



STATE OF DELAWARE
DEPARTMENT OF TRANSPORTATION
800 BAY ROAD
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DOVER, DELAWARE 19903

SHAILEN P. BHATT
SECRETARY

November 30, 2012

Mr. D.J. Hughes
Davis, Bowen & Friedel, Inc.
Milford Office
23 North Walnut Street
Milford, DE 19963

Dear Mr. Hughes:

The Department has completed its review of the Traffic Impact Study (TIS) for the proposed **McDonalds – Laurel (SSR 9450)** development in the town of Laurel, prepared by Davis, Bowen & Friedel, Inc. (DBF) dated August 6, 2012.

The TIS evaluates the impact of a 4,221 square foot McDonald's restaurant with drive-through, proposed to be located on a 20.67-acre parcel in Laurel. Currently, a gasoline station with 16 fueling positions and a portion of an outdoor flea market exist on the same parcel. Both of those land uses are to remain, although six fueling positions would be eliminated at the gasoline station. The proposed development is located on the southeast corner of the intersection of US Route 13 (Sussex Road 2) and US Route 9 (Sussex Road 28) in the town of Laurel. Two access points exist; one on US Route 13, and one on US Route 9. No new access is proposed. Construction is expected to be complete by 2014.

Based on our review, we have the following comments. With the exception of the existing main site access on US Route 9, all intersections analyzed in the study currently operate at level of service (LOS) D or better, and are projected to do so under the 2014 conditions with or without construction of the proposed land use.

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

1. The developer should participate in improvements to the intersection of US Route 9 and the main site access. The intersection should have the following lane configuration:

<i>Approach</i>	<i>Current Configuration</i>	<i>Proposed Configuration</i>
Northbound Site Access	One shared left-turn / right-turn lane	One shared left-turn / right-turn lane
Eastbound US Route 9	One shared right-turn / through lane	One through lane, one right-turn lane
Westbound US Route 9	One shared left-turn / through lane	One left-turn lane, one through lane

The storage and taper lengths of the lanes to be added to this intersection should be discussed with the Subdivision Section prior to submission of a site or entrance plan. Additionally, while it is not required, we recommend that the developer consider constructing a separate northbound right-turn lane at the US Route 9 Access. This improvement would improve traffic flow within the site by allowing drivers turning right onto Route 9 to do so without waiting behind drivers turning left onto Route 9.

Regarding the proposed configuration of the eastbound US Route 9 right-turn lane, DelDOT plans to reinstall the previously removed right-turn lane and bicycle lane in spring of 2013.

2. The following bicycle and pedestrian improvements should be included:
 - a) A 15-foot wide easement from the edge of the right-of-way should be dedicated to DelDOT within the site frontage along US Route 13 and US Route 9. Within these easements, a minimum of a five-foot wide concrete sidewalk (with a minimum of a five-foot buffer from the roadway) that meets current AASHTO and ADA standards should be constructed. The concrete sidewalk should connect to any paths on adjoining parcels or to the shoulder at the beginning and ending limits of the site frontage.
 - b) Utility covers should be moved outside of the designated bicycle lane or be flush with the pavement.
 - c) ADA-compliant curb ramps should be provided at all pedestrian crossings. Type 3 curb ramps are discouraged.
 - d) Ensure internal sidewalk to promote walking as a viable transportation alternative should be constructed within the development. These sidewalks should each be a minimum of five-feet wide (with a minimum of a five-foot buffer from the roadway) and should meet current AASHTO and ADA standards.
 - e) A four-foot wide bicycle lane will be installed by DelDOT Traffic at US Route 9 and the main site access.

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Please note that this review generally focuses on capacity and level of service issues; any additional safety and operational issues will be further addressed through our subdivision review process.

Additional details on our review of the TIS are attached. Please contact Mr. Troy Brestel at (302) 760-2167 or me at (302) 760-2109 if you have any questions concerning this review.

Sincerely,



T. William Brockenbrough, Jr.
County Coordinator

TWB:phm
Enclosures

cc with enclosures:

Terry Wright, President, Town of Laurel
Jamie Smith, Operations Manager, Town of Laurel
Lawrence Lank, Sussex County Planning and Zoning
Frederick H. Schranck, Deputy Attorney General
Nicole Majeski, Chief of Staff
Natalie Barnhart, Director, Transportation Solutions (DOTS)
Drew Boyce, Director, Planning
Michael H. Simmons, Assistant Director, Project Development South,
DOTS
Mark Luszczyk, Chief Traffic Engineer, Traffic, DOTS
Jennifer Pinkerton, Chief Materials Engineer, M&O
Jeff Reed, South District Engineer, Maintenance & Operations (M&O)
J. Marc Coté, Assistant Director, Development Coordination
Marvin Roberts, Public Works Manager, South District, M&O
Adam Weiser, Safety Programs Engineer, Traffic, DOTS
Thomas E. Meyer, Traffic Studies Manager, Traffic, DOTS
Monroe Hite, III, System Design Manager, Traffic, DOTS
Chris Sylvester, Traffic Studies Engineer, Traffic, DOTS
Wayne Henderson, Service Development Planner, Delaware Transit
Corporation
Brad Herb, Acting Kent and Sussex County Subdivision Coordinator,
Johnson, Mirmiran & Thompson, Inc.
Derek Sapp, Subdivision Manager, Development Coordination
Troy Brestel, Project Engineer, Development Coordination
W. Paul Hogge, Project Engineer, Development Coordination

General Information

Report date: August 6, 2012

Prepared by: Davis, Bowen & Friedel, Inc.

Prepared for: McDonald's - Baltimore / Washington Region, LLC

Tax Parcels: 3-32-12.00-105.00

Generally consistent with DelDOT's *Rules and Regulations for Subdivision Streets*:
Yes

Project Description and Background

Description: 4,221 square foot McDonald's with drive-through window.

Location: Southeast corner of the intersection of US Route 13 (Sussex Road 2) and US Route 9 (Sussex Road 28)

Amount of land to be developed: approximately 20.67 acres.

Land use approval(s) needed: Letter of No Objection, Entrance Plan Approval, Town of Laurel Site Plan Approval

Proposed completion date: 2014

Proposed access locations: Two access points exist; one on US Route 13, and one on US Route 9. No new access is proposed.

Livable Delaware

(Source: Delaware Strategies for State Policies and Spending, July 2004)

Location with respect to the Strategies for State Policies and Spending Map of Delaware: The proposed location of the McDonald's – Laurel development is located within Investment Level 1.

Description of Investment Level:

Investment Level 1

Investment Level 1 Areas are often municipalities, towns, or urban/urbanizing places in counties. Density is generally higher than in the surrounding areas. There are a variety of transportation opportunities available. Buildings may have mixed uses, such as a business on the first floor and apartments above.

In 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. Overall, it is the state's intent to use its spending and management tools to maintain and enhance community character, to promote well-designed and efficient new growth, and to facilitate redevelopment in Investment Level 1 Areas. These areas would be a prime location for designating "pre-permitted areas" to help steer development where the citizens are most prepared to accept it.

Proposed Development's Compatibility with Livable Delaware: McDonald's - Laurel falls in Investment Level 1. As described, Investment Level 1 may typically contain long-term redevelopment areas. This development, therefore, is compatible with Livable Delaware.

Comprehensive Plans

The proposed development is located within both Sussex County and Town of Laurel boundaries.

Sussex County Comprehensive Plan: *(Source: 2007 Sussex County Comprehensive Plan Update)* This plan indicates that the area is considered to be part of a municipality. The Plan, "strongly favors directing development to the incorporated municipalities that desire it. With exceptions, these are some of the County's most densely developed areas and the area's most fully served by public sewer and public water facilities. The specific permitted uses and densities governing new construction within an incorporated municipality will continue to be governed by that municipality's zoning ordinance, its public water and sewer capacities, and its comprehensive planning policies." Given that it is encouraged to build in municipalities, the location of the site is appropriate for the redevelopment.

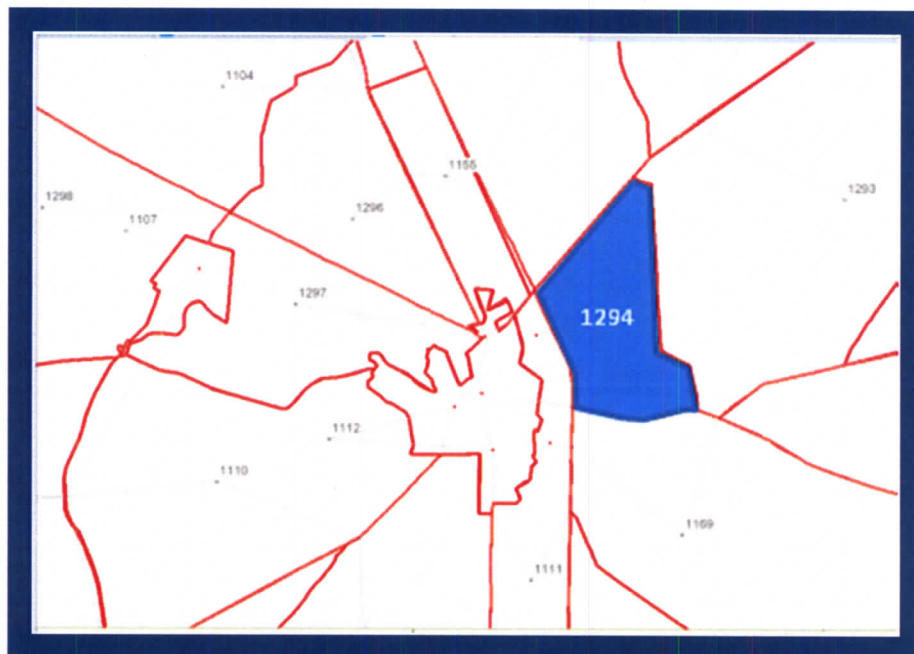
Town of Laurel Comprehensive Plan: *(Source: Comprehensive Plan, Town of Laurel, June 2011)* According to this plan, "Over the upcoming five years the Town will continue to allow a variety of commercial land uses to promote small business, revitalize downtown and expand highway commercial development along US 13 Highway in forms keeping with the desired character for each of these areas of the Town. To continue to expand these commercial opportunities, the Town will continue to promote and expand Gateways along key transportation routes within and around the community."

Proposed Development's Compatibility with Comprehensive Plans: The proposed development is consistent with both the Sussex County Comprehensive Plan and the Town of Laurel Comprehensive Plan.

Regional Transportation Plan

Transportation Analysis Zones (TAZ) where development would be located: 1294
(Travel Demand Model)

TAZ Boundaries:



Current employment estimate for TAZ: 117 in 2010

Future employment estimate for TAZ: 182 in 2040

Current population estimate for TAZ: 738 in 2010

Future population estimate for TAZ: 757 in 2040

Current household estimate for TAZ: 267 in 2010

Future household estimate for TAZ: 293 in 2040

Relevant committed developments in the TAZ: N/A

Would the addition of committed developments to current estimates exceed future projections: No

Would the addition of committed developments and the proposed development to current estimates exceed future projections: No

Relevant Projects in the DelDOT Capital Transportation Program (2012-2017)

There are no relevant projects planned at this time in DelDOT's Capital Transportation Program.

Trip Generation

Trip generation for the proposed development was computed using comparable land uses and equations contained in Trip Generation, Eighth Edition, published by the Institute of Transportation Engineers (ITE). Since the development is listed as a Fast-Food Restaurant with Drive-Through Window, ITE Code 934 was used to determine how many new trips McDonald's - Laurel would generate:

McDonald's - Laurel Trip Generation

Land Use	Morning Peak Hour			Afternoon Peak Hour			Saturday Peak Hour		
	In	Out	Total	In	Out	Total	In	Out	Total
<i>Fast-Food Restaurant with Drive-Through Window (4,221 square feet)</i>	106	102	208	74	69	143	128	123	251
<i>Removal of 6 Vehicle Fueling Positions from Existing Gasoline Station</i>	-55	-55	-110	-50	-49	-99	-30	-29	-60
<i>Net Increase</i>	51	47	98	24	20	44	97	94	191
<i>Internal Capture</i>	9	9	18	5	4	9	40	36	76
<i>External Trips</i>	42	38	80	19	16	35	57	58	115
<i>Pass-by Trips</i>	20	19	39	9	9	18	29	29	58
<i>Primary Trips</i>	22	19	41	10	7	17	28	29	57

Overview of TIS**Intersections examined:**

- 1) Site Entrance / US Route 13
- 2) Site Entrance / US Route 9
- 3) US Route 13 / US Route 9

Conditions examined:

- 1) Case 1: 2012 Existing
- 2) Case 2: 2014 Without Proposed Development
- 3) Case 3: 2014 With Proposed Development

Peak hours evaluated: all intersections were examined during the weekday morning, weekday evening, and Saturday peak hours.

Committed developments considered:

- 1) Royal Farms – Laurel (4,980 square feet of convenience market with 8 fueling pumps)

Intersection Descriptions

1) US Route 13 / Site Access:

Type of Control: Unsignalized (T-intersection)

Northbound approach: (US Route 13) two through lanes, one channelized right-turn lane

Westbound approach: (Site Access) channelized right-turn lane

2) US Route 9 / Site Access:

Type of Control: Unsignalized (T-intersection)

Northbound approach: (Site Access) one shared right-turn/left-turn lane

Eastbound approach: (US Route 9) one shared through/right-turn lane

Westbound approach: (US Route 9) one shared left-turn/right-turn lane,

3) US Route 13 / US Route 9:

Type of Control: Two-way stop-controlled intersection

Northbound approach: (US Route 13) one channelized stop controlled left-turn lane, two through lanes, one channelized right-turn lane, stop-controlled

Southbound approach: (US Route 13) one channelized stop controlled left-turn lane, two through lanes, one channelized right-turn lane, stop-controlled

Eastbound approach: (US Route 9) one channelized stop controlled left-turn lane, one through lane, one channelized right-turn lane, stop-controlled

Westbound approach: (US Route 9) one channelized stop controlled left-turn lane, one through lane, one channelized right-turn lane, stop-controlled

Transit, Pedestrian, and Bicycle Facilities

Existing transit service: According to the Delaware Transit Corporation (DTC) website, Route 212 is currently the only transit service available near the study area, although it does not travel through the study area. Route 212 travels between Georgetown and Laurel by way of Bridgeville, Seaford, and Blades. Currently, there are no bus stops within the study area. The closest stop is Laurel Commons, which is west of US Route 13.

Planned transit service: According to Wayne Henderson of the Delaware Transit Corporation (DTC), a new route is being planned along US Route 13 that would travel through the study area and extend into Dover. Mr. Henderson believes that sidewalk along US Route 13 will be needed to accommodate the new transit route.

Existing bicycle and pedestrian facilities: The Sussex Counties Bicycle Map indicates no bicycle trails run through the study area. US Route 13 is considered a connector bicycle route and US Route 9 is considered a regional bicycle route. US Route 13 is rated as having above average cycling conditions with high traffic volumes (greater than 10,000 ADT) and US Route 9 is rated as having above average cycling conditions with moderate traffic volumes (2,000-10,000 ADT). There are currently no sidewalks within the vicinity of the proposed development.

US Route 13 is rated as having a bicycle level of service of A (below 1.5) with an extremely high compatibility level, and having a moderately high bicycle capacity index of C (2.31-3.40). US Route 9 is rated as having a bicycle level of service of A (below 1.5) with an extremely high compatibility level, and having a very high bicycle capacity index of B (1.51-2.30).

Planned bicycle and pedestrian facilities: Based on internal DelDOT correspondences, the following recommendations are made:

- a) A 15-foot wide easement from the edge of the right-of-way should be dedicated to DelDOT within the site frontage along US Route 13 and US Route 9. Within these easements, a minimum of a five-foot wide concrete sidewalk (with a minimum of a five-foot buffer from the roadway) that meets current AASHTO and ADA standards should be constructed. The concrete sidewalk should connect to any paths on adjoining parcels or to the shoulder at the beginning and ending limits of the site frontage.
- b) Utility covers should be moved outside of the designated bicycle lane or be flush with the pavement.
- c) ADA-compliant curb ramps should be provided at all pedestrian crossings. Type 3 curb ramps are discouraged.
- d) Ensure internal sidewalk to promote walking as a viable transportation alternative should be constructed within the development. These sidewalks should each be a minimum of five-feet wide (with a minimum of a five-foot buffer from the roadway) and should meet current AASHTO and ADA standards.
- e) A four-foot wide bicycle lane will be installed by DelDOT Traffic at US Route 9 and the main site access.

Previous Comments

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

General HCS Analysis Comments

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

There were some minor differences between the TIS and DelDOT's review of the general HCS analysis because of a negligible difference in software editions. Highway Capacity Software (HCS) version 4.1 f was used for the TIS analysis, whereas Highway Capacity Software (HCS) + T7F was used for DelDOT's review. Both are acceptable to DelDOT.

Table 1
PEAK HOUR LEVELS OF SERVICE (LOS)
 Based on Traffic Impact Study for McDonald's - Laurel
 Report dated August 8, 2012
 Prepared by Davis, Bowen & Friedel, Inc.

Signalized Intersection ¹	LOS per Analysis			LOS per DelDOT		
	Weekday AM	Weekday PM	Saturday Mid-day	Weekday AM	Weekday PM	Saturday Mid-day
US Route 13 & US Route 9 ²						
2012 Existing (Case I)	C (26.5)	C (25.3)	C (31.3)	C (28.8)	C (28.5)	D (36.4)
2014 without development (Case II)	C (26.3)	C (27.0)	C (32.7)	C (29.0)	C (29.2)	D (37.0)
2014 with development (Case III a)	C (27.4)	C (27.4)	C (35.5)	C (29.9)	C (29.6)	D (39.6)
2014 with development with 90 – Second Cycle Length (Case III b)	--	--	C (32.3)	C (25.7)	C (27.3)	D (36.3)

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

² DelDOT used different arrival types as well as different phasing in the review of the TIS.

Table 2
PEAK HOUR LEVELS OF SERVICE (LOS)
 Based on Traffic Impact Study for McDonald's - Laurel
 Report dated August 8, 2012
 Prepared by Davis, Bowen & Friedel, Inc.

Unsignalized Intersection ¹	LOS per Analysis			LOS per DelDOT		
	Weekday AM	Weekday PM	Saturday Mid-day	Weekday AM	Weekday PM	Saturday Mid-day
US Route 13 & Southern Site Entrance						
2012 Existing (Case I)						
S. Site Access WB Right-Turn	B (11.0)	B (12.2)	B (12.2)	B (11.0)	B (12.2)	B (12.2)
2014 without development (Case II)						
S. Site Access WB Right-Turn	B (11.1)	B (12.3)	B (12.3)	B (11.1)	B (12.3)	B (12.3)
2014 with development (Case III)						
S. Site Access WB Right-Turn	B (11.1)	B (12.4)	B (12.5)	B (11.1)	B (12.4)	B (12.5)

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

Table 3
PEAK HOUR LEVELS OF SERVICE (LOS)
 Based on Traffic Impact Study for McDonald's - Laurel
 Report dated August 8, 2012
 Prepared by Davis, Bowen & Friedel, Inc.

Unsignalized Intersection ¹	LOS per Analysis			LOS per DeDOT		
	Weekday AM	Weekday PM	Saturday Mid-day	Weekday AM	Weekday PM	Saturday Mid-day
US Route 9 & Northern Site Access						
2012 Existing (Case I)						
US Route 9 WB Left-Turn	A (8.0)	A (7.8)	A (8.3)	A (8.0)	A (7.8)	A (8.3)
N. Site Access NB Left-Turn/Right-Turn	B (11.6)	B (12.3)	D (28.6)	B (11.8)	B (12.5)	D (29.6)
2014 without development (Case II)						
US Route 9 WB Left-Turn	A (8.0)	A (7.8)	A (8.3)	A (8.0)	A (7.8)	A (8.3)
N. Site Access NB Left-Turn/Right-Turn	B (11.7)	B (12.5)	D (29.4)	B (11.9)	B (12.6)	D (30.7)
2014 with development (Case III)						
US Route 9 WB Left-Turn	A (8.0)	A (7.8)	A (8.4)	A (8.0)	A (7.8)	A (8.4)
N. Site Access NB Left-Turn/Right-Turn	B (12.5)	B (12.8)	E (43.2)	B (12.7)	B (13.0)	E (45.3)
2014 with development and US Route 9 EB Right-Turn Improvement						
US Route 9 WB Left-Turn	--	--	A (8.4)	--	--	A (8.4)
N. Site Access NB Left-Turn/Right-Turn	--	--	D (27.5)	--	--	D (29.6)
2014 with development and N. Site Access NB Right-Turn lane addition						
US Route 9 WB Left-Turn	--	--	A (8.4)	--	--	A (8.4)
N. Site Access NB Left-Turn	--	--	E (38.2)	--	--	E (39.6)
N. Site Access NB Right-Turn	--	--	A (10.0)	--	--	B (10.3)

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