

STATE OF VERMONT  
AGENCY OF TRANSPORTATION

**Combined Traffic Management Plan**  
**Johnson BF 0248 (4)**  
VT Route 100C, Rural Major Collector. Bridge #1 & #2  
**Johnson BF 0248 (7)**  
VT Route 100C, Rural Major Collector. Bridge #4

6/20/2017



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

## 1.0 Project Description- JOHNSON BF 0248(4)

### ▪ Project Location

- Town of Johnson in Lamoille County on VT Route 100c over the left and right branch of the Gihon River. The bridges are located approximately 1-mile north of the intersection of VT Route 15 and VT Route 100C

### ▪ Work zone limits

- Station 12+25 (Begin Approach) to Station 18+00 (End Approach)

### ▪ Project background information.

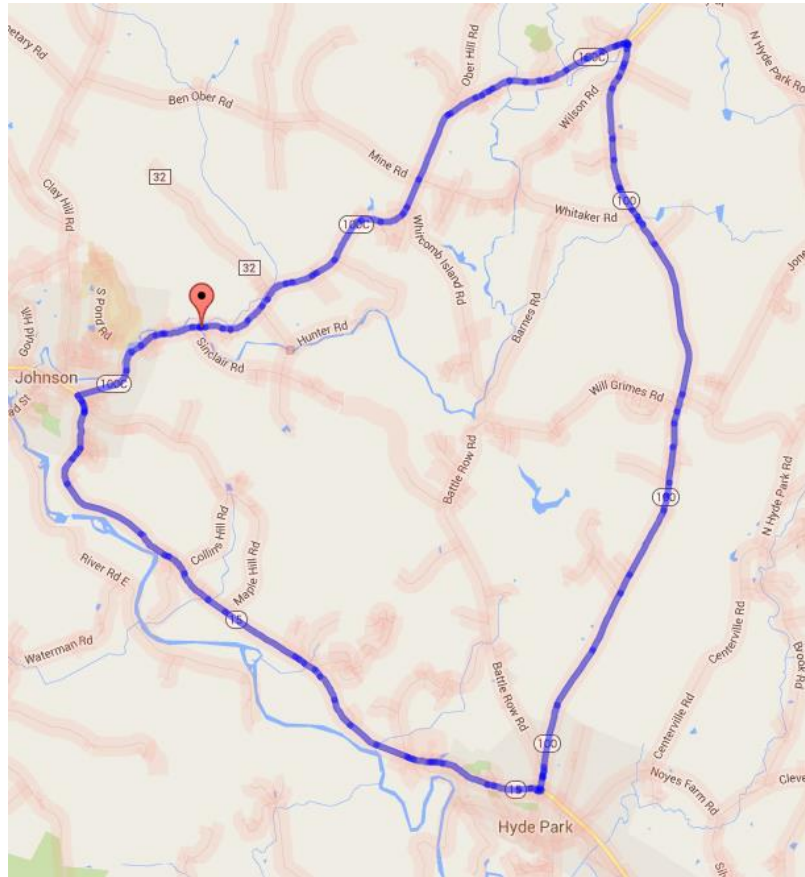
- The Johnson Bridge project will replace the superstructure of the existing bridges #1 & #2. In 2013 the bridge's decks and superstructures were rated "Fair" and "Poor" respectively. The substructure and channel were both considered to be in good condition. The existing bridges are single span concrete T-beam bridges with a 33' clear span (Bridge #1) and a 50' clear span (Bridge #2). Bridge #2 was originally constructed in 1928, Bridge #1 was constructed in 1929.
- The superstructures will be constructed with pre-stressed concrete solid slabs on Bridge #1 and prefabricated bridge units on Bridge #2. The decks will have two 11' travel lanes with 3' shoulders on each side which meets Vermont State Standards. The guardrail and bridge railing will also be improved in order to meet Vermont State Standards.

### ▪ Specific traffic restrictions expected on major roadways during the work

- There will be a 42 day (consecutive) bridge closure (**BCP1**) on VT Route 100c with **no** single lane closures permitted before or after the Bridge Closure Period. During BCP1, access to the 2 properties between Bridge #1 and Bridge #2 will need to be maintained by the contractor.

### ▪ Specific roadways that will be directly affected by the project work zones.

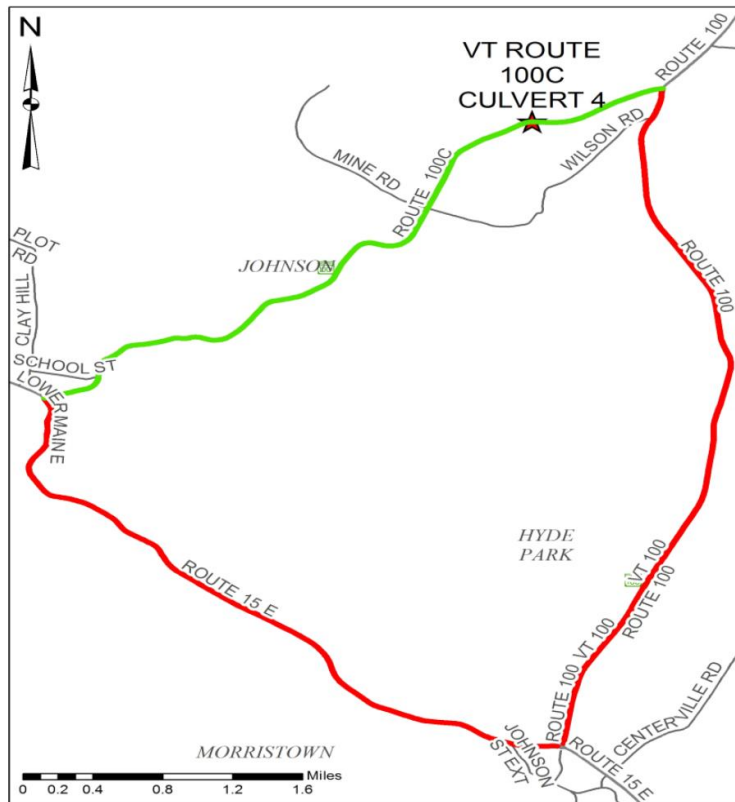
- Bridges 1 and 2 Location Map
  - Traffic will be maintained on a regional detour via VT Route 100 and VT Route 15 between Johnson and Hyde Park



■ **Johnson(4) location and schedule**

- Target Construction Schedule: Construction activities are planned to begin in May 2018 .
- Traffic Maintenance: The bridges (1 and 2) will be closed for 42 days, and traffic will be maintained on an offsite detour

## 2.0 Project Description- JOHNSON BF 0248(7)



### Project Location

- The project is located in the Town of Johnson in Lamoille County, on VT Route 100c, over an unnamed brook. It is approximately 3.8 miles east of the intersection of VT Route 15 and VT Route 100c.
- **Work Zone Limits**
  - The disturbed Area will encompass approximately 450 ft. along the roadway. A staging area of 100 ft. is assumed on each end.

- **Project Background Information**

- The Johnson (7) project proposes to replace the existing deep culvert (bridge 4) with a concrete arch.
- The existing culvert is 6' in diameter and is 166' long, a galvanized metal pipe. The inspection rating for the culvert is 4 "poor". The channel rating is also 4 "poor".
- The culvert does not meet the hydraulic standard and does not meet the ANR standard for bank full width.

- **Specific Traffic Restrictions Expected on Major Roadways During Construction**

- A road closure is planned for the construction period during which time an off-site detour, onto Routes 15 and 100, will be implemented.

- **Regional Projects That May Impact Each Other**

None are known at this time.

- **Project Schedule**

- Target Construction Schedule: Construction activities are planned to begin in August 2018, after the Lamoille County Field days are held. The Fairgrounds are located between the two Johnson projects on Route 100c and they create high traffic volumes.
- Traffic Maintenance: An off-site detour will be utilized during the 28 day road closure for construction (**BCP2**) on VT Route 100c with **no** single lane closures permitted before or after the Bridge Closure Period.

### 3.0 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 Johnson
Name/Title: Wendy Pelletier, PM Unit: Phone: 802-595-4404 Email: wendy.pelletier@vermont.gov	Name/Title: Eric Osgood, SelectBoard Chair Unit: Phone: 802-635-2138 Email: <a href="mailto:eto1@comcast.net">eto1@comcast.net</a>
<b>Roles and Responsibilities:</b> 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 will be responsible for developing the TMP related to the <u>local bypass</u> route.	

### TMP Implementation/Monitoring Managers

AOT Resident Engineer	Town of Hyde Park (on Detour)
Name/Title: TBD Unit: Phone: Email:	Name/Title: Ron Rodjenski Unit: Hyde Park Village Highways Phone: 802-888-2310 Email: ron@hydeparkvt.com
<b>Roles and Responsibilities:</b> Implementing the Traffic Management Plan. AOT will be responsible for implementing the TMP related to the area within the project construction limits. The Town 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: Chris Williams Unit: Northwest Region Phone: 802-595-0759 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

### Emergency Service Contacts

Fire Department	VT State Police (Region Barracks)
Name/Title: Johnson Volunteer Fire Department Emergency: 911 Address: Phone: Email:	Name/Title: Lieutenant James Whitcomb Address: 2777 St. George Rd. Williston VT Phone: 802-878-7111 Email: James.Whitcomb@vermont.gov

Contractor	
Contractor	Superintendent
Name/Title: TBD	Name/Title: TBD
Address:	Unit:
Phone:	Phone:
Email:	Email:
<b>Roles and Responsibilities:</b>	
Contractors Competent Person	Contractors Safety Officer
Name/Title: TBD	Name/Title: TBD
Unit:	Unit:
Phone:	Phone:
Email:	Email:
<b>Roles and Responsibilities:</b>	

## 4.0 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 facilities being used to accommodate traffic?

- Yes, this project includes two separate bridge closure periods on a Rural major Collector. The AADT on Route 100C is approx. 2800 vehicles/day. There are no sidewalks leading up to or on the existing bridges.

Can traffic be detoured?

- Yes
  - Traffic will be maintained on a regional detour via VT Route 100 and VT Route 15 between Johnson and Hyde Park
- Early coordination with the police and fire departments will result in the greatest success of the project closure.
- There are no load limit restrictions on these roads

Is the existing shoulder sufficient to support traffic during construction?

- There is an existing 1.5' wide shoulder. This is not wide enough to support a moving lane of traffic through a construction zone. A minimum of 14' is required.

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

- Traffic cannot be maintained on the bridges during construction

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

- There are no sidewalks on the bridge, so a pedestrian detour is not necessary

Would a temporary structure(s) be required?

- To avoid additional costs, time, and impact a temporary bridge will not be used. There is a detour route available during construction so a temporary bridge is not required.

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

- Utilities will need to be relocated on project to allow for construction, but will not be impacted by maintenance of traffic since there will be an off-site detour.

Does it appear that maintenance of traffic will require additional right-of-way?

- No, detouring traffic will not require additional right-of-way.

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

- a.m. peak hours, one direction - Yes
- p.m. peak hours, one direction - Yes
- a.m. peak hours, both directions - During Closure Period
- p.m. peak hours, both directions - During Closure Period
- Overnight - During the Closure Period
- Local celebrations - Bridges will need to be opened for the Lamoille County Field Days
- Holidays or weekends - During the Closure Period
- Sporting events/other special events - During the Closure Period
- Will project timing (for example, start or end date) be affected by special events:
  - The bridges must be opened for the Lamoille Valley Field Days (Approx. July 17-30 annually. Resident Engineer to verify 2018 LCFD setup and tear down dates, prior to construction start.)
  - School closings or openings: Coordinate with Johnson Elementary school buses and school buses and any special events at Lamoille Union High School on Route 15 in Hyde Park.
  - Holidays: No special consideration for holidays
- Are there any projects to be considered along the corridor or in the region?
  - None known at this time
- Roadwork in the immediate area that may affect traffic or the contractor's operations?
  - None known at this time
- Roadwork on other roads that may affect the use of alternate routes?
  - None known at this time
- Are there other maintenance of traffic issues? If so, specify.
  - Access will need to be maintained to the two properties and the Town's sewage pumping station located between Bridge #1 and Bridge #2 during construction. The contractor will need to communicate with the property owners to ensure access is available on a reasonable schedule, when needed.



## 5.0 Existing Conditions – Johnson BF0248(4)

- Roadway characteristics (history, roadway classification, number of lanes, geometrics, urban/suburban/rural).
  - Roadway Classification: Rural Major Collector
  - Roadway Lane/Shoulder Widths and Bridge Lane/Shoulder Widths: 10'/1.5' (23') and 10'/.65' (21.3')
  - Located in a rural setting
- 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 2016 and 2036.

TRAFFIC DATA	(2016)	(2036)
AADT	2800	2900
DHV	320	330
ADTT	190	290
%T	5.1	7.6
%D	66	66

- Design Speed: 35 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.
  - Year: 2010 - 2014
  - Crashes: 5
  - Fatalities, Injuries, Property Damage: 3 injuries, 2 Property Damage
- Pedestrian/bicycle facilities.
  - There are no sidewalks or bicycle facilities within the project
- Transit facilities.
  - There is no public transit route through the project area
- School Bus Routes
  - There are 2 school bus routes which are expected to be affected. Advanced coordination is planned through the public outreach consultant.
    - Local community and business concerns/issues. None known other than concern for LC Fair days.
- Specific concerns on pedestrian, bicycle, transit facilities, etc. :
  - None

## 6.0 Existing Conditions – Johnson BF0248(7)

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
  - Roadway Lane and Shoulder Widths: 30'
  - Bridge Lane and Shoulder Widths: 30'
- 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 2015 and 2035.

Traffic Data	2015	2035
AADT	2700	2800
DHV	300	320
ADTT	210	300
%T	6.8	9.3
%D	61	61

- Posted/Design Speed: 50 mph
- Traffic operations (signal timing, traffic controls).
  - There are no signals located in the project area
- Crash data.
  - The section of VT Route 100c near Bridge 4 is not a high crash location. Although there are one or two substandard features on the roadway, they are close to standard and are not considered safety risks.
  - Local community and business concerns/issues.

## 7.0 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).

## 7.1. 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
<b>Control Strategies</b>	
1. Construction phasing/staging	
2. Full roadway closures	X
3. Lane shifts or closures	
4. One-lane, two-way controlled operation	
5. Two-way, one-lane traffic/reversible lanes	
6. Night work	<b>BCP2 only</b>
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
<b>Traffic Control Devices</b>	
12. Temporary signs	X
13. Arrow boards	
14. Portable changeable message signs	<b>X ( Upcoming Closure)</b>
15. Channelizing devices	
16. Temporary pavement markings	
17. Flaggers and uniformed traffic control officers	<b>X (Special Conditions only)</b>
18. Automated Flagger Assistant Devices	
19. Temporary traffic signals	
20. Lighting devices	<b>BCP2 only</b>
21. Truck attenuators	
<b>Innovative or Accelerated Construction Techniques</b>	
22. Prefabricated/precast elements	X
23. Rapid cure materials	X

## 7.2. 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
<b>Demand Management Strategies</b>	
1. Shuttle services for pedestrian traffic	
<b>Corridor/Network Management Strategies</b>	
2. Signal timing/coordination improvements	
3. Temporary traffic signals	
4. Street/intersection improvements	
5. Bus turnouts	
6. Turn restrictions	
7. Parking restrictions	
8. Truck/heavy vehicle restrictions	
9. Reversible lanes	
10. Dynamic lane closure system	
<b>Work Zone Safety Management Strategies</b>	
31.Speed limit reduction/variable speed limits	
32.Temporary traffic signals	
33.Temporary traffic barrier	X
34.Movable traffic barrier systems	
35.Crash cushions	
36.Project task force/committee	
37.Construction safety supervisors/inspectors	X
38.Road safety audits	
39.TMP monitor/inspection team	
<b>Incident Management and Enforcement Strategies</b>	
40.Media coordination	X
41.Local detour routes	X
42.Contract support for incident management	
43.Incident/Emergency management coordination	X

44. Incident/Emergency response plan	X
45. Dedicated (paid) police enforcement	
46. Cooperative police enforcement	X

#### 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.

### 7.3. Public Information and Outreach (PI&O)

*The PI component can 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.*

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
<b>Public Awareness Strategies</b>	
1. Brochures and mailers	
2. Press releases/media alerts	X
3. Telephone hotline	
4. Planned lane closure website	
5. Project website	X
6. Public meetings/hearings, workshops	X
7. Community task forces	
8. Coordination with media/schools/business/emergency services	X
9. Email alerts	X
<b>Motorist Information Strategies</b>	
10. Changeable message signs	X

Public Information and Outreach (PI&O)	Check if recommended for use
11. Temporary motorist information signs	
12. Dynamic speed message sign	
13. Project information hotline	

## 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: **Johnson BF0248(4)** - There will be a 42 day closure period with no night work. Weekend work is allowed. The available off site detour will be via VT Route 100 and VT Route 15 between Johnson and Hyde Park. Access to the two properties located between Bridge #1 and Bridge #2 needs to be maintained from one direction throughout construction.
  - Control Strategies: **Johnson BF0248(7)** – There will be a 28 day closure period with both night work (8 pm-10 pm) and weekend work allowed. The available off site detour will be via VT Route 100 and VT Route 15 between Johnson and Hyde Park.
  - Traffic Control Devices: Traffic Barriers and “Road Closed” signs will be deployed during the closure to protect cars from driving into the construction zone.
  - Innovative or Accelerated Construction Techniques: Prefabricates superstructure and deck elements will be used 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: Wendy Pelletier, PE 802-595-4404 (Cell)

Resident Engineer: TBD

Regional Engineer: Chris Williams

Public Information Officer: Francine Perkins jfp1999@myfairpoint.net, Jill Barrett 860-539-2038 (Fitzgerald and Halliday)

Fire: Johnson Volunteer Fire Department, Emergency: 911

Emergency Medical Services: Ambulance Service: NEMS, Emergency: 911, Non-emergency: 635-8900

VT State Police (Regional Barracks): 802-878-7111 Williston Barracks

Lamoille County Sheriff's Department, Emergency: 911, Non-emergency: 888-3502

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: Amy Gamble, PE\Traffic Operations Engineer

Address: 1 National Life Drive, Montpelier, VT 05633-5001

Phone: 802-828-1055

Email: [amy.gamble@state.vt.us](mailto:amy.gamble@state.vt.us)

**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 Guideline.

Regional Construction Engineer			Traffic Operations Engineer			Project Manager		
<b>All approvals must be obtained prior to the start of work</b>								
Signature:			Signature:			Signature: <i>Wendy Pelletier</i>		
Name:			Name:			Name: Wendy Pelletier		
Date:			Date:			Date:		
Revision#	Initials	Date	Revision#	Initials	Date	Revision #	Initials	Date
1			1			1		
2			2			2		