Transportation of Radiological and Non-Radiological Hazardous Materials

Presented by:
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Michigan Department of Transportation

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The United States Code of Federal Regulations (CFR) at 49 CFR 397.65 defines hazardous material as:

A substance or material, including a hazardous substance, which has been determined by the Secretary of Transportation to be capable of posing an unreasonable risk to health, safety, or property when transported in commerce, and which has been so designated.

Hazardous materials are categorized in nine specific classes. Each class is based on various characteristics of the substance or material, such as physical state and risk potential.

<table>
<thead>
<tr>
<th>CLASS OR DIVISION</th>
<th>HAZMAT TYPE/CHARACTERISTIC</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>EXPLOSIVES</td>
</tr>
<tr>
<td>2</td>
<td>GASES</td>
</tr>
<tr>
<td>3</td>
<td>FLAMMABLE LIQUIDS (includes COMBUSTIBLE LIQUIDS)</td>
</tr>
<tr>
<td>4</td>
<td>FLAMMABLE SOLIDS and REACTIVE SOLIDS/ LIQUIDS</td>
</tr>
<tr>
<td>5</td>
<td>OXIDIZERS and ORGANIC PEROXIDES</td>
</tr>
<tr>
<td>6</td>
<td>POISONOUS (TOXIC) MATERIALS and INFECTIOUS SUBSTANCES</td>
</tr>
<tr>
<td>7</td>
<td>RADIOACTIVE MATERIALS</td>
</tr>
<tr>
<td>8</td>
<td>CORROSIVE MATERIALS</td>
</tr>
<tr>
<td>9</td>
<td>MISCELLANEOUS MATERIALS/DANGEROUS GOODS</td>
</tr>
</tbody>
</table>
Authority

The authority over highway routing of hazardous material, delegated to the Federal Motor Carrier Safety Administration (FMCSA), can be found at 49 USC § 5112.

49 CFR 397 provides for the transportation of hazardous materials, driving and parking rules.

- Subpart C – Routing of Non–Radioactive Hazardous Materials (NRHM)
- Subpart D – Routing of Class 7, Radioactive Materials (RAM)

USC = United States Code
CFR = Code of Federal Regulations
Route Types

- Radioactive, Class 7, usually designates specific or preferred transportation routes, identified as RAM or HRCQ/RAM (highway route controlled quantities).
- Non-radiological may either designate specific routes or designate routes that cannot be traveled, identified as NRHM.
  - NRHM routing designations and restrictions apply to placarded vehicles only.
The National Hazardous Materials Route Registry (NHMRR) is a listing, as reported by state and tribal government routing officials, of all designated and restricted road and highway routes for highway route-controlled quantities of Class 7 and NRHM transportation, as well as limitations for using the routes.

The FMCSA is the agency responsible for maintaining the NHMRR.

The NHMRR is published in the Federal Register.

- Sept. 28, 2009 pdf
- July 14, 2014 proposed updated list
Location of NHMRR online.
MDOT’s Experience

- The Michigan Department of Transportation (MDOT), as the state transportation department, is the authorized agency in Michigan responsible for NRHM routing designations, restrictions and requirements, MCL 480.11a.
- This authorization includes requests to consider changes to existing NRHM routes.
- MDOT received an official request from a private infrastructure owner to initiate the process to modify current restrictions across the Ambassador Bridge in Wayne County.
NRHM Routes in Wayne County, Michigan

- This shows specific restricted routes where NRHM cannot be transported.
- This county in Michigan is unique with an international border (Canada).

RESTRICTED ROUTES

1. **Ambassador Bridge** (Detroit) from Porter Street to Canada (Windsor)
2. **Windsor Tunnel** (Detroit) from Jefferson Avenue to Canada (Windsor)
3. **M-10** (Lodge Freeway) from Howard Street to Woodward Avenue under Cobo Hall (approx. 1 mile)
4. **M-10** (Lodge Freeway) from 8 Mile Road (South) to Wyoming Road
Steps in Review Process

- Determine Need For or Request Change
- Initiate Process
- Conduct Studies
- Review Data
- Propose Changes
- Stakeholder Collaboration
- Public Outreach/Comments
- Consider Comments
- Final Determination
Specific Considerations

- Should current restrictions remain?
- Should current restrictions be removed?
- Should new restrictions or requirements be added?
Risks

- Factors and considerations for safest routes, based on primary risks:
  - Technical Analysis
  - Population Density
  - Type of Highway
  - Type of Hazardous Material
  - Emergency Response Capabilities
Responsibilities in Michigan

- **Routing Designations:**
  Michigan Department of Transportation

- **Enforcement:**
  Michigan State Police and/or local police authorities

- **Emergency Response:**
  Local, state and federal emergency response and recovery resources
MDOT issued a synopsis report in December 2012 with proposed recommendations:

- Modify current routes.
- Add protective measures to reduce risks.
### Proposed Changes (continued)

<table>
<thead>
<tr>
<th>CURRENT RESTRICTIONS</th>
<th>PROPOSED CHANGES</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROUTES</td>
<td>CLASS NUMBERS</td>
</tr>
<tr>
<td>1</td>
<td>No Restrictions</td>
</tr>
<tr>
<td>2</td>
<td>Partial Class</td>
</tr>
<tr>
<td>3</td>
<td>Other Regulations Apply</td>
</tr>
</tbody>
</table>

1. Ambassador Bridge [Detroit] from Porter Street to Canada [Windsor]
   ADDITIONAL RESTRICTIONS OR COMMENTS: Require escort(s) for Classes 2-6.1 and 8-9, subject to further restrictions.

2. Windsor Tunnel [Detroit] from Jefferson Avenue to Canada [Windsor]
   ADDITIONAL RESTRICTIONS OR COMMENTS: Prohibit all plocarded vehicles.

3. M-10 [Lodge Freeway] from Howard Street to Woodward Avenue [under Cobo Hall (approximately 1 mile)]
   ADDITIONAL RESTRICTIONS OR COMMENTS: Prohibit all plocarded vehicles.

4. M-10 [Lodge Freeway] from 8 Mile Road (South) to Wyoming Road
   ADDITIONAL RESTRICTIONS OR COMMENTS: None.

*NOTE: For Partial Class and Other Regulations Apply, there are no recommendations with respect to transportation of Class 6.2 [Infectious Substances] or Class 7 [Radioactive Materials] as they have other regulations that apply. Generally, the transportation of Class 6.2 and Class 7 material is rigorously controlled and subject to strict restrictions.*
Public Outreach/Comments

- MDOT sought public comments on the proposed recommendations.
- MDOT posted information on a dedicated public website (MDOT>Projects and Programs>Studies).
- After initial comment period, MDOT decided to extend the comment period and hold a public hearing on April 25, 2013.
- The written comments and transcripts from the hearing were made available to the public in an information packet.
Review

- MDOT followed applicable regulatory guidelines when considering changes to existing routes.
- The synopsis report and proposed changes were about roadways on which hazardous materials may not be transported or have specific restrictions.
- The safety of citizens and the traveling public was a primary concern.
- Final determination no later than June 20, 2014 (18 months after release of the synopsis report/proposed recommendations).
Final Decision

- On Jan. 31, 2014, MDOT issued a final decision that maintained the current existing restrictions for the Ambassador Bridge with an added restriction of Class 6.2, and issued new restrictions for the Windsor Tunnel and M-10 routes.

- The new restrictions enhance overall public safety and were in the best interest of the state of Michigan and, more specifically, Wayne County.
<table>
<thead>
<tr>
<th>Name of Existing Route</th>
<th>Current Restrictions</th>
<th>Proposed Recommended Restrictions* from Synopsis Report (December 2012)</th>
<th>Final Decision – Restrictions*† Effective April 2, 2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ambassador Bridge [Detroit] from Porter Street to Canada [Windsor]</td>
<td>Classes 1, 3, 7 and 8.</td>
<td>Restrict Class 1. Require escort(s) for Classes 2-6.1 and 8-9; subject to further restrictions. *Partial Class and Other Regulations Apply (see note below)</td>
<td>Restrict Classes 1, 3, 6.2*†, 7*† and 8. *Partial Class and Other Regulations Apply (see note below)</td>
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<td>Windsor Tunnel [Detroit] from Jefferson Avenue to Canada [Windsor]</td>
<td>Classes 1, 3, 7 and 8.</td>
<td>Restrict all classes. Prohibit all placarded vehicles. *Other Regulations Apply (see note below)</td>
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Chart included in MDOT’s Frequently Asked Questions #24.
Final Decision Documents

- Letter to Federal Motor Carrier Safety Administration transmitting the routing designations, effective April 2, 2014, for publication in the National Hazardous Materials Route Registry.
- Letter to the Ambassador Bridge, notifying of decision.
- Letter to officials responsible for highway routing in Wayne County, notifying of decision.
- Frequently Asked Questions.
MDOT’s dedicated public website.

Selected documents available in multiple languages.

Site updated periodically throughout review process.
Other Routing Examples

- City of Boston/Massachusetts Department of Transportation
  - Metro–Boston NRHM Routes

- Yucca Mountain/Nevada
  - Transportation of High–Level Radioactive Waste
Questions

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