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

June 14, 2013

SHAILEN P. BHATT
SECRETARY

Mr. Eric Ostimchuk
Traffic Planning and Design, Inc.
Suite 650
2500 East High Street
Pottstown, PA 19464

Dear Mr. Ostimchuk:

The enclosed Traffic Impact Study (TIS) review letter for the **Georgetown Crossing** commercial development has been completed under the responsible charge of a registered professional engineer whose firm is authorized to work in the State of Delaware. They have found the TIS to conform to DelDOT's Standards and Regulations for Subdivision Streets and State Highway Access and other accepted practices and procedures for such studies. DelDOT accepts this review letter and concurs with the recommendations. If you have any questions concerning this letter or the enclosed review letter, please contact me at (302) 760-2167.

Sincerely,

Troy Brestel
Project Engineer

TEB:km
Enclosures
cc with enclosures: Ms. Constance C. Holland, Office of State Planning Coordination
Mr. Eugene Dvornick, Town of Georgetown
Ms. Jocelyn Godwin, Town of Georgetown
Mr. Alan Perry, Montchanin Development Group
Mr. Ken Kullman, Kullman Consulting Services
Mr. Andrew Parker, McCormick Taylor, Inc.
DelDOT Distribution

DelDOT

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Frederick H. Schranck, Deputy Attorney General
Natalie Barnhart, Director, Transportation Solutions (DOTS)
Drew Boyce, Director, Planning
Mark Luszcz, Chief Traffic Engineer, Traffic, DOTS
Michael Simmons, Assistant Director, Project Development South, DOTS
J. Marc Coté, Assistant Director, Development Coordination
T. William Brockenbrough, Jr., County Coordinator, Development Coordination
Thomas E. Meyer, Traffic Studies Manager, Traffic, DOTS
Chris Sylvester, Traffic Engineer, Traffic, DOTS
Jeff Reed, South District Engineer, Central District
Marvin Roberts, South District Public Works Supervisor, Central District
Lisa Collins, Service Development Planner, Delaware Transit Corporation
Steve Sisson, Sussex County Subdivision Coordinator, Development Coordination
Derek Sapp, Subdivision Manager, Development Coordination
Marco Boyce, Planning Supervisor, Statewide & Regional Planning
Claudy Joinville, Project Engineer, Development Coordination

McCormick Taylor
Engineers & Planners Since 1946

June 14, 2013

Mr. Troy E. Brestel
Project Engineer
DelDOT Division of Planning
P.O. Box 778
Dover, DE 19903

RE: Agreement No. 1529
Traffic Impact Study Services
Task No. 14A – Georgetown Crossing

Dear Mr. Brestel:

McCormick Taylor has completed its review of the Traffic Impact Study (TIS) for the Georgetown Crossing Shopping Center development prepared by Traffic Planning and Design, Inc. (TPD), dated September 2012. This review was assigned as Task Number 14A. TPD prepared the report in a manner generally consistent with DelDOT's *Standards and Regulations for Subdivision Streets and State Highway Access*.

The TIS evaluates the impacts of the Georgetown Crossing Shopping Center, proposed to be located west of US Route 113 (Sussex Road 113 / DuPont Boulevard) and north of US Route 9 (Sussex Road 28 / County Seat Highway), just behind the existing Exxon gas station on the northwest corner of the intersection of US Route 113 & US Route 9, within the Town of Georgetown in Sussex County, Delaware. The proposed development would consist of 9,958 square feet of high-turnover sit-down restaurant space, 6,720 square feet of general retail space, a 5,000 square-foot bank with drive-through window, and a 1,720 square-foot fast food restaurant with drive-through window. Two access points are proposed: one rights-in/rights-out access point on southbound US Route 113 and one full access point on US Route 9. The access point on the north side of US Route 9 would be located opposite the existing truck entrance of the Food City Shopping Center on the south side of US Route 9. Construction is anticipated to be complete by 2015.

The land is currently zoned as UB-1 (Urban Business District) within the Town of Georgetown, and the developer does not propose to change the zoning.

It is noted that a possible second phase of this development could occur at a later date. As currently contemplated, the second phase would consist of 152,820 square feet of retail space. If plans for that second phase eventually move forward, it will be the subject of another TIS, to be done later. In the Georgetown Crossing TIS prepared by TPD in September 2012, only the first phase of development was considered.

DelDOT currently has two relevant projects in the study area. The first is the US Route 113, North/South Improvements project (a.k.a. US 113 North/South Study) (State Contract No. T200212701). The US 113 North/South Study seeks to address the existing and future

transportation needs along the US Route 113 corridor while preserving environmental and historic resources, preserving the existing north/south corridor in Sussex County, and accommodating planned economic growth. The project team coordinates with Sussex and Kent Counties and the affected municipalities and continues to study viable alternatives for north/south capacity improvements throughout Sussex County. Many alternatives have been studied, both on and off existing alignments.

In June 2007, after evaluating input from the public, conducting analyses and working to refine the alternatives, DelDOT announced a Recommended Preferred Alternative for the Georgetown Area of the US 113 North/South Study. For more information, please see the project web site at http://www.deldot.gov/information/projects/us113/. The Refined On-Alignment Alternative is the Recommended Preferred Alternative in the Georgetown Area. An Environmental Assessment was completed for this alternative in March 2012. Notable features of the Refined On-Alignment Alternative in the Georgetown Area include: widening US Route 113 to provide an additional lane northbound and southbound, building grade-separated intersections at several locations, and eliminating all traffic signals and unsignalized crossovers along US Route 113. As currently planned, the design concept for this alternative would have direct impacts on the intersection of US Route 113 and US Route 9. It would become a grade-separated intersection with ramps going through the existing Exxon gas station property. Most of the proposed Georgetown Crossing site would be spared from the direct impacts of the US 113 North/South Study construction footprint (according to the current design concept), although a part of the site including the pad sites along US Route 113 and the site access points on US Route 113 and US Route 9 may be affected. The DelDOT Project Manager for the US 113 North/South Study has indicated this is a long-term project with improvements not expected to occur until at least 2020.

The second project is the Corridor Capacity Preservation Program (CCPP), which is a statewide program intended to sustain the capacity of adopted highway corridors by various means such as limiting access points and using service roads for local vehicle trips. The general purpose of the program is to ensure that existing principal arterial roadways, such as US Route 113, are able to efficiently carry regional traffic without impedance from the effects of local development. DelDOT's CCPP Manager has indicated no objection to the proposed development, although he did request consideration of a channelization island at the proposed US Route 113 site entrance to restrict potential weaving movements going from the site driveway to the nearby median crossover. He also indicated that potential site access along US Route 9 may depend on queuing analyses.

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:

Intersection	***Situations for which deficiencies occur***
US Route 9 and Site Entrance / Food City Shopping Center Truck Entrance	2015 PM with Georgetown Crossing
US Route 113 and US Route 9	2010 Existing PM; 2015 PM and Saturday without and with Georgetown Crossing
US Route 9 and Food City Shopping Center Main Entrance	2015 PM without and with Georgetown Crossing
US Route 113 and Ennis Road (Sussex Road 519) / North Street	2010 Existing PM and Saturday; 2015 PM and Saturday without and with Georgetown Crossing

Section 2.9.12 of DelDOT's *Standards and Regulations for Subdivision Streets and State Highway Access*, regarding LOS Standards, states that intersections in Developed Areas should operate at LOS D or better. However, a local government, as part of its adopted comprehensive plan, may determine that acceptance of a lower LOS (E or F) for some portion of the day is necessary and appropriate for the pattern of development they seek to create. Section 2.9.12 recognizes such instances and states that DelDOT will consider that lower LOS standard to the extent that it does not result in substandard operations elsewhere.

Related to the preceding paragraph, the intersection of US Route 113 and US Route 9 exhibits LOS deficiencies and lengthy queues under existing and future conditions. However, while we recommend improvements along a nearby section of US Route 9 as described and shown below in Item Nos. 2-4, we do not recommend any improvements be implemented by the developer specifically at this intersection. There are three reasons for this. First, the major improvements required to fully correct the LOS deficiencies (i.e., grade separation or the widening of US Route 113 to include three through lanes per direction) cannot be considered a reasonable developer improvement project. Second, our evaluation of less-extensive but still feasible improvements at this particular intersection, such as minor modifications to approach configurations, turn-lane lengths and/or signal phasing, indicates that such improvements would provide little benefit. Third, this intersection is within the US 113 North/South Study limits and as such, solutions to these deficiencies must ultimately occur as part of that larger process. The Recommended Preferred Alternative for the Georgetown Area of the US 113 North/South Study would address LOS deficiencies along US Route 113, in part by converting the intersection of US Route 113 and US Route 9 to a grade-separated intersection.

Given the LOS deficiencies and the major improvements required to address them, if the Town of Georgetown wishes to approve the proposed development, it should amend its comprehensive plan to accept a lower LOS for the US Route 113 and US Route 9 intersection and for the

shopping center entrances discussed above. While improvements to those entrances are discussed in this letter, unless the intersection is improved, the queue from it will block the entrances. Absent a project to improve the intersection, unless the Town amends their comprehensive plan to accept a lower LOS standard, DelDOT would be unable to issue a Letter of No Objection for the proposed development.

Regarding the shopping center entrances on US Route 9, the developer and DelDOT have worked together to establish proposed intersection configurations and improvements along US Route 9. These configurations and improvements are consistent with the recommendations described below in Item Nos. 2 and 3. They are depicted in the concept plan for widening and associated improvements along US Route 9 from US Route 113 to west of the shopping center truck entrance / proposed Georgetown Crossing site entrance, which is provided below in Item No. 4. DelDOT has reviewed this concept plan and finds it to be acceptable.

Additionally, the intersection of US Route 113 & Ennis Road / North Street exhibits LOS deficiencies under existing and future conditions. Other than the improvements described below in Item No. 5, we do not recommend additional improvements for this intersection. With the improvements described below, the only remaining deficiency would be a LOS E condition that would occur only on the westbound North Street approach during the Saturday peak hour, with an expected 95th percentile queue length less than 100 feet. Signalization was considered to alleviate the LOS deficiencies but is not desirable, especially on this CCPP corridor, since it would introduce lengthy delays and queues on the US Route 113 approaches.

Should the Town of Georgetown 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 construct the site entrance on southbound US Route 113. The proposed configuration is shown in the table below.

Approach	Current Configuration	Proposed Configuration
Northbound US Route 113	Two through lanes	Two through lanes
Southbound US Route 113	One u-turn lane (for downstream median crossover), one left-turn lane (for left turns at US Route 9), and two through lanes	One u-turn lane (for downstream median crossover), one left-turn lane (for left turns at US Route 9), two through lanes, and one right-turn lane
Eastbound Site Entrance	Approach does not exist	One right-turn-only lane

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

Approach	Left-Turn Lane	Right-Turn Lane
Northbound US Route 113	N/A	N/A
Southbound US Route 113	keep same as existing for downstream u-turns and left turns	350 feet*
Eastbound Site Entrance	N/A	N/A

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

At the proposed site entrance on US Route 113, the developer should include a concrete channelization island on the site driveway to separate entering and exiting traffic. This island would also be designed to restrict exiting traffic from weaving across southbound US Route 113 to access the median crossover for southbound u-turns located immediately downstream of the proposed site entrance location. A median modification may also need to be required for this purpose. The developer should coordinate with DelDOT's Subdivision Section to determine an acceptable design for the channelization.

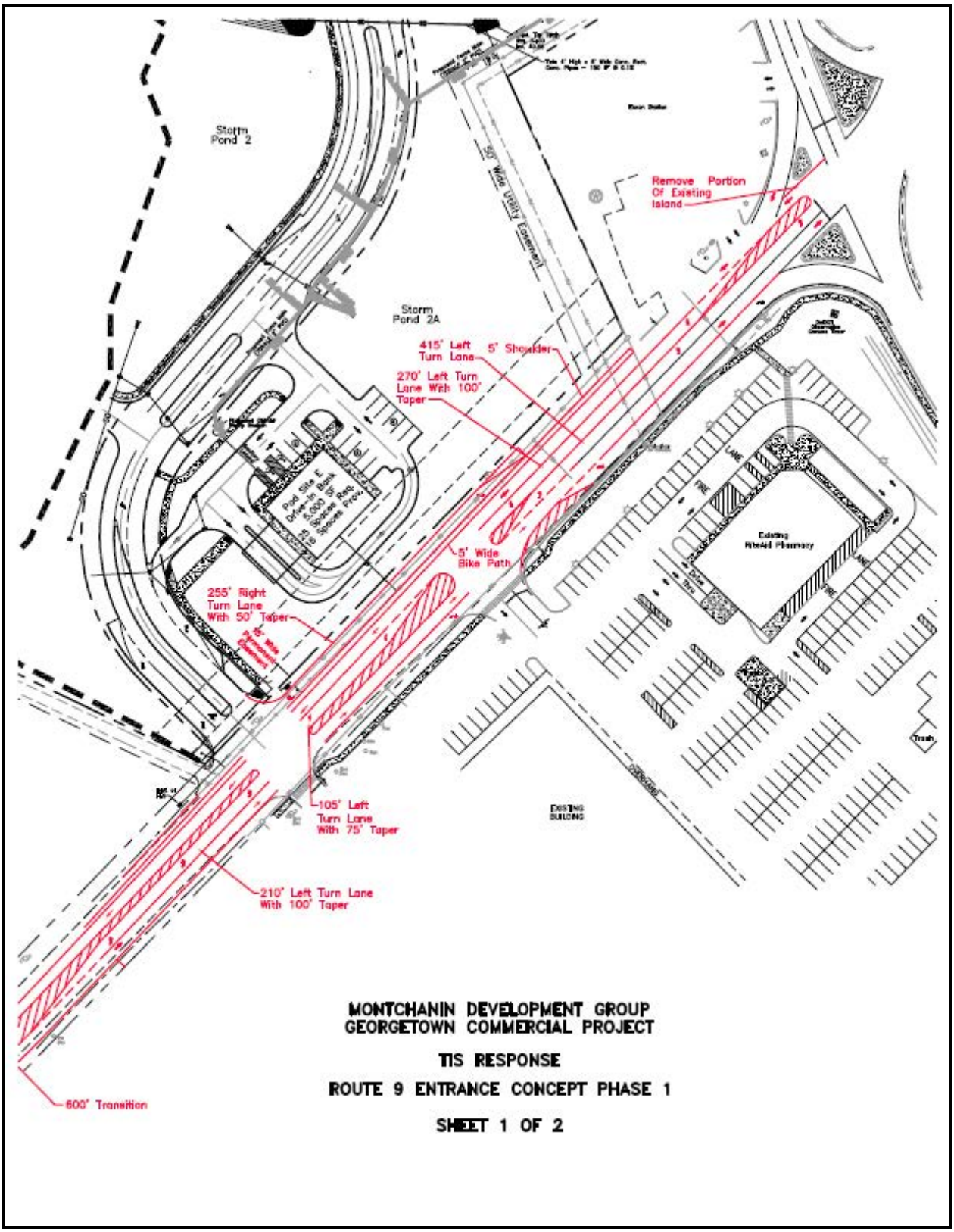
2. The developer should construct the site entrance on US Route 9. This site entrance should align with the existing Food City Shopping Center Truck Entrance on US Route 9. The proposed configuration is shown in the table directly below and depicted in the concept plan provided in Item No. 4. Turn lane lengths are also identified in that plan.

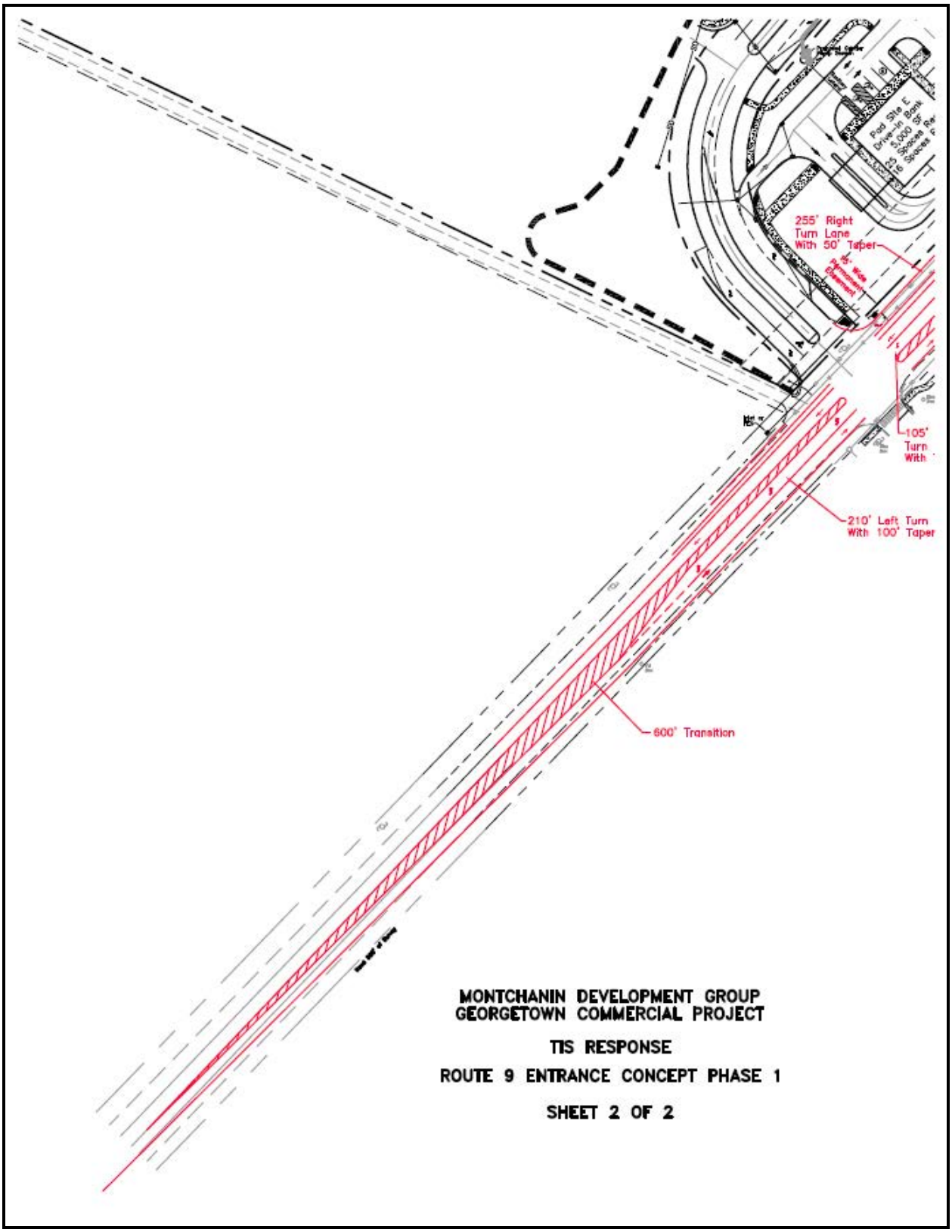
Approach	Current Configuration	Proposed Configuration
Northbound Food City Truck Entrance	One shared left/right-turn lane	One shared left/through/right-turn lane
Southbound Site Entrance	Approach does not exist	One shared through/left-turn lane and one right-turn lane
Eastbound US Route 9	One shared through/right-turn lane	One left-turn lane and one shared through/right-turn lane
Westbound US Route 9	One shared through/left-turn lane	One left-turn lane, one through lane and one right-turn lane

3. The developer should improve the intersection of US Route 9 and Food City Shopping Center Main Entrance. The proposed configuration is shown in the table directly below and depicted in the concept plan provided in Item No. 4. Turn lane lengths are also identified in that plan.

Approach	Current Configuration	Proposed Configuration
Northbound Food City Main Entrance	One left-turn lane and one right-turn lane	One left-turn lane and one right-turn lane
Eastbound US Route 9	One through lane and one right-turn lane	One through lane and one right-turn lane
Westbound US Route 9	One left-turn lane and one through lane	One left-turn lane, one through lane and one right-turn lane (for downstream right turns at the proposed site entrance)

4. The developer should improve US Route 9 from US Route 113 to west of the Food City Shopping Center Truck Entrance / Proposed Georgetown Crossing Site Entrance by widening the road as needed and providing turn lanes consistent with the proposed intersection configurations described above in Item Nos. 2 and 3. A concept plan of the US Route 9 improvements and entrance design is provided on Pages 7 and 8.


Storm Pond 2
Storm Pond 2A
50' Wide Utility Easement
Remove Portion Of Existing Island
415' Left Turn Lane
5' Shoulder
270' Left Turn Lane With 100' Taper
Pad Site E Drive-In Bank 5,000 SF 25 Spaces Req. 25 Spaces Prov.
5' Wide Bike Path
255' Right Turn Lane With 50' Taper
105' Left Turn Lane With 75' Taper
210' Left Turn Lane With 100' Taper
600' Transition
Existing Rite-Aid Pharmacy
EXISTING BUILDING
Trash
MONTCHANIN DEVELOPMENT GROUP
GEORGETOWN COMMERCIAL PROJECT
TIS RESPONSE
ROUTE 9 ENTRANCE CONCEPT PHASE 1
SHEET 1 OF 2


255' Right Turn Lane With 50' Taper
105' Turn With
210' Left Turn With 100' Taper
600' Transition
MONTCHANIN DEVELOPMENT GROUP
GEORGETOWN COMMERCIAL PROJECT
TIS RESPONSE
ROUTE 9 ENTRANCE CONCEPT PHASE 1
SHEET 2 OF 2

5. The intersection of US Route 113 and Ennis Road / North Street should be improved by installing concrete islands to limit traffic on the eastbound Ennis Road and westbound North Street approaches to right-turns only (left turns and through traffic prohibited). The eastbound and westbound through and left-turn demand would be accommodated via right turns followed by u-turns at nearby median crossovers on US Route 113. All movements from both directions of US Route 113 would still be permitted at this intersection. The developer should be required to make an equitable share contribution toward these improvements and to coordinate with DelDOT's Subdivision Section regarding the amount thereof.

6. The developer should construct an internal connector road leading to the adjacent property located immediately north of the Georgetown Crossing site. This connector road would allow for a future connection between the two properties, which would help to reduce traffic volumes on US Route 113. The developer should coordinate with DelDOT's Subdivision Section to determine design details for this connector road.

7. The following bicycle, pedestrian, and transit improvements should be included:

   a. Bike lanes should be marked on the shoulders of major internal roads within the site.
   b. A right-turn yield to bikes sign (MUTCD R4-4) should be added at the start of each right-turn lane added to US Route 9.
   c. Where right-turn lanes are added to US Route 9, 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 made flush with the pavement.
   f. Bike parking should be provided near the building entrances within this development. Where the building architecture provides for an awning or other overhang, the bike parking should be covered.
   g. 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 113. 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 along the site frontage. At the northern end, the sidewalk should connect to the shoulder of US Route 113. At the southern end, the sidewalk should connect to the Exxon gas station property.
   h. 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 9. If the possible second phase of this development project is ever built, a sidewalk or multi-use path would be required within this easement at that time.
   i. A minimum of a five-foot wide sidewalk that meets current AASHTO and ADA standards should be constructed along the major internal roads within the site. This

sidewalk would connect to the proposed sidewalk along the US Route 113 site frontage and to the shoulder along the US Route 9 site frontage.

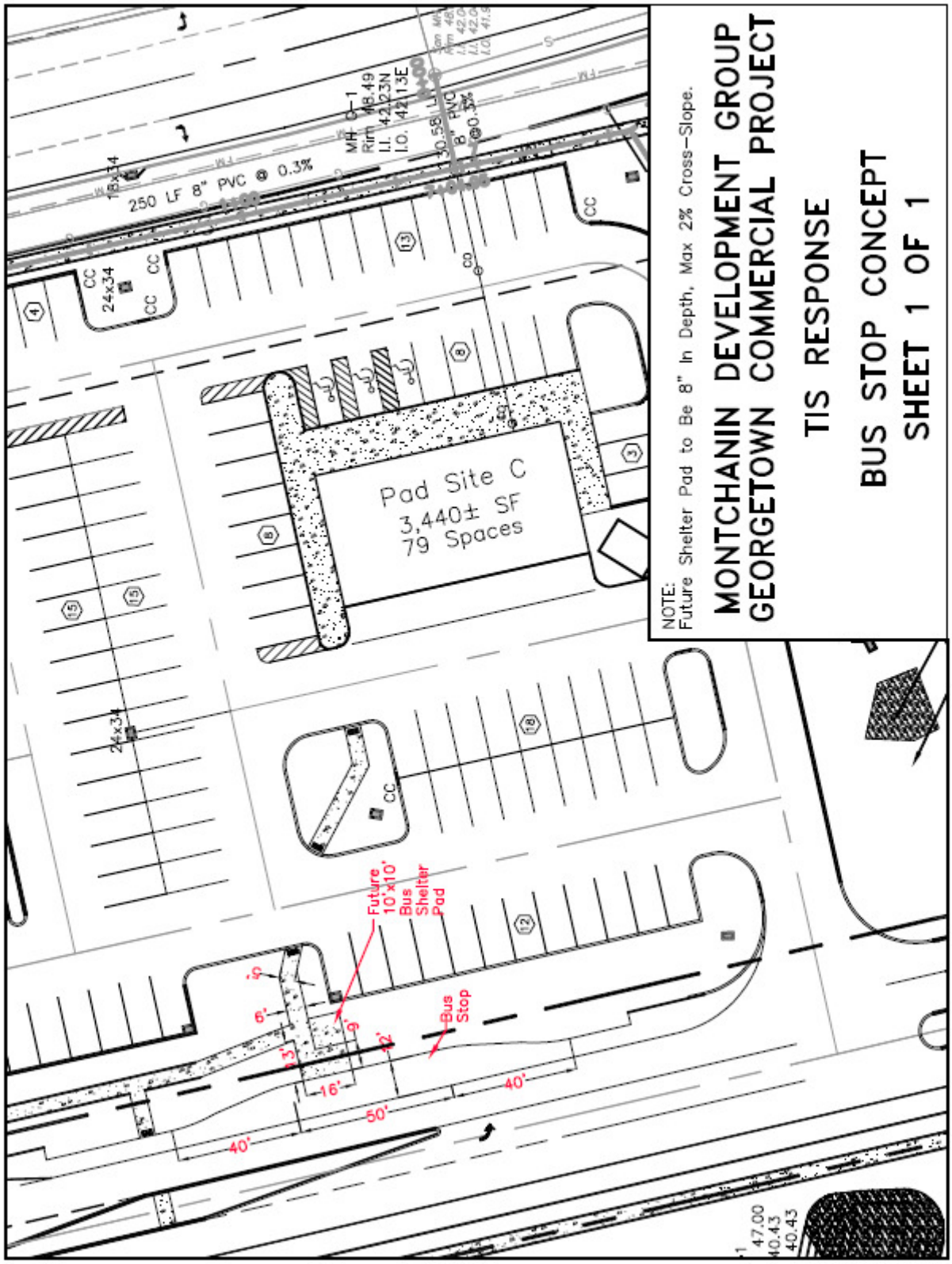
j. ADA compliant curb ramps and crosswalks should be provided at all pedestrian crossings, including all site entrances. Type 3 curb ramps are discouraged.

k. Internal sidewalks for pedestrian safety and to promote walking as a viable transportation alternative should be constructed within the site. 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/or to the sidewalks along the major internal roads within the site.

l. Where internal sidewalks are located alongside of parking spaces, a buffer should be added to eliminate vehicular overhang onto the sidewalk.

m. The developer should coordinate with the Delaware Transit Corporation (DTC) regarding the possibility of adding a bus pull-off within the site along the northbound side of the major internal road, near the proposed pad sites (restaurants along US Route 113). Having already begun coordination with DelDOT and DTC on the design of this bus pull-off, the developer has provided a concept plan that is included on Page 11. Internal sidewalks should be connected to this proposed bus pull-off, and parking facilities for bicyclists should be included. The developer should continue to coordinate with the DTC regarding the details and implementation of the transit-related improvements.

8. Due to the proximity of the proposed development to the Sussex County Airport, we recommend that deed restrictions be required similar to the attached Avigation Nuisance Easement and Non-Suit Covenant (Pages 35 and 36). The applicant should contact Mr. Michael Kirkpatrick at (302) 760-2153 of DelDOT's Statewide and Regional Planning Section to determine whether the proposed development is within the Runway Protection Zone. If so, restrictions may apply.


NOTE:
Future Shelter Pad to Be 8" In Depth, Max 2% Cross-Slope.
MONTCHANIN DEVELOPMENT GROUP
GEORGETOWN COMMERCIAL PROJECT
TIS RESPONSE
BUS STOP CONCEPT
SHEET 1 OF 1
Pad Site C
3,440± SF
79 Spaces
Future 10'x10' Bus Shelter Pad
Bus Stop
250 LF 8" PVC @ 0.3%
MH C-1
Rim 48.49
I.I. 42.23N
I.O. 42.13E
8" PVC @0.3%
18x34
24x34
CC
CO
40'
50'
16'
12'
9'
13'
6'
5'

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

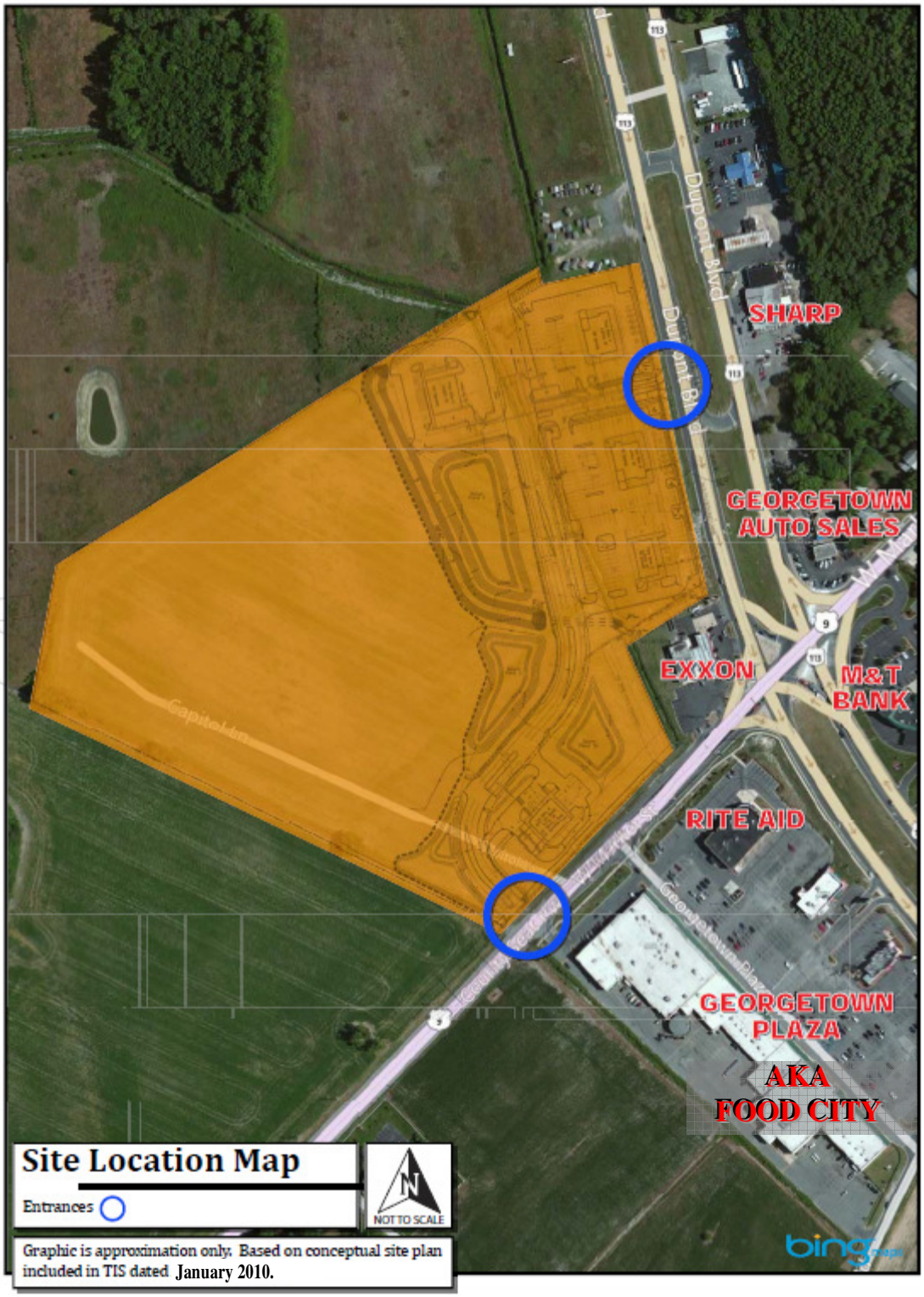
General Information

Report date: September 2012
Prepared by: Traffic Planning and Design, Inc. (TPD)
Prepared for: Montchanin Development Group, Ltd.
Tax parcels: 135-19-12.02 and 135-19-12.03
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 9,958 square feet of high-turnover sit-down restaurant space, 6,720 square feet of general retail space, a 5,000 square-foot bank with drive-through window, and a 1,720 square-foot fast food restaurant with drive-through window.
Location: Georgetown Crossing is proposed to be located west of US Route 113 (Sussex Road 113 / DuPont Boulevard) and north of US Route 9 (Sussex Road 28 / County Seat Highway), just behind the existing gas station on the northwest corner of the intersection of US Route 113 & US Route 9, within the Town of Georgetown in Sussex County, Delaware. A site location map is included on Page 14.
Amount of land to be developed: 30.2 acres of land
Land use approval(s) needed: Subdivision approval. The land is currently zoned as UB-1 (Urban Business District) within the Town of Georgetown, and the developer does not propose to change the zoning.
Proposed completion date: 2015
Proposed access locations: Two access points are proposed: one rights-in/rights-out access point on southbound US Route 113 and one full access point on US Route 9. The access point on the north side of US Route 9 would be located opposite the existing truck entrance of the Food City Shopping Center on the south side of US Route 9.
Daily Traffic Volumes:

- 2011 Average Annual Daily Traffic on US Route 113: 21,656 vpd
- 2011 Average Annual Daily Traffic on US Route 9: 8,216 vpd


SHARP
GEORGETOWN AUTO SALES
EXXON
M&T BANK
RITE AID
GEORGETOWN PLAZA
AKA
FOOD CITY
Site Location Map
Entrances
NOT TO SCALE
Graphic is approximation only. Based on conceptual site plan included in TIS dated January 2010.

Delaware Strategies for State Policies and Spending – 2010 Update

Location with respect to the Strategies for State Policies and Spending Map of Delaware: The proposed Georgetown Crossing Shopping Center is located within Investment Level 1.

Investment Level 1

Investment Level 1 Areas are areas of the state that are most prepared for growth and where the state can make cost-effective infrastructure investments for schools, roads, and public safety. In these 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. Investment Level 1 Areas are often municipalities, towns, or urban/urbanizing places in counties.

Proposed Development's Compatibility with Strategies for State Policies and Spending: The proposed Georgetown Crossing Shopping Center is located within Investment Level 1 and is to be developed as a shopping center including retail, restaurants, and a bank. The *Strategies* document generally encourages efficient new growth and redevelopment in Investment Level 1 areas, and the proposed development is consistent with those goals. It is therefore concluded that the proposed development generally complies with the policies stated in the 2010 update of the "Strategies for State Policies and Spending."

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 Georgetown Crossing development is in the Town of Georgetown, a municipality. Sussex County strongly favors directing development to municipalities that desire it. 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.

Town of Georgetown Comprehensive Plan:
(Source: Town of Georgetown Comprehensive Plan, January 2010)

On the Existing Land Use Map, the proposed development is shown as Undeveloped, and the Comprehensive Plan Map designates the area as Commercial. Additionally, the Comprehensive Plan describes possible roadway connections that could be made to alleviate traffic conditions along US Route 113. One of these is a new road west of US Route 113 that would run north-south parallel to US Route 113. This road could connect US Route 9 with points north (essentially in the area of the proposed Georgetown Crossing site), taking traffic off of US Route 113. The Town intends to work with developers to construct alternative connections such as this. The Comprehensive Plan notes that interconnected driveways and/or rear access

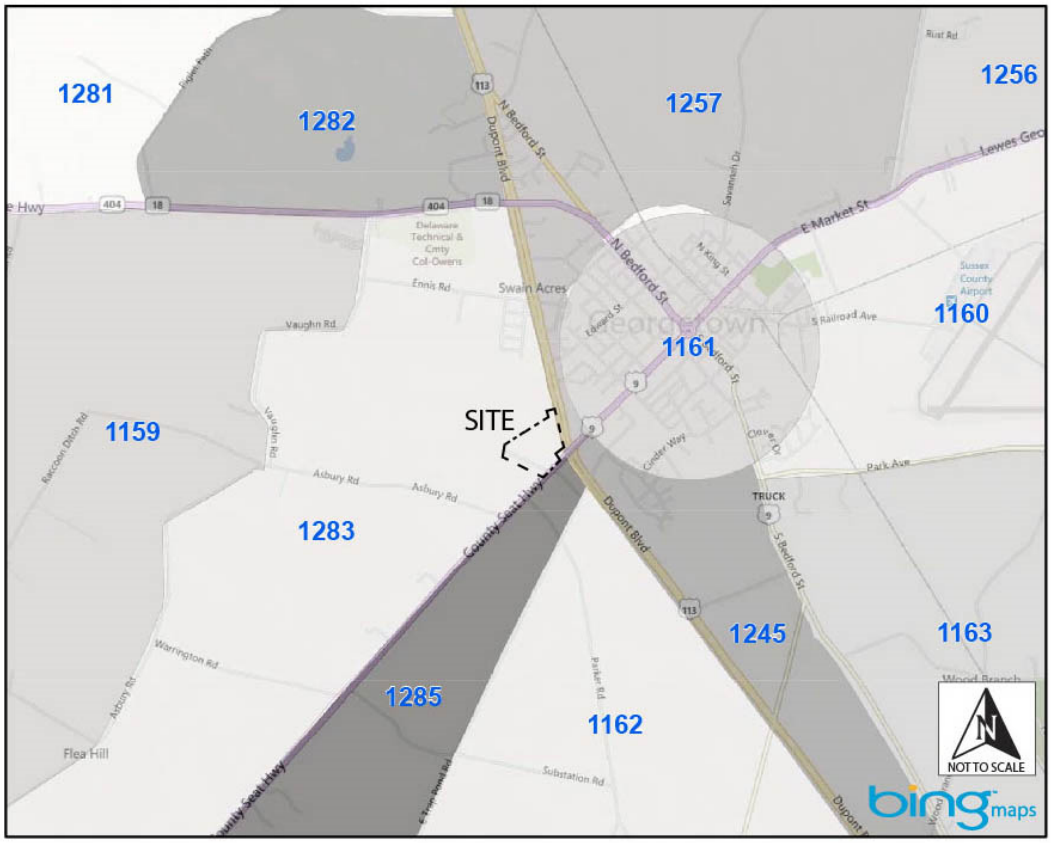
connections that are shared among businesses are desirable along US Route 113 to minimize the number of access point along US Route 113.

Proposed Development's Compatibility with Comprehensive Plans:
The proposed commercial development is currently zoned as UB-1 (Urban Business District) in the Town of Georgetown, where retail shops, restaurants, and banks are permitted uses. The proposed site plan includes an internal road connecting to the property north of the site. As such, the proposed development appears to be compatible with the Sussex County Comprehensive Plan and the Town of Georgetown Comprehensive Plan.

<u>Transportation Analysis Zones (TAZ)</u>

Transportation Analysis Zones (TAZ) where development would be located: 1283

TAZ Boundaries:



Current employment estimate for TAZ: 45 jobs in 2005
Future employment estimate for TAZ: 61 jobs in 2030
Current population estimate for TAZ: 259 people in 2005
Future population estimate for TAZ: 583 people in 2030
Current household estimate for TAZ: 79 houses in 2005
Future household estimate for TAZ: 180 houses in 2030
Relevant committed developments in TAZ: None
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 for population and households. Yes for employment.

Relevant Projects in the DelDOT Capital Transportation Program (FY 2013 – FY 2018)

DelDOT currently has two relevant projects in the study area. The first is the US Route 113, North/South Improvements project (aka US 113 North/South Study) (State Contract No. T200212701). The US 113 North/South Study seeks to address the existing and future transportation needs along the US Route 113 corridor while preserving environmental and historic resources, preserving the existing north/south corridor in Sussex County, and accommodating planned economic growth. The project team coordinates with Sussex and Kent Counties and the affected municipalities and continues to study viable alternatives for north/south capacity improvements throughout Sussex County. Many alternatives have been studied, both on and off existing alignments.

In June 2007, after evaluating input from the public, conducting analyses and working to refine the alternatives, DelDOT announced a Recommended Preferred Alternative for the Georgetown Area of the US 113 North/South Study. For more information, please see the project web site at http://www.deldot.gov/information/projects/us113/. The Refined On-Alignment Alternative is the Recommended Preferred Alternative in the Georgetown Area. An Environmental Assessment was completed for this alternative in March 2012. Notable features of the Refined On-Alignment Alternative in the Georgetown Area include: widening US Route 113 to provide an additional lane northbound and southbound, building grade-separated intersections at several locations, and eliminating all traffic signals and unsignalized crossovers along US Route 113. As currently planned, the design concept for this alternative would have direct impacts on the intersection of US Route 113 and US Route 9. It would become a grade-separated intersection with ramps going through the existing Exxon gas station property. Most of the proposed Georgetown Crossing site would be spared from the direct impacts of the US 113 North/South Study construction footprint (according to the current design concept), although a part of the site including the pad sites along US Route 113 and the site access points on US Route 113 and US Route 9 may be affected. The DelDOT Project Manager for the US 113 North/South Study has indicated this is a long-term project with improvements not expected to occur until at least 2020.

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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). Additionally, to be conservative, TPD applied an internal capture rate of 20% between all of these retail land uses. The following land uses were utilized to estimate the amount of new traffic generated for this development:

- 9,958 square feet of high-turnover (sit-down) restaurant space (ITE Land Use Code 932)
- 6,720 square-foot shopping center (ITE Land Use Code 820)
- 5,000 square-foot bank with drive-through (ITE Land Use Code 912)
- 1,720 square-foot fast-food restaurant with drive-through (ITE Land Use Code 934)

Table 1
GEORGETOWN CROSSING PEAK HOUR TRIP GENERATION

Land Use	**PM Peak Hour**			**Saturday Mid-Day**		
	In	Out	Total	In	Out	Total
9,958 sf high-turnover restaurant	65	46	111	74	66	140
Internal Capture	12	10	22	15	13	28
Pass-by Trips	19	19	38	18	18	36
Net External Trips	**34**	**17**	**51**	**41**	**35**	**76**
6,720 sf shopping center	12	13	25	17	16	33
Internal Capture	2	3	5	3	4	7
Pass-by Trips	3	3	6	3	3	6
Net External Trips	**7**	**7**	**14**	**11**	**9**	**20**
5,000 sf bank	65	64	129	69	64	133
Internal Capture	13	13	26	14	13	27
Pass-by Trips	24	24	48	20	20	40
Net External Trips	**28**	**27**	**55**	**35**	**31**	**66**
1,720 sf fast-food restaurant	30	28	58	52	50	102
Internal Capture	6	6	12	10	10	20
Pass-by Trips	11	11	22	16	16	32
Net External Trips	**13**	**11**	**24**	**26**	**24**	**50**
TOTAL NEW TRIPS	**82**	**62**	**144**	**113**	**99**	**212**

Table 2
GEORGETOWN CROSSING DAILY TRIP GENERATION

Land Use	**Weekday ADT**			**Saturday ADT**		
	In	Out	Total	In	Out	Total
9,958 sf high-turnover restaurant	634	634	1268	789	789	1578
6,720 sf shopping center	145	145	290	168	168	336
5,000 sf bank	371	371	742	216	216	432
1,720 sf fast-food restaurant	427	427	854	621	621	1242
TOTAL TRIPS	**1577**	**1577**	**3154**	**1794**	**1794**	**3588**

Overview of TIS

Intersections examined:

1) US Route 9 & Site Entrance / Food City Shopping Center Truck Entrance
2) US Route 113 & Site Entrance
3) US Route 113 & US Route 9
4) US Route 9 & Food City Shopping Center Main Entrance
5) US Route 113 & First Full Crossover North of US Route 9
6) US Route 113 & Ennis Road (Sussex Road 519) / North Street

Conditions examined:

1) 2010 existing conditions (Case 1)
2) 2015 without Georgetown Crossing (Case 2)
3) 2015 with Georgetown Crossing (Case 3)

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

Committed developments considered:

1) Village of College Park (94 single-family detached houses, 271 townhouses, and 120 apartments)
2) Shops of College Park (17,600 square feet of general office space, a 76,500 square-foot shopping center, a 7,000 square-foot high-turnover restaurant, a 7,100 square-foot drive-in bank, a 116,000 square-foot home improvement superstore, a 12,900 square-foot pharmacy with drive-thru, a 3,600 square-foot donut shop, a 17,000 square-foot pet supply superstore, and a 72-room hotel)
3) Short Property (70-room hotel)

Intersection Descriptions

1) **US Route 9 & Site Entrance / Food City Shopping Center Truck Entrance**
Type of Control: existing two-way stop-controlled (T-intersection); proposed two-way stop-controlled (four-leg intersection)
Northbound approach: (Food City Shopping Center Truck Entrance) existing one shared left/right-turn lane, stop controlled; proposed one shared left/through/right-turn lane, stop controlled
Southbound approach: (Proposed Site Entrance) proposed one left-turn lane and one shared through/right-turn lane, stop controlled
Eastbound approach: (US Route 9) existing one shared through/right-turn lane; proposed one left-turn lane and one shared through/right-turn lane
Westbound approach: (US Route 9) existing one shared through/left-turn lane; proposed one shared through/left-turn lane and one right-turn lane

2) **US Route 113 & Site Entrance**
Type of Control: proposed two-way stop-controlled (right-in/right-out T-intersection)
Northbound approach: (US Route 113) existing two through lanes (separated from northbound lanes by grass median); proposed two through lanes (separated from northbound lanes by grass median)
Southbound approach: (US Route 113) existing one left-turn lane for downstream median u-turn, one left-turn lane for downstream US Route 9 intersection, and two through lanes; proposed one left-turn lane for downstream median u-turn, one left-turn lane for downstream US Route 9 intersection, two through lanes, and one right-turn lane
Eastbound approach: (Proposed Site Entrance) proposed one right-turn-only lane, stop controlled

3) **US Route 113 & US Route 9**
Type of Control: signalized four-leg intersection
Northbound approach: (US Route 113) one left-turn lane, two through lanes and one right-turn lane
Southbound approach: (US Route 113) one left-turn lane, two through lanes and one right-turn lane
Eastbound approach: (US Route 9) one left-turn lane, one through lane and one right-turn lane
Westbound approach: (US Route 9) one left-turn lane, one through lane and one right-turn lane

4) **US Route 9 & Food City Shopping Center Main Entrance**
Type of Control: two-way stop-controlled (T-intersection)
Northbound approach: (Food City Shopping Center Main Entrance) one left-turn lane and one right-turn lane, stop controlled
Eastbound approach: (US Route 9) one through lane and one right-turn lane
Westbound approach: (US Route 9) one left-turn lane and one through lane

5) US Route 113 & First Full Crossover North of US Route 9

Type of Control: stop-controlled median crossover
Northbound approach: (US Route 113) one left-turn lane and two through lanes (separated from southbound lanes by grass median)
Southbound approach: (US Route 113) one left-turn lane and two through lanes (separated from northbound lanes by grass median)
Eastbound approach: (crossover) one left-turn-only lane, stop controlled
Westbound approach: (crossover) one left-turn-only lane, stop controlled

6) US Route 113 & Ennis Road / North Street

Type of Control: four-leg intersection with stop control on Ennis Road outer approaches and also within median
Northbound approach: (US Route 113) one left-turn lane, two through lanes and one right-turn lane
Southbound approach: (US Route 113) one left-turn lane, two through lanes and one right-turn lane
Eastbound approach: (Ennis Road) one shared through/right-turn lane with flared right-turn storage on outer approach, stop controlled; one shared through/left-turn lane within median, stop controlled
Westbound approach: (North Street) one shared through/right-turn lane with flared right-turn storage on outer approach, stop controlled; one shared through/left-turn lane within median, stop controlled

Safety Evaluation

Crash Data: Crash data was obtained for May 2009 through May 2012 for the intersections within the study area. This included a total of 115 crashes during this three-year period.

- US Route 113 & US Route 9
  - 79 crashes reported
- US Route 113 & Ennis Road
  - 28 crashes reported
- US Route 113 & First Full Crossover North of US Route 9
  - 2 crashes reported
- US Route 9 & Food City Shopping Center Entrances
  - 6 crashes reported

Sight Distance: With generally straight and flat roadways, sight distance is adequate throughout the study area. No problematic sight distance issues have been reported, and none were observed during field observations in the area.

Transit, Pedestrian, and Bicycle Facilities

Existing transit service: The Delaware Transit Corporation (DTC) currently operates three transit routes near the proposed Georgetown Crossing Shopping Center. DART Route 206, connecting Georgetown, Lewes and Rehoboth Beach, travels along US Route 113 near the

proposed development with 19 one-way trips on weekdays between 6 AM and midnight. DART Route 212 connects Georgetown, Bridgeville, Seaford, and Laurel with 13 one-way trips on weekdays between 5 AM and 10:30 PM. DART Route 303 connects Georgetown and Dover, with numerous stops in between, with 21 one-way trips on weekdays between 5 AM and 9 PM. All three bus routes stop at the nearby Georgetown Transit Hub.

Planned transit service: McCormick Taylor contacted Lisa Collins, a Service Development Planner for the DTC, via email on October 19, 2012 to determine whether DTC has any plans to extend the existing transit system in the vicinity of the development. Ms. Collins replied on the same day, stating that the DTC business plan includes adding another route in this area in the future. The planned future route would connect Georgetown and Millsboro with approximately 15 round trips between approximately 6 AM and 10 PM. Additionally, Ms. Collins requested that a bus pull-off should be incorporated within the site. Based on the preliminary site plan, ideally this bus pull-off would be located on the northbound side of the internal road near the pad sites (restaurants). This would allow buses to circulate through the site, entering from US Route 9, stopping within the site, and exiting onto southbound US Route 113. The bus pull-off should be approximately 100 feet long (to accommodate two buses) by 12 feet wide. It should also include a concrete landing pad measuring 8 feet deep by 5 feet wide, or a larger shelter pad. With the bus facilities incorporated into the site design, DTC could then arrange for one or more existing DART bus routes, and/or the planned future route, to serve this property (potentially as a route terminus point).

Existing bicycle and pedestrian facilities: According to the bicycle level of service (BLOS) calculator developed by the *League of Illinois Bicyclists*, US Route 113 and US Route 9 both operate at BLOS A. There are currently no designated bicycle lanes within the study area. There are 5-foot wide sidewalks along the south side of US Route 9 from the western edge of the Food City Shopping Center to US Route 113 and along the west side of US Route 113 south of US Route 9. There are crosswalks going across US Route 113 at the US Route 9 intersection, and there are more sidewalks along both sides of US Route 9 east of US Route 113, but there are no sidewalks along US Route 113 immediately north of US Route 9.

Planned bicycle and pedestrian facilities: McCormick Taylor contacted Marco Boyce and Anthony Aglio with DelDOT's Bicycle and Pedestrian Facilities Team via email on October 19, 2012 regarding planned or requested bicycle and pedestrian facilities in the area of this proposed development. Mr. Aglio provided comments via email dated October 24, 2012. 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 through the right-turn lane on US Route 9.
b. Bike lanes should be included on the internal street.

<u>Previous Comments</u>

All comments from DelDOT's Scoping Letter and Traffic Count Review were addressed in the Final TIS submission, with the following exception:

- The TIS did not follow DelDOT's updated analysis parameter requirements regarding base saturation flow rates, peak hour factors and heavy vehicle percentages as found in

Section 2.9.11.6 of DelDOT's *Standards and Regulations for Subdivision Streets and State Highway Access*.

General HCS Analysis Comments
(see table footnotes on the following pages for specific comments)

1) For unsignalized intersections, the TIS and McCormick Taylor applied heavy vehicle (HV) percentages by movement. For signalized intersections, the TIS and McCormick Taylor applied HV percentages by lane group. For future conditions, the TIS and McCormick Taylor generally assumed future HV percentages to be the same as existing HV percentages.

2) The TIS incorrectly calculated HV percentages for right turns at the intersection of US Route 113 & US Route 9 for Saturday conditions, because they divided the total number of heavy vehicles on each right-turn movement by only the non-Right-Turn-on-Red volume (instead of by the total right-turn volume) for each of those movements. McCormick Taylor discovered this error and calculated the correct HV percentages.

3) For existing conditions, the TIS determined existing peak hour factors (PHF) by lane group. For future conditions, the TIS assumed future PHF by lane group to be either the same as existing PHF or sometimes adjusted to 0.88 or 0.92, although this did not appear to be done in an obviously consistent manner. For existing conditions, McCormick Taylor determined overall intersection PHFs for each peak hour, per DelDOT's *Standards and Regulations for Subdivision Streets and State Highway Access*. For future conditions, McCormick Taylor assumed future PHF to be either the same as existing PHF or adjusted to 0.88 or 0.92 (depending on intersection volume), whichever was greater, for all intersections.

4) The TIS correctly performed separate counts of Right-Turn-on-Red (RTOR) volumes at the signalized intersection of US Route 113 & US Route 9 but input incorrect right-turn volumes into HCS for the Saturday peak hour because they used volumes for only the non-RTOR movements instead of for all right turns. McCormick Taylor discovered this error and input the correct right-turn volumes at this intersection.

5) The TIS input existing Right-Turn-on-Red (RTOR) volumes for signalized intersection analyses of existing and future conditions. McCormick Taylor input no RTOR volumes, but did analyze right-turn movements as overlapping the protected left-turn phases.

6) For the two intersections along US Route 9 west of US Route 113, the TIS did not count through volumes. Rather, they used peak hour turning movement volumes from the intersection of US Route 113 & US Route 9 and carried those volumes to these two intersections, where they used the local turning movement volumes (to and from the Food City Shopping Center entrances) to balance the volumes along the US Route 9 corridor. The times of day of the peak hours at US Route 113 & US Route 9 did not match the times of day of the peak hours at US Route 9 & the Food City Shopping Center entrances, but these volumes were used to balance US Route 9 through volumes. Additionally, the TIS volume balancing did not include the RTOR volumes from US

Route 113 & US Route 9 for Saturday peak hour conditions. McCormick Taylor discovered this RTOR volume error and utilized different turning movement volumes for Saturday conditions at the three intersections along the US Route 9 corridor, which included RTOR volumes from US Route 113 & US Route 9. This resulted in McCormick Taylor using higher Saturday volumes for the through movements at the two intersections along US Route 9 west of US Route 113.

7) At the intersection of US Route 9 & Food City Shopping Center Main Entrance, heavy vehicles were counted only for the movements to and from the shopping center. At the intersection of US Route 9 & Food City Shopping Center Truck Entrance, heavy vehicles were not counted at all.

8) Lacking complete count data for the two intersections along US Route 9 west of US Route 113, the TIS applied PHF and HV data from the intersection of US Route 113 & US Route 9 for use at the two other US Route 9 intersections. McCormick Taylor calculated overall intersection PHF at these two intersections by balancing 15-minute volumes at the three intersections along the US Route 9 corridor. McCormick Taylor assumed 3% HV for movements where data was not provided.

9) For analyses of signalized intersections, the TIS used a base saturation flow rate of 1,900 pcphgpl. McCormick Taylor used a base saturation flow rate of 1,750 pcphgpl per DelDOT's *Standards and Regulations for Subdivision Streets and State Highway Access* because the study area is south of the C&D Canal.

10) 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.

11) The TIS included a +/- 1% percent grade on some intersection approaches in their analysis. McCormick Taylor could not confirm the percent grade and did not take it into consideration.

12) The TIS and McCormick Taylor used different cycle lengths and/or signal timing parameters when analyzing the signalized intersections in some cases.

Table 3
PEAK HOUR LEVELS OF SERVICE (LOS)
based on Traffic Impact Study for Georgetown Crossing
Report dated September 2012
Prepared by Traffic Planning and Design, Inc.

Unsignalized Intersection [1] **Two-Way Stop Control (T-intersection)**	**LOS per TIS**		**LOS per McCormick Taylor**	
US Route 9 & Site Entrance / Food City Shopping Center Truck Entrance	Weekday PM	Saturday Mid-day	Weekday PM	Saturday Mid-day
2010 Existing (Case 1)				
Northbound Food City Truck Entrance	C (16.9)	B (10.4)	C (16.1)	B (10.6)
Westbound US Route 9 – Left	A (8.3)	A (7.9)	A (8.3)	A (7.9)
2015 without Georgetown Crossing (Case 2)				
Northbound Food City Truck Entrance	C (22.5)	B (11.9)	C (21.4)	B (12.2)
Westbound US Route 9 – Left	A (8.7)	A (8.2)	A (8.7)	A (8.3)
2015 with Georgetown Crossing (Case 3)				
Northbound Food City Truck Entrance	D (30.0)	B (12.6)	D (29.5)	B (13.1)
Southbound Site Entrance	F (141.7)	C (23.7)	F (98.4) [2]	D (25.0+)
Eastbound US Route 9 – Left	B (10.4)	A (8.3)	B (10.3)	A (8.4)
Westbound US Route 9 – Left	A (8.7)	A (8.2)	A (8.6)	A (8.3)

[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. For signalized analyses, LOS analysis results are given for only the overall intersection delay.
[2] The 95th percentile queue length for the southbound Site Entrance left-turn movement during the Case 3 PM peak hour is approximately 4 vehicles.

Table 3 (continued)
PEAK HOUR LEVELS OF SERVICE (LOS)
based on Traffic Impact Study for Georgetown Crossing
Report dated September 2012
Prepared by Traffic Planning and Design, Inc.

Unsignalized Intersection [3] **Two-Way Stop Control (T-intersection)**	**LOS per TIS**		**LOS per McCormick Taylor**	
US Route 9 & Site Entrance / Food City Shopping Center Truck Entrance	Weekday PM	Saturday Mid-day	Weekday PM	Saturday Mid-day
2015 with Georgetown Crossing (Case 3) *With Improvement Option 1* [4]				
Northbound Food City Truck Entrance	N/A	N/A	D (29.5)	B (13.1)
Southbound Site Entrance	N/A	N/A	F (98.4) [5]	D (25.0+)
Eastbound US Route 9 – Left	N/A	N/A	B (10.3)	A (8.4)
Westbound US Route 9 – Left	N/A	N/A	A (8.6)	A (8.3)
2015 with Georgetown Crossing (Case 3) *With Improvement Option 2* [6]				
Northbound Food City Truck Entrance	N/A	N/A	C (16.6)	B (11.9)
Southbound Site Entrance	N/A	N/A	C (24.3) [7]	C (16.3)
Eastbound US Route 9 – Left	N/A	N/A	B (10.3)	A (8.4)
Westbound US Route 9 – Left	N/A	N/A	A (8.6)	A (8.3)

[3] For both unsignalized and signalized intersection analyses, the numbers in parentheses following levels of service (LOS) are average delay per vehicle, measured in seconds. For signalized analyses, LOS analysis results are given for only the overall intersection delay.
[4] Improvement Option 1 consists of adding separate left-turn and right-turn lanes on the US Route 9 approaches, such that the eastbound and westbound approaches would consist of one left-turn lane, one through lane and one right-turn lane.
[5] The 95th percentile queue length for the southbound Site Entrance left-turn movement during the Case 3 PM peak hour (with Improvement Option 1) is approximately 4 vehicles.
[6] Improvement Option 2 consists of Improvement Option 1 plus the addition of an acceleration lane in the median of US Route 9 (analyzed in HCS as a turn-way left-turn lane), such that southbound traffic turning left out of the site can make the turn in two stages when traffic conditions warrant.
[7] The 95th percentile queue length for the southbound Site Entrance left-turn movement during the Case 3 PM peak hour (with Improvement Option 2) is approximately 1 vehicle.

Table 4
PEAK HOUR LEVELS OF SERVICE (LOS)
based on Traffic Impact Study for Georgetown Crossing
Report dated September 2012
Prepared by Traffic Planning and Design, Inc.

Unsignalized Intersection [8] **Two-Way Stop Control (T-intersection)**	**LOS per TIS**		**LOS per McCormick Taylor**	
US Route 113 & Site Entrance	Weekday PM	Saturday Mid-day	Weekday PM	Saturday Mid-day
2015 with Georgetown Crossing (Case 3)				
Eastbound Site Entrance – Right	C (15.6)	D (27.1)	C (16.2)	D (27.8)

[8] For both unsignalized and signalized intersection analyses, the numbers in parentheses following levels of service (LOS) are average delay per vehicle, measured in seconds. For signalized analyses, LOS analysis results are given for only the overall intersection delay.

Table 5
PEAK HOUR LEVELS OF SERVICE (LOS)
based on Traffic Impact Study for Georgetown Crossing
Report dated September 2012
Prepared by Traffic Planning and Design, Inc.

Signalized Intersection [9]	**LOS per TIS**		**LOS per McCormick Taylor**	
US Route 113 & US Route 9	Weekday PM	Saturday Mid-day	Weekday PM	Saturday Mid-day
2010 Existing (Case 1)	E (69.4)	D (49.8)	E (63.0)	D (50.2)
2015 without Georgetown Crossing (Case 2)	F (92.9)	F (89.1)	F (103.6)	F (103.3)
2015 with Georgetown Crossing (Case 3)	F (102.0)	F (102.6)	F (115.2) [10]	F (121.6) [11]
2015 with Georgetown Crossing (Case 3) *With Improvement Option 1* [12]	F (92.5)	F (98.4)	F (109.3)	F (109.3)
2015 with Georgetown Crossing (Case 3) *With Improvement Option 2* [13]	F (105.8)	F (120.1)	F (129.0)	F (139.4)

[9] For both unsignalized and signalized intersection analyses, the numbers in parentheses following levels of service (LOS) are average delay per vehicle, measured in seconds. For signalized analyses, LOS analysis results are given for only the overall intersection delay.

[10] The key 95th percentile queue lengths for the Case 3 PM peak hour are approximately 60 vehicles for the eastbound left-turn lane, 40 vehicles for the westbound through lane, 25 vehicles for the northbound left-turn lane, 66 vehicles for the northbound through lanes, 25 vehicles for the southbound left-turn lane, and 62 vehicles for the southbound through lanes.

[11] The key 95th percentile queue lengths for the Case 3 Saturday peak hour are approximately 50 vehicles for the eastbound left-turn lane, 30 vehicles for the westbound through lane, 14 vehicles for the northbound left-turn lane, 112 vehicles for the northbound through lanes, 22 vehicles for the southbound left-turn lane, and 71 vehicles for the southbound through lanes.

[12] Improvement Option 1 consists of modifying the eastbound approach of US Route 9 to consist of one exclusive left-turn lane, one shared through/left-turn lane, and one right-turn lane, and converting the eastbound and westbound approaches to split phasing.

[13] Improvement Option 2 consists of modifying the signal timing in order to reduce delays for all movements below the cycle length (180 seconds). The TIS was able to achieve this goal for both PM and Saturday conditions but, due to differences in several analysis parameter assumptions, McCormick Taylor was only able to do so for PM peak hour conditions. McCormick Taylor's Saturday results reflect the same signal cycle length and splits as the TIS but the delays are higher because many other parameters are different.

Table 5 (continued)
PEAK HOUR LEVELS OF SERVICE (LOS)
based on Traffic Impact Study for Georgetown Crossing
Report dated September 2012
Prepared by Traffic Planning and Design, Inc.

Signalized Intersection [14]	**LOS per TIS**		**LOS per McCormick Taylor**	
US Route 113 & US Route 9	Weekday PM	Saturday Mid-day	Weekday PM	Saturday Mid-day
2015 with Georgetown Crossing (Case 3) *With Improvement Option 3* [15]	F (92.7)	F (88.9)	F (107.9)	F (107.5)
2015 with Georgetown Crossing (Case 3) *With Improvement Option 4* [16]	N/A	N/A	D (52.2) [17]	D (52.6) [18]

[14] For both unsignalized and signalized intersection analyses, the numbers in parentheses following levels of service (LOS) are average delay per vehicle, measured in seconds. For signalized analyses, LOS analysis results are given for only the overall intersection delay.
[15] Improvement Option 3 analyzes the intersection with revised turning movement volumes anticipated by the TIS that reflect the diversion of traffic from the eastbound left-turn and southbound right-turn movements to a potential future connector road linking the site with the property to the north.
[16] Improvement Option 4 includes the addition of a second left-turn lane and a third through lane on the northbound approach of US Route 113, a third through lane on the southbound approach of US Route 113, a second left-turn lane on the eastbound approach of US Route 9 and a second through lane on the westbound approach of US Route 9. These improvements would also require a second westbound receiving lane on the western leg of the intersection.
[17] The key 95th percentile queue lengths for the Case 3 PM peak hour (with Improvement Option 4) are approximately 18 vehicles for the eastbound left-turn lanes, 16 vehicles for the westbound left-turn lane, 29 vehicles for the northbound through lanes, 16 vehicles for the southbound left-turn lanes, and 28 vehicles for the southbound through lanes.
[18] The key 95th percentile queue lengths for the Case 3 Saturday peak hour (with Improvement Option 4) are approximately 18 vehicles for the eastbound left-turn lanes, 54 vehicles for the northbound through lanes, 15 vehicles for the southbound left-turn lanes, and 36 vehicles for the southbound through lanes.

Table 6
PEAK HOUR LEVELS OF SERVICE (LOS)
based on Traffic Impact Study for Georgetown Crossing
Report dated September 2012
Prepared by Traffic Planning and Design, Inc.

Unsignalized Intersection [19] **Two-Way Stop Control (T-intersection)**	**LOS per TIS** [20]		**LOS per McCormick Taylor**	
US Route 9 & Food City Shopping Center Main Entrance	Weekday PM	Saturday Mid-Day	Weekday PM	Saturday Mid-Day
2010 Existing (Case 1)				
Northbound Food City Main Entrance	C (16.7)	B (11.8)	C (21.0)	B (12.2)
Westbound US Route 9 – Left	A (9.0)	A (8.4)	A (8.8)	A (8.3)
2015 without Georgetown Crossing (Case 2)				
Northbound Food City Main Entrance	C (20.9)	B (13.6)	E (37.9)	B (14.9)
Westbound US Route 9 – Left	A (9.7)	A (8.9)	A (9.4)	A (8.8)
2015 with Georgetown Crossing (Case 3)				
Northbound Food City Main Entrance	C (22.9)	B (15.0-)	F (50.1)	C (17.3)
Westbound US Route 9 – Left	A (9.9)	A (9.3)	A (9.6)	A (9.1)
2015 with Georgetown Crossing (Case 3) *With Improvement Option 1* [21]				
Northbound Food City Main Entrance	N/A	N/A	C (19.3)	B (14.3)
Westbound US Route 9 – Left	N/A	N/A	A (9.6)	A (9.1)

[19] For both unsignalized and signalized intersection analyses, the numbers in parentheses following levels of service (LOS) are average delay per vehicle, measured in seconds. For signalized analyses, LOS analysis results are given for only the overall intersection delay.

[20] The TIS analyzed this intersection as having a two-way left-turn lane median, whereas McCormick Taylor analyzed it as undivided. While this location currently has a tapering portion of a median, McCormick Taylor did not analyze it as a two-way left-turn lane for existing conditions because the median is too narrow and ends immediately west of the intersection.

[21] Improvement Option 1 consists of adding an acceleration lane in the median of US Route 9 (analyzed in HCS as a turn-way left-turn lane), such that northbound traffic turning left out of the Food City Shopping Center can make the turn in two stages when traffic conditions warrant. As stated in the previous footnote, the TIS analyzed this as the existing condition.

Table 7
PEAK HOUR LEVELS OF SERVICE (LOS)
based on Traffic Impact Study for Georgetown Crossing
Report dated September 2012
Prepared by Traffic Planning and Design, Inc.

Unsignalized Intersection [22] **U-Turn only**	**LOS per TIS**		**LOS per McCormick Taylor**	
US Route 113 & First Full Crossover North of US Route 9	Weekday PM	Saturday Mid-Day	Weekday PM	Saturday Mid-Day
2012 Existing (Case 1)				
Eastbound Median – Left (Southbound US Route 113 U-turns)	C (15.6)	C (24.0)	B (14.4)	C (19.0)
Westbound Median – Left (Northbound US Route 113 U-turns)	B (13.1)	C (15.6)	B (14.0)	C (17.2)
2015 without Georgetown Crossing (Case 2)				
Eastbound Median – Left (Southbound US Route 113 U-turns)	C (19.7)	E (?) [23]	C (17.4)	D (25.3)
Westbound Median – Left (Northbound US Route 113 U-turns)	B (14.2)	C (19.6)	C (16.9)	C (22.7)
2015 with Georgetown Crossing (Case 3)				
Eastbound Median – Left (Southbound US Route 113 U-turns)	C (21.4)	E (42.1)	C (18.8)	D (28.4)
Westbound Median – Left (Northbound US Route 113 U-turns)	C (15.0+)	C (23.3)	C (18.4)	D (27.0)

[22] For both unsignalized and signalized intersection analyses, the numbers in parentheses following levels of service (LOS) are average delay per vehicle, measured in seconds. For signalized analyses, LOS analysis results are given for only the overall intersection delay.
[23] The seconds of delay is unknown because TPD did not include this HCS report in the TIS.

Table 8
PEAK HOUR LEVELS OF SERVICE (LOS)
based on Traffic Impact Study for Georgetown Crossing
Report dated September 2012
Prepared by Traffic Planning and Design, Inc.

Unsignalized Intersection [24] **Two-Way Stop Control**	**LOS per TIS**		**LOS per McCormick Taylor**	
US Route 113 & Ennis Road / North Street	Weekday PM	Saturday Mid-Day	Weekday PM	Saturday Mid-Day
2010 Existing (Case 1)				
Eastbound Ennis Road – outer approach	C (15.9)	C (23.8)	C (15.6)	C (24.0)
Eastbound Ennis Road – median approach (includes SB US Route 113 left turns)	E (43.9)	F (85.3)	E (40.4)	F (55.1)
Westbound North Street – outer approach	D (29.8)	D (25.4)	D (30.0)	D (27.2)
Westbound Ennis Road – median approach (includes NB US Route 113 left turns)	F (94.5)	D (34.1)	F (135.6)	E (35.5)
2015 without Georgetown Crossing (Case 2)				
Eastbound Ennis Road – outer approach	C (21.9)	F (59.1)	D (25.9)	F (72.4)
Eastbound Ennis Road – median approach (includes SB US Route 113 left turns)	F (*)	F (339.7)	F (*)	F (414.6)
Westbound North Street – outer approach	F (72.3)	F (52.5)	F (99.0)	F (61.7)
Westbound Ennis Road – median approach (includes NB US Route 113 left turns)	F (268.6)	F (101.4)	F (533.8)	F (153.5)

* HCS could not generate a result due to excessive delay

[24] For both unsignalized and signalized intersection analyses, the numbers in parentheses following levels of service (LOS) are average delay per vehicle, measured in seconds. For signalized analyses, LOS analysis results are given for only the overall intersection delay.

Table 8 (continued)
PEAK HOUR LEVELS OF SERVICE (LOS)
based on Traffic Impact Study for Georgetown Crossing
Report dated September 2012
Prepared by Traffic Planning and Design, Inc.

Unsignalized Intersection [25] **Two-Way Stop Control**	**LOS per TIS**		**LOS per McCormick Taylor**	
US Route 113 & Ennis Road / North Street	Weekday PM	Saturday Mid-Day	Weekday PM	Saturday Mid-Day
2015 with Georgetown Crossing (Case 3)				
Eastbound Ennis Road – outer approach	C (22.2)	F (59.0)	D (26.4)	F (72.7)
Eastbound Ennis Road – median approach (includes SB US Route 113 left turns)	F (*)	F (378.9)	F (*)	F (454.1) [26]
Westbound North Street – outer approach	F (76.5)	F (55.5)	F (105.0) [27]	F (65.9) [28]
Westbound Ennis Road – median approach (includes NB US Route 113 left turns)	F (287.6)	F (116.3)	F (561.0) [29]	F (184.6) [30]
2015 with Georgetown Crossing (Case 3) *With Improvement Option 1* [31]				
Northbound US Route 113 – Left	N/A	N/A	C (20.9)	C (23.0)
Southbound US Route 113 – Left	N/A	N/A	C (18.9)	D (34.6)
Eastbound Ennis Road – Right	N/A	N/A	C (18.6)	C (21.6)
Westbound North Street – Right	N/A	N/A	D (28.3) [32]	E (42.4) [33]

* HCS could not generate a result due to excessive delay

[25] For both unsignalized and signalized intersection analyses, the numbers in parentheses following levels of service (LOS) are average delay per vehicle, measured in seconds. For signalized analyses, LOS analysis results are given for only the overall intersection delay.
[26] The 95th percentile queue length for the eastbound median approach during the Case 3 Saturday peak hour is approximately 8 vehicles.
[27] The 95th percentile queue length for the westbound North Street outer approach during the Case 3 PM peak hour is approximately 8 vehicles.
[28] The 95th percentile queue length for the westbound North Street outer approach during the Case 3 Saturday peak hour is approximately 4 vehicles.
[29] The 95th percentile queue length for the westbound median approach during the Case 3 PM peak hour is approximately 20 vehicles.
[30] The 95th percentile queue length for the westbound median approach during the Case 3 Saturday peak hour is approximately 5 vehicles.
[31] Improvement Option 1 consists of installing raised islands to limit traffic from the eastbound and westbound approaches to right turns only. The through and left-turn demand is accommodated via u-turns at nearby median crossovers on US Route 113. Left-turning traffic from both directions of US Route 113 would still be permitted at this intersection.
[32] The 95th percentile queue length for the westbound North Street right-turn movement during the Case 3 PM peak hour (with Improvement Option 1) is approximately 3 vehicles.
[33] The 95th percentile queue length for the westbound North Street right-turn movement during the Case 3 Saturday peak hour (with Improvement Option 1) is approximately 4 vehicles.

Table 8 (continued)
PEAK HOUR LEVELS OF SERVICE (LOS)
based on Traffic Impact Study for Georgetown Crossing
Report dated September 2012
Prepared by Traffic Planning and Design, Inc.

Signalized Intersection [34]	**LOS per TIS**		**LOS per McCormick Taylor**	
US Route 113 & Ennis Road / North Street	Weekday PM	Saturday Mid-day	Weekday PM	Saturday Mid-day
2015 with Georgetown Crossing (Case 3) *With Improvement Option 2* [35]	N/A	N/A	D (50.2)	D (47.7)

[34] For both unsignalized and signalized intersection analyses, the numbers in parentheses following levels of service (LOS) are average delay per vehicle, measured in seconds. For signalized analyses, LOS analysis results are given for only the overall intersection delay.
[35] Improvement Option 2 includes signalization of the intersection.

Avigation Nuisance Easement & Non-Suit Covenant

This indenture made this _____ day of _____, 20_____, by and between _____, hereinafter referred to as Grantor, and _____ hereinafter referred to as Grantee, witnesseth:

WHEREAS the Grantor is the owner in fee of a certain parcel of land ("the Property") in the County of _____, State of Delaware; and

WHEREAS said parcel of land is near or adjacent to _____, an operating airport ("Airport"); and

WHEREAS the Grantee is the owner of said airport; and

WHEREAS the Grantor proposes to make a use of said Property and to develop thereon the following:

_____

_____

, which use and development require approval by Municipal and County authorities subject to the applicable provisions of law; and

WHEREAS the Grantor has been advised that the subject Property is located adjacent to the Airport; that the present and future impacts of Airport operations might be considered annoying to users of the Property for its stated purpose and might interfere with the unrestricted use and enjoyment of the Property in its intended use; that these Airport impacts might change over time, for example and not by way of limitation by an increase in the number of aircraft using the Airport, louder aircraft, seasonal variations, and time-of-day variations; that changes in Airport, air traffic control operating procedures or in Airport layout could result in increased noise impacts; and that the Grantor's and users' own personal perceptions of the noise exposure could change and that his or her sensitivity to aircraft noise could increase;

NOW, THEREFORE, for and in consideration of the mutual covenants, agreements and conditions contained herein, the parties hereto agree as follows:

Grantor does hereby grant a permanent nuisance and avigation easement ("Easement") to Grantee over all of the following described real estate:

By virtue of this agreement, the Grantor, for and on behalf of himself and all successors in interest to any and all of the real property above described, waives as to Grantee or any successor agency legally authorized to operate said airport, any and all claims for damage of any kind whatsoever incurred as a result of aircraft using the Easement granted herein regardless of any future changes in volume or character of aircraft overflights, or changes in airport design and operating policies, or changes in air traffic control procedures.

The Grantor, for and on behalf of himself and all successors in interest to any and all of the real property above described, does further hereby covenant and agree with the Grantee, its successors and assigns, that it will not, from and after the effective date hereof, sue, prosecute, molest, or trouble the Grantee, its successors and assigns, in respect to or on account of the flight of any and all aircraft over or near the said parcel of land, or for any effects resulting wherefrom including but not limited to noise, air pollution, or any and all other possible damages to or taking of said property resulting from such flights.

These covenants and agreements shall run with the land of the Grantor, as hereinabove described, for the benefit of the Grantee, and its successors and assigns in the ownership, use and operation of the aforesaid Airport.

Grantee, its successors and assigns, shall have and hold said Easement and all rights appertaining thereto until said Airport shall be abandoned and shall cease to be used for airport purposes.

If any provision of this Easement or any amendments hereto, or the application thereof to any person, thing or circumstances is held invalid, such invalidity shall not affect the provisions or application of this Easement or such amendments that can be given effect without the invalid provisions or application, and to this end the provisions of this Easement and such amendments are declared to be severable.

IN WITNESS WHEREOF, the Grantor has hereunto set its hand and seal the day and year first above written.

_____(SEAL)

_____(SEAL)

NOTARY ACKNOWLEDGEMENT

STATE OF DELAWARE
ss.
COUNTY OF KENT

BE IT REMEMBERED that on this _____ day of _____, 20_____ personally, came before me, the subscriber, a Notary Public for the State and County aforesaid, _____, party(ies) to this Indenture, known to me personally to be such, and acknowledged this Indenture, to his/her (their) act or deed.

GIVEN under my Hand and Seal of office the day and year first above written.

_____
Notary Public, State of Delaware

My Commission Expires _____