

CHAPTER 6 ADDITIONAL FACTORS CONSIDERED

After the initial analysis was conducted, the results were presented to the Stakeholder Advisory Committee for their review and comment. The feedback from the committee members was incorporated into the second round of analyses that were conducted by the study group in which additional factors were considered in order to generate an updated version of the potential NRHM routes.

The next step in the NRHM route designation process was to analyze those additional factors that required a qualitative methodology for evaluation. Those additional factors included environmentally sensitive features, wildlife management areas, environmental justice populations, emergency response capacity, and recent upgrades to roadways in Cameron County. Following FHWA guidelines, the study team weighted the additional factors qualitatively, so that the overarching goal of protecting the safety and welfare of humans could be fully addressed.

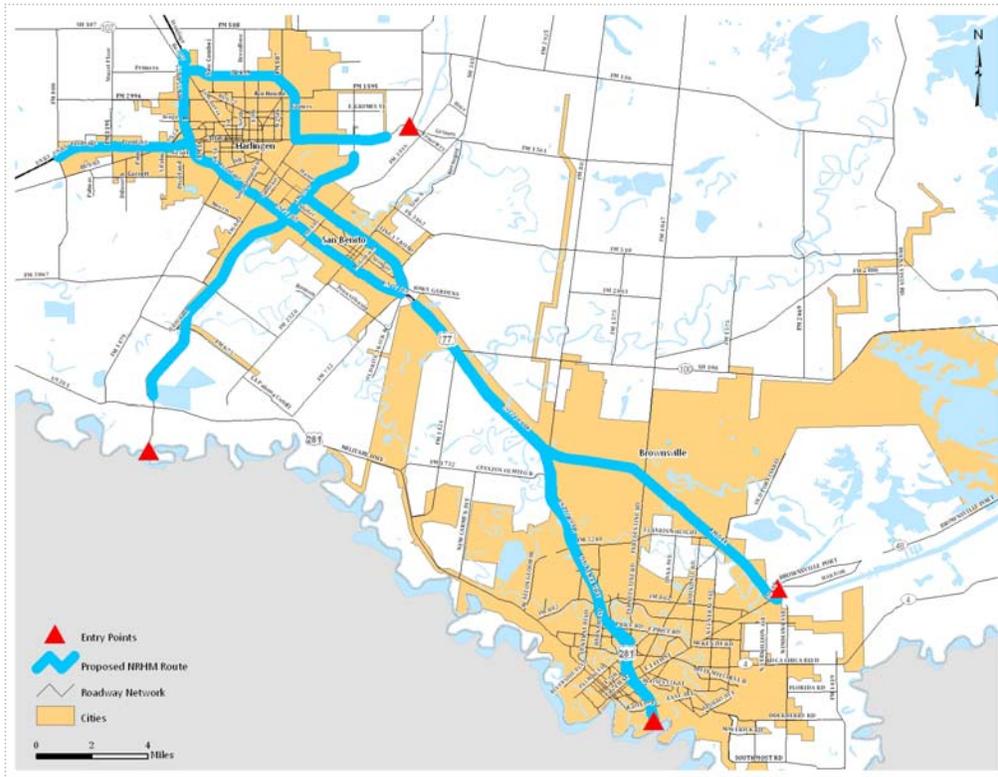
To complete this task, the study team reviewed Cameron County's drainage plan, researched the location of any wildlife management areas within the study area, completed a GIS spatial analysis of environmental justice areas in the region, developed travel time estimates for County fire stations, and worked with the Advisory Committee to identify recent upgrades to roadways in the study area.

RECENT ROADWAY UPGRADES

Recent upgrades identified by members of the project Stakeholder Advisory Committee included the ongoing expansion of Farm-to-Market Road 511/State Hwy 550 to a four lane divided highway. Completion of this work is anticipated to take place within the next few months. The committee also pointed out that the upgrade of US 77/83 in Harlingen to a six-lane, controlled access, concrete divided highway occurred only three years ago and therefore may affect the relevance of the earlier year crash data.

Given that the preliminary risk analysis may have been influenced by crash data on roadway segments and intersection locations that no longer exist, the study team removed crash data for years, 2006 and 2007 (years prior to the upgrades of US 77/83 in Harlingen) during the second round of route analysis. The results of this revised analysis were reported to the Stakeholder Advisory Committee. The committee concurred in the finding that the results of the revised analysis were more logical and intuitively reasonable and recommended proceeding with monthly crash rates calculated on the more timely set of crash data. Map 10 displays the second round NRHM route analysis results.

Map 10: NRHM Route for Cameron County Based on Second Round of Analyses



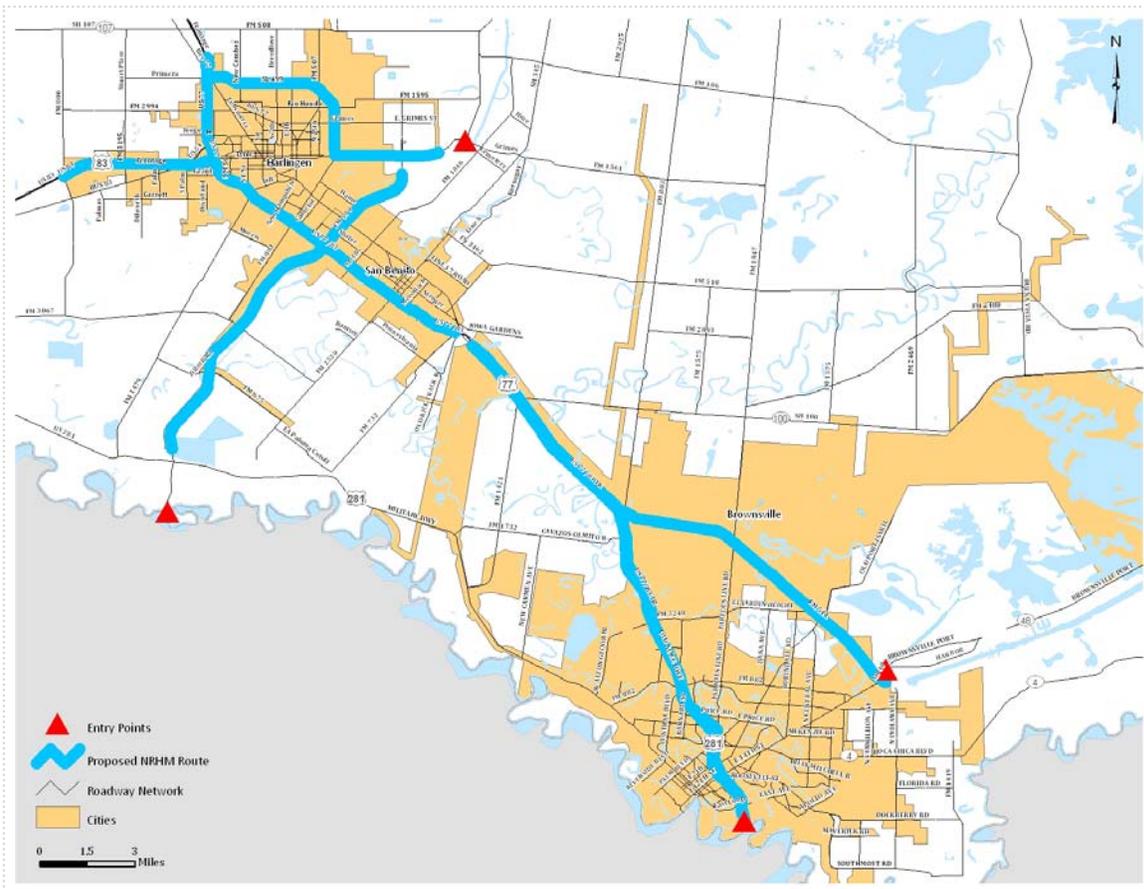
ENVIRONMENTALLY SENSITIVE FEATURES

Major environmentally sensitive features in Cameron County include the coastline near the Gulf of Mexico and the region’s storm-water management system. The study team reviewed the candidate routes and determined that none of the routes remaining under consideration were in immediate proximity to the coastline. In consultation with the Advisory committee it was determined that any potential coastal impacts would be secondary impacts from runoff from drainage ditches and storm-water management systems that might enter the estuary system.

Subsequently, the study team focused their research efforts on potential impacts of hazardous material spills to the regional storm-water management system. In their research, the team identified drainage ditches along two of the major roadways included in the Cameron County TDM network. In particular, there are open drainage systems along Business Hwy 77 in San Benito and International Blvd/SH 4 in Brownsville. In the initial run of the risk assessment, Business Hwy 77 was included as potential roadway in a NRHM route. Based on feedback from the Advisory Committee, the study team removed Business 77 Hwy from the Cameron County TDM because of

the potential impacts to the drainage system and drinking water resource should a hazardous material spill occur as a result of a crash involving a truck carrying NRHMs. Additionally, the study team removed Business Hwy 77 because of recent increases in congestion. Map 1 is a graphic of the third round route analysis results, which were produced after removing Business Hwy 77 from the Cameron County TDM and rerunning the risk analysis.

Map 11: NRHM Route for Cameron County Based on Third Round of Analyses



WILDLIFE MANAGEMENT AREAS

Next, the study team researched the location of wildlife management areas (WMA) in the Cameron County study area. The only WMA in the study area that was identified by the study team was the Los Palomas and Laguna Atascosa National Wildlife Refuge, which is near unincorporated areas of east Cameron County. The distance of this WMA from any of the potential routes made it unlikely that the area would fall within the impact area or be affected by a route designation arising from this study.

ENVIRONMENTAL JUSTICE

The FHWA administration defines environmental injustice as the disproportionate impact of any transportation project on minorities and/or low-income populations. Based on US Census estimates for 2008, the Hispanic population represents more than 80% of Cameron County's total population. Based on the geographic dispersion of the Hispanic population, it was decided that a geospatial analysis of ethnicity would be relatively uninformative. Therefore, the study team decided to focus the environmental justice analysis on individuals living below the poverty line.

To complete this task, the study team first obtained the latest geographic census block group data for the Cameron County region. Next, the study team downloaded the file into a GIS program for analysis. Then the "*below poverty: individuals*" field was selected and normalized by determining the low-income population density per census block group. The study team determined the density of individuals living below poverty per census block by dividing the "*below poverty: individuals*" attribute by the census block area. Subsequently, the study team used a color scheme of light green to dark green, with light green representing low density and dark green representing high density, to identify areas of Cameron County with high low-income population densities. As shown in Map 12, areas in east central, central, and northwest Brownsville, and central San Benito have high densities of low income individuals.

Next, the study team overlaid the first round analysis route over the below-poverty density layer and the study team performed visual spatial analysis. The spatial analysis indicated that the recommended route did not disproportionately impact the low income community. This conclusion was based on the fact that the potential routes tended to exclude hazardous cargo from roadways passing through low income areas and in the case where a route did pass through a low income area, it consolidated NRHM traffic on major roadways with the lowest risk and greatest buffer from the population.

Map 12: Environmental Justice Areas in Cameron County



EMERGENCY RESPONSE TIME

Lastly, the study team analyzed emergency response times for Cameron County fire stations. Using TransCAD, the study team first selected all nodes in the Cameron County TDM network that were closest to the study area fire stations. Secondly, the study team created a new “Network” file of the most up-to-date version of the Cameron County TDM network and designated the “Time” parameter as the impedance factor. Then the study team selected the “Network Bands” tool, and selected 5-minute interval band sizes. Thirdly, the study team overlaid the second round analysis route on top of the travel bands. In this manner it was determined that all of the roadways included in this proposed route are within 10 minutes or less of emergency responder or fire stations.

SUMMARY OF ADDITIONAL FACTORS CONSIDERED

The study team qualitatively evaluated the following additional factors: environmentally sensitive features, wildlife management areas, environmental justice populations, recent upgrades to roadways in the study area; and emergency response time. After evaluating these factors, the study team determined that the second round analysis route was suitable to use in the next level of the NRHM route designation process. In the next section, this report describes the following additional route selection criteria: through routing and delay in transportation, and burden to commerce. Subsequently, the study team developed a set of alternative route scenarios for review at public hearings.