



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

JENNIFER COHAN
SECRETARY

August 26, 2020

Mr. Scott Lobdell
Van Cleef Engineering Associates, Inc.
630 Churchmans Road
Suite 105
Newark, DE 19702

Dear Mr. Lobdell:

The enclosed Traffic Impact Study (TIS) review letter for the **Brookside Farms** (Protocol Tax Parcel 3-00-056.00-01-02.00-000) 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 prepared the TIS in a manner that conforms 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
Project Engineer

TEB:km

Enclosures

cc with enclosures: Mr. Brent Fannin, Key Properties Group
Ms. Constance C. Holland, Office of State Planning Coordination
Ms. Sarah E. Keifer, Kent County Department of Planning Services
Mr. Mir Wahed, Johnson, Mirmiran & Thompson, Inc.
Ms. Joanne Arellano, Johnson, Mirmiran & Thompson, Inc.
Mr. John Pietrobono, Johnson, Mirmiran & Thompson, Inc.
DelDOT Distribution

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

Matthew Lichtenstein, Central District Engineer, Central District

Richard McCabe, Central District Public Works Engineer, Central District

David Dooley, Service Development Planner, Delaware Transit Corporation

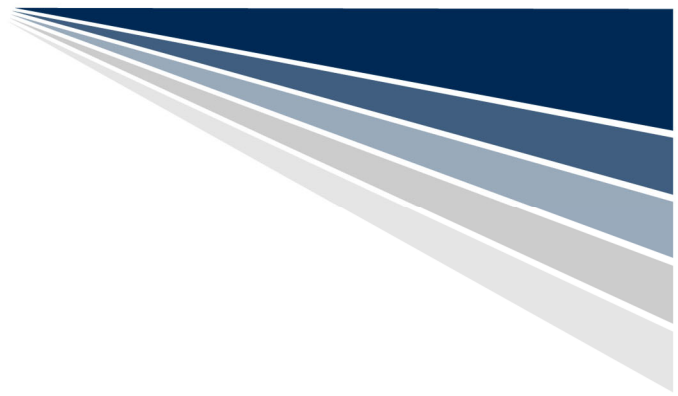
Anthony Aglio, Planning Supervisor, Statewide & Regional Planning

Joshua Schwartz, Subdivision Manager, Development Coordination

Jeff Steward, Kent Plan Reviewer, Central District

Mark Galipo, Traffic Engineer, Traffic, DOTS

Claudy Joinville, Project Engineer, Development Coordination



August 26, 2020

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 7-Brookside Farms

Dear Mr. Brestel:

Johnson, Mirmiran and Thompson (JMT) has completed a Traffic Impact Study (TIS) for Brookside Farms. This task was assigned Task Number 7. The report is prepared in a manner generally consistent with DelDOT's *Development Coordination Manual*.

The TIS evaluates the impacts of a proposed residential development in Kent County, Delaware. The development would be comprised of 119 single-family detached houses. The site is located on the southeast side of Pearsons Corner Road (Kent Road 101) approximately 1,400 feet northeast of the intersection of Pearsons Corner Road and Rose Dale Lane (Kent Road 167). One full access point is proposed along Pearsons Corner Road (Kent Road 101) at the location of the existing entrance to the parcel (for the purposes of this analysis Pearsons Corner Road is considered an east/west roadway at its intersections from Central Church Road to Kenton Road). The subject property is on an approximately 52.77-acre parcel (Tax Parcel: 3-00-056.00-01-02.00-000) that is currently zoned as RS1 (Single-Family Residential), and the developer does not plan to rezone the land.

DelDOT currently has a pavement rehabilitation project along McKee Road (Kent Road 156) within the study area. The pavement rehabilitation project of McKee Road (DelDOT Contract No. T202006202) will involve a mill and overlay of McKee Road from Scarborough Road to Main Street (Kent Road 45). Design is underway and construction is anticipated to start Summer of 2021.

DelDOT also completed a 2019 Pearsons Corner Road study which involved a speed evaluation along Pearsons Corner Road from Kenton Road (Kent Road 104) to Delaware Route 8 (Kent Road 51) as well as an evaluation of the Pearsons Corner Road intersections with Dinah Corners Road (Kent Road 165) and W. Denneys Road (Kent Road 100)/Lockwood Chapel Road (Kent Road 171). Per the study, the areas along Pearsons Corner Road with a posted speed limit of 50 miles per hour will be reduced to 45 miles per hour. Figure 1 on Page 6 shows the limits of the proposed speed reductions. Signing and striping improvements were recommended at the Pearsons Corner Road intersections with Dinahs Corner Road and W. Denneys Road/Lockwood Chapel Road.



These improvements include relocating or replacing warning signs per DEMUTCD standards and installing “STOP AHEAD” and “STOP” pavement markings.

In addition, DelDOT is coordinating with the Town of Cheswold and Kent County regarding the creation of a Transportation Improvement District (TID). DelDOT is in the process of obtaining traffic count information and reviewing existing conditions with the Town and County. The TID boundary has not been finalized but a TID Agreement is expected to be established Summer of 2020.

Section 5.3.k.2 of the Kent County Adequate Public Facilities Ordinance (APFO) states: "The specific traffic mitigation measures shall be chosen based on their ability to reduce the impact of traffic generated by the proposed subdivision or land development, in order to achieve and maintain the Level of Service standards for a minimum of two (2) years for roadway segments and intersections within the area of influence." Based on an April 14, 2008, meeting between DelDOT and Kent County Planning regarding the interpretation of the APFO, JMT has been instructed to perform the future two-year Level of Service maintenance analysis, for a date two years from when construction of the development is anticipated to be complete. The two-year Level of Service maintenance analysis results (referred to as Case 4) are contained in this final TIS letter.

Based on the traffic impact study, 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.

<i>Intersection</i>	<i>Situations for which LOS deficiencies occur</i>
Kenton Road (Kent Road 104)/Central Church Road (Kent Road 155)	2024 Weekday PM without Development (Case 2) 2024 Weekday PM with Development (Case 3) 2026 Weekday PM with Development (Case 4)

The unsignalized intersection of Kenton Road (Kent Road 104)/Central Church Road (Kent Road 155) would exhibit LOS deficiencies under 2024 without development (Case 2) as well as 2024 and 2026 with development (Cases 3 and 4) during the PM peak period. The deficiencies would occur along the westbound Central Church Road approach with LOS F (61.5 seconds of delay per vehicle) and a calculated 95th percentile queue length of approximately 160 feet.

The deficiencies at the Kenton Road/Central Church Road intersection can be mitigated through the provision of a left turn lane along eastbound and westbound Central Church Road. However, based on the TIS review letter for Palomar North and South dated December 2, 2010, a single lane roundabout was recommended to be installed to address LOS deficiencies and a roundabout would operate with acceptable LOS with years 2024 and 2026 peak hour traffic. Therefore, it is recommended that the developer be responsible to fund an equitable portion to the improvement to modify the intersection to be a single lane roundabout. Three other developers (Villages of Noble’s Pond, Cherrington, and Palomar North and South) are expected to enter into an agreement to install a roundabout at this intersection as well.



Should Kent 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 reconstruct Pearsons Corner Road to provide two 11-foot travel lanes and two six-foot shoulders from the easternmost limits of the site frontage to before the bridge limits as well as after the bridge limits to Rose Dale Lane. A mill and overlay should be provided along the bridge. 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 maintain the existing full access site entrance for the proposed Brookside Farms development on Pearsons Corner Road to be consistent with the lane configurations as shown in the table below:

Approach	Current Configuration	Proposed Configuration
Eastbound Pearsons Corner Road	One shared left turn/through/right turn lane.	No change
Westbound Pearsons Corner Road	One shared left turn/through/right turn lane.	One left turn lane and one shared through/right turn lane
Northbound Site Entrance	One shared left turn/through/right turn lane.	No change
Southbound Private Driveway	One shared left turn/through/right turn lane.	No change

Based on DelDOT’s *Development Coordination Manual*, the recommended minimum storage length is 185 feet (excluding taper) for the westbound Pearsons Corner Road left turn lane. The calculated queue lengths from the HCS analysis can be accommodated within the recommended storage length.

3. The developer should enter into an agreement with DelDOT to fund an equitable portion of the improvements required to install a single lane roundabout at the intersection of Kenton Road with Central Church Road. The Villages of Noble’s Pond, Cherrington, and Palomar North and South developments are expected to enter into an agreement to install a roundabout at this intersection as well.

Should a roundabout be determined to be infeasible for this location, installation of a traffic signal may be an option. In such case, a Traffic Signal Justification Study would need to be completed to determine if a signal is warranted. The developer should coordinate with DelDOT’s Development Coordination Section to determine the implementation and equitable cost sharing of these improvements.



4. The following bicycle, pedestrian, and transit improvements should be included:
 - a. A minimum fifteen-foot wide permanent easement from the edge of the existing right-of-way should be dedicated to DelDOT along the Pearsons Corner Road site frontage. Within this easement, the developer should construct a ten-foot wide shared-use path along each side of Pearsons Corner Road that meets current AASHTO and ADA standards. A minimum five-foot setback should be maintained from the edge of pavement to the shared-use paths. If feasible, shared-use paths should be placed behind utility poles. The developer should coordinate with DelDOT's Development Coordination section during the plan review process to identify the exact location of the shared-use paths.
 - b. Sidewalks should be provided on both sides of all internal roads.
 - c. ADA compliant curb ramps and a marked crosswalk should be provided along the Site Entrance approach to Pearsons Corner Road. The use of diagonal curb ramps is discouraged.
 - d. Minimum five-foot wide bicycle lanes should be incorporated in the shoulder along the Pearsons Corner Road approaches to the Site Entrance
 - e. Utility covers should be moved outside of any designated bicycle lanes and any proposed sidewalks or should be flush with the pavement.
1. Due to the proximity of the proposed development to the Delaware Airpark, we recommend that deed restrictions be required similar to the attached Avigation Nuisance Easement and Non-Suit Covenant (pages 41 and 42). The applicant should contact Mr. Joshua Thomas at (302) 760-4834 at DelDOT's Statewide and Regional Planning Section to determine whether the proposed development is within the Runway Protection Zone. If so, restrictions may apply.

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 review 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. For any additional information regarding the work zone impact and mitigation procedures during construction please



contact Mr. Don Weber, Assistant Director for Traffic Operations and Management. Mr. Weber can be reached at (302) 659-4651 or by email at Don.Weber@delaware.gov.

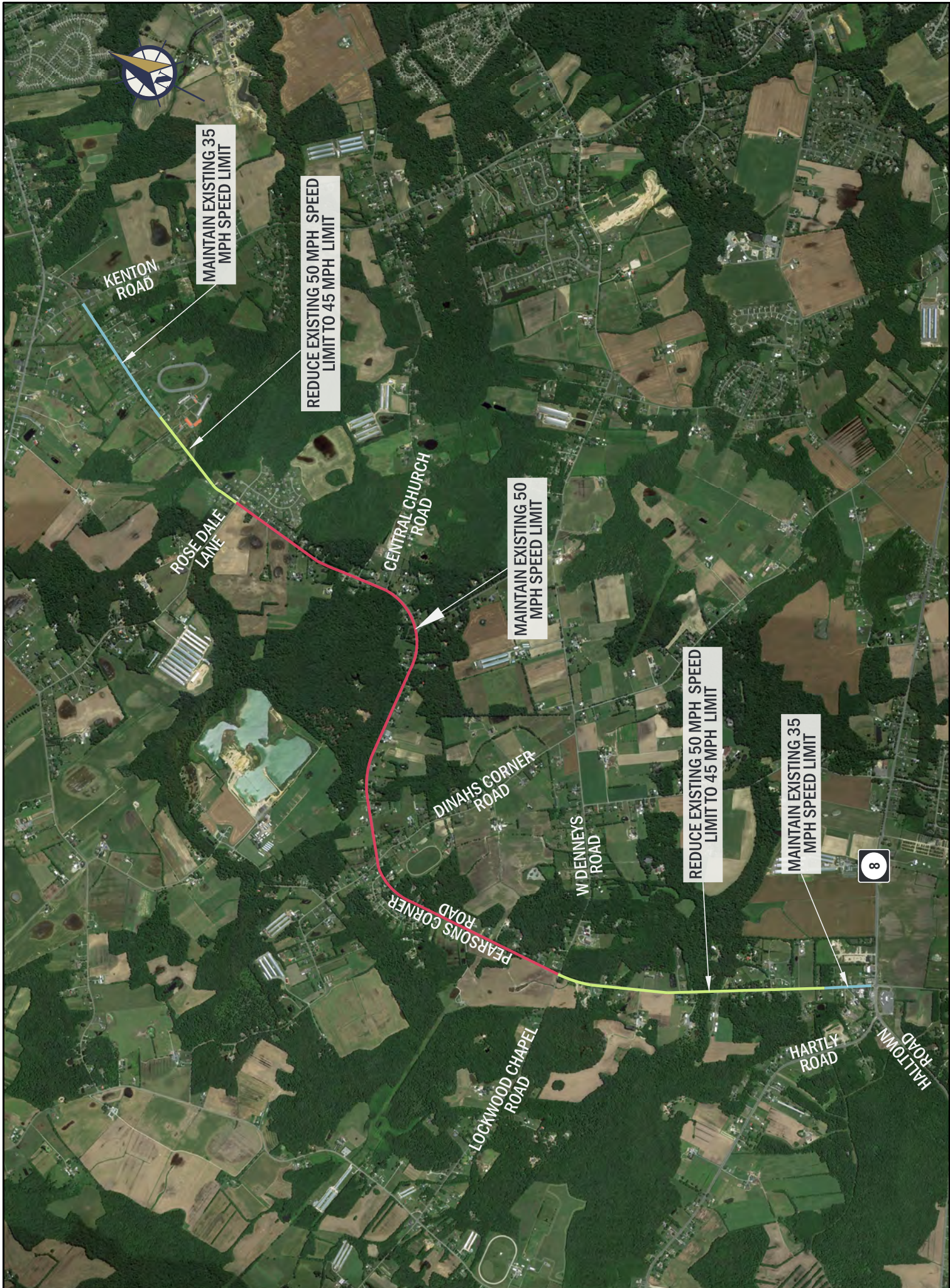
Additional details on the TIS are attached. Please contact me at (302) 266-9600 if you have any questions concerning this review.

Sincerely,
Johnson, Mirmiran, and Thompson, Inc.

A handwritten signature in black ink, appearing to read 'Joanne M. Arellano'. The signature is fluid and cursive.

Joanne M. Arellano, P.E., PTOE

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



General Information

Report date: August 2020

Prepared by: JMT

Prepared for: Sugar Loaf Farms, Inc

Tax Parcel: 3-00-056.00-01-02.00-000

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

Project Description and Background

Description: The developer seeks to develop 119 single-family detached houses.

Location: The subject property is located on the southeast side of Pearsons Corner Road (Kent Road 101) approximately 1,400 feet northeast of the intersection of Pearsons Corner Road and Rose Dale Lane (Kent Road 167) in Kent County, Delaware.

Amount of Land to be developed: The subject property is on an approximately 52.77-acre parcel.

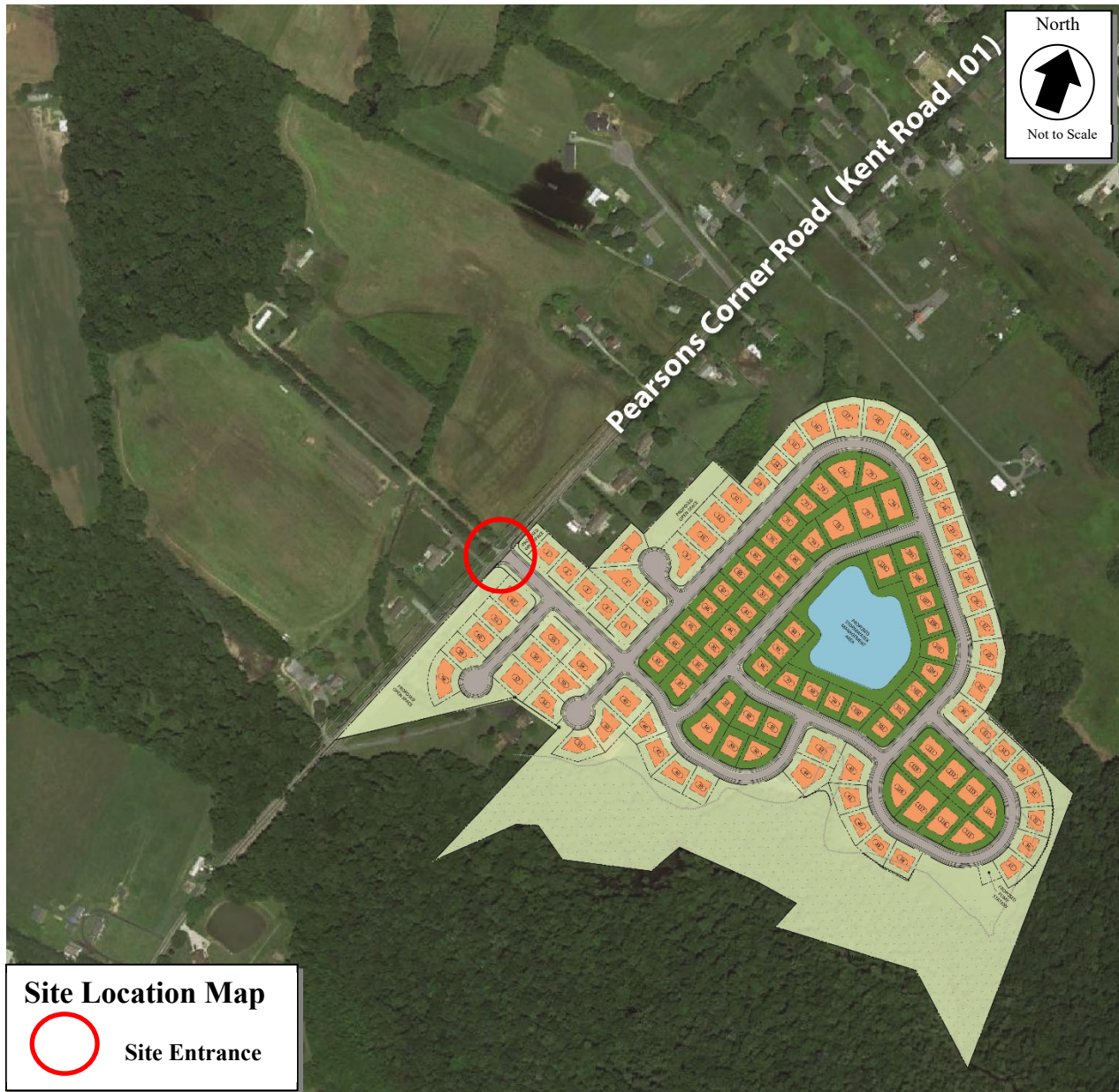
Land Use approval(s) needed: Entrance Plan approval.

Proposed completion date: Construction is anticipated to be complete in 2024.

Proposed access locations: One access point is proposed along Pearsons Corner Road (Kent Road 101) at the location of the existing entrance to the parcel.

- 2019 Average Annual Daily Traffic on Pearsons Corner Road (Kent Road 101): 1,425 vehicles per day.

Site Map



**Graphic is an approximation based on the Concept Plan prepared by Van Cleef Engineering Associates, dated December 10, 2018.*

Relevant and On-going Projects

DelDOT currently has a pavement rehabilitation project along McKee Road (Kent Road 156) within the study area. The pavement rehabilitation project of McKee Road (DelDOT Contract No. T202006202) will involve a mill and overlay of McKee Road from Scarborough Road to Main Street (Kent Road 45). Design is underway and construction is anticipated to start Summer of 2021.

DelDOT also completed a 2019 Pearsons Corner Road study which involved a speed evaluation along Pearsons Corner Road from Kenton Road (Kent Road 104) to Delaware Route 8 (Kent Road 51) as well as an evaluation of the Pearsons Corner Road intersections with Dinah Corners Road (Kent Road 165) and W. Denneys Road (Kent Road 100)/Lockwood Chapel Road (Kent Road 171). Per the study, the areas along Pearsons Corner Road with a posted speed limit of 50 miles per hour will be reduced to 45 miles per hour. Figure 1 on Page 6 shows the limits of the proposed speed reductions. Signing and striping improvements were recommended at the Pearsons Corner Road intersections with Dinahs Corner Road and W. Denneys Road/Lockwood Chapel Road. These improvements include relocating or replacing warning signs per DEMUTCD standards and installing “STOP AHEAD” and “STOP” pavement markings.

In addition, DelDOT is coordinating with the Town of Cheswold and Kent County regarding the creation of a Transportation Improvement District (TID). DelDOT is in the process of obtaining traffic count information and reviewing existing conditions with the Town and County. The TID boundary has not been finalized but a TID Agreement is expected to be established Summer of 2020.

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:

The proposed development is located within the Investment Level 2 and 3 areas.

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. 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. 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). 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. 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. 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.

Proposed Development’s Compatibility with Livable Delaware:

The proposed development is located in the Investment Level 2 and 3 areas. According to Livable Delaware, Level 2 areas should promote a broader mix of housing types, such as single-family detached houses and townhouses. Level 3 areas may be desirable for a variety of housing types. Therefore, the proposed development is generally consistent with the 2015 update of the Livable Delaware “Strategies for State Policies and Spending.”

Comprehensive Plans

(Source: Kent County 2018 Comprehensive Plan)

Kent County Comprehensive Plan:

Per the 2018 Kent County Comprehensive Plan, the future land use map indicates the site property to be residential.

Proposed Development’s Compatibility with the New Castle County Comprehensive Plan:

The proposed development will consist of a residential use. As such, the proposed use appears to be generally compatible with the *Kent 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, 10th Edition: An ITE Informational Report*, published by the Institute of Transportation Engineers (ITE) for ITE Land Use Code 210 (Single-family detached house).

The peak period trip generation utilized in the TIS for the proposed development is included in Table 1.

Table 1
Brookside Farms Trip Generation

Land Use	ADT	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
119 Unit Single-Family Detached Houses (ITE Code 210)	1,220	22	67	89	76	44	120

Intersections examined:

1. Site Entrance/Pearsons Corner Road (Kent Road 101)
2. Pearsons Corner Road /Kenton Road (Kent Road 104)
3. Pearsons Corner Road /Seven Hickories Road (Kent Road 45)
4. Main Street (Kent Road 45)/Commerce Street (Kent Road 156)
5. Kenton Road /Seven Hickories Road
6. Kenton Road /Central Church Road (Kent Road 155)
7. Central Church Road /McKee Road (Kent Road 156)
8. Kenton Road /W. Denneys Road (Kent Road 100)
9. Pearsons Corner Road /Rose Dale Lane (Kent Road 167)
10. Pearsons Corner Road /Central Church Road

Conditions examined:

1. Case 1 – Existing (2019)
2. Case 2 – 2024 without development
3. Case 3 – 2024 with development
4. Case 4 – 2026 with development (Kent County APFO Compliance)

Peak hours evaluated: Weekday morning and weekday evening

Committed Developments considered:

1. Dover Meadows (163 single-family detached houses, of which 117 units are built)
2. Villages of Nobles Pond (359 single-family houses, of which 199 units are unbuilt and 512 duplexes, of which 472 units are unbuilt)
3. Whitetail Run (155 single-family detached houses, of which 20 units are unbuilt)
4. Forty-Nine Pines I & II (116 single-family detached houses are unbuilt)
5. Stone Brook East & West (f.k.a Bush Property) (*City of Dover*) 89 single-family detached houses and 365 multifamily houses are unbuilt

Note: The committed development information was verified with Kent County and the City of Dover and supersedes the information contained within the April 5, 2019 DelDOT Scoping Meeting Memorandum.

Intersection Descriptions

1. **Site Entrance/Pearsons Corner Road (Kent Road 101)**
Type of Control: Existing two-way stop controlled intersection (four-leg intersection)
Eastbound Approach: (Pearsons Corner Road) Existing one shared left turn/through/right turn lane
Westbound Approach: (Pearsons Corner Road) Existing one shared left turn/through/right turn lane; Proposed one left turn and one shared through/right turn lane
Northbound Approach: (Site Entrance) Existing one shared left turn/through/right turn lane, stop controlled
Southbound Approach: (Private Driveway) Existing one shared left turn/through/right turn lane, stop controlled

2. **Pearsons Corner Road /Kenton Road (Kent Road 104)**
Type of Control: Existing all-way stop controlled intersection (four-leg intersection)
Eastbound Approach: (Pearsons Corner Road) Existing one shared left turn/through/right turn lane.
Westbound Approach: (Pearsons Corner Road) Existing one shared left turn/through/right turn lane.
Northbound Approach: (Kenton Road) Existing one shared left turn/through/right turn lane
Southbound Approach: (Kenton Road) Existing one shared left turn/through/right turn lane

3. **Pearsons Corner Road /Seven Hickories Road (Kent Road 45)**
Type of Control: Existing two-way stop controlled intersection (T-intersection)
Eastbound Approach: (Seven Hickories Road) Existing one shared through/right turn lane
Westbound Approach: (Seven Hickories Road) Existing one shared left turn/through lane
Northbound Approach: (Pearsons Corner Road) Existing one shared left turn/right turn lane, stop controlled

4. **Main Street (Kent Road 45)/Commerce Street (Kent Road 156)**
Type of Control: Existing two-way stop-controlled intersection (four-leg intersection)
Eastbound Approach: (Main Street) Existing one shared left turn/through/right turn lane

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

Northbound Approach: (Commerce Street) Existing one shared left turn/through/right turn lane, stop controlled

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

5. **Kenton Road/Seven Hickories Road**

Type of Control: Existing two-way stop controlled intersection (T-intersection)

Eastbound Approach: (Seven Hickories Road) Existing one through lane and one channelized right turn lane

Westbound Approach: (Seven Hickories Road) Existing one shared left turn/through lane

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

Note: A large median separates the eastbound Seven Hickories Road right turn lane from the intersection and a separate stop sign exists for the second stage of westbound Seven Hickories Road left turns.

6. **Kenton Road/Central Church Road (Kent Road 155)**

Type of Control: Existing two-way stop controlled intersection (four-leg intersection)

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

Westbound Approach: (Central Church Road) Existing one shared left turn/through/right turn lane, stop controlled

Northbound Approach: (Kenton Road) Existing one shared left turn/through/right turn lane

Southbound Approach: (Kenton Road) Existing one shared left turn/through/right turn lane

7. **Central Church Road /McKee Road (Kent Road 156)**

Type of Control: Existing two-way stop controlled intersection (T-intersection)

Eastbound Approach: (Central Church Road) Existing one shared through/right turn lane, stop controlled

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

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

8. **Kenton Road/W. Denneys Road (Kent Road 100)**

Type of Control: Existing signalized intersection (four-leg intersection)

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

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

Northbound Approach: (Kenton Road) Existing one shared left turn/through/right turn lane

Southbound Approach: (Kenton Road) Existing one shared left turn/through/right turn lane

9. **Pearsons Corner Road/Rose Dale Lane (Kent Road 167)/N. Cheswold Farms Boulevard**

Type of Control: Existing two-way stop controlled intersection (four-leg intersection)

Eastbound Approach: (Pearsons Corner Road) Existing one shared left turn/through lane and one right turn lane

Westbound Approach: (Pearsons Corner Road) Existing one shared left turn/through/right turn lane

Northbound Approach: (N. Cheswold Farms Blvd) Existing one shared left turn/through/right turn lane, stop controlled

Southbound Approach: (Rose Dale Lane) Existing one shared left turn/through/right turn lane, stop controlled

10. **Pearsons Corner Road/Central Church Road (Kent Road 155)**

Type of Control: Existing two-way stop controlled intersection (T-intersection)

Eastbound Approach: (Pearsons Corner Road) Existing one shared through/right turn lane

Westbound Approach: (Pearsons Corner Road) Existing one shared left turn/through lane

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

Transit, Pedestrian, and Bicycle Facilities

Existing transit service: Delaware Transit Corporation (DTC) currently does not provide any service in the study area.

Planned transit service: JMT contacted Ms. Tremica Cherry, Planner at the DTC on July 2, 2019 and have not received a response.

Existing bicycle and pedestrian facilities: According to DelDOT's *Kent County Bicycle Map*, Statewide Bicycle (Bicycle Route 1) and Connector Bicycle Routes exist within the study area. The Statewide Bicycle route exists along McKee Road and traverses through two of the study intersections (the McKee Road intersections with Central Church Road and Main Street). The connector bicycle routes exist along Central Church Road, Main Street/Seven Hickories Road and

W. Denneys Road and traverse through seven of the study intersections (the Central Church Road intersections with McKee Road, Kenton Road and Pearsons Corner Road, the Main Street/Seven Hickories Road intersections with Commerce Street, Pearsons Corner Road and Kenton Road, and the W. Denneys Road intersection with Kenton Road). There are no pedestrian facilities within the study area.

Planned bicycle and pedestrian facilities: Per email correspondence on July 12, 2019 from Ms. Maria Andaya, DelDOT's Pedestrian Coordinator, the following improvements were recommended:

- A 10-foot wide shared use path should be provided along the Pearsons Corner Road site frontage.
- All entrance, roadway and/or intersection improvements required shall incorporate bicycle and pedestrian facilities.
- If a right turn lane is warranted, a bike lane shall be incorporated along the right turn lane; if a left turn lane is required, any roadway improvement shall include a shoulder matching the roadway classification or existing conditions.

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 new bicycle Level of Traffic Stress (LTS) model will be applied to bicycle system planning and evaluation throughout the state. The Bicycle LTS for the roadway under existing conditions along the site frontage are summarized below. The Bicycle LTS was determined utilizing the map on the DelDOT Gateway.

- Pearsons Corner Road (Kent Road 101) – LTS: 3

Previous Comments

None

General Analysis Comments

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

1. For the analysis, HCS7 software (Version 7.8) was used.
2. For the purposes of this analysis Pearsons Corner Road is considered an east/west roadway at its intersections from Central Church Road to Kenton Road.
3. Per DelDOT's *Development Coordination Manual*, JMT used a heavy vehicle percentage of 3% for each movement in the Cases 2, 3 and 4 future scenario analyses, 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.
4. Per DelDOT's *Development Coordination Manual*, JMT utilized the existing PHF for Case 1 and a future PHF for Cases 2, 3, and 4 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.

Table 2
Peak Hour Levels Of Service (LOS)
Based on Traffic Impact Study for Brookside Farms
Report Dated: August 2019
Prepared by JMT

Unsignalized Intersection Two-Way Stop Control (T-Intersection) ¹	LOS per HCS	
	Weekday AM	Weekday PM
Site Entrance/Pearsons Corner Road (Kent Road 101) ²		
2024 with Development (Case 3) ³		
Eastbound Pearsons Corner Road Left Turn	A (7.3)	A (7.5)
Westbound Pearsons Corner Road Left Turn	A (7.5)	A (7.6)
Northbound Site Entrance Approach	A (9.3)	A (9.3)
Southbound Private Driveway Approach	B (10.4)	B (12.4)
2026 with Development (Case 4) ³		
Eastbound Pearsons Corner Road Left Turn	A (7.3)	A (7.5)
Westbound Pearsons Corner Road Left Turn	A (7.5)	A (7.6)
Northbound Site Entrance Approach	A (9.3)	A (9.4)
Southbound Private Driveway Approach	B (10.4)	B (12.4)

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

² The site entrance exists under Case 1 and Case 2 conditions. However, as zero volumes access the site entrance, analyses were not performed for Cases 1 and 2.

³ Although zero volumes are projected to exit the Private Driveway during the PM peak hour, a volume of one was applied to the analysis to obtain a delay result.

Table 3
Peak Hour Levels Of Service (LOS)
Based on Traffic Impact Study for Brookside Farms
Report Dated: August 2019
Prepared by JMT

Unsignalized Intersection All-Way Stop Control ¹	LOS per HCS	
	Weekday AM	Weekday PM
Pearsons Corner Road (Kent Road 101)/Kenton Road (Kent Road 104)		
2019 Existing (Case 1)		
Eastbound Pearsons Corner Road Approach	A (8.7)	A (9.1)
Westbound Pearsons Corner Road Approach	A (8.9)	A (9.2)
Northbound Kenton Road Approach	A (8.4)	B (11.8)
Southbound Kenton Road Approach	B (10.6)	A (9.8)
Overall Intersection	A (9.7)	B (10.7)
2024 without Development (Case 2)		
Eastbound Pearsons Corner Road Approach	A (9.4)	B (10.2)
Westbound Pearsons Corner Road Approach	A (9.4)	B (10.9)
Northbound Kenton Road Approach	A (9.2)	C (17.1)
Southbound Kenton Road Approach	B (11.5)	B (11.6)
Overall Intersection	B (10.4)	B (14.1)
2024 with Development (Case 3)		
Eastbound Pearsons Corner Road Approach	B (10.3)	B (11.3)
Westbound Pearsons Corner Road Approach	A (9.8)	B (12.0)
Northbound Kenton Road Approach	A (9.9)	C (23.9)
Southbound Kenton Road Approach	B (12.5)	B (12.8)
Overall Intersection	B (11.1)	C (17.9)

Table 3 (continued)
Peak Hour Levels Of Service (LOS)
Based on Traffic Impact Study for Brookside Farms
Report Dated: August 2019
Prepared by JMT

Unsignalized Intersection All-Way Stop Control ¹	LOS per HCS	
	Weekday AM	Weekday PM
Pearsons Corner Road (Kent Road 101) /Kenton Road (Kent Road 104)		
2026 with Development (Case 4)		
Eastbound Pearsons Corner Road Approach	B (10.3)	B (11.4)
Westbound Pearsons Corner Road Approach	A (9.9)	B (12.1)
Northbound Kenton Road Approach	B (10.0)	D (25.2)
Southbound Kenton Road Approach	B (12.8)	B (13.0)
Overall Intersection	B (11.3)	C (18.6)

Table 3 (continued)
Peak Hour Levels Of Service (LOS)
Based on Traffic Impact Study for Brookside Farms
Report Dated: August 2019
Prepared by JMT

Roundabout ¹	LOS per HCS	
	Weekday AM	Weekday PM
Pearsons Corner Road (Kent Road 101) /Kenton Road (Kent Road 104)		
2024 with Development (Case 3) ⁴		
Eastbound Pearsons Corner Road Approach	A (6.0)	A (5.0)
Westbound Pearsons Corner Road Approach	A (4.0)	A (6.4)
Northbound Kenton Road Approach	A (4.7)	A (7.4)
Southbound Kenton Road Approach	A (5.7)	A (5.8)
Overall Intersection	A (5.4)	A (6.6)
2026 with Development (Case 4) ⁴		
Eastbound Pearsons Corner Road Approach	A (6.1)	A (5.0)
Westbound Pearsons Corner Road Approach	A (4.0)	A (6.5)
Northbound Kenton Road Approach	A (4.7)	A (7.5)
Southbound Kenton Road Approach	A (5.8)	A (5.9)
Overall Intersection	A (5.4)	A (6.7)

⁴ JMT conducted a single lane roundabout analysis for the Pearsons Corner Road (Kent Road 101) intersection with Kenton Road (Kent Road 104) as this improvement was recommended in the TIS review letters for Palomar North and South dated December 2, 2010 and for Cherrington dated November 6, 2008.

Table 4
Peak Hour Levels Of Service (LOS)
Based on Traffic Impact Study for Brookside Farms
Report Dated: August 2019
Prepared by JMT

Unsignalized Intersection Two-Way Stop Control (T-Intersection) ¹	LOS per HCS	
	Weekday AM	Weekday PM
Pearsons Corner Road/Seven Hickories Road (Kent Road 45)		
2019 Existing (Case 1)		
Westbound Seven Hickories Road Left Turn	A (7.7)	A (7.6)
Northbound Pearsons Corner Road Approach	A (9.2)	A (9.6)
2024 without Development (Case 2)		
Westbound Seven Hickories Road Left Turn	A (7.8)	A (7.8)
Northbound Pearsons Corner Road Approach	A (9.7)	A (10.0)
2024 with Development (Case 3)		
Westbound Seven Hickories Road Left Turn	A (7.8)	A (7.9)
Northbound Pearsons Corner Road Approach	A (9.8)	B (10.1)
2026 with Development (Case 4)		
Westbound Seven Hickories Road Left Turn	A (7.8)	A (7.9)
Northbound Pearsons Corner Road Approach	A (9.8)	B (10.1)

Table 5
Peak Hour Levels Of Service (LOS)
Based on Traffic Impact Study for Brookside Farms
Report Dated: August 2019
Prepared by JMT

Unsignalized Intersection Two-Way Stop Control ¹	LOS per HCS	
	Weekday AM	Weekday PM
Main Street (Kent Road 45)/Commerce Street (Kent Road 156)		
2019 Existing (Case 1)		
Eastbound Main Street Left Turn	A (7.4)	A (7.7)
Westbound Main Street Left Turn	A (7.9)	A (7.8)
Northbound Commerce Street Approach	B (11.6)	B (13.4)
Southbound Commerce Street Approach	B (11.9)	B (13.5)
2024 without Development (Case 2)		
Eastbound Main Street Left Turn	A (7.5)	A (7.9)
Westbound Main Street Left Turn	A (8.2)	A (8.0)
Northbound Commerce Street Approach	B (12.7)	C (15.6)
Southbound Commerce Street Approach	B (13.3)	C (16.0)
2024 with Development (Case 3)		
Eastbound Main Street Left Turn	A (7.5)	A (8.0)
Westbound Main Street Left Turn	A (8.2)	A (8.0)
Northbound Commerce Street Approach	B (13.0)	C (16.3)
Southbound Commerce Street Approach	B (13.7)	C (16.6)

Table 5 (continued)
Peak Hour Levels Of Service (LOS)
Based on Traffic Impact Study for Brookside Farms
Report Dated: August 2019
Prepared by JMT

Unsignalized Intersection Two-Way Stop Control ¹	LOS per HCS	
	Weekday AM	Weekday PM
Main Street (Kent Road 45)/Commerce Street (Kent Road 156)		
2026 with Development (Case 4)		
Eastbound Main Street Left Turn	A (7.5)	A (8.0)
Westbound Main Street Left Turn	A (8.2)	A (8.0)
Northbound Commerce Street Approach	B (13.1)	C (16.3)
Southbound Commerce Street Approach	B (13.7)	C (16.7)

Signalized Intersection ¹	LOS per HCS	
	Weekday AM	Weekday PM
Main Street (Kent Road 45)/Commerce Street (Kent Road 156) ⁵		
2024 with Development (Case 3)	A (7.3)	A (8.4)
2026 with Development (Case 4)	B (7.4)	A (8.4)

⁵ JMT conducted a signalized analysis maintaining the existing lane configurations and utilizing a cycle lane of 60 seconds with permissive two phase signal phasing at the Main Street (Kent Road 45) intersection with Commerce Street (Kent Road 156) during the AM and PM peak hours. This was performed to incorporate the improvement as part of the Saratoga, Stonington, and Villages of Noble's Pond developments.

Table 6-a
Peak Hour Levels Of Service (LOS)
Based on Traffic Impact Study for Brookside Farms
Report Dated: August 2019
Prepared by JMT

Unsignalized Intersection Two-Way Stop Control (T-Intersection) ¹	LOS per HCS	
	Weekday AM	Weekday PM
Kenton Road (Kent Road 104)/Seven Hickories Road (Kent Road 45) ^{6,7}		
2019 Existing (Case 1)		
Westbound Seven Hickories Road Left Turn	A (7.4)	A (7.5)
Northbound Kenton Road Approach	B (10.3)	B (14.5)
2024 without Development (Case 2)		
Westbound Seven Hickories Road Left Turn	A (7.5)	A (7.5)
Northbound Kenton Road Approach	B (10.6)	C (16.9)
2024 with Development (Case 3)		
Westbound Seven Hickories Road Left Turn	A (7.5)	A (7.5)
Northbound Kenton Road Approach	B (10.6)	C (17.0)
2026 with Development (Case 4)		
Westbound Seven Hickories Road Left Turn	A (7.5)	A (7.5)
Northbound Kenton Road Approach	B (10.6)	C (17.3)

⁶ Due to the unique configuration of the Kenton Road (Kent Road 104)/Seven Hickories Road (Kent Road 45) intersection, JMT separated the intersection into two independent analysis locations. The results are depicted in Tables 6-a and 6-b.

⁷ This table depicts the analysis conducted at the location with the eastbound Seven Hickories Road (Kent Road 45) modeled as a through lane, the westbound Seven Hickories (Kent Road 45) Road modeled as a shared left-turn/through lane and the northbound Kenton Road (Kent Road 104) approach modeled as a stop-controlled shared left-turn/right-turn lane.

Table 6-b
Peak Hour Levels Of Service (LOS)
Based on Traffic Impact Study for Brookside Farms
Report Dated: August 2019
Prepared by JMT

Unsignalized Intersection Two-Way Stop Control (T-Intersection) ¹	LOS per HCS	
	Weekday AM	Weekday PM
Kenton Road (Kent Road 104)/Seven Hickories Road (Kent Road 45) ^{6,8}		
2019 Existing (Case 1)		
Westbound Seven Hickories Road Approach	B (10.2)	A (9.6)
2024 without Development (Case 2)		
Westbound Seven Hickories Road Approach	B (10.4)	A (9.8)
2024 with Development (Case 3)		
Westbound Seven Hickories Road Approach	B (10.4)	A (9.9)
2026 with Development (Case 4)		
Westbound Seven Hickories Road Approach	B (10.4)	A (9.9)

⁸ This table depicts the analysis conducted at the location with the eastbound Seven Hickories Road (Kent Road 45) right turns to southbound Kenton Road modeled as an eastbound through movement and left turns from westbound Seven Hickories Road to southbound Kenton Road modeled as a southbound stop-controlled left turn.

Table 6
Peak Hour Levels Of Service (LOS)
Based on Traffic Impact Study for Brookside Farms
Report Dated: August 2019
Prepared by JMT

Roundabout ¹	LOS per HCS	
	Weekday AM	Weekday PM
Kenton Road (Kent Road 104)/Seven Hickories Road (Kent Road 45) ⁹		
2024 with Development (Case 3)		
Eastbound Hickories Road Approach	A (5.9)	A (5.2)
Westbound Hickories Road Approach	A (3.8)	A (6.2)
Northbound Kenton Road Approach	A (4.3)	A (6.4)
Overall Intersection	A (5.3)	A (5.9)
2026 with Development (Case 4)		
Eastbound Hickories Road Approach	A (5.9)	A (5.2)
Westbound Hickories Road Approach	A (3.9)	A (6.2)
Northbound Kenton Road Approach	A (4.4)	A (6.5)
Overall Intersection	A (5.4)	A (5.9)

⁹ JMT conducted a single lane roundabout analysis for the Kenton Road (Kent Road 104) intersection with Seven Hickories Road (Kent Road 45) as this improvement was recommended in the TIS review letters for Palomar North and South dated December 2, 2010 and for Cherrington dated November 6, 2008.

Table 7
Peak Hour Levels Of Service (LOS)
Based on Traffic Impact Study for Brookside Farms
Report Dated: August 2019
Prepared by JMT

Unsignalized Intersection Two-Way Stop Control ¹	LOS per HCS	
	Weekday AM	Weekday PM
Kenton Road (Kent Road 104)/Central Church Road (Kent Road 155)		
2019 Existing (Case 1)		
Eastbound Central Church Road Approach	B (13.5)	C (15.3)
Westbound Central Church Road Approach	B (13.3)	C (20.4)
Northbound Kenton Road Left Turn	A (8.0)	A (7.8)
Southbound Kenton Road Left Turn	A (7.5)	A (8.3)
2024 without Development (Case 2)		
Eastbound Central Church Road Approach	C (17.1)	C (23.2)
Westbound Central Church Road Approach	C (15.2)	E (43.7)
Northbound Kenton Road Left Turn	A (8.2)	A (8.0)
Southbound Kenton Road Left Turn	A (7.7)	A (8.5)

Table 7 (continued)
Peak Hour Levels Of Service (LOS)
Based on Traffic Impact Study for Brookside Farms
Report Dated: August 2019
Prepared by JMT

Unsignalized Intersection Two-Way Stop Control ¹	LOS per HCS	
	Weekday AM	Weekday PM
Kenton Road (Kent Road 104)/Central Church Road (Kent Road 155)	Weekday AM	Weekday PM
2024 without Development (Case 2) <i>with Improvement</i> ¹⁰		
Eastbound Central Church Road Approach	C (16.6)	C (20.9)
Westbound Central Church Road Approach	B (14.5)	D (26.6)
Northbound Kenton Road Left Turn	A (8.2)	A (8.0)
Southbound Kenton Road Left Turn	A (7.7)	A (8.5)
2024 with Development (Case 3)		
Eastbound Central Church Road Approach	C (18.7)	D (26.5)
Westbound Central Church Road Approach	C (16.0)	F (58.1)
Northbound Kenton Road Left Turn	A (8.3)	A (8.1)
Southbound Kenton Road Left Turn	A (7.8)	A (8.7)

¹⁰ Improvement scenario includes the provision of a left turn lane along eastbound and westbound approaches of Central Church Road (Kent Road 155).

Table 7 (continued)
Peak Hour Levels Of Service (LOS)
Based on Traffic Impact Study for Brookside Farms
Report Dated: August 2019
Prepared by JMT

Unsignalized Intersection Two-Way Stop Control ¹	LOS per HCS	
	Weekday AM	Weekday PM
Kenton Road (Kent Road 104)/Central Church Road (Kent Road 155)	Weekday AM	Weekday PM
2024 with Development (Case 3) <i>with Improvement</i> ¹⁰		
Eastbound Central Church Road Approach	C (18.1)	C (23.3)
Westbound Central Church Road Approach	C (15.1)	D (30.2)
Northbound Kenton Road Left Turn	A (8.3)	A (8.1)
Southbound Kenton Road Left Turn	A (7.8)	A (8.7)
2026 with Development (Case 4)		
Eastbound Central Church Road Approach	C (18.9)	D (27.3)
Westbound Central Church Road Approach	C (16.2)	F (61.5)
Northbound Kenton Road Left Turn	A (8.3)	A (8.1)
Southbound Kenton Road Left Turn	A (7.8)	A (8.7)

Table 7 (continued)
Peak Hour Levels Of Service (LOS)
Based on Traffic Impact Study for Brookside Farms
Report Dated: August 2019
Prepared by JMT

Unsignalized Intersection Two-Way Stop Control ¹	LOS per HCS	
	Weekday AM	Weekday PM
Kenton Road (Kent Road 104)/Central Church Road (Kent Road 155)		
2026 with Development (Case 4) <i>with Improvement</i> ¹⁰		
Eastbound Central Church Road Approach	C (18.3)	C (23.8)
Westbound Central Church Road Approach	C (15.3)	D (31.0)
Northbound Kenton Road Left Turn	A (8.3)	A (8.1)
Southbound Kenton Road Left Turn	A (7.8)	A (8.7)

Table 7 (continued)
Peak Hour Levels Of Service (LOS)
Based on Traffic Impact Study for Brookside Farms
Report Dated: August 2019
Prepared by JMT

Unsignalized Intersection All-Way Stop Control ¹	LOS per HCS	
	Weekday AM	Weekday PM
Kenton Road (Kent Road 104)/Central Church Road (Kent Road 155) ¹¹		
2024 without Development (Case 2)		
Eastbound Central Church Road Approach	A (9.4)	B (10.9)
Westbound Central Church Road Approach	A (9.1)	B (12.5)
Northbound Kenton Road Approach	A (9.9)	D (28.1)
Southbound Kenton Road Approach	B (14.8)	C (16.0)
Overall Intersection	B (12.5)	C (20.7)
2024 with Development (Case 3)		
Eastbound Central Church Road Approach	A (9.6)	B (11.5)
Westbound Central Church Road Approach	A (9.3)	B (13.5)
Northbound Kenton Road Approach	B (10.2)	E (37.6)
Southbound Kenton Road Approach	C (17.1)	C (18.7)
Overall Intersection	B (14.0)	D (26.1)

¹¹ All-way stop control scenario includes the provision of an all-way stop controlled intersection for Kenton Road (Kent Road 104) and Central Church Road (Kent Road 155) while maintaining the existing lane configurations.

Table 7 (continued)
Peak Hour Levels Of Service (LOS)
Based on Traffic Impact Study for Brookside Farms
Report Dated: August 2019
Prepared by JMT

Unsignalized Intersection All-Way Stop Control ¹	LOS per HCS	
Kenton Road (Kent Road 104)/Central Church Road (Kent Road 155) ¹¹	Weekday AM	Weekday PM
2026 with Development (Case 4)		
Eastbound Central Church Road Approach	A (9.6)	B (11.5)
Westbound Central Church Road Approach	A (9.3)	B (13.6)
Northbound Kenton Road Approach	B (10.3)	E (40.3)
Southbound Kenton Road Approach	C (17.5)	C (19.2)
Overall Intersection	B (14.3)	D (27.5)

Table 7 (continued)
Peak Hour Levels Of Service (LOS)
Based on Traffic Impact Study for Brookside Farms
Report Dated: August 2019
Prepared by JMT

Roundabout ¹	LOS per HCS	
	Weekday AM	Weekday PM
Kenton Road (Kent Road 104)/Central Church Road (Kent Road 155) ¹²		
2024 without Development (Case 2)		
Eastbound Central Church Road Approach	A (5.8)	A (4.9)
Westbound Central Church Road Approach	A (4.0)	A (7.3)
Northbound Kenton Road Approach	A (4.6)	A (7.6)
Southbound Kenton Road Approach	A (6.5)	A (6.3)
Overall Intersection	A (5.8)	A (6.9)
2024 with Development (Case 3)		
Eastbound Central Church Road Approach	A (6.1)	A (5.1)
Westbound Central Church Road Approach	A (4.1)	A (7.9)
Northbound Kenton Road Approach	A (4.8)	A (8.1)
Southbound Kenton Road Approach	A (6.9)	A (6.5)
Overall Intersection	A (6.1)	A (7.4)

¹² Roundabout scenario includes the provision of a single lane roundabout for the Kenton Road (Kent Road 104) intersection with Central Church Road (Kent Road 155).

Table 7 (continued)
Peak Hour Levels Of Service (LOS)
Based on Traffic Impact Study for Brookside Farms
Report Dated: August 2019
Prepared by JMT

Roundabout ¹	LOS per HCS	
	Weekday AM	Weekday PM
Kenton Road (Kent Road 104)/Central Church Road (Kent Road 155) ¹²		
2026 with Development (Case 4)		
Eastbound Central Church Road Approach	A (6.1)	A (5.1)
Westbound Central Church Road Approach	A (4.1)	A (8.0)
Northbound Kenton Road Approach	A (4.8)	A (8.2)
Southbound Kenton Road Approach	A (7.0)	A (6.6)
Overall Intersection	A (6.1)	A (7.5)

Signalized Intersection ¹	LOS per HCS	
	Weekday AM	Weekday PM
Kenton Road (Kent Road 104)/Central Church Road (Kent Road 155) ¹³		
2024 without Development (Case 2)	B (11.1)	B (12.8)
2024 with Development (Case 3)	B (11.5)	B (13.3)
2026 with Development (Case 4)	B (11.5)	B (13.8)

¹³ Signal scenario includes the provision of a signal for the Kenton Road (Kent Road 104) with Central Church Road (Kent Road 155) intersection. JMT utilized a 60 second cycle length and permissive two-phase signal timing for AM and PM peak hours consistent with the existing signal timings at the Kenton Road (Kent Road 104)/W. Denneys Road (Kent Road 100) signalized intersection.

Table 8
Peak Hour Levels Of Service (LOS)
Based on Traffic Impact Study for Brookside Farms
Report Dated: August 2019
Prepared by JMT

Unsignalized Intersection Two-Way Stop Control (T-Intersection) ¹	LOS per HCS	
	Weekday AM	Weekday PM
Central Church Road (Kent Road 155)/McKee (Kent Road 156)		
2019 Existing (Case 1)		
Eastbound Central Church Road Approach	A (9.6)	B (10.6)
Northbound McKee Road Left Turn	A (7.4)	A (7.7)
2024 without Development (Case 2)		
Eastbound Central Church Road Approach	B (10.4)	B (11.8)
Northbound McKee Road Left Turn	A (7.6)	A (7.9)
2024 with Development (Case 3)		
Eastbound Central Church Road Approach	B (10.6)	B (12.1)
Northbound McKee Road Left Turn	A (7.6)	A (8.0)
2026 with Development (Case 4)		
Eastbound Central Church Road Approach	B (10.6)	B (12.1)
Northbound McKee Road Left Turn	A (7.6)	A (8.0)

Table 9
Peak Hour Levels Of Service (LOS)
Based on Traffic Impact Study for Brookside Farms
Report Dated: August 2019
Prepared by JMT

Signalized Intersection ¹	LOS per HCS	
	Weekday AM	Weekday PM
Kenton Road (Kent Road 104)/W. Denneys Road (Kent Road 100)		
2019 Existing (Case 1)	B (11.8)	B (13.0)
2024 without Development (Case 2)	B (13.7)	B (16.2)
2024 with Development (Case 3)	B (13.8)	B (16.5)
2026 with Development (Case 4)	B (13.9)	B (16.8)

Roundabout ¹	LOS per HCS	
	Weekday AM	Weekday PM
Kenton Road (Kent Road 104)/W. Denneys Road (Kent Road 100)		
2024 with Development (Case 3) ¹⁴		
Eastbound W. Denneys Road Approach	A (8.3)	A (6.2)
Westbound W. Denneys Road Approach	A (4.8)	B (10.3)
Northbound Kenton Road Approach	A (5.0)	B (11.4)
Southbound Kenton Road Approach	A (7.7)	A (7.9)
Overall Intersection	A (6.9)	A (9.8)

¹⁴ JMT conducted a single lane roundabout analysis for the (Kent Road 45) intersection with W. Denneys Road (Kent Road 100) to incorporate the improvement associated with the Maidstone Subdivision development.

Table 9 (continued)
Peak Hour Levels Of Service (LOS)
Based on Traffic Impact Study for Brookside Farms
Report Dated: August 2019
Prepared by JMT

Roundabout ¹	LOS per HCS	
	Weekday AM	Weekday PM
Kenton Road (Kent Road 104)/W. Denneys Road (Kent Road 100) ¹⁴		
2026 with Development (Case 4)		
Eastbound W. Denneys Road Approach	A (8.4)	A (6.3)
Westbound W. Denneys Road Approach	A (4.8)	B (10.5)
Northbound Kenton Road Left Turn	A (5.0)	B (11.8)
Southbound Kenton Road Left Turn	A (7.8)	A (8.0)
Overall Intersection	A (7.0)	A (10.0)

Table 10
Peak Hour Levels Of Service (LOS)
Based on Traffic Impact Study for Brookside Farms
Report Dated: August 2019
Prepared by JMT

Unsignalized Intersection Two-Way Stop Control ¹	LOS per HCS	
	Weekday AM	Weekday PM
Pearsons Corner Road (Kent Road 101)/Rose Dale Lane (Kent Road 167)		
2019 Existing (Case 1)		
Eastbound Pearsons Corner Road Left Turn	A (7.3)	A (7.4)
Westbound Pearsons Corner Road Left Turn	A (8.3)	A (7.4)
Northbound N. Cheswold Farms Boulevard Approach	A (9.1)	A (9.3)
Southbound Rose Dale Lane Approach	A (8.7)	A (9.3)
2024 without Development (Case 2) ¹⁵		
Eastbound Pearsons Corner Road Left Turn	A (7.3)	A (7.4)
Westbound Pearsons Corner Road Left Turn	A (7.4)	A (7.6)
Northbound N. Cheswold Farms Boulevard Approach	A (9.6)	B (10.7)
Southbound Rose Dale Lane Approach	A (8.8)	A (9.8)
2024 with Development (Case 3) ¹⁵		
Eastbound Pearsons Corner Road Left Turn	A (7.3)	A (7.4)
Westbound Pearsons Corner Road Left Turn	A (7.4)	A (7.6)
Northbound N. Cheswold Farms Boulevard Approach	A (9.7)	B (10.8)
Southbound Rose Dale Lane Approach	A (8.9)	A (9.9)

¹⁵ Under Case 1 conditions, the westbound left turn heavy vehicle percentage is 100% per the existing count data. However, JMT reduced the heavy vehicle percentage to 3% in the future Cases 2, 3, and 4 conditions due to the projected increase in volumes along that movement.

Table 10 (continued)
Peak Hour Levels Of Service (LOS)
Based on Traffic Impact Study for Brookside Farms
Report Dated: August 2019
Prepared by JMT

Unsignalized Intersection Two-Way Stop Control ¹	LOS per HCS	
	Weekday AM	Weekday PM
Pearsons Corner Road (Kent Road 101)/Rose Dale Lane (Kent Road 167)		
2026 with Development (Case 4) ¹⁵		
Eastbound Pearsons Corner Road Left Turn	A (7.3)	A (7.4)
Westbound Pearsons Corner Road Left Turn	A (7.4)	A (7.6)
Northbound N. Cheswold Farms Boulevard Approach	A (9.7)	B (10.9)
Southbound Rose Dale Lane Approach	A (8.9)	A (9.9)

Table 11
Peak Hour Levels Of Service (LOS)
Based on Traffic Impact Study for Brookside Farms
Report Dated: August 2019
Prepared by JMT

Unsignalized Intersection Two-Way Stop Control (T-Intersection) ¹	LOS per HCS	
	Weekday AM	Weekday PM
Pearsons Corner Road (Kent Road 101)/Central Church Road (Kent Road 155)		
2019 Existing (Case 1)		
Westbound Pearsons Corner Road Left Turn	A (7.5)	A (7.4)
Northbound Central Church Road Approach	A (9.0)	A (9.7)
2024 without Development (Case 2)		
Westbound Pearsons Corner Road Left Turn	A (7.6)	A (7.6)
Northbound Central Church Road Approach	A (9.8)	B (10.4)
2024 with Development (Case 3)		
Westbound Pearsons Corner Road Left Turn	A (7.6)	A (7.6)
Northbound Central Church Road Approach	A (9.8)	B (10.5)
2026 with Development (Case 4)		
Westbound Pearsons Corner Road Left Turn	A (7.6)	A (7.6)
Northbound Central Church Road Approach	A (9.8)	B (10.5)

Avigation Nuisance Easement & Non-Suit Covenant

This indenture made this _____ day of _____, 20____, by and between _____, hereinafter referred to as Grantor, and _____ hereinafter referred to as Grantee, witnesseth:

WHEREAS the Grantor is the owner in fee of a certain parcel of land (“the Property”) in the County of _____, State of Delaware; and

WHEREAS said parcel of land is near or adjacent to _____, an operating airport (“Airport”); and

WHEREAS the Grantee is the owner of said airport; and

WHEREAS the Grantor proposes to make a use of said Property and to develop thereon the following:

, which use and development require approval by Municipal and County authorities subject to the applicable provisions of law; and

WHEREAS the Grantor has been advised that the subject Property is located adjacent to the Airport; that the present and future impacts of Airport operations might be considered annoying to users of the Property for its stated purpose and might interfere with the unrestricted use and enjoyment of the Property in its intended use; that these Airport impacts might change over time, for example and not by way of limitation by an increase in the number of aircraft using the Airport, louder aircraft, seasonal variations, and time-of-day variations; that changes in Airport, air traffic control operating procedures or in Airport layout could result in increased noise impacts; and that the Grantor’s and users’ own personal perceptions of the noise exposure could change and that his or her sensitivity to aircraft noise could increase;

NOW, THEREFORE, for and in consideration of the mutual covenants, agreements and conditions contained herein, the parties hereto agree as follows:

Grantor does hereby grant a permanent nuisance and avigation easement (“Easement”) to Grantee over all of the following described real estate:

By virtue of this agreement, the Grantor, for and on behalf of himself and all successors in interest to any and all of the real property above described, waives as to Grantee or any successor agency legally authorized to operate said airport, any and all claims for damage of any kind whatsoever incurred as a result of aircraft using the Easement granted herein regardless of any future changes in volume or character of aircraft overflights, or changes in airport design and operating policies, or changes in air traffic control procedures.

The Grantor, for and on behalf of himself and all successors in interest to any and all of the real property above described, does further hereby covenant and agree with the Grantee, its successors and assigns, that it will not, from and after the effective date hereof, sue, prosecute, molest, or trouble the Grantee, its successors and assigns, in

These covenants and agreements shall run with the land of the Grantor, as hereinabove described, for the benefit of the Grantee, and its successors and assigns in the ownership, use and operation of the aforesaid Airport.

Grantee, its successors and assigns, shall have and hold said Easement and all rights appertaining thereto until said Airport shall be abandoned and shall cease to be used for airport purposes.

If any provision of this Easement or any amendments hereto, or the application thereof to any person, thing or circumstances is held invalid, such invalidity shall not affect the provisions or application of this Easement or such amendments that can be given effect without the invalid provisions or application, and to this end the provisions of this Easement and such amendments are declared to be severable.

IN WITNESS WHEREOF, the Grantor has hereunto set its hand and seal the day and year first above written.

_____(SEAL)

_____(SEAL)

NOTARY ACKNOWLEDGEMENT

STATE OF DELAWARE

ss.

COUNTY OF KENT

BE IT REMEMBERED that on this ____ day of _____, 20____ personally, came before me, the subscriber, a Notary Public for the State and County aforesaid, _____, party(ies) to this Indenture, known to me personally to be such, and acknowledged this Indenture, to his/her (their) act or deed.

GIVEN under my Hand and Seal of office the day and year first above written.

Notary Public, State of Delaware

My Commission Expires _____