



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

CAROLANN WICKS, P.E.
SECRETARY

February 21, 2011

Mr. Lawrence B. Lank
Director
Sussex County Planning and Zoning Commission
P.O. Box 417
Georgetown, DE 19947

Dear Mr. Lank:

This letter concerns Pelican Pointe (fka Fenwick Pointe, SSR6431), an approximately 15.29-acre development (Tax Parcel 5-33-19.00-50.00) located on the south side of Delaware Route 54 just east of Sand Cove Road (Sussex Road 394). The land is zoned AR-1 and the owner seeks to have it rezoned to CR-1. Briefly, we would not object to the County's accepting the developer's rezoning application now.

In that regard, the developer's traffic engineer, Orth-Rodgers and Associates, has prepared a Traffic Impact Study (TIS). The scope of work for the study was established in 2008 and traffic counts were done that year. Orth-Rodgers completed the study and submitted it for review in early 2010. We assigned that review to our consultant, McCormick Taylor that year but they did not complete it, pending discussions between us and the developer. The development proposed was a shopping center of about 102,000 square feet. The study assumed completion of the development in 2012.

We have been informed that the proposed development has changed, to 132 apartments, a restaurant and a convenience store with fuel pumps. This combination of uses would generate more traffic in the weekday morning peak hour but less traffic in the weekday evening and Saturday midday peak hours compared to the shopping center previously proposed.

The TIS and McCormick Taylor's review of it found poor levels of service, i.e. long delays, for traffic entering Route 54 from Sand Cove Road, Williamsville Road (Sussex Road 395) and Sound Church Road (Sussex Road 394A) during the summer Saturday peak hour, but also found that the traffic on these roads was not sufficient to justify the construction of turning lanes or signals, except possibly at Sand Cove Road if the subject development were connected to it. For these reasons and because of the relative trip generation of the current development proposal, we do not see any benefit from further study of most of the intersections addressed in the TIS.



Mr. Lawrence B. Lank
February 21, 2011
Page 2 of 2

Therefore, we have asked McCormick Taylor to complete their review letter based on the previous development proposal. A copy is enclosed. We have advised Orth-Rodgers that, if the rezoning is approved, we will require a revised TIS based on the current development proposal, which TIS will focus on the site access and the intersection of Route 54 and Sand Cove Road.

The enclosed Traffic Impact Study (TIS) review letter has been completed under the responsible charge of a registered professional engineer whose firm, McCormick Taylor, is authorized to work in the State of Delaware. They have found the TIS to conform to DelDOT's Standards and Regulations for Subdivision Streets and State Highway Access and other accepted practices and procedures for such studies. DelDOT accepts this TIS review and concurs with the recommendations. We are providing it to you in fulfillment of our joint agreement regarding the review of TIS. In view of the change in the proposed use, if the County finds that a revised traffic impact study, possibly of the same scope as the original study, is necessary to address the proposed rezoning, please let me know.

If you have any questions concerning this letter or the attached review letter, please contact me at (302) 760-2109.

Sincerely,



T. William Brockenbrough, Jr.
County Coordinator

TWB:km
Enclosure
cc with enclosure:

Ms. Constance C. Holland, Office of State Planning Coordination
Mr. Derrick S. Kennedy, Orth-Rodgers & Associates Inc.
Mr. Andrew J. Parker, McCormick Taylor
Mr. Mir A. Wahed, Johnson, Mirmiran, and Thompson
DelDOT Distribution

DelDOT Distribution

Frederick H. Schranck, Deputy Attorney General
J. Brett Taylor, Director of Policy and Communications, Public Relations
Natalie Barnhart, Director, Transportation Solutions (DOTS)
Michael Strange, Acting Director, Division of Planning
Michael H. Simmons, Assistant Director, Project Development South, DOTS
Donald D. Weber, Chief Traffic Engineer, Traffic, DOTS
Mark Luszcz, Assistant Chief Traffic Engineer, Traffic, DOTS
Thomas E. Meyer, Traffic Studies Manager, Traffic, DOTS
Theodore G. Bishop, Assistant Director, Development Coordination
Jeffrey S. Reed, District Engineer, South District, Maintenance & Operations (M&O)
Marvin Roberts, Public Works Manager, South District, M&O
Jennifer Pinkerton, Deputy Principal Assistant, Pavement Management
William J. Dryden, Transportation Planner, Project Development South, DOTS
Lisa Collins, Service Development Planner, Delaware Transit Corporation
J. Marc Coté, Subdivision Engineer, Development Coordination
John T. Fiori, Subdivision Manager, Development Coordination
Anthony Aglio, Bicycle and Pedestrian Coordinator, Statewide & Regional Planning
Troy E. Brestel, Project Engineer, Development Coordination

February 21, 2011

Mr. William Brockenbrough, Jr.
County Coordinator
DelDOT Division of Planning
P.O. Box 778
Dover, DE 19903

RE: Agreement No. 1404
Traffic Impact Study Services
Task No. 54A – Fenwick Pointe

Dear Mr. Brockenbrough,

McCormick Taylor has completed its review of the Traffic Impact Study (TIS) for Fenwick Pointe prepared by Orth-Rodgers & Associates, Inc (ORA), dated February 24, 2010. This review was assigned as Task Number 54A. ORA prepared the report in a manner generally consistent with DelDOT's *Standards and Regulations for Subdivision Streets and State Highway Access*.

We have recently been made aware that ORA's TIS, along with our subsequent review and recommendations contained herein, are based on a proposed land use plan that has become outdated. If the property is rezoned as the developer has proposed, the developer is now expected to develop the property with apartments, a convenience store and a restaurant, rather than the shopping center evaluated in the TIS. As such, it should be understood that this review letter applies only to ORA's TIS dated February 24, 2010, and the recommendations herein may no longer be valid if the proposed land use is changed.

The TIS evaluates the impacts of Fenwick Pointe, proposed to be located on the south side of Delaware Route 54 (Lighthouse Road / Sussex Road 58), approximately 200' east of Sand Cove Road (Sussex Road 394) in Sussex County, Delaware. The proposed development would consist of 102,000 square feet of retail space on approximately 15 acres of land. Two access points are proposed along Delaware Route 54. Construction is anticipated to be complete by 2012.

The land is currently zoned as AR-1 (Agricultural Residential) in Sussex County. The developer has proposed rezoning the land to CR-1 (Commercial Regional).

DelDOT currently has one relevant project near the study area. The *SR 54, Mainline Improvements* project (State Contract No. 24-112-01) includes improvements planned along Delaware Route 54, east of Delaware Route 20 (Zion Church Road / Sussex Road 382) to Keenwick Road (Sussex Road 58C), which will include two 12-foot travel lanes, a 14-foot center left-turn lane, two eight-foot shoulders, two three-foot grass buffers, and two five-foot sidewalks. In addition, a reconstruction project was completed in 2007 for the intersection of Delaware Route 54 and Delaware Route 20, which realigned the intersection and added a fourth leg for the Americana Bayside development.

In addition, due to the number of signal requests DelDOT's Traffic Section had received, a corridor study was completed for Delaware Route 54 from Selbyville to Delaware Route 1 to determine the optimal locations for traffic signals along the corridor. The study, completed in 2002 by Whitman, Requardt and Associates, used projected volumes for a horizon year of 2025 and it determined that, within the Fenwick Pointe study area, the intersection of Delaware Route 54 and Sand Cove Road would be an optimal location for a traffic signal when warranted.

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

The following intersections exhibit level of service (LOS) deficiencies without the implementation of physical roadway and/or traffic control improvements:

<i>Intersection</i>	<i>Situations for which deficiencies occur</i>
Delaware Route 54 and West Site Entrance	2012 Saturday with Fenwick Pointe
Delaware Route 54 and East Site Entrance	2012 Saturday with Fenwick Pointe
Delaware Route 54 and Sand Cove Road	2012 Saturday with Fenwick Pointe
Delaware Route 54 and Williamsville Road (Sussex Road 395)	2012 Saturday with Fenwick Pointe
Delaware Route 54 and Sound Church Road (Sussex Road 394A)	2012 Saturday without and with Fenwick Pointe

Although the TIS analyzed two site entrances along Delaware Route 54, DelDOT's Subdivision Section will permit Fenwick Pointe to have only one access point along Delaware Route 54, to be located near the middle of the site frontage. Limiting site access to one location on Delaware Route 54 minimizes the number of new conflict points being introduced along the heavily-traveled beach/evacuation route. Consolidating the site entrances to one location also alleviates concerns about having three intersections (one existing intersection at Sand Cove Road and two proposed site entrances) spaced less than 1,000 feet apart along Delaware Route 54.

Furthermore, due to the proximity of the intersection of Sand Cove Road and the proposed site entrance on Delaware Route 54, it is recommended that a traffic signal be installed at only one of these two intersections (when warranted). The aforementioned Delaware Route 54 Corridor Study identified the intersection of Delaware Route 54 and Sand Cove Road as an optimal location for the installation of a traffic signal when warranted. Also, when determining where to place traffic signals along Delaware Route 54, DelDOT prefers to give priority to public roadways over commercial driveways. As such, a signal may be installed on Delaware Route 54 at Sand Cove Road when warranted, and the proposed Fenwick Pointe site entrance along Delaware Route 54 should be constructed as an unsignalized intersection.

To provide better access and traffic operations for drivers entering and exiting the proposed Fenwick Pointe development, the developer should also pursue a connection to Sand Cove Road (in addition to the site entrance on Delaware Route 54). Such a connection would allow drivers

leaving the shopping center and making a left to travel west on Delaware Route 54 to do so via a second location (Sand Cove Road), which could become a signalized intersection.

Additionally, the unsignalized T-intersections of Delaware Route 54 and Williamsville Road, and Delaware Route 54 and Sound Church Road each exhibit LOS deficiencies under future conditions during the summer Saturday peak hour. However, we do not recommend any improvements be implemented by the developer at either of these intersections. For the Williamsville Road intersection, the LOS deficiencies would exist only on the low-volume minor street approach during the summer Saturday peak hour, with the 95th percentile queue lengths on that approach expected to be 75 feet or less. For the Sound Church Road intersection, the LOS deficiencies are also limited to low-volume minor street approach during the summer Saturday peak hour, with the 95th percentile queue lengths on that approach expected to be approximately 100 feet. Simply adding turn lanes would do very little to address the minor street delays and queues for summer Saturday conditions, and the volumes at both intersections would not warrant traffic signals (nor these would not be good locations for traffic signals as shown by the aforementioned Delaware Route 54 Corridor Study).

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. 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 improve Delaware Route 54 from Sand Cove Road to the eastern edge of the site frontage in order to meet DeIDOT's major collector road standards. These standards include but are not limited to twelve-foot travel lanes and eight-foot shoulders. The developer should provide a bituminous concrete overlay to the existing travel lanes, at DeIDOT's discretion. DeIDOT should analyze the existing lanes' pavement section and recommend an overlay thickness to the developer's engineer if necessary.

2. The developer should construct a single site entrance on Delaware Route 54. This site entrance should be located near the center of the site frontage, or approximately 600-700 feet east of Sand Cove Road. The proposed configuration is shown in the table below.

Approach	Current Configuration	Proposed Configuration
Northbound Site Entrance	Approach does not exist	One left-turn lane and one right-turn lane
Eastbound Delaware Route 54	One through lane	One through lane and one right-turn lane
Westbound Delaware Route 54	One through lane	One left-turn lane and one through lane

Initial recommended minimum turn-lane lengths (excluding tapers) of the separate turn lanes are listed below. The developer should coordinate with DeIDOT's Subdivision Section to determine final turn-lane lengths.

Approach	Left-Turn Lane	Right-Turn Lane
Northbound Site Entrance	N/A	675 feet*
Eastbound Delaware Route 54	N/A	185 feet**
Westbound Delaware Route 54	255 feet**	N/A

* turn-lane length based on storage length per queuing analysis

** turn-lane length based on deceleration + storage length per DeIDOT's *Standards and Regulations for Subdivision Streets and State Highway Access*

3. The developer should pursue a connection to Sand Cove Road. This would involve a crossing of Drum Creek (aka Perch Creek tax ditch) and the purchase of private property, but would provide a second access point to and from the proposed development. Additionally, if the intersection of Delaware Route 54 and Sand Cove Road were to become signalized, a connection from the proposed development to Sand Cove Road would benefit drivers leaving the shopping center and heading west on Delaware Route 54 by allowing them to make a left turn onto Delaware Route 54 at a traffic signal. The developer should coordinate with DeIDOT's Subdivision Section to determine design details of such a connection, including the location, lane configurations, and turn-lane lengths for the site access intersection along Sand Cove Road, as well as any needed improvements to Sand Cove Road.

4. Contingent upon the developer obtaining a connection to Sand Cove Road (as noted in Item No. 3), the developer should improve the intersection of Delaware Route 54 and Sand Cove Road. The proposed configuration is shown in the table below.

Approach	Current Configuration	Proposed Configuration
Northbound Sand Cove Road	One shared left/right-turn lane	One left-turn lane and one right-turn lane
Eastbound Delaware Route 54	One shared through/right-turn lane	One through lane and one right-turn lane
Westbound Delaware Route 54	One shared through/left-turn lane	One left-turn lane and one through lane

Should plans for the site access connection to Sand Cove Road move forward, at that time the developer should coordinate with DeIDOT's Subdivision Section to determine final turn-lane lengths for the intersection of Delaware Route 54 and Sand Cove Road.

5. The developer should enter into a traffic signal agreement with DelDOT for the intersection of Delaware Route 54 and Sand Cove Road. The agreement should include pedestrian signals, crosswalks and interconnection at DelDOT's discretion.
6. The following bicycle, pedestrian, and transit improvements should be included:
 - a. The shoulders on Delaware Route 54 should be maintained and marked as bike lanes along the site frontage.
 - b. A right-turn yield to bikes sign (MUTCD R4-4) should be added at the start of each right-turn lane added to Delaware Route 54.
 - c. Where right-turn lanes are added to Delaware Route 54, a minimum of a five-foot bicycle lane should be dedicated and striped with appropriate markings for bicyclists through the turn lane in order to facilitate safe and unimpeded bicycle travel.
 - d. Appropriate bicycle symbols, directional arrows, striping (including stop bars), and signing should be included along bicycle facilities and right-turn lanes within the project limits.
 - e. Utility covers should be moved outside of the designated bicycle lane or be flush with the pavement.
 - f. Covered bike parking should be included near the entrances of all commercial establishments to be included within this development.
 - g. A 15-foot wide easement from the edge of the right-of-way shall be dedicated to DelDOT within the site frontage along Delaware Route 54. Within this easement, a minimum of a five-foot wide sidewalk (with a minimum of a five-foot buffer from the roadway) that meets current AASHTO and ADA standards should be constructed. The sidewalk should connect to any paths on adjacent parcels or to the shoulder at the beginning and ending limits of the site frontage.
 - h. ADA compliant curb ramps and crosswalks should be provided at all pedestrian crossings, including all site entrances. Type 3 curb ramps are discouraged.
 - i. Internal sidewalks for pedestrian safety and to promote walking as a viable transportation alternative should be constructed within the development. These sidewalks should each be a minimum of seven feet wide (with a minimum of a five-foot buffer from the roadway) and should meet current AASHTO and ADA standards. These internal sidewalks should connect the building entrances to the frontage sidewalks and to adjacent parcels where applicable.
 - j. Where internal sidewalks are located alongside of parking spaces, a buffer should be added to eliminate vehicular overhang onto the sidewalk.
 - k. The parking areas within the site should be shaded as much as possible.
 - l. The developer should coordinate with the Delaware Transit Corporation (DTC) regarding the possibility of adding a bus stop at this location to support potential future DTC service. An ADA-compliant 8' x 5' concrete pad should be installed at an appropriate location in front of the development along Delaware Route 54. Internal sidewalks should be connected to this bus stop and parking facilities for bicyclists should be included.

- m. The developer should coordinate with other developments along the Delaware Route 54 corridor to explore the idea of contracting a private shuttle operator to provide transit services until such time comes that DTC provides service to this area.

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. Adam Weiser of DelDOT’s Traffic Section. Mr. Weiser can be reached at (302) 659-4073 or by email at Adam.Weiser@state.de.us.

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 subdivision review process.

Additional details on our review of this TIS are attached. Please contact me at (302) 738-0203 or through e-mail at ajparker@mtmail.biz if you have any questions concerning this review.

Sincerely,

McCormick Taylor, Inc.



Andrew J. Parker, P.E., PTOE
Project Manager

Enclosure

General Information

Report date: February 24, 2010

Prepared by: Orth-Rodgers & Associates, Inc.

Prepared for: Robino-Stortini Holdings, LLC

Tax parcel: 533-19.00-50.00

Generally consistent with DelDOT's *Standards and Regulations for Subdivision Streets and State Highway Access*: Yes

Project Description and Background

Description: The proposed development would consist of 102,000 square feet of retail space.

Location: Fenwick Pointe is proposed to be located on the south side of Delaware Route 54 (Lighthouse Road / Sussex Road 58), approximately 200' east of Sand Cove Road (Sussex Road 394) in Sussex County, Delaware. A site location map is included on Page 8.

Amount of land to be developed: approximately 15 acres of land

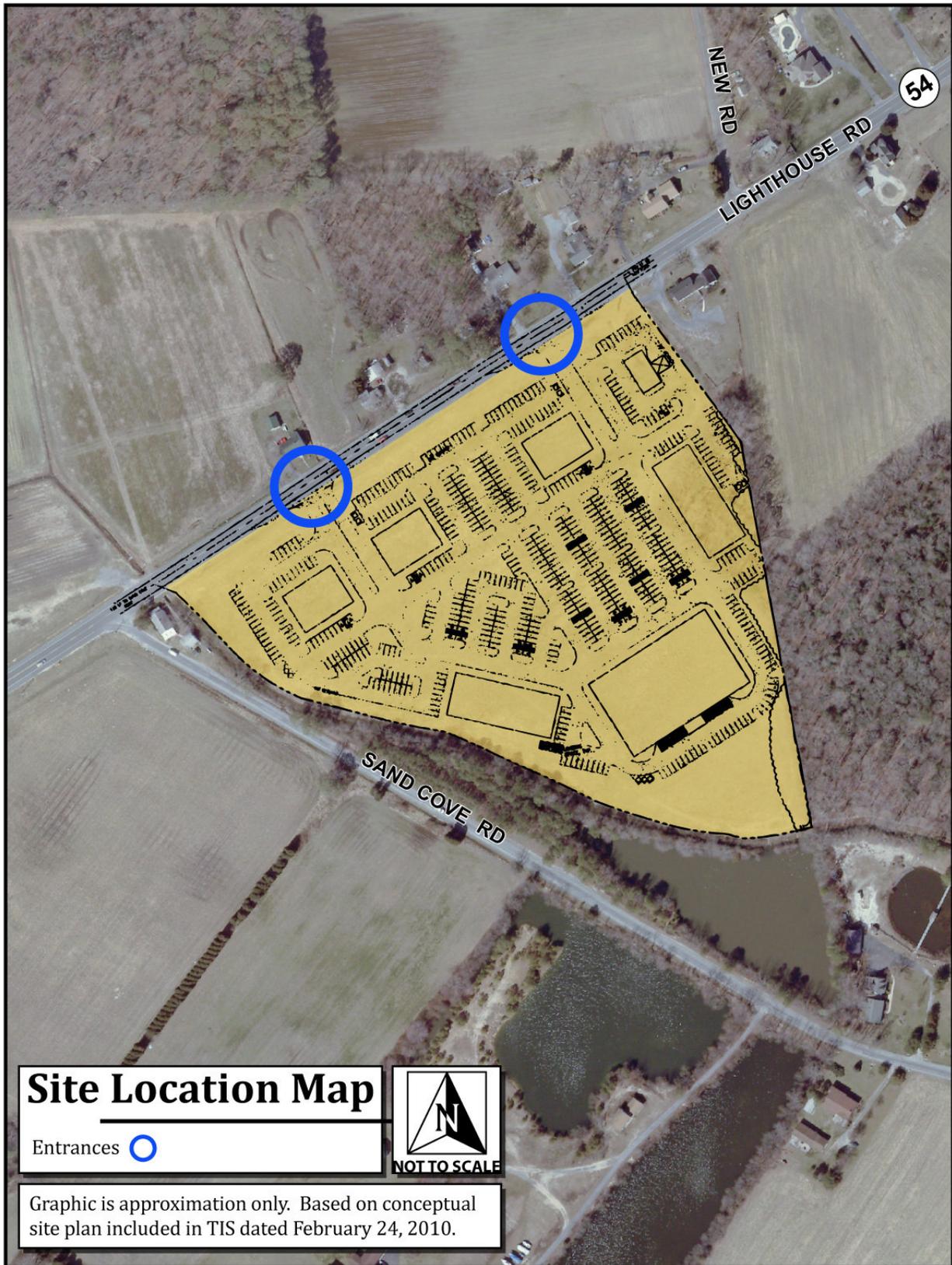
Land use approval(s) needed: Rezoning and Subdivision approval. The land is currently zoned as AR-1 (Agricultural Residential) in Sussex County. The developer has proposed rezoning the land to CR-1 (Commercial Regional).

Proposed completion date: 2012

Proposed access locations: Two access points are proposed along Delaware Route 54.

Daily Traffic Volumes:

- 2008 Average Annual Daily Traffic on Delaware Route 54: 5,699 vpd



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 Fenwick Pointe development is located within Investment Level 3 and within the Environmentally Sensitive Developing Area.

Investment Level 3

These areas are portions of the county designated for growth, development districts, or long-term annexation. Areas classified as an Investment Level 3 will be considered for state investing after the Level 1 and 2 areas are substantially built out or when the facilities are logical extensions of existing systems and deemed appropriate to serve a particular area. Many of the areas within the Investment Level 3 designation include important farmland and natural resources along with portions of roadways that are designated for corridor capacity protection. Therefore the character pattern and timing of growth along with federally mandated air and water quality goals should be considered on a case-by-case basis for areas within this designation.

In Investment Level 3 Areas, the state will continue to invest in the regional roadway network and roadway safety while continuing to protect the capacity of major transportation corridors. Roadway improvements to support new development are not encouraged in Investment Level 3 and funds will not be allocated for these types of improvements until they have been allocated to Level 1 and 2 areas.

Environmentally Sensitive Developing Areas

Environmentally Sensitive Developing Areas are defined as a Developing District with special environmental design and protection requirements. New regulations are in place in these areas to control the density of development, preserve open space and valuable habitat and to prevent excessive levels of sediments and nutrients in waterways. Regulated areas include Indian River, Indian River Bay and Rehoboth Bay. Residential Planned Communities and Village Style development is encouraged in these areas to provide open space and protect habitat. If a central wastewater system is provided, residential density would be permitted up to the maximum allowable density of the underlying zoning districts. Industrial uses in these areas are regulated by the Delaware Coastal Zone Act, however they do not regulate commercial, residential warehousing or distribution activities.

Proposed Development's Compatibility with Livable Delaware:

The proposed Fenwick Pointe development falls within Investment Level 3 and is to be developed as a commercial site (shopping center). While roadway improvements to support new development are not encouraged in Investment Level 3 Areas, these areas will be considered for state investing after Level 1 and Level 2 areas are substantially built out. There are no Level 1 or Level 2 areas within the immediate vicinity of the proposed development, but most of these areas within southeastern Sussex County are substantially built out. Additionally, the state would want to protect the capacity of Delaware Route 54, a major east-west transportation corridor between Selbyville and Fenwick Island along which long-term future growth is anticipated. As such, and

as long as the capacity of the Delaware Route 54 corridor is protected, this development generally complies with the 2004 update of the Livable Delaware “Strategies for State Policies and Spending,” although additional discussion may be required due to potential different interpretations regarding compatibility with the Investment Level 3 area.

Comprehensive Plan

Sussex County Comprehensive Plan:

(Source: Sussex County Comprehensive Plan Update, June 2008)

The Sussex County Comprehensive Plan Future Land Use Map indicates that the proposed development parcel is in a Low Density Area, which is categorized as a Rural Area, and within the Environmentally Sensitive Developing Area, which is categorized as a Growth Area.

In Rural Areas, farming should co-exist with appropriate residential uses and permanently preserved property. The following major guidelines should apply to future growth in Low Density Areas:

Permitted Uses – The primary uses envisioned in Low Density Areas are agricultural activities and single-family detached homes. Business development should be largely confined to businesses addressing the needs of these two uses. Industrial uses that support or depend on agriculture should be permitted. The focus of retail and office uses in Low Density Areas should be providing convenience goods and services to nearby residents. Commercial uses may require conditional use approval from County Council. The types of commercial uses in these residential areas should be limited in their location, size and hours of operation. More intense commercial uses, such as auto repair and gasoline sales, should be avoided in these areas.

Densities – Base densities in Low Density Areas should be unchanged from the current zoning provisions. The minimum lot size should be $\frac{3}{4}$ acre for lots served by on-lot septic systems and $\frac{1}{2}$ acre for lots with central sewers. The cluster option permitted in Low Density Areas should continue to permit overall site densities of up to 2 units per acre, provided significant open space is set aside and the tract connects to public sewers.

Infrastructure – Development where lots are no smaller than $\frac{3}{4}$ acre can be accommodated in this planning area without central sewers. Other development should require central sewer service.

In contrast to Rural Areas, designated Growth Areas are designed to accommodate concentrated levels of development. The Environmentally Sensitive Developing Area has been designated by Sussex County for large areas around Rehoboth Bay, Indian River Bay, and Little Assawoman Bay (the inland bays). This designation recognizes two characteristics of these areas. First, these regions are among the most desirable locations in Sussex County for new housing, as reflected in new construction data and real estate prices. Second, these regions contain ecologically important wetlands and other coastal lands that help absorb floodwaters and provide extensive habitat for native flora and fauna. These areas also have great impacts upon the water quality of the bays and inlets and upon natural habitats.

The challenge in these regions is to safeguard genuine natural areas and mitigate roadway congestion without stifling the tourism and real estate markets that: a) provide many jobs; b) create business for local entrepreneurs; and c) help keep local tax rates reasonable. The County has major initiatives to extend public sewer service to replace failing on-site systems in many of these areas. Very careful control of stormwater runoff is an extremely important concern to keep sediment and other pollutants out of the inland bays.

The following major guidelines should apply to future growth in Environmentally Sensitive Developing Areas:

Permitted Uses – Environmentally Sensitive Developing Areas are areas that can accommodate development provided special environmental concerns are addressed. A range of housing types should be permitted in Environmentally Sensitive Areas, including single-family homes, townhouses and multi-family units. Retail and office uses are appropriate but larger shopping centers and office parks should be confined to selected locations with access to arterial roads. Careful mixtures of homes with light commercial and institutional uses can be appropriate to provide for convenient services and to allow people to work close to home. Major new industrial uses are not proposed in these areas. Industrial zones are regulated by the Delaware Coastal Zone Act, which restrict heavy industry and bulk transfer.

Densities – The Environmentally Sensitive Developing Areas function as an “overlay” area to several underlying zoning districts. It may be advisable for legal reasons to convert this overlay area into regular zoning districts, while maintaining the current standards. Most of the Environmental Sensitive Developing Areas should continue to allow 2 homes per acre. The option should exist to go up to 4 units per acre if the developer uses optional density bonuses. Smaller lots and flexibility in dimensional standards should be allowed if the developer uses a cluster option that results in permanent preservation of a substantial percentage of the tract.

The County may also consider an additional layer of protection in the Environmentally Sensitive Developing Areas. Tidal wetland area could be subtracted from the total tract size so that “net” tract size is used as the basis for calculating how much development is allowed.

All applicants for developments of a minimum size (as specified in zoning) should continue to be required to provide information that analyzes the development’s potential environmental impacts, including effects on stormwater runoff, nitrogen and phosphorous loading, wetlands, woodlands, wastewater treatment, water systems, and other matters that affect the ecological sensitivity of the inland bays.

Infrastructure – Central water and sewer facilities are strongly encouraged. If central utilities are not possible, permitted densities should be limited to 2 units per acre.

Proposed Development’s Compatibility with Comprehensive Plans:

The proposed development is a commercial site, which appears to comply with the *Permitted Uses* for a Low Density Area as long as the corresponding guidelines are met, the rezoning to CR-1 is approved, and, if required, a conditional use approval is granted by County Council. The site also appears to comply with the *Permitted Uses* for the Environmentally Sensitive

Developing Area. As such, the proposed development appears to be compatible with the Sussex County Comprehensive Plan, although additional discussion may be required based on the details of the proposed land use.

Transportation Analysis Zones (TAZ)

Transportation Analysis Zones (TAZ) where development would be located: 1190

TAZ Boundaries:



Current employment estimate for TAZ: 986 jobs in 2005

Future employment estimate for TAZ: 1,381 jobs in 2030

Current population estimate for TAZ: 1,834 people in 2005

Future population estimate for TAZ: 2,863 people in 2030

Current household estimate for TAZ: 818 houses in 2005

Future household estimate for TAZ: 1,289 houses in 2030

Relevant committed developments in the TAZ: Americana Bayside Property, Dekowski Property, Americana Bayside Site

Would the addition of committed developments to current estimates exceed future projections: Yes

Would the addition of committed developments and the proposed development to current estimates exceed future projections: Yes

Relevant Projects in the DelDOT Capital Transportation Program (FY 2010 – FY 2015)

DelDOT currently has one relevant project near the study area. The *SR 54, Mainline Improvements* project (State Contract No. 24-112-01) includes improvements planned along Delaware Route 54, east of Delaware Route 20 (Zion Church Road / Sussex Road 382) to Keenwick Road (Sussex Road 58C), which will include two 12-foot travel lanes, a 14-foot center left-turn lane, two eight-foot shoulders, two three-foot grass buffers, and two five-foot sidewalks. In addition, a reconstruction project was completed in 2007 for the intersection of Delaware Route 54 and Delaware Route 20, which realigned the intersection and added a fourth leg for the Americana Bayside development.

In addition, due to the number of signal requests DelDOT’s Traffic Section had received, a corridor study was completed for Delaware Route 54 from Selbyville to Delaware Route 1 to determine the optimal locations for traffic signals along the corridor. The study, completed in 2002 by Whitman, Requardt and Associates, used projected volumes for a horizon year of 2025 and it determined that, within the Fenwick Pointe study area, the intersection of Delaware Route 54 and Sand Cove Road would be an optimal location for a traffic signal when warranted.

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). The following land uses were utilized to estimate the amount of new traffic generated for this development:

- 102,000 square feet of retail (ITE Land Use Code 820)

Table 1
FENWICK POINTE PEAK HOUR TRIP GENERATION

Land Use	PM Peak Hour			Saturday Peak Hour		
	In	Out	Total	In	Out	Total
102,000 square feet of retail	310	335	645	451	417	868
Pass-by Trips	121	131	252	167	154	321
TOTAL TRIPS	189	204	393	284	263	547

Table 2
FENWICK POINTE DAILY TRIP GENERATION

Land Use	Weekday ADT			Saturday ADT		
	In	Out	Total	In	Out	Total
102,000 square feet of retail	3440	3440	6880	4678	4678	9356
TOTAL TRIPS	3440	3440	6880	4678	4678	9356

Overview of TIS

Intersections examined:

- 1) Delaware Route 54 & West Site Entrance
- 2) Delaware Route 54 & East Site Entrance
- 3) Delaware Route 54 & Sand Cove Road
- 4) Delaware Route 54 & Williamsville Road (Sussex Road 395)
- 5) Delaware Route 54 & West Line Road (Sussex Road 396)
- 6) Delaware Route 54 & New Road (Sussex Road 391)
- 7) Delaware Route 54 & Sound Church Road (Sussex Road 394A)
- 8) Delaware Route 54 & Delaware Route 20

Conditions examined:

- 1) 2009 existing conditions (Case 1)
- 2) 2012 without Fenwick Pointe (Case 2)
- 3) 2012 with Fenwick Pointe (Case 3)

Peak hours evaluated: Weekday evening and Saturday mid-day peak hours

Committed developments considered:

- 1) Americana Bayside Property (59 townhouses)
- 2) Dekowski Property (13 multi-family residential units)
- 3) Americana Bayside (413 single-family detached houses (278 unbuilt), 1,227 condominiums/townhouses (912 unbuilt), 60 assisted-living units (fully built and occupied), 81,880 square feet of retail, and an 18 hole golf course (fully built and operational))
- 4) The Hamlet at Dirickson Pond (81 single-family dwellings (28 unbuilt))
- 5) The Refuge at Dirickson Creek (287 single-family detached houses (77 unbuilt) and 57 townhouses)
- 6) Swann Cove (351 single-family detached houses (201 unbuilt), 36,600 square-foot grocery store (17,300 square feet unbuilt), and 8,300 square-foot pharmacy)
- 7) Twin Cedars (31 single-family detached houses, 120 apartments, 80 townhouses, and 40,000 square feet of commercial space)
- 8) Waters Run (56 single-family detached homes)
- 9) Jones/Lankford Property (100 townhouses, a 5,000 square-foot fast-food restaurant, and a 8,000 square-foot high-turnover)
- 10) Office Park for PMP Associates (20,000 square foot general office and 60,000 square foot of medical/dental office space)
- 11) Woods at Johnsons Corner (75 single-family homes)

Intersection Descriptions

- 1) **Delaware Route 54 & West Site Entrance**
Type of Control: proposed two-way stop-controlled (T-intersection)
Northbound approach: (Site Entrance) one left-turn lane and one right-turn lane, stop-controlled
Eastbound approach: (Delaware Route 54) one through lane and one right-turn lane
Westbound approach: (Delaware Route 54) one left-turn lane and one through lane

- 2) **Delaware Route 54 & East Site Entrance**
Type of Control: proposed two-way stop-controlled (T-intersection)
Northbound approach: (Site Entrance) one left-turn lane and one right-turn lane, stop-controlled
Eastbound approach: (Delaware Route 54) one through lane and one right-turn lane
Westbound approach: (Delaware Route 54) one left-turn lane and one through lane

- 3) **Delaware Route 54 & Sand Cove Road**
Type of Control: two-way stop-controlled (T-intersection)
Northbound approach: (Sand Cove Road) one shared left/right-turn lane, stop-controlled
Eastbound approach: (Delaware Route 54) one shared through/right-turn lane
Westbound approach: (Delaware Route 54) one shared through/left-turn lane

- 4) **Delaware Route 54 & Williamsville Road**
Type of Control: two-way stop-controlled (T-intersection)
Northbound approach: (Williamsville Road) one shared left/right-turn lane, stop-controlled
Eastbound approach: (Delaware Route 54) one shared through/right-turn lane
Westbound approach: (Delaware Route 54) one shared through/left-turn lane

- 5) **Delaware Route 54 & West Line Road**
Type of Control: two-way stop-controlled (T-intersection)
Northbound approach: (West Line Road) one left-turn lane and one right-turn lane, stop-controlled
Eastbound approach: (Delaware Route 54) one through lane and one right-turn lane
Westbound approach: (Delaware Route 54) one shared through/left-turn lane
Note: This intersection has unconventional geometry with Delaware Route 54 on a horizontal curve. While all approaches at this intersection are striped as shared lanes, which is how the TIS analyzed the operations, there is gravel area just west of the West Line Road approach (between West Line Road and eastbound Delaware Route 54) that drivers use for northbound left turns and eastbound right turns. As such, for the analysis, McCormick Taylor treated this area as a separate northbound left-turn lane and separate eastbound right-turn lane. These are low-volume turning movements in all cases (less than ten vehicles in any peak hour). For drivers making a northbound left turn or an eastbound right turn, because of the geometry of the intersection, if they do not travel across this gravel area they must make a very sharp turn at the intersection of the paved

roadways. Drivers making a westbound left turn or a northbound right turn stay on the paved roadways – they do not use the gravel area. Although no signage is present directing drivers to use the gravel area, a stop bar is striped for the northbound left turns.

6) Delaware Route 54 & New Road

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

Southbound approach: (New Road) one shared left/right-turn lane, stop-controlled

Eastbound approach: (Delaware Route 54) one shared through/left-turn lane

Westbound approach: (Delaware Route 54) one shared through/right-turn lane

7) Delaware Route 54 & Sound Church Road

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

Northbound approach: (Sound Church Road) one shared left/right-turn lane, stop-controlled

Eastbound approach: (Delaware Route 54) one shared through/right-turn lane

Westbound approach: (Delaware Route 54) one shared through/left-turn lane

8) Delaware Route 54 & Delaware Route 20

Type of Control: signalized four-leg intersection

Northbound approach: (Americana Bayside Driveway) one left-turn lane, two through lanes, and one right-turn lane

Southbound approach: (Delaware Route 20) one left-turn lane, two through lanes, and one right-turn lane

Eastbound approach: (Delaware Route 54) one left-turn lane, two through lanes, and one right-turn lane

Westbound approach: (Delaware Route 54) one left-turn lane, two through lanes, and one right-turn lane

Transit, Pedestrian, and Bicycle Facilities

Existing transit service: The Delaware Transit Corporation (DTC) currently does not offer any transit service near the study area.

Planned transit service: McCormick Taylor contacted Ms. Lisa Collins, a Service Development Planner for the DTC, via email on March 4, 2010 to determine whether DTC has any plans to extend the existing transit system in the vicinity of the development. In her reply on March 18, 2010, she stated there have been requests to serve nearby developments in the past, but due to factors such as accessibility to the properties by bus, DTC has yet to provide service to this area. DTC recommends that the developer contract with a private shuttle service, which could likely be shared by several communities along the Delaware Route 54 corridor. Other communities in this area have already begun discussing the idea of contracting a shuttle service for travel between this area and nearby Ocean City, MD. Aside from that idea, and with potential future DTC service in mind, DTC recommends that the property be made transit friendly, including installation of a bus pull-off along the site frontage, a 5' x 8' concrete bus pad, and sidewalks connecting the property buildings to the bus stop.

Existing bicycle and pedestrian facilities: According to the *Delaware Kent and Sussex Counties Bicycle Touring Map*, Sand Cove Road, West Line Road, New Road, and Williamsville Road are each designated as having above average cycling conditions with low traffic volumes. Sound Church Road is designated as having average cycling conditions with low traffic volumes (less than 2,000 ADT). Delaware Route 54 and Delaware Route 20 are each designated as having average cycling conditions with moderate traffic volumes (between 2,000 and 10,000 ADT). There are currently no designated bicycle lanes or sidewalks along the site frontage on Delaware Route 54, although these facilities are in place at the intersection of Delaware Route 54 & Delaware Route 20.

Planned bicycle and pedestrian facilities: DelDOT's Bicycle and Pedestrian Facilities Team indicated, in an email from Anthony Aglio dated March 23, 2010, that the following bicycle and pedestrian facilities should be required. If the development does occur, the following requests should be incorporated into the project to facilitate bicycle and pedestrian transportation:

- a. Bike lanes should be included on Delaware Route 54.
- b. Bike parking should be included near the entrances of all commercial locations.
- c. Sidewalks should be built along the site frontage and leading into the development to the building entrances.
- d. The developer of this project should contact DART regarding the addition of transit service and transit facilities at this location.
- e. The parking areas should be shaded as much as possible.

Previous Comments

All comments from DelDOT's Scoping Letter, Traffic Count Review, Preliminary TIS (PTIS) Review, and Revised PTIS Review were addressed in the Final TIS submission.

General HCS Analysis Comments

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

- 1) For future conditions at existing intersections, the TIS generally assumed heavy vehicle factors (HV) to be the same as existing HV and assumed no minimum HV. McCormick Taylor assumed the future HV to be either existing HV or 2%, whichever was greater.
- 2) For future conditions, where the lane group volume increased from the existing volume, the TIS assumed a peak hour factor (PHF) of either existing PHF or 0.88, whichever was greater, at all intersections except Delaware Route 54 & Delaware Route 20 where they assumed 0.92 instead of 0.88. McCormick Taylor assumed future PHF of either existing PHF or 0.88, whichever was greater, for all intersections. For cases where the lane group volume did not change from existing to future conditions, the TIS and McCormick Taylor assumed a future PHF equal to existing PHF.
- 3) The HCS analyses included in the TIS did not always reflect the lane widths observed in the field by McCormick Taylor. McCormick Taylor's HCS analyses incorporated the field-measured lane widths.

- 4) The TIS and McCormick Taylor used different cycle lengths and/or signal timing parameters when analyzing the signalized intersections in some cases.
- 5) The TIS input existing Right-Turn-on-Red (RTOR) volumes for some signalized analyses. Due to increased volumes and fewer available gaps, there would likely be fewer vehicles able to make right turns on red, so McCormick Taylor conservatively input no RTOR volumes for future conditions.

Table 3
PEAK HOUR LEVELS OF SERVICE (LOS)
based on Traffic Impact Study for Fenwick Pointe
Report dated February 24, 2010
Prepared by Orth-Rodgers & Associates, Inc.

Unsignalized Intersection ¹ Two-Way Stop Control (T-intersection)	LOS per TIS		LOS per McCormick Taylor	
	Weekday PM	Saturday Mid-Day	Weekday PM	Saturday Mid-Day
Delaware Route 54 & West Site Entrance				
2012 with Fenwick Pointe (Case 3)				
Northbound West Site Entrance	C (19.3)	F (224.6)	C (20.4)	F (224.6) ²
Westbound Delaware Route 54 – Left	A (8.7)	B (11.0)	A (8.8)	B (11.0)

Signalized Intersection ¹	LOS per TIS		LOS per McCormick Taylor	
	Weekday PM	Saturday Mid-Day	Weekday PM	Saturday Mid-Day
Delaware Route 54 & West Site Entrance				
2012 with Fenwick Pointe (Case 3)	n/a	n/a	A (0.38)	B (0.66)

¹ For unsignalized analyses, the numbers in parentheses following levels of service are average delay per vehicle, measured in seconds. For signalized analyses, those numbers are X-critical, a composite volume-to-capacity ratio.

² The 95th percentile queue length for the northbound West Site Entrance left-turn movement during the Case 3 Saturday peak hour is approximately 12 vehicles.

Table 4
PEAK HOUR LEVELS OF SERVICE (LOS)
based on Traffic Impact Study for Fenwick Pointe
Report dated February 24, 2010
Prepared by Orth-Rodgers & Associates, Inc.

Unsignalized Intersection ³ Two-Way Stop Control (T-intersection)	LOS per TIS		LOS per McCormick Taylor	
	Weekday PM	Saturday Mid-Day	Weekday PM	Saturday Mid-Day
Delaware Route 54 & East Site Entrance				
2012 with Fenwick Pointe (Case 3)				
Northbound East Site Entrance	C (19.6)	F (200.0)	C (20.6)	F (200.0) ⁴
Westbound Delaware Route 54 – Left	A (8.7)	B (11.3)	A (8.9)	B (11.3)
2012 with Fenwick Pointe (Case 3) With Improvement Option 1 ⁵				
Northbound Site Entrance	n/a	n/a	E (47.1) ⁶	F (868.3) ⁷
Westbound Delaware Route 54 – Left	n/a	n/a	A (9.3)	B (13.2)

Signalized Intersection ³	LOS per TIS		LOS per McCormick Taylor	
	Weekday PM	Saturday Mid-Day	Weekday PM	Saturday Mid-Day
Delaware Route 54 & East Site Entrance				
2012 with Fenwick Pointe (Case 3)	n/a	n/a	A (0.40)	A (0.67)
2012 with Fenwick Pointe (Case 3) With Improvement Option 1 ⁵	n/a	n/a	B (0.58)	C (0.84)

³ For unsignalized analyses, the numbers in parentheses following levels of service are average delay per vehicle, measured in seconds. For signalized analyses, those numbers are X-critical, a composite volume-to-capacity ratio.

⁴ The 95th percentile queue length for the northbound East Site Entrance left-turn movement during the Case 3 Saturday peak hour is approximately 9 vehicles.

⁵ Improvement Option 1 consists of a single site entrance on Delaware Route 54 (instead of two as proposed by the TIS), with all volumes entering and exiting the site at one combined entrance located toward the center of the site frontage. This single site entrance is being considered due to the proximity of the two proposed access points to one another and of the proposed west site entrance to the intersection of Delaware Route 54 & Sand Cove Road.

⁶ The 95th percentile queue length for the northbound Site Entrance left-turn movement during the Case 3 PM peak hour (with Improvement Option 1 to combine the two entrances into one) is approximately 7 vehicles.

⁷ The 95th percentile queue length for the northbound Site Entrance left-turn movement during the Case 3 Saturday peak hour (with Improvement Option 1 to combine the two entrances into one) is approximately 27 vehicles.

Table 5
PEAK HOUR LEVELS OF SERVICE (LOS)
based on Traffic Impact Study for Fenwick Pointe
Report dated February 24, 2010
Prepared by Orth-Rodgers & Associates, Inc.

Unsignalized Intersection ⁸ Two-Way Stop Control (T-intersection)	LOS per TIS		LOS per McCormick Taylor	
	Weekday PM	Saturday Mid-Day	Weekday PM	Saturday Mid-Day
Delaware Route 54 & Sand Cove Road				
2009 Existing (Case 1)				
Northbound Sand Cove Road	B (10.5)	C (18.7)	B (10.5)	C (18.7)
Westbound Delaware Route 54 – Left	A (7.8)	A (8.9)	A (7.7)	A (8.8)
2012 without Fenwick Pointe (Case 2)				
Northbound Sand Cove Road	B (13.3)	D (32.9)	B (13.4)	D (33.5)
Westbound Delaware Route 54 – Left	A (8.2)	A (9.7)	A (8.2)	A (9.7)
2012 with Fenwick Pointe (Case 3)				
Northbound Sand Cove Road	C (15.5)	E (48.7)	C (15.7)	E (49.2) ⁹
Westbound Delaware Route 54 – Left	A (8.5)	B (10.5)	A (8.5)	B (10.5)

Signalized Intersection ⁸	LOS per TIS		LOS per McCormick Taylor	
	Weekday PM	Saturday Mid-Day	Weekday PM	Saturday Mid-Day
Delaware Route 54 & Sand Cove Road				
2012 with Fenwick Pointe (Case 3)	n/a	n/a	A (0.40)	A (0.74)

⁸ For unsignalized analyses, the numbers in parentheses following levels of service are average delay per vehicle, measured in seconds. For signalized analyses, those numbers are X-critical, a composite volume-to-capacity ratio.

⁹ The 95th percentile queue length on the northbound Sand Cove Road approach during the Case 3 Saturday peak hour is approximately 1 vehicle.

Table 6
PEAK HOUR LEVELS OF SERVICE (LOS)
based on Traffic Impact Study for Fenwick Pointe
Report dated February 24, 2010
Prepared by Orth-Rodgers & Associates, Inc.

Unsignalized Intersection ¹⁰ Two-Way Stop Control (T-intersection)	LOS per TIS		LOS per McCormick Taylor	
	Weekday PM	Saturday Mid-Day	Weekday PM	Saturday Mid-Day
Delaware Route 54 & Williamsville Road				
2009 Existing (Case 1)				
Northbound Williamsville Road	B (11.2)	C (20.4)	B (11.2)	C (20.3)
Westbound Delaware Route 54 – Left	A (7.8)	A (8.9)	A (7.8)	A (8.9)
2012 without Fenwick Pointe (Case 2)				
Northbound Williamsville Road	B (14.0)	D (33.7)	B (14.0)	D (33.7)
Westbound Delaware Route 54 – Left	A (8.3)	A (9.7)	A (8.3)	A (9.7)
2012 with Fenwick Pointe (Case 3)				
Northbound Williamsville Road	C (16.4)	F (63.9)	C (16.4)	F (63.1) ¹¹
Westbound Delaware Route 54 – Left	A (8.6)	B (10.5)	A (8.6)	B (10.6)
2012 with Fenwick Pointe (Case 3) With Improvement Option 1 ¹²				
Northbound Williamsville Road	n/a	n/a	C (15.5)	E (45.8) ¹³
Westbound Delaware Route 54 – Left	n/a	n/a	A (8.6)	B (10.6)

Signalized Intersection ¹⁰	LOS per TIS		LOS per McCormick Taylor	
	Weekday PM	Saturday Mid-Day	Weekday PM	Saturday Mid-Day
Delaware Route 54 & Williamsville Road				
2012 with Fenwick Pointe (Case 3)	n/a	n/a	A (0.43)	A (0.76)

¹⁰ For unsignalized analyses, the numbers in parentheses following levels of service are average delay per vehicle, measured in seconds. For signalized analyses, those numbers are X-critical, a composite volume-to-capacity ratio.

¹¹ The 95th percentile queue length on the northbound Williamsville Road approach during the Case 3 Saturday peak hour is approximately 3 vehicles.

¹² Improvement Option 1 consists of the addition of a separate right-turn lane on the northbound approach of Williamsville Road.

¹³ The 95th percentile queue length on the northbound Williamsville Road approach during the Case 3 Saturday peak hour (with Improvement Option 1) is approximately 2 vehicles.

Table 7
PEAK HOUR LEVELS OF SERVICE (LOS)
based on Traffic Impact Study for Fenwick Pointe
Report dated February 24, 2010
Prepared by Orth-Rodgers & Associates, Inc.

Unsignalized Intersection ¹⁴ Two-Way Stop Control (T-intersection)	LOS per TIS		LOS per McCormick Taylor	
	Weekday PM	Saturday Mid-Day	Weekday PM	Saturday Mid-Day
Delaware Route 54 & West Line Road ¹⁵				
2009 Existing (Case 1)				
Northbound West Line Road	B (10.1)	B (14.7)	B (10.1)	B (14.8)
Westbound Delaware Route 54 – Left	A (7.8)	A (8.8)	A (7.8)	A (8.7)
2012 without Fenwick Pointe (Case 2)				
Northbound West Line Road	B (11.9)	C (19.7)	B (11.9)	C (19.0)
Westbound Delaware Route 54 – Left	A (8.3)	A (9.7)	A (8.3)	A (9.7)
2012 with Fenwick Pointe (Case 3)				
Northbound West Line Road	B (13.4)	D (27.4)	B (13.4)	D (28.3)
Westbound Delaware Route 54 – Left	A (8.6)	B (10.6)	A (8.6)	B (10.6)

¹⁴ For unsignalized analyses, the numbers in parentheses following levels of service are average delay per vehicle, measured in seconds. For signalized analyses, those numbers are X-critical, a composite volume-to-capacity ratio.

¹⁵ This intersection has unconventional geometry and was analyzed differently by the TIS and McCormick Taylor. The TIS analyzed the intersection with a single shared lane on each approach. Based on field observations of drivers utilizing a gravel area just west of the West Line Road approach for northbound left turns and eastbound right turns, McCormick Taylor treated this area as a separate northbound left-turn lane and separate eastbound right-turn lane.

Table 8
PEAK HOUR LEVELS OF SERVICE (LOS)
based on Traffic Impact Study for Fenwick Pointe
Report dated February 24, 2010
Prepared by Orth-Rodgers & Associates, Inc.

Unsignalized Intersection ¹⁶ Two-Way Stop Control (T-intersection)	LOS per TIS		LOS per McCormick Taylor	
	Weekday PM	Saturday Mid-Day	Weekday PM	Saturday Mid-Day
Delaware Route 54 & New Road				
2009 Existing (Case 1)				
Southbound New Road	B (10.2)	B (14.1)	B (10.2)	B (14.2)
Eastbound Delaware Route 54 – Left	A (7.8)	A (8.4)	A (7.8)	A (8.4)
2012 without Fenwick Pointe (Case 2)				
Southbound New Road	A (9.2)	B (14.7)	B (11.9)	C (18.8)
Eastbound Delaware Route 54 – Left	A (7.2)	A (9.0)	A (8.1)	A (9.0)
2012 with Fenwick Pointe (Case 3)				
Southbound New Road	B (12.6)	B (10.1)	B (12.6)	C (21.2)
Eastbound Delaware Route 54 – Left	A (8.4)	A (7.2)	A (8.4)	A (9.5)

¹⁶ For unsignalized analyses, the numbers in parentheses following levels of service are average delay per vehicle, measured in seconds. For signalized analyses, those numbers are X-critical, a composite volume-to-capacity ratio.

Table 9
PEAK HOUR LEVELS OF SERVICE (LOS)
based on Traffic Impact Study for Fenwick Pointe
Report dated February 24, 2010
Prepared by Orth-Rodgers & Associates, Inc.

Unsignalized Intersection ¹⁷ Two-Way Stop Control (T-intersection)	LOS per TIS		LOS per McCormick Taylor	
	Weekday PM	Saturday Mid-Day	Weekday PM	Saturday Mid-Day
Delaware Route 54 & Sound Church Road				
2009 Existing (Case 1)				
Northbound Sound Church Road	B (10.5)	C (16.0)	B (10.5)	C (16.1)
Westbound Delaware Route 54 – Left	A (7.7)	A (8.7)	A (7.7)	A (8.7)
2012 without Fenwick Pointe (Case 2)				
Northbound Sound Church Road	C (20.2)	F (69.5)	C (20.4)	F (85.4) ¹⁸
Westbound Delaware Route 54 – Left	A (8.4)	B (10.0+)	A (8.4)	B (10.0+)
2012 with Fenwick Pointe (Case 3)				
Northbound Sound Church Road	D (26.6)	F (161.0)	D (27.2)	F (222.5) ¹⁹
Westbound Delaware Route 54 – Left	A (8.8)	B (10.7)	A (8.8)	B (10.7)
2012 with Fenwick Pointe (Case 3) With Improvement Option 1 ²⁰				
Northbound Sound Church Road	n/a	n/a	D (25.9)	F (198.3) ²¹
Westbound Delaware Route 54 – Left	n/a	n/a	A (8.8)	B (10.7)

Signalized Intersection ¹⁷	LOS per TIS		LOS per McCormick Taylor	
	Weekday PM	Saturday Mid-Day	Weekday PM	Saturday Mid-Day
Delaware Route 54 & Sound Church Road				
2012 with Fenwick Pointe (Case 3)	n/a	n/a	A (0.49)	A (0.74)

¹⁷ For unsignalized analyses, the numbers in parentheses following levels of service are average delay per vehicle, measured in seconds. For signalized analyses, those numbers are X-critical, a composite volume-to-capacity ratio.

¹⁸ The 95th percentile queue length on the northbound Sound Church Road approach during the Case 2 Saturday peak hour is approximately 2 vehicles.

¹⁹ The 95th percentile queue length on the northbound Sound Church Road approach during the Case 3 Saturday peak hour is approximately 4 vehicles.

²⁰ Improvement Option 1 consists of the addition of a separate right-turn lane on the northbound approach of Sound Church Road, a separate right-turn lane on the eastbound approach of Delaware Route 54, and a separate left-turn lane on the westbound approach of Delaware Route 54.

²¹ The 95th percentile queue length on the northbound Sound Church Road approach during the Case 3 Saturday peak hour (with Improvement Option 1) is approximately 4 vehicles.

Table 10
PEAK HOUR LEVELS OF SERVICE (LOS)
based on Traffic Impact Study for Fenwick Pointe
Report dated February 24, 2010
 Prepared by Orth-Rodgers & Associates, Inc.

Signalized Intersection ²²	LOS per TIS		LOS per McCormick Taylor	
	Weekday PM	Saturday Mid-Day	Weekday PM	Saturday Mid-Day
Delaware Route 54 & Delaware Route 20				
2009 Existing (Case 1)	C (0.30)	C (0.56)	C (0.30)	C (0.62)
2012 without Fenwick Pointe (Case 2)	C (0.63)	D (0.95)	D (0.60)	D (0.91)
2012 with Fenwick Pointe (Case 3)	C (0.66)	E (0.99)	D (0.63)	D (0.95)

²² For unsignalized analyses, the numbers in parentheses following levels of service are average delay per vehicle, measured in seconds. For signalized analyses, those numbers are X-critical, a composite volume-to-capacity ratio.