



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

November 24, 2020

Mr. Ring W. Lardner, P.E.
Davis, Bowen & Friedel, Inc.
1 Park Avenue
Milford, DE 19963

Dear Mr. Lardner:

The Department has completed its review of the traffic operational analysis (TOA) for the proposed White's Pond Meadow (f.k.a. Showfield – City Portion) and the Gibb's Commercial Expansion (Tax Parcels 335-8.00-46.00, 53.00, 53.01 & 335-8.12-80.00). The TOA was prepared by your firm and dated August 20, 2019. The analysis evaluates the traffic impacts of the proposed development on the intersection of Theodore C. Freeman Memorial Highway (Freeman Highway) (Sussex Road 23) and Monroe Avenue, a street maintained by the City of Lewes. The proposed development is proposed on the south side of Freeman Highway, north and west of Gills Neck Road (Sussex Road 267), just east of the intersection of Freeman Highway and Kings Highway (Sussex Road 268), in the City of Lewes.

The proposed development would consist of White's Pond Meadow and the expansion of the Gibb's Commercial development. As specifically addressed in the TOA, White's Pond Meadow would consist of a total of 165 single-family detached houses. Of the 165 single-family units, eighty-six (86) would have access on Freeman Highway with an interconnection with the Sussex County portion of Showfield to the south. The remaining seventy-nine (79) units would have access only on Gills Neck Road, on the northeast side, with no interconnection with the rest of Showfield, White's Pond Meadow, or the Gibb's Commercial development. The expansion of the Gibb's Commercial development would increase the existing 8,900 square feet retail space by 15,100 square feet to a total of 24,000 square feet. Because the seventy-nine (79) unit portion will have access only on Gills Neck Road, the TOA only evaluates the traffic impacts at the intersection of Freeman Highway and Monroe Avenue.

Since the submission of the TOA and the completion of DelDOT's technical review the plan has changed slightly. Presently, 85 single-family detached houses in White's Pond Meadow would access Kings Highway and the expansion of the Gibb's Commercial development would increase the existing 8,900 square feet retail space by an additional 18,300 square feet of commercial space, for a total of 27,200 square feet of commercial space. These changes are insignificant relative to the recommendations provided in this letter.



The subject development is currently split-zoned as R-2 (Residential Low-Density) and C-1 (General Commercial) within the City of Lewes. There are no plans to rezone the land. The portion of the land zoned R-2 will be occupied by the White's Pond Meadow development, while the C-1 portion will be occupied by the Gibb's Commercial expansion.

As reflected in the Scope of Work memorandum dated February 11, 2019, at the time of the scoping meeting, only the White's Pond Meadow development was proposed. However, following the issuance of the TOA Scope of Work, your firm informed DelDOT that the owners of the commercial lands located along Monroe Avenue, Gibb's Commercial, had decided to expand their existing retail facility and had coordinated with the developer of White's Pond Meadow to address both projects in this TOA.

During the January 31, 2019 scoping meeting, DelDOT, the Delaware River Bay Authority (DRBA), and the developer of White's Pond Meadow discussed the need for a signal at the intersection of Freeman Highway and Monroe Avenue, where the proposed development is proposed to have access. As a result, DelDOT required the completion of a Traffic Signal Justification Study and Warrant Analysis as part of the TOA. Because Freeman Highway is maintained by the DRBA, regardless of whether a signal is found to be warranted per the Delaware Manual on Uniform Traffic Control Devices (MUTCD), the decision to install a traffic will be made by the DRBA.

The TOA addressed four transportation and land use scenarios:

- Case 1 – Existing conditions in 2019
- Case 2 – Conditions in 2025 without White's Pond Meadow or the Gibb's Commercial Expansion
- Case 3 – Conditions in 2025 with White's Pond Meadow but without the Gibb's Commercial Expansion
- Case 4 – Conditions in 2025 with White's Pond Meadow and with the Gibb's Commercial Expansion

Subsequently, at the request of the DRBA, DelDOT evaluated an additional scenario, Case 3a consisting of conditions in 2025 with the Gibb's Commercial Expansion but without White's Pond Meadow.

Based on our review, we find that the intersection of Freeman Highway and Monroe Avenue / Site Entrance presently exhibits level of service (LOS) deficiencies during the summer Saturday midday peak hour. Without the implementation of physical roadway and/or traffic control improvements, the Monroe Avenue approaches to the intersection would exhibit LOS deficiencies during the summer Saturday midday peak periods for all future conditions analyzed. Again, without the implementation of physical roadway and/or traffic control improvements, the northbound Monroe Avenue approach would operate at LOS E during the weekday evening peak periods in Cases 3 and 4.

The TOA recommends the installation of a separate westbound right turn lane on Freeman Highway and we agree with this recommendation. The TOA also recommends the installation of a left turn lane on the northbound Monroe Avenue approach to mitigate the weekday evening peak hour LOS deficiency. We agree that this improvement would address the LOS deficiency and is the configuration DelDOT would recommend when the intersection is signalized. DelDOT's experience is that placing separate left and through lanes side by side under Stop control can create safety and operational problems.

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However, if signalization will occur in the relatively near future, it may be acceptable as a short-term, interim condition.

Further on the subject of left turn lanes on Freeman Highway, the TOA recommends against requiring the developer(s) to install a westbound left-turn lane on the basis of fairness. Specifically, the DRBA did not require the installation of an eastbound left-turn lane when the library and trailhead were developed. Our understanding from DRBA is that they were not consulted when those uses were developed and that they might have wanted one if they had been.

Applying DelDOT's Auxiliary Lane Worksheet to the Case 4 volumes at the intersection, DelDOT finds that both left-turn and right-turn lanes would be warranted on Freeman Highway in both directions. The Worksheet implements the criteria in Chapter 5 of DelDOT's Development Coordination Manual (DCM, Section 2309 of the Delaware Administrative Code). DelDOT acknowledges that DRBA may not be bound by the DCM but, as discussed below, recommends the installation of the left-turn lanes as something we would require if Freeman Highway were State-maintained.

We agree with your assessment that acceptable LOS cannot be achieved on the Monroe Avenue approaches with two-way Stop control. We further agree that, because of the unbalanced flows, much heavier on Freeman Highway than on Monroe Avenue, all-way Stop control and the installation of a roundabout are not appropriate. A signal would be needed to achieve acceptable LOS.

The Manual on Uniform Traffic Control Devices (MUTCD, Section 2402 of the Delaware Administrative Code) specifies nine warrants to be considered in evaluating whether to install a traffic. As discussed below, Warrant 1 (Eight-Hour Vehicular Volume), Warrant 2 (Four-Hour Vehicular Volume) and Warrant 4 (Pedestrian Volume) are relevant to this analysis. Typically, DelDOT will only install a signal if both Warrants 1 and 2 are met for weekday conditions.

Our review of the submitted Traffic Signal Justification Study confirmed your firm's findings, described as follows. Warrant 1 is met for both the weekday and summer Saturday conditions in Case 4. Warrant 2 is met only for summer Saturday conditions but it is met in all future cases. Warrant 4 is not met for weekday or summer Saturday conditions. With that said, it may be significant that the Justification Study was done using 2016 data. A current count could show higher pedestrian volumes and, as your report suggests, the proposed developments will likely generate more pedestrian trips. Further, warrant studies, by their nature do not account for latent demand, pedestrians who would cross if signal were present.

Further coordination will be needed between the DRBA, the City of Lewes, and the developers of White's Pond Meadow and the Gibb's Commercial development to determine when the installation of a signal is appropriate for the intersection of Freeman Highway and Monroe Avenue. Due to the seasonal nature of traffic on Freeman Highway it may be appropriate for the DRBA to give more consideration to the summer Saturday condition than DelDOT typically would.

Finally, regarding signalization, the TOA cites a 2009 agreement between DelDOT and LT Associates, LLC, to say that DelDOT is required to pay for any signalization at this intersection. DelDOT's reading of the agreement is that DelDOT's responsibility is limited to the aboveground portions of any signal to be installed there.

Outside the scope of the TOA, but relevant to the City, is a possible street or pedestrian path connection from White's Pond Meadow to Inlet Place in the Bay Breeze subdivision. DelDOT believes

that such a connection, would have benefits for the residents of both communities in terms of access for emergency vehicles, service vehicles and local trips. DeIDOT would encourage the City to provide it.

Should the City of Lewes choose to approve the proposed development, DeIDOT recommends that the following items 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 improve the site entrance at Freeman Highway and Monroe Avenue. The existing and proposed configurations are shown in the table below.

Approach	Current Configuration	Proposed Configuration*
Northbound Monroe Avenue / Site Entrance	One shared left-turn / through / right-turn lane	One left-turn and one through / right-turn lane
Southbound Monroe Avenue	One shared left-turn / through / right-turn lane	One left-turn and one through / right-turn lane
Westbound Freeman Highway	One shared left-turn / through lane and one right-turn lane	One left-turn lane, one through lane, and one right-turn lane
Eastbound Freeman Highway	One shared left-turn / through / right-turn lane	One left-turn lane, one through lane, and one right-turn lane

*Proposed lane configuration assumes signalization.

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

Approach	Left-Turn Lane	Right-Turn Lane
Northbound Monroe Avenue / Site Entrance	50 feet*	N/A
Southbound Monroe Avenue	50 feet*	N/A
Westbound Freeman Highway	50 feet*	135 feet**
Eastbound Freeman Highway	50 feet*	135 feet*

*turn-lane length based on deceleration + storage length per DeIDOT's *Development Coordination Manual*

**existing westbound right-turn lane is 230 feet long and should remain as such.

Included in this work should be an overlay of Freeman Highway, potentially for the full width of the roadway, within the longitudinal limits of the turning lane construction to provide a uniform surface with clean pavement markings. Also, as part of the entrance construction outlined above, the developer will likely need to relocate a portion of the Junction & Breakwater Trail near the intersection.

2. The developers of White's Pond Meadow and the Gibb's Commercial should enter into a traffic signal agreement with DelDOT regarding the installation and operation of a signal at the intersection of Freeman Highway and Monroe Avenue / Site Entrance. Because the ownership of the intersection is divided three ways (DRBA owning Freeman Highway, the City owning Monroe Avenue and the developer owning the site entrance) and DelDOT is participating only in the construction and operation of the signal, one or more additional related agreements will be needed beyond the signal agreement itself. The exact agreement structure is still being determined.

The signal agreement should include pedestrian signals, crosswalks and interconnection at DelDOT's discretion. The agreement should identify the developer as being responsible for below-ground elements, for example pole bases and conduits, and DelDOT as being responsible for above-ground elements, e.g. poles, mast arms and signal equipment. Due to the proximity of the intersection to the Lewes-Rehoboth Canal bridge on Freeman Highway, the agreements should provide for a warning sign on the east side of the bridge (Red Signal Ahead When Flashing) if needed.

3. The developer of White's Pond Meadow should provide street connections from Monroe Avenue to Battlemixer Drive in Showfield and from the proposed Filly Lane to Inlet Place in Bay Breeze.
4. The following bicycle pedestrian, and transit improvements should be included:
 - a. The developers should provide a fifteen-foot wide permanent easement along the site frontage on Freeman Highway, beyond any needed right-of-way dedication.
 - b. Where right-turn lanes are added, a five-foot wide bicycle lane should be provided through the right-turn lane in order to facilitate safe and unimpeded bicycle travel. A Right-Turn Yield to Bikes sign (R4-4) should be added before the start of each right-turn lane.
 - c. A pedestrian crossing should be included along Freeman Highway at Monroe Avenue from the north side of Freeman Highway to connect to the Junction Breakwater Trail on the south. Installation should only occur in the context of a signal. The developer should coordinate with the DRBA and to determine the number, location, and traffic control for the pedestrian crossing.
 - d. ADA-compliant curb ramps and a marked crosswalk across the entrance should be provided at all site entrances.
 - e. A pedestrian path be provided to connect the proposed development to the other portion of White's Pond Meadow on the southeast.
 - f. Item 3 above notwithstanding, if a street connection is not made from Filly Lane to Inlet Place, a pedestrian path should be provided to connect Filly Lane to the Junction Breakwater Trail and the Inlet Place cul-de-sac.
 - g. The developer should provide a minimum of five-foot wide sidewalk within this development and, where internal sidewalks are located alongside of parking spaces, a buffer, physical barrier or signage should be added to eliminate vehicular overhang onto the sidewalk.

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- h. Bike parking should be provided near the building entrances within this development. Where the building architecture provides for an awning and other overhang, the bike parking should be covered.
- i. Utility covers should be moved outside of any designated bicycle lanes or should be flush with the pavement.
- j. Neither DART nor the DRBA currently plans to provide a bus stop to serve the proposed development. DART recommends that the DRBA, the City of Lewes, and the developers of White's Pond Meadow and the Gibb's Commercial Expansion collaborate to provide bus service for the proposed development and the Lewes Public Library.

Please note that this analysis generally focuses on capacity and level of service issues. Level of Service (LOS) tables for the existing and future cases are attached with this memorandum.

You may contact me at (302) 760-2109, or Mr. Claudy Joinville at (302) 760-2124, if you have questions regarding this correspondence.

Sincerely,



T. William Brockenbrough, Jr., P.E.
County Coordinator

TWB: cjm

Enclosures

cc: David A. Hoppenjans, P.E., Delaware River Bay Authority (DRBA)
Michelle K. Griscom-Collins, DRBA
Ann Marie Townshend, City Manager, City of Lewes
Janelle Cornwell, City Planner, City of Lewes
Jamie Whitehouse, Director, Sussex County Planning and Zoning
J. Marc Coté, P.E., Director, Planning
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Peter Haag, P.E., Chief Traffic Engineer, Traffic, Transportation Solutions (DOTS)
Alastair Probert, P.E., South District Engineer, Maintenance and Operations (M&O)
William Kirsch, South District Permit Supervisor, M&O
Gemez Norwood, South District Public Works Supervisor, M&O
Anthony Aglio, Statewide & Regional Planning
Susanne K. Laws, P.E., Sussex County Review Coordinator, Development Coordination
Brian K. Yates, Subdivision Reviewer, Development Coordination
Claudy Joinville, Project Engineer, Development Coordination
Troy E. Brestel, Project Engineer, Development Coordination

Table 1
PEAK HOUR LEVELS OF SERVICE (LOS)
based on Traffic Operational Analysis for White's Pond Meadow & Gibb's Commercial Expansion
Report dated August 20, 2019
Prepared by Davis, Bowen & Friedel, Inc.

Unsignalized Intersection ¹ Two-Way Stop Control (Four-Leg intersection)	LOS per TOA			LOS per DelDOT		
	Weekday AM	Weekday PM	Saturday Midday	Weekday AM	Weekday PM	Saturday Midday
Freeman Highway & Monroe Avenue						
2019 Existing (Case 1)						
Eastbound Freeman Highway – Left	A (7.5)	A (8.2)	A (8.9)	A (7.5)	A (8.1)	A (8.9)
Westbound Freeman Highway – Left	A (7.7)	A (7.8)	A (9.4)	A (7.7)	A (7.8)	A (9.4)
Northbound Monroe Avenue	B (11.9)	C (17.8)	F (50.0)	B (11.9)	C (17.7)	F (50.0)
Southbound Monroe Avenue	B (10.3)	B (12.6)	E (44.2)	B (10.3)	B (12.5)	E (44.3)
2025 without White's Pond Meadow and without Gibb's Commercial Expansion (Case 2)						
Eastbound Freeman Highway – Left	A (7.7)	A (8.2)	A (9.3)	A (7.7)	A (8.2)	A (9.3)
Westbound Freeman Highway – Left	A (8.0)	A (8.1)	A (9.9)	A (8.0)	A (8.1)	A (9.9)
Northbound Monroe Avenue	C (15.9)	C (24.2)	F (473.2)	C (16.0)	C (24.2)	F (476.1)
Southbound Monroe Avenue	B (13.5)	C (18.4)	F (288.6)	B (13.5)	C (18.4)	F (293.0)
2025 with White's Pond Meadow and without Gibb's Commercial Expansion (Case 3)						
Eastbound Freeman Highway – Left	A (7.7)	A (8.2)	A (9.3)	A (7.7)	A (8.2)	A (9.3)
Westbound Freeman Highway – Left	A (8.1)	A (8.2)	B (10.1)	A (8.0)	A (8.2)	B (10.1)
Northbound Monroe Avenue	C (19.1)	E (35.8)	F (1,819.2)	C (19.2)	E (35.8)	F (1,856.6)
Southbound Monroe Avenue	B (14.2)	C (22.1)	F (553.9)	B (14.3)	C (22.2)	F (566.7)
2025 with White's Pond Meadow and with Gibb's Commercial Expansion (Case 4)						
Eastbound Freeman Highway – Left	A (7.7)	A (8.2)	A (9.3)	A (7.7)	A (8.2)	A (9.3)
Westbound Freeman Highway – Left	A (8.1)	A (8.3)	A (10.2)	A (8.1)	A (8.3)	B (10.2)
Northbound Monroe Avenue	C (19.7)	E (48.3)	F (2,350.3)	C (19.7)	E (49.4)	F (2,394.3)
Southbound Monroe Avenue	B (14.4)	C (23.3)	F (483.5)	B (14.5)	C (23.5)	F (494.7)

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.

Table 2
PEAK HOUR LEVELS OF SERVICE (LOS)
based on Traffic Operational Analysis for White's Pond Meadow & Gibb's Commercial Expansion
Report dated August 20, 2019
Prepared by Davis, Bowen & Friedel, Inc.

Unsignalized Intersection ² Two-Way Stop Control (Four-Leg intersection)	LOS per TOA			LOS per DelDOT		
	Weekday AM	Weekday PM	Saturday Midday	Weekday AM	Weekday PM	Saturday Midday
Freeman Highway & Monroe Avenue / Site Entrance						
2025 with White's Pond Meadow and without Gibb's Commercial Expansion (Case 3) – <i>with exclusive eastbound right-turn and northbound left-turn lanes</i>						
Eastbound Freeman Highway – Left	N/A	A (8.2)	A (9.3)	A (7.7)	A (8.2)	A (9.3)
Westbound Freeman Highway – Left	N/A	A (8.2)	B (10.1)	A (8.1)	A (8.2)	A (10.1)
Northbound Monroe Avenue	N/A	D (26.3)	F (836.6)	C (16.1)	D (26.4)	F (872.6)
Southbound Monroe Avenue	N/A	C (22.1)	F (516.4)	B (14.3)	C (22.1)	F (536.1)
2025 with White's Pond Meadow and without Gibb's Commercial Expansion (Case 3) – <i>with exclusive lanes on Freeman Highway</i>						
Eastbound Freeman Highway – Left	N/A	N/A	A (9.3)	A (7.7)	A (8.2)	A (9.3)
Westbound Freeman Highway – Left	N/A	N/A	B (10.1)	A (8.1)	A (8.2)	B (10.1)
Northbound Monroe Avenue	N/A	N/A	F (1,421.2)	C (18.6)	D (31.7)	F (1,412.6)
Southbound Monroe Avenue	N/A	N/A	F (458.1)	B (14.3)	C (21.8)	F (458.5)
2025 with White's Pond Meadow and without Gibb's Commercial Expansion (Case 3) – <i>with exclusive lanes on Freeman Highway & northbound left-turn lane</i>						
Eastbound Freeman Highway – Left	N/A	N/A	A (9.3)	A (7.7)	A (8.2)	A (9.3)
Westbound Freeman Highway – Left	N/A	N/A	B (10.1)	A (8.1)	A (8.2)	B (10.1)
Northbound Monroe Avenue	N/A	N/A	F (718.7)	C (16.1)	D (26.0)	F (713.8)
Southbound Monroe Avenue	N/A	N/A	F (458.1)	B (14.3)	C (21.8)	F (458.5)

² 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 3
PEAK HOUR LEVELS OF SERVICE (LOS)
based on Traffic Operational Analysis for White's Pond Meadow & Gibb's Commercial Expansion
Report dated August 20, 2019
Prepared by Davis, Bowen & Friedel, Inc.

Unsignalized Intersection ³ Two-Way Stop Control (Four-Leg intersection)	LOS per TOA			LOS per DelDOT		
	Weekday AM	Weekday PM	Saturday Midday	Weekday AM	Weekday PM	Saturday Midday
Freeman Highway & Monroe Avenue / Site Entrance						
2025 with White's Pond Meadow and with Gibb's Commercial Expansion (Case 4) – <i>with exclusive eastbound right-turn and northbound left-turn lanes</i>						
Eastbound Freeman Highway – Left	N/A	A (8.2)	A (9.3)	A (7.7)	A (8.2)	A (9.3)
Westbound Freeman Highway – Left	N/A	A (8.3)	B (10.2)	A (8.1)	A (8.3)	B (10.2)
Northbound Monroe Avenue	N/A	D (30.1)	F (1,193.9)	C (16.3)	D (30.7)	F (1,244.9)
Southbound Monroe Avenue	N/A	C (23.2)	F (450.1)	B (14.5)	C (23.5)	F (469.1)
2025 with White's Pond Meadow and with Gibb's Commercial Expansion (Case 4) – <i>with exclusive lanes on Freeman Highway</i>						
Eastbound Freeman Highway – Left	N/A	N/A	A (9.3)	A (7.7)	A (8.2)	A (9.3)
Westbound Freeman Highway – Left	N/A	N/A	B (10.2)	A (8.1)	A (8.3)	A (10.2)
Northbound Monroe Avenue	N/A	N/A	F (1,818.5)	C (19.0)	E (40.4)	F (1,805.5)
Southbound Monroe Avenue	N/A	N/A	F (401.7)	B (14.5)	C (23.1)	F (402.0)
2025 with White's Pond Meadow and with Gibb's Commercial Expansion (Case 4) – <i>with exclusive lanes on Freeman Highway & northbound left- turn lane on Monroe Avenue</i>						
Eastbound Freeman Highway – Left	N/A	N/A	A (9.3)	A (7.7)	A (8.2)	A (9.3)
Westbound Freeman Highway – Left	N/A	N/A	B (10.2)	A (8.1)	A (8.3)	B (10.2)
Northbound Monroe Avenue	N/A	N/A	F (1,044.2)	C (16.3)	D (30.0)	F (1,036.0)
Southbound Monroe Avenue	N/A	N/A	F (401.7)	B (14.5)	C (23.1)	F (402.0)

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.

Table 4
PEAK HOUR LEVELS OF SERVICE (LOS)
based on Traffic Operational Analysis for White's Pond Meadow & Gibb's Commercial Expansion
Report dated August 20, 2019
Prepared by Davis, Bowen & Friedel, Inc.

Unsignalized Intersection ⁴ All-Way Stop Control (Four-Leg intersection)	LOS per TOA			LOS per DeDOT		
	Weekday AM	Weekday PM	Saturday Midday	Weekday AM	Weekday PM	Saturday Midday
Freeman Highway & Monroe Avenue / Site Entrance						
2025 with White's Pond Meadow and without Gibb's Commercial Expansion (Case 3)						
Eastbound Freeman Highway	B (11.7)	C (15.3)	F (214.6)	B (11.9)	C (15.3)	F (214.6)
Westbound Freeman Highway	B (10.6)	C (17.3)	F (134.6)	B (10.7)	C (17.3)	F (134.6)
Northbound Monroe Avenue	A (9.7)	B (10.5)	B (13.1)	A (9.8)	B (10.5)	B (13.1)
Southbound Monroe Avenue	A (8.7)	B (10.0)	B (13.3)	A (8.8)	B (10.0)	B (13.3)
Overall Intersection	10.9	C (15.3)	F (155.2)	B (11.0)	C (15.3)	F (155.2)
2025 with White's Pond Meadow and with Gibb's Commercial Expansion (Case 4)						
Eastbound Freeman Highway	B (11.8)	C (16.8)	F (241.4)	B (11.9)	C (16.8)	F (241.4)
Westbound Freeman Highway	B (10.7)	C (18.7)	F (146.5)	B (10.7)	C (18.7)	F (146.5)
Northbound Monroe Avenue	A (9.8)	B (11.2)	B (14.1)	A (9.8)	B (11.2)	B (14.1)
Southbound Monroe Avenue	A (8.8)	B (10.3)	B (13.5)	A (8.8)	B (10.3)	B (13.5)
Overall Intersection	B (11.0)	C (16.5)	F (170.8)	B (11.0)	C (16.5)	F (170.8)
2025 with Gibb's Commercial Expansion and without White's Pond Meadow (Case 3a) ⁵						
Eastbound Freeman Highway	N/A	N/A	N/A	B (12.2)	B (13.2)	F (182.0)
Westbound Freeman Highway	N/A	N/A	N/A	B (11.1)	C (17.9)	F (168.6)
Northbound Monroe Avenue	N/A	N/A	N/A	A (9.7)	B (10.9)	B (13.3)
Southbound Monroe Avenue	N/A	N/A	N/A	A (9.1)	B (10.1)	B (12.6)
Overall Intersection	N/A	N/A	N/A	B (11.4)	B (14.9)	F (156.2)

⁴ 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.

⁵ Case 3a considers the future year 2025 with only the completion of Gibb's Commercial Expansion. It is noted that Case 3a was not part of the original scope; therefore, it was not included in DBF's FTOA report. Case 3a was analyzed per a request from the DRBA.

Table 5
PEAK HOUR LEVELS OF SERVICE (LOS)
based on Traffic Operational Analysis for White's Pond Meadow & Gibb's Commercial Expansion
Report dated August 20, 2019
Prepared by Davis, Bowen & Friedel, Inc.

Unsignalized Intersection ⁶ Two-Way Stop Control (Four-Leg Intersection)	LOS per TOA			LOS per DelDOT		
	Weekday AM	Weekday PM	Saturday Midday	Weekday AM	Weekday PM	Saturday Midday
Freeman Highway & Monroe Avenue / Site Entrance						
2025 with Gibb's Commercial Expansion and without White's Pond Meadow (Case 3a) ⁷						
Eastbound Freeman Highway - Left	N/A	N/A	N/A	A (7.7)	A (8.2)	A (9.3)
Westbound Freeman Highway – Left	N/A	N/A	N/A	A (8.0)	A (8.2)	B (10.0)
Northbound Monroe Avenue	N/A	N/A	N/A	C (16.3)	D (29.1)	F (863.2)
Southbound Monroe Avenue	N/A	N/A	N/A	B (13.7)	C (19.1)	F (247.9)
2025 with Gibb's Commercial Expansion and without White's Pond Meadow (Case 3a) ⁵ -with exclusive lanes on Freeman Highway & northbound and southbound right-turn lanes on Monroe Avenue						
Eastbound Freeman Highway - Left	N/A	N/A	N/A	A (7.7)	A (8.2)	A (9.3)
Westbound Freeman Highway – Left	N/A	N/A	N/A	A (8.0)	A (8.2)	B (10.0)
Northbound Monroe Avenue	N/A	N/A	N/A	C (15.5)	D (25.4)	F (563.9)
Southbound Monroe Avenue	N/A	N/A	N/A	B (13.6)	C (18.1)	F (126.0)
2025 with Gibb's Commercial Expansion and with White's Pond Meadow (Case 4)-with exclusive lanes on Freeman Highway & northbound and southbound right-turn lanes on Monroe Avenue						
Eastbound Freeman Highway - Left	N/A	N/A	N/A	A (7.7)	A (8.2)	A (9.3)
Westbound Freeman Highway – Left	N/A	N/A	N/A	A (8.1)	A (8.3)	B (10.2)
Northbound Monroe Avenue	N/A	N/A	N/A	C (18.0)	E (37.2)	F (1,438.0)
Southbound Monroe Avenue	N/A	N/A	N/A	B (14.4)	C (21.9)	F (238.4)

⁶ 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 6
PEAK HOUR LEVELS OF SERVICE (LOS)
based on Traffic Operational Analysis for White's Pond Meadow & Gibb's Commercial Expansion
Report dated August 20, 2019
Prepared by Davis, Bowen & Friedel, Inc.

Signalized Intersection ⁸	LOS per TOA			LOS per DeIDOT		
	Weekday AM	Weekday PM	Saturday Midday	Weekday AM	Weekday PM	Saturday Midday
Freeman Highway & Monroe Avenue / Site Entrance						
2025 with White's Pond Meadow and without Gibb's Commercial Expansion (Case 3)	A (7.9)	A (7.9)	A (9.5)	A (7.1)	A (7.2)	A (8.9)
2025 with Gibbs Commercial and without White's Pond Meadow (Case 3a)	N/A	N/A	N/A	A (6.4)	A (6.9)	A (8.3)
2025 with White's Pond Meadow and with Gibb's Commercial Expansion (Case 4)	A (8.0)	A (8.2)	A (9.8)	A (7.2)	A (7.4)	A (9.8)
2025 with White's Pond Meadow and Gibb's Commercial Expansion (Case 4) – <i>with exclusive lanes on Freeman Highway & northbound and southbound left and through/right turn lanes on Monroe Avenue</i>	N/A	N/A	N/A	A (9.2)	B (10.1)	B (12.6)

⁷ Case 3a considers the future year 2025 with only the completion of Gibb's Commercial Expansion. It is noted that Case 3a was not part of the original scope; therefore, it was not included in DBF's FTOA report. Case 3a is analyzed per a request from the DRBA.

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.