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

NICOLE MAJESKI
SECRETARY

November 23, 2022

Ms. Nicole Kline-Elsier, PE, PTOE
McMahon Associates, Inc.
835 Springdale Drive, Suite 200
Exton, PA 19341

Dear Ms. Kline-Elsier,

The enclosed Traffic Impact Study (TIS) review letter for the **Mulberry Meadows - (f.k.a. Harrow - Residential)** (Tax Parcel: 7-00-11200-01-0100-00001) 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 to conform to DelDOT's Development Coordination Manual and other accepted practices and procedures for such studies. DelDOT accepts this letter and concurs with the recommendations. If you have any questions concerning this letter or the enclosed review letter, please contact me at (302) 760-2124.

Sincerely,

Claudy Joinville
Project Engineer

CJ:km
cc with enclosures: Mr. Joe LaRock, D. R. Horton, Inc.
Mr. Steven Fortunato, Bohler Engineering
Mr. David Edgell, Office of State Planning Coordination
Mr. Jason Berry, Kent County Department of Planning Services
Ms. Joanne Arellano, Johnson, Mirmiran & Thompson, Inc.
Mr. Mir Wahed, Johnson, Mirmiran & Thompson, Inc.
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Brad Eaby, Deputy Attorney General
Shanté Hastings, Deputy Secretary / Director, Transportation Solutions (DOTS)
Pamela Steinebach, Director, Planning
Mark Luszcz, Deputy Director, DOTS
Peter Haag, Chief Traffic Engineer, Traffic, DOTS
Todd Sammons, Assistant Director, Development Coordination
Wendy Polasko, Subdivision Engineer, Development Coordination
Sireen Muhtaseb, TIS Group Manager, Development Coordination
Matthew Lichtenstein, Central District Engineer, Central District
Steve McCabe, Central District Public Works Manager, Central District
Jared Kauffman, Service Development Planner, Delaware Transit Corporation
Anthony Aglio, Planning Supervisor, Statewide & Regional Planning
Olayiwola Okesola, Kent County Review Coordinator, Development Coordination
Mark Galipo, Traffic Engineer, Traffic, DOTS
Joshua Schwartz, Subdivision Manager, Development Coordination
Annamaria Furmato, Project Engineer, Development Coordination

November 23, 2022

Mr. Claudy Joinville
Project Engineer
Delaware Department of Transportation
Development Coordination, Division of Planning
800 Bay Road
Dover, DE 19901

RE: Agreement No. 1945F
Project Number T202069012
Traffic Impact Study Services
Task 5-18A – Harrow Residential TIS

Dear Mr. Joinville:

Johnson, Mirmiran, and Thompson (JMT) has completed a review of the Traffic Impact Study (TIS) for the Harrow Residential development, which was prepared by McMahon, a Bowman Company, dated July 15, 2022. This review was assigned as Task Number 5-18A. 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 proposed development would consist of 111 single-family detached homes. The site is located on the east side of Peachtree Run (Kent Road 105), approximately 850 feet southeast of the intersection of Walnut Shade Road (Kent Road 30) and Peachtree Run. The subject property is on an approximately 68.53-acre parcel which is currently zoned as AC (Agricultural Conservation) with a growth overlay. The developer does not plan to rezone the land. One full access point is proposed along Peachtree Run. Construction for the development is anticipated to be completed in 2027.

DelDOT has several relevant and ongoing improvement projects within the study area. The HEP (Hazard Elimination Program) program is a component of the HSIP (Highway Safety Improvement Program), which aims to achieve a significant reduction in traffic fatalities and injuries through the implementation of infrastructure-related highway safety improvements on state-maintained roads. The Peachtree Run and Voshells Mill Star Hill Road study intersection was included within the 2017 HEP under Site M. The results of the Task I evaluation within the 2017 HEP recommended signage and pavement marking improvements which have already been implemented.

The *HEP KC, US13, Lochmeath Way to Puncheon Run Connector* project (DelDOT Contract No. T201500202) proposes to widen US Route 13 to provide a third lane in each direction from Lochmeath Way to the Puncheon Run Connector. The project area has repeatedly been cited for safety improvements under the Highway Safety Improvement Program and the Hazard Elimination Program. The proposed improvements aim to mitigate safety issues along the roadways. The

project is in the design and right-of-way acquisition phase. Construction is anticipated to begin in 2024. More information about the project can be found at:
https://deldot.gov/projects/index.shtml?dc=details&projectNumber=T201500202.

The *HEP KC, US13 Walnut Shade Road to Lochmeath Way* project (DelDOT Contract No. T201800201) proposes to widen US Route 13 to provide a third lane in each direction from Walnut Shade Road to Lochmeath Way and also widen Walnut Shade Road to the Polytech entrance. The project will include roadway widening, stormwater management facilities, multiple intersection redesigns, traffic signal reconfigurations and multi-modal improvements. The project area has repeatedly been cited for safety improvements under the Highway Safety Improvement Program and the Hazard Elimination Program. The project is in the design and right-of-way acquisition phase and construction is anticipated to start in 2026. More information about the project can be found at:
https://deldot.gov/projects/index.shtml?dc=details&projectNumber=T201800201.

The *Irish Hill Road, Fox Chase Road to McGinnis Pond Road* project (DelDOT Contract No. T202004201) proposes to realign Woodlytown Road with McGinnis Pond Road and realign Peachtree Run with Fox Chase Road. The realigned intersections will be converted to single lane roundabouts. Additionally, the project proposes to add shoulders, bicycle lanes and/or multi-use paths. The project is included in the Dover/Kent MPO Metropolitan Transportation Plan (MTP) and will provide transportation improvements to the high growth corridor. The project is in the planning and design phase and construction is anticipated to start in 2025/2026. More information about the project can be found at:
https://deldot.gov/projects/index.shtml?dc=details&projectNumber=T202004201.

The *HEP KC, Walnut Shade Road, US 13 to Peachtree Run* (DelDOT Contract No. T201800801) project proposes the installation of a roundabout at the intersection of Walnut Shade Road and Peachtree Run and a multi-use path from US Route 13 to Peachtree Run. The project is in the design and right-of-way acquisition phase and construction is anticipated to start in 2023. More information about the project can be found at:
https://deldot.gov/projects/index.shtml?dc=details&projectNumber=T201800801.

The *Peachtree Run Road (Voshells Mill Road to Irish Hill Road)* project is a future DelDOT project that proposes widening and multi-modal improvements with preliminary engineering scheduled in Fiscal Year 2025. Construction is funded in the years beyond Fiscal Year 2029. A DelDOT contract number has not been assigned to the project.

The *Irish Hill Road Pavement and Rehabilitation* project proposes to improve Irish Hill Road from US Route 13 to Main Street (Kent Road 27). The improvements will consist of pavement reclamation, pavement milling, asphalt mix overlay, and pavement markings. A DelDOT contract number has not been assigned to the project.

The *Woodlytown Road Pavement and Rehabilitation* project proposes to improve Woodlytown Road from Irish Hill Road to Briarbush Road. The improvements will consist of pavement reclamation, pavement milling, asphalt mix overlay, and pavement markings. A DelDOT contract number has not been assigned to the project.

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 the 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 TIS review letter.

As part of the TIS review, the following future scenarios were evaluated:

- Case 2 – 2027 without development
- Case 3 – 2027 with development
- Case 4 – 2029 with development

Based on our review of the TIS, 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 incorporates the improvements proposed as part of the *Irish Hill Road, Fox Chase Road to McGinnis Pond Road* project (DelDOT Contract No. T202004201).

Intersection	**LOS Deficiencies Occur**		**Case**
	AM	**PM**	
Peachtree Run/Walnut Shade Road (Kent Road 30)		X	Case 3 – 2027 with Development
		X	Case 4 – 2029 with Development

The unsignalized all-way stop-control Peachtree Run intersection with Walnut Shade Road would exhibit LOS deficiencies during the PM peak hour under future conditions, with the proposed development. As part of the *HEP KC, Walnut Shade Road, US 13 to Peachtree Run (*DelDOT Contract No. T201800801) project, the installation of a roundabout is proposed at the intersection of Walnut Shade Road and Peachtree Run. Therefore, it is recommended that the developer coordinate with DelDOT on the implementation and equitable cost sharing of the roundabout installation.

Although the Peachtree Run intersection with Millchop Lane does not exhibit LOS deficiencies under future conditions with or without the proposed development, the intersection is proposed to be converted to a single lane roundabout as part of the Chestnut Ridge development. As such, it is recommended that the developer coordinate with DelDOT on the equitable cost sharing of the roundabout installation at the Peachtree Run and Millchop Lane intersection.

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 shall improve Peachtree Run within the limits of their frontage to meet DelDOT's standards for their Functional Classification as found in Section 1.1 of the *Development Coordination Manual* and elsewhere therein. 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 is defined in Section 1 of the *Development Coordination Manual*, which states "This length includes the length of roadway perpendicular to lines created by the projection of the outside parcel corners to the roadway." Questions on or appeals of this requirement should be directed to the DelDOT Subdivision Review Coordinator in whose area the development is located.

2. The developer should construct an unsignalized full access for the proposed Harrow Residential development along Peachtree Run, approximately 850 feet south of the intersection with Walnut Shade Road, opposite the proposed entrance to Stratford Village. The intersection should be consistent with the lane configurations shown in the table below.

Approach	Current Configuration	Proposed Configuration
Eastbound Stratford Village Entrance	Approach does not exist	One shared left turn/through/right turn lane*
Westbound Site Entrance	Approach does not exist	One shared left turn/through/right turn lane
Northbound Peachtree Run	One through lane	One left turn lane*, one through lane, and one right turn lane
Southbound Peachtree Run	One through lane	One left turn lane, one through lane, and one right turn lane*

Based on DelDOT's *Development Coordination Manual,* the recommended minimum storage length (excluding taper) of the separate left turn and right turn lanes along Peachtree Run are summarized in the table below. The projected queues from the HCS analysis can be accommodated within the recommended storage lengths.

Approach	Left Turn Lane	Right Turn Lane
Northbound Peachtree Run	*	100 feet
Southbound Peachtree Run	120 feet	*

*Auxiliary lanes to be built by the Stratford Village development. The design of the auxiliary lanes and site entrance approach for the Stratford Village development should be determined during the Entrance Plan review process for that project.

3. The developer should enter into an agreement with DelDOT to fund an equitable portion of the improvements planned at the Peachtree Run and Millchop Lane intersection as part of the Chestnut Ridge development which includes the conversion to a single-lane roundabout.

4. The developer should enter into an agreement with DelDOT to fund an equitable portion of the improvements planned at the Irish Hill Road intersections with Peachtree Run, Fox Chase Road, Woodlytown Road, and McGinnis Pond Road as part of DelDOT's *Irish Hill Road, Fox Chase Road to McGinnis Pond Road* project (DelDOT Contract No. T202004201). The developer should coordinate with DelDOT on the implementation and equitable cost sharing of these improvements.

5. The developer should enter into an agreement with DelDOT to fund an equitable portion of the improvements planned at the Walnut Shade Road intersection with Peachtree Run as part of the *HEP KC, Walnut Shade Road, US 13 to Peachtree Run* (DelDOT Contract No. T201800801) project. The developer should coordinate with DelDOT on the implementation and equitable cost sharing of these improvements.

6. 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 Peachtree Run site frontage. Within the easement along Peachtree Run, the developer should construct a ten-foot wide shared-use path (SUP). The SUP 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 SUP. If feasible, the SUP 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 SUP.

    b. At least one internal connection of a sidewalk or SUP in the vicinity of the site entrance should be provided from the SUP along Peachtree Run.

c. ADA compliant curb ramps and marked crosswalks should be provided along the site entrance.

d. Minimum five-foot wide bicycle lanes should be incorporated in the right turn lane and shoulder along the Peachtree Run approaches to the site entrance.

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

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

7. Due to the proximity of the proposed development to the Dover Air Force Base, we recommend that deed restrictions be required similar to the attached Avigation Nuisance Easement and Non-Suit Covenant. The applicant should contact Mr. Steve Bayer at (302) 760-4834 from DelDOT's Office of Aeronautics 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 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. For any additional information regarding the work zone impact and mitigation procedures during construction, please contact Mr. Jeff VanHorn, Assistant Director for Traffic Operations and Management. Mr. VanHorn can be reached at (302) 659-4606 or by email at Jeffrey.VanHorn@delaware.gov.

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

Sincerely,
Johnson, Mirmiran, and Thompson, Inc.

Joanne M. Arellano, P.E., PTOE

cc: Mir Wahed, P.E., PTOE
Janna Brown, E.I.T.

Enclosure

General Information

Report date: July 15, 2022
Prepared by: McMahon, a Bowman Company
Prepared for: D.R. Horton, Inc.
Tax Parcel: 7-00-112.00-01-01.00-00001
Generally consistent with DelDOT's *Development Coordination Manual (DCM)*: Yes

Project Description and Background

Description: The proposed residential development consists of 111 single family detached homes.
Location: The land is located on the east side of Peachtree Run (Kent Road 105), approximately 850 feet southeast of the Walnut Shade Road (Kent Road 30) / Peachtree Run intersection, in Kent County, Delaware.
Amount of Land to be developed: An approximately 68.53-acre parcel.
Land Use approval(s) needed: Entrance Plan.
Proposed completion date: 2027.
Proposed access locations: One full access point on Peachtree Run.

Daily Traffic Volumes:

- 2021 Average Annual Daily Traffic on Peachtree Run: 4,241

*AADT is sourced from data provided by DelDOT Gateway

Site Map

**Graphic is an approximation based on a sketch prepared by Bohler dated April 13, 2022.*

Relevant and On-going Projects

DelDOT has several relevant and ongoing improvement projects within the study area. The HEP (Hazard Elimination Program) program is a component of the HSIP (Highway Safety Improvement Program), which aims to achieve a significant reduction in traffic fatalities and injuries through the implementation of infrastructure-related highway safety improvements on state-maintained roads. The Peachtree Run and Voshells Mill Star Hill Road study intersection was included within the 2017 HEP under Site M. The results of the Task I evaluation within the 2017 HEP recommended signage and pavement marking improvements which have already been implemented.

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Lochmeath Way to the Puncheon Run Connector. The project area has repeatedly been cited for safety improvements under the Highway Safety Improvement Program and the Hazard Elimination Program. The proposed improvements aim to mitigate safety issues along the roadways. The project is in the design and right-of-way acquisition phase. Construction is anticipated to begin in 2024. More information about the project can be found at:
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reclamation, pavement milling, asphalt mix overlay, and pavement markings. A DelDOT contract number has not been assigned to the project.

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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 Level 1 and Level 2.

Investment Level 1

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

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

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.

Proposed Development's Compatibility with Livable Delaware:
The proposed site is located within Investment Level 1 and Level 2. Investment Levels 1 and 2 areas are the most favorable location for new development and redevelopment. For state policies, Levels 1 and 2 are the primary focus for creating and sustaining a variety of housing types. Therefore, the proposed development is consistent with the 2020 update of the Livable Delaware "Strategies for State Policies and Spending."

Comprehensive Plan

(Source: Kent County Comprehensive Plan, 2018)

Kent County Comprehensive Plan:
Per the *Kent County Comprehensive Plan Existing Land Uses Map,* the proposed development appears to be currently zoned as Agricultural Land and Open Space. Per the *Kent County Comprehensive Plan Future Land Use Map,* the proposed development is in an area designated as Low Density Residential.

Proposed Development's Compatibility with the Kent County Comprehensive Plan:
The *Kent County Comprehensive Plan* states that Low Density Residential areas are permitted for single family detached residential as well as agriculture and supporting uses, home based businesses, and limited commercial uses. Therefore, the proposed development is generally consistent 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 Housing). Trip generation was reviewed by DelDOT as part of the Preliminary TIS (PTIS) submission.

Table 1
Harrow Residential Trip Generation

Land Use	ADT	Weekday AM Peak Hour			Weekday PM Peak Hour		
		In	Out	Total	In	Out	Total
111 Units - Single Family Detached Housing (ITE – 210)	1,145	21	63	84	70	42	112

Overview of TIS

Intersections examined:

1. Site Entrance / Peachtree Run (Kent Road 105)
2. Peachtree Run / Walnut Shade Road (Kent Road 30)
3. Walnut Shade Road / Autumn Moon Lane (Kent Road 369)
4. Walnut Shade Road / Briarbush Road (Kent Road 367)
5. Walnut Shade Road / Millchop Lane (Kent Road 368)
6. Walnut Shade Road / Barney Jenkins Road (Kent Road 370)
7. Peachtree Run / Longacre Drive / Peach Peddler Path
8. Peachtree Run / Mifflin Meadow Drive *(south driveway)*
9. Peachtree Run / Mifflin Meadow Drive *(north driveway)*
10. Peachtree Run / Lochmeath Way (Kent Road 361)
11. Peachtree Run / Voshells Mill Star Hill Road (Kent Road 105/360)
12. Peachtree Run / Millchop Lane
13. Peachtree Run / Irish Hill Road (Kent Road 31)
14. a) Irish Hill Road / Fox Chase Road (Kent Road 381)
14. b) Fox Chase Road / Realigned Peachtree Run / Irish Hill Road
15. a) Irish Hill Road / Woodlytown Road (Kent Road 106)
15. b) McGinnis Pond Road / Realigned Woodlytown Road / Irish Hill Road

Conditions examined:

1. Case 1 – 2022 existing
2. Case 2 – 2027 without development

3. Case 3 – 2027 with development

Committed Developments considered:

1. Fifer Farm (a.k.a. Barret Farm) (70 single family detached homes; 30 units remain unbuilt)
2. Woodfield Village (295 single family detached homes; 70 units remain unbuilt)
3. Stratford Village (164 low-rise multi-family homes)
4. Pinehurst Village (185 single family homes; 57 units remain unbuilt)
5. Knollwood Phase 4 (282 single family detached homes)
6. King Property – Residential (192 low-rise multi-family homes)
7. Long Acre Village (3 – 5,000 SF fast-food restaurants with drive-through windows)
8. Townsend Fields (106 single family detached homes; 54 remain unbuilt)
9. Brookfield Phase IV (104 single family detached homes)

*Note: Committed development information provided in the Final TIS supersedes the information provided in the March 1, 2022, DelDOT Scoping Meeting Memorandum.

Peak hours evaluated:
Weekday morning and weekday evening peak periods.

Intersection Descriptions

1. **Site Entrance / Peachtree Run (Kent Road 105)**

   Type of Control: Proposed two-way stop-controlled intersection (T-intersection).
   Westbound Approach: (Site Entrance) Proposed one shared left turn/right turn lane, stop-controlled.
   Northbound Approach: (Peachtree Run) Existing one through lane; proposed one through lane and one right-turn lane.
   Southbound Approach: (Peachtree Run) Existing one through lane; proposed one left turn lane and one through lane.

2. **Peachtree Run / Walnut Shade Road (Kent Road 30)**

   Type of Control: All-way stop-controlled intersection.
   Eastbound Approach: (Walnut Shade Road) Existing one shared left turn/through/right turn lane.
   Westbound Approach: (Walnut Shade Road) Existing one shared left turn/through/right turn lane.
   Northbound Approach: (Peachtree Run) Existing one shared left turn/through/right turn lane.
   Southbound Approach: (Peachtree Run) Existing one shared left turn/through/right turn lane.

3. **Walnut Shade Road / Autumn Moon Lane (Kent Road 369)**
   Type of Control: Existing two-way stop-controlled intersection (T-intersection).
   Eastbound Approach: (Walnut Shade Road) Existing one shared through/right turn lane.
   Westbound Approach: (Walnut Shade Road) Existing one shared left turn/through lane.
   Northbound Approach: (Autumn Moon Lane) Existing one shared left turn/right turn lane, stop-controlled.

4. **Walnut Shade Road / Briarbush Road (Kent Road 367)**
   Type of Control: Existing two-way stop-controlled intersection (T-intersection).
   Eastbound Approach: (Walnut Shade Road) Existing one shared through/right turn lane.
   Westbound Approach: (Walnut Shade Road) Existing one shared left turn/through lane.
   Northbound Approach: (Briarbush Road) Existing one shared left turn/right turn lane, stop-controlled.

   * A private driveway is located at the southbound leg of the intersection.

5. **Walnut Shade Road / Millchop Lane (Kent Road 368)**
   Type of Control: Existing two-way stop-controlled intersection (T-intersection).
   Eastbound Approach: (Walnut Shade Road) Existing one shared through/right turn lane.
   Westbound Approach: (Walnut Shade Road) Existing one shared left turn/through lane.
   Northbound Approach: (Millchop Lane) Existing one shared left turn/right turn lane, stop-controlled.

6. **Walnut Shade Road / Barney Jenkins Road (Kent Road 370)**
   Type of Control: Existing two-way stop-controlled intersection (T-intersection).
   Eastbound Approach: (Walnut Shade Road) Existing one through lane and one right turn lane.
   Westbound Approach: (Walnut Shade Road) Existing one shared left turn/through lane.
   Northbound Approach: (Barney Jenkins Road) Existing one shared left turn/right turn lane, stop-controlled.

7. **Peachtree Run / Longacre Drive / Peach Peddler Path**
   Type of Control: Existing two-way stop-controlled intersection (four-legged).
   Eastbound Approach: (Longacre Drive) Existing one shared left turn/through/right turn lane, stop-controlled.
   Westbound Approach: (Peach Peddler Path) Existing one shared left turn/through/right turn lane, stop-controlled.

Northbound Approach: (Peachtree Run) Existing one left turn lane, one through lane, and one right turn lane.
Southbound Approach: (Peachtree Run) Existing one left turn lane, one through lane, and one right turn lane.

8. Peachtree Run / Mifflin Meadow Drive *(south driveway)*
Type of Control: Existing two-way stop-controlled intersection (T-intersection).
Eastbound Approach: (Mifflin Meadow Drive) Existing one shared left turn/right turn lane, stop-controlled.
Northbound Approach: (Peachtree Run) Existing one shared left turn/through lane.
Southbound Approach: (Peachtree Run) Existing one shared through/right turn lane.

9. Peachtree Run / Mifflin Meadow Drive *(north driveway)*
Type of Control: Existing two-way stop-controlled intersection (T-intersection).
Eastbound Approach: (Mifflin Meadow Drive) Existing one shared left turn/right turn lane, stop-controlled.
Northbound Approach: (Peachtree Run) Existing one shared left turn/through lane.
Southbound Approach: (Peachtree Run) Existing one shared through/right turn lane.

* A private driveway is located at the westbound leg of the intersection.

10. Peachtree Run / Lochmeath Way (Kent Road 361)
Type of Control: All-way stop-controlled intersection.
Eastbound Approach: (Lochmeath Way) Existing one shared left turn/through/right turn lane.
Westbound Approach: (Lochmeath Way) Existing one shared left turn/through/right turn lane.
Northbound Approach: (Peachtree Run) Existing one shared left turn/through/right turn lane.
Southbound Approach: (Peachtree Run) Existing one shared left turn/through/right turn lane.

11. Peachtree Run / Voshells Mill Star Hill Road (Kent Road 105)
Type of Control: Existing two-way stop-controlled intersection (T-intersection).
Eastbound Approach: (Voshells Mill Star Hill Road) Existing one shared through/right turn lane.
Westbound Approach: (Voshells Mill Star Hill Road) Existing one shared left turn/through lane.
Northbound Approach: (Peachtree Run) Existing one shared left turn/right turn lane, stop-controlled.

* A private entrance is located at the southbound leg of the intersection.

12. Peachtree Run / Millchop Lane

Type of Control: All-way stop-controlled intersection.
Eastbound Approach: (Millchop Lane) Existing one shared left turn/through/right turn lane.
Westbound Approach: (Millchop Lane) Existing one shared left turn/through/right turn lane.
Northbound Approach: (Peachtree Run) Existing one shared left turn/through/right turn lane.
Southbound Approach: (Peachtree Run) Existing one shared left turn/through/right turn lane.

13. Peachtree Run / Irish Hill Road (Kent Road 31)

Type of Control: Existing two-way stop-controlled intersection (T-intersection).
Eastbound Approach: (Irish Hill Road) Existing one shared left turn/through lane.
Westbound Approach: (Irish Hill Road) Existing one shared through/right turn lane.
Southbound Approach: (Peachtree Run) Existing one shared left turn/right turn lane, stop-controlled.

14. a) Irish Hill Road / Fox Chase Road (Kent Road 381)

Type of Control: Existing two-way stop-controlled intersection (T-intersection).
Eastbound Approach: (Irish Hill Road) Existing one shared through/right turn lane.
Westbound Approach: (Irish Hill Road) Existing one shared left turn/through lane.
Northbound Approach: (Fox Chase Road) Existing one shared left turn/right turn lane, stop-controlled.

* A private entrance is located at the southbound leg of the intersection.

14. b) Fox Chase Road / Realigned Peachtree Run / Irish Hill Road

Type of Control: Proposed roundabout (four-legged).
Eastbound Approach: (Irish Hill Road) Proposed one shared left turn/through/right turn lane.
Westbound Approach: (Irish Hill Road) Proposed one shared left turn/through/right turn lane.
Northbound Approach: (Fox Chase Road) Proposed one shared left turn/through/right turn lane.
Southbound Approach: (Realigned Peachtree Run) Proposed one shared left turn/through/right turn lane.

***** This intersection is being constructed as part of the *Irish Hill Road, Fox Chase Road to McGinnis Pond Road* project (DelDOT Contract No. T202004201). The project will realign the Fox Chase Road and Peachtree Run intersection to create a new four-legged roundabout.

15. a) Irish Hill Road / Woodlytown Road (Kent Road 106)

Type of Control: Existing two-way stop-controlled intersection (T-intersection).
Eastbound Approach: (Irish Hill Road) Existing one shared left turn/through lane.
Westbound Approach: (Irish Hill Road) Existing one shared through/right turn lane.
Southbound Approach: (Woodlytown Road) Existing one shared left turn/right turn lane, stop-controlled.

15. b) McGinnis Pond Road / Realigned Woodlytown Road / Irish Hill Road

Type of Control: Proposed roundabout (four-legged).
Eastbound Approach: (Irish Hill Road) Proposed one shared left turn/through/right turn lane.
Westbound Approach: (Irish Hill Road) Proposed one shared left turn/through/right turn lane.
Northbound Approach: (McGinnis Pond Road) Proposed one shared left turn/through/right turn lane.
Southbound Approach: (Realigned Woodlytown Road) Proposed one shared left turn/through/right turn lane.

***** This intersection is being constructed as part of the *Irish Hill Road, Fox Chase Road to McGinnis Pond Road* project (DelDOT Contract No. T202004201). The project will realign the Woodlytown Road and McGinnis Pond Road intersection to create a new four-legged roundabout.

Transit, Pedestrian, and Bicycle Facilities

Existing transit service: Per DelDOT Gateway, DART Route 117 runs along and through the study area and has stops at the study intersections. Route 117 provides nine round trips from 5:45 AM to 10:22 PM on weekdays. Specifically, bus stops for DART Route 117 exist at the study intersections of Peachtree Run/Voshells Mill Star Hill Road, Peachtree Run/Lochmeath Way, and Peachtree Run/Mifflin Meadow Drive. There are no bus stops directly in front of the proposed development on the frontage road.

Planned transit service: Per email correspondence on August 2, 2022, with Mr. Jared Kauffman, Planner for DART, the Delaware Transit Corporation, DART does not have any transit specific comments for this project.

Existing bicycle and pedestrian facilities: According to DelDOT's Kent County Bicycle Map, several study roadways are considered bicycle routes. Peachtree Run, Walnut Shade Road, Fox Chase Road and Irish Hill Road are considered connector bicycle routes. A bike lane is located at the Walnut Shade Road/Barney Jenkins Road intersection. A crosswalk is located at the Peachtree Run/Voshells Mill Star Hill Road intersection.

Planned bicycle and pedestrian facilities: Email correspondence was sent to Anthony Aglio, DelDOT's Bicycle and Pedestrian Coordinator, on July 21, 2022, and to Mr. John Fiori, DelDOT's Bicycle Coordinator and Ms. Linda Osiecki, DelDOT's Pedestrian Coordinator on August 26, 2022. A response has not yet been received.

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 Bicycle On-Road Network Level of Traffic Stress map from the April 2018 Blueprint for a Bicycle-Friendly Delaware document which can be found on the following website:
https://deldot.gov/Publications/plans/bikeandped/pdfs/DelDOTBikePlan043018FINAL.pdf

- Peachtree Run LTS: 3

Crash Evaluation

Per the crash data included in the TIS from March 16, 2019, to March 16, 2022, provided by the Delaware Department of Transportation (DelDOT), 128 crashes were reported within the study area. Of the 128 crashes reported, 101 involved property damage only, 27 involved injury and there were no fatalities.

The Peachtree Run/Walnut Shade Road intersection had 21 crashes reported with 5 rear-end, 1 head-on, 6 angle, 1 animal, 2 hit fixed object, 1 pedestrian and 5 other/unknown.

The Peachtree Run/Millchop Lane intersection had 18 crashes reported with 2 head-on, 7 angle, 1 sideswipe, 1 animal, 4 hit fixed object and 3 other/unknown.

Millchop Lane/Walnut Shade Road intersection had 13 crashes reported with 2 rear-end, 1 head-on, 4 angle, 1 sideswipe, 1 hit fixed object, and 4 other/unknown.

Autumn Moon Lane/Walnut Shade Road had 13 crashes reported with 3 rear-end, 1 angle, 7 hit fixed object and 2 other/unknown.

Peachtree Run/Irish Hill Road intersection had 12 crashes reported with 5 rear-end, 1 head-on, 2 angle, 1 animal, 2 hit fixed object and 1 other/unknown.

Woodlytown Road/Irish Hill Road intersection had 12 crashes reported with 2 rear-end, 4 angle, 3 sideswipe, 2 hit fixed object and 1 other/unknown.

The remaining intersections reported 10 incidents or less 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 location per a field visit conducted on August 10, 2022.

General HCS Analysis Comments

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

1) The TIS used version 7.6 of HCS7, whereas JMT used version 7.9.6 of HCS7 to complete the analysis.

2) Per DelDOT's *Development Coordination Manual,* JMT utilized the existing PHF for all current condition (Case 1) models whereas the TIS used a PHF value of 0.92.

3) As all the intersections within the study area experience some increase in volumes, per DelDOT's *Development Coordination Manual,* JMT 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, whereas the TIS used a PHF value of 0.92.

4) JMT utilized the existing heavy vehicle percentage for each movement greater than 100 vph in the Case 1 existing scenario.

5) 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, Case 3 and Case 4 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 did not.

6) 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 did not.

7) JMT included pedestrians counted during the traffic data collection in the analysis whereas the TIS did not.

8) JMT included analysis of a Case 4 – 2029 with Development traffic condition (two years following development) per the Kent County Adequate Public Facilities Ordinance (APFO) whereas the TIS did not.

Table 2
Peak Hour Levels Of Service (LOS)
Based on Final Traffic Impact Study for the Harrow Residential Development
Report Dated: July 15, 2022
Prepared by: McMahon, a Bowman Company

Unsignalized Intersection Two-Way Stop Control[1]	**LOS per TIS**		**LOS per JMT**	
Site Entrance / Peachtree Run (Kent Road 105) / Proposed Strafford Village Access	Weekday AM	Weekday PM	Weekday AM	Weekday PM
2027 without Development (Case 2)[2]				
Eastbound Strafford Village Access Approach	-	-	B (13.4)	C (15.5)
Northbound Peachtree Run Left Turn	-	-	A (7.6)	A (8.5)
2027 with Development (Case 3)				
Eastbound Strafford Village Access Approach	C (17.3)	C (22.6)	C (17.4)	C (22.7)
Westbound Site Access Approach	B (12.9)	B (12.2)	B (12.9)	B (12.2)
Northbound Peachtree Run Left Turn	A (7.5)	A (8.4)	A (7.6)	A (8.5)
Southbound Peachtree Run Left Turn	A (8.4)	A (8.1)	A (8.4)	A (8.1)
2029 with Development (Case 4)				
Eastbound Strafford Village Access Approach	-	-	C (17.4)	C (23.1)
Westbound Site Access Approach	-	-	B (12.9)	B (12.3)
Northbound Peachtree Run Left Turn	-	-	A (7.6)	A (8.5)
Southbound Peachtree Run Left Turn	-	-	A (8.4)	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 conducted an additional Case 2 analysis of the intersection, whereas the TIS did not.

Table 3
Peak Hour Levels Of Service (LOS)
Based on Final Traffic Impact Study for the Harrow Residential Development
Report Dated: July 15, 2022
Prepared by: McMahon, a Bowman Company

Unsignalized Intersection All-Way Stop Control[1]	**LOS per TIS**		**LOS per JMT**	
Peachtree Run / Walnut Shade Road (Kent Road 30)	Weekday AM	Weekday PM	Weekday AM	Weekday PM
2022 Existing (Case 1)				
Eastbound Walnut Shade Road Approach	A (9.8)	B (11.1)	A (9.6)	B (12.0)
Westbound Walnut Shade Road Approach	B (10.5)	B (14.5)	B (10.3)	C (16.8)
Northbound Peachtree Run Approach	B (12.7)	B (12.4)	B (12.1)	B (13.7)
Southbound Peachtree Run Approach	A (9.3)	B (13.5)	A (9.2)	C (15.4)
2027 without Development (Case 2)				
Eastbound Walnut Shade Road Approach	B (11.1)	C (15.1)	B (10.9)	C (15.2)
Westbound Walnut Shade Road Approach	B (12.7)	D (29.3)	B (12.3)	D (29.7)
Northbound Peachtree Run Approach	C (21.1)	C (21.1)	C (19.0)	C (21.4)
Southbound Peachtree Run Approach	B (10.6)	D (25.6)	B (10.5)	D (26.0)
2027 with Development (Case 3)				
Eastbound Walnut Shade Road Approach	B (11.7)	C (18.5)	B (11.4)	C (18.7)
Westbound Walnut Shade Road Approach	B (13.5)	E (44.2)	B (13.0)	E (45.1)
Northbound Peachtree Run Approach	D (29.5)	D (32.7)	D (25.2)	D (33.3)
Southbound Peachtree Run Approach	B (11.2)	E (42.2)	B (11.0)	E (43.1)

Table 3 (continued)
Peak Hour Levels Of Service (LOS)
Based on Final Traffic Impact Study for the Harrow Residential Development
Report Dated: July 15, 2022
Prepared by: McMahon, a Bowman Company

Unsignalized Intersection All-Way Stop Control[1]	**LOS per TIS**		**LOS per JMT**	
Peachtree Run / Walnut Shade Road (Kent Road 30)	Weekday AM	Weekday PM	Weekday AM	Weekday PM
2027 with Development (Case 3) *with improvements* [3]				
Eastbound Walnut Shade Road Approach	-	-	B (12.0)	C (17.5)
Westbound Walnut Shade Road Approach	-	-	B (12.6)	D (30.8)
Northbound Peachtree Run Approach	-	-	C (18.2)	C (19.8)
Southbound Peachtree Run Approach	-	-	B (10.8)	D (30.2)
2029 with Development (Case 4)				
Eastbound Walnut Shade Road Approach	-	-	B (11.4)	C (19.2)
Westbound Walnut Shade Road Approach	-	-	B (13.1)	E (49.1)
Northbound Peachtree Run Approach	-	-	D (26.1)	E (35.5)
Southbound Peachtree Run Approach	-	-	B (11.0)	E (46.4)
2029 with Development (Case 4) *with improvements* [3]				
Eastbound Walnut Shade Road Approach	-	-	B (12.1)	C (17.9)
Westbound Walnut Shade Road Approach	-	-	B (12.6)	D (32.7)
Northbound Peachtree Run Approach	-	-	C (18.6)	C (20.5)
Southbound Peachtree Run Approach	-	-	B (10.8)	D (32.0)

[3] JMT conducted additional analysis of the intersection with one left turn/through lane and one right turn lane on the westbound, northbound, and southbound approaches. The eastbound approach was modeled with existing conditions (one shared left turn/through/right turn lane).

Table 3 (continued)
Peak Hour Levels Of Service (LOS)
Based on Final Traffic Impact Study for the Harrow Residential Development
Report Dated: July 15, 2022
Prepared by: McMahon, a Bowman Company

Roundabout [1]	**LOS per TIS**		**LOS per JMT**	
Peachtree Run / Walnut Shade Road (Kent Road 30)[4]	Weekday AM	Weekday PM	Weekday AM	Weekday PM
2027 with Development (Case 3)				
Eastbound Walnut Shade Road Approach	-	-	A (4.3)	A (7.7)
Westbound Walnut Shade Road Approach	-	-	A (7.3)	A (8.5)
Northbound Peachtree Run Approach	-	-	A (8.3)	A (6.7)
Southbound Peachtree Run Approach	-	-	A (4.8)	A (9.6)
Overall			A (7.1)	A (8.2)
2029 with Development (Case 4)				
Eastbound Walnut Shade Road Approach	-	-	A (4.3)	A (7.8)
Westbound Walnut Shade Road Approach	-	-	A (7.3)	A (8.6)
Northbound Peachtree Run Approach	-	-	A (8.4)	A (6.7)
Southbound Peachtree Run Approach	-	-	A (4.8)	A (9.8)
Overall			A (7.1)	A (8.3)

[4] JMT conducted an additional analysis of the intersection as a single-lane roundabout.

Table 3 (continued)
Peak Hour Levels Of Service (LOS)
Based on Final Traffic Impact Study for the Harrow Residential Development
Report Dated: July 15, 2022
Prepared by: McMahon, a Bowman Company

Signalized Intersection[1]	**LOS per TIS**		**LOS per JMT**	
Peachtree Run / Walnut Shade Road (Kent Road 30)[5]	Weekday AM	Weekday PM	Weekday AM	Weekday PM
2027 with Development (Case 3)	-	-	C (31.9)	C (25.7)
2029 with Development (Case 4)	-	-	C (32.9)	C (26.2)

[5] JMT conducted an additional analysis of the intersection as a signalized intersection. For this analysis, all approaches were modeled with one left turn lane and one shared through/right-turn lane. The intersection was modeled utilizing a 60 second cycle length with protected/permitted left turn phasing on all approaches except the eastbound one, which was modeled with permissive left turns.

Table 4
Peak Hour Levels Of Service (LOS)
Based on Final Traffic Impact Study for the Harrow Residential Development
Report Dated: July 15, 2022
Prepared by: McMahon, a Bowman Company

Unsignalized Intersection Two-Way Stop Control[1] (T-Intersection)	**LOS per TIS**		**LOS per JMT**	
Walnut Shade Road / Autumn Moon Lane (Kent Road 369)	Weekday AM	Weekday PM	Weekday AM	Weekday PM
2022 Existing (Case 1)				
Westbound Walnut Shade Road Left Turn	A (7.6)	A (7.8)	A (7.7)	A (7.9)
Northbound Autumn Moon Road Approach	A (9.8)	B (11.4)	B (10.0)	B (11.8)
2027 without Development (Case 2)				
Westbound Walnut Shade Road Left Turn	A (7.8)	A (8.0)	A (7.8)	A (8.0)
Northbound Autumn Moon Road Approach	B (10.4)	B (12.5)	B (10.7)	B (13.0)
2027 with Development (Case 3)				
Westbound Walnut Shade Road Left Turn	A (7.8)	A (8.0)	A (7.9)	A (8.0)
Northbound Autumn Moon Road Approach	B (10.5)	B (12.7)	B (10.8)	B (13.1)
2029 with Development (Case 4)				
Westbound Walnut Shade Road Left Turn	-	-	A (7.9)	A (8.0)
Northbound Autumn Moon Road Approach	-	-	B (10.8)	B (13.2)

Table 5
Peak Hour Levels Of Service (LOS)
Based on Final Traffic Impact Study for the Harrow Residential Development
Report Dated: July 15, 2022
Prepared by: McMahon, a Bowman Company

Unsignalized Intersection Two-Way Stop Control[1]	**LOS per TIS**		**LOS per JMT**	
Walnut Shade Road / Briarbush Road (Kent Road 367)	Weekday AM	Weekday PM	Weekday AM	Weekday PM
2022 Existing (Case 1)				
Eastbound Walnut Shade Road Left Turn	A (7.5)	A (7.9)	A (7.5)	A (8.0)
Westbound Walnut Shade Road Left Turn	A (7.9)	A (7.8)	A (7.9)	A (7.8)
Northbound Briarbush Road Approach	B (11.5)	B (12.6)	B (11.6)	B (13.6)
Southbound Residential Driveway Approach	B (14.3)	-	B (14.4)	-
2027 without Development (Case 2)				
Eastbound Walnut Shade Road Left Turn	A (7.5)	A (8.1)	A (7.5)	A (8.1)
Westbound Walnut Shade Road Left Turn	A (8.1)	A (7.9)	A (8.1)	A (8.0)
Northbound Briarbush Road Approach	B (13.1)	B (14.9)	B (13.2)	C (15.7)
Southbound Residential Driveway Approach	C (16.1)	-	C (16.2)	-
2027 with Development (Case 3)				
Eastbound Walnut Shade Road Left Turn	A (7.5)	A (8.1)	A (7.5)	A (8.2)
Westbound Walnut Shade Road Left Turn	A (8.1)	A (7.9)	A (8.1)	A (8.0)
Northbound Briarbush Road Approach	B (13.3)	C (15.2)	B (13.4)	C (16.0)
Southbound Residential Driveway Approach	C (16.4)	-	C (16.5)	-
2029 with Development (Case 4)				
Eastbound Walnut Shade Road Left Turn	-	-	A (7.5)	A (8.2)
Westbound Walnut Shade Road Left Turn	-	-	A (8.1)	A (8.0)
Northbound Briarbush Road Approach	-	-	B (13.5)	C (16.2)
Southbound Residential Driveway Approach	-	-	C (16.7)	-

Table 6
Peak Hour Levels Of Service (LOS)
Based on Final Traffic Impact Study for the Harrow Residential Development
Report Dated: July 15, 2022
Prepared by: McMahon, a Bowman Company

Unsignalized Intersection Two-Way Stop Control[1] (T-Intersection)	**LOS per TIS**		**LOS per JMT**	
Walnut Shade Road / Millchop Road (Kent Road 368)	Weekday AM	Weekday PM	Weekday AM	Weekday PM
2022 Existing (Case 1)				
Westbound Walnut Shade Road Left Turn	A (7.6)	A (8.0)	A (7.8)	A (8.1)
Northbound Millchop Road Approach	B (13.2)	B (13.1)	C (15.6)	B (13.9)
2027 without Development (Case 2)				
Westbound Walnut Shade Road Left Turn	A (7.7)	A (8.1)	A (7.7)	A (8.2)
Northbound Millchop Road Approach	B (14.5)	B (14.4)	C (15.2)	B (15.0)
2027 with Development (Case 3)				
Westbound Walnut Shade Road Left Turn	A (7.7)	A (8.2)	A (7.7)	A (8.2)
Northbound Millchop Road Approach	B (15.0)	B (14.9)	C (15.7)	C (15.6)
2029 with Development (Case 4)				
Westbound Walnut Shade Road Left Turn	-	-	A (7.7)	A (8.3)
Northbound Millchop Road Approach	-	-	C (15.9)	C (15.7)

Table 7
Peak Hour Levels Of Service (LOS)
Based on Final Traffic Impact Study for the Harrow Residential Development
Report Dated: July 15, 2022
Prepared by: McMahon, a Bowman Company

Unsignalized Intersection Two-Way Stop Control[1] (T-Intersection)	**LOS per TIS**		**LOS per JMT**	
Walnut Shade Road / Barney Jenkins Road (Kent Road 370)[6]	Weekday AM	Weekday PM	Weekday AM	Weekday PM
2022 Existing (Case 1)				
Westbound Walnut Shade Road Left Turn	A (8.7)	A (8.4)	A (9.2)	A (8.4)
Northbound Barney Jenkins Road Approach	C (15.3)	B (14.1)	C (19.7)	B (13.9)
2027 without Development (Case 2)				
Westbound Walnut Shade Road Left Turn	A (8.8)	A (8.6)	A (8.9)	A (8.6)
Northbound Barney Jenkins Road Approach	C (16.3)	C (15.2)	C (17.2)	C (14.9)
2027 with Development (Case 3)				
Westbound Walnut Shade Road Left Turn	A (8.8)	A (8.6)	A (8.9)	A (8.6)
Northbound Barney Jenkins Road Approach	C (16.6)	C (15.6)	C (17.4)	C (15.3)
2029 with Development (Case 4)				
Westbound Walnut Shade Road Left Turn	-	-	A (8.9)	A (8.6)
Northbound Barney Jenkins Road Approach	-	-	C (17.6)	C (15.4)

[6] TIS modeled intersection eastbound approach with one shared through/right turn lane, whereas JMT modeled the eastbound approach with one through lane and one right turn lane based on existing conditions.

Table 8
Peak Hour Levels Of Service (LOS)
Based on Final Traffic Impact Study for the Harrow Residential Development
Report Dated: July 15, 2022
Prepared by: McMahon, a Bowman Company

Unsignalized Intersection Two-Way Stop Control[1]	**LOS per TIS**		**LOS per JMT**	
Peachtree Run / Longacre Drive / Peach Peddler[7]	Weekday AM	Weekday PM	Weekday AM	Weekday PM
2022 Existing (Case 1)				
Eastbound Longacre Drive Approach	B (11.1)	B (11.1)	B (11.3)	B (11.5)
Westbound Peach Peddler Approach	B (10.9)	B (11.2)	B (11.1)	B (11.5)
Northbound Peachtree Road Left Turn	A (7.4)	A (7.9)	A (7.4)	A (8.0)
Southbound Peachtree Road Left Turn	A (8.0)	A (7.7)	A (8.1)	A (7.8)
2027 without Development (Case 2)				
Eastbound Longacre Drive Approach	B (12.4)	B (12.6)	B (12.7)	B (12.9)
Westbound Peach Peddler Approach	B (12.4)	B (12.7)	B (12.7)	B (12.9)
Northbound Peachtree Road Left Turn	A (7.5)	A (8.1)	A (7.5)	A (8.2)
Southbound Peachtree Road Left Turn	A (8.2)	A (7.9)	A (8.3)	A (8.0)
2027 with Development (Case 3)				
Eastbound Longacre Drive Approach	B (12.8)	B (13.1)	B (13.2)	B (13.5)
Westbound Peach Peddler Approach	B (12.8)	B (13.2)	B (13.2)	B (13.5)
Northbound Peachtree Road Left Turn	A (7.5)	A (8.2)	A (7.5)	A (8.3)
Southbound Peachtree Road Left Turn	A (8.3)	A (8.0)	A (8.4)	A (8.0)
2029 with Development (Case 4)				
Eastbound Longacre Drive Approach	-	-	B (13.2)	B (13.5)
Westbound Peach Peddler Approach	-	-	B (13.3)	B (13.6)
Northbound Peachtree Road Left Turn	-	-	A (7.5)	A (8.3)
Southbound Peachtree Road Left Turn	-	-	A (8.5)	A (8.0)

[7] TIS modeled the northbound and southbound approaches with one shared left turn/through/right turn lane, whereas JMT modeled the intersection with one left turn lane, one through lane, and one right turn lane on the northbound and southbound approaches based on existing conditions.

Table 9
Peak Hour Levels Of Service (LOS)
Based on Final Traffic Impact Study for the Harrow Residential Development
Report Dated: July 15, 2022
Prepared by: McMahon, a Bowman Company

Unsignalized Intersection Two-Way Stop Control[1] (T-Intersection)	**LOS per TIS**		**LOS per JMT**	
Peachtree Run / Mifflin Meadow Drive (South Driveway)	Weekday AM	Weekday PM	Weekday AM	Weekday PM
2022 Existing (Case 1)				
Eastbound Mifflin Meadow Drive (South Driveway) Approach	B (10.3)	A (10.0)	B (10.5)	B (10.2)
Northbound Peachtree Run Left Turn	A (7.4)	A (7.9)	A (7.5)	A (8.0)
2027 without Development (Case 2)				
Eastbound Mifflin Meadow Drive (South Driveway) Approach	B (11.1)	B (10.8)	B (11.3)	B (10.9)
Northbound Peachtree Run Left Turn	A (7.5)	A (8.2)	A (7.5)	A (8.3)
2027 with Development (Case 3)				
Eastbound Mifflin Meadow Drive (South Driveway) Approach	B (11.3)	B (11.0)	B (11.6)	B (11.2)
Northbound Peachtree Run Left Turn	A (7.5)	A (8.3)	A (7.6)	A (8.4)
2029 with Development (Case 4)				
Eastbound Mifflin Meadow Drive (South Driveway) Approach	-	-	B (11.6)	B (11.3)
Northbound Peachtree Run Left Turn	-	-	A (7.6)	A (8.4)

Table 10
Peak Hour Levels Of Service (LOS)
Based on Final Traffic Impact Study for the Harrow Residential Development
Report Dated: July 15, 2022
Prepared by: McMahon, a Bowman Company

Unsignalized Intersection Two-Way Stop Control[1] (T-Intersection)	**LOS per TIS**		**LOS per JMT**	
Peachtree Run / Mifflin Meadow Drive (North Driveway)	Weekday AM	Weekday PM	Weekday AM	Weekday PM
2022 Existing (Case 1)				
Eastbound Mifflin Meadow Drive (North Driveway) Approach	B (11.8)	B (11.9)	B (12.1)	B (12.4)
Northbound Peachtree Run Left Turn	A (7.5)	A (7.9)	A (7.5)	A (8.0)
2027 without Development (Case 2)				
Eastbound Mifflin Meadow Drive (North Driveway) Approach	B (13.2)	B (13.7)	B (13.6)	B (14.2)
Northbound Peachtree Run Left Turn	A (7.5)	A (8.2)	A (7.6)	A (8.3)
2027 with Development (Case 3)				
Eastbound Mifflin Meadow Drive (North Driveway) Approach	B (13.7)	B (14.4)	B (14.2)	B (14.9)
Northbound Peachtree Run Left Turn	A (7.6)	A (8.3)	A (7.6)	A (8.4)
2029 with Development (Case 4)				
Eastbound Mifflin Meadow Drive (North Driveway) Approach	-	-	B (14.3)	C (15.0)
Northbound Peachtree Run Left Turn	-	-	A (7.6)	A (8.4)

Table 11
Peak Hour Levels Of Service (LOS)
Based on Final Traffic Impact Study for the Harrow Residential Development
Report Dated: July 15, 2022
Prepared by: McMahon, a Bowman Company

Unsignalized Intersection All-Way Stop Control[1]	**LOS per TIS**		**LOS per JMT**	
Peachtree Run / Lochmeath Way (Kent Road 361)	Weekday AM	Weekday PM	Weekday AM	Weekday PM
2022 Existing (Case 1)				
Eastbound Lochmeath Way Approach	A (9.1)	B (10.9)	A (9.2)	B (11.0)
Westbound Lochmeath Way Approach	A (9.3)	A (9.7)	A (9.4)	A (9.8)
Northbound Peachtree Run Approach	B (12.4)	B (11.4)	B (12.4)	B (11.5)
Southbound Peachtree Run Approach	A (8.6)	B (10.7)	A (8.6)	B (10.7)
2027 without Development (Case 2)				
Eastbound Lochmeath Way Approach	B (10.5)	C (17.8)	B (10.7)	C (18.5)
Westbound Lochmeath Way Approach	B (11.1)	B (12.2)	B (11.2)	B (12.4)
Northbound Peachtree Run Approach	C (18.7)	C (16.6)	C (19.0)	C (17.0)
Southbound Peachtree Run Approach	A (9.5)	B (14.0)	A (9.6)	B (14.3)
2027 with Development (Case 3)				
Eastbound Lochmeath Way Approach	B (10.8)	C (20.5)	B (11.0)	C (20.7)
Westbound Lochmeath Way Approach	B (11.4)	B (12.8)	B (11.5)	B (12.9)
Northbound Peachtree Run Approach	C (21.5)	C (18.6)	C (21.9)	C (18.8)
Southbound Peachtree Run Approach	A (9.7)	C (15.1)	A (9.8)	C (15.2)
2029 with Development (Case 4)				
Eastbound Lochmeath Way Approach	-	-	B (11.1)	C (21.3)
Westbound Lochmeath Way Approach	-	-	B (11.6)	B (13.0)
Northbound Peachtree Run Approach	-	-	C (22.6)	C (19.2)
Southbound Peachtree Run Approach	-	-	A (9.8)	C (15.4)

Table 12
Peak Hour Levels Of Service (LOS)
Based on Final Traffic Impact Study for the Harrow Residential Development
Report Dated: July 15, 2022
Prepared by: McMahon, a Bowman Company

Unsignalized Intersection Two-Way Stop Control[1] (T-Intersection)	**LOS per TIS**		**LOS per JMT**	
Peachtree Run / Voshells Mill Star Hill Road (Kent Road 105)	Weekday AM	Weekday PM	Weekday AM	Weekday PM
2022 Existing (Case 1)				
Westbound Voshells Mill Star Hill Road (Kent Road 105) Left Turn	A (7.6)	A (7.8)	A (7.6)	A (7.9)
Northbound Peachtree Run Approach	B (12.5)	B (12.9)	B (12.6)	B (12.8)
2027 without Development (Case 2)				
Westbound Voshells Mill Star Hill Road (Kent Road 105) Left Turn	A (7.6)	A (7.9)	A (7.7)	A (7.9)
Northbound Peachtree Run Approach	B (13.0)	B (13.5)	B (13.1)	B (13.3)
2027 with Development (Case 3)				
Westbound Voshells Mill Star Hill Road (Kent Road 105) Left Turn	A (7.7)	A (7.9)	A (7.7)	A (7.9)
Northbound Peachtree Run Approach	B (13.2)	B (13.7)	B (13.3)	B (13.6)
2029 with Development (Case 4)				
Westbound Voshells Mill Star Hill Road (Kent Road 105) Left Turn	-	-	A (7.7)	A (7.9)
Northbound Peachtree Run Approach	-	-	B (13.4)	B (13.7)

Table 13
Peak Hour Levels Of Service (LOS)
Based on Final Traffic Impact Study for the Harrow Residential Development
Report Dated: July 15, 2022
Prepared by: McMahon, a Bowman Company

Unsignalized Intersection All-Way Stop Control[1]	**LOS per TIS**		**LOS per JMT**	
Peachtree Run / Millchop Lane	Weekday AM	Weekday PM	Weekday AM	Weekday PM
2022 Existing (Case 1)				
Eastbound Millchop Lane Approach	A (8.7)	A (9.9)	A (8.8)	A (9.9)
Westbound Millchop Lane Approach	A (8.9)	A (9.5)	A (9.0)	A (9.5)
Northbound Peachtree Run Approach	B (13.3)	B (11.1)	B (13.6)	B (11.1)
Southbound Peachtree Run Approach	A (8.6)	B (12.1)	A (8.7)	B (12.1)
2027 without Development (Case 2)				
Eastbound Millchop Lane Approach	A (9.2)	B (11.2)	A (9.4)	B (11.4)
Westbound Millchop Lane Approach	A (9.5)	B (10.5)	A (9.6)	B (10.7)
Northbound Peachtree Run Approach	C (18.7)	B (14.1)	C (19.5)	B (14.5)
Southbound Peachtree Run Approach	A (9.3)	C (17.1)	A (9.4)	C (17.7)
2027 with Development (Case 3)				
Eastbound Millchop Lane Approach	A (9.3)	B (11.3)	A (9.4)	B (11.5)
Westbound Millchop Lane Approach	A (9.5)	B (10.6)	A (9.7)	B (10.8)
Northbound Peachtree Run Approach	C (19.1)	B (14.6)	C (19.9)	B (14.9)
Southbound Peachtree Run Approach	A (9.4)	C (17.7)	A (9.5)	C (18.3)
2029 with Development (Case 4)				
Eastbound Millchop Lane Approach	-	-	A (9.4)	B (11.6)
Westbound Millchop Lane Approach	-	-	A (9.7)	B (10.9)
Northbound Peachtree Run Approach	-	-	C (20.4)	C (15.2)
Southbound Peachtree Run Approach	-	-	A (9.5)	C (18.7)

Table 14
Peak Hour Levels Of Service (LOS)
Based on Final Traffic Impact Study for the Harrow Residential Development
Report Dated: July 15, 2022
Prepared by: McMahon, a Bowman Company

Unsignalized Intersection Two-Way Stop Control[1] (T-Intersection)	**LOS per TIS**		**LOS per JMT**	
Peachtree Run / Irish Hill Road[8]	Weekday AM	Weekday PM	Weekday AM	Weekday PM
2022 Existing (Case 1)				
Eastbound Irish Hill Road Left Turn	A (8.0)	A (8.0)	A (8.2)	A (8.0)
Southbound Peachtree Run Approach	B (12.6)	C (15.6)	B (14.5)	C (16.1)

[8] As part of Irish Hill Road, Fox Chase Road to McGinnis Pond Road (DelDot project number T202004201), geometric upgrades are planned for the near future which will convert the intersections of Peachtree Run & Irish Hill Road & Irish Hill Road & Fox Chase Road to a single roundabout-controlled intersection.

Table 15a
Peak Hour Levels Of Service (LOS)
Based on Final Traffic Impact Study for the Harrow Residential Development
Report Dated: July 15, 2022
Prepared by: McMahon, a Bowman Company

Unsignalized Intersection Two-Way Stop Control[1] (T-Intersection)	**LOS per TIS**		**LOS per JMT**	
Irish Hill Road / Fox Chase Road (Kent Road 381)[8]	Weekday AM	Weekday PM	Weekday AM	Weekday PM
2022 Existing (Case 1)				
Westbound Irish Hill Road Left Turn	A (7.6)	A (7.9)	A (7.6)	A (7.9)
Northbound Fox Chase Road Approach	A (9.8)	B (10.3)	A (9.7)	B (10.3)

Table 15b
Peak Hour Levels Of Service (LOS)
Based on Final Traffic Impact Study for the Harrow Residential Development
Report Dated: July 15, 2022
Prepared by: McMahon, a Bowman Company

Roundabout [1]	**LOS per TIS**		**LOS per JMT**	
Fox Chase Road / Realigned Peachtree Run and Irish Hill Road[8]	Weekday AM	Weekday PM	Weekday AM	Weekday PM
2027 without Development (Case 2)				
Eastbound Irish Hill Road Approach	A (4.8)	A (6.5)	A (4.9)	A (6.5)
Westbound Irish Hill Road Approach	A (6.2)	A (6.2)	A (6.3)	A (6.2)
Northbound Fox Chase Road Approach	A (5.1)	A (5.0)	A (5.2)	A (5.1)
Southbound Realigned Peachtree Run Approach	A (4.8)	A (7.0)	A (5.0)	A (7.1)
Overall	A (5.4)	A (6.5)	A (5.5)	A (6.5)
2027 with Development (Case 3)				
Eastbound Irish Hill Road Approach	A (4.8)	A (6.5)	A (4.9)	A (6.6)
Westbound Irish Hill Road Approach	A (6.2)	A (6.3)	A (6.3)	A (6.3)
Northbound Fox Chase Road Approach	A (5.1)	A (5.0)	A (5.2)	A (5.1)
Southbound Realigned Peachtree Run Approach	A (4.9)	A (7.1)	A (5.0)	A (7.2)
Overall	A (5.4)	A (6.5)	A (5.6)	A (6.6)
2029 with Development (Case 4)				
Eastbound Irish Hill Road Approach	-	-	A (4.9)	A (6.7)
Westbound Irish Hill Road Approach	-	-	A (6.4)	A (6.4)
Northbound Fox Chase Road Approach	-	-	A (5.3)	A (5.2)
Southbound Realigned Peachtree Run Approach	-	-	A (5.1)	A (7.2)
Overall			A (5.6)	A (6.6)

Table 16a
Peak Hour Levels Of Service (LOS)
Based on Final Traffic Impact Study for the Harrow Residential Development
Report Dated: July 15, 2022
Prepared by: McMahon, a Bowman Company

Unsignalized Intersection Two-Way Stop Control[1] (T-Intersection)	**LOS per TIS**		**LOS per JMT**	
Irish Hill Road / Woodlytown Road (Kent Road 106)[9]	Weekday AM	Weekday PM	Weekday AM	Weekday PM
2022 Existing (Case 1)				
Eastbound Irish Hill Road Left Turn	A (8.0)	A (7.9)	A (8.0)	A (7.9)
Southbound Woodlytown Road Approach	B (11.0)	B (13.4)	B (10.8)	B (12.8)

[9]As part of Irish Hill Road, Fox Chase Road to McGinnis Pond Road (DelDot project number T202004201), geometric upgrades are planned for the near future which will convert the intersections of Irish Hill Road & Woodlytown Road and Irish Hill Road & McGinnis Pond Road to a single roundabout-controlled intersection.

Table 16b
Peak Hour Levels Of Service (LOS)
Based on Final Traffic Impact Study for the Harrow Residential Development
Report Dated: July 15, 2022
Prepared by: McMahon, a Bowman Company

Roundabout [1]	**LOS per TIS**		**LOS per JMT**	
McGinnis Pond Road / Realigned Woodlytown Road / Irish Hill Road[9]	Weekday AM	Weekday PM	Weekday AM	Weekday PM
2027 without Development (Case 2)				
Eastbound Irish Hill Road Approach	A (4.6)	A (5.2)	A (4.6)	A (5.3)
Westbound Irish Hill Road Approach	A (4.9)	A (5.0)	A (4.9)	A (5.0)
Northbound Fox Chase Road Approach	A (4.8)	A (4.3)	A (4.9)	A (4.4)
Southbound Realigned Woodlytown Road Approach	A (4.5)	A (5.3)	A (4.6)	A (5.4)
Overall	A (4.7)	A (5.1)	A (4.7)	A (5.2)
2027 with Development (Case 3)				
Eastbound Irish Hill Road Approach	A (4.6)	A (5.2)	A (4.6)	A (5.3)
Westbound Irish Hill Road Approach	A (4.9)	A (5.0)	A (4.9)	A (5.1)
Northbound Fox Chase Road Approach	A (4.8)	A (4.3)	A (4.9)	A (4.4)
Southbound Realigned Woodlytown Road Approach	A (4.5)	A (5.3)	A (4.6)	A (5.4)
Overall	A (4.7)	A (5.1)	A (4.8)	A (5.2)
2029 with Development (Case 4)				
Eastbound Irish Hill Road Approach	-	-	A (4.7)	A (5.4)
Westbound Irish Hill Road Approach	-	-	A (5.0)	A (5.2)
Northbound Fox Chase Road Approach	-	-	A (4.9)	A (4.4)
Southbound Realigned Woodlytown Road Approach	-	-	A (4.6)	A (5.5)
Overall			A (4.8)	A (5.2)

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 _____