

Jasper County Planning and Building Services

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Lisa Wagner, CFM Director of Planning and Building Services [wagner@jaspercountyse.gov]

Jasper County Planning Commission Staff Report

Meeting Date:	October 11, 2022
Project:	Master Plan – Center Point Apartments
Applicant:	Hussey Gay Bell
Tax Map Number:	A portion of 081-00-03-019
Submitted For:	Action
Recommendation:	

Description: Hussey Gay Bell request approval of a Master Plan of an apartment complex consisting of 327 units to be developed within the Center Point Planned Development District (PDD), which was approved by Jasper County Council on August 19, 2008. This Master Plan has been developed in accordance with the Center Point PDD standards and Concept Plan, and the Center Point Development Agreement (DA).

A Master Plan is a plan for the overall utilization of a particular area, including allocation of land uses and infrastructure. This Master Plan anticipates development of approximately a 30.31-acre tract, for a single lot commercial development and construction of a road, which will serve the development.

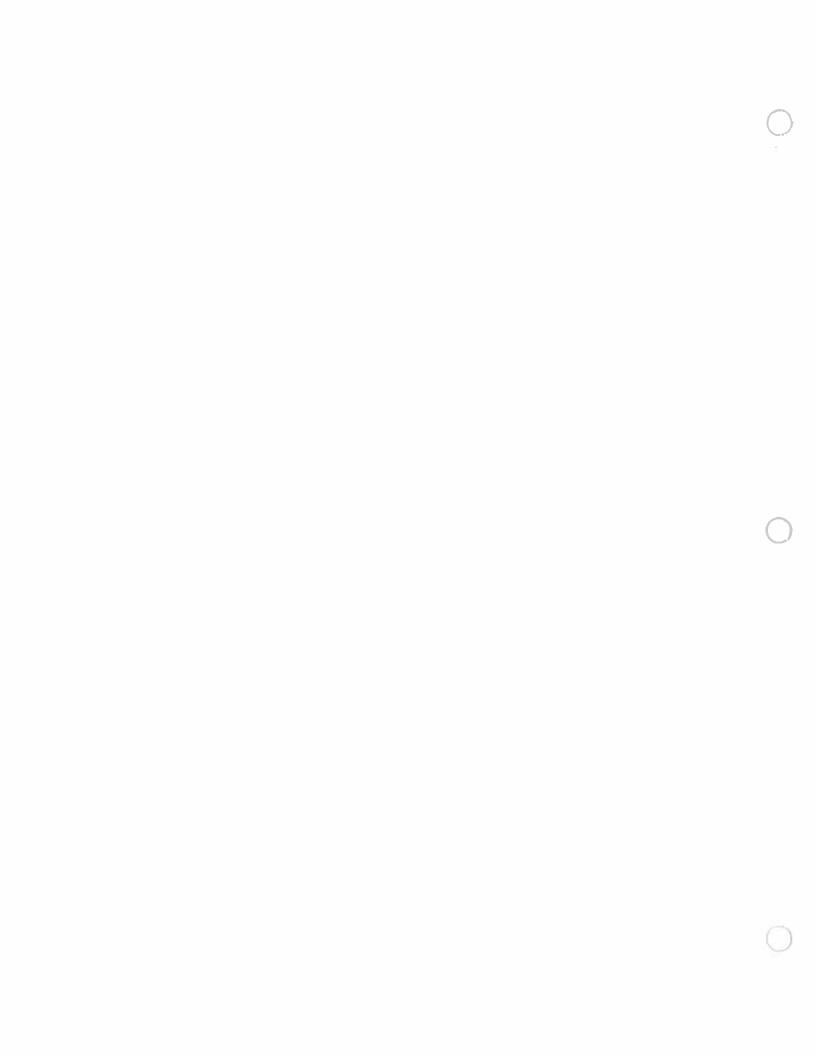
Analysis: The Master Plan for Center Point Apartments was prepared in accordance with Article 8.1.10 of the Jasper County Zoning Ordinance, which is outlined below and is intended to serve as a checklist. The red print directs you to where the requested information is located in the Master Plan document.

8:1.10 Master Plan.

The minimum requirements of the Master Plan include:

1. Multiple copies of the Master Plan to sufficiently distribute to all designated reviewing bodies at the time of submittal;

Received electronic submission on 9/20/2022



- 2. Proposed arrangement of land uses, including land for public facilities, approximate acreage of each use area or tract, type of use and density (residential use tracts). All specified densities will be construed as maximums, with acceptance of the maximums subject to satisfaction of other provisions within the PDD ordinance; See Conceptual Maps (folded in back of binder) and Site Density (1st page of the binder)
- 3. A boundary survey with the computed acreage of the tract bearing the seal of a registered land surveyor;

See Boundary Survey, dated 5/22/08 (folded in back of binder)

- 4. The location of primary control points to which all dimensions, angles, bearings, block numbers and similar data shall be referred;

 Center Point Conceptual Plan Map, dated October 2007, (folded in back of binder)
- 5. The proposed name of the development and the names and addresses of the owner(s) of record, and the applicant, if different from the owner(s), with proof of authority to submit and process the application;

 See page 2 of binder
- 6. Type of land use of all parcels contiguous to the development property; See page 4 of binder Surrounding Land Uses
- 7. A Master Plan Planned Development Map showing:
 - a. Vicinity map or sketch showing the general relationship of the proposed development to the surrounding areas with access roads referenced to the intersection of the nearest state primary or secondary paved roads;

 See Conceptual Plan Maps (folded in back of binder)
 - b. Topographic survey of the area being applied for; See Conceptual Plan Maps (folded in back of binder)
 - c. Where applicable, surveyed line delineating the extent of any special district boundary on the development property; Not Applicable
 - d. Where applicable, survey line delineating wetlands; See Conceptual Plan Maps and Conceptual Utility and Drainage Exhibit (both maps are folded in back of binder)
 - e. The location, dimensions, descriptions, and flow of existing watercourses and drainage structures within the tract or on contiguous tracts; See Conceptual Utility and Drainage Exhibit (folded in back of binder)
 - f. Location of municipal limits or county lines, and district and overlay district boundaries, if they traverse the tract, form part of the boundary of the tract, or are contiguous to such boundary; Not Applicable

g. The location, dimensions, name and description of all existing or recorded streets, alleys, reservations, easements or other public rights-of-way within the tract intersecting or contiguous with its boundaries or forming such boundaries;

See Boundary Survey dated May 22, 2008

h. The location, dimensions, name and description of all existing or recorded residential lots, parks, public areas, permanent structures and other sites within or contiguous with the tract;

See Boundary Survey dated May 22, 2008

- i. The proposed location, dimensions, and description of land(s) for public facilities; Not Applicable
- j. Proposed conceptual street system layout, vehicular and pedestrian, with the written comments of the DSR and/or his/her representative.

 See Center Point Conceptual Plan Map dated October 2007
- 8. Traffic impact analysis as set forth in the Jasper County Zoning Ordinance and Land Development Regulations or as required by the DSR and/or County Council, and a statement of need for mitigation (if any). If mitigation is required, a statement of proposed mitigation;

See Traffic Impact Analysis prepared by Stantec Consulting Services, dated September 2022 – beginning on page 6 of the binder

- 9. Preliminary Master Drainage Plan and Master Water and Sewer Plan with the written comments of the DSR and/or his/her representative.

 See Conceptual Utility and Drainage Plan Exhibit (folded in back of binder)
- 10. Preliminary comments from affected agencies having approval or permitting authority over elements related to the proposed development, or evidence that a written request for such comments was properly submitted to the agency and a reasonable period of time has elapsed without receipt of such comments. Minimum agency responses include South Carolina Department of Transportation, South Carolina Department of Health and Environmental Control (SCDHEC), and Office of Ocean and Coastal Resource Management (OCRM), Jasper County School District and Jasper County Emergency Services (as applicable).

See SCDOT letter in back of binder - No other agency comments were received

11. A narrative addressing:

a. The proposed ownership and maintenance of streets, drainage systems, water and sewer systems, open space areas, parking areas, and other proposed amenities and improvements; and when any of the above are to be privately owned, a description of the governance, operation and financial structure to be used to secure their maintenance, management and long term improvements;

See Project Narrative – last page of binder

- b. Proposed phasing and time schedule if development is to be done in phases; See Project Narrative – last page of binder
- c. Proposed phasing and time schedule for lands to be dedicated for public facilities; See Project Narrative – last page of binder
- d. Proposed internal site planning standards such as typical lot sizes and widths, and setbacks and buffers aimed at addressing potential incompatibility between adjacent land uses and activities;

See Project Narrative – last page of binder

- e. Letters of capability and intent to serve community water supply or sewage disposal service from the affected agency or entity, where applicable;

 See Will Serve Letter from BJWSA last page of binder. No other will serve letters were received
- f. A statement describing the character of, and rationale for, the proposed Master Plan;
 and
 See Project Narrative 3rd tab in binder
- g. Other information or descriptions deemed reasonably appropriate by staff or Planning Commission for review.

Staff Recommendation: Staff does not recommend approval of the Master Plan for Center Point Apartments until all will serve letters are received and other agency comments are received or evidence is provided, requesting comments from the other agencies.

Attachments:

- 1. Master Plan Document
- 2. Concept Map for Center Point PDD inside document binder
- 3. Center Point PDD Standards instead of duplicating, please refer to the PDD standards provided for Center Point Storage

HUSSEY GAY BELL

Established 1958

MASTER PLAN SUBMTIALL CENTERPOINT APARTMENTS



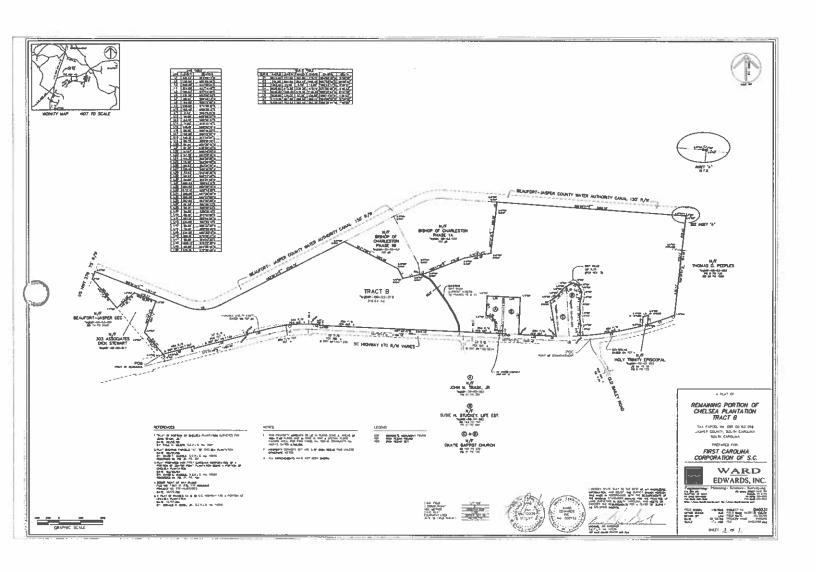
SITE DENSITY

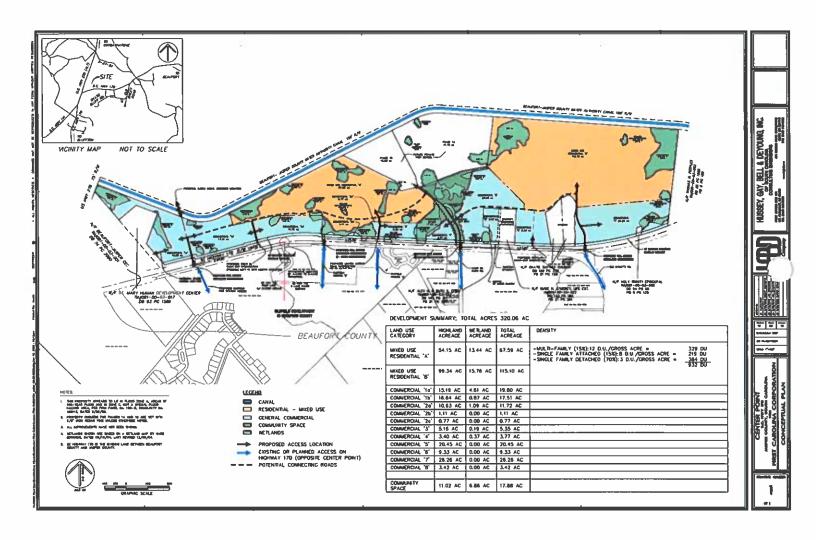
Site Area: 1,320,263 Square Feet = 30.31 Acres

Zoning: Planned Development District

Total Units: 327 Units

Units Per Acre: 10.78 Units per Acre







CENTERPOINT APARTMENTS

Proposed name: Centerpoint Apartments

Current Owner: First Carolina Corp of SC

Contact: John Trask

200 Distant Island Dr.

Beaufort, SC 29907

Future Owner and Developer: Wood Partners

Contact: Dennis Jordan, 843-814-3127

225 Seven Farms Dr. Suite 402

Charleston, SC 29492

Applicant: Hussey Gay Bell

Contact: Justin Robinette, 843-849-7500

474 Wando Park Blvd, Suite 201

Mount Pleasant, SC 29464

APPOINTMENT OF AGENT

The undersigned owner(s), John Trask, hereby appoint(s) Hussey Gay Bell, Inc. as the exclusive agent for the purpose of making an application to Jasper County for approval of the master plan described in the attached application. The owner(s) hereby agree(s) that this agent has the authority to act for and on behalf of the owner(s) as follows:

- 1. to submit an application and required supplemental materials;
- 2. to appear at public meetings and give representation and comments on behalf of the owner(s);
- 3. to accept conditions or recommendations made by Jasper County Technical Review Committee for the proposed improvements on the subject property; and
- 4. to act on behalf of the owner(s) without limitations with regard to any and all things directly or indirectly connected with or arising out of any application for master plan approval under Jasper County Development Ordinance.

This Appointment of Agent shall remain in effect until final resolution of the attached application.

Signed this day of 2021

Property Owner Name:

Title:

Agent Name: Justin Robinette, PE

Title: Civil Engineering Department Head



SURROUNDING LAND USES

West:

TMS# 081-00-03-003 - Mobile Home Park

North:

TMS# 098-00-00-001 - BJWSA Canal

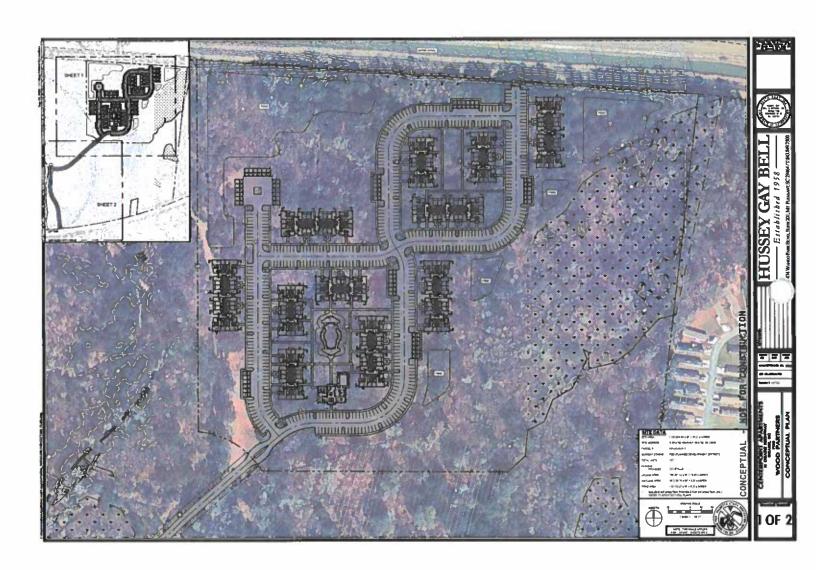
East:

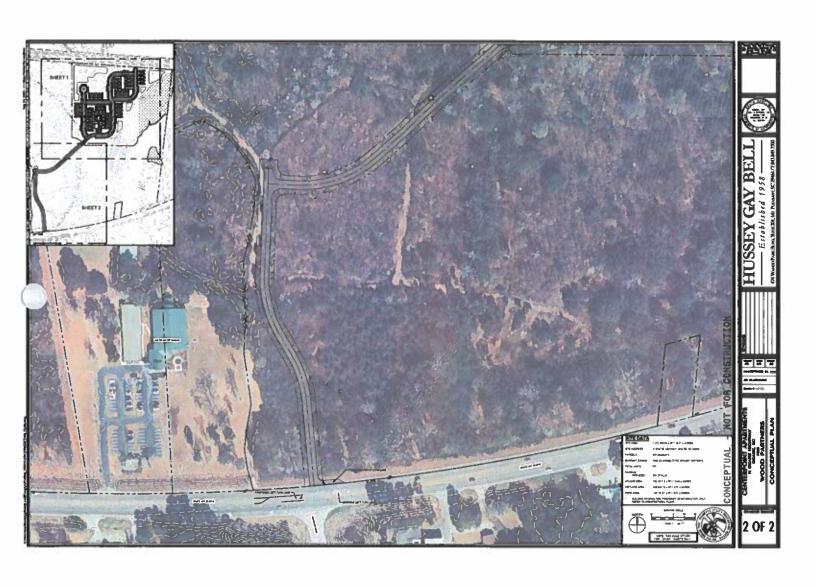
TMS# 081-00-03-020 - Baptist Church

TMS# 081-00-03-019 - Planned Residential Development

South:

Okatic Highway with undeveloped, residential, and commercial lots across the highway







STREET LAYOUT COMMENTS

The location of the access road has been selected to allow it to properly align with Old Bailey Road as well as keep it in line with the original 2008 plan for the property. This access road will be designed to allow for other developments to tic into it and gain access to Okatic Highway. Roads within the apartment complex have been laid out to allow for maximum flow and access within the complex.



CENTERPOINT APARTMENTS

2022 September

Project No: **171002628**

DRAFT

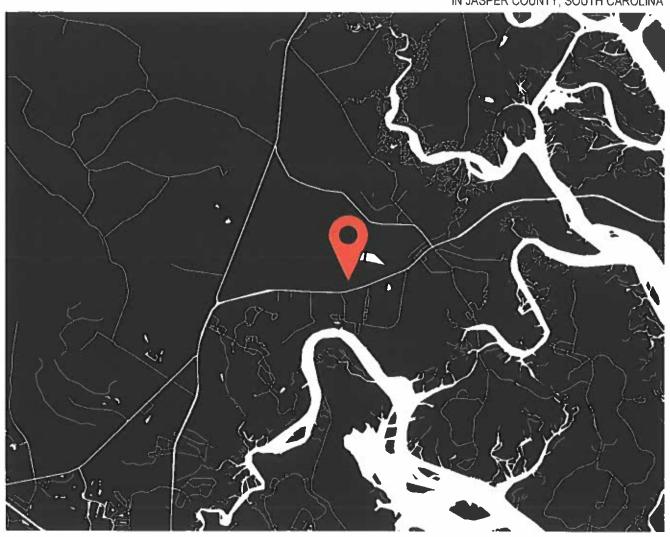
PREPARED FOR:

HUSSEY GAY BELL

474 WANDO PARK BLVD, SUITE 201 // MT PLEASANT, SC, 29464

TRAFFIC IMPACT ANALYSIS

ALONG SC 170/OKATIE HIGHWAY IN JASPER COUNTY, SOUTH CAROLINA



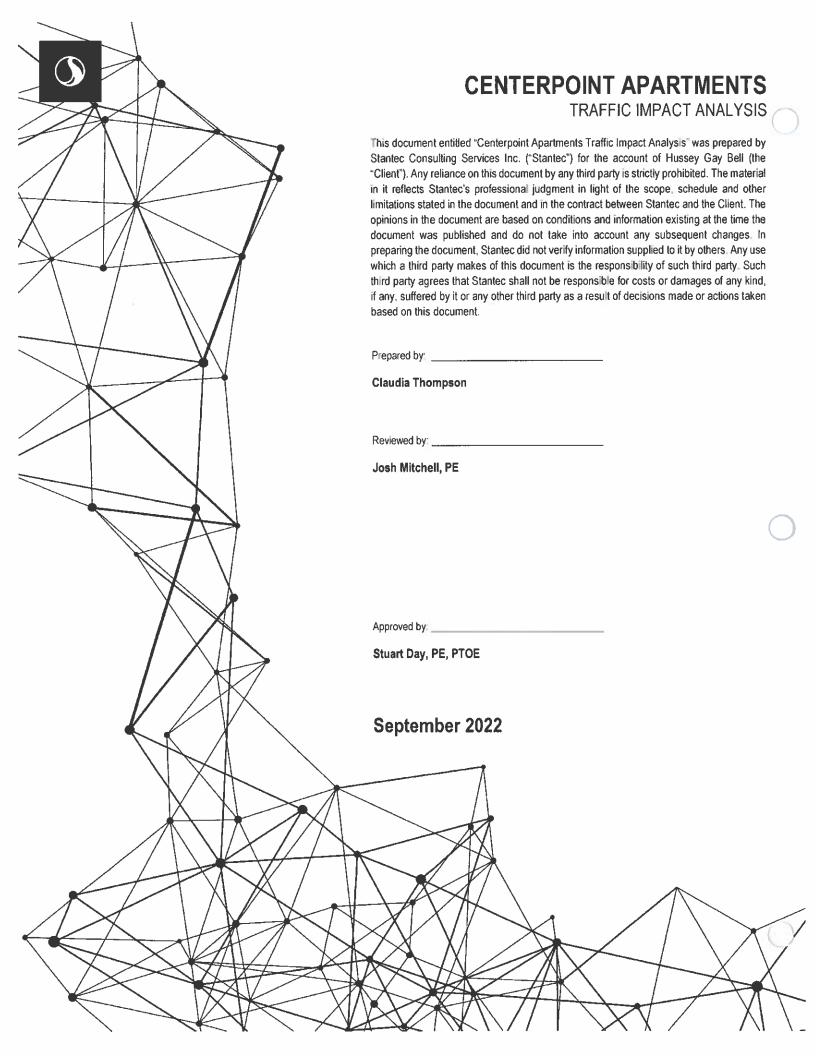


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EXECUTIVE SUMMARY

A traffic impact analysis was conducted for the Centerpoint Apartments development in accordance with SCDOT and Jasper County guidelines.

The proposed Centerpoint Apartments development (which is anticipated to be constructed by 2025) is located along SC 170/Okatie Highway and will consist of multifamily housing units.

Access to the development is proposed to be provided via one full access driveway along SC 170/Okatie Highway aligned with Old Bailey Road, which meets the SCDOT spacing requirements.

The extent of the roadway network analyzed consisted of the intersection of SC 170/Okatie Highway & Old Bailey Road/Project Driveway.

The operation of this intersection (in terms of average vehicular delay and level of service) was analyzed with and without the project traffic anticipated to be generated by the Centerpoint Apartments development.

The results of the analysis indicate that the study intersection currently operates and is expected to continue to operate at an unacceptable LOS with or without the proposed Centerpoint Apartments development.

The intersection of SC 170/Okatie Highway & Old Bailey Road/Project Driveway is projected to experience undesirable delay in both peak hours of the 2022 Existing, No Build, and Build Conditions. This projected delay is likely due to the conservative nature of the HCM 6th Edition unsignalized methodology and is not an uncommon condition for two-way stop control during the peak hours of the day. A signal would likely mitigate this delay - though a cursory review indicates that signal warrants are not likely to be met considering the project traffic from the Centerpoint Apartment development only. However, as the remainder of the surrounding parcels develop, a signal may be warranted. Therefore, it is recommended that the Project Driveway approach be constructed to include two approach lanes (a shared through/right-turn lane and an exclusive left-turn lane) that aligns with the Old Bailey Road approach to accommodate for signalization in the future if/when warranted.

Based on SCDOT's Roadway Design Manual considerations, an exclusive eastbound left-turn lane along SC 170/Okatie Highway is recommended at the Project Driveway. Per the criteria documented in Section 5D-4 of SCDOT's Access and Roadside Management Standards (ARMS, 2008), it is recommended that the exclusive left-turn lane consist of a total of 400 feet, with 200 feet of storage and a 200-foot taper. Since there is a two-way-left-turn-lane (TWLTL) present, it is recommended that the TWLTL be restriped to provide this turn lane storage and taper.

Based on SCDOT's Roadway Design Manual considerations, an exclusive westbound right-turn lane along SC 170/Okatie Highway is recommended at the Project Driveway. Per the criteria documented in Section 5D-4 of SCDOT's Access and Roadside Management Standards (ARMS, 2008), it is recommended that the exclusive right-turn lane consist of a total of 300 feet, with 100 feet of storage and a 200-foot taper.

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1.0 INTRODUCTION

1.1 PROJECT BACKGROUND

The purpose of this report is to document the procedures and findings of a traffic impact analysis for the proposed Centerpoint Apartments development in accordance with SCDOT and Jasper County guidelines. The proposed Centerpoint Apartments development is located along SC 170/Okatie Highway, as shown in **Exhibit 1.1**, and will consist of the 336 multifamily housing units, with anticipated completion in 2025.

Access to the development will be provided through one full access driveway along SC 170/Okatie Highway aligned with Old Bailey Road, as shown in the site plan in **Exhibit 1.2**.

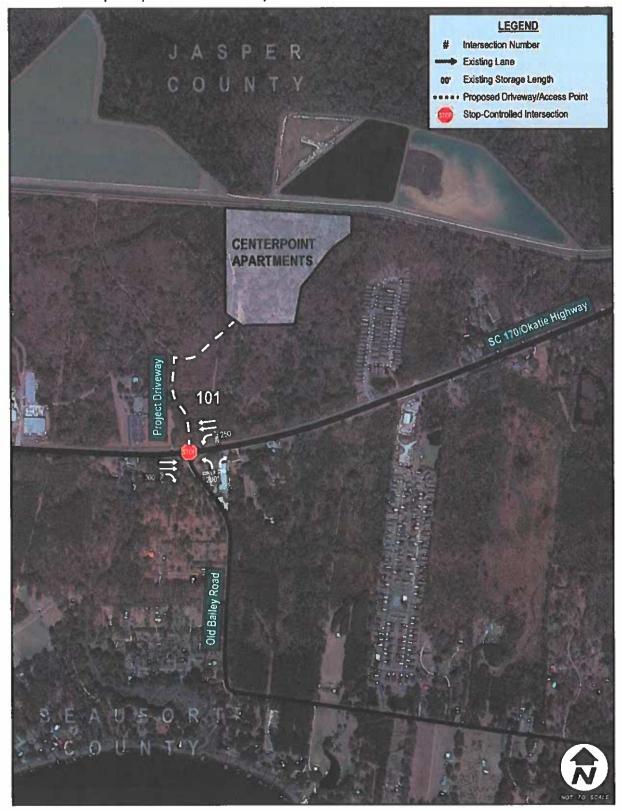
The traffic impact analysis considers the weekday AM peak hour (between 7:00 AM and 9:00 AM) and the weekday PM peak hour (between 4:00 PM and 6:00 PM) as the study time frames. The extent of the existing roadway network to be studied consists of the intersection of SC 170/Okatle Highway & Old Bailey Road/Project Driveway.

1.2 EXISTING ROADWAY CONDITIONS

SC 170/Okatie Highway is a five-lane principal arterial that primarily serves residential and commercial land uses. The posted speed limit is 55 mph and the average annual daily traffic (AADT) in 2021 was 34,400 vehicles/day. Based upon existing turning movement counts, the percentage of heavy vehicles along SC 170/Okatie Highway is approximately 3%.

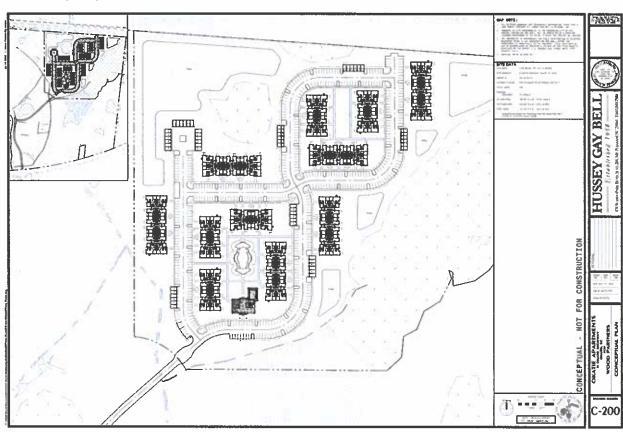
Old Bailey Road is a two-lane major collector that primarily serves residential land uses. The posted speed limit is 30 mph and the AADT in 2021 was 400 vehicles/day. Based upon existing turning movement counts, the percentage of heavy vehicles along Old Bailey Road is approximately 8%.

Exhibit 1.1 – Centerpoint Apartments Location Map



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Exhibit 1.2 - Centerpoint Apartments Site Plan



HUSSEY GEV BELL 1.3

2.0 DRIVEWAY SPACING REVIEW

Access to the development will be provided through one proposed full access driveway along SC 170/Okatie Highway.

The **Project Driveway** is proposed to be located along SC 170/Okatie Highway aligned with Old Bailey Road which meets the spacing criteria required by SCDOT ARMS.

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3.0 PROJECT TRAFFIC

3.1 PROPOSED LAND USES

Project Traffic in this analysis is defined as the vehicle trips anticipated to be generated by the proposed Centerpoint Apartments development. These trips were distributed and assigned throughout the study roadway network.

The Centerpoint Apartments development is proposed to consist of the 336 multifamily housing units.

3.2 TRIP GENERATION ESTIMATES

The trip generation potential for the development was estimated using information contained in ITE's *Trip Generation Manual*, 11th Edition (2021) reference. The estimates utilized land use codes (LUC) 220 – Multifamily Housing (Low-Rise).

Due to the nature of the proposed Centerpoint Apartments development, internal capture trips, pass-by trips, and multimodal reduction were not considered in the trip generation estimates.

The trip generation estimates for the development are shown below in **Table 3.1** and documented in **Appendix A**.

3.3 TRIP DISTRIBUTION & ASSIGNMENT

3.3.1 New External Traffic

New external traffic expected to be generated by the Centerpoint Apartments development was distributed and assigned to the roadway network based upon existing travel patterns in the area. The general distribution of project trips was assumed to be:

- 50% to/from the east via SC 170/Okatie Highway; and
- 50% to/from the west via SC 170/Okatie Highway.

The assignment of new external project traffic anticipated to be generated by the Centerpoint Apartments development is illustrated in **Exhibit 3.1** and the peak hour project traffic volumes are illustrated in **Exhibit 3.2**.

Table 3.1 - Trip Generation Estimates

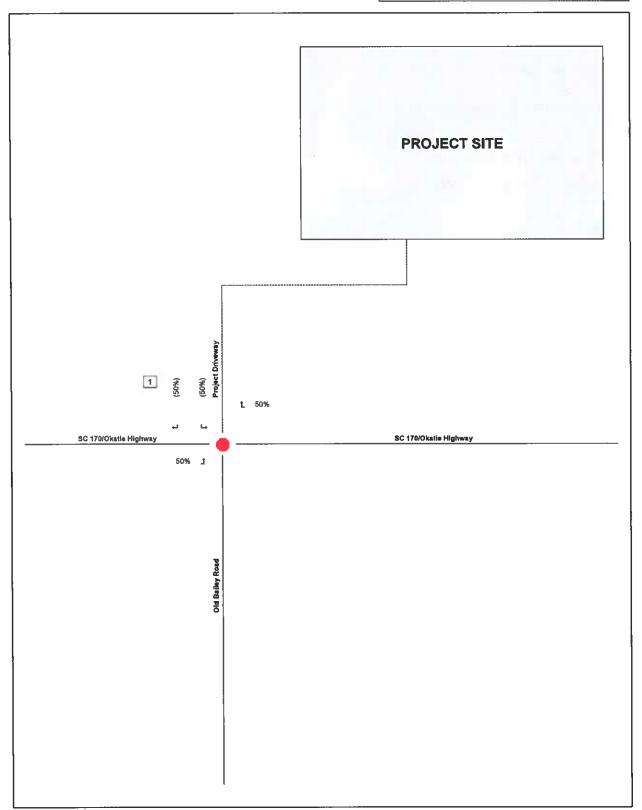
Land Use	ITE LUC	Scale	Daily	Weekday AM Peak Period		Weekday PM Peak Period	
				Enter	Exit	Enter	Exit
Multifamily Housing (Low-Rise)	220	336 Dwelling Units	2,229	30	97	104	61
		New, External Trips	2,229	30	97	104	61

Exhibit 3.1 - Project Traffic Distribution and Assignment



Project Traffic Volume Assignment Legend 00% - Inbound Trip Percentage (00%) - Outbound Trip Percentage





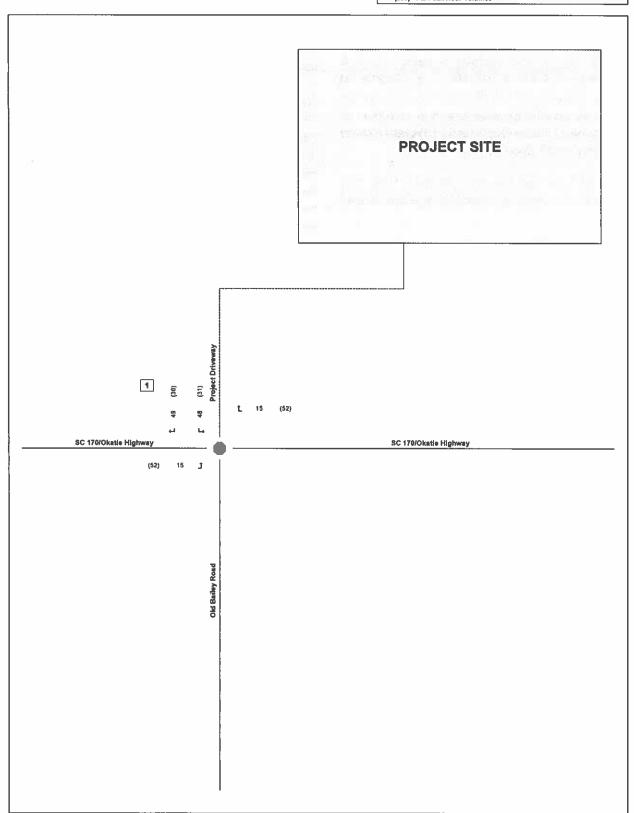
3.3 HUSSEY GAY BELL

Exhibit 3.2 - Peak Hour Project Traffic Volumes



Traffic Volumes Legend 000 - AM Peak Hour Volumes (000) - PM Peak Hour Volumes

TWSC



4.0 TRAFFIC VOLUME DEVELOPMENT

4.1 EXISTING TRAFFIC VOLUMES

The traffic impact analysis considers the weekday AM peak hour (between 7:00 AM and 9:00 AM) and the weekday PM peak hour (between 4:00 PM and 6:00 PM) as the study time frames. The extent of the existing roadway network to be studied consists of the intersection of SC 170/Okatie Highway & Old Bailey Road/Project Driveway.

Existing 2022 traffic volumes were collected at these study area intersections during the AM and PM peak periods listed above.

The raw traffic volume counts are provided in **Appendix B** and the 2022 existing AM and PM peak hour traffic volumes are illustrated in **Exhibit 4.1**.

4.2 FUTURE TRAFFIC PROJECTIONS

Future 2025 No Build traffic volumes were developed by adding background traffic growth and vested traffic to the collected existing study area peak hour volumes. Background traffic growth is growth anticipated to occur in the study area regardless of the proposed Centerpoint Apartments development. Vested traffic is traffic anticipated to be generated by other known nearby developments expected to be completed prior to the Centerpoint Apartments development.

To develop an annual background growth rate for use in the analysis, historical count data along SC 170/Okatie Highway (SCDOT count stations #169 and #184) was reviewed over the past 10 years. It was determined that the roadways have experienced a collective annual growth of 4.8%. Therefore, in an effort to be conservative, a 5% annual growth rate was utilized to develop anticipated background traffic growth through the anticipated 2025 buildout year.

Two separate projects are currently proposed adjacent to the Centerpoint Apartments development. The Centerpoint development consisting of 220 single family detached housing units, 240 multi-family (low-rise) housing units, and a 20,600 square-foot nursing home is located along SC 170/Okatie Highway near Old Meadow Road. The Centerpoint Storage Facility development consisting of a 53,344 square-foot climate-controlled storage center is located along SC 170/Okatie Highway near Camp St Marys Road. The traffic volumes anticipated to be generated by these developments were considered in the analysis as vested traffic. These vested traffic volumes are illustrated in Exhibit 4.2.

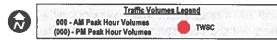
Future 2025 No Build AM and PM peak hour traffic volumes, illustrated in **Exhibit 4.3**, were developed by adding the background traffic growth (assuming 5% annual growth of the existing traffic volumes) and the vested traffic from the nearby Centerpoint and Centerpoint Storage Facility development to the 2022 existing AM and PM peak hour traffic volumes.

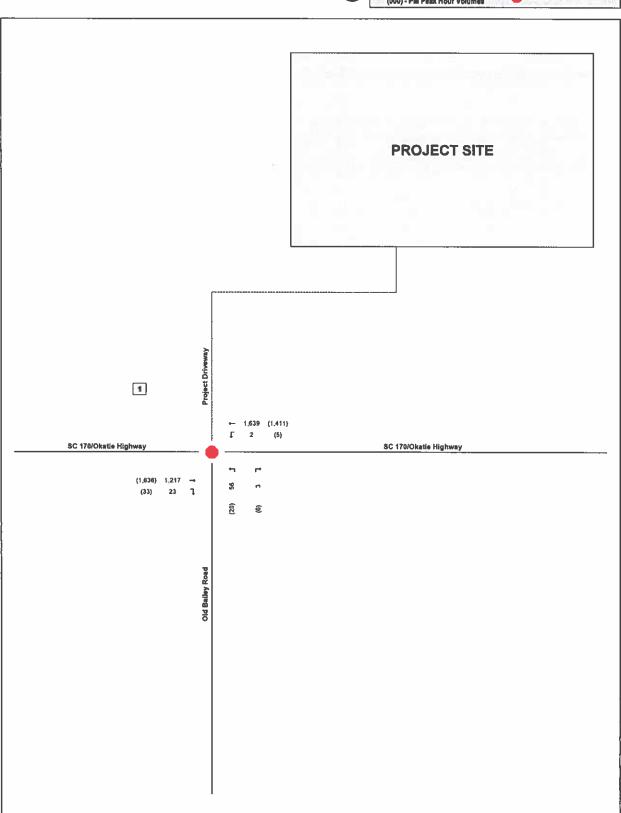
Future 2025 Build AM and PM peak hour traffic volumes, illustrated in **Exhibit 4.4**, were developed by adding the Centerpoint Apartments project traffic volumes (shown in **Exhibit 3.2**) to the 2025 No Build traffic volumes.

Volume development worksheets for each intersection are documented in **Appendix C**.

HUSSEY GAY BELL 4.1

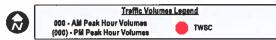
Exhibit 4.1 - 2022 Existing Peak Hour Traffic Volumes

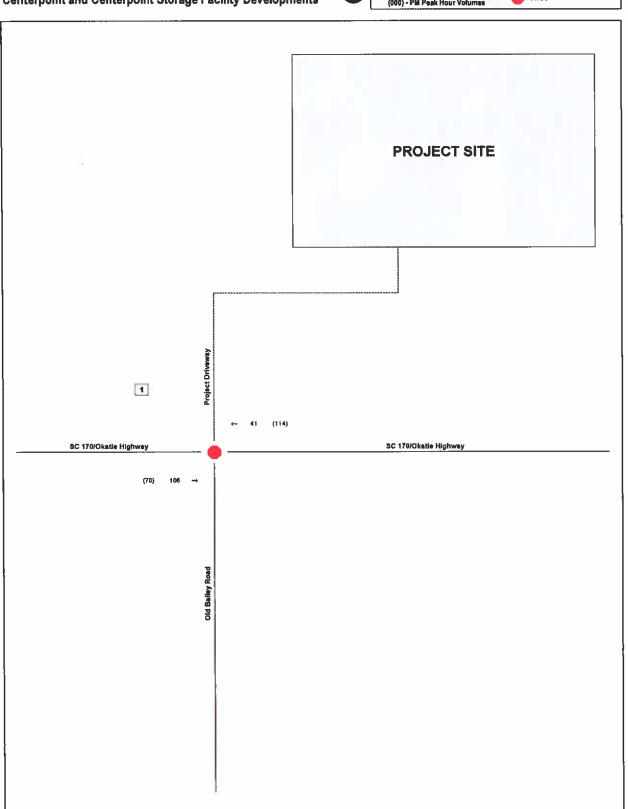




HUSSEY GAY BELL

Exhibit 4.2 - Vested Traffic Volumes from the Nearby Centerpoint and Centerpoint Storage Facility Developments





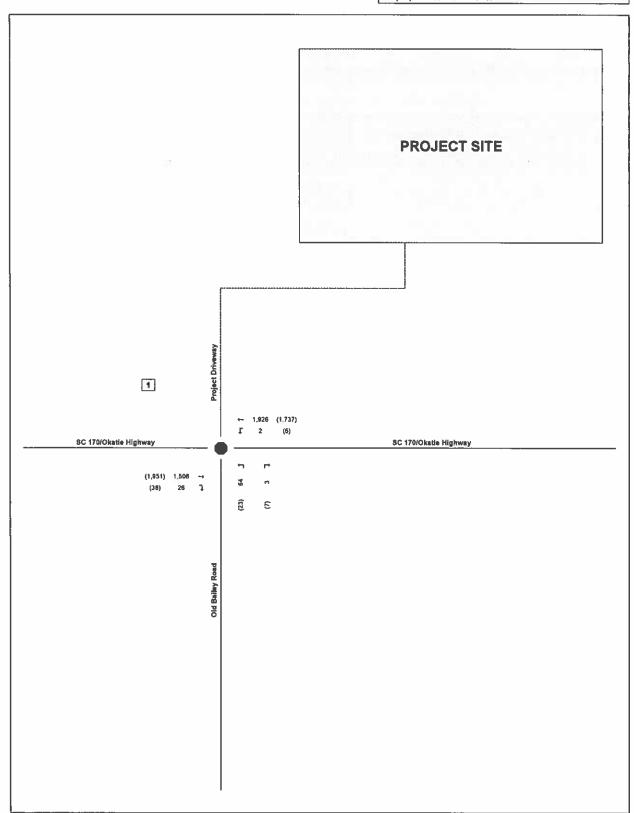
HUSSEY GAY BELL 4.3

Exhibit 4.3 - 2025 No Build Peak Hour Traffic Volumes



Traffic Volumes Legend 000 - AM Peak Hour Volumes (000) - PM Peak Hour Volumes

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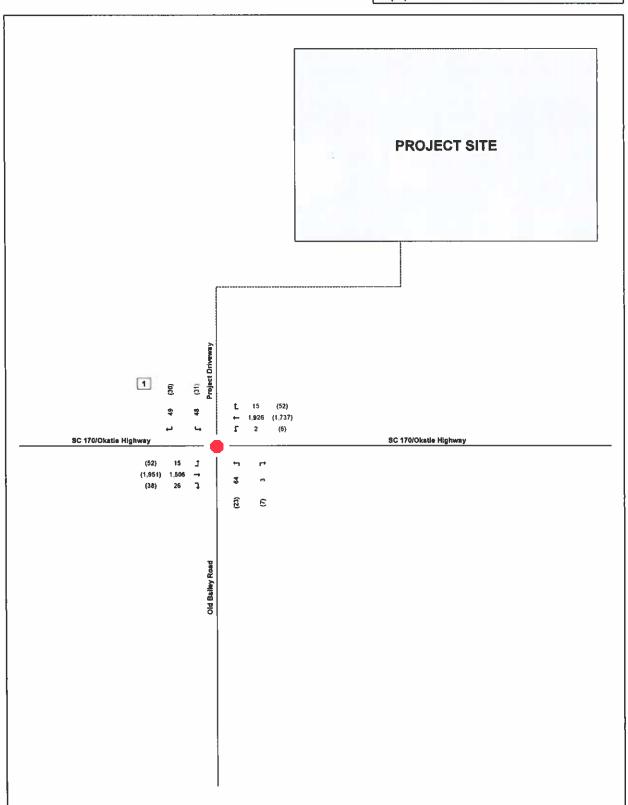
HUSSEY GAY BELL

Exhibit 4.4 - 2025 Build Peak Hour Traffic Volumes



Traffic Volumes Legend 000 - AM Peak Hour Volumes (000) - PM Peak Hour Volumes





HUSSEY GAY BELL

4.5

5.0 TRAFFIC IMPACT ANALYSIS

A traffic impact analysis was conducted for the Centerpoint Apartments development which analyzed the need for turn lanes at the project driveways as well as the operation of study area intersections according to *Highway Capacity Manual (HCM)* 6th *Edition* methodologies.

5.1 TURN LANE ANALYSIS

5.1.1 Right-Turn Lanes

The need for exclusive right-turn lanes is based upon the criteria documented in *Section 9.5.1.1* of SCDOT's *Roadway Design Manual* (2021), which consists of nine considerations, listed below:

- At a free-flowing leg of any unsignalized intersection on a two-lane urban or rural highway which satisfies the criteria in Figure 9.5-A;
- at a free-flowing leg of any unsignalized intersection on a high-speed (50 mph or greater), four-lane urban or rural highway which satisfies the criteria in Figure 9.5-B;
- at the free-flowing leg of any unsignalized intersection on a six-lane urban or rural highway;
- at any intersection where a capacity analysis determines a right-turn lane is necessary to meet the overall level-ofservice criteria;
- 5. as a general rule, at any signalized intersection where the projected right-turning volume is greater than 300 vehicles per hour and where there are greater than 300 vehicles per hour per lane on the mainline (A traffic analysis will be required if the turning volumes are greater than 300 vehicles per hour);
- for uniformity of intersection design along the highway if other intersections have right-turn lanes;
- at any intersection where the mainline is curved to the left and where the mainline curve requires superelevation;
- at railroad crossings where the railroad is paralleled to the facility and is located close to the intersection and where a right-turn lane would be desirable to store queued vehicles avoiding interference with the movement of through traffic; or
- at any intersection where the crash experience, existing traffic operations, sight distance restrictions (e.g., intersection beyond a crest vertical curve), or engineering judgement indicates a significant conflict related to right-turning vehicles;

Table 5.1 below details whether the previously mentioned criteria for exclusive right-turn lanes are satisfied for each driveway. An "≥" indicates that the criteria is not met or is not applicable, and a "✓" indicates that it is applicable and met.

Table 5.1 - Right-Turn Lane Criteria Warrants

Criteria	Project Driveway	Reference/Note
1	ж	Not a 2-lane highway
2	✓	Appendix G
3	30	Not a 6-lane highway
4	3¢	Table 5.4
5	k	Exhibit 4.4
6	30	Right turn lanes provided at some driveways, but not at others.
7	30	Mainline not curved to the left
8	30	No railroad crossing
9	N/A	Crash data not provided

Based on SCDOT's Roadway Design Manual considerations, an exclusive westbound right-turn lane along SC 170/Okatie Highway is recommended at Project Driveway #1.

Per the criteria documented in Section 5D-4 of SCDOT's Access and Roadside Management Standards (ARMS, 2008), it is recommended that the exclusive right-turn lane consist of a total of 300 feet, with 100 feet of storage and a 200-foot taper.

5.1.2 Left-Turn Lanes

The need for exclusive left-turn lanes is based upon the criteria documented in *Section 9.5.1.2* of SCDOT's *Roadway Design Manual* (2021), which consists of nine considerations, listed below:

- 1. At any unsignalized intersection on principal, high-speed rural highways with other arterials or collectors;
- at any unsignalized intersection on a two-lane urban or rural highway that satisfies the criteria in Figures 9.5-C, 9.5-D, 9.5-E, 9.5-F, or 9.5-G;
- at any intersection where a capacity analysis determines a left-turn lane is necessary to meet the level of service criteria:
- at any signalized intersection where the left-turn volume is 300 vehicles per hour or more, conduct a traffic review to determine if dual left-turn lanes are required;
- as a general rule, at any intersection where the leftturning volume is 100 vehicles per hour (for a single turn lane) or 300 vehicles per hour (for a dual turn lane);
- at all entrances to major residential, commercial, and industrial developments;
- 7. at all median crossovers;
- for uniformity of intersection design along the highway if other intersections have left-turn lanes (i.e., to satisfy driver expectancy); or
- at any intersection where the crash experience, existing traffic operations, sight distance restrictions (e.g., intersection beyond a crest vertical curve), or engineering judgement indicates a significant conflict related to left-turning vehicles;

Table 5.2 below details whether the previously mentioned criteria for exclusive left-turn lanes are satisfied for each driveway. An "∗" indicates that the criteria is not met or is not applicable, and a "✓" indicates that it is applicable and met.

Table 5.2 - Left-Turn Lane Criteria Warrants

Criteria	Project Driveway	Reference/Note
1	36	Not arterial or collector
2	✓	Appendix G
3	×	Table 5.4 Fails with & without left turn lane
4	36	Not signalized
5	36	Exhibit 4.4
6	3c	Not a major development
7	✓	SC 170 has a median crossing
8	ж	TWLTL provided along SC 170
9	N/A:	No crash data provided

Based on SCDOT's *Roadway Design Manual* considerations, an exclusive eastbound left-turn lane along SC 170/Okatie Highway **is recommended** at Project Driveway #1.

Per the criteria documented in Section 5D-4 of SCDOT's Access and Roadside Management Standards (ARMS, 2008), it is recommended that the exclusive left-turn lane consist of a total of 400 feet, with 200 feet of storage and a 200-foot taper.

5.2 INTERSECTION LOS ANALYSIS

Using the existing and projected peak hour traffic volumes previously discussed, intersection analysis was conducted for the study and project driveway intersections considering 2022 Existing Conditions, 2025 No Build Conditions, and 2025 Build Conditions. The analysis was conducted using the Transportation Research Board's *Highway Capacity Manual (HCM)* 6th Edition methodologies of the Synchro, Version 11 software for stop-controlled intersection analysis.

Intersection level of service (LOS) grades range from LOS A to LOS F, which are directly related to the level of control delay at the intersection and characterize the operational conditions of the intersection traffic flow. LOS A operations typically represent ideal, free-flow conditions where vehicles experience little to no delays, and LOS F operations typically represent poor, forced-flow (bumper-to-bumper) conditions with high vehicular delays, and are generally considered undesirable. **Table 5.3** summarizes the HCM 6th Edition control delay thresholds associated with each LOS grade for unsignalized and signalized intersections. Level of service A through D is considered to be acceptable LOS, while LOS E and F is considered to be undesirable.

Table 5.3 - HCM 6th Edition Intersection LOS Criteria

LOS	Control Delay per Vehicle (s) Unsignalized
Α	≤ 10
В	> 10 and ≤ 15
С	> 15 and ≤ 25
D	> 25 and ≤ 35
É	> 35 and ≤ 50
F	> 50

As part of the intersection analysis, SCDOT's default *Synchro* parameters were utilized. The existing 2022 traffic counts' peak hour factors (PHF) were utilized in the analysis of existing conditions. Future-year 2025 conditions were analyzed utilizing existing PHF, but with a minimum PHF of 0.90 and maximum PHF of 0.95 considered. The existing 2022 heavy vehicle percentages, as previously discussed, were utilized in the analysis, with a minimum percentage of 2% considered.

Existing lane geometry was utilized for the analysis of 2022 Existing Conditions and 2025 No Build Conditions. The 2025 Build Conditions were analyzed both with existing lane geometry and with any proposed improvements resulting from this impact analysis (including any proposed exclusive turn lanes per the results of **Section 5.1**) to illustrate their anticipated impact on traffic operations.

The results of the intersection analysis for existing and futureyear conditions for the weekday AM and PM peak hour time periods are summarized in **Table 5.4.**

For two-way stop-controlled (TWSC) intersections, the LOS and delay results are evaluated for the worst-case minor-street approaches only, per *HCM* 6th Edition methodologies for TWSC intersections.

Table 5.4 - Peak Hour Intersection Analysis Results

						LOS/Delay (see	conds/vehicle)		
Lutum	- 41	0 1 1			AM Peak Hour			PM Peak Hour	
Interse	ection	Control	Approach	2022 Existing	2025 No Build	2025 Build	2022 Existing	2025 No Bulid	2025 Build
SC 170/Ok	atie Highway &	TWSC	NB	E/38 6	F/77.0	F*	E/37.0	F/65.2	F*
Old Bailey Road (NE	3)/Project Driveway (SB)	14420	SB	-	-	F*	-	-	F*

^{*}Delay exceeds 300 seconds

As shown in **Table 5.4**, the results of the analysis indicate that the study intersection currently operates and is expected to continue to operate at an unacceptable LOS with or without the proposed Centerpoint Apartments development.

The intersection of SC 170/Okatie Highway & Old Bailey Road/Project Driveway is projected to experience undesirable delay in both peak hours of the 2022 Existing, No Build, and Build Conditions. This projected delay is likely due to the conservative nature of the HCM 6th Edition unsignalized methodology and is not an uncommon condition for two-way stop control during the peak hours of the day. A signal would likely mitigate this delay - though a cursory review indicates that signal warrants are not likely to be met considering the project traffic from the Centerpoint Apartment development only. However, as the remainder of the surrounding parcels develop, a signal may be warranted. Therefore, it is recommended that the Project Driveway approach be constructed to include two approach lanes (a shared through/right-turn lane and an exclusive left-turn lane) that aligns with the Old Bailey Road approach to accommodate for signalization in the future if/when warranted.

Worksheets documenting the intersection analyses are provided in **Appendix D** for 2022 Existing Conditions, **Appendix E** for 2025 No Build Conditions, and **Appendix F** for 2025 Build Conditions.

6.0 SUMMARY OF FINDINGS AND RECOMMENDATIONS

A traffic impact analysis was conducted for the Centerpoint Apartments development in accordance with SCDOT and Jasper County guidelines.

The proposed Centerpoint Apartments development (which is anticipated to be constructed by 2025) is located along SC 170/Okatie Highway and will consist of multifamily housing units.

Access to the development is proposed to be provided via one full access driveway along SC 170/Okatie Highway aligned with Old Bailey Road, which meets the SCDOT spacing requirements.

The extent of the roadway network analyzed consisted of the intersection of SC 170/Okatie Highway & Old Bailey Road/Project Driveway.

The operation of this intersection (in terms of average vehicular delay and level of service) was analyzed with and without the project traffic anticipated to be generated by the Centerpoint Apartments development.

The results of the analysis indicate that the study intersection currently operates and is expected to continue to operate at an unacceptable LOS with or without the proposed Centerpoint Apartments development.

The intersection of SC 170/Okatie Highway & Old Bailey Road/Project Driveway is projected to experience undesirable delay in both peak hours of the 2022 Existing, No Build, and Build Conditions. This projected delay is likely due to the conservative nature of the HCM 6th Edition unsignalized methodology and is not an uncommon condition for two-way stop control during the peak hours of the day. A signal would likely mitigate this delay - though a cursory review indicates that signal warrants are not likely to be met considering the project traffic from the Centerpoint Apartment development only. However, as the remainder of the surrounding parcels develop, a signal may be warranted. Therefore, it is recommended that the Project Driveway approach be constructed to include two approach lanes (a shared through/right-turn lane and an exclusive left-turn lane) that aligns with the Old Bailey Road approach to accommodate for signalization in the future if/when warranted.

Based on SCDOT's Roadway Design Manual considerations, an exclusive eastbound left-turn lane along SC 170/Okatie Highway is recommended at the Project Driveway. Per the criteria documented in Section 5D-4 of SCDOT's Access and Roadside Management Standards (ARMS, 2008), it is recommended that the exclusive left-turn lane consist of a total of 400 feet, with 200 feet of storage and a 200-foot taper. Since there is a two-way-left-turn-lane (TWLTL) present, it is recommended that the TWLTL be restriped to provide this turn lane storage and taper.

Based on SCDOT's Roadway Design Manual considerations, an exclusive westbound right-turn lane along SC 170/Okatie Highway is recommended at the Project Driveway. Per the criteria documented in Section 5D-4 of SCDOT's Access and Roadside Management Standards (ARMS, 2008), it is recommended that the exclusive right-turn lane consist of a total of 300 feet, with 100 feet of storage and a 200-foot taper.

HUSSEY GAY BELL 6.1

CENTERPOINT APARTMENTS TRAFFIC IMPACT ANALYSIS APPENDICES

Appendix A TRIP GENERATION WORKSHEETS

HUSSEY GAY BELL APPENDIX A

					TRIP (<u>GENE</u>	RAT	ION	ESTI	MAT	<u>ES</u>										
					Ce	enterp	oint	Apa	rtme	nts											
						W	/eekd	ay Da	ily												
	Trip G	enerati	on Char	acteristics			rect bution	Gı	oss Tr	ps	Inte	rnal Ca	pture 1	rips	Pas	s-By Ca	epture '	Trips	New E	xterna	Trip
Land Use	€d.	LUC	Scale	Unit	Equation/Rate	ln	Out	ln	Out	Total	%	ĺn	Out	Trips	3%	In	Out	Trips	In	Out	Tota
Multifamily Housing (Low-Rise)	11th	220	336	Dwelling Units	T = 6.41 (X) + 75.31	50%	50%	1,115	1,114	2,229	0%	0	0	0	0%	0	0	0	1,115	1,114	2,22
W. TII							Total:	1,115	1,114	2,229	0%	0	0	0	0%	0	0	0	1,115	1,114	2,22
	Trip G	enerati	on Char	acteristics	•		lay Al rect bution		a <mark>k Ho</mark> oss Tr		Inte	rnal Ca	pture 1	rips	Pass	s-By Ca	apture ⁻	Trips	New E	Externa	1 Trip
Land Use	Ed.	LUC	Scale	Unit	Equation/Rate	In	Out	in:	Out	Total	%	In	Out	Trips	%	ln	Out	Trips	ln	Out	Tot
Multifamily Housing (Low-Rise)	11th	220	336	Dwelling Units	T = 0.31 (X) + 22.85	24%	76%	30	97	127	0%	0	0	0	0%	0	0	0	30	97	127
							Total:	30	97	127	0%	0	0	0	0%	0	0	0	30	97	12
					ļ	Week	day Pi	VI Pea	ık Ho	ur											
	Trlp G	enerati	ion Char	acteristics			rect ibution	Gı	ross Tr	ips	Inte	rnal Ca	pture 1	rips	Pas	s-By Ca	apture 1	Trips	Ne	w Exter Trips	
Land Use	Ed.	LUC	Scale	Unit	Equation/Rate	ln .	Out	ln .	Out	Total	%	In	Out	Trips	%	tn	Out	Trips	ln .	Out	Total
Multifamily Housing (Low-Rise)	11th	220	336	Dwelling Units	T = 0.43 (X) + 20.55	63%	37%	104	61	165	0%	0	0	0	0%	0	0	0	104	61	16
							Total:	104	61	165	0%	0	0	0	0%	0	0	0	104	61	165

Appendix B TRAFFIC VOLUME DATA

HUSSEY GAY BELL APPENDIX B

S 360 RS COUNTS, LLC 735 Maryland St Columbia, SC 29201

We can't say we're the Best, but you Can!

File Name: Okatie Hwy @ Old Bailey Rd

Site Code :

Start Date : 08/25/2022

Page No : 1

					G	iroups Pr	inted- P	assenge	er Vehic	les - Hea	ıvy Vehi	cles - Bu	ıses					
						SC	170 (OI	katie Hw	ν)		Old Bai	ley Rd		SC	170 (O	katie Hw	·γ)	
			South	ound			Westb				Northb	ound			Eastb			
Start	Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
	07:00	0	0	0	0	1	402	0	0	26	0	0	0	0	256	3	0	688
	07:15	0	0	0	0	1	467	0	0	14	0	0	0	0	303	6	0	791
	07:30	0	0	0	0	0	432	0	0	9	0	2	0	0	314	8	0	765
	07:45	0	00	. 0	0	0	338	0	0	7	0	1_	0	0	344	6	0	696
	Total	0	0	0	0	2	1639	0	0	56	0	3	0	0	1217	23	0	2940
	08:00	0	0	0	0	1	313	0	0	2	0	0	0	0	285	5	0	606
	08:15	0	0	0	0	0	299	0	0	4	0	2	0	0	292	5	0	602
	08:30	0	0	0	0	0	311	0	0	4	0	0	0	0	245	4	0	564
	08:45	0	00	0	0	1_	308	0	0	4	0	2	0	0	265	. 2	0	582
	Total	0	0	0	0	2	1231	0	0	14	0	4	0	0	1087	16	0	2354
	16:00	0	0	0	o l	0	278	0	0 1	2	0	1	οl	0	358	10	0	l 649
	16:15	ő	Õ	Ö	ŏl	1	327	ő	ő	4	0	Ó	ől	ő	353	9	0	694
	16:30	0	Õ	0	ŏ	i	387	ő	ő	4	Ő	2	ŏl	ő	398	10	0	802
	16:45	0	0	ő	ŏl	2	338	ő	ŏ	2	0	3	ő	ő	424	12	0	781
\bigcirc	Total	0	0	0	0	4	1330	0	ō	12	0	6	Ö	Ö	1533	41	0	
	17:00	0	0	0	0	1	346	0	0	12	0	1	0	0	428	5	0	793
	17:15	0	0	0	0	1	340	0	0	2	0	0	0	0	386	6	0	735
	17:30	0	0	0	0	1	337	0	0	5	0	1	0	0	385	7	0	736
	17:45	0	0_	0	0	0	272	0	0	7	0	0	0	0	354	13	0	646
	Total	0	0	0	0	3	1295	0	0	26	0	2	0	0	1553	31	0	2910
	nd Total	0	0	0	0	11	5495	0	0	108	0	15	0	0	5390	111	0	11130
A	pprch %	0	0	0	0	0.2	99.8	0	0	87.8	0	12.2	0	0	98	2	0	
	Total %	. 0	0	0	0	0.1	49.4	0	0	1	0	0.1	0	0	48.4	1	0	
Passeng	jer Vehicles	0	0	0	0	11	5344	0	0	100	0	13	0	0	5254	104	0	10826
	nger Vehicles	0	0	0	0	100	97.3	0	0	92.6	. 0	86.7	0	0	97.5	93.7	0	97.3
Heavy	Vehicles	0	0	0	0	0	146	0	0	6	0	0	0	0	132	3	0	287
_ % Heav	y Vehicles	0	0	0	0	0	2.7	0	0	5.6	0	0	0	0	2.4	2.7	0	2.6
	Buses	0	0	0	0	0	5	0	0	2	0	2	0	0	4	4	0	17
9	6 Buses	0	0	0	0	0	0.1	0	0	1.9	0	13.3	0	0	0.1	3.6	0	0.2

S HO RT COUNTS, LLC 735 Maryland St Columbia, SC 29201

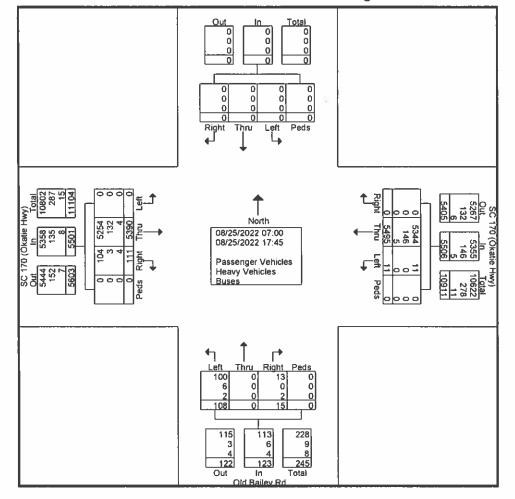
We can't say we're the Best, but you Can!

File Name: Okatie Hwy @ Old Bailey Rd

Site Code :

Start Date : 08/25/2022

Page No : 2



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We can't say we're the Best, but you Can!

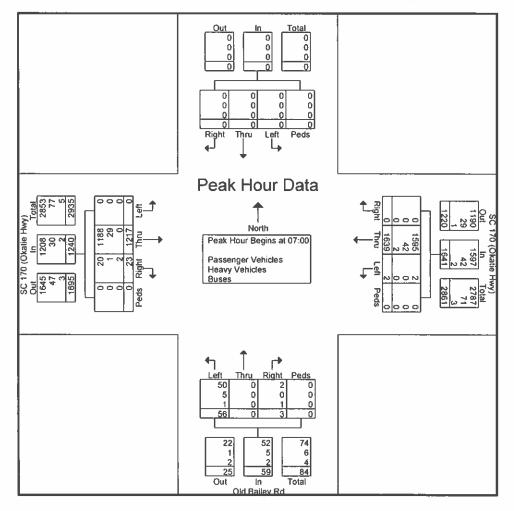
File Name: Okatie Hwy @ Old Bailey Rd

Site Code :

Start Date : 08/25/2022

Page No : 3

			م دا دالار د			;		0 (Okai		/)			Baile	•				0 (Oka		y)	
			<u>uthbo</u> i	<u>uria</u>				<u>/estbou</u>				- IAi	<u>orthbo</u>	una				astbou			
Start Time		Thru					Thru	Right	Peds	App Total	Left	Thru	Right	Peds	App Total	Left	Thru	Right	Peds	App Total	Int. Total
Peak Hour Ar	nalysis	From 0	7:00 to	08:45	- Peak	1 of 1															
Peak Hour for	r Entire	Interse	ection	Begins	at 07:0	0															
07:00	0	0	0	0	0	1	402	0	0	403	26	0	0	0	26	0	256	3	0	259	688
07:15	0	0	0	0	0	1	467	0	0	468	14	0	0	0	14	0	303	6	0	309	791
07:30	0	0	0	0	0	0	432	0	0	432	9	0	2	0	11	0	314	8	0	322	765
07:45	0	0	0	0	0	0	338	0	0	338	7	0	1	0	8	0	344	6	0	350	696
Total Volume	0	0	0	0	0	2	1639	0	0	1641	56	0	3	0	59	0	1217	23	0	1240	2940
% App. Total	0	0	0	0		0.1	99_9	0	0		94.9	0	5,1	0		0	98.1	1.9	0		
PHF	.000	,000	,000	.000	.000	.500	.877	.000	.000	.877	.538	.000	.375	.000	.567	.000	.884	.719	.000	.886	929
Passenger Velucies	0	0	. 0	0	0	2	1595										1188				
% Passenger Vehicles	0	0	0	0	0	100	97.3	0	0	97.3	89.3	0	66.7	0	88.1	0	97.6	87.0	0	97.4	97.2
Heavy Vehicles	0	0	0	0	0	0	42	0	0	42	5	0	0	0	5	0	29	1	0	30	77
% Heavy Vehicles	0	0	0	0	0	0	2.6	0	0	2.6	8.9	0	0	0	8.5	0	2.4	4.3	0	2.4	2.6
Buses	0	0	0	0	0	0	2	0	0	2	1	0	1	0	2	0	0	2	0	2	6
% Buses	0	0	0	0	0	0	0.1	0	0	0.1	1.8	0	33.3	0	3.4	0	0	8.7	0	0.2	0.2



S HO RT COUNTS, LCC 735 Maryland St Columbia, SC 29201

We can't say we're the Best, but you Can!

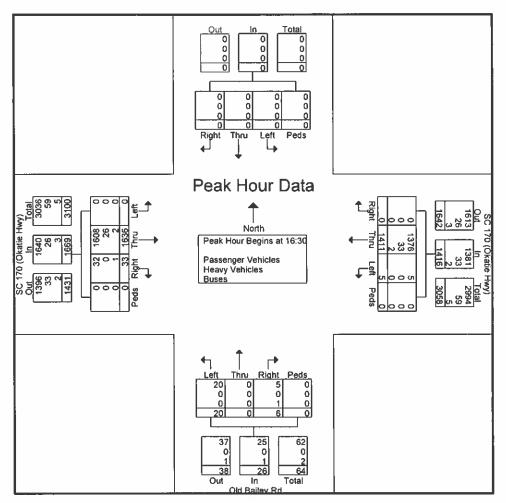
File Name: Okatie Hwy @ Old Bailey Rd

Site Code :

Start Date : 08/25/2022

Page No : 4

							SC 170	Oka	tie Hwy	y)		Old	d Baile	y Rd			SC 17	0 (Oka	tie Hw	y)]
		So	uthbou	und			W	<u>/estboι</u>	ınd			N-	orthbo	und				astbou			
Start Time	Left	Thru	Right	Peds	App Total	Left	Thru	Right	Peds	App Total	Left	Thru	Right	Peds	App Total	Left	Thru	Right	Peds	App Total	Int. Total
Peak Hour Ar	nalysis l	From 1	6:00 to	17:45	- Peak	1 of 1															
Peak Hour for	r Entire	Interse	ection (Begins	at 16:3	0															
16:30	0	0	0	0	0	1	387	0	0	388	4	0	2	0	6	0	398	10	0	408	802
16:45	0	0	0	0	0	2	338	0	0	340	2	0	3	0	5	0	424	12	0	436	781
17:00	0	0	0	0	0	1	346	0	0	347	12	0	1	0	13	0	428	5	0	433	793
17:15	0	0	0	0	0	1	340	0_	0	341	2	0	0	0	2	0	386	6	0	392	735
Total Volume	0	0	0	0	0	5	1411	0	0	1416	20	0	6	0	26	0	1636	33	0	1669	3111
% App. Total	0	0	0	0		0.4	99.6	0	0		76.9	0	23.1	0		0	98	2	0		
PHF	.000	.000	.000	.000	,000	.625	.911	.000	.000	.912	.417	.000	.500	.000	.500	.000	.956	.688	.000	.957	.970
Passenger Vehicles	٥	0	0	0	0	5	1376										1608				
% Passenger Vehicles	0	0	0	0	0	100	97.5	0	0	97.5	100	0	83.3	0	96.2	0	98.3	97.0	0	98.3	97.9
Heavy Vehicles	0	0	0	0	0	0	33	0	0	33	0	0	0	0	0	0	26	0	0	26	59
% Heavy Vehicles	0	0	0	0	0	0	2.3	0	0	2.3	0	0	0	0	0	0	1.6	0	0	1.6	1.9
Buses	0	0	0	0	0	0	2	0	0	2	0	0	1	0	1	0	2	1	0	3	6
% Buses	0	0	0	0	0	0	0.1	0	0	0.1	0	0	16.7	0	3.8	0	0.1	3.0	0	0.2	0.2



Appendix C TRAFFIC VOLUME DEVELOPMENT WORKSHEETS

HUSSEY GAY BELL APPENDIX C

1 - S	C 170/O	katie Hi	ghway	& Old B	ailey R	oad/Pro	oject Dr	iveway				
					TOTA	L PROJ	ECT TR	AFFIC				
Traffic Contro	I: TWSC				IN	OUT		1N	OUT			
Date Counted	l: 8/25/20	22		AM	30	97	PM	104	61			
AM PEAK HOUR 7:00 AM - 8:00 AM	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
2022 Existing Traffic Volumes	0	1,217	23	2	1,639	0	56	0	3	0	0	0
Years to Buildout	3	3	3	3	3	3	3	3	3	3	3	3
Yearly Growth Rate	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Background Traffic	0	183	3	0	246	0	8	0	0	0	0	0
Vested Traffic		106			41							
2025 No Build Traffic Volumes	0	1,606	26	2	1,926	0	64	0	3	0	0	0
Inbound Project Traffic %	50%					50%						
Outbound Project Traffic %										50%		50%
2025 Project Traffic	15	0	0	0	0	15	0	0	0	48	0	49
2025 Pass-By Traffic										1110		
2025 Build Traffic Volumes	15	1,506	26	2	1,926	15	64	0	3	48	0	49

PM PEAK HOUR 4:30 PM - 5:30 PM	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
2022 Existing Traffic Volumes	0	1,636	33	5	1,411	0	20	0	6	0	0	0
Years to Buildout	3	3	3	3	3	3	3	3	3	3	3	3
Yearly Growth Rate	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Background Traffic	0	245	5	1	212	0	3	0	1	0	0	0
Vested Traffic		70			114							
2025 No Build Traffic Volumes	0	1,951	38	6	1,737	0	23	0	7	0	0	0
Inbound Project Traffic %	50%					50%						
Outbound Project Traffic %										50%		50%
2025 Project Traffic	52	0	0	0	0	52	0	0	0	31	0	30
2025 Pass-By Traffic										l		
2025 Build Traffic Volumes	52	1,951	38	6	1,737	52	23	0	7	31	0	30

Appendix D ANALYSIS WORKSHEETS: 2022 EXISTING CONDITIONS

HUSSEY GAY BELL APPENDIX D

ntersection		19112			11	A Page
Int Delay, s/veh	0.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	44	7	ች	44	74	
Traffic Vol. veh/h	1217	23	2	1639	56	3
Future Vol, veh/h	1217	23	2	1639	56	3
Conflicting Peds, #/hr		0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	1100	THE RESERVE AND ADDRESS OF THE PERSON NAMED IN	1100	7.7	Stop -	
Storage Length		300	250			
	_ H A			-	-	
Veh in Median Storag		-	•	0	2	•
Grade, %	0		-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	3	3	3	3	12	12
Mvmt Flow	1309	25	2	1762	60	3
EV C MAI	11.5.7		A T		A 4	
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1334	0	2194	655
Stage 1	-			-	1309	•
Stage 2	-	-	-	-	885	•
Critical Hdwy		-	4.16		7.04	7.14
Critical Hdwy Stg 1	-		-	-	6.04	
Critical Hdwy Stg 2	_	-			6.04	
Follow-up Hdwy	_	-	2.23	-	3.62	3.42
Pot Cap-1 Maneuver		_	508	-	~ 34	386
Stage 1	_	-	-		199	-
Stage 2					340	
		_ •	-	-	340	•
Platoon blocked, %						
Mov Cap-1 Maneuver		•	508	-	~ 34	386
Mov Cap-2 Maneuver	-	-	-	-	164	-
Stage 1	-				199	-
Stage 2		-	-	-	339	-
William Park						
,			74.00		112	
Approach	EB		WB		N8	
HCM Control Delay, s	0		0		38.6	
HCM LOS					Ε	
Manufact Military		NIDI - Z	FAT	EDD	LACTO	MART
Minor Lane/Major Mvi	nit	NBLn1	EBT	EBR		WBT
Capacity (veh/h)		169	-			-
HCM Lane V/C Ratio		0.375	-	-	0.004	-
HCM Control Delay (s	s)	38.6	-	-	12.1	-
HCM Lane LOS		E	-	-	В	-
HCM 95th %tile Q(vel	h)	1.6	-		0	-
	*					
Notes						

WE WELL THE						
ntersection			HDC =			
Int Delay, s/veh	0.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	个个	LBK	VVDL	1	W	HUIN
	1636	33	5	1411	20	6
	1636	33	5		20	6
	0 0	0	0	1411	0	0
Conflicting Peds, #/hr				O Eroo		
	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-		•	None
Storage Length		300	250			-
Veh in Median Storage, a		•	•	0	2	
Grade, %	0		-	0	0	_
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	2	4	4
Mvmt Flow	1687	34	5	1455	21	6
Maria (Mina)	aiau4	- 1	(Period)		Ain aud	
	ajor1		Major2		Minor1	044
Conflicting Flow All	0	0	1721	0	2425	844
Stage 1	•	-	•	•	1687	-
Stage 2	-	-		-	738	-
Critical Hdwy	•	-	4.14	•	6.88	6.98
Critical Hdwy Stg 1	-	-	H. 182	-	5.88	-
Critical Hdwy Stg 2	-	-	-	-	5.88	-
Follow-up Hdwy	-	_	2.22	-	3.54	3.34
Pot Cap-1 Maneuver	-	-	364	12	26	303
Stage 1	-				132	
Stage 2	-				428	_
Platoon blocked, %					720	
Mov Cap-1 Maneuver			364		26	303
	•		304			
Mov Cap-2 Maneuver	•			-	120	-
Stage 1	-	-	-	-	132	-
Stage 2	-	-	-	-	422	-
Approach	EB	0.8	WB		NB	
HCM Control Delay, s	0		0.1	-	37	
HCM LOS	U		U, I		E	
HOW LOS						
Minor Lane/Major Mvmt	- 1	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)		139	-	-	364	
HCM Lane V/C Ratio		0.193	-		0.014	-
HCM Control Delay (s)		37			15	_
HCM Lane LOS		E		1 100	C	
HCM 95th %tile Q(veh)		0.7				
HCIVI 95th %tile Q(ven)		0.7	-		0	

Appendix E ANALYSIS WORKSHEETS: 2025 NO BUILD CONDITIONS

HUSSEY GAY BELL APPENDIX E

ntersection			1 (888)	. 0	200			E 2000	
Delay, s/veh	1.5								
ovement	EBT	EBR	WBL	WBT	NBL	NBR			
					-	NOIL			
ane Configurations	4500	00	7	^	Y	_	THE RESIDENCE OF THE PERSON OF		
raffic Vol, veh/h	1506	26	2	1926	64	3			
uture Vol, veh/h	1506	26	2	1926	64	3			
onflicting Peds, #/hr		0	_ 0	_ 0	0	0			
ign Control	Free	Free	Free	Free	Stop	Stop			
T Channelized			•	None	grade.	None			
torage Length	-	300	250	-	-	-			
eh in Median Storag		-	•	0	2	-			
Grade, %	0	-	-	0	0	-			
eak Hour Factor	93	93	93	93	93	93		Establish a	
eavy Vehicles, %	3	3	3	3	12	12			
mt Flow	1619	28	2	2071	69	3			11-00-0-
ajor/Minor	Major1		Major2		Vinor1	200	SET DE LA		NO. ROLL
onflicting Flow All	0	0	1647	0	2659	810		N-200-0-11-11	
Stage 1	•	-	-	· .	1619				
Stage 2		-	-	-	1040	-			
ritical Hdwy	-	-	4.16	-	7.04	7.14			
itical Hdwy Stg 1	-	-	-	-	6.04	-			
ritical Hdwy Stg 2	- 101	-	-		6.04	-			
llow-up Hdwy	-	-	2.23	-	3.62	3.42			
ot Cap-1 Maneuver	9	-	384	-	~ 16	303			
Stage 1	-	-			133				
Stage 2	-				280	-	TEST DEL		ia je
atoon blocked, %	-			-					
ov Cap-1 Maneuver			384		~ 16	303	NOTE OF THE PARTY.	THE PARTY OF	
ov Cap-2 Maneuver		-	-		113				
Stage 1	-	-	-		133		THE NAME OF THE OWNER,	CHARLES	
Stage 2	_		-		279				
		28 W				A TO	ilon villagasin		
proach	EB		WB		NB	-	O CONTRACTOR	THE STATE OF	
CM Control Delay, s		X I	0		77		Mark III		
CM LOS	J		U		F			1 - 12 - 12 - 12	
									CD_ES//
inor Lane/Major Mvr	mt	NBLn1	EBT	EBR	WBL	WBT	Valley and the		
	nit.				384		TOTAL STREET,		
apacity (veh/h)		116	-	•		•	TO VICE THE PARTY OF THE PARTY	0	
CM Lane V/C Ratio		0.621	•		0.006				
CM Control Delay (s	9	77	•	495		-			-175
CM Lane LOS		F	•		В				
CM 95th %tile Q(vet	1)	3.1		SARY T	0	-			
ites									
Volume exceeds ca	apacity	\$: De	elay exc	eeds 30	00s	+: Comp	outation Not Defined	*: All major volun	ne in platoon
	Charles Col.				111		The polytella many the second		

tersection		3X II			I COL		HIN WATER	
t Delay, s/veh	0.6							
ovement	E8T	EBR	WBL	WBT	NBL	NBR		
ne Configurations	44	7	7	^	W			
affic Vol. veh/h	1951	38	6	1737	23	7		
ure Vol, veh/h	1951	38	6	1737	23	7		
nflicting Peds, #/hr		0	0	0	0	0		
n Control	Free	Free	Free	Free	Stop	Stop		
Channelized	-	None	riee -	None	Stup	The second second		
	- :	300	250	None	- :	Nune		
orage Length			250	0	2			
h in Median Storag		•						
ade, %	95	0.5	O.E.	95	95	95		
ak Hour Factor		95	95					
avy Vehicles, %	2	2	2	4000	4	4	- 1	
mt Flow	2054	40	6	1828	24	7		
				- 11/2-17	n: (F)	C 101 - 63	to the second	
or/Minor	Major1	Copy of A	Major2	4.737	Minor1			
nflicting Flow All	0	0	2094	0	2980	1027		
Stage 1	-				2054			
Stage 2	-	-		-	926	-		
tical Hdwy	-		4.14	-	6.88	6.98	W 197	THE SHOOT OF THE
tical Hdwy Stg 1				-	5.88	-		
tical Hdwy Stg 2				-	5.88	-		
flow-up Hdwy			2.22	-	3.54	3.34		
t Cap-1 Maneuver	-	-	260		- 11	228		
Stage 1	-	-		-	83	·		
Stage 2	_		-		341			
stoon blocked, %	-	-						
v Cap-1 Maneuver	_		260		~ 11	228	200	and the Control of the Control
ov Cap-2 Maneuver					76	-		
Stage 1	_				83			
Stage 2					333			7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7
Oldgo E			(FX-24)		500			
proach	EB		WB	S 4	NB		Strate de la company	
			0.1		65.2			
CM Control Delay, s	, U		0.1	111	65.2 F		200	
CM LOS			William I		г		The second second	
1 10 10 10 10	,	MIDI - C	COT	C00	LA IPSI	MOT		AA-CONTROL CONTROL CON
nor Lane/Major Mvi	mt	NBLn1	EBT	EBR	WBL	WBT		
pacity (veh/h)		90	•	-		-		
M Lane V/C Ratio		0.351	•		0.024	-		
CM Control Delay (s	5)	65.2	•	-				
M Lane LOS		F		-	C			
CM 95th %tile Q(vel	h)	1.4	-	•	0.1	•		
tes	SHIII.					- Interest		
		_	THE OWNER OF THE OWNER.	eeds 3		-	utation Not Defined	*: All major volume in platoon

Appendix F ANALYSIS WORKSHEETS: 2025 BUILD CONDITIONS

HUSSEY GAY BELL APPENDIX F

ntersection								<u> </u>					
nt Delay, s/veh	139.2												
lovement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
ane Configurations		44		1	11	17	7	ĵ.		T	1 >		
raffic Vol. veh/h	15	1506	26	2	1926	15	64	0	3	48	0	49	
uture Vol, veh/h	15	1506	26	2	1926	15	64	0	3	48	0	49	
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop	
T Channelized			None			None			None			None	Well like
torage Length	150		300	250	17.7	100			_	200		-	
eh in Median Storage		0	-		0	-	_	0		-	0	_	
rade, %	-	0		_	0	-	-	0	-	-	0	_	
eak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93	
eavy Vehicles, %	2	3	3	3	3	2	12	2	12	2	2	2	
lvmt Flow	16	1619	28	2	2071	16	69	0	3	52	0	53	
IVIIIL FIOW	10	1019	20		20/1	10	09	0	J	32	U	00	
ajor/Minor	Major1			Major2			Minor1		1	/linor2			
onflicting Flow All	2087	0		1647	0	0	2691	3742	810	2917	3754	1036	
Stage 1	2007	-	-	10-11	-	-	1651	1651	-	2075	2075	-	
Stage 2					-		1040	2091	_	842	1679	_	
ritical Hdwy	4.14		-	4.16	_	-	7.74	6.54	7.14	7.54	6.54	6.94	
ritical Hdwy Stg 1	7.17		-	4.10		-	6.74	5.54	7.17	6.54	5.54	0.34	
itical Hdwy Stg 2	-					0.74	6.74	5.54		6.54	5.54	-	
the second second second				2.23		-	3.62	4.02	3.42	3.52	4.02	3.32	
ollow-up Hdwy	2.22	-	-			_				3.5Z ~ 7			
ot Cap-1 Maneuver	262			384			~ 9	4	303			228	
Stage 1			-	•	-	-	93	155		55	94	•	
Stage 2	-	-	-	-		0.5	229	93	-	325	150		
atoon blocked, %		-	•		-	-	_						
ov Cap-1 Maneuver	262	-	•	384	-	-	~7	4	303	~7	4	228	
ov Cap-2 Maneuver					•		~ 7	4	-	~ 7	4	•	
Stage 1	-	-	-	-	-	-	87	146	- 100	52	94	-	
Stage 2	_	-	-	-	-	-	175	93	-	302	141	-	
ann anh	FD			10/10			AUD			CD			
pproach	EB			WB			NB			SB			
CM Control Delay, s	0.2			0		\$ 4	1777.7		\$ 1	939.3			
CM LOS							F			F			
linor Lane/Major Mvn	nt I	VBLn1	MRI n2	EBL	EBT	EBR	WBL	WBT	MPD	SBLn1	SRI n2		
	11,	7			1217.00			_	YYOR			-	
apacity (veh/h)			303	262	-	-	384	-	-	7	228		Albert S.
CM Lane V/C Ratio			0.011		-		0.006	•		7.373			
CM Control Delay (s)	\$:	5000.9	17	19.6	-	•	14.4	-		3893	25.5	100	
CM Lane LOS		F	C	С	-		В	-	-	F	D		
ICM 95th %tile Q(veh)	10.2	0	0.2	-	1.	0		•	8	0.9		# 17
lotes							<u> ILLUI</u>				ة.بللا		
-: Volume exceeds ca	nacity	\$: De	lav exc	eeds 30	00s	+: Com	nutation	Not De	efined	*: All	maior v	olume in	platoon

Intersection	ma wa sala				51.							F	
Int Delay, s/veh	54.4												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	ħ		1	7	十 个	7	7	1		ী	1		_
Traffic Vol. veh/h	52	1951	38	6	1737	52	23	0	7	31	0	30	
Future Vol, veh/h	52	1951	38	6	1737	52	23	0	7	31	0	30	
Conflicting Peds, #/hr		0	0	0	0	0	0	0	0	0	0	0	
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop	-
RT Channelized	- 1100	-	None	-	- 100	None	Olop	Otop	None	Olop -	Citop	None	
Storage Length	150	-	300	250		100	_		-	200		THORE	-
Veh in Median Storag		0	-	200	0	100	_	0		200	0		
Grade, %	υ, π	0	-		0		-	0			0		
Peak Hour Factor	90	95	95	95	95	95	95	95	95	95	95	95	
Heavy Vehicles, %	2		2	2	2	2	4	2	4	2	2	2	
Mymt Flow	58	2054	40	6	1828	55	24	0	7	33	0	32	
MAUITION	30	2004	40	U	1020	00	24	U		33	U	32	
Major/Minor	Majort		10041116	Major2	100		Minor1			linor2			10
Major/Minor	Major1			_				4005			4050	044	_
Conflicting Flow All	1883	0	0	2094	0	0	3096	4065	1027	2983	4050	914	
Stage 1	-			•	-	•	2170	2170	-	1840	1840	-	
Stage 2	- 444			4.44		•	926	1895	0.00	1143	2210	-	
Critical Hdwy	4.14	-	•	4.14	•	•	7.58	6.54	6.98	7.54	6.54	6.94	
Critical Hdwy Stg 1	-	-	-	-	-	-	6.58	5.54	-	6.54	5.54	-	
Critical Hdwy Stg 2	-		•	-	-	-	6.58	5.54	-	6.54	5.54	•	
Follow-up Hdwy	2.22	-	•	2.22	-	-	3.54	4.02	3.34	3.52	4.02	3.32	
Pot Cap-1 Maneuver	314		-	260	-	-	~ 5	3	228	~ 6	3	276	
Stage 1	-	-	-	-	-	-	47	84	•	78	124	-	
Stage 2	-	-				•	285	117	•	213	81	-	
Platoon blocked, %		-	-		-								
Mov Cap-1 Maneuver			-	260		1111	~ 4	2	228	~ 5	2	276	
Mov Cap-2 Maneuver	-	-	-	-	•	_	~ 4	2	-	~ 5	2	-	
Stage 1	-		-	-	-	-	38	68	-	64	121	-	
Stage 2	-		, •		-	-	247	114	-	168	66		
						- 4-							
Approach	EB			WB			NB		EL.	SB	Lance		
HCM Control Delay, s	0.5			0.1		\$:	3053.8		\$ 1	982.4		in a second	
HCM LOS							F			F			
X								osau l					
Minor Lane/Major Mvi	mt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR S	SBLn1	SBLn2	71-22	
Capacity (veh/h)		4		314	-	-	260	-	-	5	276		
HCM Lane V/C Ratio			0.032			_	0.024				0.114		
HCM Control Delay (s		3976.7		19	18 W.	-	19.2	-		881.7	19.7		
HCM Lane LOS	4	F	C	C			C		-	F	C		
HCM 95th %tile Q(vel	h)	4.5	0.1	0.7		= 1100	0.1			5.6	0.4		
	ii)	4.0	V. 1	U.I			V. 1			3.0	0.4		
Notes													

Appendix G TURN LANE ANALYSIS WORKSHEETS

RUSSEY GAY BELL APPENDIX G



Study Area Information

County: Jasper County SCDOT Engineering District: District 6

Analysis Year: 2025

Date: 9/6/2022

Analyst: Claudia Thompson

Agency: Stantec Consulting Services Inc.

Intersection: SC 170/Okaite Highway & Old Bailey Road

Left Turn Movement: Eastbound Left-Turn Lane

Right Turn Movement: Westbound Right-Turn Lane

Posted Speed Limit: mph # of Approach Lanes:

Median: Urban or Rural?

Divided Rural

Volume Information & Calculations

Left Turn Lane Volume Calculations

Mariaman	Volume (vph)			
Movement	AM	PM		
	Left	15	52 1,951	
Advancing	Through	1,506		
	Right	26	38	
The second second	Left	2	6	
Opposing	Through	1,926	1,737	
	Right	15	52	

PM AM Advancing Volume: 1,547 2,041 Opposing Volume: 1,943 1,795 Left Turn Volume: 15 52

% Left Turns in Advancing Volume:

1.0% 2.5%

Right Turn Lane Volume Calculations

AND THE RESIDENCE	经过了经验的企业			
Movement	Movement			
	Left	2	6	
Advancing	Through	1,926	1,737	
1 Commence	Right	15	52	

Adjustment to Right Turn Volume¹ Include?

No

AM PM Advancing Volume: 1,943 1,795 Right Turn Volume 15 52

Turn Lane Warrant Met?

Left Turn Lane Warrant

Applicable Warrant Chart: Warrant Satisfied: Flg 9.5-D

Right Turn Lane Warrant

Applicable Warrant Chart: Warrant Satisfied: Fig 9.5-B

Recommended Turn Lane Length

Turning Truck%:

Turning Truck%: 2%

Left Turn Lane

Storage Length (ft): 200 Taper Length (ft): 200 ft Total Left Turn Lane (ft): 400

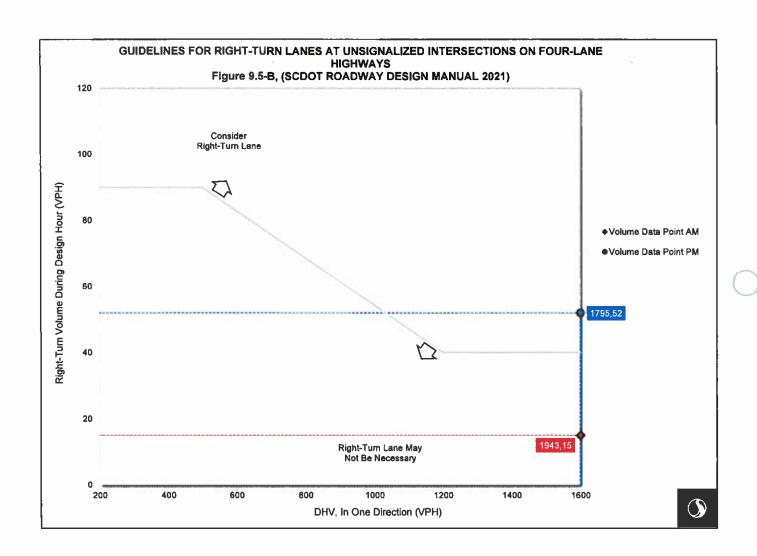
Right Turn Lane

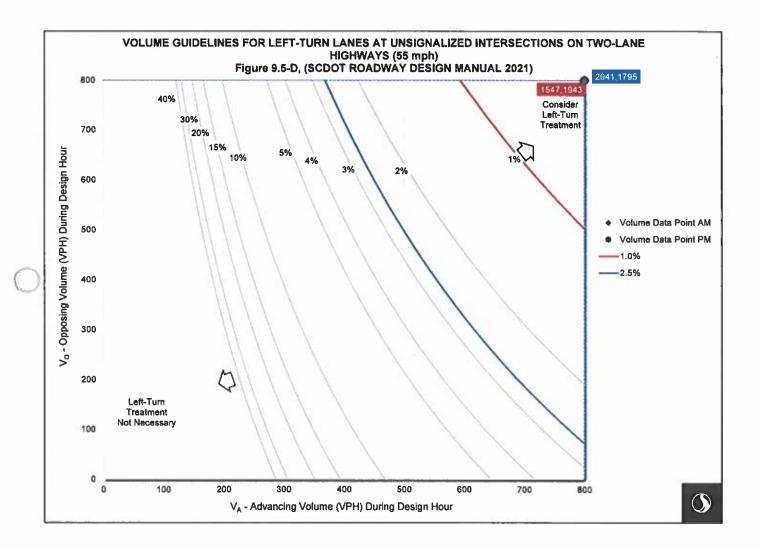
Storage Length: Taper Length: 200 Total Left Turn Lane: 300

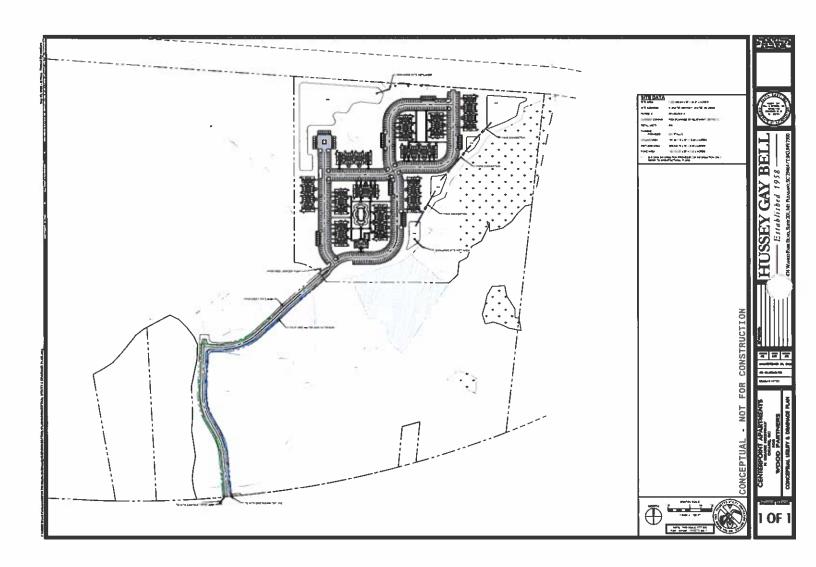
Consider providing dual-turn tanes if the turning volumes are greater than 300 vehicles per hour. A traffic analysis will be required if the turning volumes are greater than 300 vehicles per hour.

The traffic designer should review the design to determine if longer turn lane lengths are required.

Source: SCDOT Roadway Design Manual (2021), SCDOT Access and Roadside Management Standards (2008), and TRB Highway Research Record 211, Volume Warrants for Left Turn Storage Lanes at Unsignalized Grade Intersections.









UTILITY AND DRAINAGE STUDY COMMENTS

Utilities: The primary challenge in bringing utilities to this site is gaining access to the existing utilities on Okatic Highway. BJWSA recently issued an availability letter stating that tie in points are available at the pump station located at John Paul Catholic School. Given that this pump station is located a significant distance from our proposed development, we are currently in talks on if there are any other options open to us.

Drainage: Based on our preliminary study, a large majority of this site drains towards the south of the property and towards Okatic Highway. The primary challenge of this site will be obtaining good outfalls, as the entire site is relatively low and wet. Stormwater will continue to be discharged into the onsite wetlands and maintain existing flow patterns down to the crossing which runs under Okatic Highway.



Walters, Read <rwalters@husseygaybell.com>

Okatie Apartments - Preliminary Comments

Fleming, Juleigh B. <FlemingJB@scdot.org>

Thu, Sep 15, 2022 at 12:53 PM

To: Read Walters <rwalters@husseygaybell.com>

Cc: "Grooms, Robert W." <GroomsRW@scdot.org>, "Cannady, Jack R." <CannadyJR@scdot.org>

Hey Read;

I forwarded your request to our District Traffic Engineer. He had the following response:

If they will construct a full standard right-turn lane and restripe the median for the left-turn lane, a TIA is not required. They will also need to restripe the Old Bailey Rd approach for a through/right. Note that this is for the apartment complex as proposed and they have a lot of available land for further development. They should approach us again when that portion of the development proceeds to determine if any further study or improvements are needed.

Let me know if you have questions.

Thanks!



JuLeigh B Fleming, PE

District 6 Permit Engineer

P 843-746-6722 E flemingjb@scdot.org

6355 Fain Street, North Charleston, SC 29406

LET 'EM WORK. LET 'EM LIVE.



6 SNAKE ROAD, OKATIE, SC 29909-3937 Phone 843.987.8100 | Fax 843.548.0096 Customer Service 843.987.9200 Operations & Maintenance 843.987.8046 Engineering 843.987.8065

Our mission: Provide quality water and wastewater services to our current and future customers in the Lowcountry

JOE MANTUA, PE, GENERAL MANAGER

August 22, 2022

Read Walters Hussey Gay Bell 474 Wando Park Blvd., Stc. 201 Mount Pleasant, SC 29464

Via email: rwalters@husseygaybell.com & brian.tye@woodpartners.com

Subject: Availability - 5253 Okatie Highway (SC-170), PIN 081-00-03-019.

Dear Mr. Walters,

This letter is in response to the water and sewer availability request for Okatie Apartments, a 366 unit multi-family development at the above referenced parcel. There are existing 8" water and gravity sewer mains on the adjacent parcel (081-00 -03-033), approximately 2,150' west of the subject property. Services may be extended at the owner/developer's expense upon obtaining all necessary construction and encroachment permits. Please be advised that, should the sewer needs of the development exceed the available capacity of the receiving lift station, the developer would be responsible for any improvements or upgrades to BJWSA's existing infrastructure.

If or when you wish to proceed with this development, design drawings and calculations must be submitted to BJWSA's Engineering Department for review and approval. Upon approval, capacity and project fees will be determined based on the information provided. These fees must be paid in full before a capacity commitment can be issued or a pre-construction meeting may be held. If construction on the proposed water and sewer systems has not started within twelve (12) months from the date of this letter this availability will be invalid.

Should you have questions or require additional information, please contact me at 843-987-8082 or james.clardy@bjwsa.org.

Sincerely,

James Clardy

Development Program Manager

JBC/mya

JAMES E. BAKER, JR CHAIR

LORRAINE W. BOND GERALD H. SCHULZE GREGORY A. PADGETT VICE CHAIR

ANDERSON M. KINGHORN, JR WILLIAM SINGLETON, Ed.D DONNA L. ALTMAN SECRETARY/TREASURER

J. ROBERT McFEE, PE DAVID R. STRANGE MICHAEL L BELL BAMEDIATE PAST CHAIR R. THAYER RIVERS, JR



PROJECT NARRAITVE - CENTERPOINT APARTMENTS

- a) Planned access road will be owned and maintained by the master developer, John Trask. All streets and drainage systems within the proposed parcel, as well as associated utility systems and other improvements, will be privately owned and maintained by the developer. Funding will be provided through revenue generated by the apartment complex.
- b) Development is not planned to be done in phases.
- c) No land is currently planned to be dedicated to public facilities.
- d) This master plan only encompasses one property and as such, no buffering or setbacks are planned.
- e) Water and Sewer availability letter from BJWSA has been provided.
- f) This master plan is will only include one apartment complex. This master plan is required by Jasper County.
- g) Not applicable.

