 1 or 2. In Investment Level 4, urban and suburban development is discouraged. However, as per the concept plan, the area located in Investment Level 4 is to be dedicated as "Passive Open Space". Therefore, the proposed development is consistent with the 2020 update of the Livable Delaware "Strategies for State Policies and Spending."

Comprehensive Plan

(Source: Town of Frankford Comprehensive Plan Update 2020)

Town of Frankford Comprehensive Plan:

Per the Town of Frankford Comprehensive Plan Future Land Use and Annexation, the proposed development is in an area designated as Residential.

Proposed Development's Compatibility with the Town of Delmar Comprehensive Plan:

The Town of Frankford Comprehensive Plan states that Residential permits single-family detached and single-family attached dwellings. Therefore, the proposed development is consistent with the Town of Frankford 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 11th Edition of the ITE *Trip Generation Manual*, published by the Institute of Transportation Engineers (ITE) for ITE Land Use Code 210 (Single-Family Detached Houses) and ITE Land Use Code 215 (Single-Family Attached Houses). Trip generation was reviewed by DelDOT as part of the Preliminary TIS (PTIS) submission.

Table 1
Parsons Cress Property Trip Generation

Land Use	ADT	Weekday AM Peak Hour			Weekday PM Peak Hour			Saturday Midday Peak Hour		
		In	Out	Total	In	Out	Total	In	Out	Total
200 Units Single-Family Detached Houses (ITE – 210)	1,909	36	104	140	120	71	191	98	84	182
385 Units Single-Family Attached Houses (ITE 215)	2,883	60	135	195	129	98	227	97	106	203
Total	4,792	96	239	335	249	169	418	195	190	385

Overview of TIS

Intersections examined:

1. Site Entrance A / Pepper Road (Sussex Road 376)
2. Site Entrance B / Frankford School Road (Sussex Road 92)
3. Pepper Road / Thatcher Street (Sussex Road 54)
4. Main Street / Delaware Avenue (Town)
5. Main Street (Sussex Road 54) / Frankford Avenue (Sussex Road 401)
6. Clayton Street (Sussex Road 401) / Daisey Road (Sussex Road 54)
7. US Route 113 / Daisey Road / Blueberry Lane (Sussex Road 402)*
8. Omar Road (Sussex Road 54) / Thatcher Street / Frankford School Road
9. Thatcher Street / Omar Road (Sussex Road 54) / Honolulu Road (Sussex Road 356)
10. Omar Road / Dukes Road (Sussex Road 354)
11. Pepper Road / Gum Road (Sussex Road 392)
12. Pepper Road / Lazy Lagoon Road (Sussex Road 380)
13. US Route 113 / Lazy Lagoon Road / Parker Road (Sussex Road 380)*
14. Frankford School Road / Shockley Town Road (Sussex Road 375)
15. Frankford School Road / McCary Road (Sussex Road 385)
16. Frankford School Road / Pyle Center Road (Sussex Road 382)*

*In addition to the weekday counts, Summer Saturday counts were required for the analysis at select intersections.

Conditions examined:

1. Case 1 – 2022 existing
2. Case 2 – 2030 without development
3. Case 3 – 2030 with development

Note: The September 2, 2022 DelDOT Scoping Meeting Memorandum lists Cases 3a (Full access on Pepper Road and full access on Frankford School Road) and 3b (Full access on Pepper Road and no access on Frankford School Road). However, only one Case 3 scenario is evaluated in the TIS as full access is proposed on Frankford School Road.

Committed Developments considered:

No committed developments were considered due to their distance from the site.

Peak hours evaluated: Weekday AM and PM and Saturday Midday.

Intersection Descriptions

1. Site Entrance A / Pepper Road (Sussex Road 376)

Type of Control: Proposed two-way stop-controlled intersection.

Westbound Approach: (Site Entrance A) Proposed one shared left turn/right turn lane, stop-controlled.

Northbound Approach: (Pepper Road) Existing one through lane; proposed one through lane and one right turn lane.

Southbound Approach: (Pepper Road) Existing one through lane; proposed one left turn lane and one through lane.

2. Site Entrance B / Frankford School Road (Sussex Road 92)

Type of Control: Proposed two-way stop-controlled intersection.

Eastbound Approach: (Frankford School Road) Existing one through lane; proposed one shared left turn/through lane.

Westbound Approach: (Frankford School Road) Existing one through lane; proposed one shared through/right turn lane.

Northbound Approach: (Site Entrance B) Proposed one shared left turn/right turn lane, stop-controlled.

3. Pepper Road / Thatcher Street (Sussex Road 54)

Type of Control: Existing two-way stop-controlled intersection.

Eastbound Approach: (Pepper Road) Existing one shared through/right turn lane, stop-controlled.

Westbound Approach: (Main Street) Existing one shared left turn/through lane.

Southbound Approach: (Thatcher Street) Existing one shared left turn/right turn lane, stop controlled.

4. Main Street / Delaware Avenue (Town)

Type of Control: Existing two-way stop-controlled intersection.

Eastbound Approach: (Main Street) Existing one shared left turn/through lane.

Westbound Approach: (Main Street) Existing one shared through/right turn lane.

Northbound Approach: (Delaware Avenue) Existing one shared left turn/right turn lane, stop-controlled.

5. Main Street (Sussex Road 54) / Frankford Avenue (Sussex Road 401)

Type of Control: Existing two-way stop-controlled intersection.

Eastbound Approach: (Main Street) Existing one shared through/right turn lane.

Westbound Approach: (Main Street) Existing one shared left turn/through lane.

Northbound Approach: (Frankford Avenue) Existing one shared left turn/right turn lane, stop-controlled.

6. Clayton Street (Sussex Road 401) / Daisey Road (Sussex Road 54)

Type of Control: Existing two-way stop-controlled intersection.

Eastbound Approach: (Daisey Road) Existing one shared left turn/right turn lane, stop-controlled.

Northbound Approach: (Main Street) Existing one shared left turn/through lane.

Southbound Approach: (Clayton Street) Existing one shared through/right turn lane.

7. US Route 113 / Daisey Road / Blueberry Lane (Sussex Road 402)

Type of Control: Existing signalized intersection*.

Eastbound Approach: (Blueberry Lane) Existing one shared left turn/through/right turn lane.

Westbound Approach: (Daisey Road) Existing one shared left turn/through/right turn lane.

Northbound Approach: (US Route 113) Existing one left turn lane, two through lanes, and one right turn lane.

Southbound Approach: (US Route 113) Existing one left turn lane, two through lanes, and one right turn lane.

*Intersection is signalized as per field visit on May 5, 2023.

8. Thatcher Street / Frankford School Road

Type of Control: Existing two-way stop-controlled intersection.

Westbound Approach: (Frankford School Road) Existing one shared left turn/right turn lane, stop controlled.

Northbound Approach: (Thatcher Street) Existing one shared through/right turn lane.

Southbound Approach: (Thatcher Street) Existing one shared left turn/through lane.

9. Thatcher Street / Omar Road (Sussex Road 54) / Honolulu Road (Sussex Road 356)

Type of Control: Existing two-way stop-controlled intersection.

Eastbound Approach: (Honolulu Road) Existing one shared left turn/right turn lane, stop controlled.

Northbound Approach: (Thatcher Street) Existing one shared left turn/through lane.

Southbound Approach: (Omar Road) Existing one shared through/right turn lane.

10. Omar Road / Dukes Road (Sussex Road 354)

Type of Control: Existing two-way stop-controlled intersection.

Eastbound Approach: (Omar Road) Existing one shared left turn/through lane.

Westbound Approach: (Omar Road) Existing one shared through/right turn lane.

Southbound Approach: (Dukes Road) Existing one shared left turn/right turn lane, stop controlled.

11. Pepper Road / Gum Road (Sussex Road 392)

Type of Control: Existing two-way stop-controlled intersection.

Westbound Approach: (Gum Road) Existing one shared left turn/right turn lane, stop controlled.

Northbound Approach: (Pepper Road) Existing one shared through/right turn lane.

Southbound Approach: (Pepper Road) Existing one shared left turn/through lane.

12. Pepper Road / Lazy Lagoon Road (Sussex Road 380)

Type of Control: Existing two-way stop-controlled intersection.

Eastbound Approach: (Lazy Lagoon Road) Existing one shared left turn/right turn lane, stop controlled.

Northbound Approach: (Pepper Road) Existing one shared left turn/through lane.

Southbound Approach: (Pepper Road) Existing one shared through/right turn lane.

13. US Route 113 / Lazy Lagoon Road / Parker Road (Sussex Road 380)

Type of Control: Existing two-way stop-controlled intersection.

Eastbound Approach: (Parker Road) Existing one shared left turn/through/right turn lane, stop controlled.

Westbound Approach: (Lazy Lagoon Road) Existing one shared left turn/through/right turn lane, stop controlled.

Northbound Approach: (US Route 113) Existing one left turn lane, two through lanes, and one right turn lane.

Southbound Approach: (US Route 113) Existing one left turn lane, two through lanes, and one right turn lane.

14. Frankford School Road / Shockley Town Road (Sussex Road 375)

Type of Control: Existing two-way stop-controlled intersection.

Eastbound Approach: (Frankford School Road) Existing one shared left turn/through/right turn lane.

Westbound Approach: (Frankford School Road) Existing one shared left turn/through/right turn lane.

Northbound Approach: (Shockley Town Road) Existing one shared left turn/through/right turn lane, stop-controlled.

Southbound Approach: (Shockley Town Road) Existing one shared left turn/through/right turn lane, stop-controlled.

15. Frankford School Road / McCary Road (Sussex Road 385)

Type of Control: Existing two-way stop-controlled intersection.

Eastbound Approach: (Frankford School Road) Existing one shared through/right turn lane.

Westbound Approach: (Frankford School Road) Existing one shared left turn/ through lane.

Northbound Approach: (McCary Road) Existing one shared left turn/right turn lane, stop controlled.

16. Frankford School Road / Pyle Center Road (Sussex Road 382)

Type of Control: Existing two-way stop-controlled intersection.

Eastbound Approach: (Frankford School Road) Existing one shared left turn/right turn lane, stop controlled.

Northbound Approach: (Pyle Center Road) Existing one shared left turn/through lane.

Southbound Approach: (Pyle Center Road) Existing one shared through/right turn lane.

Transit, Pedestrian, and Bicycle Facilities

Existing transit service: Per DelDOT Gateway, no transit stops are located within the study area.

Planned transit service: Per email correspondence on May 9, 2023, with Mr. Jared Kauffman, Fixed-Route Planner for DART, the Delaware Transit Corporation does not have any transit specific comments for this project.

Existing bicycle and pedestrian facilities: According to DelDOT's Sussex County Bicycle Map, several study roadways are considered bicycle routes. Clayton Street and Pepper Road are considered statewide bicycle routes. Pyle Center Road is considered a regional bicycle route. Thatcher Street and Omar Road are considered a connector bicycle route.

Planned bicycle and pedestrian facilities: Per email correspondence dated April 28, 2023 with Mr. Peter Haag, DelDOT Chief of Traffic Engineering:

- pedestrian connectivity should be reviewed further during the entrance review process, such as a crossing to the George Washington Carver Academy on Frankford School Road.
- a marked crossing with a concrete median island along the Frankford School Road site frontage across from the George Washington Carver Academy is recommended.

Per email correspondence contained within the TIS report dated March 28, 2023 with Mr. Anthony Aglio, DelDOT's Pedestrian and Bicycle Coordinator, the installation of sidewalk is recommended.

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 *Blueprint for a Bicycle-Friendly Delaware, a Statewide Policy Plan* (<https://deldot.gov/Publications/plans/bikeandped/pdfs/DelDOTBikePlan043018FINAL.pdf>).

- Pepper Road LTS: 3
- Frankford School Road LTS: 4

Crash Evaluation

Per the crash data included in the TIS from March 15, 2020, to March 15, 2023, provided by the Delaware Department of Transportation (DelDOT), a total of 83 crashes were reported within the study area. Of the 83 crashes reported, one fatality occurred.

The US Route 113 / Daisey Road / Blueberry Lane intersection had 44 crashes reported including 22 front to rear, one front to front, 11 angle, three sideswipe same direction, one sideswipe opposite direction, one other, and five not a collision between two vehicles. A traffic signal was recently installed at the intersection which is expected to reduce the occurrence of angle collisions.

The US Route 113 / Lazy Lagoon Road / Parker Road intersection had 21 crashes reported including six front to rear, ten angle, one sideswipe, and four not a collision between two vehicles. There was one fatality reported which was classified as not a collision between two vehicles and was due to driver inattention, distraction, or fatigue with wet surface conditions and with fog, smog, or smoke weather conditions.

The remaining intersections each reported five or less incidents within the three-year study period.

Previous Comments

All comments from the PTIS have been addressed in the Final TIS.

Sight Distance Evaluation

No sight distance constraints were noted at the proposed site entrance's locations per a field visit conducted on May 5, 2023.

General HCS Analysis Comments

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

- 1) The TIS used HCS Version 2023, whereas JMT used version 7.9.6 of HCS7 to complete the analysis.
- 2) Per DelDOT's *Development Coordination Manual*, JMT and the TIS 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) JMT utilized the existing heavy vehicle percentage for each movement greater than 100 vph in the Case 1 existing scenario while the TIS utilized the existing heavy vehicle percentage for each movement.
- 4) Per DelDOT's *Development Coordination Manual*, JMT used a heavy vehicle percentage of 3% for each movement greater than 100 vph in the Case 2 and Case 3 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 TIS used different values.
- 5) 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 TIS utilizing the existing heavy vehicle percentage.

Table 2
Peak Hour Levels Of Service (LOS)
Based on Final Traffic Impact Study for Parsons Cress Property
Report Dated: April 17, 2023
Prepared by: The Traffic Group, Inc.

Unsignalized Intersection Two-Way Stop Control ¹ (T-Intersection)	LOS per TIS		LOS per JMT	
	Weekday AM	Weekday PM	Weekday AM	Weekday PM
Site Entrance A / Pepper Road (Sussex Road 376) ²				
2030 with Development (Case 3)				
Westbound Site Entrance Approach	B (13.4)	B (13.6)	B (13.5)	B (13.7)
Southbound Pepper Road Left Turn	A (7.9)	A (8.1)	A (7.9)	A (8.1)

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

² JMT and the TIS modeled the intersection with one left turn lane and one through lane along the southbound approach and one through lane and right turn lane along the northbound approach. The westbound approach was modeled with one shared left/right turn lane.

Table 3
Peak Hour Levels Of Service (LOS)
Based on Final Traffic Impact Study for Parsons Cress Property
Report Dated: April 17, 2023
Prepared by: The Traffic Group, Inc.

Unsignalized Intersection Two-Way Stop Control ¹ (T-Intersection)	LOS per TIS		LOS per JMT	
	Weekday AM	Weekday PM	Weekday AM	Weekday PM
Site Entrance B / Frankford School Road (Sussex Road 92) ³				
2030 with Development (Case 3)				
Westbound Frankford School Road Left Turn	A (7.5)	A (7.5)	A (7.6)	A (7.6)
Southbound Site Entrance Approach	B (10.4)	A (9.9)	B (10.5)	A (10.0)

³ JMT and the TIS modeled the intersection with one shared left turn/through lane for the eastbound approach. The westbound approach was modeled with one shared through/right turn lane. The northbound approach was modeled with one shared left/right turn lane.

Table 4
Peak Hour Levels Of Service (LOS)
Based on Final Traffic Impact Study for Parsons Cress Property
Report Dated: April 17, 2023
Prepared by: The Traffic Group, Inc.

Unsignalized Intersection Two-Way Stop Control¹ (T-Intersection)	LOS per TIS		LOS per JMT	
	Weekday AM	Weekday PM	Weekday AM	Weekday PM
Pepper Road / Thatcher Street (Sussex Road 54)				
2022 Existing (Case 1)				
Westbound Pepper Road Left Turn	B (14.9)	B (13.5)	B (14.3)	B (13.2)
Southbound Thatcher Street Right Turn	B (10.8)	B (10.7)	B (10.9)	B (10.7)
2030 without Development (Case 2)				
Westbound Pepper Road Left Turn	C (16.2)	B (14.5)	C (15.4)	B (14.0)
Southbound Thatcher Street Right Turn	B (11.1)	B (10.9)	B (11.1)	B (10.9)
2030 with Development (Case 3)				
Westbound Pepper Road Left Turn	C (21.0)	C (18.1)	C (19.4)	C (17.0)
Southbound Thatcher Street Right Turn	B (11.4)	B (11.5)	B (11.4)	B (11.6)

Table 5
Peak Hour Levels Of Service (LOS)
Based on Final Traffic Impact Study for Parsons Cress Property
Report Dated: April 17, 2023
Prepared by: The Traffic Group, Inc.

Unsignalized Intersection All-Way Stop Control ¹ (T-Intersection)	LOS per TIS		LOS per JMT	
	Weekday AM	Weekday PM	Weekday AM	Weekday PM
Main Street / Delaware Avenue (Town)				
2022 Existing (Case 1)				
Westbound Main Street Left Turn	A (8.1)	A (7.8)	A (8.1)	A (7.8)
Northbound Delaware Avenue Approach	B (11.2)	B (10.5)	B (10.8)	B (10.6)
2030 without Development (Case 2)				
Westbound Main Street Left Turn	A (8.1)	A (7.8)	A (8.1)	A (7.9)
Northbound Delaware Avenue Approach	B (11.5)	B (10.7)	B (11.1)	B (10.8)
2030 with Development (Case 3)				
Westbound Main Street Left Turn	A (8.2)	A (8.0)	A (8.2)	A (8.1)
Northbound Delaware Avenue Approach	B (12.0)	B (11.5)	B (11.5)	B (11.6)

Table 6
Peak Hour Levels Of Service (LOS)
Based on Final Traffic Impact Study for Parsons Cress Property
Report Dated: April 17, 2023
Prepared by: The Traffic Group, Inc.

Unsignalized Intersection Two-Way Stop Control ¹ (T-Intersection)	LOS per TIS		LOS per JMT	
	Weekday AM	Weekday PM	Weekday AM	Weekday PM
Main Street (Sussex Road 54) / Frankford Avenue (Sussex Road 401)				
2022 Existing (Case 1)				
Westbound Main Street Left Turn	A (8.0)	A (7.8)	A (8.0)	A (7.9)
Northbound Frankford Avenue Approach	B (11.5)	B (10.5)	B (11.5)	B (10.6)
2030 without Development (Case 2)				
Westbound Main Street Left Turn	A (8.1)	A (7.9)	A (8.1)	A (7.9)
Northbound Frankford Avenue Approach	B (12.0)	B (10.8)	B (11.9)	B (10.9)
2030 with Development (Case 3)				
Westbound Main Street Left Turn	A (8.2)	A (8.1)	A (8.2)	A (8.1)
Northbound Frankford Avenue Approach	B (12.6)	B (11.5)	B (12.5)	B (11.6)

Table 7
Peak Hour Levels Of Service (LOS)
Based on Final Traffic Impact Study for Parsons Cress Property
Report Dated: April 17, 2023
Prepared by: The Traffic Group, Inc.

Unsignalized Intersection Two-Way Stop Control ¹ (T-Intersection)	LOS per TIS		LOS per JMT	
	Weekday AM	Weekday PM	Weekday AM	Weekday PM
Clayton Street (Sussex Road 401) / Daisey Road (Sussex Road 54)				
2022 Existing (Case 1)				
Eastbound Daisey Road Approach	B (10.1)	A (9.9)	B (10.1)	A (9.9)
Northbound Clayton Street Left Turn	A (7.8)	A (7.8)	A (7.8)	A (7.8)
2030 without Development (Case 2)				
Eastbound Daisey Road Approach	B (10.4)	B (10.0)	B (10.4)	B (10.0)
Northbound Clayton Street Left Turn	A (7.8)	A (7.8)	A (7.8)	A (7.8)
2030 with Development (Case 3)				
Eastbound Daisey Road Approach	B (10.6)	B (10.6)	B (10.6)	B (10.6)
Northbound Clayton Street Left Turn	A (8.0)	A (7.9)	A (8.0)	A (7.9)

Table 8
Peak Hour Levels Of Service (LOS)
Based on Final Traffic Impact Study for Parsons Cress Property
Report Dated: April 17, 2023
Prepared by: The Traffic Group, Inc.

Unsignalized Intersection Two-Way Stop Control ¹	LOS per TIS		LOS per JMT	
	Weekday AM	Weekday PM	Weekday AM	Weekday PM
US Route 113 / Daisey Road / Blueberry Lane (Sussex Road 402)⁴				
2022 Existing (Case 1)				
Eastbound Blueberry Lane Approach	E (41.2)	D (34.2)	E (40.1)	D (31.7)
Westbound Daisey Road Approach	B (14.5)	C (18.3)	C (15.9)	C (23.7)
Northbound US Route 113 Left Turn	B (10.3)	A (9.9)	B (10.6)	B (10.0)
Southbound US Route 113 Left Turn	B (11.2)	B (12.1)	B (11.1)	B (12.0)
2030 without Development (Case 2)				
Eastbound Blueberry Lane Approach	F (67.0)	F (134.4)	-	-
Westbound Daisey Road Approach	C (16.3)	C (22.2)	-	-
Northbound US Route 113 Left Turn	B (10.9)	B (10.4)	-	-
Southbound US Route 113 Left Turn	B (12.2)	B (13.7)	-	-
2030 with Development (Case 3)				
Eastbound Blueberry Lane Approach	F (100.7)	-	-	-
Westbound Daisey Road Approach	C (19.2)	D (28.0)	-	-
Northbound US Route 113 Left Turn	B (10.9)	B (10.4)	-	-
Southbound US Route 113 Left Turn	B (12.5)	B (14.8)	-	-

⁴ JMT and the TIS modeled the intersection with two through lanes and one left turn and one right turn lane for the northbound and southbound approaches. The eastbound approach was modeled with one shared left turn/through/right turn lane. JMT modeled the westbound approach with one shared left turn/through/right turn lane while the TIS modeled the approach with one shared left/through lane and one right turn lane.

Table 8 (continued)
Peak Hour Levels Of Service (LOS)
Based on Final Traffic Impact Study for Parsons Cress Property
Report Dated: April 17, 2023
Prepared by: The Traffic Group, Inc.

Signalized Intersection ¹	LOS per TIS			LOS per JMT		
	Weekday AM	Weekday PM	Saturday Midday	Weekday AM	Weekday PM	Saturday Midday
US Route 113 / Daisey Road / Blueberry Lane (Sussex Road 402)⁵						
2022 Existing (Case 1) ⁶	-	-	-	E (68.4)	D (48.4)	D (45.6)
2022 Existing (Case 1) <i>with optimization</i> ⁷	-	-	C (24.4)	C (34.7)	C (34.5)	D (36.3)
2030 without Development (Case 2) <i>with optimization</i> ^{7, 8}	-	-	C (28.4)	D (38.6)	D (38.6)	D (46.4)
2030 with Development (Case 3) <i>with optimization</i> ^{7, 8}	-	-	C (32.4)	D (43.3)	D (45.3)	D (53.4)

⁵ JMT conducted analysis incorporating the current DelDOT signal installation at this intersection. The intersection was modeled with protected left turn phasing along the northbound and southbound approaches, and split phases along the eastbound and westbound approaches.

⁶ JMT modeled the intersection utilizing the split green times consistent with DelDOT MAX 1 green times.

⁷ JMT modeled the intersection with a 120 second cycle length and optimized green split times, whereas the TIS used various cycle lengths.

⁸ In future analysis, JMT incorporated the planned implementation of a lagging northbound left turn phase.

Table 9
Peak Hour Levels Of Service (LOS)
Based on Final Traffic Impact Study for Parsons Cress Property
Report Dated: April 17, 2023
Prepared by: The Traffic Group, Inc.

Unsignalized Intersection Two-Way Stop Control¹ (T-Intersection)	LOS per TIS		LOS per JMT	
	Weekday AM	Weekday PM	Weekday AM	Weekday PM
Thatcher Street / Frankford School Road				
2022 Existing (Case 1)				
Westbound Frankford School Road Approach	B (12.0)	B (10.4)	B (11.8)	B (10.3)
Southbound Thatcher Street Left Turn	A (7.8)	A (7.5)	A (7.9)	A (7.6)
2030 Without Development (Case 2)				
Westbound Frankford School Road Approach	B (12.4)	B (10.6)	B (12.3)	B (10.5)
Southbound Thatcher Street Left Turn	A (7.9)	A (7.5)	A (8.0)	A (7.6)
2030 With Development (Case 3)				
Westbound Frankford School Road Approach	B (13.1)	B (11.4)	B (13.0)	B (11.3)
Southbound Thatcher Street Left Turn	A (8.0)	A (7.7)	A (8.0)	A (7.8)

Table 10
Peak Hour Levels Of Service (LOS)
Based on Final Traffic Impact Study for Parsons Cress Property
Report Dated: April 17, 2023
Prepared by: The Traffic Group, Inc.

Unsignalized Intersection Two-Way Stop Control ¹ (T-Intersection)	LOS per TIS		LOS per JMT	
	Weekday AM	Weekday PM	Weekday AM	Weekday PM
Thatcher Street / Omar Road (Sussex Road 54) / Honolulu Road (Sussex Road 356)				
2022 Existing (Case 1)				
Eastbound Honolulu Road Approach	B (11.8)	B (10.4)	B (11.8)	B (10.5)
Northbound Thatcher Street Left Turn	A (7.9)	A (7.7)	A (7.9)	A (7.7)
2030 Without Development (Case 2)				
Eastbound Honolulu Road Approach	B (12.3)	B (10.6)	B (12.3)	B (10.7)
Northbound Thatcher Street Left Turn	A (7.9)	A (7.7)	A (8.0)	A (7.8)
2030 With Development (Case 3)				
Eastbound Honolulu Road Approach	B (13.3)	B (11.3)	B (13.4)	B (11.3)
Northbound Thatcher Street Left Turn	A (8.0)	A (7.9)	A (8.1)	A (7.9)

Table 11
Peak Hour Levels Of Service (LOS)
Based on Final Traffic Impact Study for Parsons Cress Property
Report Dated: April 17, 2023
Prepared by: The Traffic Group, Inc.

Unsignalized Intersection Two-Way Stop Control ¹ (T-Intersection)	LOS per TIS		LOS per JMT	
	Weekday AM	Weekday PM	Weekday AM	Weekday PM
Omar Road / Dukes Road (Sussex Road 354)				
2022 Existing (Case 1)				
Eastbound Omar Road Left Turn	A (7.9)	A (7.6)	A (7.7)	A (7.7)
Southbound Dukes Road Approach	A (9.5)	A (9.7)	A (9.4)	A (9.8)
2030 Without Development (Case 2)				
Eastbound Omar Road Left Turn	A (7.9)	A (7.7)	A (7.7)	A (7.7)
Southbound Dukes Road Approach	A (9.6)	A (9.9)	A (9.5)	A (9.9)
2030 With Development (Case 3)				
Eastbound Omar Road Left Turn	A (8.0)	A (7.8)	A (7.8)	A (7.9)
Southbound Dukes Road Approach	A (9.7)	B (10.3)	A (9.7)	B (10.4)

Table 12
Peak Hour Levels Of Service (LOS)
Based on Final Traffic Impact Study for Parsons Cress Property
Report Dated: April 17, 2023
Prepared by: The Traffic Group, Inc.

Unsignalized Intersection Two-Way Stop Control ¹ (T-Intersection)	LOS per TIS		LOS per JMT	
	Weekday AM	Weekday PM	Weekday AM	Weekday PM
Pepper Road / Gum Road (Sussex Road 392)				
2022 Existing (Case 1)				
Westbound Gum Road Approach	B (10.0)	B (10.1)	B (10.0)	B (10.1)
Southbound Pepper Road Left Turn	A (7.8)	A (7.7)	A (7.8)	A (7.7)
2030 Without Development (Case 2)				
Westbound Gum Road Approach	B (10.2)	B (10.4)	B (10.2)	B (10.4)
Southbound Pepper Road Left Turn	A (7.8)	A (7.7)	A (7.8)	A (7.7)
2030 With Development (Case 3)				
Westbound Gum Road Approach	B (10.7)	B (11.3)	B (10.7)	B (11.3)
Southbound Pepper Road Left Turn	A (7.9)	A (7.9)	A (7.9)	A (7.9)

Table 13
Peak Hour Levels Of Service (LOS)
Based on Final Traffic Impact Study for Parsons Cress Property
Report Dated: April 17, 2023
Prepared by: The Traffic Group, Inc.

Unsignalized Intersection Two-Way Stop Control ¹ (T-Intersection)	LOS per TIS		LOS per JMT	
	Weekday AM	Weekday PM	Weekday AM	Weekday PM
Pepper Road / Lazy Lagoon Road (Sussex Road 380)				
2022 Existing (Case 1)				
Eastbound Lazy Lagoon Road Approach	A (9.6)	A (9.4)	A (9.6)	A (9.4)
Northbound Pepper Road Left Turn	A (7.5)	A (7.4)	A (7.5)	A (7.5)
2030 Without Development (Case 2)				
Eastbound Lazy Lagoon Road Approach	A (9.8)	A (9.4)	A (9.8)	A (9.5)
Northbound Pepper Road Left Turn	A (7.5)	A (7.4)	A (7.5)	A (7.5)
2030 With Development (Case 3)				
Eastbound Lazy Lagoon Road Approach	B (10.3)	B (10.3)	B (10.3)	B (10.3)
Northbound Pepper Road Left Turn	A (7.7)	A (7.5)	A (7.6)	A (7.6)

Table 14
Peak Hour Levels Of Service (LOS)
Based on Final Traffic Impact Study for Parsons Cress Property
Report Dated: April 17, 2023
Prepared by: The Traffic Group, Inc.

Unsignalized Intersection Two-Way Stop Control ¹ (T-Intersection)	LOS per TIS			LOS per JMT		
	Weekday AM	Weekday PM	Saturday Midday	Weekday AM	Weekday PM	Saturday Midday
US Route 113 / Lazy Lagoon Road / Parker Road (Sussex Road 380)⁹						
2022 Existing (Case 1)						
Eastbound Parker Road Approach	D (25.9)	C (20.6)	E (39.6)	D (26.8)	C (20.5)	E (38.1)
Westbound Lazy Lagoon Road Approach	B (13.4)	B (14.5)	C (19.3)	B (13.4)	B (14.5)	C (19.1)
Northbound US 113 Left Turn	B (10.0)	B (9.7)	B (14.6)	B (10.2)	A (9.8)	B (12.3)
Southbound US 113 Left Turn	A (8.9)	A (9.9)	B (10.7)	A (9.0)	A (9.8)	B (10.7)
2030 Without Development (Case 2)						
Eastbound Parker Road Approach	D (31.8)	C (24.2)	F (54.4)	D (33.0)	C (24.1)	F (51.9)
Westbound Lazy Lagoon Road Approach	C (15.0)	C (16.6)	C (23.1)	C (15.1)	C (16.7)	C (22.9)
Northbound US 113 Left Turn	B (10.6)	B (10.1)	C (16.5)	B (10.7)	B (10.3)	B (13.5)
Southbound US 113 Left Turn	A (9.2)	B (10.4)	B (11.4)	A (9.3)	B (10.4)	B (11.4)
2030 With Development (Case 3)						
Eastbound Parker Road Approach	D (33.4)	D (28.8)	F (65.0)	D (34.5)	D (28.0)	F (61.2)
Westbound Lazy Lagoon Road Approach	C (23.6)	C (24.8)	E (48.5)	C (24.0)	C (25.0)	E (48.1)
Northbound US 113 Left Turn	B (10.6)	B (10.1)	C (16.5)	B (10.7)	B (10.3)	B (13.5)
Southbound US 113 Left Turn	A (9.2)	B (10.6)	B (11.4)	A (9.3)	B (10.4)	B (11.4)

⁹ Both the TIS and JMT modeled the eastbound and westbound approaches as a shared left turn/through/right turn lane with a flared approach.

Table 14 (continued)
Peak Hour Levels Of Service (LOS)
Based on Final Traffic Impact Study for Parsons Cress Property
Report Dated: April 17, 2023
Prepared by: The Traffic Group, Inc.

Unsignalized Intersection Two-Way Stop Control ¹ (T-Intersection)	LOS per TIS			LOS per JMT		
	Weekday AM	Weekday PM	Saturday Midday	Weekday AM	Weekday PM	Saturday Midday
US Route 113 / Lazy Lagoon Road / Parker Road (Sussex Road 380)						
2030 Without Development (Case 2) with restricted movements ¹⁰						
Eastbound Parker Road Approach	-	-	-	B (13.1)	B (12.6)	C (16.5)
Westbound Lazy Lagoon Road Approach	-	-	-	B (11.3)	B (12.8)	B (14.0)
Northbound US 113 Left Turn	-	-	-	B (10.6)	B (10.4)	B (13.6)
Southbound US 113 Left Turn	-	-	-	A (9.3)	B (10.5)	B (11.5)
2030 With Development (Case 3) with restricted movements ¹⁰						
Eastbound Parker Road Approach	-	-	-	B (13.4)	B (12.9)	C (17.1)
Westbound Lazy Lagoon Road Approach	-	-	-	B (11.8)	B (13.3)	B (14.8)
Northbound US 113 Left Turn	-	-	-	B (10.7)	B (10.5)	B (13.8)
Southbound US 113 Left Turn	-	-	-	A (9.3)	B (10.5)	B (11.5)

¹⁰ JMT modeled the intersection restricting the left turn and through movements for both the eastbound and westbound approaches.

Table 15
Peak Hour Levels Of Service (LOS)
Based on Final Traffic Impact Study for Parsons Cress Property
Report Dated: April 17, 2023
Prepared by: The Traffic Group, Inc.

Unsignalized Intersection Two-Way Stop Control ¹ (T-Intersection)	LOS per TIS		LOS per JMT	
	Weekday AM	Weekday PM	Weekday AM	Weekday PM
Frankford School Road / Shockley Town Road (Sussex Road 375)				
2022 Existing (Case 1)				
Eastbound Frankford School Road Left Turn	A (7.3)	A (7.2)	A (7.3)	A (7.3)
Westbound Frankford School Road Left Turn	A (7.3)	A (7.2)	A (7.3)	A (7.3)
Northbound Shockley Town Approach	A (9.6)	A (9.3)	A (9.6)	A (9.3)
Southbound Shockley Town Approach	A (9.5)	A (9.4)	A (9.5)	A (9.4)
2030 Without Development (Case 2) ¹¹				
Eastbound Frankford School Road Left Turn	A (7.3)	A (7.2)	A (7.3)	A (7.3)
Westbound Frankford School Road Left Turn	A (7.3)	A (7.3)	A (7.3)	A (7.3)
Northbound Shockley Town Approach	A (9.7)	A (9.3)	A (9.5)	A (9.3)
Southbound Shockley Town Approach	A (9.6)	A (9.4)	A (9.5)	A (9.5)
2030 With Development (Case 3) ¹¹				
Eastbound Frankford School Road Left Turn	A (7.3)	A (7.3)	A (7.4)	A (7.4)
Westbound Frankford School Road Left Turn	A (7.4)	A (7.3)	A (7.4)	A (7.4)
Northbound Shockley Town Approach	B (10.2)	A (9.8)	B (9.9)	B (9.8)
Southbound Shockley Town Approach	A (10.0)	A (9.9)	A (9.8)	A (10.0)

¹¹ The TIS utilized a PHF of 0.71 for the AM peak hour, whereas JMT utilized a PHF of 0.80.

Table 16
Peak Hour Levels Of Service (LOS)
Based on Final Traffic Impact Study for Parsons Cress Property
Report Dated: April 17, 2023
Prepared by: The Traffic Group, Inc.

Unsignalized Intersection Two-Way Stop Control ¹ (T-Intersection)	LOS per TIS		LOS per JMT	
	Weekday AM	Weekday PM	Weekday AM	Weekday PM
Frankford School Road / McCary Road (Sussex Road 385)				
2022 Existing (Case 1)				
Westbound Frankford School Road Left Turn	A (7.3)	A (7.2)	A (7.4)	A (7.3)
Northbound McCary Road Approach	A (9.3)	A (8.7)	A (9.1)	A (8.7)
2030 Without Development (Case 2) ¹²				
Westbound Frankford School Road Left Turn	A (7.3)	A (7.2)	A (7.3)	A (7.3)
Northbound McCary Road Approach	A (9.4)	A (8.7)	A (8.9)	A (8.7)
2030 With Development (Case 3) ¹²				
Westbound Frankford School Road Left Turn	A (7.5)	A (7.3)	A (7.4)	A (7.3)
Northbound McCary Road Approach	A (9.9)	A (9.1)	A (9.3)	A (9.1)

¹² The TIS utilized a PHF of 0.54 for the AM peak hour, whereas JMT utilized a PHF of 0.80.

Table 17
Peak Hour Levels Of Service (LOS)
Based on Final Traffic Impact Study for Parsons Cress Property
Report Dated: April 17, 2023
Prepared by: The Traffic Group, Inc.

Unsignalized Intersection Two-Way Stop Control ¹ (T-Intersection)	LOS per TIS			LOS per JMT		
	Weekday AM	Weekday PM	Saturday Midday	Weekday AM	Weekday PM	Saturday Midday
Frankford School Road / Pyle Center Road (Sussex Road 382)						
2022 Existing (Case 1)						
Eastbound Frankford School Road Approach	A (9.8)	A (9.8)	B (11.0)	A (9.8)	A (9.9)	B (11.1)
Northbound Pyle Center Road Left Turn	A (7.7)	A (7.6)	A (7.8)	A (7.8)	A (7.7)	A (7.9)
2030 Without Development (Case 2)						
Eastbound Frankford School Road Approach	A (9.9)	A (9.9)	B (11.3)	A (9.9)	A (10.0)	B (11.4)
Northbound Pyle Center Road Left Turn	A (7.8)	A (7.6)	A (7.9)	A (7.8)	A (7.7)	A (7.9)
2030 With Development (Case 3)						
Eastbound Frankford School Road Approach	B (10.1)	A (9.7)	B (10.8)	B (10.2)	A (9.8)	B (10.9)
Northbound Pyle Center Road Left Turn	A (7.8)	A (7.7)	A (7.9)	A (7.9)	A (7.8)	A (8.0)