



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

JENNIFER COHAN
SECRETARY

November 27, 2019

Ms. Betty Tustin
The Traffic Group, Inc.
104 Kenwood Court
Berlin, MD 21811

Dear Ms. Tustin:

The enclosed Traffic Impact Study (TIS) review letter for the proposed **Baywood Gardens** (Tax Parcels 234-23.00-270.00 & 273.05) development has been completed under the responsible charge of a registered professional engineer whose firm is authorized to work in the State of Delaware. They have found the TIS to conform to DelDOT's Development Coordination Manual and other accepted practices and procedures for such studies. DelDOT accepts this 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: Mr. Robert Tunnell, III, Tunnell Companies
Ms. Constance C. Holland, Office of State Planning Coordination
Ms. Janelle Cornwell, Sussex County Planning and Zoning
Mr. Andrew Parker, McCormick Taylor, Inc.
DelDOT Distribution

DelDOT Distribution

Brad Eaby, Deputy Attorney General
Shanté Hastings, Director, Transportation Solutions (DOTS)
Drew Boyce, Director, Planning
Mark Luszczyk, Deputy Director, DOTS
Michael Simmons, Assistant Director, Project Development South, DOTS
J. Marc Coté, Assistant Director, Development Coordination
T. William Brockenbrough, Jr., County Coordinator, Development Coordination
Peter Haag, Chief Traffic Engineer, Traffic, DOTS
Alastair Probert, South District Engineer, South District
Gomez Norwood, South District Public Works Manager, South District
Susanne Laws, Sussex Subdivision Review Coordinator, Development Coordination
David Dooley, Service Development Planner, Delaware Transit Corporation
Mark Galipo, Traffic Engineer, Traffic, DOTS
Anthony Aglio, Planning Supervisor, Statewide & Regional Planning
John Andrescavage, Sussex County Subdivision Reviewer, Development Coordination
Claudy Joinville, Project Engineer, Development Coordination



November 25, 2019

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

RE: Agreement No. 1773
Traffic Impact Study Services
Task No. 1A Subtask 27A – Baywood Gardens

Dear Mr. Brestel:

McCormick Taylor has completed its review of the Traffic Impact Study (TIS) for Baywood Gardens residential development prepared by The Traffic Group, Inc dated June 20, 2019. The Traffic Group prepared the report in a manner generally consistent with DelDOT's Development Coordination Manual.

The TIS evaluates the impacts of the Baywood Gardens residential development, proposed to be located on the north side of Long Neck Road (Delaware Route 23 / Sussex Road 22), east of Delaware Route 24 in the Long Neck area of Sussex County, Delaware. The proposed development would consist of 353 low-rise multi-family homes. Two full-movement access points are proposed, one along Long Neck Road across from Bayshore Drive and the other on Greens Way. The development is planned to be built in two phases, with construction anticipated to be complete in 2027.

The subject land is located on an approximately 38-acre assemblage of parcels. The land is currently split zoned as C-1 (General Commercial) and B-1 (Neighborhood Business). The developer plans to rezone the property to HR-RPC (High Density Residential, Residential Planned Community District).

DelDOT currently has one capital project within the area of study. The SR 24 at SR 5 / SR 23 Intersection Improvements Project (State Contract No. T201200903) includes the intersections of Delaware Route 24 & Indian Mission Road / Long Neck Road and Delaware Route 24 & White Pine Drive and several commercial entrances along Delaware Route 24. The need for the project was identified, in part, through DelDOT's Hazard Elimination Program (HEP). The proposed improvements associated with this project include various operational and safety improvements at and near these intersections, such as adding channelization islands at accesses, extending turn lanes, adding sidewalk, and adding bike lanes. Other proposed improvements include relocating the entrance of the Timber Acres community to align with Plaza Drive, and reconstructing both traffic signals. This project is currently in the design and right of way acquisition phase, with construction anticipated to begin in the spring of 2021.

Following submission of the TIS, DelDOT further considered the impact of traffic from several other developments in the area that were not contemplated in the original scope of the TIS. Based on this, it was determined that an additional through lane in each direction is going to be needed along Delaware Route 24. As such, the developer should make an equitable share contribution towards the cost of the both the aforementioned SR 24 at SR 5 / SR 23 Intersection Improvements Project and the future widening of Delaware Route 24, as described below in Item No. 3.

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>Existing Traffic Control</i>	<i>Situations for which deficiencies occur</i>
Long Neck Rd and Bayshore Dr / Site Access	Unsignalized	2027 with development Saturday (Case 3)
Delaware Route 24 and Long Neck Rd / Indian Mission Rd	Signalized	2027 with development Saturday (Case 3)
Delaware Route 24 and White Pine Dr	Unsignalized	2027 without development weekday PM & Saturday (Case 2); 2027 with development weekday PM & Saturday (Case 3)
Delaware Route 24 and Greens Way	Unsignalized	2027 without development weekday PM & Saturday (Case 2); 2027 with development weekday PM & Saturday (Case 3)
Delaware Route 24 and Banks Rd	Unsignalized	2027 without development weekday AM, PM & Saturday (Case 2); 2027 with development weekday AM, PM & Saturday (Case 3)
Delaware Route 24 and Holly Lake Rd	Unsignalized	2018 Existing Saturday (Case 1); 2027 without development weekday PM & Saturday (Case 2); 2027 with development weekday PM & Saturday (Case 3)
Indian Mission Rd and E. Stonewater Creek Blvd / Surf Board Blvd	Unsignalized	2027 with development weekday AM & Saturday (Case 3)
Indian Mission Rd and Cannon Rd	Unsignalized	2027 without development weekday AM, PM & Saturday (Case 2); 2027 with development weekday AM, PM & Saturday (Case 3)
Indian Mission Rd and Harmons Hill Rd / Phillips Branch Rd	Unsignalized	2027 without development weekday AM, PM & Saturday (Case 2); 2027 with development weekday AM, PM & Saturday (Case 3)

Long Neck Road and Bayshore Drive / Site Access

This unsignalized intersection experiences LOS deficiencies in the Saturday midday peak hour during 2027 with development (with the addition of the site driveway as the fourth leg of the intersection). The Saturday deficiencies are for the northbound Bayshore Drive (LOS F) and southbound site driveway (LOS E) approaches, with 95th percentile queue lengths of approximately two vehicles (50 feet) southbound and four vehicles (100 feet) northbound. Because the deficiencies are only anticipated to occur during the summer Saturday peak hour, and the queue lengths are relatively short, no additional improvements are recommended at this intersection beyond those described below in Item No. 1.

Delaware Route 24 and Long Neck Road / Indian Mission Road

This signalized intersection experiences LOS deficiencies in the Saturday midday peak hour during 2027 with development. To mitigate the delays and queues, the developer should contribute toward DelDOT's SR 24 at SR 5 / SR 23 Intersection Improvements Project as described below in Item No. 3.

Delaware Route 24 and White Pine Drive

This unsignalized intersection experiences LOS deficiencies in the weekday PM and Saturday midday peak hours during the future scenarios without Baywood Gardens and with Baywood Gardens. The deficiencies are for the westbound White Pine Drive approach, which is anticipated to operate at LOS E during those peak hours, with 95th percentile queue lengths of less than two vehicles (50 feet). This intersection is included in DelDOT's SR 24 at SR 5 / SR 23 Intersection Improvements Project, with improvements to include a southbound left-turn lane on Delaware Route 24 at White Pine Drive and a two-way center-turn-lane on Delaware Route 24 south of White Pine Drive. The developer is recommended to contribute toward the DelDOT project as described below in Item No. 3, and will not be required to implement additional improvements beyond those which DelDOT has already evaluated and designed for this location.

Delaware Route 24 and Greens Way

This unsignalized intersection experiences LOS deficiencies in the weekday PM and Saturday midday peak hours during the future scenarios without Baywood Gardens and with Baywood Gardens. The deficiencies are for the westbound Greens Way approach, which is anticipated to operate at LOS E during the future PM peak hours and LOS F during the future Saturday peak hours, with 95th percentile queue lengths of less than two vehicles (50 feet). The LOS F deficiencies are only anticipated to occur during the summer Saturday peak hour, the queue lengths are relatively short, and this intersection already has separate turn lanes on each approach. Therefore, no improvements are recommended at this intersection.

Delaware Route 24 and Banks Road

This unsignalized intersection experiences LOS deficiencies in the weekday AM, PM and Saturday midday peak hours during the future scenarios without Baywood Gardens and with Baywood Gardens. All LOS deficiencies would occur on the westbound Banks Road approach. It is anticipated that the projected LOS deficiencies would be resolved by installing a signal at this intersection when warranted, as described below in Item No. 4. The developer should perform a Traffic Signal Justification Study at a later time when required by DelDOT to determine if and when the signal is warranted.

Delaware Route 24 and Holly Lake Road

This unsignalized intersection experiences LOS deficiencies in the Saturday midday peak hour under all scenarios and the weekday PM peak hour during both 2027 scenarios. The deficiencies are for the stop-controlled eastbound Holly Lake Road approach, which has one shared lane for lefts and rights. This approach operates at LOS E during the existing Saturday peak hour and at LOS F during all 2027 scenarios (PM and Saturday peak hours). As described below in Item No. 5, the developer should contribute to an improvement that is recommended for implementation by

the Keastone Bay development project, which would add a separate right-turn lane on the eastbound Holly Lake Road approach to alleviate delays and reduce queue lengths. While the added turn lane would not completely eliminate the LOS deficiencies, it is anticipated to significantly reduce delays and queue lengths on eastbound Holly Lake Road.

Indian Mission Road and E. Stonewater Creek Boulevard / Surf Board Boulevard

This unsignalized intersection experiences LOS deficiencies in the weekday AM and Saturday midday peak hours under the 2027 with Baywood Gardens scenario. The eastbound approach operates at LOS E during the AM peak hour and the westbound approach operates at LOS E during the Saturday peak hour. Anticipated 95th percentile queue lengths on the 2027 with development scenario are always less than one vehicle (25 feet) on the low-volume eastbound approach, and always less than three vehicles (75 feet) on the westbound approach. This intersection already has separate turn lanes on each approach. For all of these reasons, no improvements are recommended at this intersection.

Indian Mission Road and Cannon Road

This unsignalized intersection experiences LOS deficiencies in the weekday AM, PM and Saturday midday peak hours during the future scenarios without Baywood Gardens and with Baywood Gardens. The LOS deficiencies would occur on the eastbound Cannon Road approach, which is anticipated to operate at LOS F during each peak hour of all the future scenarios. The projected LOS deficiencies would be resolved by installing a traffic signal at this intersection, as described below in Item No. 6.

Indian Mission Road and Harmons Hill Road / Phillips Branch Road

This unsignalized intersection experiences LOS deficiencies in the weekday AM, PM and Saturday midday peak hours during the future scenarios without Baywood Gardens and with Baywood Gardens. The LOS deficiencies would occur on both the eastbound Harmons Hill Road and westbound Phillips Branch Road approaches, which are anticipated to operate at LOS F during each peak hour of all the future scenarios. Future 95th percentile queue lengths would be greater than ten vehicles (250 feet) on each minor street approach. The projected LOS deficiencies would be resolved by installing a traffic signal at this intersection, as described below in Item No. 7.

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

1. The developer should construct a full-movement site access on Long Neck Road. This proposed site driveway should be constructed directly across from Bayshore Drive. The proposed configuration is shown in the table below.

Approach	Current Configuration	Proposed Configuration
Northbound Bayshore Drive	One shared left/right-turn lane	One shared left/through/right-turn lane
Southbound Site Access	Does not exist	One shared left-turn/through lane and one right-turn lane
Eastbound Long Neck Road	One through lane and one right-turn lane	One left lane, one through lane and one right lane
Westbound Long Neck Road	One shared left-turn/through lane and one bypass lane	One left lane, one through lane and one right lane

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

Approach	Left-Turn Lane	Right-Turn Lane
Northbound Bayshore Drive	N/A	N/A
Southbound Site Access	N/A	60 feet *
Eastbound Long Neck Road	195 feet **	190 feet **
Westbound Long Neck Road	120 feet **	190 feet **

* Initial turn-lane length based on storage length per queuing analysis, with 50-foot minimum.

** Initial turn-lane length based on DelDOT's *Auxiliary Lane Worksheet*.

2. The developer should construct a full-movement site access on Greens Way. This proposed driveway should be located approximately halfway between Long Neck Road and Long Spoon Way. The proposed configuration is shown in the table below.

Approach	Current Configuration	Proposed Configuration
Northbound Greens Way	One through lane	One shared left-turn/through lane
Southbound Greens Way	One through lane	One shared through/right turn-lane
Eastbound Site Access	Does not exist	One shared left/right turn-lane

3. The developer should coordinate with DelDOT regarding an equitable share contribution toward DelDOT's SR 24 at SR 5 / SR 23 Intersection Improvements Project. The amount of the contribution should be determined through coordination with DelDOT's Development Coordination Section. As described on page 2, the contribution amount should account for the cost of both the DelDOT project as presently planned and the future widening of Delaware Route 24 to include an additional through lane in each direction.
4. The developer should enter into a traffic signal agreement with DelDOT for design and construction of a future traffic signal for the intersection of Delaware Route 24 and Banks Road. The agreement should include pedestrian signals, crosswalks, interconnection, and ITS equipment such as CCTV cameras at DelDOT's discretion. The developer should coordinate with DelDOT on the design details and implementation of the traffic signal. The agreement should provide for installation and activation of the signal at DelDOT's discretion.

Entering into a Traffic Signal Revolving Fund agreement for this intersection is an option instead of the traditional traffic signal agreement. The developer should coordinate with DelDOT's Development Coordination Section regarding the appropriate type of agreement needed and details thereof.

5. The developer should coordinate with DelDOT regarding an equitable share contribution toward improvements at the intersection of Delaware Route 24 and Holly Lake Road. An improvement has been recommended for implementation by the Keastone Bay development project, which consists of adding a separate right-turn lane on the eastbound Holly Lake Road approach. This eastbound right-turn lane is initially recommended to be 125 feet in length (excluding taper). The developer should coordinate with DelDOT's Development Coordination Section to determine details for the contribution and design.

6. The developer should enter into a traffic signal agreement with DelDOT for design and construction of a future traffic signal for the intersection of Indian Mission Road and Cannon Road. The agreement should include pedestrian signals, crosswalks, interconnection, and ITS equipment such as CCTV cameras at DelDOT's discretion. The developer should coordinate with DelDOT on the design details and implementation of the traffic signal. The agreement should provide for installation and activation of the signal at DelDOT's discretion.

Entering into a Traffic Signal Revolving Fund agreement for this intersection is an option instead of the traditional traffic signal agreement. The developer should coordinate with DelDOT's Development Coordination Section regarding the appropriate type of agreement needed and details thereof.

7. The developer should enter into a traffic signal agreement with DelDOT for design and construction of a future traffic signal for the intersection of Indian Mission Road and Harmons Hill Road / Phillips Branch Road. The agreement should include pedestrian signals, crosswalks, interconnection, and ITS equipment such as CCTV cameras at DelDOT's discretion. The developer should coordinate with DelDOT on the design details and implementation of the traffic signal. The agreement should provide for installation and activation of the signal at DelDOT's discretion.

Entering into a Traffic Signal Revolving Fund agreement for this intersection is an option instead of the traditional traffic signal agreement. The developer should coordinate with DelDOT's Development Coordination Section regarding the appropriate type of agreement needed and details thereof.

8. The following bicycle, pedestrian, and transit improvements should be included:
 - a. Adjacent to the proposed right-turn lane on westbound Long Neck Road at the proposed site access opposite Bayshore Drive, 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.
 - b. Appropriate bicycle symbols, directional arrows, pavement markings, and signing should be included along bicycle facilities and turn lanes within the project limits.
 - c. Utility covers should be made flush with the pavement.
 - d. If clubhouses or other community facilities are constructed as shown on the site plan, bicycle parking should be provided near building entrances. Where building architecture provides for an awning, other overhang, or indoor parking, the bicycle parking should be covered.

- e. A minimum 15-foot wide easement from the edge of the right-of-way should be dedicated to DelDOT within the site frontage along Long Neck Road.
- f. Within the easement along Long Neck Road, a minimum of a ten-foot wide shared-use path that meets current AASHTO and ADA standards should be constructed along the site frontage. The shared-use path should be constructed from the western edge of the site frontage (approximately 750 feet west of the proposed site access) to the east side of Greens Way, where it should connect to the existing path. Crosswalks will be required across the proposed site access and across Greens Way. The shared-use path should have a minimum of a five-foot buffer from the roadway. At the western end, the shared-use path should connect to the limits of the SR 24 at SR 5 / SR 23 Intersection Improvements Project in accordance with DelDOT's *Shared-Use Path and/or Sidewalk Termination Reference Guide* dated August 1, 2018. The developer should coordinate with DelDOT's Development Coordination Section to determine exact location and details of the shared-use path connections at the property boundaries.
- g. ADA compliant curb ramps and crosswalks should be provided at all pedestrian crossings within the development. Type 3 curb ramps are discouraged.
- h. 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 five 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 to the proposed shared-use path along Long Neck Road, as well as to other surrounding residential developments via internal connections.
- i. Where internal sidewalks are located alongside of parking spaces, a buffer should be added to prevent vehicular overhang onto the sidewalk.
- j. The developer should coordinate with the Delaware Transit Corporation (DTC) regarding the possibility of including a bus stop to be located along the Long Neck Road site frontage.

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://deldot.gov/Publications/manuals/de_mutcd/index.shtml.



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 (610) 640-3500 or through e-mail at ajparker@mccormicktaylor.com if you have any questions concerning this review.

Sincerely,

McCormick Taylor, Inc.

A handwritten signature in black ink, appearing to read "Andrew J. Parker", with a long, sweeping horizontal line extending from the end of the signature.

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

Enclosure

General Information

Report date: June 20, 2019

Prepared by: The Traffic Group, Inc.

Prepared for: Baywood LLC

Tax parcel: 234-23.00-270.00, and 273.05

Generally consistent with DelDOT's Development Coordination Manual: Yes

Project Description and Background

Description: The proposed Baywood Gardens would consist of 353 low-rise multi-family homes.

Location: The Baywood Gardens development is proposed to be located on the north side of Long Neck Road (Delaware Route 23 / Sussex Road 22), east of Delaware Route 24 in the Long Neck area of Sussex County, Delaware. A site location map is included on Page 11.

Amount of land to be developed: approximately 38 acres

Land use approval(s) needed: Subdivision and rezoning approval. The land is currently split zoned as C-1 (General Commercial) and B-1 (Neighborhood Business). The developer plans to rezone the property to HR-RPC (High Density Residential, Residential Planned Community District).

Proposed completion date: The development will be built in two phases, with construction anticipated to be complete in 2027

Proposed access locations: Two full movement access points are proposed, one along Long Neck Road across from Bayshore Drive and the other on Greens Way.

Daily Traffic Volumes (per DelDOT Traffic Summary 2018):

- 2018 Average Annual Daily Traffic on Long Neck Road: 11,338



2015 Delaware Strategies for State Policies and Spending

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

The proposed Baywood Gardens development is located within an Investment Level 1 and 2 area.

Investment Level 1

Areas of the state designated as Investment Level 1 are most prepared for growth and are where the state can make cost-effective infrastructure investments in schools, roads, and public safety. In these areas, state investments and policies should support and encourage a wide range of uses and densities, promote a variety of transportation options, foster efficient use of existing public and private investments, and enhance community identity and integrity. Investment Level 1 areas are often municipalities, towns, or urban/urbanizing places. Density is generally higher than in the surrounding areas. Overall, it is the state's intent to use its spending and management tools to maintain and enhance community character, to promote well-designed and efficient new growth, and to facilitate redevelopment in Investment Level 1 Areas.

Investment Level 2

Investment Level 2 reflects areas where growth is anticipated by local, county, and State plans in the near-term future. This investment level has many diverse characteristics. These areas can be composed of less developed areas within municipalities, rapidly growing areas in the counties that have or will have public water and wastewater services and utilities, areas that are generally adjacent to or near Investment Level 1 Areas, smaller towns and rural villages that should grow consistently with their historic character, and suburban areas with public water, wastewater, and utility services. These areas have been shown to be the most active portion of Delaware's developed landscape. They serve as transition areas between Level 1 and the more open, less populated areas. They generally contain a limited variety of housing types, predominantly detached single-family dwellings.

In Investment Level 2, state investments and policies should support and encourage a wide range of uses and densities, promote other transportation options, foster efficient use of existing public and private investments, and enhance community identity and integrity.

Investments should encourage departure from the typical single-family-dwelling developments and promote a broader mix of housing types and commercial sites encouraging compact, mixed-use development where applicable. Overall, the State's intent is to use spending and management tools to promote well-designed development in these areas. Such development provides for a variety of housing types, user-friendly transportation systems, and provides essential open spaces and recreational facilities, other public facilities, and services to promote a sense of community. Investment Level 2 areas are prime locations for designating "pre-permitted areas."

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

The proposed Baywood Gardens Residential development is comprised of a 38.17 acre assemblage of parcels with 353 low rise multi-family homes located within an Investment Levels 1 and 2 area. Investment Levels 1 and 2 reflect areas where growth is anticipated in the near-term future. Developments in these areas should generally provide a mix of higher-density land uses, a variety of housing types, promote walking/cycling/transit, and make efficient use of existing public infrastructure/services. As such, the proposed development generally appears to comply with the guidelines of the 2015 "Strategies for State Policies and Spending."

Comprehensive Plan

Sussex County Comprehensive Plan:

(Source: Sussex County Comprehensive Plan, March 2019)

The Sussex County Comprehensive Plan 2045 Future Land Use Map indicates that the proposed development parcels are within a combination of Coastal Area and Commercial Area. Both are categorized as a Growth Areas.

Coastal Area: Sussex County has designated the areas around Rehoboth Bay, Indian River Bay, and Little Assawoman Bay (the inland bays) as Coastal Areas. Coastal Areas generally encompass areas on the south-eastern side of Sussex County within what was previously referred to as the Environmentally Sensitive Developing Areas of prior Comprehensive Plans. The updated name more accurately reflects the function of this land use classification. While the Coastal Area is a Growth Area, additional considerations should be taken into account in this Area that may not apply in other Growth Areas.

The Coastal Area designation is intended to recognize two characteristics. First, this region is among the most desirable locations in Sussex County for new housing, as is reflected in new construction data and real estate prices. Second, this region contains ecologically important and sensitive characteristics as well as other coastal lands which help to absorb floodwaters and provide extensive habitat for native flora and fauna. This area also has significant impact upon water quality within the adjacent bays and inlets as well as upon natural the region's various habitats. And, these factors are themselves part of the reason that this Area is so desirable- making the protection of them important to both the environment and the economy.

The County has significant initiatives to extend public sewer service to replace inadequate on-site systems. Careful control of stormwater runoff is also an important concern in keeping sediment and other pollutants out of the Inland Bays.

The challenge in this region is to safeguard genuine natural areas and mitigate roadway congestion without stifling the tourism and real estate markets which: a) provide many jobs; b) create business for local entrepreneurs; and c) help keep local tax rates low.

The following guidelines should apply to future growth in Coastal Areas:

- **Permitted Uses** – Coastal Areas are areas that can accommodate development provided special environmental concerns are addressed. A range of housing types should be permitted in Coastal 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 along arterial roads. Appropriate mixed-use development should also be allowed. In doing so, careful mixtures of homes with light commercial, office 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.
- **Densities** – Sussex County's base density of 2 units per acre is appropriate throughout this classification; however, medium and higher density (4-12 units per acre) can be appropriate in certain locations. Medium and higher density could be supported in areas: where there is central water and sewer; near sufficient commercial uses and employment centers; where it is in keeping with the character of the area; where it is along a main road or at/or near a major intersection; where there is adequate Level of Service; or where other considerations exist that are relevant to the requested project and density. A clustering option permitting smaller lots and additional flexibility in dimensional standards is encouraged on tracts of a certain minimum size, provided significant permanent common open space is preserved and the development is connected to central water and sewer service. The preservation of natural resources or open space is strongly encouraged in this land use classification. The County should revisit environmental protection in the Coastal Areas.

Specific regulations governing cluster developments are designated by zoning district. There currently is an option where density can be increased with optional density bonuses for certain zoning districts. Those optional bonuses may involve payment of fees that fund permanent land preservation elsewhere in the County, or other options. RPC's are encouraged to allow for a mix of housing types and to preserve open space and natural areas/resources. Cluster development that allows for smaller lots and flexibility in dimensional standards is encouraged if the developer uses a cluster option that results in permanent preservation of a substantial percentage of the tract and/or natural areas/resources. Master planning should be encouraged especially for large-scale developments on large parcels or groups of parcels, higher density and mixed-use developments to provide flexibility in site design.

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 two units per acre provided a septic permit can be approved.

Commercial Area: Commercial Areas include concentrations of retail and service uses that are mainly located along arterials, and highways. As opposed to small, traditional downtown areas that are often historic and pedestrian-friendly, Commercial Areas include commercial corridors, shopping centers, and other medium and large commercial vicinities geared towards vehicular traffic. In addition to primary shopping destinations, this area would also be the appropriate place to locate hotels, motels, car washes, auto dealerships, and other medium and larger scale commercial uses not primarily targeted to the residents of immediately adjacent residential areas. These more intense uses should be located along main roads or near major intersections. Institutional and commercial uses may be appropriate depending on surrounding uses. Mixed-use buildings may also be appropriate for these areas.

Proposed Development's Compatibility with Comprehensive Plan: The proposed Baywood Gardens commercial development is planned to be developed as 353 low rise multi-family homes on a 38.17-acre assemblage of parcels. The site is currently split zoned C-1 (General Commercial) and B-1 (Neighborhood Business). The developer plans to rezone the property to HR-RPC (High Density Residential, Residential Planned Community District). The purpose of these districts is to permit variety in housing types and provide for residential densities appropriate for areas which are or will be served by public sanitary sewer and water systems and which are well-located with respect to major thoroughfares, shopping facilities and centers of employment. The proposed development appears to comply with the characteristics of High Density Residential in general as well as the *Permitted Uses* for the Coastal Area.

While the type of use proposed for this site appears to be permitted in this location by the Comprehensive Plan, there are specific regulations that must be followed. For these reasons and due to a density of greater than 2 units per acre, this development raises questions regarding consistency with Sussex County regulations; therefore additional discussion may be required.

Relevant Projects in the DelDOT Capital Transportation Program

DelDOT currently has one capital project within the area of study. The SR 24 at SR 5 / SR 23 Intersection Improvements Project (State Contract No. T201200903) includes the intersections of Delaware Route 24 & Indian Mission Road / Long Neck Road and Delaware Route 24 & White Pine Drive and several commercial entrances along Delaware Route 24. The need for the project was identified, in part, through DelDOT's Hazard Elimination Program (HEP). The proposed improvements associated with this project include various operational and safety improvements at and near these intersections, such as adding channelization islands at accesses, extending turn lanes, adding sidewalk, and adding bike lanes. Other proposed improvements include relocating the entrance of the Timber Acres community to align with Plaza Drive, and reconstructing both traffic signals. This project is currently in the design and right of way acquisition phase, with construction anticipated to begin in the spring of 2021.

Trip Generation

Trip generation for the proposed development was computed using comparable land uses and equations contained in Trip Generation, Tenth 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:

- 353 Low Rise Multi-Family Homes (ITE Land Use Code 220)

Table 1
BAYWOOD GARDENS PEAK HOUR TRIP GENERATION

Land Use	Weekday AM Peak Hour of Adjacent Street			Weekday PM Peak Hour of Adjacent Street			SAT Peak Hour		
	In	Out	Total	In	Out	Total	In	Out	Total
353 Low Rise Multi-Family Houses	36	122	158	114	67	181	188	160	348

Table 2
BAYWOOD GARDENS DAILY TRIP GENERATION

Land Use	Weekday Daily		
	In	Out	Total
353 Unit Low Rise Multi-Family Housing	1,314	1,314	2,628

Overview of TIS

Intersections examined:

- 1) Long Neck Road & Bayshore Drive / Site Access
- 2) Greens Way & Site Access
- 3) Long Neck Road & Greens Way
- 4) Delaware Route 24 & Indian Mission Road / Long Neck Road
- 5) Delaware Route 24 & White Pine Drive
- 6) Delaware Route 24 & Greens Way
- 7) Delaware Route 24 & Banks Road (Sussex Road 298)
- 8) Delaware Route 24 & Holly Lake Road (Sussex Road 301)
- 9) Indian Mission Road & E. Stonewater Creek Boulevard / Surf Board Boulevard
- 10) Indian Mission Road & Cannon Road (Sussex Road 307)
- 11) Indian Mission Road & Harmons Hill Road / Phillips Branch Road (Sussex Road 302)

Conditions examined:

- 1) 2018 existing conditions (case 1)
- 2) 2027 without Baywood Gardens development (case 2)
- 3) 2027 with Baywood Gardens development (case 3)

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

Committed developments considered:

- 1) Bridlewood at Baywood (350 single-family detached houses)
- 2) Pelican Point (400 single-family detached houses; 121 already built)
- 3) Independence (f.k.a Indigo Run) (450 single-family detached houses; 284 already built)
- 4) Acadia (f.k.a. Insight at Lewes Point) (238 single-family detached houses)
- 5) Headwater Cove (f.k.a. The Woods at Burton Pond) (164 single-family detached houses)
- 6) Burton Pond (265 single-family detached houses and 100 multi-family mid-rise units)
- 7) Deerbrook (120 single-family detached houses)
- 8) Peninsula Lakes (588 single-family detached houses (143 already built) and 72 multi-family low-rise units)
- 9) Baylis Estates (136 single-family detached houses)
- 10) Peninsula Square (40,000 square feet of retail space, 15,000 square feet of medical office space, a 6,200 square-foot high turn-over sit-down restaurant, 144 apartments, and a 100-room hotel)

Intersection Descriptions

1) Long Neck Road & Bayshore Drive / Site Access

Type of Control: Three-leg stop-controlled intersection; proposed four-leg stop controlled intersection

Northbound approach: (Bayshore Drive) existing one shared left/right-turn lane, stop controlled; proposed one shared left/through/right-turn lane, stop controlled

Southbound approach: (Site Access) proposed one shared left-turn/through lane and one right-turn lane, stop controlled

Eastbound approach: (Long Neck Road) existing one through lane and one right-turn lane; proposed one left-turn lane, one through lane and one right-turn lane

Westbound approach: (Long Neck Road) existing one shared left-turn/through lane and one bypass lane; proposed one shared left-turn/through lane and one right-turn lane

2) Greens Way & Site Access

Type of Control: no existing intersection; proposed three-leg stop controlled intersection

Northbound approach: (Greens Way) One shared left-thru lane

Southbound approach: (Greens Way) One shared thru-right lane

Eastbound approach: (Site Access) One shared left-right turn lane, stop controlled

3) Long Neck Road & Greens Way

Type of Control: One-way stop (T-intersection)

Southbound approach: (Greens Way) One left-turn lane, one channelized right-turn lane, stop controlled

Eastbound approach: (Long Neck Road) One left-turn lane, one thru lane

Westbound approach: (Long Neck Road) One thru lane, one right-turn lane

4) Delaware Route 24 & Indian Mission Road / Long Neck Road

Type of Control: signalized four-leg intersection

Northbound approach: (Delaware Route 24) One left-turn lane, one thru lane, one channelized right-turn lane

Southbound approach: (Delaware Route 24) One left-turn lane, one thru lane, one channelized right-turn lane

Eastbound approach: (Indian Mission Road) One left-turn lane, one thru lane, one channelized right-turn lane

Westbound approach: (Long Neck Road) One left turn lane, one thru lane, one channelized right-turn lane

5) Delaware Route 24 & White Pine Drive

Type of Control: One-way stop (T-intersection)

Northbound approach: (Delaware Route 24) One shared thru-right turn lane

Southbound approach: (Delaware Route 24) One shared left-thru lane, one bypass lane

Eastbound approach: (White Pine Drive) One shared left-right turn lane, stop controlled

6) Delaware Route 24 & Greens Way

Type of Control: Two-way stop-controlled intersection

Northbound approach: (Delaware Route 24) One left-turn lane, one thru lane, one channelized right-turn lane

Southbound approach: (Delaware Route 24) One left-turn lane, one thru lane, one channelized right-turn lane

Eastbound approach: (Greens Way) One shared left-thru lane, one channelized right turn lane, stop controlled

Westbound approach: (Greens Way) One shared left-thru lane, one channelized right turn lane, stop controlled

7) Delaware Route 24 & Banks Road

Type of Control: One-way stop (T-intersection)

Northbound approach: (Delaware Route 24) One thru lane, one right-turn lane

Southbound approach: (Delaware Route 24) One left-turn lane, one thru lane

Westbound approach: (Banks Road) One left-turn lane, one right-turn lane, stop controlled

8) Delaware Route 24 & Holly Lake Road

Type of Control: One-way stop (T-intersection)

Northbound approach: (Delaware Route 24) One shared left-thru lane

Southbound approach: (Delaware Route 24) One thru lane, one right-turn lane

Eastbound approach: (Holly Lake Road) One shared left-right turn lane, stop controlled

9) Indian Mission Road & E. Stonewater Creek Boulevard / Surf Board Boulevard

Type of Control: Two-way stop-controlled intersection

Northbound approach: (Indian Mission Road) One left-turn lane, one thru lane, one right-turn lane

Southbound approach: (Indian Mission Road) One left-turn lane, one thru lane, one right-turn lane

Eastbound approach: (E. Stonewater Creek Boulevard) One shared left-thru lane, one right-turn lane, stop controlled

Westbound approach: (Surf Board Boulevard) One shared left-thru lane, one right-turn lane, stop controlled

10) Indian Mission Road & Cannon Road

Type of Control: One-way stop (T-intersection)

Northbound approach: (Indian Mission Road) One shared left-thru-right lane

Southbound approach: (Indian Mission Road) One shared left-thru-right lane

Eastbound approach: (Cannon Road) One shared left-thru-right lane, stop controlled

Westbound approach: (driveway) One shared left-thru-right lane, stop controlled

11) Indian Mission Road & Harmons Hill Road / Phillips Branch Road

Type of Control: Two-way stop-controlled intersection

Northbound approach: (Indian Mission Road) One shared left-thru-right lane

Southbound approach: (Indian Mission Road) One shared left-thru-right lane

Eastbound approach: (Harmons Hill Road / Phillips Branch Road) One shared left-thru-right lane, stop controlled

Westbound approach: (Harmons Hill Road / Phillips Branch Road) One shared left-thru-right lane, stop controlled

Safety Evaluation

Crash Data: Review of crash data is not included at this time.

Sight Distance: The study area generally consists of straight and flat roadways and there are few potential visual obstructions. Sight distance appears adequate throughout the study area. No problematic sight distance issues have been reported or indicated by crash data.

Transit, Pedestrian, and Bicycle Facilities

Existing transit service: The Traffic Group contacted and representative from DART, Delaware Transit Corporation (DTC) to determine existing and planned transit services near the proposed development. The nearest existing transit service is DART bus route 215, which travels along Delaware Route 24 and on Long Neck Road directly past the site. There are currently bus stops located at Delaware Route 24 & Holly Lake Road, Long Neck Road & Greens Way, and Long Neck Road & Bayshore Drive.

Planned transit service: Based on coordination with DTC representatives, there are plans for bus stops along Delaware Route 24 near Long Neck Road / Indian Mission Road. It is requested that

if any improvements are made to the locations with existing or future transit service, that the bus stops be brought up to DelDOT M-9 standards.

Existing bicycle and pedestrian facilities: According to the Sussex County bicycle map, Delaware Route 24 and Long Neck Road are classified as Regional Bicycle Routes. Both roads are noted as high-traffic roads with shoulders on both sides. Existing bicycle facilities in the study area include bike lanes along eastbound Long Neck Road, along both directions of Indian Mission Road, along Delaware Route 24 at Greens Way, and in the northbound, southbound and eastbound directions at Delaware Route 24 & Long Neck Road / Indian Mission Road.

Existing pedestrian facilities in the study area include sidewalk along the south side of Long Neck Road at Bayshore Drive and along both sides of Indian Mission Road near Stonewater Creek Boulevard / Surf Board Boulevard.

Planned bicycle and pedestrian facilities: The Traffic Group contacted a representative from DelDOT's Statewide and Regional Planning Section regarding bicycle and pedestrian facilities. A multi-use path is requested along the frontage of Long Neck Road. A crosswalk is requested across Greens Way and a connection to the existing path on the east side of the property.

Previous Comments

In a review letter dated March 28, 2019, DelDOT indicated that the revised Preliminary TIS was acceptable contingent upon modifications to a number of exhibits.

It appears that all substantive comments from DelDOT's TIS Scoping Memorandum, Traffic Count Review, Preliminary TIS Review, Revised Preliminary TIS Review, and other correspondence were addressed in the Final TIS submission.

General HCS Analysis Comments

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

- 1) For signalized intersections, the TIS and McCormick Taylor applied heavy vehicle factors (HV) by lane group using existing data. The TIS and McCormick Taylor generally assumed future HV to be the same as existing HV at all intersections. There are some discrepancies between the TIS and McCormick Taylor's heavy vehicle factor calculations. Both the TIS and McCormick Taylor assumed 3% HV for future movements to and from the proposed site access points (as per DelDOT's Development Coordination Manual).
- 2) For existing conditions, the TIS and McCormick Taylor determined and utilized overall intersection peak hour factors (PHF). The TIS and McCormick Taylor assumed future PHF to be the same as existing PHF at all existing intersections. At the site entrances, future PHF were based on DelDOT's Development Coordination Manual. The TIS and McCormick Taylor used different PHF at Indian Mission Road & Stonewater Creek Road (AM Peak) and Delaware Route 24 & Greens Way (all scenarios).

- 3) For analyses of all intersections, the TIS assumed 0% grade for all movements. McCormick Taylor utilized field data for existing grades and assumed future grades to be the same.
- 4) The TIS and McCormick Taylor used different Right Turn on Red and pedestrian volumes when analyzing some intersections. All volumes for McCormick Taylor's analyses were taken directly from traffic counts in Appendix A of the TIS.
- 5) Some discrepancies exist between the TIS and McCormick Taylor's analysis for eastbound volumes at Greens Way & Site Access. All volumes for McCormick Taylor's 2027 Total Peak Hour analyses were taken directly from Exhibit 12.
- 6) Some discrepancies exist between the TIS and McCormick Taylor's lane usage assumed for analysis. All lane usage information for McCormick Taylor's analyses was taken from Exhibit 2 of the TIS, and backchecked with field view information.
- 7) The TIS and McCormick Taylor used different signal timings when analyzing the signalized intersections in some cases.
- 8) For analyses of signalized intersections, the TIS and McCormick Taylor used a base saturation flow rate of 1,750 pc/hr/ln per DelDOT's Development Coordination Manual for all peak hours.

Table 3
PEAK HOUR LEVELS OF SERVICE (LOS)
based on Traffic Impact Study for Baywood Gardens
Report dated June 20, 2019
Prepared by The Traffic Group

Unsignalized Intersection ¹ Two-Way Stop Control	LOS per TIS			LOS per McCormick Taylor		
Long Neck Rd & Bayshore Dr / Site Access	Weekday AM	Weekday PM	Saturday Mid-Day	Weekday AM	Weekday PM	Saturday Mid-Day
2018 Existing (case 1)						
Westbound Long Neck Road – Left	A (8.0)	A (8.4)	A (8.7)	A (8.0)	A (8.5)	A (8.7)
Northbound Bayshore Drive	B (15.0)	B (13.7)	C (21.1)	C (16.0)	B (14.4)	C (23.6)
2027 Background Traffic (case 2)						
Westbound Long Neck Road – Left	A (8.1)	A (8.7)	A (9.0)	A (8.1)	A (8.7)	A (9.0)
Northbound Bayshore Drive	C (17.2)	C (15.6)	D (26.0)	C (18.7)	C (16.6)	D (30.1)
2027 Total Traffic (case 3)						
Eastbound Long Neck Road – Left	A (8.6)	A (8.4)	A (9.7)	A (8.6)	A (8.4)	A (9.7)
Westbound Long Neck Road – Left	A (8.1)	A (8.7)	A (9.0)	A (8.1)	A (8.7)	A (9.0)
Northbound Bayshore Drive	D (27.6)	C (23.0)	F (122.5)	D (31.3)	D (25.5)	F (176.4)
Southbound Baywood Gardens Access	C (16.1)	C (15.4)	E (36.2)	C (16.1)	C (15.4)	E (36.3)

¹ For both unsignalized and signalized analyses, the numbers in parentheses following levels of service are average delay per vehicle, measured in seconds. For signalized analyses, LOS analysis results are given for only the overall intersection delay.

Table 4
PEAK HOUR LEVELS OF SERVICE (LOS)
based on Traffic Impact Study for Baywood Gardens
Report dated June 20, 2019
Prepared by The Traffic Group

Unsignalized Intersection ² Two-Way Stop Control	LOS per TIS			LOS per McCormick Taylor		
	Weekday AM	Weekday PM	Saturday Mid-Day	Weekday AM	Weekday PM	Saturday Mid-Day
Greens Way & Site Access						
2027 Total Traffic (case 3)						
Eastbound Site Access	A (8.5)	A (8.5)	A (8.7)	A (8.8)	A (8.8)	A (9.1)
Northbound Greens Way – Left	A (7.3)	A (7.3)	A (7.4)	A (7.3)	A (7.3)	A (7.4)

² For both unsignalized and signalized analyses, the numbers in parentheses following levels of service 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 Baywood Gardens
Report dated June 20, 2019
Prepared by The Traffic Group

Unsignalized Intersection ³ Two-Way Stop Control	LOS per TIS			LOS per McCormick Taylor		
	Weekday AM	Weekday PM	Saturday Mid-Day	Weekday AM	Weekday PM	Saturday Mid-Day
Long Neck Rd & Greens Way						
2018 Existing (case 1)						
Eastbound Long Neck Road – Left	A (8.6)	A (8.0)	A (8.7)	A (8.6)	A (8.0)	A (8.7)
Southbound Greens Way	B (13.6)	B (14.3)	C (19.4)	B (13.5)	B (14.3)	C (19.5)
2027 Background Traffic (case 2)						
Eastbound Long Neck Road – Left	A (8.8)	A (8.2)	A (9.0)	A (8.9)	A (8.2)	A (9.0)
Southbound Greens Way	C (15.0)	C (16.4)	C (23.5)	B (15.0-)	C (16.5)	C (23.6)
2027 Total Traffic (case 3)						
Eastbound Long Neck Road – Left	A (8.9)	A (8.2)	A (9.2)	A (8.9)	A (8.2)	A (9.2)
Southbound Greens Way	C (15.5)	C (17.1)	D (25.8)	C (15.4)	C (17.2)	D (25.9)

³ For both unsignalized and signalized analyses, the numbers in parentheses following levels of service are average delay per vehicle, measured in seconds. For signalized analyses, LOS analysis results are given for only the overall intersection delay.

Table 6
PEAK HOUR LEVELS OF SERVICE (LOS)
based on Traffic Impact Study for Baywood Gardens
Report dated June 20, 2019
Prepared by The Traffic Group

Signalized Intersection ⁴	LOS per TIS			LOS per McCormick Taylor		
	Weekday AM	Weekday PM	Saturday Mid-Day	Weekday AM	Weekday PM	Saturday Mid-Day
DE 24 & Long Neck Rd / Indian Mission Rd						
2018 Existing (case 1)	C (23.9)	C (25.3)	C (34.4)	C (21.7)	C (23.2)	C (30.4)
2027 Background Traffic (case 2)	C (30.3)	D (35.2)	E (56.5)	C (26.9)	C (30.7)	D (48.7)
2027 Total Traffic (case 3)	C (32.3)	D (39.0)	E (71.9)	C (28.3)	C (33.8)	E (62.0)

⁴ For both unsignalized and signalized analyses, the numbers in parentheses following levels of service are average delay per vehicle, measured in seconds. For signalized analyses, LOS analysis results are given for only the overall intersection delay.

Table 7
PEAK HOUR LEVELS OF SERVICE (LOS)
based on Traffic Impact Study for Baywood Gardens
Report dated June 20, 2019
Prepared by The Traffic Group

Unsignalized Intersection ⁵ Two-Way Stop Control	LOS per TIS			LOS per McCormick Taylor		
DE 24 & White Pine Dr	Weekday AM	Weekday PM	Saturday Mid-Day	Weekday AM	Weekday PM	Saturday Mid-Day
2018 Existing (case 1)						
Westbound White Pine Drive	C (15.2)	C (22.1)	C (24.3)	C (15.2)	C (22.1)	C (24.3)
Southbound DE 24 – Left	A (9.3)	A (8.8)	A (9.1)	A (9.3)	A (8.8)	A (9.1)
2027 Background Traffic (case 2)						
Westbound White Pine Drive	C (20.3)	E (38.2)	E (44.0)	C (20.4)	E (38.2)	E (44.0)
Southbound DE 24 – Left	A (10.0)	A (9.6)	A (9.9)	B (10.0+)	A (9.6)	A (9.9)
2027 Total Traffic (case 3)						
Westbound White Pine Drive	C (21.0)	E (40.2)	E (49.4)	C (21.1)	E (40.2)	E (49.4)
Southbound DE 24 – Left	B (10.1)	A (9.7)	A (10.0)	B (10.1)	A (9.7)	B (10.0+)

⁵ For both unsignalized and signalized analyses, the numbers in parentheses following levels of service are average delay per vehicle, measured in seconds. For signalized analyses, LOS analysis results are given for only the overall intersection delay.

Table 8
PEAK HOUR LEVELS OF SERVICE (LOS)
based on Traffic Impact Study for Baywood Gardens
Report dated June 20, 2019
Prepared by The Traffic Group

Unsignalized Intersection ⁶ Two-Way Stop Control	LOS per TIS			LOS per McCormick Taylor		
DE 24 & Greens Way	Weekday AM	Weekday PM	Saturday Mid-Day	Weekday AM	Weekday PM	Saturday Mid-Day
2018 Existing (case 1)						
Westbound Greens Way	B (14.9)	C (18.0)	C (22.5)	B (14.6)	C (21.8)	D (25.8)
Southbound DE 24 – Left	A (9.0)	A (8.7)	A (9.3)	A (8.8)	A (8.8)	A (9.2)
2027 Background Traffic (case 2)						
Westbound Greens Way	C (19.8)	D (28.5)	E (40.3)	C (19.3)	E (41.0)	F (53.4)
Southbound DE 24 – Left	A (9.8)	A (9.5)	B (10.3)	A (9.4)	A (9.6)	B (10.1)
2027 Total Traffic (case 3)						
Westbound Greens Way	C (18.2)	D (28.8)	E (42.9)	C (17.2)	E (41.7)	F (57.4)
Southbound DE 24 – Left	A (9.9)	A (9.6)	B (10.6)	A (9.5)	A (9.8)	B (10.5)

⁶ For both unsignalized and signalized analyses, the numbers in parentheses following levels of service are average delay per vehicle, measured in seconds. For signalized analyses, LOS analysis results are given for only the overall intersection delay.

Table 9
PEAK HOUR LEVELS OF SERVICE (LOS)
based on Traffic Impact Study for Baywood Gardens
Report dated June 20, 2019
Prepared by The Traffic Group

Unsignalized Intersection ⁷ Two-Way Stop Control	LOS per TIS			LOS per McCormick Taylor		
DE 24 & Banks Rd	Weekday AM	Weekday PM	Saturday Mid-Day	Weekday AM	Weekday PM	Saturday Mid-Day
2018 Existing (case 1)						
Westbound Banks Road	B (14.7)	C (15.8)	C (24.5)	B (14.9)	C (16.2)	D (25.5)
Southbound DE 24 – Left	A (8.7)	A (9.6)	A (9.7)	A (8.7)	A (9.6)	A (9.7)
2027 Background Traffic (case 2)						
Westbound Banks Road	D (34.3)	E (39.9)	F (138.5)	E (36.3)	E (43.5)	F (153.5)
Southbound DE 24 – Left	A (9.7)	B (13.7)	B (12.8)	A (9.7)	B (13.7)	B (12.8)
2027 Total Traffic (case 3)						
Westbound Banks Road	E (39.0)	E (43.3)	F (172.9)	E (41.5)	E (47.4)	F (191.4)
Southbound DE 24 – Left	A (9.8)	B (14.0)	B (13.3)	A (9.8)	B (14.0)	B (13.3)
With Improvement – Traffic Signal	C (22.7)	C (24.9)	C (33.1)	C (25.5)	C (25.2)	D (36.3)

⁷ For both unsignalized and signalized analyses, the numbers in parentheses following levels of service are average delay per vehicle, measured in seconds. For signalized analyses, LOS analysis results are given for only the overall intersection delay.

Table 10
PEAK HOUR LEVELS OF SERVICE (LOS)
based on Traffic Impact Study for Baywood Gardens
Report dated June 20, 2019
Prepared by The Traffic Group

Unsignalized Intersection ⁸ Two-Way Stop Control	LOS per TIS			LOS per McCormick Taylor		
	Weekday AM	Weekday PM	Saturday Mid-Day	Weekday AM	Weekday PM	Saturday Mid-Day
DE 24 & Holly Lake Rd						
2018 Existing (case 1)						
Eastbound Holly Lake Road	C (16.1)	C (23.7)	E (38.9)	C (16.1)	C (23.7)	E (39.0)
Northbound DE 24 – Left	A (8.0)	A (9.2)	A (9.1)	A (8.0)	A (9.2)	A (9.1)
2027 Background Traffic (case 2)						
Eastbound Holly Lake Road	C (21.5)	F (56.3)	F (317.6)	C (21.5)	F (56.7)	F (330.5)
Northbound DE 24 – Left	A (8.6)	B (11.2)	B (10.7)	A (8.6)	B (11.2)	B (10.7)
2027 Total Traffic (case 3)						
Eastbound Holly Lake Road	C (22.5)	F (63.8)	F (454.0)	C (22.5)	F (64.3)	F (477.5)
Northbound DE 24 – Left	A (8.6)	B (11.4)	B (11.1)	A (8.6)	B (11.4)	B (11.1)

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

Table 11
PEAK HOUR LEVELS OF SERVICE (LOS)
based on Traffic Impact Study for Baywood Gardens
Report dated June 20, 2019
Prepared by The Traffic Group

Unsignalized Intersection ⁹ Two-Way Stop Control	LOS per TIS			LOS per McCormick Taylor		
Indian Mission Rd & E. Stonewater Creek Blvd / Surf Board Blvd	Weekday AM	Weekday PM	Saturday Mid-Day	Weekday AM	Weekday PM	Saturday Mid-Day
2018 Existing (case 1)						
Eastbound Surf Board Blvd	C (18.0)	B (11.9)	B (12.1)	C (21.0)	B (11.9)	B (12.1)
Westbound E. Stonewater Creek Blvd	B (14.4)	C (16.8)	C (19.0)	C (16.4)	C (16.8)	C (19.0)
Northbound Indian Mission Road – Left	A (9.4)	A (8.2)	A (8.1)	A (9.7)	A (8.2)	A (8.1)
Southbound Indian Mission Road – Left	A (8.2)	A (8.2)	A (8.3)	A (8.3)	A (8.2)	A (8.3)
2027 Background Traffic (case 2)						
Eastbound Surf Board Blvd	D (25.9)	B (14.8)	C (15.2)	D (33.0)	B (14.8)	C (15.2)
Westbound E. Stonewater Creek Blvd	C (19.7)	D (26.9)	D (34.2)	D (25.8)	D (26.9)	D (34.1)
Northbound Indian Mission Road – Left	B (10.1)	A (8.7)	A (8.6)	B (10.4)	A (8.7)	A (8.6)
Southbound Indian Mission Road – Left	A (8.7)	A (8.7)	A (8.8)	A (8.9)	A (8.7)	A (8.8)
2027 Total Traffic (case 3)						
Eastbound Surf Board Blvd	D (27.8)	C (15.5)	C (16.5)	E (36.2)	C (15.5)	C (16.3)
Westbound E. Stonewater Creek Blvd	C (21.2)	D (29.6)	E (44.3)	D (28.8)	D (29.6)	E (40.9)
Northbound Indian Mission Road – Left	B (10.1)	A (8.8)	A (8.8)	B (10.5)	A (8.8)	A (8.8)
Southbound Indian Mission Road – Left	A (8.8)	A (8.8)	A (8.9)	A (9.1)	A (8.8)	A (8.8)

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

Table 12
PEAK HOUR LEVELS OF SERVICE (LOS)
based on Traffic Impact Study for Baywood Gardens
Report dated June 20, 2019
Prepared by The Traffic Group

Unsignalized Intersection ¹⁰ Two-Way Stop Control	LOS per TIS			LOS per McCormick Taylor		
Indian Mission Rd & Cannon Rd	Weekday AM	Weekday PM	Saturday Mid-Day	Weekday AM	Weekday PM	Saturday Mid-Day
2018 Existing (case 1)						
Eastbound Cannon Road	C (19.6)	C (19.5)	C (17.6)	C (20.8)	C (21.5)	C (18.9)
Westbound Driveway	C (16.3)	-	C (17.9)	C (16.3)	-	C (17.9)
Northbound Indian Mission Road – Left	A (8.2)	A (8.57)	A (8.3)	A (8.2)	A (8.5)	A (8.3)
Southbound Indian Mission Road – Left	A (8.2)	A (8.1)	A (8.1)	A (8.2)	A (8.1)	A (8.1)
2027 Background Traffic (case 2)						
Eastbound Cannon Road	F (93.5)	F (116.3)	F (66.1)	F (99.4)	F (124.8)	F (71.8)
Westbound Driveway	C (24.0)	-	D (30.3)	C (24.1)	-	D (30.3)
Northbound Indian Mission Road – Left	A (8.5)	A (9.6)	A (9.1)	A (8.5)	A (9.6)	A (9.1)
Southbound Indian Mission Road – Left	A (8.7)	A (8.4)	A (8.4)	A (8.7)	A (8.4)	A (8.4)
2027 Total Traffic (case 3)						
Eastbound Cannon Road	F (119.5)	F (150.4)	F (105.7)	F (125.3)	F (158.8)	F (112.4)
Westbound Driveway	D (25.7)	-	E (35.2)	D (25.7)	-	E (35.3)
Northbound Indian Mission Road – Left	A (8.6)	A (9.8)	A (9.3)	A (8.6)	A (9.8)	A (9.3)
Southbound Indian Mission Road – Left	A (8.8)	A (8.5)	A (8.6)	A (8.8)	A (8.5)	A (8.6)
With Improvement – Traffic Signal	C (10.2)	C (8.9)	C (8.4)	B (11.0)	A (9.3)	A (8.5)
With Improvement – Roundabout	N/A	N/A	N/A	A (9.7)	B (10.5)	A (9.1)

¹⁰ For both unsignalized and signalized analyses, the numbers in parentheses following levels of service are average delay per vehicle, measured in seconds. For signalized analyses, LOS analysis results are given for only the overall intersection delay.

Table 13
PEAK HOUR LEVELS OF SERVICE (LOS)
based on Traffic Impact Study for Baywood Gardens
Report dated June 20, 2019
Prepared by The Traffic Group

Unsignalized Intersection ¹¹ Two-Way Stop Control	LOS per TIS			LOS per McCormick Taylor		
Indian Mission Rd & Harmons Hill Rd / Phillips Branch Rd	Weekday AM	Weekday PM	Saturday Mid-Day	Weekday AM	Weekday PM	Saturday Mid-Day
2018 Existing (case 1)						
Eastbound Harmons Hill Rd	D (25.3)	C (17.6)	C (17.8)	D (25.3)	C (17.5)	C (17.8)
Westbound Phillips Branch Rd	D (31.6)	D (25.5)	C (24.5)	D (31.6)	D (25.5)	C (24.5)
Northbound Indian Mission Rd – Left	A (8.4)	A (8.5)	A (8.3)	A (8.4)	A (8.5)	A (8.3)
Southbound Indian Mission Rd – Left	A (8.1)	A (7.9)	A (8.2)	A (8.1)	A (7.9)	A (8.2)
2027 Background Traffic (case 2)						
Eastbound Harmons Hill Rd	F (282.5)	F (170.1)	F (102.2)	F (285.1)	F (170.8)	F (102.7)
Westbound Phillips Branch Rd	F (228.3)	F (332.6)	F (199.6)	F (229.7)	F (333.8)	F (200.4)
Northbound Indian Mission Rd – Left	A (9.0)	A (9.3)	A (9.0)	A (9.0)	A (9.4)	A (9.0)
Southbound Indian Mission Rd – Left	A (8.8)	A (8.3)	A (8.7)	A (8.8)	A (8.3)	A (8.7)
2027 Total Traffic (case 3)						
Eastbound Harmons Hill Rd	F (503.9)	F (239.8)	F (200.0)	F (510.6)	F (241.0)	F (201.2)
Westbound Phillips Branch Rd	F (350.6)	F (468.4)	F (420.5)	F (353.7)	F (470.3)	F (423.1)
Northbound Indian Mission Rd – Left	A (9.1)	A (9.5)	A (9.2)	A (9.1)	A (9.5)	A (9.2)
Southbound Indian Mission Rd – Left	A (8.9)	A (8.3)	A (8.8)	A (8.9)	A (8.3)	A (8.8)
With Improvement – Traffic Signal	B (17.4)	B (13.4)	B (12.0)	B (17.4)	B (13.4)	B (12.0)
With Improvement – Roundabout	N/A	N/A	N/A	B (11.5)	B (11.0)	B (10.8)

¹¹ For both unsignalized and signalized analyses, the numbers in parentheses following levels of service are average delay per vehicle, measured in seconds. For signalized analyses, LOS analysis results are given for only the overall intersection delay.