

MEMO

TO: Art Reinhardt, P.E., CFM
Director of Public Works/County Engineer
County of Bexar
1948 Probandt Street
San Antonio, TX 78214

DATE: October 3, 2025

FROM: Queenie Ye, P.E., PTOE
Rima Subedi, P.E.

PROJECT NO.: 12356-06

cc: Bexar County PWD, COSA DSD
Bruna Spengler, P.E., CFM (Pape-Dawson)

RE: Guajolote Ranch TIA (LAND-TIA-22-12800029): Update to Scenic Loop Road @ Babcock Road

Guajolote Ranch is a residential development consisting of 3,022 single-family homes. It is located west of Scenic Loop Road and north of Babcock Road, in the City of San Antonio ETJ, Bexar County. The Guajolote Ranch TIA (LAND-TIA-22-12800029) was approved in January 2023, and the Approval Letter is included in **Appendix A**. Since then, the dwelling units for the Guajolote Ranch have been revised to 2,700 due to some land plan changes, and an updated trip generation is shown in **Table 1**.

Table 1. Projected Site Trip Generation – Guajolote Ranch

Land Use (ITE Code)	Size	AM Peak Hour			PM Peak Hour			Daily Total
		Enter	Exit	Total	Enter	Exit	Total	
Single Family Detached Housing (220)	2700 DU	500	14,99	1,999	1,684	989	2,673	25,488

Additionally, there has been an update to land use on the northeast corner of Babcock Road at Scenic Loop Road, which could increase trips and impact the study intersections listed in the approved TIA, such as Scenic Loop Road at Babcock Road and Scenic Loop Road at Guajolote Ranch. The proposed commercial development in the east includes approximately 10,000 square feet of shopping center, a gas station with 8 pumping stations, 80,000 square feet of mini-warehouse, and 5,500 square feet of fast-food with a drive-through restaurant. The site plan is included in **Appendix B**. The detailed trip generation for the proposed land use is shown in **Table 2** and is included in **Appendix C**.

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Table 2. Projected Site Trip Generation – Commercial Development

Land Use (ITE Code)	Size	AM Peak Hour			PM Peak Hour			Daily Total
		Enter	Exit	Total	Enter	Exit	Total	
Shopping Center (820)	10 TSFGLA	6	4	10	18	20	38	378
Mini-Warehouse (151)	80 TSFGLA	5	3	8	6	7	13	121
Gasoline/Service Station with Convenience Market (945)	8 Vehicle Fueling	51	49	100	57	55	112	1,643
Fast-Food Restaurant with Drive-Through Window (934)	5.5 TSFGFA	113	108	221	93	86	179	2,560
Total		175	164	339	174	168	342	4,732

Mitigations Proposed

Table 2 summarizes the changes in mitigation improvements that will be updated with additional commercial development in the east. As shown in the table below, the mitigation improvements proposed in the approved TIA at the intersections of Babcock Road at Cielo Vista, Scenic Loop at Cross Mountain Trail and Scenic Loop Road at Midsomer PI will remain the same as listed in the approved TIA. The proposed roadway geometry is shown in **Figure 1** and is also included in **Appendix D**.

Figure 1: Proposed Roadway Geometry

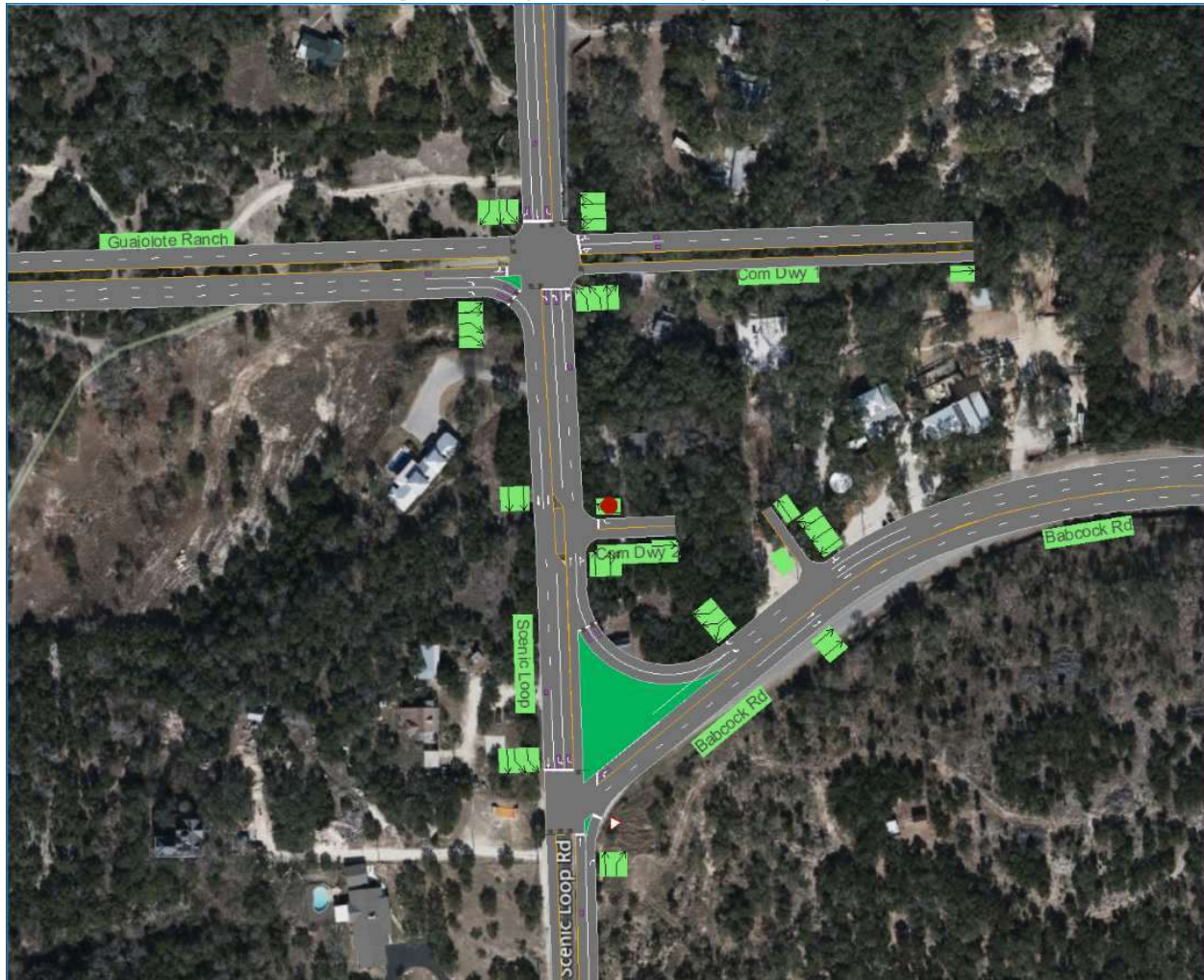


Table 3: Update to Mitigations

Intersection	Improvements in Previous TIA	Proposed Improvements
Babcock Rd at Cielo Vista (AWSC)	Install Signal Equipment and place on flash until warrants are met (After 910 Homes)	Mitigations to remain the same
Scenic Loop Rd at Cross Mountain Trail	Install Signal (After 1,010 Homes)	Mitigations to remain the same
Scenic Loop Rd at Midsomer Pl	Restripe for EB left & right turn lanes	Mitigations to remain the same

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Intersection	Improvements in Previous TIA	Proposed Improvements
Scenic Loop Rd at Guajolote Ranch	Option A: Install signal, widen Scenic Loop Rd to 4-lanes, install dual NB left- turn lane, dual EB right-turn lane, & optimize signal timings	Modify to a cross intersection with access to the commercial property on the right.
	Option B: Install signal, realign Babcock Rd with Prop RDWY 1, widen Scenic Loop Rd and Babcock Rd to 4-lanes, install dual NB left-turn lane, dual EB left-turn lane, dual WB left-turn lane, EB right-turn lane, WB right-turn lane & optimize signal timings	Install signal, widen Scenic Loop Road to install a dual NB left-turn lane, and install SB left and right-turn lanes. Install a dual EB right-turn lane and signalize the right-turn movement
Scenic Loop Rd at Babcock Rd (AWSC)	Option A: Install signal, widen Babcock Rd to 4-lanes, install SB left-turn lane, & install dual WB right-turn lanes	Install signal, widen Babcock Road to 4 lanes, install dual SB left-turn lanes, and install a NB right-turn lane.
	Option C: Realign Babcock Rd with Prop RDWY 1 & widen Babcock to 4-lanes	Install channelized dual WB right-turn lanes and signalize the right-turn movement.

Analysis

Access to the commercial development will be facilitated through three separate driveways. Driveway 1 will be located along Scenic Loop Road and aligned with Guajolote Ranch and will be signalized. Driveway 2 will be located along Scenic Loop Road and will be a two-way stop-controlled with restricted right-in/right-out. Driveway 3 will be located along Babcock Road and will be restricted to right-in only. The trips generated from commercial development are distributed along the driveways and the study intersections, along with the trips from Guajolote Ranch. Synchro models for the final Build Condition (2032) for this segment of Scenic Loop Road were developed, and the Level of Service (LOS) for AM and PM peak hours are shown in **Table 4**. The Capacity Analysis Worksheets are included in **Appendix E**.

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Table 4. Intersection Capacity Analysis – Build Condition (2032)

Intersection	Movement	AM Peak Hour		PM Peak Hour	
		LOS	Delay (sec/veh)	LOS	Delay (sec/veh)
Signalized Intersection:					
Scenic Loop Rd at Babcock Rd	Overall	D	52.6	D	35.3
Scenic Loop Rd at Proposed Guajolote Rd/Dwy 1	Overall	C	33.7	D	50.7
Unsignalized Intersections:					
Scenic Loop at Driveway 2	WB: R	B	11.4	C	18.9

Note: Driveway 3 has a Right in only and does not have any delays

As shown in Table 4, all intersections operate with a level of service D or better.

Queuing

Queuing Analysis was carried out to determine the minimum length of the left-turn lane. The 95th percentile queue lengths were obtained from multiple runs of SIM Traffic and are shown in **Table 5** below.

Table 5. Queuing Analysis - 2032

Intersection	Movement	AM Peak Hour	PM Peak Hour
		95 th % Queue Length (ft)	95 th % Queue Length (ft)
Scenic Loop Rd at Guajolote Ranch Rd/Com Dwy 1	SB: Left-Turn Lane	42	54

As shown in Table 5, the queuing lengths for southbound left-turning vehicles during peak AM and PM hours are 42 feet and 54 feet, respectively, which are less than the minimum storage lengths for a left-turn lane (100 feet). Therefore, a minimum turn length of 260 feet, including a 50-foot taper, will be sufficient to contain the queue and prevent spillback based on the posted speed limit of 40 miles per hour. The queuing results from Synchro are also included in **Appendix E**.

Conclusion

The intersections will operate with a level of service D with the proposed geometry and are acceptable to Bexar County. The other assumptions and turn lane improvements on all other study intersections as listed in the 2022 TIA will remain the same.

END OF MEMO**APPENDICES**

A - 2022 TIA Approval Letter

B – Site Plan

C – Trip Generation Data

D – Proposed Geometry

E – Capacity Analysis Worksheets

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