MEMORANDUM

TO: Mayor and Council

CC: Marc A. Ott, City Manager
Robert Goode, P.E., Assistant City Manager

FROM: Robert Spillar, P.E., Director,
Austin Transportation Department

DATE: November 26, 2013

SUBJECT: **Hazardous Materials Routing (CIUR 1032)**

On June 20, 2013, Council approved Resolution 20130620-055 directing the City Manager to assess the public health risk from the transport of hazardous materials through Austin. Furthermore, the City Manager was directed to determine an appropriate process and potential timeline in the event the City chooses to pursue a designated route for the transport of hazardous materials and to report back to Council on all findings.

Texas law requires the development of Non-Radioactive Hazardous Materials Routes (NRHM) for municipalities with populations in excess of 850,000. With the City of Austin's population exceeding the 850,000 threshold to designate hazardous materials routes, staff recommends that the City initiates the process to establish hazardous materials routes in Austin. The establishment of NRHM routing designation must be completed within 18 months of the notice given under federal requirements.

The attached document is the Final Report on transporting hazardous materials through the City of Austin. This report serves as the formal response to City Council's above request. The report:

1. Provides preliminary context regarding the public health risk of transporting hazardous materials through Austin. (Note: Additional resources are requested later in this report to adequately assess the public health risk.)
2. Identifies the process and timeline for designating hazardous materials route(s) including cost participation and collaboration, route analysis and proposal, local public hearing submission, review, consultation with other States and Indian tribes, authorization and approval, and route signing plan.
3. Staff recommendations to establish such routes and to launch the formal process to establish such routes in FY14 per the State and Federal defined process.

Developing the response was a collaborative effort between the Austin Fire Department and the Austin Transportation Department with input received from Austin Resource Recovery, Watershed Protection, Health, and Homeland Security and Emergency Management Departments, as well as the Texas Department of Transportation, Capital Area Metropolitan Planning Organization, and Travis County.

The departments will continue to work together with our regional partners to ensure transportation safety in Austin remains a top priority. Our recommendation is to launch the formal process to establish hazardous routes in FY14, including a routing analysis and public outreach per the State and Federal defined process.

Transporting Hazardous Materials Through the City of Austin

Assessing the Public Health Risk

and

The Process to Establish Hazardous Materials Routes

Prepared for

Austin City Council

Prepared by

Austin Transportation Department

Austin Fire Department

November 1, 2013

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EXECUTIVE SUMMARY AND INTRODUCTION

Texas law requires the development of Non-Radioactive Hazardous Materials Routes (NRHM) for municipalities with populations in excess of 850,000. Austin's population is currently estimated at 853,283 (October 1, 2013, City of Austin). As Austin's population was approaching the 850,000 threshold earlier this year, Austin City Council, on June 20, 2013, through Resolution 20130620-055, directed:

Austin's population recently exceeded the 850,000 threshold to designate hazardous materials routes.

> *…the City Manager to assess the public health risk from the transport of hazardous materials through Austin. The City Manager is further directed to determine an appropriate process and potential timeline in the event the City chooses to pursue a designated route for the transport of hazardous materials. The City Manager is further directed to report back to City Council on all findings on November 1, 2013.*

This report serves as the formal response to City Council's above request. The report:

1. Provides preliminary context regarding the public health risk of transporting hazardous materials through Austin. (Note: Additional resources are requested later in this report to adequately assess the public health risk.)
2. Identifies the process and timeline for designating hazardous materials route(s).

Public Health Risk: Although hazardous materials are transported through Austin daily, the frequency of hazardous material releases along Austin's roadways has been relatively rare – five significant releases occurred during the three year period from 2010 to 2012. Current data regarding the number of roadway vehicles transporting bulk shipments of hazardous materials through Austin, however, is needed to accurately assess the public health risk. Staff, therefore, recommends procuring services to conduct a Commodities Flow Study to accurately quantify the current status of hazardous materials passing through Austin. Austin Fire Department (AFD) will coordinate with regional jurisdictions to identify and recommend a funding source and implementation strategy for the Commodities Flow Study.

Data on the current number of vehicles transporting hazardous materials through Austin is needed to assess the public health risk.

Process and Timeline to Designate Hazardous Materials Routes: The process to designate NRHM routes through Austin is governed by State law (Texas Administrative Code, Title 43 Transportation, Part 1, Ch. 25, Sub-Ch. F, Rule §25.103). In addition to requiring compliance with federal law, the State law addresses the following aspects of the process:

Texas law establishes the process municipalities must follow to designate hazardous materials routes.

- Cost participation
- Initial contact and collaboration

- Route analysis and proposal
- Local public hearing
- Proposal submission
- Proposal review
- Consultation with other States or Indian tribes
- Authorization and approval
- Route signing plan

18 months is the time allowed to complete the hazardous materials route designation process.

The establishment of NRHM routing designations must be completed within 18 months of the notice given under federal requirements (United States Code of Federal Regulations, Title 49, Part 397, Subpart C, §397.71[6]).

With the City of Austin's population exceeding the 850,000 threshold to designate hazardous materials routes, staff recommends that the City of Austin initiate the process to establish hazardous materials routes in Austin. Given the breadth of the outreach effort and resources required to engage agencies and the public, staff further recommends hiring a consultant or research organization to facilitate the process to designate hazardous materials routes. Austin Transportation Department (ATD) will work with affected departments, the Texas Department of Transportation (TxDOT) and other jurisdictions and agencies to identify and recommend a funding source and strategy to implement the process.

Recommendations:

- *Conduct a Commodities Flow Study to assess the public health risk with transporting hazardous materials through the City of Austin.*
- *Initiate process to designate hazardous materials routes in Austin.*
- *Procure services to conduct a Commodities Flow Study and to facilitate process to designate hazardous materials routes.*

REPORT PURPOSE

This report serves as the formal response to City Council's request regarding the transport of hazardous materials through Austin. The report:

1. Provides preliminary context regarding the public health risk of transporting hazardous materials through Austin. (Note: Additional resources are requested later in this report to adequately assess the public health risk.)
2. Identifies the process and timeline for designating hazardous materials route(s).

ASSESSMENT OF PUBLIC HEALTH RISK

Hazardous materials are transported through Austin daily. Fortunately, the frequency of hazardous material spills along Austin's roadways has been rare with five significant releases during the 3-year period from 2010 to 2012.

Data on the current number of vehicles transporting hazardous materials through Austin is needed to assess the public health risk.

Although the transport of these materials is regulated, data on the current number of roadway vehicles transporting bulk shipments of hazardous materials through Austin is needed to assess the public health risk. As described later in this section, a Commodities Flow Study is recommended to gather this information and more comprehensively assess the public health risk.

In this section of the report, the Austin Fire Department (AFD) defines what constitutes a hazardous material and identifies hazardous materials (Tier II) sites located within the City of Austin. AFD also provides an overview of existing hazardous materials transport conditions along roadways, on railways, in aircraft, through pipelines and by waterways. Hazardous materials incidents within the region are also discussed.

Hazardous Materials Definition

Hazardous material means a substance or material that the Secretary of Transportation has determined is capable of posing an unreasonable risk to health, safety, and property when transported in commerce, and has designated as hazardous under Federal hazardous materials transportation law (49 CFR, Subtitle III, Chpt. 51, Sec. 5103) (including an explosive, radioactive material, infectious substance, flammable or combustible liquid, solid, or gas, toxic, oxidizing, or corrosive material, and compressed gas) . The term includes hazardous substances, hazardous wastes, marine pollutants, elevated temperature materials, materials designated as hazardous in the Hazardous Materials Table (49 CFR, Subtitle B, Chpt. 1, Subchpt. A, Part 172.101, pages 132-300) and materials that meet the defining criteria for hazard classes and divisions in part (49 CFR, Subtitle B, Chpt. 1, Subchpt. A, Part 173.2). These substances which if released or misused can cause death, serious injury, long lasting health effects, or damage to structures and other properties as well as to the environment.

Hazardous Materials Sites

Facilities housing reportable quantities of hazardous materials are designated as Tier II sites.

Sites required under Occupational Safety and Health Administration (OSHA) regulations to maintain material safety data sheets (MSDSs) for hazardous chemicals stored or used in the work place must submit a Tier II report to the Texas Department of Health and Human Services. In addition, facilities with chemicals in quantities that equal or exceed the following thresholds must report:

- For Extremely Hazardous Substances (EHSs), either 500 pounds or the Threshold Planning Quantity (TPQ), whichever is lower

- For gasoline (all grades combined) at a retail gas station, the threshold level is 75,000 gallons, if the tank(s) are stored entirely underground and are in compliance at all times during the preceding calendar year with all applicable Underground Storage Tank (UST) requirements at 40 CFR part 280 or requirements of the State UST program approved by the Agency under 40 CFR part 281.

The State of Texas Tier II reporting requirements are available through this Web Link.

- For diesel fuel (all grades combined) at a retail gas station, the threshold level is 100,000 gallons, if the tank(s) are stored entirely underground and the tank(s) are in compliance at all times during the preceding calendar year with all applicable Underground Storage Tank (UST) requirements at 40 CFR part 280 or requirements of the State UST program approved by the Agency under 40 CFR part 281.

- For all other hazardous chemicals (any substance for which a facility must maintain a Material Safety Data Sheet), 10,000 pounds

Other common examples of these materials that lead to filing a Tier II report include: compressed gas such as oxygen, dry cleaning chemicals, pesticides and fertilizers. Tier II reports must also be submitted as a condition of occupancy and updated annually or when a reportable quantity of hazardous material previously not stored on the property will be stored on the property.

430 Tier II hazardous materials sites exist in the City of Austin.

There are 430 Tier II sites located in the City of Austin (refer to Exhibit 1). Travis County contains another 240 Tier II sites outside the City of Austin (refer to Exhibit 2) bringing the total within Travis County to 670 sites.

Exhibit 1. Tier II Hazardous Materials Sites (430) within Austin City Limits

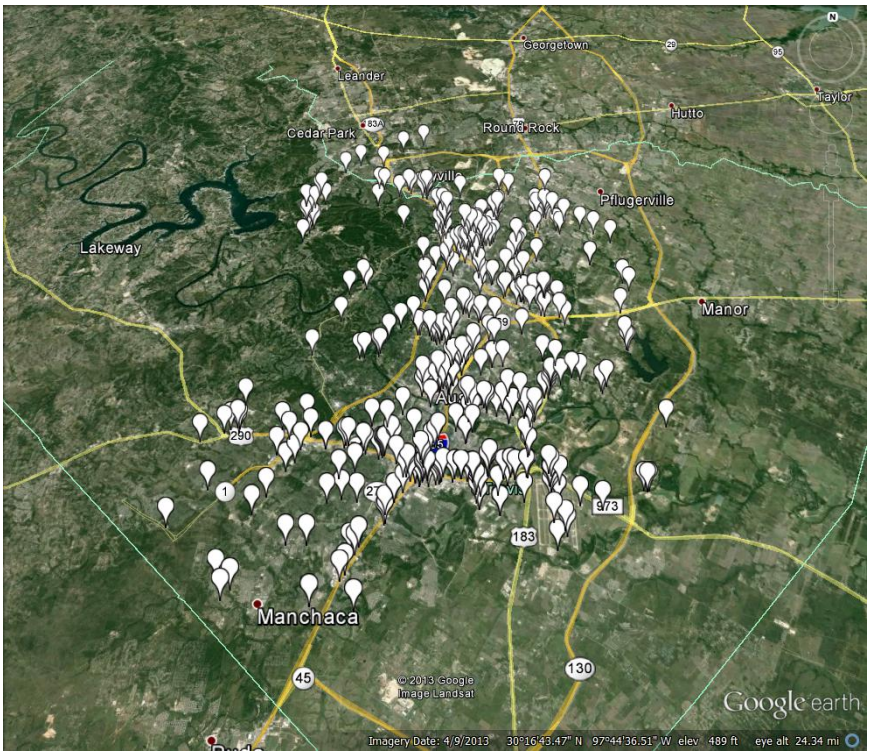
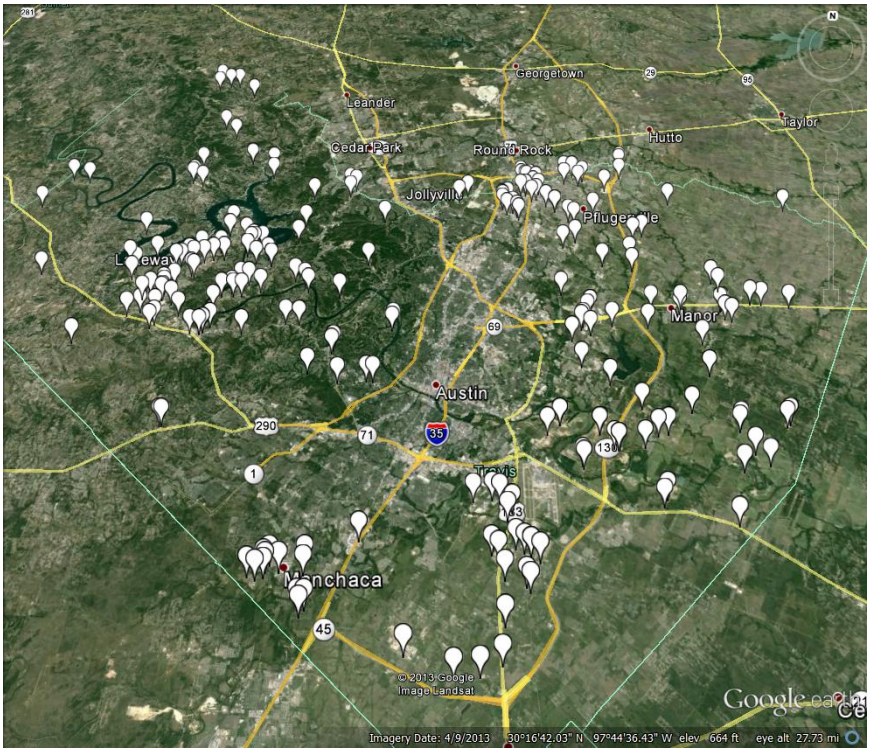


Exhibit 2. Tier II Hazardous Materials Sites (240) within Travis County (Outside Austin City Limits)



Source: Austin Fire Department

Transportation of Hazardous Materials

Hazardous materials can be shipped along roadways, on railways, in aircraft, through pipelines and by waterways. A brief overview of hazardous materials shipping by each of these transportation modes in Austin is presented in the following sections.

Roadways

Transportation of hazardous materials is currently allowed on all roadways in Austin.

Transportation of hazardous materials is currently allowed on all roadways in Austin. The US Department of Transportation (DOT) requires all shipments of hazardous materials of 1,000 pounds or more (classified as a "bulk" shipment) to be placarded in accordance with the DOT placarding system. Shipments of materials over Austin's roadways generally fall into one of four categories:

1. Shipment of materials that originate and terminate within Austin city limits
2. Shipment of materials that originate within the Austin City limits and terminate outside the Austin city limits
3. Shipment of materials that originate outside the Austin city limits and terminate within the Austin city limits
4. Shipment of materials that both originate and terminate outside, but pass through, the Austin city limits

Railways

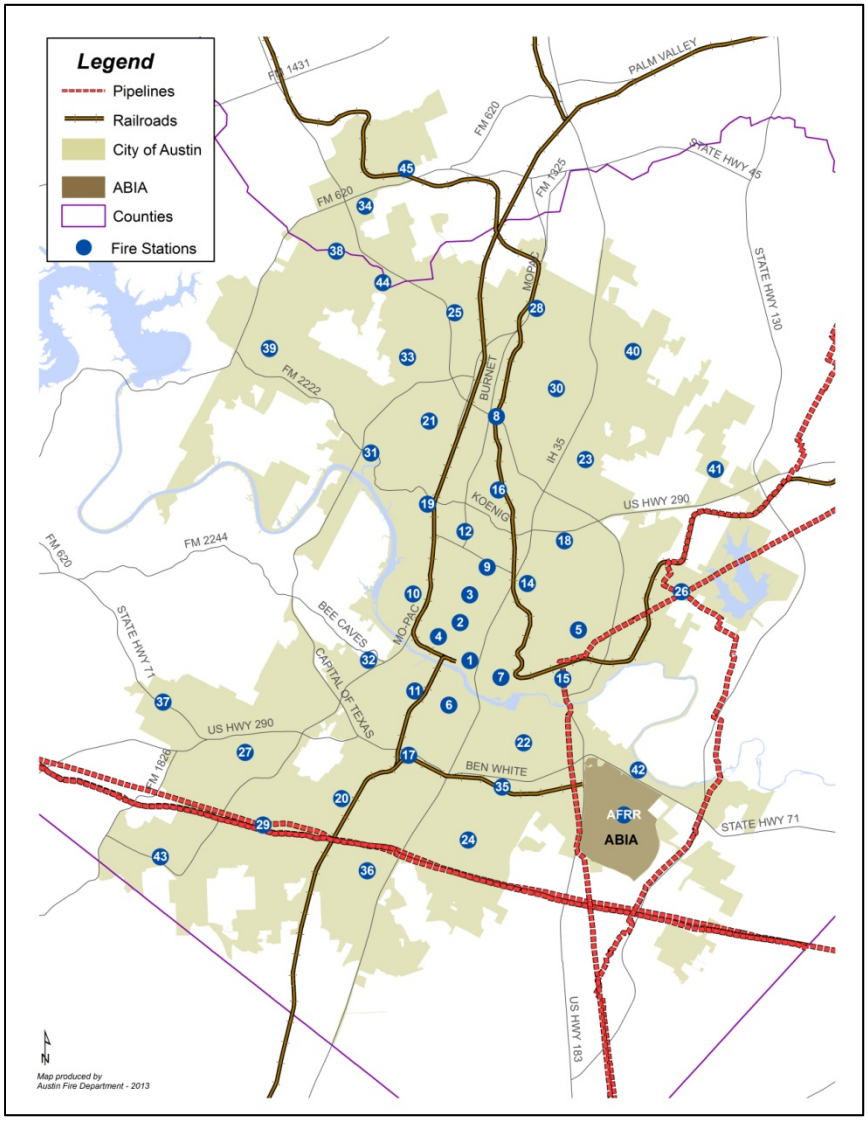
Hazardous materials comprise less than 1% of all shipments of materials over the railways in America (Source: Michael Moore, Union Pacific Railroad Hazardous Materials Manager, Oklahoma and Central Texas Region). Railroad companies are required by federal law to ship any hazardous material that a shipper wishes to ship via railway provided that shipper meets all required safety and labeling requirements. Hazardous materials could, and sometimes do, move via railway through Austin. The current railway system in Texas, however, is not conducive for efficiently moving the majority of hazardous materials shipped in and through Texas from their point of origin to their point of termination via the existing railways in Austin. More cost effective and timely routes exist outside the Austin city limits. Railroad lines within the City of Austin are shown in Exhibit 3.

Pipelines

Three major pipelines carry hazardous materials through Austin.

Three major pipelines carrying hazardous materials pass through Austin (refer to Exhibit 3). These three pipelines are located in south and east Austin. The management companies and products currently being shipped through them are as follows: (1) Kinder Morgan - compressed natural gas; (2) Conoco-Phillips - mixed petroleum products; and, (3) Magellan - crude oil.

Exhibit 3. Railroads and Major Pipelines within Austin City Limits



Source: Austin Fire Department

Aircraft

Transporting hazardous materials by aircraft is highly regulated.

Transportation of hazardous materials via aircraft is highly regulated. Movement of these materials in and out of Austin Bergstrom International Airport (ABIA) could be accurately quantified rather easily in a Commodity Flow Study. Flight paths/corridors are firmly established and dependent upon weather conditions at the time when the aircraft takes off, is in flight and lands.

Waterways

Waterways are not a viable means to transport hazardous materials in or through Austin.

The use of watercraft is not a viable means for the transport of hazardous material in or through Austin due to the lack of navigable waterways.

Hazardous Materials Incidents

AFD reviewed three calendar years (2010, 2011, 2012) of incidents in Austin and Travis County that resulted in either a Hazardous Materials Task Force Alarm or a Hazardous Materials Alarm. The following is a brief description of each alarm type:

> A *Hazardous Materials Task Force Alarm* is an incident when caller information indicates that a moderate hazardous materials release has occurred, but the nature of the call does not require the resource complement of a full Hazardous Materials Alarm.
>
> A *Hazardous Materials Alarm* is an incident when a hazardous materials release has occurred and information indicates that the risk potential is great due to the material involved, impact to citizens, or concern for the environment. Examples would be: large hazardous materials transportation accidents, high pressure/large diameter gas leaks in a populated area, detonations, the potential for many injuries, the potential for mass evacuations, train derailments, etc.

The primary findings of AFD's 3-year review are listed below and shown in Exhibit 4:

- Total number of alarms
    - Travis County = 103
    - City of Austin = 95
- Alarms involving the transportation of hazardous materials
    - Travis County = 6
    - City of Austin = 5 (3 on I-35)
- 90 of the 95 alarms in Austin occurred at fixed facilities

Five (5) hazardous material incidents occurred on Austin's roadways between 2010 and 2012.

3 of the 5 incidents involving the transportation of hazardous materials occurred on I-35.

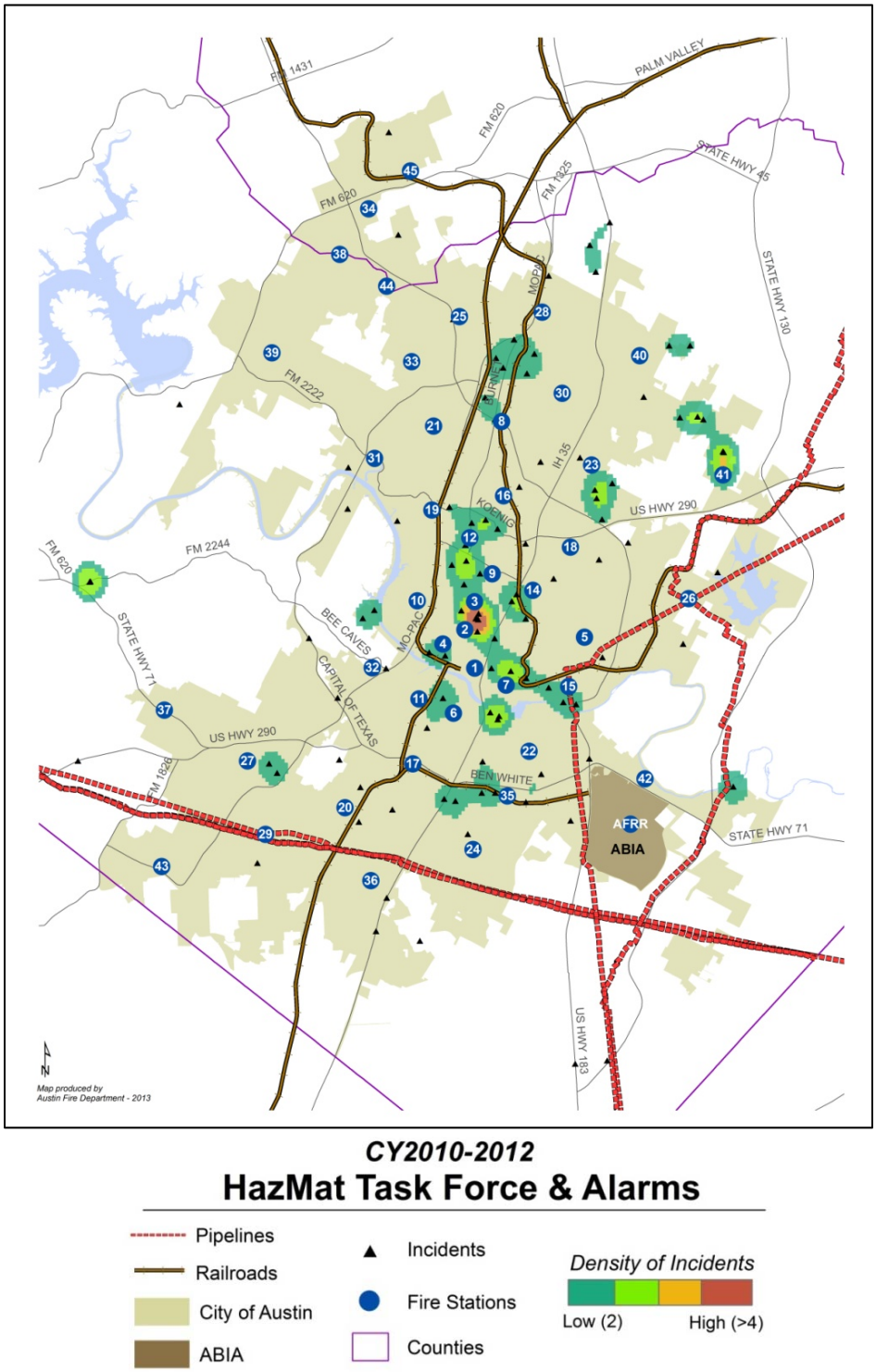
The five City of Austin incidents involving the transportation of hazardous materials are described in further detail below:

1. 10200 South I-35: collision involving a "bobtail" propane truck with leak from piping in the meter box
2. 9000 South I-35: overturned 18 wheeler, gasoline tanker leaking
3. 3500 North I-35: collision between two 18 wheelers, one hauling old lead/acid batteries which broke apart and leaked sulfuric acid
4. 3400 Red Bud Trail: overturned sewage/chemical mix truck, tank ruptured and leaked

Most incidents (95%) in Austin occurred at fixed facilities (not during transportation).

5. 11655 Research Blvd. (US 183): collision involving 18 wheeler gasoline tanker leaking from discharge piping

Exhibit 4. Hazardous Materials Task Force/Alarm Incidents in Travis County (2010 - 2012)



Source: Austin Fire Department

Recommendation to Assess Public Health Risk

Current data regarding the number of roadway vehicles transporting bulk shipments of hazardous materials in and/or through Austin is needed to accurately assess the public health risk. Therefore, staff recommends conducting a Commodities Flow Study to gather this information. This study should be coordinated with subsequent recommendations regarding the designation of hazardous materials routes.

A Commodities Flow Study will accurately quantify the current status of hazardous materials passing through Austin on area roadways. In addition to roadways, the study can also be expanded to quantify bulk shipments of hazardous materials via railway, air, pipeline or any combination of these transportation modes. Austin's last commodities flow study was conducted in 1999 and included 32 roadway segments in Austin and Travis County (*Fire Department Influence on a Hazmat Transportation Study*, Austin Fire Department, August 2000). Williamson County is in the early stages of conducting a Commodities Flow Study with an approximate cost of $70,000. Austin Fire Department (AFD) will coordinate with regional jurisdictions to identify and recommend a funding source and implementation strategy for the Commodities Flow Study.

Recommendations:

- *Conduct a Commodities Flow Study to assess the public health risk with transporting hazardous materials through the City of Austin.*

PROCESS TO DESIGNATE HAZARDOUS MATERIALS ROUTES

Texas law requires municipalities to develop Non-Radioactive Hazardous Materials (NRHM) routes within their full-purpose city limits when their populations exceed 850,000. Austin's population was estimated at 853,283 on October 1, 2013 (U.S. Census Bureau and City of Austin). With Austin exceeding the 850,000 threshold, it is prudent for the City of Austin to begin planning to designate hazardous materials routes. Counties and the State (through the Texas Department of Transportation) are responsible for designating routes outside these boundaries.

Austin's population recently exceeded the 850,000 threshold to designate hazardous materials routes.

City of Austin's compliance with State law is the primary factor of consideration when designating NRHM routes. The City is required to follow the route designation process established by:

> *Texas Administrative Code (TAC), Title 43 Transportation, Part 1, Ch.* 25*, Sub-Ch. F, Rule* §*25.103,* "Hazardous Material Routing Designations; Routing Designations by Political Subdivisions."

Texas law establishes the process municipalities must follow to designate hazardous materials routes.

In addition to requiring compliance with federal law, the TAC outlines the process with regards to:

- Cost participation
- Initial contact and collaboration
- Route analysis and proposal
- Local public hearing
- Proposal submission
- Proposal review
- Consultation with other States or Indian tribes
- Authorization and approval
- Route signing plan

NRHM = Non-Radioactive Hazardous Materials

18 months: This is the time allowed to complete the hazardous materials route designation process.

The establishment of NRHM routing designations must be completed within 18 months of the notice given under federal requirements (U.S. CFR 49 "Transportation", 397, Subpart C, §397.71[6]).

With the City of Austin's population exceeding the 850,000 threshold, staff recommends that the City of Austin initiate the process to establish hazardous materials routes in Austin. Given the breadth of the outreach effort and resources required to engage agencies and the public, staff further recommends hiring a

consultant or research organization to facilitate the process to designate hazardous materials routes through Austin.

Austin Transportation Department (ATD) elaborates on the above information in the following sections. Specifically, ATD outlines the NRHM route designation process, approximate timeline to designate routes, current regional efforts, benefits and limitations of designating routes and similar efforts in other Texas cities. An Appendix is added to provide additional details regarding the federal (includes information about the routing of radioactive materials) and states process requirements.

Process

The City of Austin is required to follow the process to designate NRHM routes as established by *Texas Administrative Code (TAC), Title 43 Transportation, Part 1, Ch.* 25*, Sub-Ch. F, Rule* §*25.103,* "Hazardous Material Routing Designations; Routing Designations by Political Subdivisions". In addition to authorizing NRHM route designations on roads and highways in an entity's political jurisdiction, the TAC requires full compliance with federal law codified in *U.S. CFR 49 "Transportation", 397, Subpart C*, "Routing of Non-Radioactive Hazardous Materials".

The following discussion summarizes the Texas NRHM route designation process which includes references to the overarching federal requirements. A summary of the federal and State requirements is provided in the Appendix.

Costs

All costs of NRHM route development, including proposal preparation, public hearings, signs, sign supports, sign installation and sign maintenance are the responsibility of the political subdivision (in this case the City of Austin).

Initial Contact and Collaboration

If a political subdivision is considering establishment of a NRHM it must contact the local district office of TxDOT and any other political subdivisions within a *25-mile radius of any point along the proposed route* and consult with these entities to determine the best NRHM route. TxDOT encourages coordination with the Texas Department of Public Safety and the local emergency planning council or appropriate committee.

Route Analysis and Proposal

The route analysis and proposal must fully consider and address in writing all of the federal standards and factors listed in §397.71(b) in the route determination process. A listing of these standards and factors are provided in Exhibit 5 with an expanded discussion provided in the Appendix. The State requires use of the most current version of the USDOT publication "Guidelines for Applying Criteria to Designate Routes for Transporting Hazardous Materials".

Exhibit 5. Federal Standards and Factors for Route Analysis and Proposal

Federal Standards for Compliance (§397.71)
1. Enhancement of public safety
2. Public participation
3. Consultation with others
4. Through routing
5. Timeliness
6. Reasonable routes to terminals and other facilities
7. Responsibility for local compliance.

Federal Factors to Consider (§397.71[9])
1. Population density
2. Type of highway
3. Types and quantities of NRHM
4. Emergency response capabilities
5. Results of consultation with affected persons
6. Exposure and other risk factors
7. Terrain considerations
8. Continuity of routes
9. Alternative routes
10. Effects on commerce
11. Delays in transportation
12. Climatic conditions
13. Congestion and accident history.

Note: Refer to the Appendix for added discussion about these standards and factors.

Local Public Hearing

At least one local public hearing is necessary, and may take the form of a city council or commissioner court meeting, to conform to all State laws governing public meetings. Specifications for public notice are noted in the TAC. The notice, when complete, initiates a 30-day public comment period.

Proposal Submission

After conclusion of the public hearing, the political subdivision must submit eight copies of the NRHM route designation proposal and one original color map of the proposed NRHM route to TxDOT for approval. The TAC contains a full list of submittal requirements.

Public hearing, submittal and review requirements are outlined in state law.

Proposal Review

The proposal review occurs once TxDOT provides public notice in the Texas Register, initiating a 30-day comment period. A public hearing is held to receive additional comments on the proposed NRHM route by the Texas Transportation Commission (TTC). TxDOT notifies affected areas, and the TTC public hearing is held in Austin.

Consultation with Other States or Indian Tribes

At least 60 days prior to establishing the NRHM routing designation, TxDOT sends written notice to officials responsible for NRHM highway routing in all other affected States or Indian tribes. TxDOT attempts to resolve any concerns or disagreements expressed by any consulted States or Indian tribes related to the proposed designation, however if it cannot be resolved, TxDOT petitions the Federal Highway Administration for resolution of the dispute.

Authorization and Approval

If TxDOT determines the route(s) met all of the criteria for approval the Executive Director will approve the NRHM routing designation, notify the political subdivision the routing is authorized, and issue appropriate notice to the FHWA and TxDPS. Upon receipt of the approval notice, the political subdivision has 30 days to designate the NRHM route by ordinance, resolution, rule, or some other official order.

Route Signing

After receiving TxDOT approval and passage of a local official order, the political entity must submit the proposed sign and installation locations for the NRHM route to TxDOT for approval.

Timeline

The establishment of a NRHM routing designation must be completed within 18 months of the notice given under federal requirements (U.S. CFR 49 "Transportation", 397, Subpart C, §397.71[6]).

Current Regional Efforts

The Capital Area Metropolitan Planning Organization (CAMPO) is the Metropolitan Planning Organization (MPO) for the Bastrop, Burnet, Caldwell, Hays, Travis, and Williamson Counties in central Texas. CAMPO was established in 1973 and is governed by the Transportation Policy Board (CAMPO Board) comprised of regional and local officials.

The purpose of CAMPO is to coordinate regional transportation planning with counties, cities, the Capital Metropolitan Transportation Authority (Capital Metro), the Capital Area Rural Transportation System (CARTS), Texas Department of Transportation (TxDOT) and other transportation providers in the region and to approve the use of federal transportation funds within the region. MPOs currently operate under the Moving Ahead for Progress in the 21st Century Act (MAP-21) signed into law on July 6, 2012.

CAMPO conducts its work as defined in the *Unified Planning Work Program* (UPWP). The fiscal year (FY) 2013 UPWP included a task stating that CAMPO will "participate in coordination of hazardous material cargo route planning as needed" (Web Link, Page 20). However, the FY 2013 UPWP expired on September 30, 2013 and this task was not carried forward in the FY 2014 UPWP. Absent an UPWP amendment to include this task and associated funding, CAMPO can only provide existing technical resources and general coordination assistance, such as using the Technical Advisory Committee and Transportation Policy Board as forums for discussion and coordination.

Benefits and Limitations of Designating Routes

One of the most obvious benefits of route designation is the concentration of NRHMs moving through Austin on highway routes that will encourage increased public safety and efficient freight/cargo transport. While route designation does not remove NRHMs from other area roadways, it would manage expectations by focusing the through movement of these materials within the designated corridors. These roadways are served by the City's combined hazardous materials incident management teams and provide the appropriate response level depending on the nature of each spill, release or materials incident. Another clear benefit for a municipality is compliance with State law.

Benefits of designating routes:

- *Public safety*
- *Managed expectations*
- *Compliance with State law*

Some limitations of route designation may be associated with the point of origin/point of delivery for NRHMs – some transport must necessarily continue on roadways other than the NRHMs. Shipments on non-NRHM routes will be limited and routed expeditiously to the major "trunk routes" of the NRHM system within a jurisdiction. Although not a limiting factor per se, within a jurisdiction all the costs of designation, installation and maintenance of NRHMs is borne by the local entity. Another challenge is the continuity of route designations across jurisdictional boundaries as designations may already exist on roadways outside the municipality. Continuity is a major factor in designating routes since the designation must ensure continuity of movement so it does not impede or unnecessarily delay the transport of NRHMs.

Limitations of designating routes:

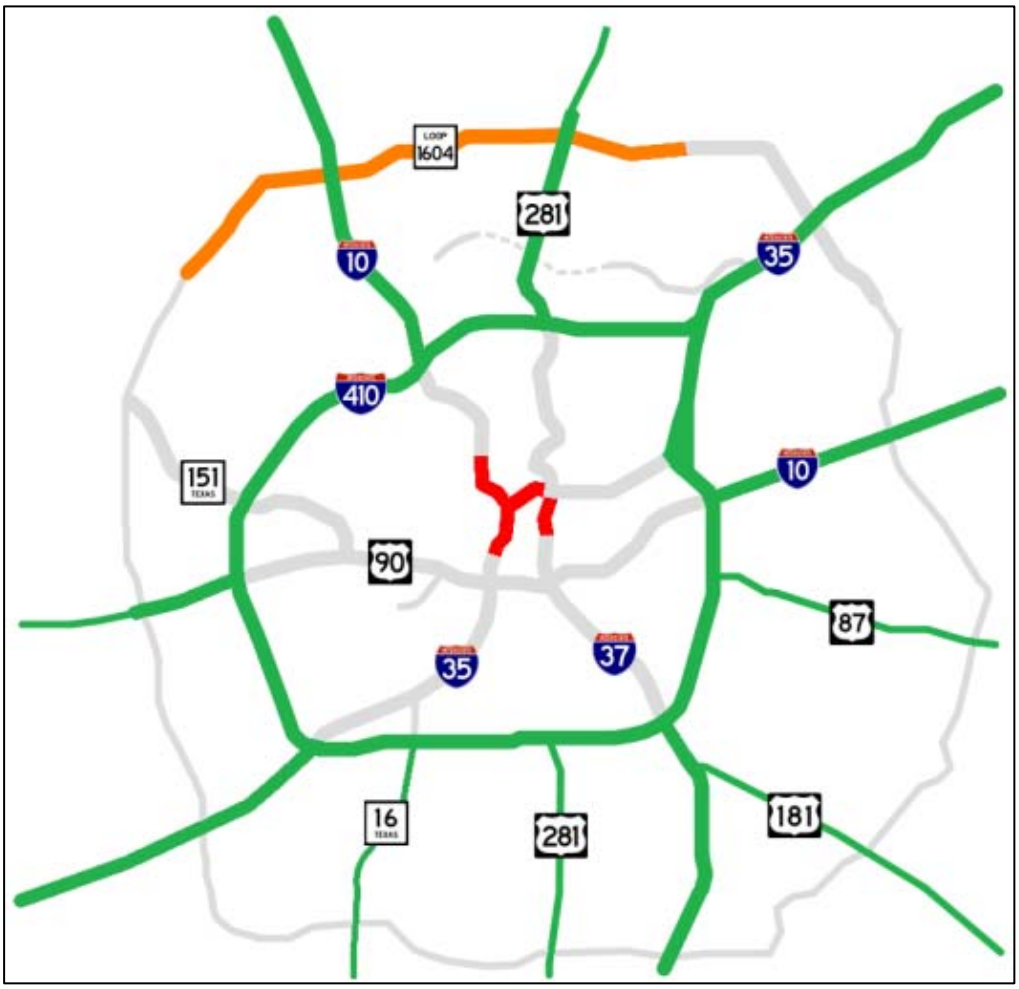
- *Continuity of route designations across jurisdictional boundaries*
- *Costs borne by local entity*

Efforts in Other Texas Cities

Thirty-five (35) Texas cities have designated NRHM routes through their jurisdictions. The route maps for these cities can be accessed on TxDOT's web site at: http://www.txdot.gov/inside-txdot/forms-publications/publications/nrhm.html. The plans located at the TxDOT website are for NRHMs and *do not reflect* route designations for Class 7 Radioactive Waste.

An example of the NRHM route map for the San Antonio region (Bexar County) is provided in Exhibit 6. A similar map is expected to be the outcome of designating routes in Austin. Designated hazmat routes are marked with the "HC" sign pictured here.

Exhibit 6. NRHM Route Map for San Antonio Region



Note: Vehicles with hazardous cargo are completely banned from the red sections and banned with the exception of specific local deliveries on the orange sections. All through hazmat traffic must use the green routes. *(Based on San Antonio Municipal Ordinance 94321)*

Source: TexasHighwayMan.com

Recommendations to Establish Hazardous Materials Routes

With the City of Austin's population exceeding the 850,000 threshold, staff recommends that the City of Austin initiate the process to establish hazardous materials routes in Austin. Given the breadth of the outreach effort and resources required to engage agencies and the public, staff further recommends hiring a consultant or research organization to facilitate the process to designate hazardous materials. These recommendations, if approved by City Council, should be coordinated with the Commodities Flow Study recommended earlier in this report. ATD will work with affected departments, TxDOT and other jurisdictions and agencies to identify and recommend a funding source and strategy to implement the process if so directed by Austin City Council.

Recommendations:

- *Initiate process to designate hazardous materials routes in Austin.*
- *Procure services to facilitate process to designate hazardous materials routes.*

APPENDIX

Federal Process Summary

U.S. CFR Title 49 "Transportation", Part 397, Subpart C, "Routing of Non-Radioactive Hazardous Materials" (Code of Federal Regulations Web Link).

This process applies to any State or Indian tribe that establishes, maintains, or enforces any routing designations over which NRHM may or may not be transported by motor vehicle. It also applies to any motor carrier that transports placarded or marked NRHM in commerce. There are both federal standards and federal factors to adhere to in NRHM route designations.

Federal Standards

The federal standards (§397.71) for designation are described in detail in this section. The establishment of a NRHM routing designation must be completed within 18 months of the notice given under these federal requirements.

1. *Enhanced public safety*. The NRHM route should result in increased public safety in the areas subject to its jurisdictions and in others directly affected by the designation. To make this determination, the federal factors are used along with the DOT "Guidelines for Applying Criteria to Designate Routes for Transporting Hazardous Materials".

2. *Public participation.* The public is involved in the routing process by receiving notice of any proposed HRHM routing designation and a 30-day comment period. Any time during the 30-day period or after review of the comments received, the entity holds a public hearing on the proposed NRHM route. The public must receive 30-day notification, and made in accordance with the federal requirements. At least one public hearing is necessary to allow the public to present their views and any information or data related to the proposed NRHM designation.

3. *Consultation with others.* The designating entity shall consult with officials of affected political subdivisions, States and Indian tribes, and any other affected parties. These actions must occur at least 60 days prior to establishing a route designation by providing written notice to all affected political subdivisions. This notice will request approval in writing by the political subdivisions of the proposed routing designations. The manner in which consultations are conducted is left to the discretion of the State or Indian tribe, who will attempt to resolve any concern or disagreement expressed by any consulted official related to the routing proposal. The State or Indian tribe is obligated to keep certain records of this process.

4. *Through routing.* The State or Indian tribe will ensure through highway routing for the transport of NRHM between adjacent areas. The term "through highway routing" means the routing designation must ensure

continuity of movement so it does not impede or unnecessarily delay the transport of NRHM. In addition to other specified requirements, the State shall find that the routing designation enhances public safety, supported by a risk analysis. The risk analysis mush show the current routing presents at least 50 percent more risk to the public than the deviation under the proposed routing designation for the routing designation to go into effect:

1. If the current routing presents a greater risk but less than 50 percent more risk to the public than the deviation under the proposed routing designation, then the proposed routing restriction shall only go into effect if it does not force a deviation of more than 25 miles or result in an increase of more than 25 percent of that part of a trip affected by the deviation, whichever is shorter, from the most direct route through a jurisdiction as compared to the intended deviation.

2. If the current route has the same or less risk to the public than the deviation resulting from the proposed route, then the routing designation will not be allowed.

5. *Agreement of other States; burden on commerce.* Any NHRM routing which affects another State or Indian tribe shall only be established if it does not unreasonably burden commerce, and is agreed to by the affected State or Indian tribe within 60 days of receipt of the notice, or approval by the Administrator of the Federal Motor Carrier Safety Administration (FMCSA), US DOT.

6. *Timeliness.* Establishment of a NRHM rout designation by any State or Indian tribe shall be completed within 18 months of the required notification

7. *Reasonable routes to terminals and other facilities.* To provide reasonable access to and from designated routes, an entity must use the shortest practicable route considering the federal factors. The entity shall provide reasonable access for motor vehicles transporting NRHM to reach terminals, point of loading, unloading, pickup and delivery, and facilities for food, fuel, repairs, rest and safe havens.

8. *Responsibility for local compliance.* The States are responsible for ensuring all of their political subdivisions comply with the provisions of this law. The States too must be responsible for dispute resolution between political subdivisions within their jurisdictions. If a State or any political subdivision chooses to establish, maintain, or enforce any NRHM routing designation, the Governor or Indian tribe shall designate a routing agency for the State or Indian tribe. It is the responsibility of the routing agency to ensure that all NRHM routing designations within its jurisdiction comply with federal standards. (In Texas, TxDOT is the designated routing agency.)

Federal Factors

The federal factors (§397.71[9]) to consider are: population density; type of highway; types and quantities of NRHM; emergency response capabilities; results of consultation with affected persons; exposure and other risk factors; terrain considerations; continuity of routes; alternative routes; effects on commerce; delays in transportation; climatic conditions; congestion and accident history.

1. *Population density.* The population potentially exposed to a NRHM release must be estimated from the density of the residents, employees, motorists, and other persons in the area using the US Census tract data and boundaries for the area within a potential impact zone along a designated highway route. The impact zone is the potential range of effects in the event of a release. Special populations such as schools, hospitals, prisons, and senior citizen homes shall be considered when determining potential risk to populations along a highway routing. The amount of time during which an area will experience a heavy population density must be considered.

2. *Type of highway.* The characteristics of each alternative NRHM highway routing designation must be compared. Vehicle weight and size limits, underpass and bridge clearances, roadway geometrics, number of lanes, degree of access control, and median and shoulder structures are examples of characteristics that must be considered.

3. *Types and quantities of NRHM.* The type and quantity of NRHM normally transported along highway routes which are in a proposed NRHM routing designation must be examined. The relative impact zone and risks of each type and quantity must be considered.

4. *Emergency response capabilities.* Consulting with appropriate fire, law enforcement, and highway safety agencies, consideration must be given to the emergency response capabilities necessary as a result of a NHRM route designation. The analysis of these emergency response capabilities shall be based upon the proximity of emergency response facilities and their ability to contain and suppress NHRM releases within the impact zones.

5. *Results of consultation with affected persons.* Consideration must be given to the comments and concerns of all affected persons and entities during public hearings and consultations conducted in accord with this law.

6. *Exposure and other risk factors.* States and Indian tribes must define the exposure and risk factors associated with any NRHM routing designations. The distance to sensitive areas must be evaluated, and includes homes and commercial buildings, special populations in hospitals, schools, handicapped

facilities, prisons and stadiums, water sources such as streams and lakes, and natural areas such as parks, wetlands, and wildlife reserves.

7. *Terrain considerations.* Topography along and adjacent to the proposed NRHM route designation that may affect the potential severity of an accident, the dispersion of the NRHM upon release and the control and clean-up of NRHM if released must all be considered.

8. *Continuity of routes.* Adjacent jurisdictions must be consulted to ensure routing continuity for NRHM across common borders. Deviations from the most direct route shall be minimized.

9. *Alternative routes.* The analysis must consider alternative routes to, or resulting from, the NRHM route designation. These alternatives are examined and evaluated to the extent necessary to show the most probable alternative routing resulting from a NHRM routing designation is safer than the current routing.

10. *Effects on commerce.* The NRHM designation must not create an unreasonable burden upon interstate or intrastate commerce.

11. *Delays in transportation.* No NRHM route designations may create unnecessary delays in the transportation of NHRM.

12. *Climatic conditions.* Weather conditions unique to a highway route (snow, wind, ice, fog, etc.), or any other climatic conditions that could impact route safety, the dispersion of NRHM upon release, or increase the difficulty of controlling it and clean-up shall be evaluated.

13. *Congestion and accident history.* Traffic conditions unique to a highway routing such as: traffic congestion, accident experience with motor vehicles, traffic considerations that could affect the potential for an accident, exposure of the public to any release, ability to perform emergency response operations, or the temporary closing of a highway for cleaning up any release shall be considered.

Other Federal Requirements of NHRM Routing Designations

There are *extensive dispute resolution rules and requirements* to enable the FMCSA to resolve disagreements on a proposed NRHM routing designation, and the federal rules should be thoroughly consulted (§397.75-.77). There are also *preemption procedures* contained in *U.S. CFR Title 49 "Transportation", Part 397, Subpart E* to allow anyone affected by any highway routing designation for hazardous materials to apply directly to FMCSA, DOT for a determination as to whether that designation is preempted under 49 USC 5125 or §397.69 or §397.203. Preemptions are a more complex process, and for a complete understanding of the preemption procedure the reader is directed to §397.201 – §397.225.

Radioactive Materials

Routing of Class 7 Radioactive Materials. U.S. CFR Title 49 "Transportation", Part 397, Subpart D, "Routing of Class 7 (Radioactive) Materials" (Code of Federal Regulations Web Link).

Subpart D of the federal standards defines requirements for routing of Class 7 Radioactive Materials. In addition to outlining other rules and responsibilities for motor carriers and drivers, this subpart indicates a 'preferred route' for Class 7 materials' transporters and drivers is an Interstate System highway for which an alternative route is not designated by a State routing agency, a State-designated route selected by a State routing agency pursuant to §397.103, or both. For Class 7 route designations the State routing agency shall select routes to minimize radiological risk using *"Guidelines for Selecting Preferred Highway Routes for Highway Route Controlled Quantity Shipments of Radioactive Materials,"* or an equivalent routing analysis which adequately considers overall risk to the public. Designations must be preceded by substantive consultation with affected local jurisdictions and with any other affected States to ensure consideration of all impacts and continuity of designated routes.

State Process Summary

Texas Administrative Code, Title 43 Transportation, Part 1, Ch. 25, Sub-Ch. F, Rule §25.103, "Hazardous Material Routing Designations; Routing Designations by Political Subdivisions" (Texas Administrative Code Web Link).

In addition to authorizing NRHMs route designations on roads and highways in an entity's political jurisdiction, the TAC requires full compliance with federal law codified in U.S. CFR 49 "Transportation", 397, Subpart C, "Routing of Non-Radioactive Hazardous Materials" (Code of Federal Regulations Web Link). All costs of HRHM route development, including proposal preparation, public hearings, signs, sign supports, sign installation and sign maintenance are the responsibility of the political subdivision. If a political subdivision is considering establishment of a NRHM it must contact the local district office of TxDOT and any other political subdivisions within a *25-mile radius of any point along the proposed route* and consult with these entities to determine the best NRHM route. TxDOT encourages coordination with the Texas Department of Public Safety and the local emergency planning council or appropriate committee.

The route analysis and proposal must fully consider and address in writing all of the federal standards and factors listed in §397.71(b) in the route determination process. The State requires use of the most current version of the USDOT publication "Guidelines for Applying Criteria to Designate Routes for Transporting Hazardous Materials". At least one local public hearing is necessary, and may take the form of a city council or commissioner court meeting, to conform to all state laws governing public meetings. Specifications for public notice are noted in the TAC. The notice, when complete, initiates a 30-day public comment period.

After public hearing conclusion, the political subdivision must submit eight copies of the NRHM route designation proposal and one original color map of the proposed NRHM route to TxDOT for approval. The TAC contains a full list of submittal requirements.

The proposal review occurs once TxDOT provides public notice in the Texas Register, initiating a 30-day comment period. A public hearing is held to receive additional comments on the proposed NRHM route by the Texas Transportation Commission (TTC). TxDOT notifies affected areas, and the TTC public hearing is held in Austin.

At least 60 days prior to establishing the NRHM routing designation, TxDOT sends written notice to officials responsible for NRHM highway routing in all other affected States or Indian tribes. TxDOT attempts to resolve any concerns or disagreements expressed by any consulted States or Indian tribes related to the proposed designation, however if it can't be resolved, TxDOT petitions the Federal Highway Administration for resolution of the dispute.

If TxDOT determines the route met all of the criteria for approval the Executive Director will approve the NRHM routing designation, notify the political subdivision the routing is authorized, and issue appropriate notice to the FHWA and TxDPS. Upon receipt of the approval notice, the political subdivision has 30 days to designate the NRHM route by ordinance, resolution, rule, or some other official order. The political entity also has to submit the proposed sign and installation locations for the NRHM route to TxDOT for approval.