STATE OF VERMONT
AGENCY OF TRANSPORTATION

Traffic Management Plan

FOR

Richford, VT - Sutton, PQ BHF 0814(1)

VT ROUTE 105A, BRIDGE 3 OVER THE MISSISQUOI RIVER

September 11, 2017

This document shall be provided to the Resident Engineer prior to the preconstruction meeting.

Table of Contents

1.0 Project Description **3**

2.0 TMP Team—Contact Information **4**

3.0 Preliminary Work Zone Impact Assessment **6**

4.0 Existing Conditions **8**

5.0 Work Zone Impact Management Strategies **9**

5.1. Temporary Traffic Control (TTC) 9
5.2. Transportation Operations (TO) 11
5.3. Public Information and Outreach (PI&O) 12

6.0 Notes **13**

7.0 TMP Summary **14**

8.0 TMP Review/Approvals **15**

9.0 Appendices **16**

1.0 Project Description

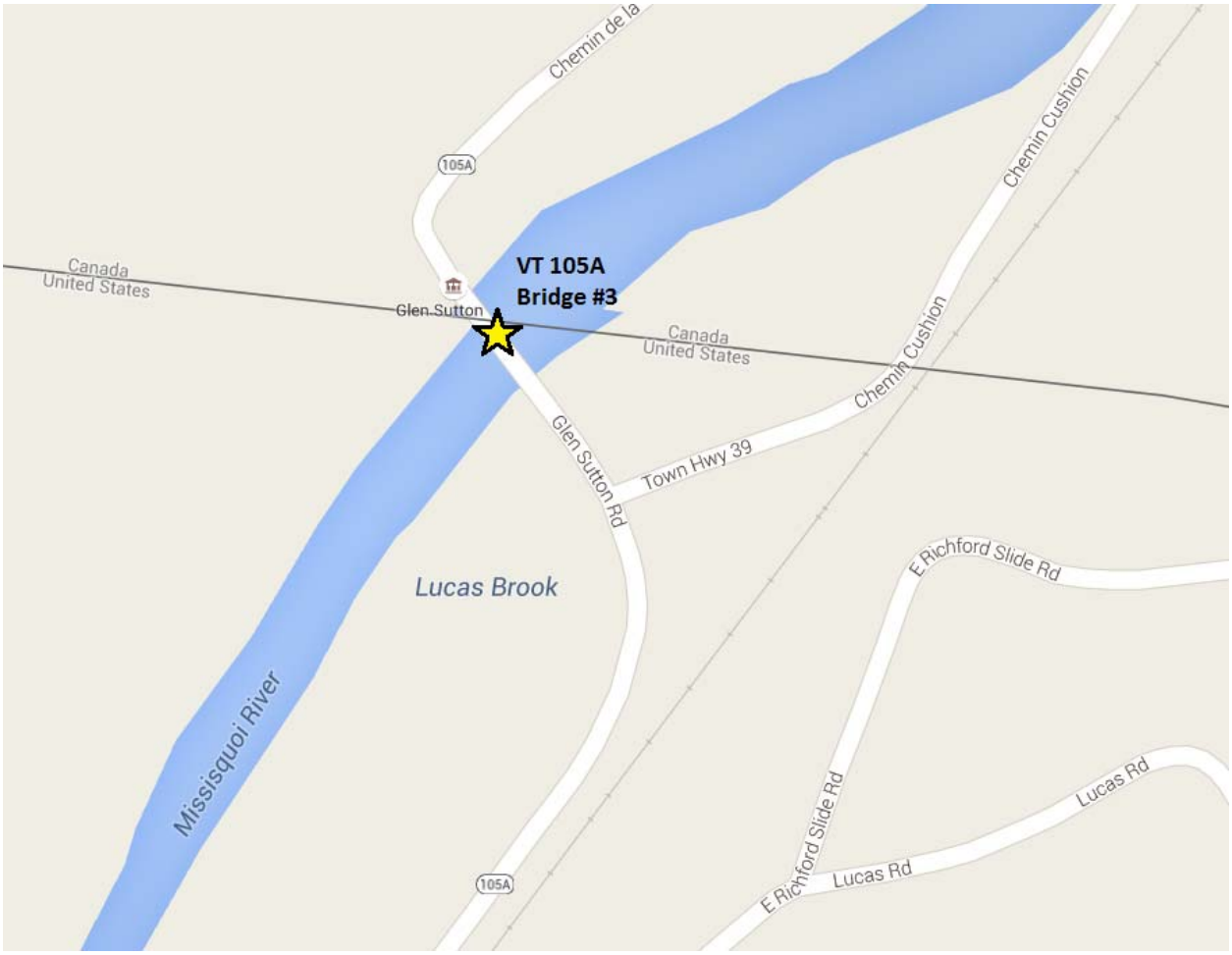
- **Project Location**
  - Town of Richford, VT in Franklin County on VT Route 105A over the Missisquoi River. The bridge is located approximately 1.8 northeast of the intersection of VT Route 105 and VT Route 105A directly on the US/ Canadian border with Sutton, Province of Quebec.

- **Work zone limits**
  - Station 59+87 (Begin Project/ Bridge) to Station 61+91.92 (End Bridge/ Project).

- **Project background information.**
  - The Richford-Sutton Bridge 3 project will rehabilitate the existing bridge over the Missisquoi River, which has deteriorating components in the deck, superstructure, and substructure elements. The existing bridge is a two-span structure built in 1929, with the first span being a 51-ft steel rolled beam structure and the second span being a 151-ft steel truss. The bridge spans over the border between the United States and Canada, with approximately 80% in the United States and 20% in Canada. The existing approach span has substantial corrosion to the metal grid deck, rusting of the beams, and concrete cracking and spalling of the skeletal abutment. The truss span also has significant deterioration of the metal grid deck, as well as truss components with section loss in need of repair or replacement. Currently the bridge is posted for a weight limit of 5 tons.
  - The rehabilitation project will consist of the replacement of the entire approach span with a new partial-filled grid deck system supported by new steel rolled beams. A new abutment on piles will also be installed at the south end of the bridge. The existing truss span will be rehabilitated with a new partial-filled grid deck system, new floor system, and new steel members will replace significantly deteriorated members in the truss. The remaining truss will be cleaned and painted. The rehabilitation will also include substructure repair work to the existing pier and abutment 2 at the north end of the bridge. The bridge will have two, ten-foot travel lanes with new bridge rail to improve the safety on the bridge.

- **Specific traffic restrictions expected on major roadways during the work**
  - Bridge 3 will be closed to traffic during construction. A detour route will be signed that will follow state-owned roads via VT 105 and VT 139 to the border crossing in Richford, VT on VT 139. Portable message boards will be utilized to inform the public of the bridge closure.

- **Specific roadways that will be directly affected by the project work zones**
  - See Bridge Location Map on following page.



- **Regional projects that may impact each other**
  - None known of at this time.

- **Project schedule**
  - Target Construction Schedule: Construction activities will likely take place beginning in April 2018 and last one construction season.
  - Traffic Maintenance: The bridge will be closed and traffic will be detoured to the Richford-Abercorn border crossing. Flagging operations and single lane closures with one-way, alternating traffic may also be used outside of the bridge closure period.

2.0 TMP Team—Contact Information

Defining roles and responsibilities from the initial stages of a project helps to coordinate all the activities related to TMP development and implementation. This section includes contact information and roles and responsibilities for major personnel involved in the project.

- **TMP Development Managers**—Personnel with the primary responsibility for developing the TMP.
- **TMP Implementation Managers**—Personnel primarily responsible for implementing the TMP.

- **Emergency Contacts**— Public or semi-public agencies (e.g., hospitals, schools, fire, police, select board/town administrator, road foremen) that need to be kept informed about work zone activities, especially in case of a road closures.

Contact information and roles and responsibilities of major personnel involved in the project.

TMP Development Managers	
Agency of Transportation (AOT) DPM	**Town of Richford, VT**
Name/Title: Carolyn Carlson, PE/Project Manager Unit: Structures Phone: 802-828-0048 Email: Carolyn.carlson@vermont.gov	Name/Title: Alan Fletcher, Town Clerk Unit: Phone: 802-848-7751 Email:
Roles and Responsibilities: Development of the Traffic Management Plan. AOT will be responsible for developing the TMP related to the area within the project construction limits.	
TMP Implementation/Monitoring Managers	
AOT Resident Engineer	**Town of Richford, VT**
Name/Title: Unit: Phone: Email:	Name/Title: Alan Fletcher, Town Clerk Unit: Phone: 802-848-7751 Email:
Roles and Responsibilities: Implementing the Traffic Management Plan. AOT will be responsible for implementing the TMP related to the area within the project construction limits.	
Other Important Agency Contacts	
AOT Regional Engineer	**AOT Construction and Materials Bureau Director**
Name/Title: Chris Williams / Northwest Regional Construction Engineer Unit: Construction and Materials Phone: 802-828-1333 Email: chris.williams@vermont.gov	Name/Title: David Hoyne/Director Unit: Construction and Materials Phone: 802-828-2593 (main desk) Email: david.hoyne@vermont.gov
Roles and Responsibilities:	
Emergency Service Contacts	
VT State Police (St. Albans Barracks)	**Richford Fire Department**
Name/Title: Maurice Lamothe, Lieutenant Address: 140 Fisher Pond Road, St. Albans, VT 05478 Phone: 802-524-5993	Name/Title: Ken Pigeon, Chief Address: 48 Main Street, Richford, VT 05476 Phone: 802-848-7743

Email: maurice.lamothe@vermont.gov	Email:
Richford Ambulance Service	
Name/Title: Phone: Address: Email:	
Roles and Responsibilities:	
Contractor	
Contractor	**Superintendent**
Name/Title: Address: Phone: Email:	Name/Title: Unit: Phone: Email:
Roles and Responsibilities:	
Contractors Competent Person	**Contractors Safety Officer**
Name/Title: Unit: Phone: Email:	Name/Title: Unit: Phone: Email:
Roles and Responsibilities:	

3.0 Preliminary Work Zone Impact Assessment

This preliminary assessment of work zone impacts should be developed in the early planning stages of the project to help identify issues or uncover problem areas that should be considered during project development.

Preliminary assessment of work zone impacts questionnaire:

Does the project include a long-term closure and/or an extended weekend closure? If Yes, what is/are the applicable type of facility(ies) being used to accommodate traffic?

- Yes, this project includes a bridge closure on a Rural Minor Collector. The AADT on VT 105A is 210 vehicles/day. There are no sidewalks leading up to or on the existing bridge.

Can traffic be detoured?

- Traffic from the United States side of the bridge will be detoured to VT 105 to VT 139 to the Richford-Abercorn border crossing on VT 139 in Richford, VT.

- It will be up to Canadian officials to determine the detour routes they wish to utilize on the Canadian side of the bridge during construction.
- Early coordination with the border patrol, police, and fire departments will result in the greatest success of the project closure.
- Any construction projects that occur along the detour route concurrently with the bridge closure should be coordinated with.

Is the existing shoulder sufficient to support traffic during construction?

- The existing roadway is relatively narrow and has limited shoulders. In addition, the US border crossing station restricts the ability to build out the shoulders to support traffic on during construction.

Is additional width required on culverts or bridges to maintain traffic?

- Since the project includes an entire replacement of the approach span, significant work to the existing truss span, and lead paint removal, traffic on the bridge during construction as an option was not considered.

Is there a pedestrian/bicycle facility that must be maintained?

- There are no sidewalks on the existing or the proposed bridge, so pedestrian traffic will not need to be maintained during construction.

Would a temporary structure(s) be required?

- Due to the 200-ft plus crossing of the Missisquoi River, the existing site does not allow for a temporary bridge either upstream or downstream. In addition, archaeological resources and a US border patrol station would prohibit the installation of a temporary bridge either upstream or downstream. Numerous US/ Canada border stations are located within a reasonable distance to warrant a bridge closure during construction.

Would a median crossover be needed?

- N/A

Would there be a need to maintain railroad traffic?

- N/A

Could maintenance of traffic have an impact on existing or proposed utilities?

- There are no aerial utilities located in the project are, so maintenance of traffic will not have an impact on the existing or proposed utilities.

Does it appear that maintenance of traffic will require additional Right-of-Way?

- No, detouring traffic will not require additional Right-of-Way. If a temporary bridge were constructed, additional Right-of-Way would be necessary.

Can the contractor restrict the roadway during the time periods listed?

- a.m. peak hours, one direction - Yes, an AADT of 210 would support one way alternating traffic with a minimal drop in Level of Service (LOS)
- p.m. peak hours, one direction - Yes, an AADT of 210 would support one way alternating traffic with a minimal drop in Level of Service (LOS)
- a.m. peak hours, both directions - only during the closure period
- p.m. peak hours, both directions - only during the closure period
- Overnight - only during the closure period
- Local celebrations - only during the closure period

- Holidays or weekends - only during the closure period
- Sporting events/other special events - only during the closure period

Will project timing (for example, start or end date) be affected by special events?

- School closings or openings: The bridge closure will likely take place while school is in session. Bus companies will need to be notified ahead of scheduled closure. Communication will need to be made with any necessary residents on bus stop locations and pickup/ drop off in the project vicinity.
- Holidays: Holidays that fall within the designated bridge closure period will not be given special consideration and the Contractor will be allowed to work. The Contractor shall not work on any holiday periods that fall outside of the designated bridge closure period without prior approval.
- Special events: None Noted

Are there any projects to be considered along the corridor or in the region?

- Roadwork in the immediate area that may affect traffic or the contractor's operations?
    - A proposed state paving project of VT 105A may occur around the same time as the bridge rehabilitation project. Coordination will need to be made to insure there are no issues with contradicting signage, prohibitive accessibility for the contractor, unnecessary repetitive construction operations such as ripping out brand new pavement, etc.
- Roadwork on other roads that may affect the use of alternate routes?
    - None known of at this time

Are there other maintenance of traffic issues? If so, specify.

- No.

4.0 Existing Conditions

This section provides an overview of the existing conditions within the project area, and includes:

- Roadway characteristics (history, roadway classification, number of lanes, geometrics, urban/suburban/rural).
    - Roadway Classification: Rural Minor Collector
    - Roadway Lane/Shoulder Widths and Bridge Lane/Shoulder Widths: 8'/1.5' (21') roadway, 10'/0' (20') bridge
- Historical traffic data (volumes, speed, capacity, volume/capacity, percent trucks, queue length, peak traffic hours).
    - A traffic study of this site was performed by the Vermont Agency of Transportation. The traffic volumes are projected for the years 2018 and 2038.

TRAFFIC DATA	2018	2038
AADT	210	240
DHV	25	30
ADTT	10	10
%T	5.3	6.8
%D	60	60

- Design Speed: 25 mph

- Traffic operations (signal timing, traffic controls).
  - There is a signal for the US border crossing station located at the bridge project site.
- Crash data.
  - There are no recorded crashes in the project area.
- Pedestrian/bicycle facilities.
  - There are no sidewalks or bicycle facilities through the project area.
- Transit facilities.
  - There is currently no public transit route scheduled through the project area.
- Truck routes.
  - This route sees very little truck traffic due to the clearance height of the thru truss and an additional overhead railroad crossing located along VT 105A. In addition, the bridge is posted for a weight limit of 5 tons.
- Local community and business concerns/issues.
  - Comments/concerns regarding traffic operations, delays, access/egress, etc., that have been received from community, business representatives, and stakeholders during the planning and design stages of the project development:
    - Both the United States and Canada border crossing station plan to be closed during the bridge closure period.
    - The Missisquoi River at the project site is part of the Northern Canoe Forest Trail. Paddlers using the river are required to check in at the US border station. Since the border station will be closed during construction special accommodations may need to be made for recreational users.
  - Specific concerns on pedestrian, bicycle, transit, facilities, etc.:
    - None noted at this time

5.0 Work Zone Impact Management Strategies

This section provides an overview of various strategies to be deployed to improve the safety and mobility of the work zone and reduce the work zone impacts on the road users, community, and businesses.

The strategies are grouped according to the following three categories.

1. Temporary Traffic Control (TTC).
2. Transportation Operations (TO).
3. Public Information and Outreach (PI&O).

5.1. Temporary Traffic Control (TTC)

A TTC plan describes temporary traffic control measures to be used for facilitating road users through a work zone or an incident area. The TTC plan plays a vital role in providing continuity of reasonably safe and efficient road user flow and highway worker safety when a work zone, incident, or other event temporarily disrupts normal road user flow. The TTC plan shall be consistent with the provisions of the MUTCD and AASHTO Roadside Design Guide.

Temporary Traffic Control (TTC)	Check if recommended for use
Control Strategies	
1. Construction phasing/staging	
2. Full roadway closures	**X**
3. Lane shifts or closures	**X**
4. One-lane, two-way controlled operation	**X**
5. Two-way, one-lane traffic**/**reversible lanes	
6. Night work	**X**
7. Weekend work	**X**
8. Work hour restrictions for peak travel	
9. Pedestrian/bicycle access improvements	
10. Business access improvements	**X**
11. Off-site detours/use of alternate routes	**X**
Traffic Control Devices	
12. Temporary signs	**X**
13. Arrow boards	
14. Portable changeable message signs	**X**
15. Channelizing devices	
16. Temporary pavement markings	
17. Flaggers and uniformed traffic control officers	**X**
18. Automated Flagger Assistant Devices	
19. Temporary traffic signals	
20. Lighting devices	
21. Truck attenuators	
Project Coordination Strategies	
22. Other area projects	**X**
23. Utilities	**X**
24. Right-of-Way	**X**
25. Other transportation infrastructure	
Innovative or Accelerated Construction Techniques	
26. Prefabricated/precast elements	
27. Rapid cure materials	

5.2. Transportation Operations (TO)

The TO component shall include the identification of strategies to mitigate impacts of the work zone on the operation of the transportation system within the work zone impact area. The work zone impact area consists of the immediate work zone as well as affects to the surrounding roadways and communities. Additional information can be acquired from the "Workzone Safety and Mobility Guidelines" (WSMG) and "Appendix A" in the WSMG document.

Transportation Operations (TO)	Check if recommended for use
Demand Management Strategies	
1. Shuttle services for pedestrian traffic	
Corridor/Network Management Strategies	
2. Signal timing/coordination improvements	
3. Temporary traffic signals	
4. Street/intersection improvements	**X**
5. Bus turnouts	
6. Turn restrictions	
7. Parking restrictions	**X**
8. Truck/heavy vehicle restrictions	**X**
9. Reversible lanes	
10. Dynamic lane closure system	
Work Zone Safety Management Strategies	
11. Speed limit reduction/variable speed limits	**X**
12. Temporary traffic signals	
13. Temporary traffic barrier	**X**
14. Movable traffic barrier systems	
15. Crash cushions	
16. Project task force/committee	
17. Construction safety supervisors/inspectors	**X**
18. Road safety audits	
19. TMP monitor/inspection team	**X**
Incident Management and Enforcement Strategies	
20. Media coordination	**X**
21. Local detour routes	**X**
22. Contract support for incident management	
23. Incident/Emergency management coordination	**X**

24. Incident/Emergency response plan	X
25. Dedicated (paid) police enforcement	
26. Cooperative police enforcement	

Contingency/Incident Management Plans—

It is best to develop the Contingency/Incident Management plan as a collaborative effort with the emergency response and the public safety community. Development of such a plan is crucial in the early phases to properly integrate the concerns of the first responder personnel.

5.3. Public Information and Outreach (PI&O)

The PI component shall include communication strategies that seek to inform the general public of work zone impacts and the changing condition of the project. The general public may include road users, area residences and businesses, and other public entities. Examples of communications strategies that may be used to satisfy the PI component may be found at:
http://www.ops.fhwa.AOT.gov/wz/rule_guide/sec6.htm#sec63.

Public Information and Outreach can be important for the success of bridge closure projects. This project will create a short term impact to travelers, businesses, residents, and truckers. Properly informing these stakeholders of what to expect during construction will ensure proper public support and reduce problems during construction. The following measures can be used:

- Factsheets
    - A project factsheet can be used to show the detour routes, if any, describe the project and why and when it is taking place.
- Business concerns/issues
- Public Input and Surveys
- Social Media to inform the public

Public Information and Outreach (PI&O)	Check if recommended for use
Public Awareness Strategies	
1. Brochures and mailers	X
2. Press releases/media alerts	X
3. Telephone hotline	
4. Planned lane closure website	
5. Project website	
6. Public meetings/hearings, workshops	X
7. Community task forces	
8. Coordination with media/schools/business/emergency services	X
9. Email alerts	X
Motorist Information Strategies	

10. Changeable message signs	**X**
11. Temporary motorist information signs	**X**
12. Dynamic speed message sign	
13. Project information hotline	

6.0 Notes

Any additional notes on selected strategies, the TMP in general, or any item requiring special attention for the project can be provided in this section.

This section should include meeting notes or conversation notes where decisions pertaining to the TMP are made.

7.0 TMP Summary

This summary should include a brief description of the traffic management strategies selected for use on the project as well as important contact information. This summary should be included in the contract documents.

TMP Summary

- The following temporary traffic control (TTC) measures have been identified for use though the construction area.
    - Control Strategies: During construction the bridge will be closed to traffic. Traffic will be detoured to the Richford-Abercorn border crossing on route 139 in Richford. Canada will be responsible for choosing and signing their detour of choice within Canada. Additional work may be required before and after the bridge closure period. During this time the contractor may utilize flaggers to maintain one-way, alternating traffic through the bridge project.
    - Traffic Control Devices: Traffic Barriers and "Road Closed" signs will be deployed during the closure to protect cars from driving into the construction site. Portable message signs will be used at the project site and strategic areas in the vicinity to inform motorists of the bridge and border crossing closures. Temporary traffic signage will be installed to inform motorists of the detour route.
    - Project Coordination Strategies: Coordination with any potential projects in the bridge vicinity and along the detour route should occur to avoid any issues during the project. Coordination with emergency services, school bus services, local community, US Customs and Border Protection, Canadian officials, International Border Commission, and the General Services Administration will also be necessary.
- The following transportation operations (TO) measures have been identified for use for mitigation of impacts to the work zone and the surrounding roadway network
    - Incident Management and Enforcement Strategies: The media should be coordinated with to inform the public of any delays that occur due to unexpected incidents. Emergency response personnel should be aware of the local routes available in case of emergency, and an Incident/Emergency response plan should be drafted and coordinated with emergency personnel.

Public Information and Outreach Summary

The following measures are recommended to warn the public of the possible impacts to them:

- Public meetings prior to the closure should be held in order to notify the public what to expect during the closure, and to hear concerns.
- Factsheets
- Public Input and Surveys
- Social Media to inform the public of upcoming impacts and changes in traffic patterns

Contacts

Design Project Manager: Carolyn Carlson, 802-828-0048
Ministry of Transport: André Côté, 819-820-3280 #44202
Customs Border Patrol: TBD
General Services Administration: TBD
Resident Engineer: TBD
Regional Engineer: Chris Williams, 802-281-5000
Public Information Officer: TBD
Richford Fire Department: Ken Pigeon (Chief), 802-848-7743
VT State Police Services: Maurice Lamothe (Lieutenant, St. Albans Barracks), 802-524-5993
Ambulance Service: TBD
Contractor: TBD
Superintendent: TBD
Contractors Competent Person: TBD
Contractor Safety Officer: TBD

8.0 TMP Review/Approvals

TMPs, and changes to TMPs, can be submitted for review by the Transportation Systems Management & Operations (TSMO) section at AOT before they are implemented. Review of the TMP by AOT prior to implementation is not mandatory, but is highly encouraged.

TSMO Contacts
AOT - Transportation Systems Management & Operations (TSMO)
Name/Title: Amy Gamble, PE\Traffic Operations Engineer Address: 1 National Life Drive, Montpelier, VT 05633-5001 Phone: 802-477-3251 Email: amy.gamble@vermont.gov
Roles and Responsibilities: Review of Traffic Management Plans

Regional Construction Engineer			Traffic Operations Engineer			Project Manager		
All approvals must be obtained prior to the start of work								
Signature: Name: Date:			Signature: Name: Date:			Signature: Name: Date:		
Revision#	Initials	Date	Revision #	Initials	Date	Revision #	Initials	Date
1			1			1		
2			2			2		

The approval of the TMP should be based on conformance of the TMP with the Work Zone Safety and Mobility Guide.

9.0 Appendices

Future appendices could include:

- Traffic Counts
- Temporary Traffic Control Plans
- Public Information and Outreach Plan
- TMP Review Notes
- Project Monitoring Form or Post-Project Evaluation Form.