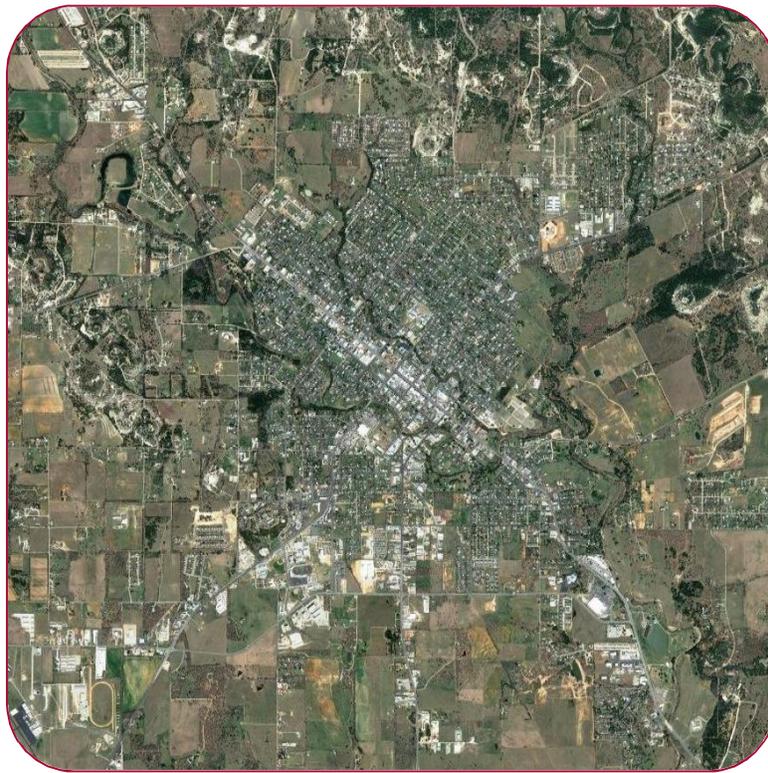


FREDERICKSBURG TRAFFIC IMPACT STUDY OVERVIEW



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Prepared By:

BACKGROUND

In November 2019, the City of Fredericksburg, Texas initiated a Traffic Impact Study (TIS) to be performed by Kimley-Horn. The purpose of the TIS is to determine means to provide local congestion relief. The TIS covers two major components – 1) an evaluation of high-priority new connection projects, identified in **Figure 1** below, and 2) operational and safety improvements at intersections in the City Limits. In Figure 1 below, the new connections are as follows:

1. Post Oak / Cherry Extension (completes gap from Bowie St to Main St, widens Post Oak)
2. Mulberry Extension (connects Mulberry at Llano to Main at Eagle)
3. Frederick Rd Extension (SH 16 to US 290 E)
4. Inner Loop Extension (formerly Friendship Lane or Interim Relief Route from SH 16 to US 87 N)

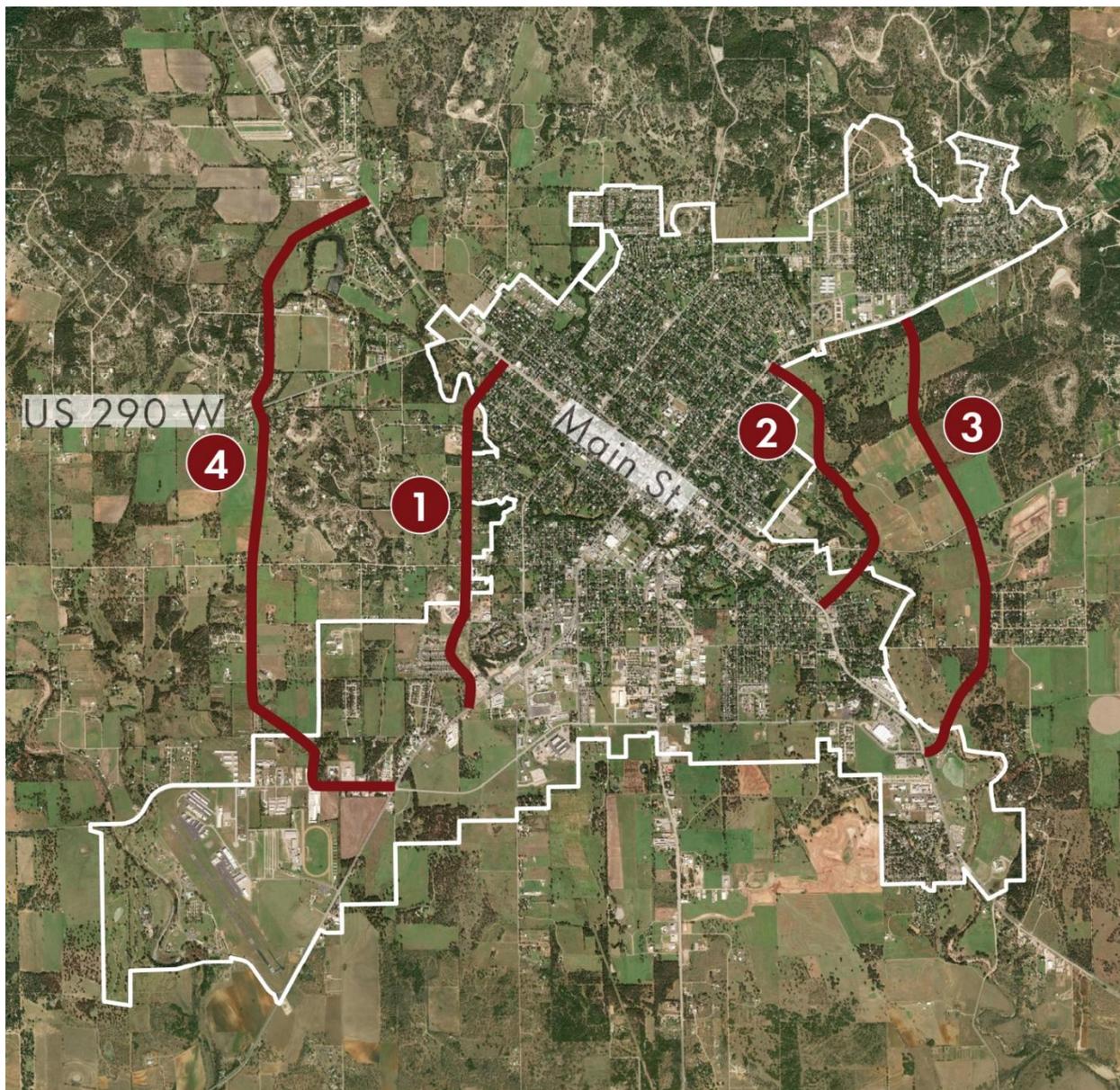


Figure 1: Four High-Priority Connection Options

RESULTS AND BENEFITS

FOUR EXTENSION PROJECTS

In general, all four extension options would see benefits in key travel measures of effectiveness, including travel time savings and amount of fuel consumed. Cost estimates for all projects include costs of construction, ROW acquisition, new signals, widening at major intersections, and engineering costs. Benefits for all projects were estimated using two factors over a 20 year period: (1) the daily reduction in travel delay multiplied by a person's value of time (i.e. how much a person values their time no longer spent in traffic), and (2) the amount of fuel cost savings. The benefit/cost ratio and cost estimate for each project is summarized in **Figure 2**.

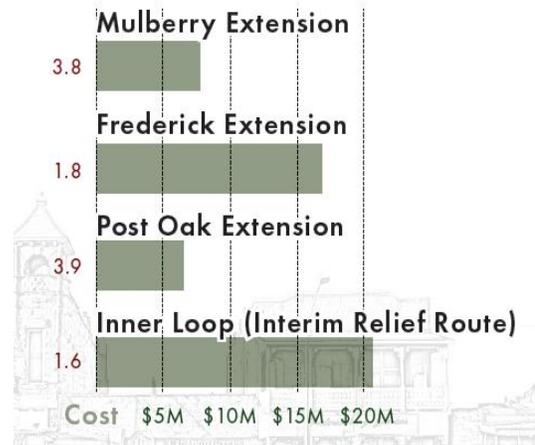


Figure 2: Benefit/Cost Ratios and Costs

MULBERRY EXTENSION

The Mulberry Extension would connect Main St to Llano St between Eagle at Main and Mulberry at Llano. The projected average daily traffic on this road in 2020 is 6,700 vehicles per day. It is assumed that this extension would relieve 50% of traffic turning between Llano and Main; 25% of traffic turning left off Llano between Austin and Travis; and 25% of traffic turning right along Main between Lincoln and Olive.

FREDERICK EXTENSION

The Frederick Extension would connect Main St to Llano St between Friendship at US 290 and Frederick at Llano. The projected average daily traffic on this road in 2020 is 6,000 vehicles per day. It is assumed that this extension would relieve 25% of traffic turning between Llano and Main; 15% of traffic turning left along Llano between Austin and Mulberry; and 15% of traffic turning right along Main between Lincoln and Goehmann.

POST OAK EXTENSION

The Post Oak Extension would connect Main St to Adams St between Post Oak at Adams and Cherry at Main. The projected average daily traffic on this road in 2020 is between 6,700-8,800 vehicles per day. It is assumed that this extension would relieve 10% of traffic turning between Adams and Main and 25% of traffic turning between Milam and Main as well as at between Milam at SH 16.

INNER LOOP EXTENSION

The Inner Loop Extension, previously known as the Friendship Extension or Interim Relief Route, is situated around the western edge of Fredericksburg and would connect SH 16 to US 290 and US 87 to primarily redirect non-local traffic. The projected average daily traffic on this road in 2020 is 5,700 vehicles per day. It is assumed that this extension would reroute 20% of traffic traveling to downtown at Friendship and US 290; 20% of traffic heading west at the intersection of Washington and Main; and a portion of traffic turning at Adams and Main.

INTERSECTION PACKAGES

Short-term relief options were considered by analyzing the twenty-six (26) signalized intersections in the City of Fredericksburg, as well as some additional intersections identified for safety issues. The benefit of implementing these options is significant, and the impact of these projects is included in the benefit/cost ratio of each of the four extension projects.

LANE ASSIGNMENT AND SIGNAL IMPROVEMENTS

It is suggested that many intersections change or reassign lanes to improve operations. Some lane reassignments involve “swapping” lanes – for example, changing through-left lane and right lane approach to instead be a left lane and through-right lane approach. Some lane reassignments involve adding new lanes by better utilizing the existing road space with new paint for traffic. Some lane reassignments involve adding new lanes by adding new pavement surface. At Washington at Main and Creek at Adams, a recommendation from the 2017 Transportation Master Plan has been reiterated to make Washington one-way northbound on the north side of Main and Creek Street one-way eastbound east of Adams. Some lane reassignments require upgrading existing signal heads, primarily for left turns, such as at Elk and Main on the southbound approach.

SAFETY IMPROVEMENTS

Safety-specific improvements have been made for seven locations in Fredericksburg, including five signalized intersections which have also been analyzed for operational improvements. These seven intersections were selected based on crash history and include (1) US 290 at US 87 (“the Y”), (2) Main at Olive, (3) Main at Highway, (4) Main at Llano, (5) Washington at Walnut, (6) Llano at Travis, and (7) Milam at Austin. Safety improvements include restriping, adding new pedestrian or left-turn signal heads, installing new signs, access management and drainage improvements. Additionally, many stop bars at minor streets intersecting with Main Street have been moved further back from the intersections to provide room for large trucks turning right.

SIGNAL TIMING IMPROVEMENTS

Several intersection timing changes have been suggested to reduce overall delay at signalized intersections. It is recommended that signal timings at all signalized intersections are updated every 2-3 years in the future to respond to local demands.

PRELIMINARY CONCLUSIONS

Based on the analysis performed, the intersections package and any of the four extension options would improve conditions in Fredericksburg. The intersections package would have a significant benefit to local traffic at a relatively low cost and could be implemented in a short time frame. Each of the four extension options offer different benefits to local traffic, though there are significant variations in costs and benefits between each project.