

CHAPTER 2 OBJECTIVES AND RESPONSIBILITIES

REVIEW OF CURRENT ORDINANCES AND EXISTING ROUTE PLANS

The first step in the process of developing any new NRHM route is the review of existing regulations and ordinances related to the movement of NRHMs. For the development of a Cameron County NRHM route, the study team reviewed the FHWA's Guidelines for Applying Criteria to Designate Routes for Transporting Hazardous Materials, and two existing local ordinances. The cities of Harlingen and San Benito were the only two jurisdictions within the study area that had existing hazardous materials ordinances. Harlingen's NRHM route as shown in Map 3, has been officially designated by the Texas Department of Transportation (TxDOT). Map 3 displays Harlingen's existing NRHM route. The City of San Benito has moved forward on adopting a NRHM route ordinance, but has not completed the TxDOT prescribed route designation process. Map 4 shows the proposed San Benito NRHM route.

Map 3: Existing NRHM Routes in the City of Harlingen



NONRADIOACTIVE HAZARDOUS MATERIAL ROUTE MAP

PREPARED BY THE TEXAS DEPARTMENT OF TRANSPORTATION TRAFFIC OPERATIONS DIVISION

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 While Routing Exhibited April 15th, 1981

CAMERON COUNTY HARLINGEN, TEXAS

HAZARDOUS MATERIALS ROUTING LEGEND

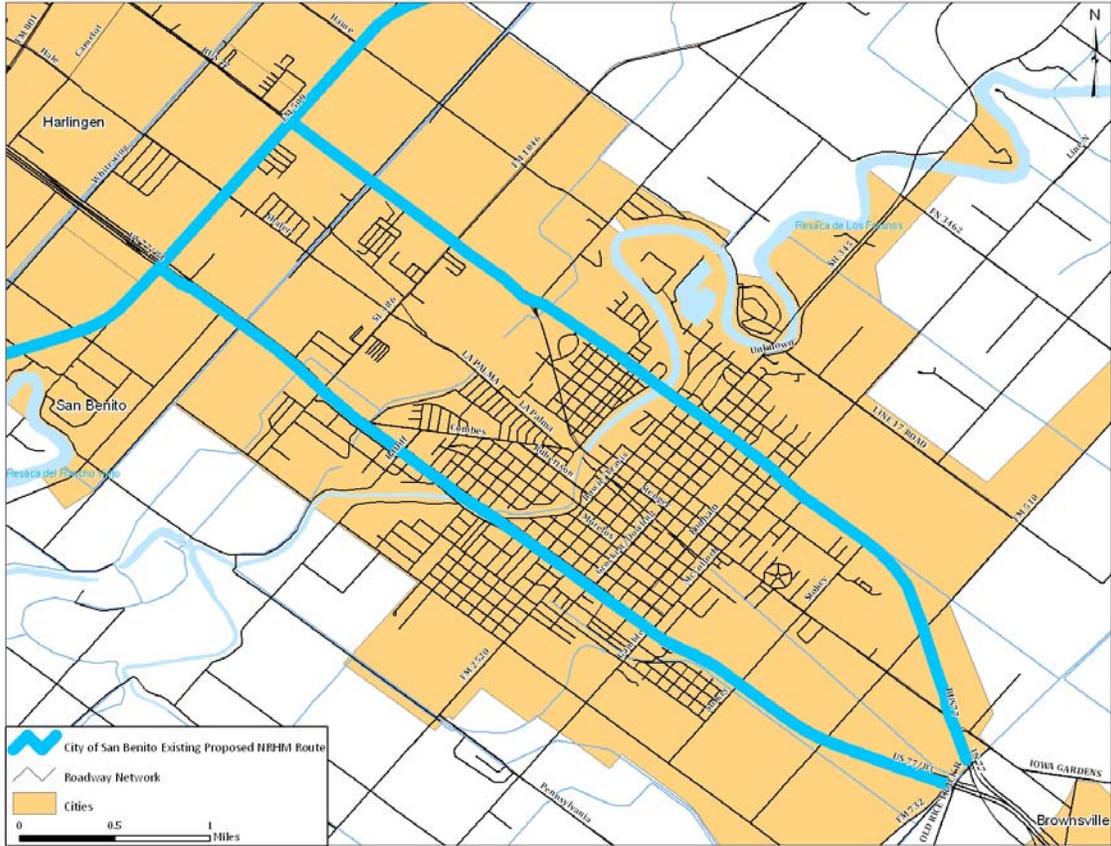
- HAZARDOUS MATERIAL ROUTES THROUGH LOCAL DELIVERY AND POINT OF ORIGIN
- NO HAZARDOUS MATERIAL - AT ANYTIME

LEGEND

- CITY LIMIT
- INTERSTATE HIGHWAY
- U.S. HIGHWAY
- STATE HIGHWAY
- STATE HIGHWAY LOOP OR SPUR
- STATE HIGHWAY FARM ROAD
- PAVE OR PLANS TO PAVEMENT ROAD
- UNPAVED ROAD
- RAILROAD ROUTE
- U.S. & STATE ROUTE OF 20TH

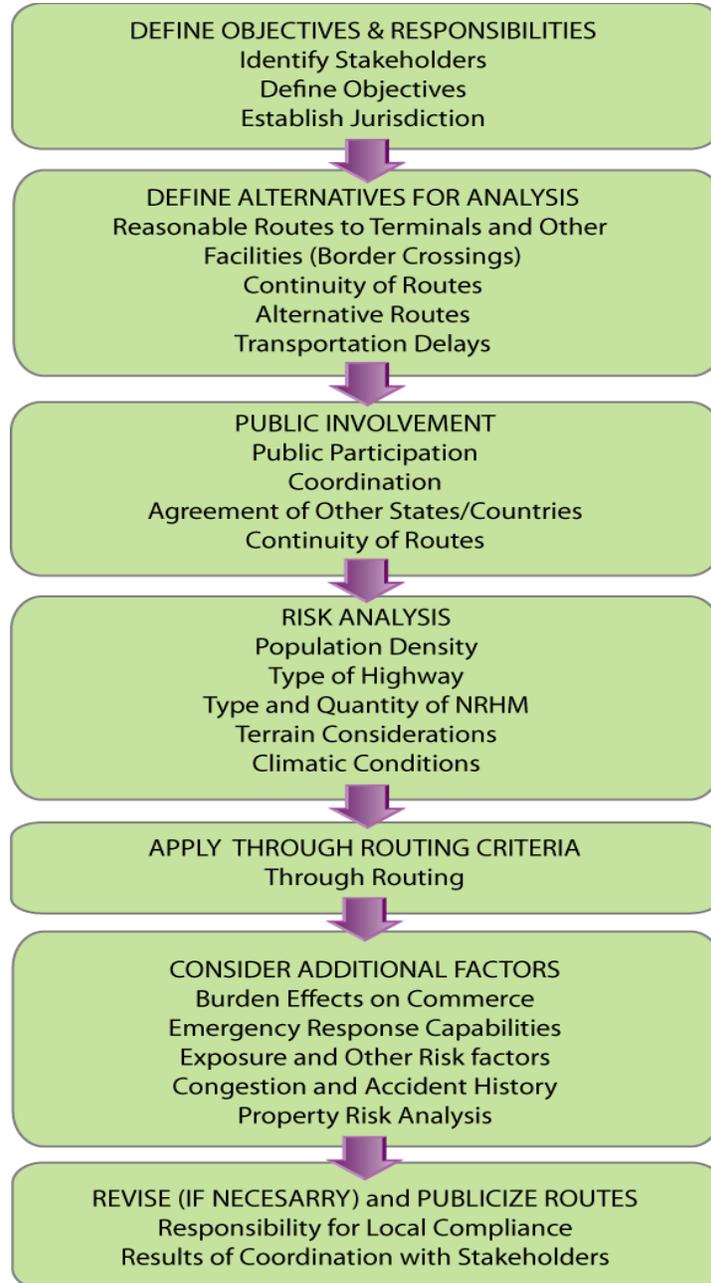


Map 4: Proposed NRHM Route for San Benito



The FHWA *Guidelines for Applying Criteria to Designate Routes for Transporting Hazardous Materials* provides a process for evaluating the relative risks associated with alternative highway routes for the movement of non-radioactive hazardous materials. The following flow chart depicts that process:

Figure 1 FHWA NRHM Route Designation Process



The FHWA guidelines establish a set of standards to be used to ensure safety and a set of factors for evaluating whether those standards are being met. The federal standards are designed to significantly reduce risk. These standards are:

- Enhancement of safety
- Public participation in the decision-making process
- Consultation with other jurisdictions, agencies and organizations
- Through highway routing
- Reduced burden on commerce
- Reasonable routes to terminals and other facilities
- Reasonable time to reach agreement between affected states or Indian tribes
- Timely response for local compliance

The federal methodology for evaluating and designing NHRM routes includes the following factors. Some of the factors are easily quantifiable, but others reflect community priorities and values and must therefore be evaluated using qualitative methods.

- Population Density - This factor looks at the distribution of residents, employees, motorists and other persons within a potential impact zone along a designated highway route. The impact zone is the potential area that would be affected if a release of hazardous materials were to occur. Special populations, such as schoolchildren, the elderly, hospital patients, and others with limited mobility are considered separately due to the increased amount of time it would take to evacuate these populations in the event of a release of hazardous material. In addition to considering the total number of persons residing in the impact zone, the number of persons in an area do to normal daily activity is also considered. This factor is quantifiable using existing data sources.
- Type of Highway - The characteristics of the roadways including number of lanes, height of bridges, vehicle weight/size limits, roadway geometrics, access management, median type, shoulder width, and other relevant physical characteristics are considered in conjunction with other factors such as terrain, climate, and congestion. The measurements of the roadway characteristics

- are quantifiable and readily available from existing data sources, but their impact relative to terrain, climate and congestion is a qualitative measure.
- **Types and Quantities of Non-Radioactive Hazardous Material (NRHM)** - The types and quantities of NRHM that are likely to travel through the study area are determined in addition to the potential impact zone of each. This allows for the consideration of establishing different NRHM routes for different types of materials. This factor is also quantifiable from existing data sources.
 - **Emergency Response Capabilities** - The capacities of fire, law enforcement, highway safety, emergency medical, and other emergency response agencies to address a potential incident are determined through consultation with the various agencies. This factor is a qualitative factor that requires the use of professional judgment to assess.
 - **Results of Consultation with Other Affected Persons and Entities** - The input gathered from potentially affected persons and entities is used to evaluate the potential impact of study recommendations and to establish any additional areas of community concern that should be used as evaluation factors. This factor is also a qualitative factor that requires the use of professional judgment to assess.
 - **Exposure and Other Risk Factors** - Exposure and risk factors are defined and distances to sensitive areas are considered. Sensitive areas must be defined and can include homes and businesses; special populations (as described above); water sources and aquifers; as well as natural areas such as parks and wetlands. The impact of exposure and other risk factors on sensitive areas is a qualitative factor that requires the use of hard data and professional judgment.
 - **Terrain Considerations** - Topography that can affect the impact zone as well as terrain-related highway features (e.g. sharp curves, grade, and roadside characteristics) that can affect the likelihood of an incident, emergency response capacity, and crash severity are considered in NRHM route evaluation. This is a qualitative factor that is determined through professional judgment.
 - **Continuity of Routes** - Coordination of routes within adjacent jurisdictions and minimizing deviation from the most direct route to external destinations is also a part of the NRHM route evaluation. The minimizing of deviation can be quantified, but its relative importance requires qualitative judgment.

- Effects on Commerce - It is required by federal law that any NRHM designated route shall not create "an unreasonable burden upon interstate or intrastate commerce", which requires the evaluation of the change in mileage and travel time that will be imposed on commerce if a change in the currently used routes is made. This is also a factor that requires qualitative judgment to assess.
- Delays in Transportation - NRHM routes are prohibited by federal regulation from creating "unnecessary delays in the transportation of NRHM", therefore a change in travel time from current shipping patterns to a proposed NRHM route must be evaluated and evidence of necessity made to justify any increase in travel time. The change in travel time can be quantified using existing tools.
- Climatic Conditions - Weather conditions that are unique to a route can affect the safety of NRHM shipments moving along that route, the potential impact area, the difficulty in cleaning up any release, and the evacuation of persons within the impact zone. Although general climate factors for the area affect all routes in the area, this factor focuses on climatic conditions that affect one route differently from other routes, such as fogbanks, high winds, or flooding. The climatic conditions can be determined by quantitative data, but the level of impact on the safety of the route requires the use of qualitative judgment to assess.
- Congestion and Crash History - The unique traffic conditions of each route are considered with regard to the potential for a crash occurring, emergency response capacity, exposure of the public to the release, and the potential impact if the roadway must be closed for an extended period of time for cleanup to occur. The crash history and congestion level are quantifiable data that can be obtained from existing data sources, but the other elements involved in assessing this factor require qualitative judgment.

In addition to the federal regulations and guidelines for establishing a NRHM route, the existing NRHM routes within the cities of Harlingen and San Benito were reviewed. The ordinances established the routes depicted in Map 3 and Map 4 previously.

These routes were considered when evaluating current NHRM movements and when considering the creation of new routes.