

Memo

Date: Tuesday, March 23, 2021

Project: Heritage TIA

To: Chad Gilpin, P.E., City of Dripping Springs

From: Leslie Pollack, P.E., PTOE, HDR Engineering, Inc.

Subject: Heritage TIA Review

Site Land Use and Access

HDR has completed a review of the Heritage Traffic Impact Analysis (TIA) dated November 19, 2020, for the development located northwest of the intersection of US 290 and RM 12. The development is expected to be constructed by 2026 and is proposed to consist of Single-Family Detached Housing and Multifamily Housing (Mid-Rise). Table 1 provides a summary of the land use sizes and trips generated by the development.

Table 1. Summary of Daily and Peak Hour Trip Generation

Land Use	Size	24-Hour Two-Way Volume	AM Peak Hour		PM Peak Hour	
			Enter	Exit	Enter	Exit
Single-Family Detached Housing	595 DU	5,366	107	320	355	208
Multifamily Housing (Mid-Rise)	105 DU	572	10	28	28	18
Total		5,938	117	348	383	226

Access to the development is proposed at US 290 and at RM 12 via the extension of Roger Hanks Parkway through the development. One additional access point is proposed via the extension of Baird Lane into the development.

Traffic Analysis and Recommendations

Traffic conditions were analyzed for 2020 existing conditions and 2026 No Build and Build Conditions. The intersections analyzed as part of this TIA were the following:

- US 290 and RM 12 (signalized)
- US 290 and Sportsplex Drive (signalized)
- RM 12 and Old Fitzhugh Road (unsignalized)
- RM 12 and Brookside Street (unsignalized)
- Baird Lane and Sportsplex Drive (unsignalized)
- US 290 and Roger Hanks Parkway (signalized)

- Roger Hanks Parkway (extension) at Internal Intersection (unsignalized)
- Roger Hanks Parkway (extension) at Internal Roundabout (unsignalized)

Table 2 summarizes the analysis results for the study intersections for all traffic conditions. Delay and level-of-service (LOS) for both signalized and unsignalized intersections are provided in Table 2. The highest minor street approach delay and LOS are provided for unsignalized intersections.

Table 2. Intersection Level of Service and Delay (sec/veh)

Location	2020 Existing		2026 Forecasted No Build		2026 Forecasted Build		2026 Forecasted Build w/Mitigation	
	AM	PM	AM	PM	AM	PM	AM	PM
US 290 and RM 12	E (60.7)	E (61.1)	F (157.0)	F (143.9)	F (197.6)	F (193.5)	F (114.7)	F (124.7)
US 290 and Sportsplex Drive	A (8.2)	D (35.8)	B (13.2)	F (83.6)	C (26.1)	F (124.3)	B (14.8)	E (62.8)
RM 12 and Old Fitzhugh Road*	F (94.4) (EB)	F (206.8) (EB)	F (712.3) (EB)	F (1253) (EB)	F (1300) (EB)	F (2253) (EB)	F (1300) (EB)	F (2253) (EB)
RM 12 and Brookside Street*	C (21.2) (WB)	C (17.8) (WB)	D (33.7) (WB)	C (24.5) (WB)	F (1710) (WB)	F (1027) (EB)	C** (27.6)	B** (19.8)
Baird Lane and Sportsplex Drive*	C (16.8) (SB)	C (20.2) (SB)	C (21.9) (SB)	D (28.9) (SB)	F (384.8) (SB)	F (401.3) (SB)	F (90.4) (SB)	F (59.8) (SB)
US 290 and Roger Hanks Parkway	C (22.2)	B (18.4)	C (28.9)	C (26.9)	C (31.5)	C (29.2)	C (26.5)	C (34.4)
Roger Hanks Parkway (extension) at Internal Intersection*	-	-	-	-	A (9.0) (SB)	A (9.0) (SB)	A (9.0) (SB)	A (9.0) (SB)
Roger Hanks Parkway (extension) at Internal Roundabout*	-	-	-	-	A (3.2)	A (3.5)	A (3.2)	A (3.5)

*Unsignalized

**Signalization proposed as mitigation

As shown in Table 2, the following study intersections are expected to operate with an unacceptable LOS in the AM and/or PM peak periods at the build out of the development in 2026 after mitigation:

- US 290 and RM 12
- US 290 and Sportsplex Drive
- RM 12 and Old Fitzhugh Road
- Baird Lane and Sportsplex Drive

The following improvements were proposed to improve traffic operations:

- US 290 at RR 12
 - Adjust signal timing
 - Install a 275' westbound right-turn lane with a 100' taper
 - Install a 275' eastbound right-turn lane with a 100' taper
 - Install 150' eastbound dual left-turn lanes with a 25' taper
 - Install 150' westbound dual left-turn lanes with a 25' taper
 - Install 150' northbound dual left-turn lanes with a 100' taper
 - Install 130' southbound dual left-turn lanes with a 100' taper
- US 290 at Sportsplex Drive
 - Adjust signal timings
 - Install a 275' westbound right-turn lane with a 100' taper
 - Install 250' southbound dual left-turn lanes with a 50' taper
- RR 12 at Brookside Street
 - Install traffic signal
 - Install a 400' southbound right-turn deceleration lane
- Sportsplex Drive at Baird Lane
 - Install 100' eastbound left turn lane and 50' taper
 - Install 175' southbound left turn lane and 50' taper
 - Install 100' southbound right turn lane and 50' taper
 - Install 150' westbound right turn lane and 25' taper
- US 290 at Roger Hanks
 - Signal head modifications
 - Adjust signal timing

The operations at the intersection of US 290 and RM 12 and the intersection of US 290 and Sportsplex Drive could not be improved to acceptable LOS due to heavy volumes at the intersections, but operations were mitigated to 2026 Forecasted conditions, mitigating the impacts of the development.

The operations at the intersection of RM 12 and Old Fitzhugh Road could not be mitigated to acceptable LOS due to the unsignalized traffic control. The intersection is not expected to meet peak hour signal warrants at the time of construction. Furthermore, a signal exists at RM 12 and Mercer Street and another signal is recommended at RM 12 and Roger Hanks Parkway/Brookside Street as part of this TIA. The development will include a stub out for Old Fitzhugh Road to be realigned in the future, which is expected to reduce traffic delays at the intersection of RM 12 and Old Fitzhugh Road.

The operations at the intersection of Baird Lane and Sportsplex Drive could not be mitigated to acceptable LOS due to the unsignalized traffic control. The intersection is not expected to meet peak hour signal warrants at the time of construction.

A mitigation agreement was formed between TxDOT and the developer, and the developer has also agreed to construct additional improvements to meet the City's TIA requirements. The following transportation improvements will be constructed by the developer:

- Extension of Roger Hanks Parkway as a two-lane roadway from its existing terminus north of US 290 to RM 12 (Dripping Springs Offsite Road and Trail Agreement)
- Signalization of RM 12 and Roger Hanks Parkway/Brookside Street (TxDOT agreement)
- Construction of a channelized southbound right-turn movement on RM 12 at Roger Hanks Parkway/Brookside Street (TxDOT agreement)
- Construction of an eastbound right-turn lane on Roger Hanks Parkway at RM 12 to provide a two-lane approach with a 75' storage length and 50' taper length
- Construction of a westbound right-turn lane on Sportsplex Drive at Baird Lane with a 70' storage length and 50' taper length
- Construction of a southbound left-turn lane on Baird Lane at Sportsplex Drive with a 175' storage length and 50' taper length
- Construction of a 10' concrete off-site trail connecting the Heritage on-site trail system on the south side of the property line to Mercer Street (Dripping Springs Offsite Road and Trail Agreement)

Summary

- Acceptable LOS (LOS C) was not able to be reached through mitigation at all study intersections as part of this TIA; however, the TIA considered feasible improvements at study intersections and recommended improvements that mitigated the impact of the development traffic.
- The Heritage Development has agreed to construct improvements comparable with the development's impact.
- The City should continue to work towards realigning the northern terminus of Old Fitzhugh Road from its existing intersection at RM 12 to Roger Hanks Parkway through the development to improve future traffic operations.