



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

JENNIFER COHAN
SECRETARY

August 25, 2020

Mr. Michael Kaszyski
Duffield Associates, Inc.
5400 Limestone Road
Wilmington, Delaware 19808

Dear Mr. Kaszyski:

The Department has completed its review of the traffic impact study (TIS) for the proposed New Castle Avenue Redevelopment. The TIS was prepared by Duffield Associates, Inc. (DA), and is dated May 2020. DA prepared the report in a manner generally consistent with DelDOT's *Development Coordination Manual*.

The TIS evaluates the traffic impacts of the proposed development, proposed to be located along the south side of the northbound I-295 off-ramp and northwest of the intersection of New Castle Avenue (Delaware Route 9) and Cherry Lane in New Castle County, Delaware.

The proposed development would consist of a 5,200 square foot high-turnover sit-down restaurant, a 2,400 square foot fast-food restaurant with drive-through window, a 2,400 square foot coffee / donut shop with drive-through window, a 4,160 square-foot variety store, and an 88-room business hotel on an approximately 6.07-acre assemblage of parcels (Tax Parcels 1001500001 and 1001500005), and would replace a now-vacant Harley-Davidson dealership. One full access is proposed on New Castle Avenue by way of Cherry Lane. Construction is anticipated to be complete in 2022.

The subject land is currently zoned CR (Commercial - Regional) in New Castle County, and the developer does not plan to change the zoning.

While DelDOT does not have any current projects in the study area, WILMAPCO has completed a master plan that includes the study area, the Delaware Route 9 Corridor Land Use and Transportation Master Plan (Route 9 Master Plan). The master plan addresses a three-mile segment of the Delaware Route 9 corridor from the north limits of the City of New Castle to the south limits of the City of Wilmington. With its goals of improving health and quality of life, incentivizing economic development, mitigating environmental and health concerns, examining land uses, and recommending zoning adjustments and roadway improvements, the Route 9 Master Plan identifies the best reinvestment and redevelopment strategies for the revitalization of



the Delaware Route 9 corridor. Within those goals, several ideas for improvements were identified for intersections within the study area. However, the horizon year for the Route 9 Master Plan is 2036, and none of the improvement ideas identified are currently in DelDOT's Capital Transportation Program (FY 2021 – FY 2026).

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

The review of the TIS shows that all of the intersections analyzed, except for the intersection of the site entrance with the northbound I-295 off-ramp and Cherry Lane, exhibit Level of Service (LOS) D or better for all scenarios that were studied, and would satisfy the criteria listed in Chapter 2 of DelDOT's *Development Coordination Manual*.

For the intersection of the site entrance with the northbound I-295 off-ramp and Cherry Lane, the failing LOS is limited to the westbound Cherry Lane approach for the 2022 full build scenario during the a.m. peak hour. As this approach is not State-maintained and has a maximum traffic queue of less than 125 feet, no improvements are recommended to correct the LOS for this approach.

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

1. The developer should lengthen the southbound right-turn lane leading into the site entrance from the northbound I-295 off-ramp to 160 feet, which includes a 50 foot taper. The lengthening of this lane may require substantial reconstruction of the nearby stormwater facility. Additionally, this section of roadway is maintained by the Delaware River and Bay Authority (DRBA). In these regards, the developer should contact both DelDOT's Development Coordination section and the DRBA to discuss the details of the necessary construction.
2. The developer should provide a cross-access easement to the adjoining swimming club (Tax Parcel 1001500002) to enable a pedestrian connection between the proposed development and this parcel when it is improved or redeveloped. The developer should contact DelDOT's Development Coordination section to discuss the details of the easement.

Improvements in this TIS may be considered "significant" under DelDOT's *Work Zone Safety and Mobility Procedures and Guidelines*. These guidelines are available on DelDOT's website at http://www.delDOT.gov/information/pubs_forms/manuals/de_mutcd/index.shtml. For any additional information regarding the work zone impact and mitigation procedures during construction please contact Mr. Don Weber, Assistant Director for Traffic Operations and Management. Mr. Weber can be reached at (302) 659-4651 or by email at Don.Weber@delaware.gov.

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Please note that this review generally focuses on capacity and level of service issues; additional comments relating to bicycle, pedestrian, transit, safety and operational issues may be further addressed through DelDOT's subdivision review process.

Additional details on our review of this TIS are attached. If you have any questions concerning this review, please contact me at (302) 760-2167. My email is Troy.Brestel@delaware.gov.

Sincerely,



Troy Brestel
Project Engineer

TEB:km
Enclosures

cc with enclosures: Mr. Justin Rosemore, 2160 New Castle Avenue, L.L.C.
Mr. James Taylor, Duffield Associates, Inc.
Mr. George Haggerty, New Castle Department of Land Use
Mr. Antoni Sekowski, New Castle Department of Land Use
Mr. Owen Robatino, New Castle Department of Land Use
Mr. Brent Van Lith, Delaware River and Bay Authority
Ms. Constance C. Holland, Office of State Planning Coordination
Mr. Brad Eaby, Deputy Attorney General
Ms. Shanté Hastings, Director, Transportation Solutions (DOTS)
Mr. J. Marc Coté, Director, Planning
Mr. Mark Luszcz, Deputy Director, Design, DOTS
Ms. Pamela Steinebach, Assistant Director, Project Development North,
DOTS
Mr. Todd Sammons, Assistant Director, Development Coordination
Mr. T. William Brockenbrough, Jr., County Coordinator, Development
Coordination
Mr. Don Weber, Assistant Director, Traffic Operations and Management,
Traffic, DOTS
Mr. Peter Haag, Chief Traffic Engineer, Traffic, DOTS
Ms. Wendy Polasko, Subdivision Engineer, Development Coordination
Mr. Matthew Vincent, Canal District Public Works Engineer, Canal
District
Mr. Chris Sylvester, Traffic Studies Manager, Traffic, DOTS
Mr. Jared Kauffman, Service Development Planner, Delaware Transit
Corporation
Mr. Anthony Aglio, Planning Supervisor, Statewide & Regional Planning
Ms. Sireen Muhtaseb, New Castle County Subdivision Coordinator,
Development Coordination
Mr. Claudy Joinville, Project Engineer, Development Coordination
Mr. Will Mobley, Johnson, Mirmiran & Thompson, Inc.

General Information

Report date: May 2020

Prepared by: Duffield Associates, Inc.

Prepared for: 2160 New Castle Avenue, L.L.C.

Tax parcels: 10-015.00-001 and 10-015.00-005

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

Project Description and Background

Description: a 5,200 square foot high-turnover sit-down restaurant, a 2,400 square foot fast-food restaurant with drive-through window, a 2,400 square foot coffee / donut shop with drive-through window, a 4,160 square-foot variety store, and an 88-room business hotel

Location: South side of the northbound I-295 off-ramp and northwest of the intersection of New Castle Avenue (Delaware Route 9) and Cherry Lane in New Castle County, Delaware

Amount of land to be developed: approximately 6.07 acres

Land use approval(s) needed: DelDOT Subdivision approval and New Castle County land use approval

Proposed completion date: 2022

Proposed access location: One full access is proposed on New Castle Avenue by way of Cherry Lane

Daily Traffic Volumes (taken from traffic counts conducted as part of the study):

- 2019 Average Annual Daily Traffic on Cherry Lane: 7,635 vpd

2020 Delaware Strategies for State Policies and Spending

Location with respect to the Strategies for State Policies and Spending Map of Delaware:

The proposed development is located within an Investment Level 1 area.

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 promote well-designed and efficient new growth in Investment Level 1 Areas. These areas contain downtowns and distressed neighborhoods where strong public-private partnerships are needed to facilitate community redevelopment and accelerate economic revitalization. Thoughtful measures also are needed in some Level 1 Areas to expand a range of housing options in healthy, vibrant communities with schools and quality employment, but have few housing options. These areas would be a prime location for designating "pre-permitted areas" to help steer development where the local government and citizens are most prepared to accept it.

Proposed Development's Compatibility with Strategies for State Policies and Spending:

The proposed development is located in an Investment Level 1 area. Comparing the land use to the description above, the proposed development is generally consistent with the 2020 update of the Strategies for State Policies and Spending.

Comprehensive Plan

New Castle County Comprehensive Plan:

(Source: New Castle County Comprehensive Plan Update, July 2012)

The New Castle County Comprehensive Plan 2012 Future Land Use Map indicates that the proposed development parcels are within an area designated as an Office / Commercial / Industrial Development Area (OCI). OCI areas include those properties with non-residential zoning, exclusive of heavy industrial, that may be appropriate for redevelopment or mixed-use centers.

Proposed Development's Compatibility with Comprehensive Plan: The proposed development is located in an OCI area. Comparing the land use to the description above, the proposed development is generally consistent with the 2012 update of the New Castle County Comprehensive Plan.

Relevant Projects in the DelDOT Capital Transportation Program

There are currently no active DelDOT projects within the area of study.

Trip Generation

Trip generation for the proposed development was computed using comparable land uses and equations contained in the Trip Generation Manual, Tenth Edition, published by Institute of Transportation Engineers (ITE). The following land use was utilized to estimate the amount of new traffic generated for this development:

- 5,200 square foot high-turnover sit-down restaurant (ITE code 932);
- 2,400 square foot fast-food restaurant with drive-through window (ITE code 934);
- 4,160 square foot variety store (ITE code 814);
- 88-room business hotel (ITE code 312)

Additionally, the developer supplied site-specific data for use in developing the trip generation for the following:

- 2,400 square foot coffee / donut shop with drive-through window

Table 1
NEW CASTLE AVENUE REDEVELOPMENT PEAK HOUR TRIP GENERATION

Trip Generation for proposed land use	Weekday AM Peak Hour			Weekday PM Peak Hour		
	In	Out	Total	In	Out	Total
Gross total trips	189	175	364	138	119	257
Internal Capture	-6	-6	-12	-24	-24	-48
Pass-by	-38	-37	-75	-43	-34	-77
Net total trips	145	132	277	71	61	132

Table 2
NEW CASTLE AVENUE REDEVELOPMENT DAILY TRIP GENERATION

Trip generation for proposed land use	Weekday ADT		
	In	Out	Total
TOTAL TRIPS	1,766	1,765	3,531

Overview of TIS

Intersections examined:

- 1) Northbound I-295 off-ramp / Cherry Lane / Site Entrance
- 2) New Castle Avenue (New Castle Road 19) / Cherry Lane
- 3) New Castle Avenue / Rodney Drive
- 4) New Castle Avenue / Stamm Boulevard
- 5) New Castle Avenue / Landers Lane (New Castle Road 373)
- 6) New Castle Avenue / Halcyon Drive
- 7) New Castle Avenue / West Avenue (New Castle Road 371) / Memorial Drive (New Castle Road 61)

Conditions examined:

- 1) 2019 existing conditions (Case 1)
- 2) 2022 without development (Case 2)
- 3) 2022 with development of hotel only (Case 3a)
- 4) 2022 with development of retail only (Case 3b)
- 5) 2022 with full development (Case 3c)

Peak hours evaluated: Weekday morning and afternoon peak hours

Committed developments considered:

- 1) New Castle County Route 9 Library / Community Center (7,600 square-foot addition)
- 2) New Castle Industrial Park (5,000 square-foot warehouse)
- 3) Shamrock Enterprises (3,738 square feet of light industrial space)
- 4) Castlewood Industrial Park (32.6-acre business / industrial park)

Transit, Pedestrian, and Bicycle Facilities

Existing transit service: DART currently operates Routes 14, 15, and 51 within the study area.

Planned transit service: There are no current plans to change the transit service that currently exists within the study area.

Existing bicycle and pedestrian facilities: According to the New Castle County bicycle map, New Castle Avenue is a high-traffic statewide bicycle route with a bikeway, and is also an East Coast Greenway Route. Landers Lane is considered a connector bicycle route without a bikeway. Existing pedestrian facilities in the study area include sidewalk along the site entrance extending out along Cherry Lane.

Planned bicycle and pedestrian facilities: No additional bicycle facilities are planned within the area study. The developer should provide a cross-access easement to the adjoining swimming club (Tax Parcel 1001500002) to enable a pedestrian connection between the proposed development and this parcel when it is improved or redeveloped.

Mr. Michael Kaszyski

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Previous Comments

All comments from DelDOT's Scoping Letter and Traffic Count Review were addressed in the Final TIS submission.

General HCS Analysis Comments

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

There were no general differences between the TIS and DelDOT's review of it.

Table 3
 PEAK HOUR LEVELS OF SERVICE (LOS)
based on the Traffic Impact Study for New Castle Avenue Redevelopment
Report dated May 2020
 Prepared by Duffield Associates, Inc.

Unsignalized Intersection ¹	LOS per TIS		LOS per DelDOT	
	Weekday AM	Weekday PM	Weekday AM	Weekday PM
I-295 Northbound off-ramp / Cherry Lane / Site Entrance				
2022 with hotel only				
Eastbound Site Entrance	B (12.1)	B (10.5)	B (12.1)	B (10.5)
Westbound Cherry Lane	C (19.3)	B (14.1)	C (19.3)	C (14.1)
2022 with retail only				
Eastbound Site Entrance	B (14.5)	B (11.1)	B (14.5)	B (11.1)
Westbound Cherry Lane	D (33.5)	C (16.3)	D (33.5)	C (16.3)
2022 with full development				
Eastbound Site Entrance	C (15.1)	B (11.2)	C (15.1)	B (11.2)
Westbound Cherry Lane	E (35.7)	C (16.9)	E (39.4)	C (16.9)

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

Table 4
 PEAK HOUR LEVELS OF SERVICE (LOS)
based on the Traffic Impact Study for New Castle Avenue Redevelopment
Report dated May 2020
 Prepared by Duffield Associates, Inc.

Signalized Intersection ¹	LOS per TIS		LOS per DeIDOT ²	
	Weekday AM	Weekday PM	Weekday AM	Weekday PM
New Castle Avenue / Cherry Lane				
2019 Existing	C (30.1)	C (30.5)	C (31.3)	D (43.1)
2022 without development	C (30.4)	C (30.9)	C (30.7)	D (41.3)
2022 with hotel only	C (31.0)	C (31.8)	C (31.3)	D (42.1)
2022 with retail only	C (34.8)	D (36.7)	C (33.5)	D (46.0)
2022 with full development	D (35.6)	D (37.8)	C (33.9)	D (46.9)

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

² In their review of the TIS, DeIDOT used a cycle length of 150 seconds, whereas the consultant used a cycle length of 120 seconds in the TIS.

Table 5
 PEAK HOUR LEVELS OF SERVICE (LOS)
based on the Traffic Impact Study for New Castle Avenue Redevelopment
Report dated May 2020
 Prepared by Duffield Associates, Inc.

Signalized Intersection ¹	LOS per TIS		LOS per DeIDOT ²	
	Weekday AM	Weekday PM	Weekday AM	Weekday PM
New Castle Avenue / Rodney Drive				
2019 Existing	A (6.5)	A (4.9)	A (3.4)	A (1.9)
2022 without development	A (6.8)	A (4.9)	A (3.4)	A (1.9)
2022 with hotel only	A (6.8)	A (5.0)	A (3.4)	A (2.5)
2022 with retail only	A (6.8)	A (5.0)	A (3.4)	A (2.5)
2022 with full development	A (6.8)	A (5.0)	A (3.4)	A (2.5)

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

² In their review of the TIS, DeIDOT used a cycle length of 150 seconds, whereas the consultant used a cycle length of 120 seconds in the TIS.

Table 6
 PEAK HOUR LEVELS OF SERVICE (LOS)
based on the Traffic Impact Study for New Castle Avenue Redevelopment
Report dated May 2020
 Prepared by Duffield Associates, Inc.

Signalized Intersection ¹	LOS per TIS		LOS per DeIDOT ²	
	Weekday AM	Weekday PM	Weekday AM	Weekday PM
New Castle Avenue / Stamm Boulevard				
2019 Existing	A (8.8)	B (11.1)	A (6.5)	A (6.5)
2022 without development	A (8.8)	B (11.1)	A (6.5)	A (6.5)
2022 with hotel only	A (8.8)	B (11.1)	A (6.5)	A (6.5)
2022 with retail only	A (8.8)	B (11.1)	A (6.5)	A (6.5)
2022 with full development	A (8.8)	B (11.1)	A (6.5)	A (6.5)

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

² In their review of the TIS, DeIDOT used a cycle length of 150 seconds, whereas the consultant used a cycle length of 120 seconds in the TIS.

Table 7
 PEAK HOUR LEVELS OF SERVICE (LOS)
based on the Traffic Impact Study for New Castle Avenue Redevelopment
Report dated May 2020
 Prepared by Duffield Associates, Inc.

Signalized Intersection ¹	LOS per TIS		LOS per DeIDOT ²	
	Weekday AM	Weekday PM	Weekday AM	Weekday PM
New Castle Avenue / Landers Lane				
2019 Existing	B (11.3)	B (14.7)	A (6.6)	A (9.2)
2022 without development	B (11.7)	B (15.1)	A (7.1)	A (9.7)
2022 with hotel only	B (11.8)	B (15.2)	A (7.2)	A (9.8)
2022 with retail only	B (12.3)	B (15.4)	A (7.7)	A (9.9)
2022 with full development	B (12.5)	B (15.5)	A (7.8)	B (10.0)

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

² In their review of the TIS, DeIDOT used a cycle length of 150 seconds, whereas the consultant used a cycle length of 120 seconds in the TIS.

Table 8
 PEAK HOUR LEVELS OF SERVICE (LOS)
based on the Traffic Impact Study for New Castle Avenue Redevelopment
Report dated May 2020
 Prepared by Duffield Associates, Inc.

Unsignalized Intersection ¹	LOS per TIS		LOS per DelDOT	
	Weekday AM	Weekday PM	Weekday AM	Weekday PM
New Castle Avenue / Halcyon Drive				
2019 Existing				
Northbound New Castle Avenue Left-Turn	B (11.7)	C (20.4)	B (11.9)	C (19.8)
Eastbound Halcyon Drive	C (17.0)	D (27.3)	C (16.9)	D (30.0)
2022 without development				
Northbound New Castle Avenue Left-Turn	B (11.9)	C (21.1)	B (12.1)	C (20.5)
Eastbound Halcyon Drive	C (17.3)	D (28.0)	C (17.1)	D (30.9)
2022 with hotel only				
Northbound New Castle Avenue Left-Turn	B (11.9)	C (21.3)	B (12.2)	C (20.7)
Eastbound Halcyon Drive	C (17.4)	D (28.3)	C (17.3)	D (31.2)
2022 with retail only				
Northbound New Castle Avenue Left-Turn	B (12.1)	C (21.5)	B (12.4)	C (20.9)
Eastbound Halcyon Drive	C (17.8)	D (28.6)	C (17.7)	D (31.6)
2022 with full development				
Northbound New Castle Avenue Left-Turn	B (12.2)	C (21.6)	B (12.5)	C (21.0)
Eastbound Halcyon Drive	C (18.0)	D (28.8)	C (17.8)	D (31.8)

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

Table 9
 PEAK HOUR LEVELS OF SERVICE (LOS)
based on the Traffic Impact Study for New Castle Avenue Redevelopment
Report dated May 2020
 Prepared by Duffield Associates, Inc.

Signalized Intersection ¹	LOS per TIS		LOS per DeIDOT ²	
	Weekday AM	Weekday PM	Weekday AM	Weekday PM
New Castle Avenue / Memorial Drive / West Avenue				
2019 Existing	C (21.7)	C (34.6)	C (22.1)	C (32.3)
2022 without development	C (22.2)	D (36.2)	C (22.4)	C (32.5)
2022 with hotel only	C (22.4)	D (36.7)	C (22.6)	C (32.7)
2022 with retail only	C (22.9)	D (37.6)	C (22.9)	C (33.0)
2022 with full development	C (23.0)	D (37.9)	C (23.0)	C (33.1)

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

² In their review of the TIS, DeIDOT used a cycle length of 150 seconds, whereas the consultant used a cycle length of 120 seconds in the TIS.