Public Hearing for Hazardous Material Route Registry Study for the Ambassador Bridge

March 20, 2024

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Title VI of the Civil Rights Act

Title VI of the Civil Rights Act of 1964 requires MDOT to provide the opportunity for everyone to comment on transportation programs and activities that may affect their community. Please take this three-question survey:

https://forms.office.com/g/ysEf5aVfzf

Overview

1. Presentation
2. Public comment – three minutes per speaker
   - Unmute and provide verbal comments. Use the sign-up link in the chat.
   - If you called in, we will use the last four digits of your phone number and ask if you'd like to provide a comment.
   - Provide a written comment using the link in the chat.
   - Leave a voicemail comment at 517-335-4381.
3. Virtual hearing concludes at 7 p.m.

Verbal or Written Comments

Sign up to provide verbal comments

Provide written comments

Verbal or written comments: use links in the chat or visit Michigan.gov/NHRM.

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Introduction

Ambassador Bridge
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Introduction

- A formal request from the Ambassador Bridge to modify current route designation was received on Sept. 28, 2020.
- MDOT commissioned a study to evaluate non-radioactive hazardous materials (NRHM) restricted route designations for the Ambassador Bridge.
- This study was performed by FACTOR, Inc.

Ambassador Bridge

- The Ambassador Bridge is a key international border crossing and critical transportation route that helps move millions of people and freight shipments every year.

- This study evaluated the risks associated with transportation of hazardous materials on routes leading to the Ambassador Bridge and alternate routes should Class 3 and Class 8 materials be permitted to cross the bridge.

Ambassador Bridge

Current NRHM route restrictions for the Ambassador Bridge include:

- Class 1 (explosives),
- Class 3 (flammable liquids),
- Division 6.2 (infectious substances),
- Class 7 (radioactive materials), and
- Class 8 (corrosives).

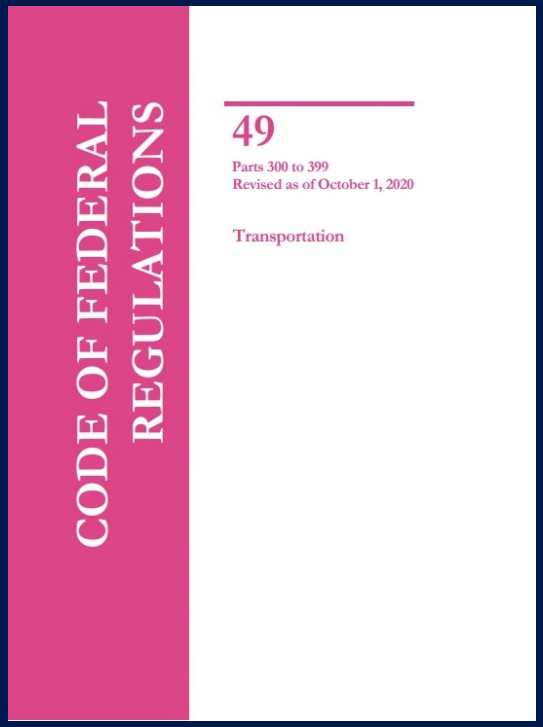
These restrictions have been in place since April 2, 2014.

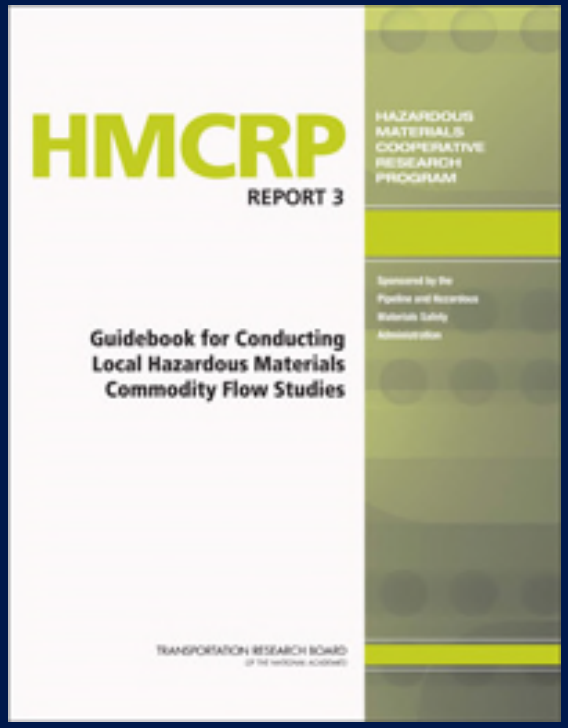
Ambassador Bridge

- Hazardous material shipments to/from Canada that are not permitted on the Ambassador Bridge must use the Blue Water Bridge connecting Port Huron, Michigan, with Sarnia, Ontario.

- When this report was completed the Detroit-Windsor Truck Ferry was in operation.

Study Design





Study Design

The study included the following:

DATA COLLECTION		ANALYSIS	CONSIDERATIONS
Stakeholder Interviews	Population Data	Alternate Routes and Weighting	Discussion
GIS Data	Environmental Data	Population Risk	
Commodity Flow Data	Infrastructure Data	Environmental Risk	Mitigation
Accident Data	Emergency Response Information	Infrastructure Risk	

Methodology

- Identified route alternatives, conducted route risk assessments, and compared results independently for each hazard class.

- The assessments rely on a geographic information system (GIS) that integrates analysis of transportation networks with associated attributes, such as crash likelihood, neighboring population, and environmental characteristics.

Data Collection

Data Sources

Interviews

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Data Sources

Data were collected from various public and private sources including:

MDOT Linear Referencing System (LRS)	MDOT Commercial Annual Average Daily Traffic (CAADT)	MSP Michigan Traffic Crash Reporting System (TCRS)	Local Emergency, Spill, and Contingency Response Plans
2017 Commodity Flow Survey	North American Emergency Response Guidebook (ERG)	DOT PHMSA Hazardous Materials Table (HMT)	MDOT Bridge Authority and the Federal Bridge Corp.
Canada Border Service Agency	FEMA Hazus Population Data	USGS Protected Areas Dataset (PAD)	Detroit-Windsor Truck Ferry
U.S. Customs and Border Protection Agency	Homeland Infrastructure Foundational-Level Data (HIFLD)	USGS National Hydrography Dataset (NHD)	Detroit International Bridge Co.

Interviews

- According to individuals interviewed in the Detroit-Windsor area, hazardous materials transportation predominantly supports the automotive and energy distribution industries;
  - Class 3 (flammable liquids)
  - Class 8 (corrosive liquids)
  - Class 9 (miscellaneous) are the most common

- This includes commodities such as gasoline, fuel oil, paint, coatings, batteries, and cleaning solutions.

Analysis

Border Crossings and Routes

Modeling Commodity Flow

Risk Results

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Border Crossings and Routes

- The MDOT 2040 Freight Plan was reviewed to determine a set of routes for analysis.

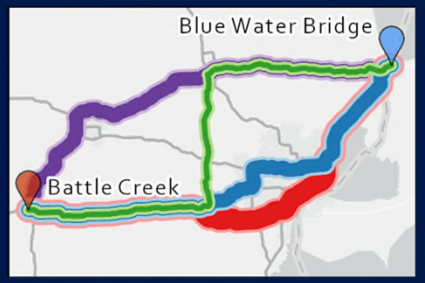
ORIGINS		
Lansing, MI	Flint, MI	East Toledo, OH
Sterling Heights, MI	Battle Creek, MI	West Toledo, OH

to

CROSSINGS
Ambassador Bridge
Detroit-Windsor Truck Ferry (now closed)
Blue Water Bridge

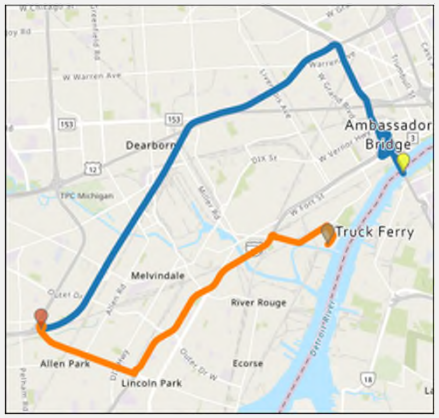
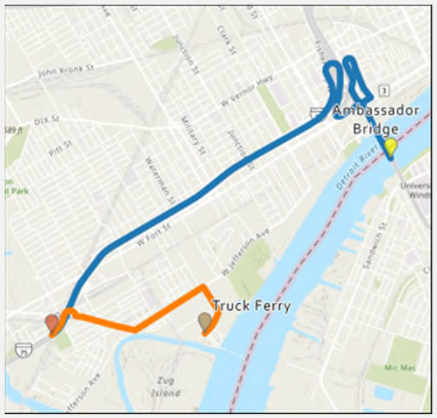
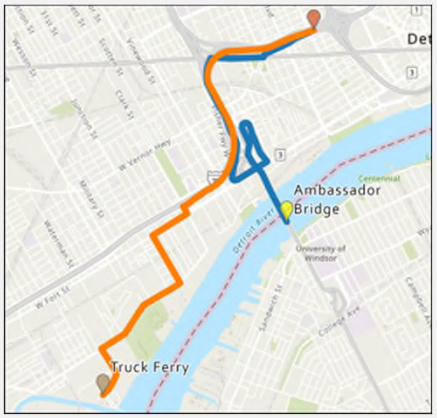
Border Crossings and Routes

- A total of 32 routes were analyzed and given weights based on crossing preference using a shortest path analysis.

	Ambassador Bridge (A)			Blue Water Bridge (B)		
Battle Creek (6)						
	6A.1)	Through Livonia	107 mi	6B.1)	Through Flint, US-23	186 mi
	6A.2)	Through Romulus	109 mi	6B.3)*	Through Detroit on I-696 (Walter P. Reuther Freeway)	167 mi
				6B.4)	Through Romulus	168 mi
				6B.5)	Through Flint and Lansing (on I-69)	165 mi
*Hazmat restricted route: Classes 1 and 3 restricted on I-696						

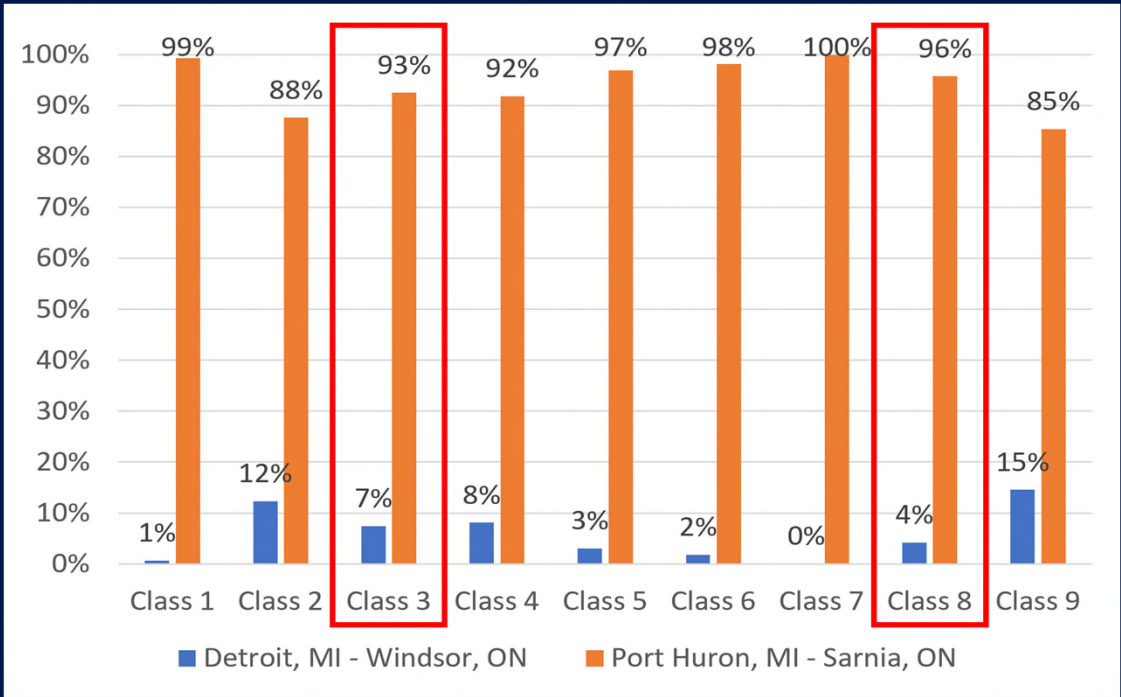
Border Crossings and Routes

Local route segments were also considered to better understand local impacts near the Ambassador Bridge and Detroit-Windsor Truck Ferry (now closed).

D1: To/from Battle Creek, Lansing and West Toledo via Romulus	D2: To/from East Toledo	D3: To/from Battle Creek, Lansing and West Toledo via Livonia, Sterling Heights and Flint
		

Modeling Commodity Flow

Benchmark Commodity Flow for Each Hazard Class



Modeling Commodity Flow

- Hazardous materials shipments to Canada typically cross the border in Detroit or Port Huron, Michigan. As restrictions are lifted for certain hazard classes, the commodity flow will shift.

- It is estimated that approximately 15 percent of Blue Water Bridge shipments would shift to the Ambassador Bridge. This estimation is based on the ratio of shipments for a currently unrestricted hazard class (Class 2).

- Industry is more developed in locations where unrestricted routes are more accessible and, therefore, believe the shift for Classes 3 and 8 will be modest.

Mitigations

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Hazard Mitigation

- There are mitigation strategies that could be applied to help reduce the inherent risks that hazardous materials present during transportation.

- We estimated the potential local and state route impacts of various mitigation strategies on transportation safety and security for hazardous materials using a three-point rating scale (Low, Medium, High).

Hazard Mitigation

This table shows potential mitigation strategies and estimated impacts on local and state routes leading to the Ambassador Bridge as part of the study.

All have a positive impact.

Mitigation Strategy	Description	Local Route Impact (near or on bridge)	State Route Impact (routes to bridge)
Vehicle escorts *(front and rear)*	Use front and rear escort vehicles for crossing the bridge with restricted hazardous materials to reduce front and rear crashes.	**High**	**Low**
Vehicle escorts *(rear)*	Use rear escort vehicles for crossing the bridge with restricted hazardous materials to reduce rear crashes.	**Medium**	**Low**
Daytime bridge crossing restriction *(6 a.m. - 7 p.m.)*	Permit restricted hazardous materials to cross bridge during off-hours to limit exposure to daytime traffic and population.	**Medium**	**Low**
Congested time bridge crossing restriction *(6-9 a.m., 4-7 p.m.)*	Permit restricted hazardous materials to cross bridge during hours of lower congestion to limit exposure to heavier traffic.	**Medium**	**Low**
Bridge Crossing Notification	Permit restricted hazardous materials to cross bridge if notification is given to bridge authority and/or emergency personnel prior to crossing.	**Low**	**Low**
Response Resource Prepositioning *(near bridge)*	Class 3 fires may require an aqueous foam to properly extinguish. Prepositioning these (and other) resources near the bridge would help reduce the time needed to mitigate the consequences of a Class 3 fire.	**High**	**Low**

Summary

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Summary

- A comprehensive risk assessment was conducted to better understand impacts on state and local routes in Michigan if route designations for the Ambassador Bridge were changed.

- The analysis results show a small difference in statewide risk if the existing Class 3 and 8 restrictions were lifted. The difference is not significant enough to make a compelling case for or against any changes.

Public Comment

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4. Leave a voicemail comment at 517-335-4381.
5. **Limit your comment to three minutes.**

Provide written comments at Michigan.gov/NRHM or use the QR code.

Thank You

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