

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Traffic Management Plan

FOR

Danby BF 0130(3)

FAS ROUTE 130 (TH 1), BRIDGE 9 OVER THE MILL BROOK

December 6, 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 Information4

3.0 Preliminary Work Zone Impact Assessment.....6

4.0 Existing Conditions8

5.0 Work Zone Impact Management Strategies.....9

 5.1. Temporary Traffic Control (TTC) 9

 5.2. Transportation Operations (TO)..... 10

 5.3. Public Information and Outreach (PI&O)..... 12

6.0 Notes13

7.0 TMP Summary.....14

8.0 TMP Review/Approvals15

9.0 Appendices15

1.0 Project Description

- **Project Location**

- Town of Danby in Rutland County on FAS Route 130 (TH 1) over Mill Brook. The bridge is located approximately 2.83 miles west from its intersection with North Main Street (TH 27) and extending easterly approximately .047 miles.

- **Work zone limits**

- Station 11+00 (Begin Approach) to Station 15+50 (End Approach).

- **Project background information**

- The Danby Bridge 9 project will replace the existing bridge, which is in satisfactory to fair condition and has a substandard width, horizontal and vertical alignment. The existing bridge is a single span, rolled beam bridge constructed in 1933. Bridge 9 is 74-feet in length and has a deck and substructure that are in fair condition and beams that are in satisfactory condition.
- The new bridge will be comprised of a curved girder superstructure and a substructure of reinforced concrete abutments on piles driven to competent bedrock. The bridge will have two, nine-foot lanes with three-foot shoulders on each side, which meets Vermont State Design Standards. The new bridge span will be approximately 86-feet in length since the new bridge will be built off alignment slightly behind the existing abutments. The new horizontal alignment will be warned for 25 mph in order to improve safety on the curve in the road at the bridge.

- **Specific traffic restrictions expected on major roadways during the work**

- The bridge will be closed during construction and traffic detoured on alternative routes. Prior to and after the bridge closure the Contractor will maintain at least one lane of alternating traffic.

- **Specific roadways that will be directly affected by the project work zones**

- See Bridge Location Map on following page.
- Detour Route to be chosen and signed by the Town of Danby

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

TMP Development Managers	
Agency of Transportation (AOT) DPM	Town of Danby
Name/Title: Carolyn Carlson, PE/Project Manager Unit: Structures Phone: 802-828-0048 Email: carolyn.carlson@vermont.gov	Name/Title: Janice Arnold, Town Clerk Address: 130 Brook Road Danby, VT 05739 Phone: 802-293-5136 Email: danbytownclerk@vermontel.net
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. The Town of Danby will be responsible for developing the TMP related to the detour route.	
TMP Implementation/Monitoring Managers	
AOT Resident Engineer	Town of Danby
Name/Title: Unit: Phone: Email:	Name/Title: Janice Arnold, Town Clerk Address: 130 Brook Road Danby, VT 05739 Phone: 802-293-5136 Email: danbytownclerk@vermontel.net
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. The Town of Danby will be responsible for implementing the TMP related to the detour route.	
Other Important Agency Contacts	
AOT Regional Engineer	AOT Construction and Materials Bureau Director
Name/Title: Mark Mackintosh / Southwest Regional Construction Engineer Unit: Construction and Materials Phone: 802-786-0023 Email: mark.mackintosh@vermont.gov	Name/Title: Mladen Gagulic/Director Unit: Construction and Materials Phone: 802-828-6405 Email: mladen.gagulic@vermont.gov
Roles and Responsibilities:	
Emergency Service Contacts	
Mt. Tabor-Danby Fire Department	VT State Police (Rutland Barracks)
Name/Title: Address: Box 590 N. Main St., Danby, VT 05739 Phone: 802-786-9797 Email:	Name/Title: Chuck Cacciatore/Lieutenant Address: 124 State Place, Rutland, VT 05701-9332 Phone: 802-773-9101 Email: charles.cacciatore@vermont.gov

Roles and Responsibilities:	
Contractor	
Contractor	Superintendent
Name/Title:	Name/Title:
Address:	Unit:
Phone:	Phone:
Email:	Email:
Roles and Responsibilities:	
Contractors Competent Person	Contractors Safety Officer
Name/Title:	Name/Title:
Unit:	Unit:
Phone:	Phone:
Email:	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)?

- Yes, this project includes a bridge closure on a Rural Major Collector. The AADT on Brook Road is 660 vehicles/day. There are no sidewalks leading up to or on the existing bridge.

Can traffic be detoured?

- There are several available detour routes that the town can choose from for a signed detour. Some of the options are:
 - FAS Route 130 (TH 1/Brook Road), to Keeler Road, VT Route 20, Smokey House Road, back to Brook Road (1.7 miles end-to-end).
 - FAS Route 130 (TH 1/Brook Road), to Danby Hill Road, back to Brook Road (5.5 miles end-to-end).
- Early coordination with the police and fire departments will result in the greatest success of the project closure.
- Since this a town highway it is restricted to a load limit of 24,000 pounds. Despite this, numerous logging trucks utilize this route.

Is the existing shoulder sufficient to support traffic during construction?

- There is an existing 2-foot wide shoulder. This is not wide enough to support a moving lane of traffic through a construction zone. A minimum of 14-feet is required.

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

- The additional width that would be needed to maintain a lane of traffic on this bridge during construction would widen the bridge superstructure and substructures by approximately 8 feet and is not recommended.

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?

- The existing site does allow for a temporary bridge either upstream or downstream. Since there are reasonable detour routes available for use during construction, it is not recommended to construct a temporary bridge. A temporary bridge would require additional Right-of-Way to be acquired, negatively impact archaeologically sensitive areas and adjacent property owners, and would be costly.

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 660 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 660 would support one way alternating traffic with a minimal drop in Level of Service (LOS)
- a.m. peak hours, both directions - only during the approximate 20-week closure period
- p.m. peak hours, both directions - only during the approximate 20-week closure period
- Overnight - only during the approximate 20-week closure period
- Local celebrations - only during the approximate 20-week closure period
- Holidays or weekends - only during the approximate 20-week closure period
- Sporting events/other special events - only during the approximate 20-week closure period

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

- No, the bridge closure will last an entire construction season.
- School closings or openings: The bridge closure will likely take place while school is in session.
- Holidays: No special consideration for holidays
- 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?
 - None known of at this time
- 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.

- One-way, alternating traffic controlled with flaggers may need to be utilized during construction for equipment operations if there is not adequate enough space for the contractor to work within

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 Major Collector (Class 2 Town Highway)
 - Roadway Lane/Shoulder Widths and Bridge Lane/Shoulder Widths: 9’/2’ (22’) and 9’/2.2’ (22.4’)
 - Located in a rural setting and a sharp horizontal curve.
- 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 2017 and 2037.

TRAFFIC DATA	2017	2037
AADT	660	700
DHV	85	90
ADTT	75	120
%T	3.5	5.2
%D	67	67

- Design Speed: 30 mph
- Traffic operations (signal timing, traffic controls).
 - There are no signals located in the project area
 - There are no traffic controls located in the project area
- 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.
 - The truck traffic volume through the project area is 75 trucks per day. During the closure, trucks may need to find an alternative appropriate route depending on the detour route chosen by the Town.
- 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:
 - None noted at this time
 - 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	
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	
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	X
16. Temporary pavement markings	
17. Flaggers and uniformed traffic control officers	X
18. Automated Flagger Assistant Devices	
19. Temporary traffic signals	
20. Lighting devices	X
21. Truck attenuators	
Project Coordination Strategies	
22. Other area projects	
23. Utilities	
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	
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	X
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, 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	
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	
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: There will be an approximate bridge closure with night work and weekend work allowed. The selection and signing of the offsite detour is the responsibility of the Town of Danby.
 - Traffic Control Devices: Traffic Barriers and “Road Closed” signs will be deployed during the closure to protect cars from driving into the construction site.
 - Innovative or Accelerated Construction Techniques: Prefabricated elements may be used in order to reduce the closure duration.
- 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

Contacts

Design Project Manager: Carolyn Carlson, 802-828-0048

Resident Engineer: TBD

Regional Engineer: Mark Mackintosh, 802-786-0023

Public Information Officer: TBD

Fire and Emergency Medical Services: Danby Mount Tabor Fire Department, 802-293-5100

VT State Police (Rutland Barracks): Chuck Cacciatore (Lieutenant), 802-773-9101

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: Dill Building, 2178 Airport Road, Unit A, Barre, VT, 05641		
Phone: 802-477-3251		
Email: amy.gamble@vermont.gov		
Roles and Responsibilities: Review of Traffic Management Plans		

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

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

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.