Federal & State Regulations

- Federal regulations authorize states and Indian tribes to designate non-radioactive hazardous materials (NRHM) routes on public roads and highways under their jurisdiction\(^1\)

- State regulations require municipalities with a population of more than 850,000 to designate routes for commercial motor vehicles carrying NRHM\(^2\)
  - Requires that municipalities use Federal Highway Administration’s (FHWA) “Guidelines for Applying Criteria to Designate Routes for Transporting Hazardous Materials” in developing a NRHM routing designation

2. Texas Transportation Code, Title 7, Subtitle F, Chapter 644, Subchapter E, Section §644.202 Designation of Route
Purpose of Study

- Designate roadways for through-routing of NRHM in Austin without unduly burdening commerce
- Minimize potential for vehicular incidents involving NRHM
- Minimize consequences to all Austin residents should an NRHM incident occur
- Maximize public safety in relation to NRHM transport
Define Objectives and Responsibilities

- Formed Steering Committee and Stakeholder Working Group (SWG) to guide process

- Steering Committee:
  - City of Austin (CoA) Transportation Department (Rob Spillar, Jim Dale, Marissa Monroy, Annick Beaudet, Tien-Tien Chan), Capital Area Metropolitan Planning Organization (CAMPO - Ashby Johnson), CoA Communications & Public Information Office (Douglas Matthews), CoA Office of Sustainability (Lucia Athens, Lewis Leff), CoA Public Works Department (Richard Mendoza, David Magana), CoA Law Department (Angela Rodriguez)
Define Objectives and Responsibilities

Stakeholder Working Group – to provide technical expertise on infrastructure and operations:

- CoA departments; TxDOT; CAMPO; Central Texas Regional Mobility Authority (CTRMA); local Chambers of Commerce; emergency response agencies; environmental protection agencies; schools/universities; county representatives; healthcare providers; and shipping/trucking industry representatives
- CoA boards and commissions including the Chairs of the Urban Transportation Commission and Public Safety Commission
Public Involvement and Outreach

The following public events and outreach efforts were conducted to gather input on the NRHM route identification process, priorities of the community, and preliminary outcomes:

- 2 public open houses
  - Locations: Ruiz Branch Public Library & Terrazas Branch Public Library
  - Advertised through official CoA press release, social media, project webpage, and secondary outreach to the SWG and City Council
  - Advertised and covered by local news

- 2 presentations to local emergency planning committees

- Presentations to the CoA Public Safety Committee, the CoA Mobility Committee, and the CAMPO Technical Advisory Committee

- Outreach to CoA City Council
  - One-on-one meetings with council members and/or aides
  - Provided project information 30 days in advance of open house for distribution to constituents

- Coordinated outreach with Austin Strategic Mobility Plan (ASMP) public events
Define Network

- Established that the routing designation would focus on through-routes
- Started with CAMPO model network updated for 2015; all roadways considered as candidates for NRHM routing designation
- Removed roads with physical or legal constraints
- Removed roads identified by SWG as unsuitable for NRHM through-traffic
- Limited network to all roadways with a functional classification of principal arterial and above that were not disqualified in previous steps
2 Define Network

- Established that the routing designation would focus on through-routes.
- Started with CAMPO model network updated for 2015; all roadways considered as candidates for NRHM routing designation.
- Removed roads with physical or legal constraints.
- Removed roads identified by SWG as unsuitable for NRHM through-traffic.
- Limited network to all roadways with a functional classification of principal arterial and above that were not disqualified in previous steps.
2 Define Network

- Established that the routing designation would focus on through-routes
- Started with CAMPO model network updated for 2015; all roadways considered as candidates for NRHM routing designation
- Removed roads with physical or legal constraints
- Removed roads identified by SWG as unsuitable for NRHM through-traffic
- Limited network to all roadways with a functional classification of principal arterial and above that were not disqualified in previous steps
Define Network

- Established that the routing designation would focus on through-routes
- Started with CAMPO model network updated for 2015; all roadways considered as candidates for NRHM routing designation
- Removed roads with physical or legal constraints
- Removed roads identified by SWG as unsuitable for NRHM through-traffic
- Limited network to all roadways with a functional classification of principal arterial and above that were not disqualified in previous steps
Current likely through-routing shows likely existing conditions based on hazmat freight routing data and minimized travel time.

Used as a baseline comparison for through-routing options developed in risk analysis.
Calculated an “incident risk factor” for all candidate network links

- Incident risk factor = impacted population $\times$ crash probability
  - Impacted Population = population within 0.5 mile of roadway

Compared the risk of through-routes between major study area entry and exit points

All possible major through-routing options were considered, including Mopac/Loop 1, US 183, Loop 360, and IH 35
Presented through-routing options to SWG
Presented through-routing options to the public
Feedback was collected and vetted with the Steering Committee
The following factors were used to compare routing options:

- Incident risk factor
- Travel time
- Population of environmental justice (EJ) areas within 0.5 miles of route
  - EJ areas have at least 50% of families earning less than 80% of the county median family income, and/or at least 25% of the population earning below the poverty level, and/or less than 50% of the population identifying themselves as White, non-Hispanic
- Roadway miles in Edwards Aquifer
- Number of sensitive environmental features within 0.5 miles of route
North-South Through-Routing Example

- North-south is the predominant NRHM through-routing movement for the study area

**Major Through-Route Risk Analysis Comparison (IH 35 N - S) for Study Area**

<table>
<thead>
<tr>
<th>Route</th>
<th>Incident Risk Factor</th>
<th>Travel Time</th>
<th>Pop. of EJ Area within 0.5 mile</th>
<th>Road Miles in Edwards Aquifer</th>
<th>Sensitive Environmental Features within 0.5 mile</th>
</tr>
</thead>
<tbody>
<tr>
<td>IH 35 (Current Likely)</td>
<td>198</td>
<td>145</td>
<td>396,900</td>
<td>34</td>
<td>10</td>
</tr>
<tr>
<td>SH 130</td>
<td>34</td>
<td>148</td>
<td>193,300</td>
<td>12</td>
<td>7</td>
</tr>
<tr>
<td>Loop 1 / Mopac</td>
<td>121</td>
<td>154</td>
<td>300,900</td>
<td>55</td>
<td>22</td>
</tr>
<tr>
<td>US 183</td>
<td>209</td>
<td>158</td>
<td>419,600</td>
<td>34</td>
<td>10</td>
</tr>
<tr>
<td>Loop 360</td>
<td>170</td>
<td>163</td>
<td>282,300</td>
<td>54</td>
<td>18</td>
</tr>
</tbody>
</table>
North-South Through-Routing Example

- North-south is the predominant NRHM through-routing movement for the study area

### Major Through-Route Risk Analysis Comparison (IH 35 N-S) for Study Area

<table>
<thead>
<tr>
<th></th>
<th>Incident Risk Factor</th>
<th>Travel Time</th>
<th>Pop. of EJ Area within 0.5 mile</th>
<th>Road Miles in Edwards Aquifer</th>
<th>Sensitive Environmental Features within 0.5 mile</th>
</tr>
</thead>
<tbody>
<tr>
<td>IH 35 (Current Likely)</td>
<td>198</td>
<td>145</td>
<td>396,900</td>
<td>34</td>
<td>10</td>
</tr>
<tr>
<td>SH 130</td>
<td>34</td>
<td>148</td>
<td>193,300</td>
<td>12</td>
<td>7</td>
</tr>
<tr>
<td>Loop 1 / Mopac</td>
<td>121</td>
<td>154</td>
<td>300,900</td>
<td>55</td>
<td>22</td>
</tr>
<tr>
<td>US 183</td>
<td>209</td>
<td>158</td>
<td>419,600</td>
<td>34</td>
<td>10</td>
</tr>
<tr>
<td>Loop 360</td>
<td>170</td>
<td>163</td>
<td>282,300</td>
<td>54</td>
<td>18</td>
</tr>
</tbody>
</table>

North/South Through-Routing

- SH 130
- IH 35 (Current Likely Routing)
- Other N/S Routing Examples

Environmental Features:
- EJ Area - Population Density [Low to High]
- Hospitals, Nursing Homes, Colleges
- Surface Water Intake
- Springs
- Edwards Aquifer Recharge Zone
- Critical Habitat
- State Park
- Wildlife Management Area
Non-Radioactive Hazardous Materials Route Designation Study - Updated EJ Analysis for Austin ETJ

Areas with Highest Concentrations of Environmental Justice Populations

Note: For this study, environmental justice populations are defined as minority populations, families with income below 80% of county median family income, and those earning an income less than the poverty level. This map shows the top 25% of block groups in the study area based on population density for these three population categories. The map is intended to show where environmental justice populations are most concentrated.

DRAFT - SUBJECT TO CHANGE

Sources: 2012-2016 US Census American Community Survey; 2016 City of Austin Land Database

<table>
<thead>
<tr>
<th>Metrics for Routing within Austin ETJ</th>
<th>Total Pop. within 0.5 Miles</th>
<th>Minority Pop. within 0.5 Miles</th>
<th>Pop. with Income below Poverty Level</th>
<th>% of Land within 0.5 Miles that is Undeveloped</th>
<th># of Residential Units within 0.5 Miles</th>
</tr>
</thead>
<tbody>
<tr>
<td>IH 35</td>
<td>246,904</td>
<td>150,960</td>
<td>45,153</td>
<td>14%</td>
<td>54,915</td>
</tr>
<tr>
<td>SH 130</td>
<td>60,837</td>
<td>43,824</td>
<td>8,571</td>
<td>68%</td>
<td>979</td>
</tr>
<tr>
<td>Loop 1 / Mopac</td>
<td>233,042</td>
<td>165,190</td>
<td>51,181</td>
<td>19%</td>
<td>44,567</td>
</tr>
<tr>
<td>US 183</td>
<td>206,175</td>
<td>99,272</td>
<td>24,274</td>
<td>16%</td>
<td>41,803</td>
</tr>
<tr>
<td>Loop 360</td>
<td>227,172</td>
<td>102,590</td>
<td>30,813</td>
<td>13%</td>
<td>54,184</td>
</tr>
</tbody>
</table>
Non-Radioactive Hazardous Materials Route Designation Study - Environmental Features Analysis for Austin ETJ

Sources: TX Commission on Environmental Quality, TX Parks and Wildlife Division, US Fish and Wildlife Service

DRAFT - SUBJECT TO CHANGE

<table>
<thead>
<tr>
<th>Metrics for Routing within Austin ETJ</th>
<th>Roadway Miles within Edwards Aquifer Recharge Zone</th>
<th># of Sensitive Environmental Features within 0.5 Miles</th>
</tr>
</thead>
<tbody>
<tr>
<td>IH 35</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>SH 130</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Loop 1 / Mopac</td>
<td>23</td>
<td>14</td>
</tr>
<tr>
<td>US 183</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Loop 360</td>
<td>21</td>
<td>10</td>
</tr>
</tbody>
</table>