

MEMORANDUM



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TO: Nick Williams, PE, CFM

FROM: Mitch Aiton, PE, PMP`

SUBJECT: Harbin Drive Widening Median

DATE: 2/11/2021

PROJECT: Harbin Drive Widening

Mitch Aiton, P. E. 2-11-2021
Signature of Registrant & Date
Freese and Nichols, Inc.
Texas Registered Engineering Firm F-2144

Background

As part of the scope of work for the Harbin Drive Widening project for the City of Stephenville, Texas, Freese and Nichols, Inc. (FNI) designed Harbin Drive according to the Stephenville Thoroughfare Plan adopted in April 2017. The thoroughfare plan calls for Harbin Drive to be a minor arterial, to accommodate the present and future traffic and manage access through a divided median, as shown in Figure 1.

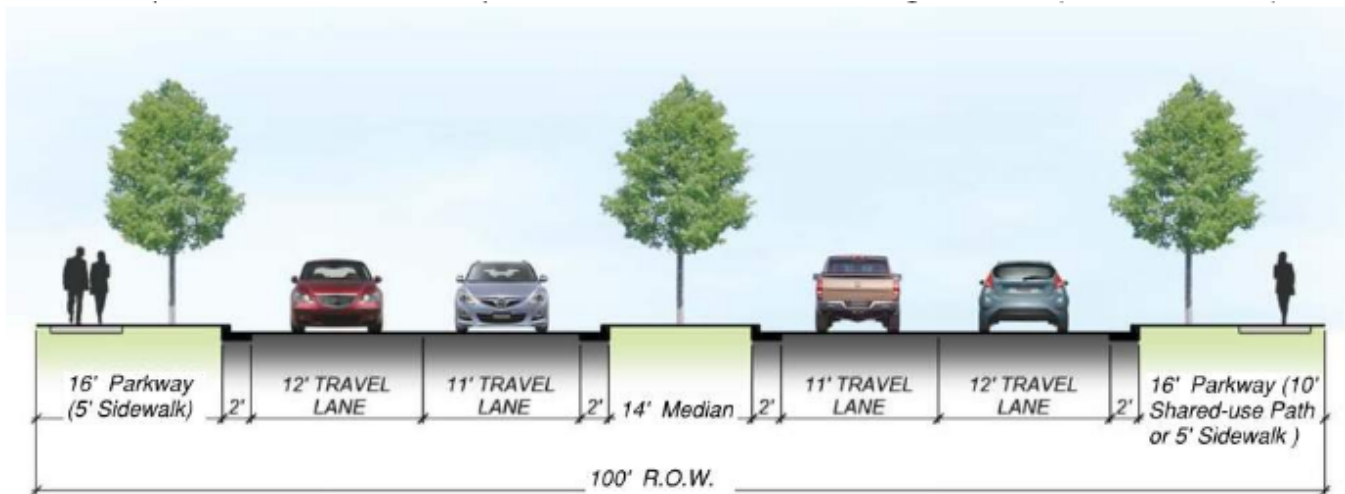


Figure 1: Minor Arterial Section

Recommendation

The purpose of a median for this type of roadway is to provide access management. The goal of access management is to provide safety for the driver and reduce the number of crashes. The optimum design of access management is to limit the number of driveways and provide access with a limited number of median openings between intersections. Due to the high number of existing residential driveways located along Harbin, the best way to provide access management is to limit the median openings to the existing cross street intersections as much as possible. Existing residents will be able access driveways with “right-in” and “right-out” movements as they do today, however left turn movements in and out of the driveways will be impacted. Left turn lanes will be provided at cross street intersections and residents will be able to make a “u-turn” movement to access existing driveways.

If it is found after construction that the “u-turn” movements are conflicting with Harbin traffic, it is recommended that the city install stop signs on Harbin to create 4 way stop sign controlled intersections at the Mimosa and Overhill intersections. In future years when traffic increases, the stop signs can be removed and replaced with traffic signals if needed. The stop signs will be a cheaper temporary solution than constructing a two way left turn lane and removing it in the future to install a median. Due to the projected traffic volume on Harbin Drive, as shown in Figure 2, it is advised that Harbin Drive be built with a median to protect the driver and the neighboring community.



Figure 2: Future Traffic, 2034