

MEMORANDUM

To: Lisa Bernstein, P.E.
Consultant for the City of Margate

From: Christopher W. Heggen, P.E.
Kimley-Horn and Associates, Inc.

Date: September 17, 2025

Subject: *Carolina Club Residential*
Study Methodology – Traffic Impact Analysis
KH #241158000

The above-referenced project is located within the area generally bounded by Sample Road on the north, Rock Island Road on the east, and Holiday Springs Boulevard on the west in the City of Margate, Florida. The proposed plan of development includes redevelopment of certain portions of the site that currently contain golf course uses to include a mix of multifamily, townhome and commercial uses.

Kimley-Horn and Associates has been retained to undertake a traffic analysis for the proposed program of development. Following is a summary of the methodology that will be used to undertake this traffic analysis.

- Trip generation:** The trip generation potential for the existing and proposed uses will be calculated using rates and equations published by the Institute of Transportation Engineers (ITE) in the *Trip Generation Manual, Eleventh Edition*. The calculations will include calculation of pass-by capture based upon methodologies and data published in ITE's *Trip Generation Handbook, Third Edition* for the commercial use. Table 1 summarizes the trip generation calculation for the proposed uses on site. Note that, should the intensities/densities change on the master plan or site plans, this table will be updated accordingly to match those documents in the final traffic study.

Table 1: Trip Generation Calculations

Source	Land Use	ITE Code	Intensity	Daily Trips	AM Peak Hour			PM Peak Hour			
					Total	In	Out	Total	In	Out	
Proposed Scenario											
ITE	Shop Plaza (40-150ksf w/ supermarket)	ITE 821	57.5 ksf	5,433	203	126	77	519	249	270	
ITE	Multifamily Housing (Mid-Rise)	ITE 221	507 DU	2,372	211	49	162	198	121	77	
ITE	Single-Family Attached Housing	ITE 215	377 DU	2,822	190	48	142	222	131	91	
			Subtotal	10,627	604	223	381	939	501	438	
Internal Capture			% Daily	% AM	% PM						
	Shop Plaza (40-150ksf w/ supermarket)		0.0%	0.0%	0.0%	0	0	0	0	0	
	Multifamily Housing (Mid-Rise)		0.0%	0.0%	0.0%	0	0	0	0	0	
	Single-Family Attached Housing		0.0%	0.0%	0.0%	0	0	0	0	0	
			Subtotal	0	0	0	0	0	0	0	
Pass-By Capture			Daily	AM	PM						
	Shop Plaza (40-150ksf w/ supermarket)		0.0%	0.0%	40.0%	0	0	0	208	100	108
	Multifamily Housing (Mid-Rise)		0.0%	0.0%	0.0%	0	0	0	0	0	0
	Single-Family Attached Housing		0.0%	0.0%	0.0%	0	0	0	0	0	0
			Subtotal	0	0	0	0	208	100	108	
Driveway Volumes				10,627	604	223	381	939	501	438	
Net New External Trips				10,627	604	223	381	731	401	330	
Proposed Net External Trips-Existing Net New External Trips				10,627	604	223	381	731	401	330	
Land Use			Daily	AM Peak Hour			PM Peak Hour			Pass By	
Shop Plaza (40-150ksf w/ supermarket)			94.49 trips/ksf	3.53 trips/ksf (62% in, 38% out)			9.03 trips/ksf (48% in, 52% out)			0.0%	
Multifamily Housing (Mid-Rise)			Trips = 4.77(X) -46.46	Trips = 0.44(X) -11.61 (23% in, 77% out)			Trips = 0.39(X) +0.39 (61% in, 39% out)			0.0%	
Single-Family Attached Housing			Trips = 7.62(X) -50.48	Trips = 0.52(X) -5.7 (25% in, 75% out)			Trips = 0.6(X) 0.6 (59% in, 41% out)			0.0%	

2. **Trip distribution/assignment:** Overall trip distribution percentages will be determined based on a review of the complementary land uses and roadway network proposed to be in place at the time of buildout. This assignment will be carried out through one mile from the site boundary. Figure 1, attached, depicts the preliminary traffic assignment on the surrounding transportation system.
3. **Buildout Year:** A buildout year of 2030 will be used for the purposes of this analysis.
4. **Data collection:** AM (7:00 AM – 9:00 AM) and PM (4:00 PM – 6:00 PM) peak period turning movement counts were collected on February 29, 2024 at the study intersections. The following is the list of the sixteen (16) intersections that will be evaluated in this analysis:
 1. Riverside Drive & Sample Road
 2. Holiday Springs Boulevard & Sample Road
 3. Project Driveway & Sample Road
 4. Rock Island Road & Sample Road
 5. Rock Island Road & Pinewalk Drive North/NW 33rd Street
 6. Pinewalk Drive North & Project Access
 7. Holiday Springs Boulevard & Potential Future E-W Connection
 8. Potential Future E-W Connection & Parcel 1 Driveway
 9. Potential Future E-W Connection + Pinewalk Drive North
 10. NW 30th Street & Rock Island Road
 11. Pinewalk Drive North & Pinewalk Drive South
 12. Rock Island Road & Pinewalk Drive South
 13. Pinewalk Drive South & Holiday Springs Boulevard
 14. Rock Island Road & Holiday Springs Boulevard
 15. Riverside Drive & Royal Palm Boulevard
 16. Royal Palm Boulevard & Rock Island Road

From count data that was collected at the existing intersections, peak hour traffic volumes will be determined. For any counts conducted outside of the peak season (January – March), the Peak Season Conversion Factor (PSCF) published by FDOT will be applied.

The City of Margate has a standard that includes analysis of all intersections within a one-mile radius of the site. It would be unrealistic to perform analyses of all intersections within that distance, and many of those intersections, especially further from the site boundary, have a 10% or less assignment of project traffic traveling through the intersection. The above list of intersections identifies those in which the project traffic may have an impact on Level of Service and operations. All other intersections have been excluded because it is anticipated that the project would have a *de minimis* impact on intersection operations.

5. **Future Background (Non-Project) Volumes:** Future background volumes will be determined by adding compounded annual growth rate determined using historical AADT data for roadway links within the vicinity of the project site. At a minimum, the growth rate applied will be no less than 1.0%. Additionally, project traffic generated by relevant approved projects as identified by the City and/or its consultant, if applicable, will be assigned to the project study intersections.
6. **Total Future Volumes:** Total future volumes will be determined by adding future background volumes and project traffic volumes at each of the study intersections.
7. **Intersection LOS Analysis:** Intersection LOS analyses will be conducted for Existing Peak Season, Future Background Peak Season and Future Total Peak Season Conditions using Synchro or HCS software. Summary tables will be prepared to report the Highway Capacity Manual (HCM)-results and will include: LOS, Delay and queue (where applicable), for all movements (L, T, R), approaches (E, W, N, S) and overall intersection LOS and delay for each approach and the

overall intersection (if available; no overall intersection LOS will be reported for two-way stop-controlled unsignalized intersections).

8. **Transit/Multi-Modal Options:** The location and frequency of transit service on nearby corridors will be quantified, and any modifications to that service identified in Broward County's 5-Year Improvement Program will be reported.
9. **Queuing Evaluation:** If gated access is proposed at any locations within the site plan for any of the development pods, or if any uses within the commercial portion of the project contain drive-through lanes, a queuing analysis will be conducted to determine whether or not sufficient vehicle storage is provided.
10. **Mitigation:** Prior to final site plan approval and issuance of building permits, the Applicant will identify potential mitigation measures. These measures will be reviewed with City staff and the City consultant, if needed, to evaluate feasibility and appropriateness of these measures. Included in this evaluation will be a determination of the need for turn lanes at project access points and available queue storage within turn lanes at adjacent and surrounding intersections. These mitigation measures will be implemented in a final Development Order conditions to be determined in coordination with the City staff and/or City consultant.

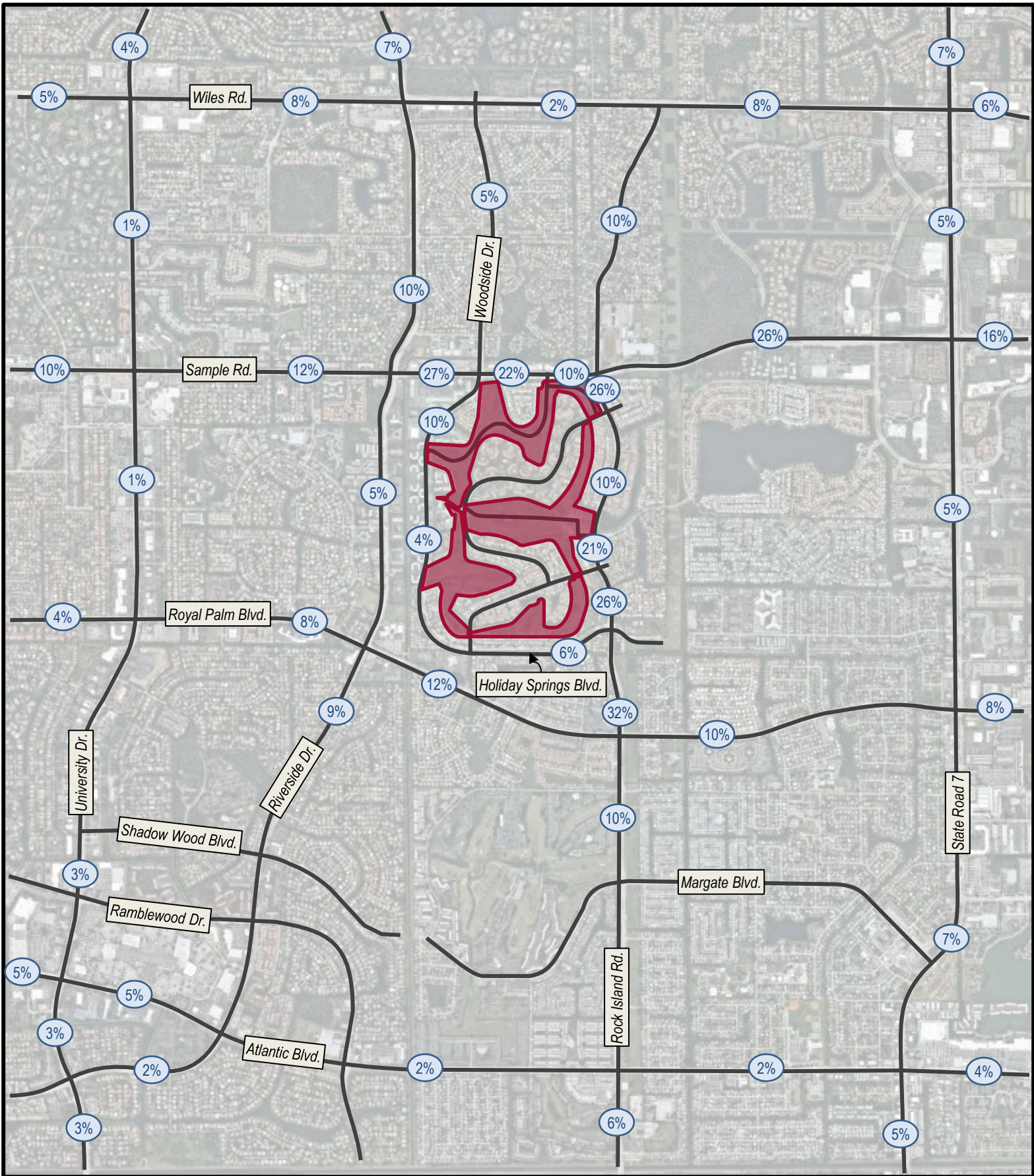
The data collection, calculations, analyses and results will be summarized in a written report for City review. Relevant tables, charts, figures, worksheets, and a current copy of the site plan(s) will be included in the summary report.

Please review the methodology for this analysis as outlined above and indicate your concurrence by signing in the space below. Should you have questions or comments regarding the proposed methodology, please call me via phone at (561) 840-0248 or via e-mail at chris.heggen@kimley-horn.com.

Concur by:  _____ Date: September 19, 2025

Attachment

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LEGEND

Site Location

Traffic Assignment

FIGURE 1

Carolina Club
KH #241158000
Trip Distribution