



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

NICOLE MAJESKI
SECRETARY

May 22, 2023

Mr. Alex Meitzler
Traffic Planning & Design, Inc.
111 E. Main Street, Suite A
Elkton, MD 21921

Dear Mr. Meitzler:

The enclosed Traffic Impact Study (TIS) review letter for the proposed **Walker Farm Warehouse/ Logistics Development** (Tax Parcel: 10-024.00-219) industrial 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 Annamaria.Furmato@delaware.gov.

Sincerely,

Annamaria Furmato
TIS Group Project Engineer

AF:km

Enclosures

cc with enclosures: Mr. John Hanlon, First Industrial Realty Trust
Mr. Alex Meitzler, Traffic, Planning, and Design, Inc.
Mr. Eric Kramer, Traffic, Planning, and Design, Inc.
Ms. Kestra Kelly, BL Companies
Mr. David L. Edgell, Office of State Planning Coordination
Mr. Antoni Sekowski, New Castle County Department of Land Use
Mr. Bradford Shockley, New Castle County Department of Land Use
Mr. Owen C. Robatino, New Castle County Department of Land Use
Ms. Joanne M. Arellano, Johnson, Mirmiran, & Thompson, Inc.
Mr. Mir Wahed, Johnson, Mirmiran, & Thompson, Inc.
DelDOT Distribution

DelDOT Distribution

Brad Eaby, Deputy Attorney General

Shanté Hastings, Director, Deputy Secretary, Transportation Solutions (DOTS)

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Mark Luszcz, Deputy Director, Operations and Support, Traffic, DOTS

Peter Haag, Chief Traffic Engineer, Traffic, DOTS

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Wendy Carpenter, Traffic Calming & Subdivision Relations Manager, Traffic, DOTS

Sean Humphrey, Traffic Engineer, Traffic, DOTS

Todd Sammons, Assistant Director, Development Coordination, Planning

Wendy Polasko, Subdivision Engineer, Development Coordination, Planning

John Pietrobono, Acting New Castle Review Coordinator, Development Coordination, Planning

Ryan Schroder, New Castle County Subdivision Reviewer, Development Coordination, Planning

Sireen Muhtaseb, TIS Group Manager, Development Coordination, Planning

Philip Lindsey, TIS Group Project Engineer, Development Coordination, Planning

Brian Schilling, Canal District Engineer, Canal District

Nathan Draper, Canal District Public Works Engineer, Canal District

Jared Kauffman, Service Development Planner, Delaware Transit Corporation

Tremica Cherry, Service Development Planner, Delaware Transit Corporation

Anthony Aiglio, Planning Supervisor, Statewide & Regional Planning



May 19, 2023

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

RE: Agreement No. 1945F
Project Number T202069012/PO#611882
Traffic Impact Study Services
Task 11-11A – Walker Farm Warehouse/Logistics Development

Dear Ms. Furmato:

Johnson, Mirmiran, and Thompson (JMT) has completed a review of the Traffic Impact Study (TIS) for the Walker Farm Warehouse/Logistics Development, which was prepared by Traffic Planning and Design, Inc., dated January 23, 2023. This review was assigned as Task Number 11-11A. The report is prepared in a manner generally consistent with DelDOT's *Development Coordination Manual*.

The TIS evaluates the impacts of a proposed warehouse development in New Castle County, Delaware. The proposed development would consist of two warehousing facilities totaling 837,200 square feet on an approximately 61.37-acre parcel. The land is currently zoned as S (Suburban), and the developer plans to rezone the land to I (Industrial).

The site is located on the north side of Delaware Route 273 (Christiana Road) opposite Prangs Lane, and south of Churchmans Road (New Castle Road 339), approximately 2,250 feet east of the intersection with Airport Road (New Castle Road 340). Two full access points are proposed: one on Delaware Route 273 (opposite Prangs Lane) and one on Churchmans Road (to be aligned with County Road 339A). Construction is expected to be complete in 2024.

There are DelDOT Projects within the study area. The *US 13, US 40 to Memorial Drive Pedestrian Improvements* project (DelDOT Contract No. T201601102) involves improving pedestrian facilities and safety along the US Route 13 corridor. The project has been divided into several phases in order to expedite the overall implementation. One phase within the study area is the *US 13 Paving and Pedestrian Improvements, Llangollen Blvd to Bacon/Boulden Blvd* project (DelDOT Contract No. T201901102) which includes a signal rebuild and installations of pedestrian facilities at the US Route 13/Delaware Route 273 intersection. The project is in design with construction anticipated to start end of 2024. More information regarding the *US 13, US 40 to Memorial Drive Pedestrian Improvements* project can be found on the project website: <https://deldot.gov/projects/index.shtml?dc=details&projectNumber=T201601102>.



There is also a *SR 273, US 13 to SR 1* (DelDOT Contract No. T201606120) pavement and rehabilitation project proposed in the study area. Construction is expected to be complete in Summer 2023.

Additionally, DelDOT completed three Pedestrian Safety Audits within the study area: *SR 273 Pedestrian & Bicycle Road Safety Audit* study dated September 2011, *US 13 Pedestrian Safety Study, SR 273 to Market Street/Walnut Street Split* dated August 2015, and *US 13, US 40 to Memorial Drive Pedestrian Improvements* dated April 2017. The studies evaluate existing pedestrian accommodations and crash trends to identify problem locations and deficiencies. Short-term and long-term improvements are presented in the reports. The TIS study intersections of Delaware Route 273 with US Route 13, Westbound U-turn / Eastbound U-turn, Churchmans Road, Prangs Lane, Rambleton Drive, and Scottie Lane are included in the audits. Several of the short term and long-term improvements identified at those locations included pedestrian, lighting, signage and striping, and bus stop recommendations with some already implemented. More information regarding the Pedestrian Safety Audits can be found on the project website: <https://deldot.gov/Programs/DSHSP/index.shtml?dc=project-pedestrian-safety-audit>.

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

Based on the analysis results, the following intersections require the implementation of physical roadway and/or traffic control improvements:

Intersection	LOS Deficiencies Occur		Case
	AM	PM	
Site Entrance B / Churchmans Road (New Castle Road 339) / County Road 339A (New Castle Road 339A)		X	Case 3 – 2024 with Development
Delaware Route 273 / Westbound U-turn / Eastbound U-turn		X	Case 3 – 2024 with Development
US Route 13 / Delaware Route 273	X	X	Case 1 – 2022 Existing
	X	X	Case 2 – 2024 without Development
	X	X	Case 3 – 2024 with Development



Site Entrance B/Churchmans Road (New Castle Road 339)/County Road 339A (New Castle Road 339A)

The unsignalized Churchmans Road intersection with Site Entrance B/County Road 339A would exhibit LOS deficiencies during the PM peak hour under future conditions with the proposed development. The deficiencies would occur along the eastbound Site Entrance B approach with a delay of 35.4 seconds per vehicle and a calculated 95th percentile queue length of approximately 20 feet. The deficiencies could be mitigated by the provision of a separate left turn lane and right turn lane along the eastbound approach. With this improvement, the eastbound Site Entrance B approach would improve to operate at acceptable LOS D with a delay of 34.2 seconds per vehicle. As such, it is recommended that the developer construct the eastbound Site Entrance B approach to Churchmans Road with one left turn lane and one right turn lane.

Additionally, a northbound Churchmans Road right turn lane would be warranted based on DelDOT's *Development Coordination Manual*. However, due to right-of-way constraints and the lack of available data for the daily right turn volume, it is not recommended that the developer be required to construct a northbound right turn lane at the intersection.

Delaware Route 273/Westbound U-turn/Eastbound U-turn

The unsignalized intersection of Delaware Route 273/Westbound U-turn/Eastbound U-turn would exhibit LOS deficiencies during the PM peak hour under future conditions with the proposed development. The deficiencies would occur along the westbound Delaware Route 273 U-turn with a delay of 35.6 seconds per vehicle and a calculated 95th percentile queue length of approximately 30 feet. The deficiencies could be mitigated by restricting the westbound U-turn movement and rerouting vehicles to U-turn at the Delaware Route 273/Churchmans Road signalized intersection. Restricting the westbound Delaware Route 273 U-turn movement may not be feasible as it is utilized to access adjacent businesses. Additionally, the installation of a traffic signal at this intersection would impact vehicle progression along the corridor. As such, it is not recommended that the developer implement any improvements at the intersection.

US Route 13 / Delaware Route 273

The signalized US Route 13 and Delaware Route 273 intersection exhibits LOS deficiencies during the AM and PM peak hour under existing and future conditions, with or without the proposed development. Under Case 3 conditions, the intersection would operate at LOS F with a delay of 81.6 seconds per vehicle. Due to the geometric constraints of the intersection, it may not be feasible to mitigate the deficiencies with a traditional intersection design. As such, a more innovative intersection design (such as converting some approaches to be grade separated) may be needed to mitigate the capacity constraints. However, the deficiencies at the intersection occur under existing conditions and the scope of these improvements would be outside the scope of this TIS. Therefore, it is not recommended that the developer implement any improvements at the intersection.



Site Entrance A/Prangs Lane

The signalized Site Entrance A/Prangs Lane intersection with Delaware Route 273 would not exhibit LOS deficiencies under existing or future conditions, with or without the proposed development. However, the TIS recommended the conversion of the northbound and southbound approaches to one left turn lane and one shared through/right turn lane with concurrent phasing. Although these alterations would not degrade LOS, the appropriate truck turning templates should be completed to determine feasibility.

Utilizing the latest as-built signal plan and the site plan contained within the TIS report, JMT evaluated truck turning paths and determined that a WB-67 truck executing a southbound left turn movement onto eastbound Delaware Route 273 would encroach upon the turning path of vehicles executing northbound left turning movements onto westbound Delaware Route 273. As such, the conversion to concurrent phasing along the Site Entrance A and Prangs Lane approaches is not recommended.

Additionally, the developer should ensure the truck operations on-site would not impact adjacent roadways. Specifically, on-site truck circulation and truck parking accommodations should be provided to minimize truck spillback onto Delaware Route 273 and Churchmans Road.

Should New Castle 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 Delaware Route 273 and Churchmans Road 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." The developer should coordinate with DelDOT's Development Coordination Section during the site plan review to determine the improvements.
2. The developer should maintain the signalized full access Site Entrance A for the proposed Walker Farm development along Delaware Route 273 opposite Prangs Lane as well as provide a right turn lane along the southbound Site Entrance A and westbound Delaware Route 273 approaches. The intersection should be consistent with the lane configurations shown in the table below.



Approach	Current Configuration	Approach	Proposed Configuration
Eastbound Delaware Route 273		Eastbound Delaware Route 273	No change
Westbound Delaware Route 273		Westbound Delaware Route 273	One left turn lane, two through lanes, and one right turn lane
Northbound Prangs Lane		Northbound Prangs Lane	No change
Southbound Site Entrance A		Southbound Site Entrance A	One shared left turn/through lane and one right turn lane

Based on DelDOT’s *Development Coordination Manual*, the recommended minimum storage length (excluding taper) of the westbound Delaware Route 273 right turn lane is 265 feet. The existing eastbound Delaware Route 273 left turn lane is approximately 135 feet long (excluding taper) and the developer is proposing to lengthen to 275 feet. The developer should coordinate with DelDOT during the Entrance Plan review regarding the required storage length. The projected queues from the Synchro analysis can be accommodated within the recommended westbound Delaware Route 273 right turn lane storage length as well as within the existing and the proposed eastbound Delaware Route 273 left turn lane storage length.

3. The developer should enter into a traffic signal agreement with DelDOT for the intersection of Delaware Route 273 with Prangs Lane and Site Entrance A. The developer should coordinate with DelDOT Subdivision Section to execute the traffic signal agreement.
4. The developer should construct an unsignalized full access Site Entrance B for the proposed Walker Farm development along Churchmans Road, opposite County Road 339A and install northbound and southbound Churchmans Road left turn lanes as well as a southbound Churchmans Road right turn lane. The intersection should be consistent with the lane configurations shown in the table below.



Approach	Current Configuration	Approach	Proposed Configuration
Eastbound Site Entrance B	Approach does not exist	Eastbound Site Entrance B	One left turn/through lane and one right turn lane
Westbound County Road 339A	One shared left turn/right turn lane	Westbound County Road 339A	One shared left turn/through/right turn lane
Northbound Churchmans Road	One shared through/right turn lane	Northbound Churchmans Road	One left turn lane and one shared through/right turn lane
Southbound Churchmans Road	One shared left turn/through lane and one bypass lane	Southbound Churchmans Road	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 auxiliary lanes along Churchmans Road are listed below. The projected queues from the Synchro analysis can be accommodated within the recommended storage lengths.

Approach	Left Turn Lane	Right Turn Lane
Northbound Churchmans Road	210 feet	N/A
Southbound Churchmans Road	210 feet	265 feet

5. The developer should enter into a traffic signal agreement with DelDOT for the intersection of US Route 13 with Delaware Route 273 or the developer may contribute to the Traffic Signal Revolving Fund (TSRF) in lieu of a traffic signal agreement. The amount of the TSRF contribution is \$2,540.00. The developer should coordinate with the DelDOT Subdivision Section to execute the traffic signal agreement or the TSRF agreement and pay the TSRF amount.
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 Delaware Route 273 and Churchmans Road site frontages. Within the easement along Churchmans Road, 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. Pedestrian access should be provided into the site from the frontage SUP along Churchmans Road and the existing sidewalk along Delaware Route 273.
 - c. ADA compliant curb ramps and marked crosswalks should be provided along the site entrances.
 - d. A minimum five-foot wide bicycle lane should be provided along the limits of the right turn lane along Delaware Route 273 at Site Entrance A. Due to the widening for the bicycle lane, the existing sidewalk would need to be removed and reconstructed to current DelDOT standards and regulations from Site Entrance A to the existing rights-out entrance (approximately 440 feet in length).
 - e. Minimum five-foot wide bicycle lanes should be incorporated in the right turn lane and shoulder along the Churchmans Road approaches to Site Entrance B.
 - f. Utility covers should be moved outside of any designated bicycle lanes and any proposed sidewalks/SUP or should be flush with the pavement.
 - g. Two bus stops should be provided along Delaware Route 273:
 - i. A Type 1 5'x8' bus stop pad should be provided on eastbound Delaware Route 273, placed far-side of Prangs Lane and just to the east of the drainage.
 - ii. A Type 1 5'x8' bus stop pad should be provided on westbound Delaware Route 273, placed at least 50 feet far-side of the entrance.
7. Due to the proximity of the proposed development to the New Castle Airport, 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 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 TIS may be considered "significant" under DelDOT's *Work Zone Safety and Mobility Procedures and Guidelines*. These guidelines are available on DelDOT's website at https://www.deldot.gov/Publications/manuals/de_mutcd/index.shtml.



Additional details on our review of the TIS 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'.

Joanne M. Arellano, P.E., PTOE

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

Enclosure

General Information

Report date: January 23, 2023

Prepared by: Traffic Planning and Design, Inc.

Prepared for: First Industrial Realty Trust, Inc.

Tax Parcel: 10-024.00-219

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

Project Description and Background

Description: The proposed development consists of two warehousing facilities totaling 837,200 square feet.

Location: The site is located on the north side of Delaware Route 273 (Christiana Road) opposite to Prangs Lane, and south of Churchmans Road (New Castle Road 339), in New Castle County, Delaware.

Amount of Land to be developed: An approximately 61.37-acre parcel.

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

Proposed completion date: 2024.

Proposed access locations: Two full access points are proposed: one on Delaware Route 273 across from Prangs Lane and one on Churchmans Road across from County Road 339A.

Daily Traffic Volumes:

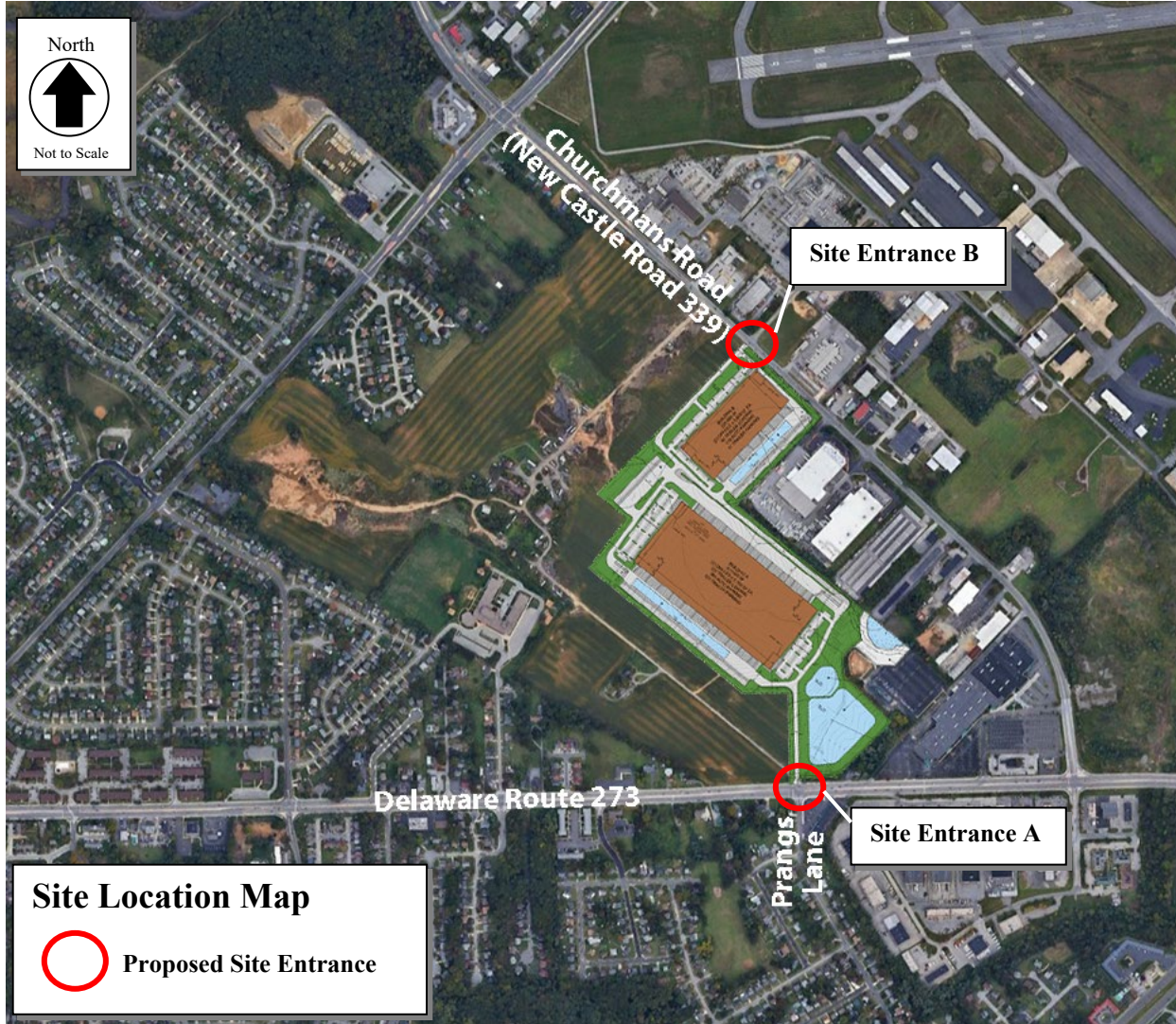
- 2022 Average Annual Daily Traffic Road on Delaware Route 273: 16,201 vehicles per day

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

- 2022 Average Annual Daily Traffic on Churchmans Road: 10,077 vehicles per day

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

Site Map



**Graphic is an approximation based on the Figure 2 Site Plan from the January 23, 2023 Walker Farm/Warehouse Logistics Development Transportation Impact Study prepared by Traffic Planning and Design, Inc.*

Relevant and On-going Projects

There are DelDOT Projects within the study area. The *US 13, US 40 to Memorial Drive Pedestrian Improvements* project (DelDOT Contract No. T201601102) involves improving pedestrian facilities and safety along the US Route 13 corridor. The project has been divided into several phases in order to expedite the overall implementation. One phase within the study area is the *US 13 Paving and Pedestrian Improvements, Llangollen Blvd to Bacon/Boulden Blvd* project (DelDOT Contract No. T201901102) which includes a signal rebuild and installations of pedestrian facilities at the US Route 13/Delaware Route 273 intersection. The project is in design with construction anticipated to start end of 2024. More information regarding the *US 13, US 40*

to Memorial Drive Pedestrian Improvements project can be found on the project website: <https://deldot.gov/projects/index.shtml?dc=details&projectNumber=T201601102>.

There is also a SR 273, US 13 to SR 1 (DeIDOT Contract No. T201606120) pavement and rehabilitation project proposed in the study area. Construction is expected to be complete in Summer 2023.

Additionally, DeIDOT completed three Pedestrian Safety Audits within the study area: SR 273 Pedestrian & Bicycle Road Safety Audit study dated September 2011, US 13 Pedestrian Safety Study, SR 273 to Market Street/Walnut Street Split dated August 2015, and US 13, US 40 to Memorial Drive Pedestrian Improvements dated April 2017. The studies evaluate existing pedestrian accommodations and crash trends to identify problem locations and deficiencies. Short-term and long-term improvements are presented in the reports. The TIS study intersections of Delaware Route 273 with US Route 13, Westbound U-turn / Eastbound U-turn, Churchmans Road, Prangs Lane, Rambleton Drive, and Scottie Lane are included in the audits. Several of the short term and long-term improvements identified at those locations included pedestrian, lighting, signage and striping, and bus stop recommendations with some already implemented. More information regarding the Pedestrian Safety Audits can be found on the project website: <https://deldot.gov/Programs/DSHSP/index.shtml?dc=project-pedestrian-safety-audit>.

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 first 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 Level 1 areas consist of urban places in counties, with a variety of transportation opportunities available. Investment Level 2 areas, along with Investment Level 1, are the priority for job creation and retention. Therefore, the proposed development is consistent with the 2020 update of the Livable Delaware "Strategies for State Policies and Spending."

Comprehensive Plan

(Source: New Castle County Comprehensive Plan 2050)

New Castle County Comprehensive Plan:

Per the *New Castle County Comprehensive Plan Zoning Map*, the proposed development appears to be currently zoned as Suburban. Per the *New Castle County Comprehensive Plan Future Land Use Map*, the proposed development is in an area designated as Type 2 Corridor (Employment-based Corridor Development).

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

The *New Castle County Comprehensive Plan* states that Type 2 Corridors consist of districts zoned as commercial regional, office neighborhood, office regional, business park, and industrial. Type 2 Corridors generally have a regional impact regarding jobs and services. Therefore, the proposed development is generally consistent with the *New Castle County Comprehensive Plan*.

The developer plans to rezone the proposed development to industrial.

Trip Generation

The trip generation for the proposed development was determined by using the comparable land use and rates/equations contained in the 11th Edition of the *ITE Trip Generation Manual*, published by the Institute of Transportation Engineers (ITE) for ITE Land Use Code 150 (Warehousing). Trip generation was reviewed by DelDOT as part of the Preliminary TIS (PTIS) submission.

Table 1
Walker Farm Trip Generation

Land Use	ADT	Weekday AM Peak Hour			Weekday PM Peak Hour		
		In	Out	Total	In	Out	Total
837,200 SF Warehousing (ITE – 150)	1,361	95	29	124	36	91	127

Overview of TIS

Intersections examined:

1. Site Entrance A / Delaware Route 273 / Prangs Lane
2. Site Entrance B / Churchmans Road (New Castle Road 339) / County Road 339A (New Castle Road 339A)
3. Delaware Route 273 / Sallie Mae South Entrance
4. Delaware Route 273 / Churchmans Road
5. Delaware Route 273 / Westbound U-turn / Eastbound U-turn

6. Delaware Route 273 / US Route 13
7. Delaware Route 273 / Rambleton Drive
8. Delaware Route 273 / Pleasant Place / Scottie Lane
9. Delaware Route 273 / Edinburgh Drive
10. Churchmans Road / Century Park East Driveway / Century Boulevard
11. Churchmans Road / Sallie Mae North Entrance
12. Churchmans Road / Sallie Mae Middle Entrance
13. Churchmans Road / New Castle County Department of Public Works East Driveway
14. Churchmans Road / Southbound U-turn
- 15. Churchmans Road / Airport Road (New Castle Road 340)**

Conditions examined:

1. Case 1 – 2022 existing
2. Case 2 – 2024 without development
3. Case 3 – 2024 with development

Committed Developments considered:

1. NKS Distributers (23,594 square feet warehouse)
2. 505 New Churchmans Road (17,672 square feet flex warehouse)
3. 650 Churchmans Road (807,240 square feet warehouse with 82,000 square feet mezzanine)
4. Reserve at Cavaliers
 - a. 102 age-restricted detached houses
 - b. 100 age-restricted attached houses
 - c. 156 single-family detached houses
 - d. 68 low-rise multifamily houses
 - e. 288 mid-rise multifamily houses
 - f. 15,390 square feet banquet hall
5. Morgan Chase (616,165 square feet office space; 129,000 square feet retail space)
6. Halko (28,550 square feet retail space)
7. Cytometrics (93,104 square feet manufacturing space; 141,896 square feet office space)
8. NCC Government Center (134,400 square feet government office building addition)
9. Faithful Friends Animal Shelter (19,999 square feet veterinary clinic/animal shelter)
10. New Castle Square Mall (6,663 square feet bank with drive-thru)
11. Frenchtown Crossing (11,174 square feet retail space)
12. Christiana Care; Lisa Drive Logistics Center (125,00 square feet warehouse)
13. Highway Word of Faith Church & Daycare (9,775 square feet church; 10,000 square feet daycare)

*Note: Committed development information provided in the Final TIS supersedes the information provided in the October 24, 2022, DelDOT Scoping Meeting Memorandum.

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

Intersection Descriptions

1. Site Entrance A / Delaware Route 273 / Prangs Lane

Type of Control: Existing signalized intersection (Four-legged).

Eastbound Approach: (Delaware Route 273) Existing one left turn lane, two through lanes and one right turn lane.

Westbound Approach: (Delaware Route 273) Existing one left turn lane, one through lane, and one shared through/right turn lane; proposed one left turn lane, two through lanes, and one right turn lane.

Northbound Approach: (Prangs Lane) Existing one shared left turn/through lane and one right turn lane; proposed one left turn lane and one shared through/right turn lane.

Southbound Approach: (Site Entrance A) Existing one shared left turn/through/right turn lane; proposed one left turn lane and one shared through/right turn lane.

2. Site Entrance B / Churchmans Road (New Castle Road 339) / County Road 339A (New Castle Road 339A)

Type of Control: Proposed two-way stop-controlled intersection (Four-legged).

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

Westbound Approach: (County Road 339A) Existing one shared left turn/right turn lane, stop-controlled.

Northbound Approach: (Churchmans Road) Existing one shared through/right turn lane; proposed one left turn lane and one shared through/right turn lane.

Southbound Approach: (Churchmans Road) Existing one shared left turn/through lane and one bypass lane; proposed one shared left turn/through lane and one right turn lane.

3. Delaware Route 273 / Sallie Mae South Entrance

Type of Control: Existing unsignalized intersection (T-intersection).

Eastbound Approach: (Delaware Route 273) Existing one left turn lane and two through lanes.

Westbound Approach: (Delaware Route 273) Existing two through lanes and one right turn lane.

Southbound Approach: (Sallie Mae South Entrance) Existing one channelized right turn lane.

*Median between eastbound and westbound Delaware Route 273 allows for eastbound left turns and is yield-controlled.

4. Delaware Route 273 / Churchmans Road

Type of Control: Existing signalized intersection (Four-legged).

Eastbound Approach: (Delaware Route 273) Existing one left turn lane, two through lanes and one channelized right turn lane.

Westbound Approach: (Delaware Route 273) Existing one left turn lane, two through lanes and one channelized right turn lane.

Northbound Approach: (Churchmans Road) Existing one shared left turn/through lane and one channelized right turn lane.

Southbound Approach: (Churchmans Road) Existing one left turn lane, one shared left turn/through lane and one channelized right turn lane.

5. Delaware Route 273 / Westbound U-turn / Eastbound U-turn

Type of Control: Existing unsignalized intersection.

Eastbound Approach: (Delaware Route 273) (Eastbound U-turn) Existing one U-turn lane, two through lanes, and one right turn lane.

Westbound Approach: (Delaware Route 273) (Westbound U-turn) Existing one U-turn lane and two through lanes.

*Median between eastbound and westbound Delaware Route 273 allows for U-turns and is yield-controlled.

*Eastbound right turn lane provides access to entrances east of the intersection.

6. Delaware Route 273 / US Route 13

Type of Control: Existing signalized intersection (Four-legged).

Eastbound Approach: (Delaware Route 273) Existing two left turn lanes, two through lanes and one channelized right turn lane.

Westbound Approach: (Delaware Route 273) Existing two left turn lanes, two through lanes and one channelized right turn lane.

Northbound Approach: (US Route 13) Existing two channelized left turn lanes, four through lanes and one right turn lane.

Southbound Approach: (US Route 13) Existing two channelized left turn lanes, four through lanes and one channelized right turn lane.

7. Delaware Route 273 / Rambleton Drive

Type of Control: Existing unsignalized intersection (T-intersection).

Eastbound Approach: (Delaware Route 273) Existing two through lanes and one right turn lane.

Westbound Approach: (Delaware Route 273) Existing one channelized left turn lane and two through lanes.

Northbound Approach: (Rambleton Drive) Existing one channelized right turn lane.

*Median between eastbound and westbound Delaware Route 273 allows for westbound left turns and is yield-controlled.

8. Delaware Route 273 / Pleasant Place / Scottie Lane

Type of Control: Existing signalized intersection (Four-legged).

Eastbound Approach: (Delaware Route 273) Existing one left turn lane, two through lanes and one channelized right turn lane.

Westbound Approach: (Delaware Route 273) Existing one left turn lane, two through lanes and one right turn lane.

Northbound Approach: (Scottie Lane) Existing one shared left turn/through lane and one channelized right turn lane.

Southbound Approach: (Pleasant Place) Existing one shared left turn/through/right turn lane.

9. Delaware Route 273 / Edinburgh Drive

Type of Control: Existing signalized intersection (Four-legged).

Eastbound Approach: (Delaware Route 273) Existing one left turn lane, two through lanes and one channelized right turn lane.

Westbound Approach: (Delaware Route 273) Existing one left turn lane, two through lanes and one right turn lane.

Northbound Approach: (Edinburgh Drive) Existing one shared left turn/through lane and one channelized right turn lane.

Southbound Approach: (Edinburgh Drive) Existing one shared left turn/through lane and one right turn lane.

10. Churchmans Road / Century Park East Driveway / Century Boulevard

Type of Control: Two-way stop-controlled intersection (Four-legged).

Eastbound Approach: (Century Park East Driveway) Existing one shared left turn/through/right turn lane, stop-controlled.

Westbound Approach: (Century Boulevard) Existing one shared left turn/through/right turn lane, stop-controlled.

Northbound Approach: (Churchmans Road) Existing one shared left turn/through lane and one right turn lane.

Southbound Approach: (Churchmans Road) Existing one shared left turn/through lane and one right turn lane.

11. Churchmans Road / Sallie Mae North Entrance

Type of Control: Two-way stop-controlled intersection (T-intersection).

Eastbound Approach: (Sallie Mae North Entrance) Existing one shared left turn/right turn lane, stop-controlled.

Northbound Approach: (Churchmans Road) Existing one shared left turn/through lane and one bypass lane.

Southbound Approach: (Churchmans Road) Existing one through lane and one right turn lane.

*Piccard Road will be constructed in the future and become the westbound leg to the Churchmans Road and Sallie Mae North Entrance intersection.

12. Churchmans Road / Sallie Mae Middle Entrance

Type of Control: Two-way stop-controlled intersection (T-intersection).

Eastbound Approach: (Sallie Mae North Entrance) Existing one shared left turn/right turn lane, stop-controlled.

Northbound Approach: (Churchmans Road) Existing one left turn lane and one through lane.

Southbound Approach: (Churchmans Road) Existing one through lane one right turn lane.

13. Churchmans Road / New Castle County Department of Public Works East Driveway

Type of Control: Two-way stop-controlled intersection (T-intersection).

Westbound Approach: (New Castle County Department of Public Works East Driveway) Existing one shared left turn/right turn lane, stop-controlled.

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

Southbound Approach: (Churchmans Road) Existing one left turn lane and one through lane.

14. Churchmans Road / Southbound U-turn

Type of Control: Existing unsignalized intersection.

Northbound Approach: (Churchmans Road) Existing two through lanes.

Southbound Approach: (Churchmans Road) (Southbound U-turn) Existing one U-turn lane and two through lanes.

*Median between northbound and southbound Churchmans Road allows for a southbound U-turn and is yield-controlled.

15. Churchmans Road / Airport Road (New Castle Road 340)

Type of Control: Existing signalized intersection (Four-legged).

Eastbound Approach: (Churchmans Road) Existing two left turn lanes, two through lanes and one channelized right turn lane.

Westbound Approach: (Churchmans Road) Existing one left turn lane, two through lanes and one channelized right turn lane.

Northbound Approach: (Airport Road) Existing two left turn lanes, two through lanes and one channelized right turn lane.

Southbound Approach: (Airport Road) Existing two left turn lanes, two through lanes and one channelized right turn lane.

Transit, Pedestrian, and Bicycle Facilities

Existing transit service: Per DelDOT Gateway, bus stops exist within the study area for DART Routes 13 and 51. Route 13 has 8 bus stops within the study area. Route 13 provides 45 roundtrips on weekdays from 4:20 AM to 12:21 AM, and 29 round trips on weekends from 6:30 AM to 11:09 PM. Route 51 has 9 bus stops within the study area. Route 51 provides 16 roundtrips on weekdays from 5:25 AM to 9:44 PM.

Planned transit service: Per email correspondence on January 27, 2023, with Mr. Jared Kauffman, Fixed-Route Planner for DART, the following improvements were recommended:

- A pair of companion stops are needed on Christiana Road.
 - A Type 1 5x8 stop pad is needed on eastbound Christian Road, placed far-side of Prangs Lane and just to the east of the drainage.
 - A Type 1 5x8 stop pad is needed on westbound Christian Road, placed at least 50 feet far-side of the entrance.
- A Shared Use Path is needed along the frontage with Churchmans Road.
- Pedestrian accessways are needed into the site from Christiana Road and Churchmans Road.

Existing bicycle and pedestrian facilities: According to DelDOT's New Castle County Bicycle Map, US Route 13, Churchmans Road, and Airport Road are considered connector bicycle routes. Delaware Route 273 is considered a regional bicycle route. The East Coast Greenway Trail exists along Delaware Route 273 and Churchmans Road. Marked pedestrian crosswalks exist at all the signalized intersections along Delaware Route 273, the Churchmans Road/Airport Road intersection, and the Churchmans Road/New Castle County Department of Public Works East Driveway intersection. Sidewalks exist along all of Delaware Route 273 within the study area, and at the Churchmans Road/Airport Road intersection. A Shared Use Path exists from the Churchmans Road/New Castle County Department of Public Works East Driveway intersection to the Churchmans Road/Airport Road intersection.

Planned bicycle and pedestrian facilities: Per email correspondence on February 27, 2023, with Mr. John Fiori, DelDOT's Bicycle Coordinator and Ms. Linda Osiecki, DelDOT's Pedestrian Coordinator, the following improvements were recommended:

- Referring to the State Strategies and Spending Map this site is within Level 1. Per the DelDOT SUP/Sidewalk Policy a non-motorized facility is required unless there is a physical impossibility. It would be recommended to install a 10' wide shared-use path

along the property frontage of Churchmans Road with angled terminations into the shoulder and shared-use path extended to the property lines to the northern and southern property limits.

- Site Entrance A; If a right turn lane is warranted, then a separate 5' wide bike lane shall be provided along the limits of the right turn lane and follow the striping as per the DE MUTCD, Figure 9C-1E. Due to the widening for the bike lane the existing sidewalk would need to be removed, reconstructed and follow current DelDOT standards and regulations from the site entrance to the existing rights-out entrance at Bethel Church.
- Site Entrance B; Since there is an existing bypass lane, assuming this intersection will now have a protected left turn lane. If a right turn lane is warranted, then a separate 5' wide bike lane shall be provided along the limits of the right turn lane and follow the striping as per the DE MUTCD, Figure 9C-1E.
- Provide pedestrian access into the site from the frontage SUP.
- Check with DART for bus stop(s) to provide for the frontages.
- At this time Active Transportation & Community Connections (ATCC) has no bicycle/pedestrian improvement projects within the area of this project.
- Per the Development Coordination Manual (DCM) the site shall dedicate right-of-way per the roadway classification and establish a 15' wide permanent easement along all property roadway frontages.
- All entrance, roadway and/or intersection improvements required shall incorporate bicycle and pedestrian facilities. Per the DCM, if the right turn lane is warranted, then a separate bike lane shall be incorporated along the right turn lane; if a left turn lane is required any roadway improvements shall include a shoulder matching the roadway functional classification or existing conditions (minimum 5-feet).
- There could be additional and/or revised comments once project is discussed at a pre-submittal meeting and/or plans are submitted for LONO/ENT review/approval.

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 DelDOT Gateway.

- Delaware Route 273 LTS: 3 and 4
- Churchmans Road LTS: 3 and 4

Crash Evaluation

Per the crash data included in the TIS from October 10, 2019, to November 10, 2022, provided by the Delaware Department of Transportation (DelDOT), a total of 302 crashes were reported within the study area. Of the 302 crashes reported, no fatalities occurred.

The Churchmans Road and Airport Road intersection had 152 crashes reported including 80 rear-end, five head-on, 46 angle, 18 sideswipe, and three not a collision between two vehicles.

The Delaware Route 273 and US Route 13 intersection had 82 crashes reported including 44 rear-end, five head-on, 12 angle, 17 sideswipe, one other, and three not a collision between two vehicles.

The Delaware Route 273 and Churchmans Road intersection had 18 crashes reported including ten rear-end, five angle, one sideswipe, and two not a collision between two vehicles.

The remaining intersections each reported less than 15 incidents within the three-year study period.

Previous Comments

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

Sight Distance Evaluation

No sight distance constraints were noted at the proposed site entrance locations per a field visit conducted on February 9, 2023.

General Synchro Analysis Comments

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

- 1) The TIS and JMT used Synchro 11 to complete the analysis. The results are based on HCM 6th Edition.
- 2) Per DelDOT's *Development Coordination Manual*, the TIS and JMT utilized the existing PHF for the existing condition (Case 1).
- 3) 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 the existing PHF for all cases.
- 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 and Case 3 future scenario analysis, unless the existing heavy vehicle percentage was greater than 3% and there was no significant increase of vehicles along that movement, in which case the existing heavy vehicle percentage was used for the analysis of future scenarios. The TIS used existing heavy vehicle percentages for all cases.
- 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.
- 7) JMT included pedestrians counted during the traffic data collection in the analysis.
- 8) JMT utilized an approach grade of 0% for all applicable minor approaches, whereas the TIS utilized various grades in the analysis.

Table 2
Peak Hour Levels Of Service (LOS)
Based on Final Traffic Impact Study for Walker Farm/Warehouse Logistics
Report Dated: January 23, 2023
Prepared by: Traffic Planning and Design, Inc

Signalized Intersection ¹	LOS per TIS		LOS per JMT	
	Weekday AM	Weekday PM	Weekday AM	Weekday PM
Site Entrance A / Delaware Route 273 / Prangs Lane				
2022 Existing (Case 1)	B (13.9)	B (11.4)	A (8.9)	A (7.8)
2024 without Development (Case 2)	B (10.9)	B (11.7)	B (11.9)	B (10.8)
2024 with Development (Case 3) ²	B (13.6)	B (15.7)	B (14.3)	B (14.8)
2024 with Development (Case 3) <i>with Improvements</i> ³	B (13.8)	B (15.2)	A (7.4)	A (8.2)

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

² JMT and the TIS modeled the intersection with one left turn lane, two through lanes, and one right turn lane along the eastbound and westbound approaches. The northbound and southbound approaches were modeled with one shared left turn/through lane and one right turn lane. The intersection was modeled with split phasing along northbound and southbound approaches.

³ JMT and the TIS conducted an additional scenario considering the conversion of the northbound and southbound approaches to one left turn lane and one shared through/right turn lane. The approaches were modeled with concurrent phasing.

Table 3
Peak Hour Levels Of Service (LOS)
Based on Final Traffic Impact Study for Walker Farm/Warehouse Logistics
Report Dated: January 23, 2023
Prepared by: Traffic Planning and Design, Inc

Unsignalized Intersection Two-Way Stop Control (T-Intersection) ¹	LOS per TIS		LOS per JMT	
	Weekday AM	Weekday PM	Weekday AM	Weekday PM
Churchmans Road (New Castle Road 339) / County Road 339A (New Castle Road 339A)				
2022 Existing (Case 1)				
Eastbound Churchmans Road Left Turn	A (8.3)	A (8.5)	A (8.3)	A (8.5)
Southbound Country Road 339A Approach	B (13.2)	B (13.3)	B (12.9)	B (13.7)
2024 without Development (Case 2)				
Eastbound Churchmans Road Left Turn	A (8.8)	A (8.9)	A (8.8)	A (8.9)
Southbound Country Road 339A Approach	C (16.2)	C (15.8)	C (15.8)	C (16.5)

Table 3 Continued
Peak Hour Levels Of Service (LOS)
Based on Final Traffic Impact Study for Walker Farm/Warehouse Logistics
Report Dated: January 23, 2023
Prepared by: Traffic Planning and Design, Inc

Unsignalized Intersection Two-Way Stop Control ¹	LOS per TIS		LOS per JMT	
	Weekday AM	Weekday PM	Weekday AM	Weekday PM
Site Entrance B / Churchmans Road (New Castle Road 339) / County Road 339A (New Castle Road 339A)				
2024 with Development (Case 3) ⁴				
Eastbound Churchmans Road Left Turn	A (8.8)	A (8.9)	A (8.8)	A (8.9)
Westbound Churchmans Road Left Turn	A (8.5)	A (8.9)	A (8.5)	A (8.9)
Northbound Country Road 339A Approach	D (25.8)	E (36.1)	D (25.3)	E (35.4)
Southbound Country Road 339A Approach	C (18.3)	C (17.5)	C (17.7)	C (18.5)
2024 with Development (Case 3) <i>with Improvements</i> ⁵				
Eastbound Churchmans Road Left Turn	-	-	A (8.8)	A (8.9)
Westbound Churchmans Road Left Turn	-	-	A (8.5)	A (8.9)
Northbound Country Road 339A Approach	-	-	D (25.1)	D (34.2)
Southbound Country Road 339A Approach	-	-	C (17.7)	C (18.5)

⁴ JMT modeled the intersection with one left turn lane, one through lane, and one right turn lane along the eastbound approach and one left turn lane and one through/right turn lane along the westbound approach per the Auxiliary Lane Worksheet results. The TIS modeled the intersection with one left turn lane and one through/right turn lane along the eastbound approach and one shared left turn/through/right turn lane along the westbound approach.

⁵ JMT modeled the intersection with one left turn/through lane and one right turn lane along the northbound approach.

Table 4
Peak Hour Levels Of Service (LOS)
Based on Final Traffic Impact Study for Walker Farm/Warehouse Logistics
Report Dated: January 23, 2023
Prepared by: Traffic Planning and Design, Inc

Unsignalized Intersection Two-Way Stop Control (T-Intersection) ¹	LOS per TIS		LOS per JMT	
	Weekday AM	Weekday PM	Weekday AM	Weekday PM
Delaware Route 273 / Sallie Mae South Entrance (rights-in/rights-out/lefts-in)				
2022 Existing (Case 1)				
Eastbound Delaware Route 273 Left Turn	A (7.8)	A (8.3)	A (8.5)	B (10.1)
Southbound Sallie Mae South Entrance Approach	A (9.0)	B (10.2)	A (9.9)	B (12.3)
2024 without Development (Case 2)				
Eastbound Delaware Route 273 Left Turn	A (8.0)	A (8.8)	A (9.2)	B (13.7)
Southbound Sallie Mae South Entrance Approach	A (9.1)	B (10.5)	B (10.1)	B (12.9)
2024 with Development (Case 3)				
Eastbound Delaware Route 273 Left Turn	A (8.1)	A (8.8)	A (9.3)	B (13.8)
Southbound Sallie Mae South Entrance Approach	A (9.1)	B (10.5)	B (10.2)	B (13.0)

Table 5
Peak Hour Levels Of Service (LOS)
Based on Final Traffic Impact Study for Walker Farm/Warehouse Logistics
Report Dated: January 23, 2023
Prepared by: Traffic Planning and Design, Inc

Signalized Intersection ¹	LOS per TIS		LOS per JMT	
	Weekday AM	Weekday PM	Weekday AM	Weekday PM
Delaware Route 273 / Churchmans Road				
2022 Existing (Case 1)	C (34.1)	C (34.4)	C (32.0)	C (33.4)
2024 without Development (Case 2)	C (34.4)	D (37.9)	C (32.3)	D (38.2)
2024 with Development (Case 3)	C (34.2)	D (38.2)	C (32.3)	D (38.5)

Table 6
Peak Hour Levels Of Service (LOS)
Based on Final Traffic Impact Study for Walker Farm/Warehouse Logistics
Report Dated: January 23, 2023
Prepared by: Traffic Planning and Design, Inc

Unsignalized Intersection Two-Way Stop Control (T-Intersection) ¹	LOS per TIS		LOS per JMT	
	Weekday AM	Weekday PM	Weekday AM	Weekday PM
Delaware Route 273 / Westbound U-turn / Eastbound U-turn				
2022 Existing (Case 1)				
Eastbound Delaware Route 273 U-turn	C (16.2)	C (18.6)	A (9.3)	A (9.5)
Westbound Delaware Route 273 U-turn	A (9.3)	A (9.7)	C (17.5)	C (23.0)
2024 without Development (Case 2)				
Eastbound Delaware Route 273 U-turn	C (21.2)	C (22.8)	A (9.9)	B (10.6)
Westbound Delaware Route 273 U-turn	A (9.2)	B (10.6)	C (19.1)	D (33.5)
Southbound Piccard Driveway Approach	B (13.7)	B (14.3)	B (10.5)	B (12.4)
2024 with Development (Case 3)				
Eastbound Delaware Route 273 U-turn	C (22.2)	C (23.2)	B (10.4)	B (11.0)
Westbound Delaware Route 273 U-turn	A (9.3)	B (11.0)	C (19.4)	E (35.6)
Southbound Piccard Driveway Approach	B (14.0)	B (14.4)	B (10.5)	B (12.9)

Table 7
Peak Hour Levels Of Service (LOS)
Based on Final Traffic Impact Study for Walker Farm/Warehouse Logistics
Report Dated: January 23, 2023
Prepared by: Traffic Planning and Design, Inc

Signalized Intersection ¹	LOS per TIS		LOS per JMT	
	Weekday AM	Weekday PM	Weekday AM	Weekday PM
US Route 13 / Delaware Route 273				
2022 Existing (Case 1)	E (59.7)	E (63.9)	E (59.7)	E (64.0)
2024 without Development (Case 2)	E (64.5)	E (74.0)	E (63.6)	E (79.9)
2024 with Development (Case 3)	E (65.0)	E (76.1)	E (64.0)	F (81.6)

Table 8
Peak Hour Levels Of Service (LOS)
Based on Final Traffic Impact Study for Walker Farm/Warehouse Logistics
Report Dated: January 23, 2023
Prepared by: Traffic Planning and Design, Inc

Unsignalized Intersection Two-Way Stop Control <small>Error! Bookmark not defined.</small> (T-Intersection) ¹	LOS per TIS		LOS per JMT	
	Weekday AM	Weekday PM	Weekday AM	Weekday PM
Delaware Route 273 / Rambleton Drive				
2022 Existing (Case 1)				
Westbound Delaware Route 273 Left Turn	A (8.3)	A (7.9)	A (9.2)	A (9.0)
Northbound Rambleton Drive Approach	A (9.4)	A (9.5)	B (10.9)	B (10.6)
2024 without Development (Case 2)				
Westbound Delaware Route 273 Left Turn	A (8.4)	A (7.9)	A (9.3)	A (9.2)
Northbound Rambleton Drive Approach	A (9.6)	A (9.5)	B (11.1)	B (10.9)
2024 with Development (Case 3)				
Westbound Delaware Route 273 Left Turn	A (8.3)	A (8.0)	A (9.5)	A (9.2)
Northbound Rambleton Drive Approach	A (9.8)	A (9.6)	B (11.3)	B (10.9)

Table 9
Peak Hour Levels Of Service (LOS)
Based on Final Traffic Impact Study for Walker Farm/Warehouse Logistics
Report Dated: January 23, 2023
Prepared by: Traffic Planning and Design, Inc

Signalized Intersection ¹	LOS per TIS		LOS per JMT	
	Weekday AM	Weekday PM	Weekday AM	Weekday PM
Delaware Route 273 / Pleasant Place / Scottie Lane				
2022 Existing (Case 1)	B (15.0)	A (0.8)	A (5.1)	A (4.4)
2024 without Development (Case 2)	B (15.6)	A (2.2)	A (5.0)	A (4.4)
2024 with Development (Case 3)	B (12.1)	A (2.2)	A (5.0)	A (4.5)

Table 10
Peak Hour Levels Of Service (LOS)
Based on Final Traffic Impact Study for Walker Farm/Warehouse Logistics
Report Dated: January 23, 2023
Prepared by: Traffic Planning and Design, Inc

Signalized Intersection ¹	LOS per TIS		LOS per JMT	
	Weekday AM	Weekday PM	Weekday AM	Weekday PM
Delaware Route 273 / Edinburgh Drive				
2022 Existing (Case 1)	C (20.5)	B (19.6)	B (16.3)	B (12.7)
2024 without Development (Case 2)	C (20.4)	B (19.9)	B (15.4)	B (12.7)
2024 with Development (Case 3)	C (20.3)	C (20.1)	B (15.3)	B (12.7)

Table 11
Peak Hour Levels Of Service (LOS)
Based on Final Traffic Impact Study for Walker Farm/Warehouse Logistics
Report Dated: January 23, 2023
Prepared by: Traffic Planning and Design, Inc

Unsignalized Intersection Two-Way Stop Control ¹	LOS per TIS		LOS per JMT	
	Weekday AM	Weekday PM	Weekday AM	Weekday PM
Churchmans Road / Century Park (East Driveway)				
2022 Existing (Case 1)				
Eastbound Churchmans Road Left Turn	A (8.2)	A (8.3)	A (8.3)	A (8.4)
Westbound Churchmans Road Left Turn	A (8.1)	B (10.1)	A (8.2)	A (8.4)
Northbound Century Park Approach	C (19.6)	C (17.0)	C (16.1)	C (16.3)
Southbound Century Park East Driveway Approach	C (18.6)	C (15.8)	C (16.8)	C (15.1)
2024 without Development (Case 2)				
Eastbound Churchmans Road Left Turn	A (8.7)	A (8.7)	A (8.8)	A (8.8)
Westbound Churchmans Road Left Turn	A (8.4)	B (11.0)	A (8.5)	A (8.9)
Northbound Century Park Approach	D (28.0)	C (23.3)	C (21.2)	C (21.7)
Southbound Century Park East Driveway Approach	D (26.6)	C (20.8)	C (22.7)	C (19.5)
2024 with Development (Case 3)				
Eastbound Churchmans Road Left Turn	A (8.7)	A (8.7)	A (8.7)	A (8.8)
Westbound Churchmans Road Left Turn	A (8.4)	B (11.1)	A (8.4)	A (9.0)
Northbound Century Park Approach	D (28.5)	C (23.7)	C (20.4)	C (22.1)
Southbound Century Park East Driveway Approach	D (27.2)	C (21.2)	C (21.8)	C (19.8)

Table 12
Peak Hour Levels Of Service (LOS)
Based on Final Traffic Impact Study for Walker Farm/Warehouse Logistics
Report Dated: January 23, 2023
Prepared by: Traffic Planning and Design, Inc

Unsignalized Intersection Two-Way Stop Control (T-Intersection)¹	LOS per TIS		LOS per JMT	
	Weekday AM	Weekday PM	Weekday AM	Weekday PM
Churchmans Road / Sallie Mae North Entrance / Future Piccard Road				
2022 Existing (Case 1)				
Westbound Churchmans Road Left Turn	A (8.2)	A (8.5)	A (8.3)	A (8.5)
Northbound Sallie Mae North Entrance Approach	B (14.5)	C (17.8)	B (14.1)	C (17.4)

Signalized Intersection¹	LOS per TIS		LOS per JMT	
	Weekday AM	Weekday PM	Weekday AM	Weekday PM
Churchmans Road / Sallie Mae North Entrance/ Future Piccard Road⁶				
2024 without Development (Case 2)	B (13.2)	B (17.1)	B (12.9)	B (16.4)
2024 with Development (Case 3)	B (13.3)	B (17.2)	B (12.9)	B (16.4)

⁶ Per the March 16, 2022 Final TIS Review Letter for the 650 Churchmans Road (f.k.a. 100 Piccard Road) development, JMT and the TIS modeled the intersection as a signalized intersection with one left turn lane, one through lane, and one right turn lane along the eastbound and westbound approaches. The northbound and southbound approaches were modeled as split phased with one shared left turn/through lane and one right turn lane.

Table 13
Peak Hour Levels Of Service (LOS)
Based on Final Traffic Impact Study for Walker Farm/Warehouse Logistics
Report Dated: January 23, 2023
Prepared by: Traffic Planning and Design, Inc

Unsignalized Intersection Two-Way Stop Control (T-Intersection) ¹	LOS per TIS		LOS per JMT	
	Weekday AM	Weekday PM	Weekday AM	Weekday PM
Churchmans Road / Sallie Mae Middle Entrance (full access)				
2022 Existing (Case 1)				
Westbound Churchmans Road Left Turn	A (8.2)	A (8.6)	A (8.3)	A (8.7)
Northbound Sallie Mae Middle Entrance Approach	B (13.9)	B (14.8)	B (13.8)	B (14.8)
2024 without Development (Case 2)				
Westbound Churchmans Road Left Turn	A (8.5)	A (9.4)	A (8.5)	A (9.5)
Northbound Sallie Mae Middle Entrance Approach	C (18.1)	C (20.3)	C (15.9)	C (20.6)
2024 with Development (Case 3)				
Westbound Churchmans Road Left Turn	A (8.6)	A (9.5)	A (8.5)	A (9.6)
Northbound Sallie Mae Middle Entrance Approach	C (18.3)	C (20.6)	C (16.2)	C (20.9)

Table 14
Peak Hour Levels Of Service (LOS)
Based on Final Traffic Impact Study for Walker Farm/Warehouse Logistics
Report Dated: January 23, 2023
Prepared by: Traffic Planning and Design, Inc

Unsignalized Intersection Two-Way Stop Control (T-Intersection) ¹	LOS per TIS		LOS per JMT	
	Weekday AM	Weekday PM	Weekday AM	Weekday PM
Churchmans Road / New Castle County Department of Public Works (East Driveway – full access)				
2022 Existing (Case 1)				
Eastbound Churchmans Road Left Turn	A (8.4)	A (8.5)	A (8.3)	A (8.5)
Southbound New Castle County Public Works Driveway Approach	B (12.3)	B (13.5)	B (12.2)	B (14.4)
2024 without Development (Case 2)				
Eastbound Churchmans Road Left Turn	A (8.9)	A (8.9)	A (8.8)	A (9.0)
Southbound New Castle County Public Works Driveway Approach	B (14.6)	C (16.1)	B (14.1)	C (17.5)
2024 with Development (Case 3)				
Eastbound Churchmans Road Left Turn	A (8.9)	A (8.9)	A (8.8)	A (9.0)
Southbound New Castle County Public Works Driveway Approach	B (14.8)	C (16.6)	B (14.3)	C (18.1)

Table 15
Peak Hour Levels Of Service (LOS)
Based on Final Traffic Impact Study for Walker Farm/Warehouse Logistics
Report Dated: January 23, 2023
Prepared by: Traffic Planning and Design, Inc

Unsignalized Intersection ¹	LOS per TIS		LOS per JMT	
	Weekday AM	Weekday PM	Weekday AM	Weekday PM
Churchmans Road / Eastbound U-turn				
2022 Existing (Case 1)				
Eastbound Churchmans Road U-turn	B (10.0)	B (10.4)	B (10.2)	B (10.6)
2024 without Development (Case 2)				
Eastbound Churchmans Road U-turn	B (11.3)	B (11.5)	B (11.5)	B (11.7)
2024 with Development (Case 3)				
Eastbound Churchmans Road U-turn	B (11.4)	B (11.8)	B (11.6)	B (12.0)

Table 16
Peak Hour Levels Of Service (LOS)
Based on Final Traffic Impact Study for Walker Farm/Warehouse Logistics
Report Dated: January 23, 2023
Prepared by: Traffic Planning and Design, Inc

Signalized Intersection ¹	LOS per TIS		LOS per JMT	
	Weekday AM	Weekday PM	Weekday AM	Weekday PM
Churchmans Road / Airport Road (New Castle Road 340)				
2022 Existing (Case 1)	D (36.0)	C (34.2)	C (33.8)	C (32.3)
2024 without Development (Case 2)	D (39.8)	D (38.5)	D (37.1)	D (40.3)
2024 with Development (Case 3)	D (40.1)	D (38.9)	D (37.2)	D (40.3)

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 _____