BAY ROAD BRIDGE REPLACEMENT
SHELBURNE, VERMONT

SCOPING PHASE REPORT
BAY ROAD (TH 1)
BRIDGE NO. 7 OVER LAPLATTE RIVER

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INTRODUCTION

This Scoping Report has been prepared for the Chittenden County Metropolitan Planning Organization (CCMPO) by McFarland-Johnson (MJ). MJ was hired by the CCMPO to provide Phase A (Scoping) design services for the Bay Road bridge project within the town of Shelburne, Vermont.

This project deals with a study of alternatives for correcting existing deficiencies on the Bridge No. 7 over the LaPlatte River in Shelburne. The bridge carries a town-maintained highway and is owned by the town.

The Scoping Phase of this project included a site visit, a Local Concerns Meeting, and two Alternatives Presentation Meetings with the Shelburne Selectboard. The object of this report is to establish the scope of the project and provide an overview of the project’s key issues.
Purpose and Need Statement  
Shelburne Bridge #7  
Bay Road over the LaPlatte River  
May 18, 2010

Purpose:

The purpose of the project is to improve safety for vehicular traffic, bicycles, and pedestrians, as well as for boats passing under the bridge on Bay Road in the Town of Shelburne at the location where Bay Road crosses over the LaPlatte River. This is a unique corridor used by traffic, pedestrians, bicyclists, and below the bridge, small watercraft. The corridor is also a unique ecological location with historic sightings of many threatened and endangered species, critical wetlands, and archeological resources. A successful project will balance the needs of all the elements within the corridor.

Need:

Bay Road crosses over the LaPlatte River on a bridge originally constructed in the 1940s. The current condition of the bridge and the bridge approaches, when combined with the increased use of the area immediately adjacent to the bridge location, create the need for the project. The project needs include the following:

- The deteriorated condition of the bridge itself warrants attention. Girders are showing damage from runoff laden with road salt. The bridge rails are in poor condition and do not meet current standards. Approach rails are likewise in poor condition and do not meet current standards. The most recent Sufficiency Rating for the bridge is 41.6 (out of 100).

- The width of the bridge (23 feet 10 inches, curb to curb) does not meet current standards for vehicular use and does not allow for any sidewalks or shoulders for bicycles or pedestrians. Bicycle and pedestrian use of the road in this location is substantial. The adjacent boat launch area, nature preserve, public park and marina generate much of this traffic. Fishermen also use the bridge (again, insufficient width makes this a safety concern).

- A low point in the roadway east of the bridge results in restricted sight distance for vehicles travelling in both directions.

- Below the bridge there is a restricted vertical clearance for boats. It is desirable for the clearance to be increased slightly to balance the allowable clearance with the small craft able to navigate the shallow channel.
PHOTOGRAPHS

Figure 1 – Overall View of Bridge No. 7

Figure 2 – Bay Road Approach
Figure 3 – Fascia/Exterior Beam View

Figure 4 – Abutment & Wingwall Deterioration
Figure 5 – Steel Beam Corrosion
BACKGROUND INFORMATION

General

The project area is located on Bay Road (Town Highway 1), approximately 1.1 miles west of the junction with US Route 7. Bay Road is a Class II town highway and is classified as a major collector. At this location, Bay Road passes over the LaPlatte River on Bridge No. 7. The LaPlatte River empties into Shelburne Bay shortly after passing under the bridge. The existing bridge was constructed in 1948. Bridge No. 7 is a two-lane, single span bridge measuring 89 feet in length. The bridge is a rolled steel beam bridge, supporting a concrete bridge deck having an approximate width of 24 feet between curbs, divided into two 10 foot 6 inch travel lanes and two 1 foot 6 inch shoulders. The roadway approaches measure 24 feet in width. A large volume of pedestrians and bicyclists are present along this section of Bay Road. Fisherman often fish from the bridge. A boat ramp and parking area are located adjacent to northwest corner of the bridge. Boat traffic routinely passes under the bridge during the spring and summer months, traveling to and from the Shelburne Bay Boat Club’s marina located nearby the bridge. Clearance between the bottom of the bridge and the water surface measures approximately six feet under normal flow conditions. During public meetings, some members of the public expressed concern about the ability to safely pass under the bridge during higher water elevations, typically observed during spring months.

The current bridge width does not meet state standards for pedestrian or bicycle traffic, causing conflicts between vehicular traffic and pedestrians, fishermen, and bicyclists. The minimum width required by Vermont State Standards is 28 feet to accommodate two 10 foot travel lanes and two 4 foot shoulders. The average annual daily traffic (AADT) in the vicinity of the project area was 2,900 vehicles per day as of 2007. The AADT for trucks in the project vicinity was approximately three percent. Bay Road is posted with a 35 mile per hour (MPH) speed limit. A railroad overpass located east of the project on Bay Road has a restricted vertical clearance which significantly restricts truck traffic over the bridge. Should corrective action be taken to address the vertical clearance issues at the overpass, the truck traffic could affect the capacity of the existing bridge.

Structural Condition

Bridge No. 7 is inspected on a two-year frequency interval by the Vermont Agency of Transportation (VTrans). The latest inspection of the bridge was performed in 2008. A copy of the report is included in Appendix B. VTrans supplies the Federal Highway Administration (FHWA) with the inspection findings. From those findings, FHWA calculates a “sufficiency rating” for the bridge. Known as the Federal Sufficiency Rating (FSR), it is a measure of a bridge’s sufficiency to remain in service and its eligibility for repair or replacement funding. The FSR is not an indication of the bridge’s ability to carry traffic loads or a prediction of collapse. The FSR is calculated from a formula that considers factors such as the condition of the bridge components, the average daily traffic, and the alignment of the approach roadway. The result of the formula is a percentage, where 100 percent represents an entirely sufficient bridge and zero percent represents and entirely insufficient bridge. To qualify for federal replacement funds, a bridge must have an FSR of 50 percent or less. To qualify for federal rehabilitation funding, a bridge must have an FSR of 80 percent or less. Results of the 2008 inspection indicate that Bridge No. 7 has an FSR of 41.6, which would make it eligible for federal replacement funding.
In addition to the sufficiency rating, bridge safety inspection information is used to determine if a bridge should be classified as “structurally deficient” or “functionally obsolete.” A bridge is considered “structurally deficient” if primary load-handling components are found to be in “poor” or worse condition due to deterioration and/or damage. A load limit may be imposed on the bridge to prohibit heavier vehicles from using the structure while it remains in service. Items taken into consideration when determining if Bridge No. 7 is “structurally deficient” would include the “ongoing progressive corrosion of the steel beams” (See Figure 3 on page 5) and the “deterioration of the corner end areas of both abutment stemwalls,” (See Figure 4 on page 5) as noted in the 2008 inspection report. A bridge is considered “functionally obsolete” if the bridge geometrics (lane and shoulder width, bridge railing, and guardrail) do not meet current design and safety standards. The bridge may be retrofitted with devices that meet current design and safety standards or may have warning signage posted in advance of the crossing. A bridge given these classifications does not imply it is an unsafe bridge. If a bridge meets the criteria to be classified as both “structurally deficient” and “functionally obsolete,” the “structurally deficient” classification will be applied. Results of the 2008 inspection indicate that Bridge No. 7 is “structurally deficient” because of the advanced deterioration of the abutments and wingwalls.

During an inspection, primary components of the bridge are examined for their condition and given a numeric rating. The numeric rating ranges from zero to nine, where a rating of zero indicates a component in failed condition and a rating of nine indicates a component in excellent condition. During the latest inspection, the abutments were assigned a condition rating of five, indicating a “fair” condition. The inspection report noted continuing progressive corrosion of the steel beams (See Figure 5 on page 6.) The deck was assigned a condition rating of six, indicating a “satisfactory” condition. The rolled steel beams were assigned a condition rating of five, indicating a “fair” condition. Nonstructural portions of the bridge, such as the bridge railing and approach guardrail are given a condition appraisal rating. Similar to the structural condition rating, the appraisal rating is a numeric rating from zero to nine. The current railing system was given a zero because it does not meet current design standards. (See Figure 2 on page 4.) The overall condition of the bridge was reported to be “fair” due to the ongoing progressive corrosion of the steel beams and the deterioration of the corner end areas of both abutment stemwalls.

**Horizontal Alignment**

The existing horizontal alignment of the roadway includes two curves within the project limits, both of which satisfy AASHTO and Vermont Highway Standards for the posted speed of 35 mph.

**Vertical Alignment**

The existing vertical alignment is substandard due to sag curves on either end of the bridge and a flat gradient across the bridge. A sag curve is created when a negative profile grade is followed by a positive profile grade creating a low point when a vertical curve is used to smooth the vertical transition. The sag curves create sight distance problems for vehicles approaching from either direction.
Clear Zone

A horizontal offset is the distance from the edge of the travel lane to a hazard. Examples of common hazards include trees, telephone poles or steep slopes that could potentially cause a vehicle to overturn if it left the road surface. For this project, the VTrans Clear Zone Policy of 1996 recommends a horizontal offset of 12 feet. This is based upon a speed limit of less than 45 mph and an average daily traffic of 2,900 cars.

Sight Distance

Sight distances vary along the project. Sag curves on either side of the bridge create sight distance problems when approaching from either direction.

Crash Data

The Vermont State Police has no record of motor vehicle crashes in the vicinity of the bridge.

Traffic

Average Annual Daily Traffic (AADT) in 2007 was 2,900 vehicles per day. Truck traffic in 2009 was approximately three percent of the AADT.

Right-of-Way

Without additional research, a consistent three-rod right-of-way (49 feet – 6 inches) is assumed for the length of the roadway within the project limits.

Intermodal/Multi-Modal

The Town of Shelburne has expressed interest in providing wider shoulders for bicyclists and a sidewalk over the bridge to protect pedestrians and provide a safe haven for fisherman using the bridge.

ENVIRONMENTAL RESOURCES

Agriculture

The United States Department of Agriculture’s Natural Resource Conservation Service identifies “prime farmland”, “farmland of statewide importance”, and “locally important farmland” on the published soil surveys. Within the project limits, Bay Road passes through the following soil series, as shown on the Soil Survey of Chittenden County, Vermont and as depicted on Figure C-1 in Appendix C:

- Adams and Windsor loamy sand, 0-5% slopes (statewide importance)
- Covington silty clay (statewide importance)
- Vergennes clay, 2-6% slopes (statewide importance)
Archeology

Hartgen Archeological Associates, Inc. (HAA) was retained to conduct a preliminary resource identification for the project study area in 1999. In their report, HAA identified several areas of archeological sensitivity for prehistoric resources and one area of sensitivity for historic resources (Figure C-2 in Appendix C). If an alternative affecting archeologically sensitive land is selected, additional archeological investigation (Phase 1B) will likely be needed to determine whether resources are present. The full report is included in Appendix C.

Recent communication from the Vermont Division for Historic Preservation indicates that an additional prehistoric archaeology site was discovered east of the project following the writing of the 1999 report, and said that both the southeast and southwest quadrants of the bridge are highly sensitive for prehistoric resources.

Historical Resources

Elizabeth Durfee Hengen, Historic Preservation Consultant, was retained to review the project area to identify any known or potential historic resources. No historic resources on or eligible for the State or National Register were found. The bridge dates from the 1940’s but was not deemed eligible, therefore none of the alternatives would affect eligible historic resources.

Ms. Hengen’s report is included in Appendix C.

Hazardous Materials

There are no mapped hazardous waste generators or hazardous waste sites within the project area.

Floodplains

Floodplains are mapped on Federal Emergency Management Agency (FEMA) Community Panel Number 500193 0003 B, dated December 16, 1980. The bridge falls within the mapped 100 year floodplain (Figure C-3 in Appendix C).

Fish and Wildlife

The project corridor includes a public park with deciduous upland woods, conservation land, and the fringes of large wetlands. Several rare species are also present, as described below. All of the undisturbed land within the corridor is valuable wildlife habitat. Deer wintering habitat is identified west and south of the corridor (Figure C-4 in Appendix C).

The LaPlatte River is a warm water fishery, and according to ANR fisheries, people enjoy fishing off the bridge for brown bullhead in the spring.
Rare, Threatened, and Endangered Species

The Vermont Nongame and Natural Heritage Program (NNHP) reports 24 species which are known to occur in the vicinity of the project that are rare or of concern, and three rare natural communities in the vicinity of the project (see email dated August 5, 2009 in Appendix C, and Figure C-5). There are no known federally listed species in the vicinity of the project (see letter dated January 4, 2010 in Appendix C).

Public Lands – Sections 4(f) and 6(f)

Section 4(f) of the U.S. Department of Transportation Act and Section 6(f) of the Land Water Conservation Fund Act state that lands cannot be taken from a publicly owned park, recreation area, wildlife or waterfowl refuge, or historic site unless there is no feasible or prudent alternative to the use of land and the action includes all possible planning to minimize harm to the property resulting from such use.

A public park and a private conservation property are located within the limits of the project area (Figure C-6 in Appendix C). Shelburne Bay Park is situated north of Bay Road on the west bank of the LaPlatte River. The property includes a Vermont Fish and Game Department boating access area. The park has received Land and Water Conservation Fund (LWCF) funding in the past, and is therefore protected under Section 6(f). The private conservation land is the LaPlatte River Marsh Natural Area owned by The Nature Conservancy and located south of Bay Road, west of the river.

As a public recreational facility, the boating access area is also likely subject to Section 4(f), as is the LaPlatte River Marsh Natural Area. It is likely that any involvement with these lands would constitute, at most, a de minimis use of Section 4(f) lands.

Noise

The project is not expected to affect the noise environment.

Surface Waters

The Bay Road Bridge crosses the LaPlatte River, at the mouth of Lake Champlain. The La Platte has a watershed measuring 53 square miles, extending to Hinesburg and St George to the east. The ordinary high water elevation of Lake Champlain extends upstream past the bridge, so both the upstream and downstream toes of slope of the causeway on the eastern approach are technically in Lake Champlain. Under the Army Corps of Engineers’ Vermont Programmatic General Permit, over 5,000 square feet of fill in Lake Champlain requires an Individual Permit from the Corps, and would likely require mitigation for unavoidable impacts. In addition, it has been determined that the waterway is a navigable waterway subject to Coast Guard jurisdiction, and the bridge design is subject to Coast Guard review. A Shoreland Encroachment Permit, through the Vermont Agency of Natural Resources (ANR) will be required for any encroachment into Lake Champlain associated with the project.
Wetlands

The Vermont Significant Wetlands Inventory map (Figure C-7 in Appendix C) shows Vermont Class 2 wetlands on both sides of the Bay Road causeway at the easterly approach to the bridge. Wetlands were delineated in the field in 2000 and confirmed in the field in 2009. Delineated wetlands are depicted on Figure C-8. In the vicinity of the bridge and causeway, jurisdictional wetlands include portions of the lake (aquatic bed wetlands) and palustrine emergent wetlands on the southwest side of the bridge. They are part of a much larger wetland complex that extends south along the LaPlatte River. The wetlands are important for several wetland functions, including fish and wildlife habitat, recreation, shoreline stabilization, and flood flow alteration. The wetlands are described in more detail in a McFarland-Johnson, Inc. memo dated 18 April 2000 in Appendix C.

All proposed impacts to wetlands are below the ordinary high water line of Lake Champlain, and would be permitted through the Army Corps of Engineers and VT DEC’s Shoreland Encroachment permitting process. There could be impacts to the 50 foot regulatory buffer of the Class 2 wetland on the southwest quadrant of the bridge, which may require a Conditional Use Determination from VT DEC.

**ALTERNATIVES**

**The Do Nothing Alternative**

- Cost Estimate: $0
- New Bridge and Approach Rail: NO
- Improve Approach Roadway Profile: NO
- Address Steel Beam Corrosion: NO
- Address Abutment Deterioration: NO
- Widen Bridge for Bicycle Traffic: NO
- Construct Sidewalk for Pedestrian Traffic: NO
- Increase Clearance Under Bridge: NO
- Impact to Adjacent Properties: NO

This alternative would leave the existing roadway and bridge as it is today, in its current condition. It is used as a benchmark for comparison to the other alternatives. Although there are no computed costs, it should be noted that this alternative would continue to generate maintenance costs and it does not address safety issues. This alternative does not satisfy the Purpose and Need Statement.

**Alternative 1 – Maintenance Improvements**

- Cost Estimate: $186,000
- New Bridge and Approach Rail: YES
- Improve Approach Roadway Profile: NO
- Address Steel Beam Corrosion: NO
• Address Abutment Deterioration: NO
• Widen Bridge for Bicycle Traffic: NO
• Construct Sidewalk for Pedestrian Traffic: NO
• Increase Clearance Under Bridge: NO
• Impact to Adjacent Properties: NO

This alternative addresses the necessary repairs required to provide a minimum level of safety improvements. The current bridge rail and approach rail would be replaced with new rail that meets current safety standards (See Figure 6 on page 15). In order to install the new bridge rail a portion of the deck would be temporarily removed in order to establish rebar reinforcement connections between the existing deck and the new bridge rail. The new rail would be a minimum height of 34 inches off the deck, with the material (concrete or steel) and final configuration to be determined during final design of the project. The approach rail would likely be steel rail with a transition to the chosen bridge rail. Traffic control during construction would include alternating one-way traffic during daytime hours of operation.

Benefits of this alternative include upgrading the existing bridge rail and approach rail. This alternative would not address any profile improvements, the continued corrosion of the steel beams and the deterioration of the abutment concrete. The bridge width would remain the same and no pedestrian or bicycle accommodations would be provided. The bridge would continue to not meet state and federal standards for bicycle and pedestrian traffic. Clearance under the bridge would not be increased by this alternative. This alternative is only a temporary repair.

**Resources Affected by Alternative 1**

This alternative is not anticipated to affect any resources identified in the vicinity of the bridge.

**Alternative 2 – Maintenance and Approach Improvements**

• Cost Estimate: $513,000
• New Bridge and Approach Rail: YES
• Improve Approach Roadway Profile: MINOR
• Address Steel Beam Corrosion: NO
• Address Abutment Deterioration: NO
• Widen Bridge for Bicycle Traffic: NO
• Construct Sidewalk for Pedestrian Traffic: NO
• Increase Clearance Under Bridge: NO
• Impact to Adjacent Properties: NO
Figure 6 - Schematic Cross Sections for Bridge Alternatives

**Existing Bridge** (Do nothing alternative)

**Alternative 1** - Maintenance Improvements

**Alternative 2** - Maintenance and Approach Improvements

**Alternative 3** - Rehabilitate existing superstructure (with deck replacement)

**Alternative 4** - Superstructure replacement (no profile change at bridge)

**Alternative 5** - Superstructure replacement (raise profile at bridge)
This alternative addresses the necessary repairs required to provide a minimum level of safety improvements. Similar to Alternative 1, the current bridge rail and approach rail would be replaced with new rail that meets current safety standards (See Figure 6).

In addition to Alternative 1, minor improvements would be made to the approach roadway profile to improve sight distance along the bridge approaches. Traffic control during construction would include alternating one-way traffic during daytime hours of operation. The approach roadway has two sag curves on either end of the bridge that provide areas of limited sight distance. The approach profile improvements would eliminate these blind spots on either end of the bridge.

Benefits of this alternative include upgrading the existing bridge and approach rail and improvements to the approach roadway profile. This alternative is only a temporary repair and does not address deficiencies associated with the structure. Corrective measures to address the continued corrosion of the steel beams and the deterioration of the abutment concrete would not be addressed by this alternative. The current bridge width would not be increased nor would a sidewalk be added and the bridge would continue to not meet state and federal standards for bicycle and pedestrian traffic. Clearance under the bridge would not be increased by this alternative. This alternative would not meet state or federal standards for bicycle and pedestrian traffic.

**Resources Affected by Alternative 2**

This alternative will affect a small area of wetland (below Ordinary High Water) and floodplain on the south side of the bridge. No impacts to flood storage from the bridge rehabilitation are anticipated.

It is not anticipated that any of the alternatives would have a significant impact on wildlife habitat.

It is unknown whether Alternative 2 would adversely affect rare species or habitat, but restricting work to the fringes of the road without any change in alignment would avoid or minimize impacts. The Nongame and Natural Heritage Program (NNHP) recommended, at a minimum, a rare plant and animal survey in the vicinity of the project and suggested that a rare mussel survey may also be required. Continued coordination with NNHP will be necessary as the project proceeds.

Section 4(f) and 6(f) impacts are expected to be minimal, all work would be within the existing right of way, but could extend slightly beyond the existing toe of slope. This may require modifications to the end of the driveway to the public boat ramp to tie in at the proper slope, but should not adversely affect the properties in any way.

Impacts to Lake Champlain have been minimized to the extent possible for all alternatives, and will be well below the 5,000 square foot threshold.

For each alternative, coordination will be required with the Coast Guard. This will include the submission of plans and potentially the acquisition of a permit, especially for the alternatives where the beams will be reset or replaced. It is likely that the Coast Guard will need to hold a public meeting to take testimony on the effects of the project on navigable waters.
Alternative 3 – Rehabilitate Existing Superstructure with Deck Replacement

- Cost Estimate: $895,000
- New Bridge and Approach Rail: YES
- Improve Approach Roadway Profile: MINOR
- Address Steel Beam Corrosion: YES
- Address Abutment Deterioration: YES
- Widen Bridge for Bicycle Traffic: YES
- Construct Sidewalk for Pedestrian Traffic: YES
- Increase Clearance Under Bridge: NO
- Impact to Adjacent Properties: NO

This alternative involves rehabilitating the current bridge to improve safety and bridge life (See Figure 6). The current bridge rail and approach rail would be replaced with new rail that meets current safety standards. The bridge deck would be removed and replaced with a wider deck, providing two foot shoulders on either side of the road. A sidewalk would be cantilevered off the bridge on the side opposite of Lake Champlain. Minor improvements would be made to the approach roadway profile to improve site distance and reduce the potential for flooding of the bridge approaches. Traffic control during construction would include full closure of the bridge. As part of the traffic control, traffic along the LaPlatte River between Lake Champlain and the upstream marina will need to be coordinated.

This alternative would include minor patching of the existing abutments, sand blasting and repainting of the existing beams and replacement of the bridge seats. The new deck would be constructed upon the existing steel beams. This would change the existing clearance below the bridge.

Benefits of this alternative include upgrading the existing bridge and approach rail and improvements to the approach roadway profile. Corrective measures to address the continued corrosion of the steel beams and the deterioration of the abutment concrete would be addressed by this alternative. The current bridge width would be increased and a sidewalk would be added. This would meet standards for pedestrian access, and would improve bicycle accommodations, but it will still not meet state and federal standards for bicycle traffic. Clearance under the bridge would not be increased by this alternative.

Resources Affected by Alternative 3

This alternative will affect a small area of wetland (below Ordinary High Water) and floodplain on the south side of the bridge. No impacts to flood storage from the bridge rehabilitation are anticipated.

It is not anticipated that any of the alternatives would have a significant impact on wildlife habitat.

It is unknown whether Alternative 3 would adversely affect rare species or habitat, but restricting work to the fringes of the road without any change in alignment would avoid or minimize impacts. The Nongame and Natural Heritage Program (NNHP) recommended, at a minimum, a rare plant and animal survey in the vicinity of the project and suggested that a rare mussel survey may also be required. Continued coordination with NNHP will be necessary as the project proceeds.
Section 4(f) and 6(f) impacts are expected to be minimal, all work would be within the existing right of way, but could extend slightly beyond the existing toe of slope. This may require modifications to the end of the driveway to the public boat ramp to tie in at the proper slope, but should not adversely affect the properties in any way.

Impacts to Lake Champlain have been minimized to the extent possible for all alternatives, and will be well below the 5,000 square foot threshold.

For each alternative, coordination will be required with the Coast Guard. This will include the submission of plans and potentially the acquisition of a permit, especially for the alternatives where the beams will be reset or replaced. It is likely that the Coast Guard will need to hold a public meeting to take testimony on the effects of the project on navigable waters.

**Alternative 4 – Superstructure Replacement**

- Cost Estimate: $1,138,000
- New Bridge and Approach Rail: YES
- Improve Approach Roadway Profile: MINOR
- Address Steel Beam Corrosion: YES
- Address Abutment Deterioration: YES
- Widen Bridge for Bicycle Traffic: YES
- Construct Sidewalk for Pedestrian Traffic: YES
- Increase Clearance Under Bridge: YES
- Impact to Adjacent Properties: NO

This alternative involves replacing the bridge superstructure (concrete deck and steel beams) (See Figure 6). The current bridge rail and approach rail would be replaced with new rail that meets current safety standards. The bridge deck would be removed and replaced with a wider deck, providing four foot shoulders on either side of the road. A sidewalk would be cantilevered off the bridge on the side opposite of Lake Champlain. Minor improvements would be made to the approach roadway profile to improve site distance and reduce the potential for flooding of the bridge approaches. Traffic control during construction would include full closure of the bridge.

This alternative would address all safety concerns. Clearance under the bridge would be increased one foot by this alternative. The profile at the bridge would not be altered, but by optimizing the depth of the new beams would likely result in a reduction of the beam height by about 12 inches.

**Resources Affected by Alternative 4**

This alternative will affect a small area of wetland (below Ordinary High Water) and floodplain on the south side of the bridge. No impacts to flood storage from the bridge rehabilitation are anticipated.

It is not anticipated that any of the alternatives would have a significant impact on wildlife habitat.
It is unknown whether Alternative 4 would adversely affect rare species or habitat, but restricting work to the fringes of the road without any change in alignment would avoid or minimize impacts. The Nongame and Natural Heritage Program (NNHP) recommended, at a minimum, a rare plant and animal survey in the vicinity of the project and suggested that a rare mussel survey may also be required. Continued coordination with NNHP will be necessary as the project proceeds.

Section 4(f) and 6(f) impacts are expected to be minimal, all work would be within the existing right of way, but could extend slightly beyond the existing toe of slope. This may require modifications to the end of the driveway to the public boat ramp to tie in at the proper slope, but should not adversely affect the properties in any way.

Impacts to Lake Champlain have been minimized to the extent possible for all alternatives, and will be well below the 5,000 square foot threshold.

For each alternative, coordination will be required with the Coast Guard. This will include the submission of plans and potentially the acquisition of a permit, especially for the alternatives where the beams will be reset or replaced. It is likely that the Coast Guard will need to hold a public meeting to take testimony on the effects of the project on navigable waters.

**Alternative 5 – Superstructure Replacement and Raise Profile at Bridge**

- Cost Estimate: $1,414,000
- New Bridge and Approach Rail: YES
- Improve Approach Roadway Profile: YES
- Address Steel Beam Corrosion: YES
- Address Abutment Deterioration: YES
- Widen Bridge for Bicycle Traffic: YES
- Construct Sidewalk for Pedestrian Traffic: YES
- Increase Clearance Under Bridge: YES
- Impact to Adjacent Properties: NO

This alternative involves replacing the bridge superstructure (concrete deck and steel beams) to improve safety and extend the bridge life (See Figure 6). The current bridge rail and approach rail would be replaced with new rail that meets current safety standards. The bridge deck would be removed and replaced with a wider deck, providing four foot shoulders on each side of the road. A sidewalk would be cantilevered off the bridge on the side opposite of Lake Champlain. Significant improvements would be made to the approach roadway profile, by raising it two feet, to improve site distance and reduce potential for flooding of the bridge approaches. Traffic control during construction would include full closure of the bridge.

Benefits of this alternative include upgrading the existing bridge and approach rail and improvements to the approach roadway profile. New steel beams would replace the existing beams experiencing continued corrosion. The abutments would be patched and widened to receive the new beam configuration and widened deck. Reuse of the existing abutments appears to be practical and would be the best way to minimize impacts to the adjacent natural resources. The current bridge width would be...
increased and a sidewalk would be added and the bridge would meet state and federal standards for bicycle and pedestrian traffic. Clearance under the bridge would be increased three feet by this alternative. The increase in clearance would be created by raising the profile approximately two feet and by optimizing the height of the required beams. Optimization would likely provide a usable beam that would be about one foot shallower than the existing beams.

**Resources Affected by Alternative 5**

This alternative may affect the archeologically sensitive areas on the south side of the bridge, as identified by Hartgen Archeological Associates, and an area of wetland (below Ordinary High Water) on the south side of the bridge.

Although Alternative 5 would affect a very small area of agricultural soils along the edge of the roadway, there are no active agricultural activities in the vicinity of the project.

Alternative 5 would affect a slightly larger area of floodplain. No impacts to flood storage from the bridge rehabilitation are anticipated.

It is not anticipated that any of the alternatives would have a significant impact on wildlife habitat.

It is unknown whether Alternatives 5 would adversely affect rare species or habitat, but restricting work to the fringes of the road without any change in alignment would avoid or minimize impacts. The Nongame and Natural Heritage Program (NNHP) recommended, at a minimum, a rare plant and animal survey in the vicinity of the project and suggested that a rare mussel survey may also be required. Continued coordination with NNHP will be necessary as the project proceeds.

Section 4(f) and 6(f) impacts are expected to be minimal, all work would be within the existing right of way, but could extend slightly beyond the existing toe of slope. This may require modifications to the end of the driveway to the public boat ramp to tie in at the proper slope, but should not adversely affect the properties in any way.

Impacts to Lake Champlain have been minimized to the extent possible for all alternatives, and will be well below the 5,000 square foot threshold. Impacts for Alternative 5, including temporary and permanent impacts, are anticipated to be under 1,000 square feet, most of which would be temporary impact for construction.

For each alternative, coordination will be required with the Coast Guard. This will include the submission of plans and potentially the acquisition of a permit, especially for the alternatives where the beams will be reset or replaced. It is likely that the Coast Guard will need to hold a public meeting to take testimony on the effects of the project on navigable waters.
MEETINGS

The scoping process of this bridge included a site visit, a Local Concerns Meeting that included the town’s Selectboard, and an Alternatives Presentation Meetings that included the Selectboard.

Site Visit

McFarland Johnson has made several visits to the site and has extensive knowledge of this project from previous work conducted on a separate project.

A site visit was conducted on August 18, 1999. Attendees included MJ, the Shelburne Town Manager and the Shelburne Road Agent. Items noted in the field included: The existing guard, approach and bridge rail is in poor condition and should be replaced. The road has two 10.5-foot lanes. The curb to curb distance on the bridge is 24 feet. The LaPlatte River has a small craft docking area. Small boats pass under the bridge to reach Lake Champlain. Vertical sight distance issues were noted on the approaches to the bridge. Wetlands adjacent to the bridge make a temporary bridge impractical. A sign for sport fishing restoration may signify spawning waters. It was mentioned that people commonly fish from the bridge. The Speed Limit is posted at 35 mph. The approaches to the bridge have a tendency to flood. The approaches have been filled in the past, but the grades still need to be raised to fully solve the problem.

Local Concerns Meeting

A Local Concerns Meeting was held July 28, 2009 at the Shelburne Town Offices. Attendees included the Shelburne Selectboard, the Shelburne Town Manager, the Shelburne Financial Officer, the Shelburne Public Works Director, the Shelburne Town Planner, the CCMPO, McFarland Johnson, and members of the public. Concerns included shoulders for pedestrian and bicycle travel, sidewalk over the bridge, clearance under the bridge, and connectivity to existing paths. (See appendix D for meeting minutes).

Informational Resource Meeting

An informational meeting was held with the environmental resource agencies on January 22, 2010 at the Corps of Engineers office in Essex Junction, VT. Critical elements of the discussion included overall impacts to the resources, Corps of Engineers or Coast Guard jurisdiction, and mitigation for wetland impacts. (See Appendix C for meeting minutes). It has been subsequently determined that the Coast Guard will have jurisdiction.

Alternatives Presentation Meeting

An Alternatives Presentation Meeting was held June 22, 2010 at the Shelburne Town Offices. Attendees included the Shelburne Selectboard, the Shelburne Town Manager, the Shelburne Public Works Director, the CCMPO, McFarland Johnson, and members of the public. After careful discussion of the Alternatives, the Selectboard voted to recommend Alternative 5 (See appendix D for meeting minutes).
<table>
<thead>
<tr>
<th></th>
<th>Do Nothing</th>
<th>Maintenance Improvements</th>
<th>Maintenance &amp; Approach Improvements</th>
<th>Rehabilitate Existing Superstructure Deck Replacement</th>
<th>Superstructure Replacement No Profile Change at Bridge</th>
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**Engineering Impacts**

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<th>0-11-11-0</th>
<th>2-11-11-2</th>
<th>4-11-11-4</th>
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<td>Alignment Change</td>
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<td>NO</td>
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<td>Bicycle Access</td>
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<td>YES</td>
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<tr>
<td>Utilities</td>
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<td>NO IMPACT</td>
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<td>POTENTIALLY</td>
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**Local Issues**

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<th>UNCHANGED</th>
<th>UNCHANGED</th>
<th>UNCHANGED</th>
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<tr>
<td>Conform to Regional Trans Plan</td>
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<tr>
<td>Clearance Under Bridge</td>
<td>NO CHANGE</td>
<td>NO CHANGE</td>
<td>NO CHANGE</td>
<td>NO CHANGE</td>
</tr>
<tr>
<td>Satisfy Purpose &amp; Need Statement</td>
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<td>NO</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>401 Water Quality</td>
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<td>NO</td>
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<td>YES</td>
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<tr>
<td>Stream Alteration</td>
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<td>NO</td>
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<td>NO</td>
</tr>
<tr>
<td>Stormwater Discharge</td>
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<td>NO</td>
<td>NO</td>
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<tr>
<td>Lakes &amp; Ponds</td>
<td>NO</td>
<td>NO</td>
<td>POTENTIALLY</td>
<td>POTENTIALLY</td>
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<td>T&amp;E Species</td>
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<tr>
<td>SHPO</td>
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<td>NO</td>
<td>YES</td>
<td>YES</td>
</tr>
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</table>

**Permits**

| Coast Guard              | NO        | NO        | YES       | YES       |

McFarland Johnson, Inc.

December 2010
RECOMMENDATIONS

This project is within an area that is unique for its social and environmental value. Socially this bridge provides value to pedestrians, bicyclists, fishermen, boaters, and motorized vehicles. It is used as a route to school for children, a commuter route, and recreation. Environmentally the bridge is located on a causeway that includes the potential for more than a dozen threatened or endangered species, wetlands, archeological resources, floodplain/flood storage, wildlife habitat, and potential public lands impacts. All of this within a short distance from the point where the LaPlatte River enters Lake Champlain. A successful project will need to carefully balance the needs of the users with the diverse cultural and environmental resources that make this area such a special place.

The Local Concerns Meeting comments helped generate the Purpose and Need Statement. Prior to finalizing the Alternatives it became necessary to meet with resource agencies to discuss the practical alternatives and refine the environmental constraints for the project.

Investigating a request for the bridge to be raised that was discussed at the Local Concerns meeting led to a discussion about whether the Corps of Engineers or the Coast Guard would hold the jurisdiction for decisions involving the new bridge profile. After a number of discussions, it was determined that the Coast Guard would retain jurisdiction over the project. The Coast Guard will need to review the Final design as it develops and would hold a public hearing to take input on the vertical clearance issue. Since the depth of the channel is generally compatible with the boats currently utilizing the channel, but would not support boats very much larger, it was felt that a significant vertical clearance increase was not very practical.

There was not geotechnical testing included in this contract, but there are signs of compressible soils within the project limits. For this reason a nominal increase in the approach embankment height is probably acceptable, but a significant change in profile could result in the need for specialized methodologies to address settlement of either the approach roadway or the bridge abutments.

With this information presented to the Selectboard and after discussion with the citizens in attendance, the Selectboard voted to recommend Alternative 5. This is the alternative that would increase the bridge elevation by two feet and reconstruct the bridge. Some of the resource impacts would be reduced by the construction of retaining walls at the four quadrants of the bridge.
COST ESTIMATES

APPENDIX A
**AlTERNATIVE #1- SAFETY IMPROVEMENTS ONLY**

**PRELIMINARY CONSTRUCTION ESTIMATE**

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>UNIT</th>
<th>QUANTITY</th>
<th>PRICE</th>
<th>AMOUNT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Common Excavation</td>
<td>CY</td>
<td>0</td>
<td>$15.00</td>
<td>$0</td>
</tr>
<tr>
<td>Embankment in Place</td>
<td>CY</td>
<td>0</td>
<td>$10.00</td>
<td>$0</td>
</tr>
<tr>
<td>Rock Excavation (5% of common)</td>
<td>CY</td>
<td>0</td>
<td>$30.00</td>
<td>$0</td>
</tr>
<tr>
<td>Sand</td>
<td>CY</td>
<td>20</td>
<td>$35.00</td>
<td>$700</td>
</tr>
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<td>Dense Graded Crushed Stone</td>
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<td>20</td>
<td>$20.00</td>
<td>$400</td>
</tr>
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<td>Hot Bituminous Pavement</td>
<td>TON</td>
<td>50</td>
<td>$100.00</td>
<td>$5,000</td>
</tr>
<tr>
<td>Guard Rail</td>
<td>LF</td>
<td>730</td>
<td>$25.00</td>
<td>$18,250</td>
</tr>
<tr>
<td>Bridge Rail</td>
<td>UNIT</td>
<td>4</td>
<td>$3,000.00</td>
<td>$12,000</td>
</tr>
<tr>
<td>End Treatments</td>
<td>UNIT</td>
<td>4</td>
<td>$3,000.00</td>
<td>$12,000</td>
</tr>
</tbody>
</table>

**SUBTOTAL #1**

Misc. Items 15.00% $7,253

**SUBTOTAL #2**

Drainage 15.00% $8,340

**SUBTOTAL #3**

Water Pollution Control 2.00% $1,279
Mobilization 7.50% $4,796
Right of Way (R.O.W.) allowance $0
Construction Engineering 12.50% $7,993
Traffic Control 10.00% $6,394
Contingency 10.00% $6,394

**TOTAL ROADWAY**

$90,799

**Bridge**

$73,000

**SUBTOTAL A**

Mobilization 7.50% $5,475
Construction Engineering 12.50% $9,125
Contingency 10.00% $7,300

**TOTAL STRUCTURES**

$94,900

**PROJECT TOTAL**

$185,699

**ROUNDED PROJECT TOTAL**

$186,000
McFarland-Johnson, Inc.

Shelburne Bridges- Bay Road over the LaPlatte River
Calculated by: DMB  Updated by: MAH

**ALTERNATIVE #2- SAFETY IMPROVEMENTS ONLY, W/ PROFILE REVISIONS**
PRELIMINARY CONSTRUCTION ESTIMATE

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>UNIT</th>
<th>QUANTITY</th>
<th>PRICE</th>
<th>AMOUNT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Common Excavation</td>
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<td>1050</td>
<td>$15.00</td>
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<td>CY</td>
<td>550</td>
<td>$10.00</td>
<td>$5,500</td>
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<tr>
<td>Rock Excavation (5% of common)</td>
<td>CY</td>
<td>50</td>
<td>$30.00</td>
<td>$1,500</td>
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<tr>
<td>Sand</td>
<td>CY</td>
<td>1233</td>
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<td>$43,155</td>
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<td>CY</td>
<td>1633</td>
<td>$20.00</td>
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<tr>
<td>Hot Bituminous Pavement</td>
<td>TON</td>
<td>530</td>
<td>$100.00</td>
<td>$53,000</td>
</tr>
<tr>
<td>Guard Rail</td>
<td>LF</td>
<td>730</td>
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<td>$18,250</td>
</tr>
<tr>
<td>Bridge Rail</td>
<td>UNIT</td>
<td>4</td>
<td>$3,000.00</td>
<td>$12,000</td>
</tr>
<tr>
<td>End Treatments</td>
<td>UNIT</td>
<td>4</td>
<td>$3,000.00</td>
<td>$12,000</td>
</tr>
</tbody>
</table>

**SUBTOTAL #1**  
Misc. Items 15.00%  $29,072

**SUBTOTAL #2**  
Drainage 15.00%  $33,433

**SUBTOTAL #3**  
Water Pollution Control 2.00%  $5,126
Mobilization 7.50%  $19,224
Right of Way (R.O.W.) allowance  $50,000
Construction Engineering 12.50%  $32,040
Traffic Control 10.00%  $25,632
Contingency 10.00%  $25,632

**TOTAL ROADWAY**  
$413,975

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>UNIT</th>
<th>QUANTITY</th>
<th>PRICE</th>
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<tbody>
<tr>
<td>Bridge</td>
<td></td>
<td></td>
<td></td>
<td>$76,000</td>
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</table>

**SUBTOTAL A**  
Mobilization 7.50%  $5,700
Construction Engineering 12.50%  $9,500
Contingency 10.00%  $7,600

**TOTAL STRUCTURES**  
$98,800

**PROJECT TOTAL**  
$512,775

**ROUNDED PROJECT TOTAL**  
$513,000
### ALTERNATIVE #3- REHAB DECK POUR DECK COMPOSITE WITH BEAMS

#### PRELIMINARY CONSTRUCTION ESTIMATE

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>UNIT</th>
<th>QUANTITY</th>
<th>PRICE</th>
<th>AMOUNT</th>
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<tr>
<td>Common Excavation</td>
<td>CY</td>
<td>1050</td>
<td>$15.00</td>
<td>$15,750</td>
</tr>
<tr>
<td>Embankment In Place</td>
<td>CY</td>
<td>550</td>
<td>$10.00</td>
<td>$5,500</td>
</tr>
<tr>
<td>Rock Excavation</td>
<td>CY</td>
<td>50</td>
<td>$30.00</td>
<td>$1,500</td>
</tr>
<tr>
<td>Sand</td>
<td>CY</td>
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<td>$43,155</td>
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<td>UNIT</td>
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**SUBTOTAL #1** $193,815

**Misc. Items 15.00%** $29,072

**SUBTOTAL #2** $222,887

**Drainage 15.00%** $33,433

**SUBTOTAL #3** $256,320

| Water Pollution Control                  | 2.00% | $5,126 |
| Mobilization                             | 7.50% | $19,224|
| Construction Engineering                 | 12.50%| $32,040|
| Contingency                              | 10.00%| $25,632|
| Right of Way (R.O.W.)                    | allowance| $50,000|
| Traffic Control                          | 10.00%| $25,632|

**TOTAL ROADWAY** $413,975

| Bridge                                   | $370,000 |

**SUBTOTAL A** $370,000

| Mobilization                             | 7.50% | $27,750|
| Construction Engineering                 | 12.50%| $46,250|
| Contingency                              | 10.00%| $37,000|

**TOTAL STRUCTURES** $481,000

| PROJECT TOTAL                             | $894,975 |

**ROUNDED PROJECT TOTAL** $895,000
Shelburne Bridges - Bay Road over the LaPlatte River
Calculated by: DMB  Updated by: MAH

ALTERNATIVE #4 - RECONSTRUCT BRIDGE
PRELIMINARY CONSTRUCTION ESTIMATE

<table>
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<tr>
<th>DESCRIPTION</th>
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<td>$18,250</td>
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SUBTOTAL #1 $257,200

Misc. Items 15.00% $38,580
SUBTOTAL #2 $295,780

Drainage 15.00% $44,367

SUBTOTAL #3 $340,147

Water Pollution Control 2.00% $6,803
Mobilization 7.50% $25,511
Construction Engineering 12.50% $42,518
Contingency 10.00% $34,015
Right of Way (R.O.W.) allowance $50,000
Traffic Control 10.00% $34,015

TOTAL ROADWAY $533,009

Bridge

$465,000

SUBTOTAL A $465,000

Mobilization 7.50% $34,875
Construction Engineering 12.50% $58,125
Contingency 10.00% $46,500

TOTAL STRUCTURES $604,500

PROJECT TOTAL $1,137,509

ROUNDED PROJECT TOTAL $1,138,000
**ALTERNATIVE #5- RECONSTRUCT BRIDGE**

**PRELIMINARY CONSTRUCTION ESTIMATE**

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<td>$10.00</td>
<td>$46,000</td>
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<tr>
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<td>CY</td>
<td>110</td>
<td>$30.00</td>
<td>$3,300</td>
</tr>
<tr>
<td>Sand</td>
<td>CY</td>
<td>1100</td>
<td>$35.00</td>
<td>$38,500</td>
</tr>
<tr>
<td>Dense Graded Crushed Stone</td>
<td>CY</td>
<td>2100</td>
<td>$20.00</td>
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<tr>
<td>Hot Bituminous Pavement</td>
<td>TON</td>
<td>1380</td>
<td>$100.00</td>
<td>$138,000</td>
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<tr>
<td>Guard Rail</td>
<td>LF</td>
<td>730</td>
<td>$25.00</td>
<td>$18,250</td>
</tr>
<tr>
<td>Bridge Rail</td>
<td>UNIT</td>
<td>4</td>
<td>$3,000.00</td>
<td>$12,000</td>
</tr>
<tr>
<td>End Treatments</td>
<td>UNIT</td>
<td>4</td>
<td>$3,000.00</td>
<td>$12,000</td>
</tr>
</tbody>
</table>

**SUBTOTAL #1** $379,050

**Misc. Items** 15.00% $56,858

**SUBTOTAL #2** $435,908

**Drainage** 15.00% $65,386

**SUBTOTAL #3** $501,294

**Water Pollution Control** 2.00% $10,026
**Mobilization** 7.50% $37,597
**Construction Engineering** 12.50% $62,662
**Contingency** 10.00% $50,129
**Right of Way (R.O.W.) allowance** 10.00% $50,000

**TOTAL ROADWAY** $761,837

**Bridge** $502,000

**SUBTOTAL A** $502,000

**Mobilization** 7.50% $37,650
**Construction Engineering** 12.50% $62,750
**Contingency** 10.00% $50,200

**TOTAL STRUCTURES** $652,600

**PROJECT TOTAL** $1,414,437

**ROUNDED PROJECT TOTAL** $1,414,000
### Bay Road over Laplatte River

**ALTERNATIVE 1 - MAINTENANCE ONLY**

<table>
<thead>
<tr>
<th>VTrans ITEM No.</th>
<th>DESCRIPTION</th>
<th>QUANTITY</th>
<th>UNIT</th>
<th>$/UNIT</th>
<th>COST</th>
</tr>
</thead>
<tbody>
<tr>
<td>406.25</td>
<td>BITUMINOUS CONCRETE PAVEMENT (3&quot; DEPTH)</td>
<td>40</td>
<td>TON</td>
<td>$110.00</td>
<td>$4,400</td>
</tr>
<tr>
<td>501.33</td>
<td>CONCRETE, HIGH PERFORMANCE CLASS A</td>
<td>13</td>
<td>CY</td>
<td>$1,000.00</td>
<td>$13,037</td>
</tr>
<tr>
<td>507.17</td>
<td>EPOXY COATED REINFORCING STEEL</td>
<td>978</td>
<td>LB</td>
<td>$1.50</td>
<td>$1,467</td>
</tr>
<tr>
<td>519.20</td>
<td>SHEET MEMBRANE WATERPROOFING, TORCH APPLIED</td>
<td>235</td>
<td>SY</td>
<td>$24.00</td>
<td>$5,640</td>
</tr>
<tr>
<td>525.17</td>
<td>EPOXY COATED REINFORCING STEEL</td>
<td>978</td>
<td>LB</td>
<td>$1.50</td>
<td>$1,467</td>
</tr>
<tr>
<td>529.10</td>
<td>REMOVAL OF BRIDGE PAVEMENT</td>
<td>235</td>
<td>SY</td>
<td>$18.00</td>
<td>$4,230</td>
</tr>
<tr>
<td>529.20</td>
<td>PARTIAL REMOVAL OF STRUCTURE</td>
<td>1</td>
<td>EA</td>
<td>$10,000.00</td>
<td>$10,000</td>
</tr>
<tr>
<td>621.21</td>
<td>HD STEEL BEAM GUARDRAIL, GALVANIZED (4 @ 31.25 FT)</td>
<td>150</td>
<td>LF</td>
<td>$23.00</td>
<td>$3,450</td>
</tr>
</tbody>
</table>

**SUBTOTAL BRIDGE** $65,984

**Assumptions**

- Contingency Percentage - Unknowns: 10%
- Contingency Percentage - Railroad Work: 0%

**Notes:**
1) Replace Bridge Rail and Approach Rail, Remove and Replace Bridge Pavement
2) Pavement quantity based on 2 Tons/CY (Vtrans 25.4.1)
3) Unit prices based on Vtrans 5 year average unit prices
4) 621.21 Qty increased by 1.2 per SB-R6-62

---

**Assumptions**

- New Curb Height = 1.0 ft
- New Curb Width = 2.0 ft
- New Curb Length = 88.0 ft (Per Side)
- Reinforcing Weight per CY = 75 lbs per CY
- Roadway Width = 24 ft (Curb to Curb)
## ALTERNATIVE 2 - REHAB EXIST STRUCTURE

<table>
<thead>
<tr>
<th>VTrans ITEM No.</th>
<th>DESCRIPTION</th>
<th>comments</th>
<th>QUANTITY</th>
<th>UNIT</th>
<th>$/UNIT</th>
<th>COST</th>
</tr>
</thead>
<tbody>
<tr>
<td>406.25</td>
<td>BITUMINOUS CONCRETE PAVEMENT (5” DEPTH)</td>
<td></td>
<td>65</td>
<td>TON</td>
<td>$110.00</td>
<td>$7,150</td>
</tr>
<tr>
<td>501.33</td>
<td>CONCRETE, HIGH PERFORMANCE CLASS A</td>
<td></td>
<td>13</td>
<td>CY</td>
<td>$1,000.00</td>
<td>$13,037</td>
</tr>
<tr>
<td>507.17</td>
<td>EPOXY COATED REINFORCING STEEL</td>
<td></td>
<td>978</td>
<td>LB</td>
<td>$1.50</td>
<td>$1,467</td>
</tr>
<tr>
<td>519.20</td>
<td>SHEET MEMBRANE WATERPROOFING, TORCH APPLIED</td>
<td></td>
<td>235</td>
<td>SY</td>
<td>$24.00</td>
<td>$5,640</td>
</tr>
<tr>
<td>525.10</td>
<td>REMOVAL OF EXISTING BRIDGE RAILING</td>
<td></td>
<td>176</td>
<td>LF</td>
<td>$15.00</td>
<td>$2,640</td>
</tr>
<tr>
<td>525.43</td>
<td>BRIDGE RAILING, GALVANIZED HDSB/FASCIA MOUNTED/HAND RAIL</td>
<td>176</td>
<td>LF</td>
<td>$120.00</td>
<td>$21,120</td>
<td></td>
</tr>
<tr>
<td>529.10</td>
<td>REMOVAL OF BRIDGE PAVEMENT</td>
<td></td>
<td>235</td>
<td>SY</td>
<td>$18.00</td>
<td>$4,230</td>
</tr>
<tr>
<td>529.20</td>
<td>PARTIAL REMOVAL OF STRUCTURE</td>
<td></td>
<td>1</td>
<td>EA</td>
<td>$10,000.00</td>
<td>$10,000</td>
</tr>
<tr>
<td>621.21</td>
<td>HD STEEL BEAM GUARDRAIL, GALVANIZED (4 @ 31.25 FT)</td>
<td>150</td>
<td>LF</td>
<td>$23.00</td>
<td>$3,450</td>
<td></td>
</tr>
</tbody>
</table>

**SUBTOTAL BRIDGE** $68,734

### Assumptions

| Contingency Percentage - Unknowns | 10% |
| Contingency Percentage - Railroad Work | 0% |

**ITEM TOTAL** $76,000

### Assumptions

- New Curb Height = 1.0 ft
- New Curb Width = 2.0 ft
- New Curb Length = 88.0 ft (Per Side)
- Reinforcing Weight per CY = 75 lbs per CY
- Roadway Width = 24 ft (Curb to Curb)

Notes:
1. Replace Bridge Rail and Approach Rail, Remove and Replace Bridge Pavement w/ raised profile
2. Pavement quantity based on 2 Tons/CY (Vtrans 25.4.1)
3. Unit prices based on Vtrans 5 year average unit prices
4. 621.21 Qty increased by 1.2 per SB-R6-82

McFarland Johnson, Inc.  A - 8  December 2010
### Bay Road over Laplatte River

**ALTERNATIVE 3 - NEW DECK W/ SIDEWALK + REHAB STEEL BEAMS**

<table>
<thead>
<tr>
<th>VTrans ITEM No.</th>
<th>DESCRIPTION</th>
<th>QUANTITY</th>
<th>UNIT</th>
<th>$/UNIT</th>
<th>COST</th>
</tr>
</thead>
<tbody>
<tr>
<td>406.25</td>
<td>BITUMINOUS CONCRETE PAVEMENT (3&quot; DEPTH)</td>
<td>40</td>
<td>TON</td>
<td>$110.00</td>
<td>$4,400</td>
</tr>
<tr>
<td>501.33</td>
<td>CONCRETE, HIGH PERFORMANCE CLASS A</td>
<td>93</td>
<td>CY</td>
<td>$1,000.00</td>
<td>$93,239</td>
</tr>
<tr>
<td>507.17</td>
<td>EPOXY COATED REINFORCING STEEL</td>
<td>6,993</td>
<td>LB</td>
<td>$1.50</td>
<td>$10,489</td>
</tr>
<tr>
<td>513.30</td>
<td>STRUCTURAL PAINTING, FIELD APPLIED</td>
<td>1</td>
<td>LS</td>
<td>$40,000</td>
<td>$40,000</td>
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<tr>
<td>513.36</td>
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<td>513.41</td>
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<td>$40,000</td>
</tr>
<tr>
<td>519.20</td>
<td>SHEET MEMBRANE WATERPROOFING, TORCH APPLIED</td>
<td>235</td>
<td>SY</td>
<td>$24.00</td>
<td>$5,640</td>
</tr>
<tr>
<td>525.43</td>
<td>BRIDGE RAILING, GALVANIZED HDSB/FASCIA MOUNTED/HAND RAIL</td>
<td>176</td>
<td>LF</td>
<td>$120.00</td>
<td>$21,120</td>
</tr>
<tr>
<td>529.20</td>
<td>PARTIAL REMOVAL OF STRUCTURE (Entire Deck)</td>
<td>1</td>
<td>EA</td>
<td>$20,000.00</td>
<td>$20,000</td>
</tr>
<tr>
<td>621.21</td>
<td>HD STEEL BEAM GUARDRAIL, GALVANIZED (4 @ 31.25 FT)</td>
<td>150</td>
<td>LF</td>
<td>$23.00</td>
<td>$3,450</td>
</tr>
<tr>
<td>580.13</td>
<td>REPAIR OF CONCRETE SUBSTRUCTURE, CLASS I</td>
<td>24</td>
<td>SY</td>
<td>$570</td>
<td>$13,680</td>
</tr>
<tr>
<td>580.14</td>
<td>REPAIR OF CONCRETE SUBSTRUCTURE, CLASS II</td>
<td>24</td>
<td>SY</td>
<td>$1,000</td>
<td>$24,000</td>
</tr>
<tr>
<td>580.15</td>
<td>REPAIR OF CONCRETE SUBSTRUCTURE, CLASS III</td>
<td>10</td>
<td>CY</td>
<td>$2,000</td>
<td>$20,000</td>
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</table>

**SUBTOTAL BRIDGE** $336,018

**Assumptions**

- Contingency Percentage - Unknowns: 10%
- Contingency Percentage - Railroad Work: 0%

<table>
<thead>
<tr>
<th>Assumptions</th>
<th>ITEM TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Curb Height = 1.0 ft</td>
<td></td>
</tr>
<tr>
<td>New Curb Width = 2.0 ft</td>
<td></td>
</tr>
<tr>
<td>New Curb Length = 88.0 ft (Per Side)</td>
<td></td>
</tr>
<tr>
<td>Reinforcing Weight per CY = 75 lbs per CY</td>
<td></td>
</tr>
<tr>
<td>Roadway Width = 24 ft (Curb to Curb)</td>
<td></td>
</tr>
<tr>
<td>Sidewalk Width = 5 ft</td>
<td></td>
</tr>
<tr>
<td>Sidewalk Height (Avg) = 0.83 ft</td>
<td></td>
</tr>
<tr>
<td>New Deck Width = 31.00 ft</td>
<td></td>
</tr>
<tr>
<td>New Deck Length = 90.00 ft</td>
<td></td>
</tr>
<tr>
<td>New Deck Thickness = 0.71 ft</td>
<td></td>
</tr>
<tr>
<td>Abut Width = 30.00 ft</td>
<td></td>
</tr>
<tr>
<td>Abut Height = 8.00 ft</td>
<td></td>
</tr>
</tbody>
</table>

Notes:
1) Replace Deck + Rehab Steel
2) Pavement quantity based on 2 Tons/CY (Vtrans 25.4.1)
3) Unit prices based on Vtrans 5 year average unit prices
4) 621.21 Qty increased by 1.2 per SB-R6-82
### Bay Road over Laplatte River

#### ALTERNATIVE 4 - RECONSTRUCT BRIDGE

<table>
<thead>
<tr>
<th>VTrans ITEM No.</th>
<th>DESCRIPTION</th>
<th>comments</th>
<th>QUANTITY</th>
<th>UNIT</th>
<th>$/UNIT</th>
<th>COST</th>
</tr>
</thead>
<tbody>
<tr>
<td>406.25</td>
<td>BITUMINOUS CONCRETE PAVEMENT (3&quot; DEPTH)</td>
<td>OK</td>
<td>40</td>
<td>TON</td>
<td>$110.00</td>
<td>$4,400</td>
</tr>
<tr>
<td>501.33</td>
<td>CONCRETE, HIGH PERFORMANCE CLASS A</td>
<td>Formula OK</td>
<td>93</td>
<td>CY</td>
<td>$1,000.00</td>
<td>$93,239</td>
</tr>
<tr>
<td>506.50</td>
<td>STRUCTURAL STEEL, ROLLED BEAM (ASSUME 5 @ 150 PCF)</td>
<td>Formula OK</td>
<td>67,500</td>
<td>LB</td>
<td>$2.50</td>
<td>$168,750</td>
</tr>
<tr>
<td>507.17</td>
<td>EPOXY COATED REINFORCING STEEL</td>
<td>Formula OK</td>
<td>6,993</td>
<td>LB</td>
<td>$1.50</td>
<td>$10,489</td>
</tr>
<tr>
<td>519.20</td>
<td>SHEET MEMBRANE WATERPROOFING, TORCH APPLIED</td>
<td>OK</td>
<td>235</td>
<td>SY</td>
<td>$24.00</td>
<td>$5,640</td>
</tr>
<tr>
<td>525.43</td>
<td>BRIDGE RAILING, GALVANIZED HDSB/FASCIA MOUNTED/HAND RAIL</td>
<td>OK</td>
<td>176</td>
<td>LF</td>
<td>$120.00</td>
<td>$21,120</td>
</tr>
<tr>
<td>529.20</td>
<td>PARTIAL REMOVAL OF STRUCTURE (Entire Deck)</td>
<td>SEE 1</td>
<td>1</td>
<td>EA</td>
<td>$20,000.00</td>
<td>$20,000</td>
</tr>
<tr>
<td>531.11</td>
<td>BEARING DEVICE ASSEMBLY, ELASTOMERIC PAD</td>
<td>SEE 1</td>
<td>10</td>
<td>EA</td>
<td>$1,200.00</td>
<td>$12,000</td>
</tr>
<tr>
<td>621.21</td>
<td>HD STEEL BEAM GUARDRAIL, GALVANIZED (4 @ 31.25 FT)</td>
<td></td>
<td>150</td>
<td>LF</td>
<td>$23.00</td>
<td>$3,450</td>
</tr>
<tr>
<td></td>
<td>ADDITIONAL CONCRETE AND REBAR FOR ABUTMENT WIDEN</td>
<td>SEE 3</td>
<td>26</td>
<td>CY</td>
<td>$1,000</td>
<td>$25,920</td>
</tr>
<tr>
<td>580.13</td>
<td>REPAIR OF CONCRETE SUBSTRUCTURE, CLASS I</td>
<td></td>
<td>24</td>
<td>SY</td>
<td>$570</td>
<td>$13,680</td>
</tr>
<tr>
<td>580.14</td>
<td>REPAIR OF CONCRETE SUBSTRUCTURE, CLASS II</td>
<td></td>
<td>24</td>
<td>SY</td>
<td>$1,000</td>
<td>$24,000</td>
</tr>
<tr>
<td>580.15</td>
<td>REPAIR OF CONCRETE SUBSTRUCTURE, CLASS III</td>
<td></td>
<td>10</td>
<td>CY</td>
<td>$2,000</td>
<td>$20,000</td>
</tr>
</tbody>
</table>

**SUBTOTAL BRIDGE** | **$422,694**

**Assumptions**

| Contingency Percentage - Unknowns | **10%** |
| Contingency Percentage - Railroad Work | **0%** |

**Assumptions**

- New Curb Height = 1.0 ft
- New Curb Width = 2.0 ft
- New Curb Length = 88.0 ft (Per Side)
- Reinforcing Weight per CY = 75 lbs per CY
- Roadway Width = 24 ft (Curb to Curb)
- Sidewalk Width = 5 ft
- Sidewalk Height (Avg) = 0.83 ft
- New Deck Width = 31.00 ft
- New Deck Length = 90.00 ft
- New Deck Thickness = 0.71 ft
- Abut Width = 30.00 ft
- Abut Height = 8.00 ft

**Notes:**

1. Replace Deck + Rehab Steel
2. Pavement quantity based on 2 Tons/CY (Vtrans 25.4.1)
3. Unit prices based on Vtrans 5 year average unit prices
4. 621.21 Qty increased by 1.2 per SB-R6-82
Bay Road over Laplatte River

**ALTERNATIVE 5 - NEW BRIDGE**

<table>
<thead>
<tr>
<th>VTrans ITEM No.</th>
<th>DESCRIPTION</th>
<th>QUANTITY</th>
<th>UNIT</th>
<th>$/UNIT</th>
<th>COST</th>
</tr>
</thead>
<tbody>
<tr>
<td>406.25</td>
<td>BITUMINOUS CONCRETE PAVEMENT (3&quot; DEPTH)</td>
<td>OK</td>
<td>40</td>
<td>TON</td>
<td>$110.00</td>
</tr>
<tr>
<td>501.33</td>
<td>CONCRETE, HIGH PERFORMANCE CLASS A</td>
<td>Formula OK</td>
<td>93</td>
<td>CY</td>
<td>$1,000.00</td>
</tr>
<tr>
<td>506.50</td>
<td>STRUCTURAL STEEL, ROLLED BEAM (ASSUME 5 @ 150 PCF)</td>
<td>67,500</td>
<td>LB</td>
<td>$2.50</td>
<td>$168,750</td>
</tr>
<tr>
<td>507.17</td>
<td>EPOXY COATED REINFORCING STEEL</td>
<td>Formula OK</td>
<td>6,993</td>
<td>LB</td>
<td>$1.50</td>
</tr>
<tr>
<td>519.20</td>
<td>SHEET MEMBRANE WATERPROOFING, TORCH APPLIED</td>
<td>OK</td>
<td>235</td>
<td>SY</td>
<td>$24.00</td>
</tr>
<tr>
<td>525.43</td>
<td>BRIDGE RAILING, GALVANIZED HSS/FASCIA MOUNTED/HAND RAIL</td>
<td>OK</td>
<td>176</td>
<td>LF</td>
<td>$120.00</td>
</tr>
<tr>
<td>529.20</td>
<td>PARTIAL REMOVAL OF STRUCTURE (Entire Deck)</td>
<td>SEE 1</td>
<td>1</td>
<td>EA</td>
<td>$20,000.00</td>
</tr>
<tr>
<td>531.11</td>
<td>BEARING DEVICE ASSEMBLY, ELASTOMERIC PAD</td>
<td>SEE 3</td>
<td>26</td>
<td>CY</td>
<td>$1,000</td>
</tr>
<tr>
<td>621.21</td>
<td>HD STEEL BEAM GUARDRAIL, GALVANIZED (4 @ 31.25 FT)</td>
<td>SEE 4</td>
<td>33</td>
<td>CY</td>
<td>$1,000</td>
</tr>
</tbody>
</table>

**ADDITIONAL CONCRETE AND REBAR FOR ABUTMENT WIDEN**

<table>
<thead>
<tr>
<th>VTrans ITEM No.</th>
<th>DESCRIPTION</th>
<th>QUANTITY</th>
<th>UNIT</th>
<th>$/UNIT</th>
<th>COST</th>
</tr>
</thead>
<tbody>
<tr>
<td>580.13</td>
<td>REPAIR OF CONCRETE SUBSTRUCTURE, CLASS I</td>
<td>SEE 3</td>
<td>24</td>
<td>CY</td>
<td>$570</td>
</tr>
<tr>
<td>580.14</td>
<td>REPAIR OF CONCRETE SUBSTRUCTURE, CLASS II</td>
<td>SEE 4</td>
<td>24</td>
<td>CY</td>
<td>$1,000</td>
</tr>
<tr>
<td>580.15</td>
<td>REPAIR OF CONCRETE SUBSTRUCTURE, CLASS III</td>
<td>SEE 5</td>
<td>10</td>
<td>CY</td>
<td>$2,000</td>
</tr>
</tbody>
</table>

**SUBTOTAL BRIDGE** $456,028

**Assumptions**

| Contingency Percentage - Unknowns | 10% |
| Contingency Percentage - Railroad Work | 0% |

**Assumptions**

- New Curb Height = 1.0 ft
- New Curb Width = 2.0 ft
- New Curb Length = 88.0 ft (Per Side)
- Reinforcing Weight per CY = 76 lbs per CY
- Roadway Width = 24 ft (Curb to Curb)
- Sidewalk Width = 5 ft
- Sidewalk Height (Avg) = 0.83 ft
- New Deck Width = 31.00 ft
- New Deck Length = 90.00 ft
- New Deck Thickness = 0.71 ft
- Abut Width = 30.00 ft
- Abut Height = 8.00 ft

Notes:
1) Replace Deck + Rehab Steel
2) Pavement quantity based on 2 Tons/CY (Vtrans 25.4.1)
3) Unit prices based on Vtrans 5 year average unit prices
4) 621.21 Qty increased by 1.2 per SB-R6-82
ROADWAY / STRUCTURAL INFORMATION
### STRUCTURE INSPECTION, INVENTORY and APPRAISAL SHEET

**Vermont Agency of Transportation ~ Structures Section ~ Bridge Management and Inspection Unit**

**Bridge:** Bay Road Bridge  
Bridge No.: 7  
Over: Laplatte River  
Distance: approximately 1.0 MI TO JCT W US  
Owner: 04 CITY-OWNED  

<table>
<thead>
<tr>
<th>CONDITION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deck Rating: 6 Satisfactory</td>
</tr>
<tr>
<td>Superstructure Rating: 5 Fair</td>
</tr>
<tr>
<td>Substructure Rating: 5 Fair</td>
</tr>
<tr>
<td>Channel Rating: 8 Very Good</td>
</tr>
<tr>
<td>Culvert Rating: N Not Applicable</td>
</tr>
<tr>
<td>Federal Surcharges: 205704000704152</td>
</tr>
<tr>
<td>Federal Surcharges Rating: 43.6</td>
</tr>
<tr>
<td>Deficiency Status of Structure: FD</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>AGE and SERVICE</th>
</tr>
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</table>
| Year Built: 1948  
Year Reconstructed: 0000  
Service On: 1 Highway  
Service Under: 5 Waterway  
Lanes On the Structure: 02  
Lanes Under the Structure: 00  
Bypass, Detour Length (miles): 05  
ADT: 002300  
% Truck ADT: 03  
Year of ADT: 1997 |

<table>
<thead>
<tr>
<th>GEOMETRIC DATA</th>
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</table>
| Length of Maximum Span (ft): 0086  
Structure Length (ft): 000089  
Lt Curb/Sidewalk Width (ft): 0.5  
Rt Curb/Sidewalk Width (ft): 0.5  
Bridge Rdwy Width Curb-to-Curb (ft): 24  
Deck Width Out-to-Out (ft): 27.5  
Appr. Roadway Width (ft): 024  
Skew: 00  
Bridge Median: 0 No Median  
Min Vertical Cir Over (ft): 99 FT 99 IN  
Feature Under: Feature Not a Highway or Railroad  
Min Vertical Undercr (ft): 60 FT 00 IN |

<table>
<thead>
<tr>
<th>STRUCTURE TYPE and MATERIALS</th>
</tr>
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<tbody>
<tr>
<td>Bridge Type: Rolled Beam</td>
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</table>
| Number of Approach Spans: 0000  
Number of Main Spans: 001  
Kind of Material and/or Design: 3 Steel  
Deck Structure Type: 1 Concrete CIP  
Type of Wearing Surface: 6 Bituminous  
Type of Membrane: 0 None  
Deck Protection: 0 None |

<table>
<thead>
<tr>
<th>APPRAISAL *AS COMPARED TO FEDERAL STANDARDS</th>
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<tbody>
<tr>
<td>Bridge Railings: 0 Does Not Meet Current Standard</td>
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<tr>
<td>Transitions: 0 Does Not Meet Current Standard</td>
</tr>
<tr>
<td>Approach Guardrail: 0 Does Not Meet Current Standard</td>
</tr>
<tr>
<td>Approach Guardrail Ends: 0 Does Not Meet Current Standard</td>
</tr>
<tr>
<td>Structural Evaluation: 4 Meets Minimum Tolerable Criteria</td>
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<tr>
<td>Deck Geometry: 2 Intolerable, Replacement Needed</td>
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<tr>
<td>Undershield Vertical and Horizontal: N Not Applicable</td>
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<tr>
<td>Waterway Adequacy: 6 Occasional Overtopping of Roadway with Insignificant Traffic Delays</td>
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<tr>
<td>Approach Roadway Alignment: 8 Equal to Desirable Criteria</td>
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</table>

<table>
<thead>
<tr>
<th>DESIGN VEHICLE, RATING, and POSTING</th>
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</thead>
<tbody>
<tr>
<td>Load Rating Method (In): 2 Allowable Stress (AS)</td>
</tr>
<tr>
<td>Posting Status: A Open, No Restriction</td>
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<tr>
<td>Bridge Posting: 5 No Posting Required</td>
</tr>
<tr>
<td>Load Posting: 01 No Load Posting Signs Exist Near Bridge</td>
</tr>
<tr>
<td>Posted Vehicle: Posting Not Required</td>
</tr>
<tr>
<td>Posted Weight (tons):</td>
</tr>
<tr>
<td>Design Load: 3 HS 15</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>INSPECTION and CROSS REFERENCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>X-Ref. Route:</td>
</tr>
</tbody>
</table>

**INSPECTION SUMMARY and NEEDS**

*This structure is in fair to poor condition. The deck, superstructure and substructure continue to deteriorate.*

- 06/05/2006 - The overall condition of this bridge is fair due to the ongoing progressive corrosion of the steel beams and deterioration of the corner end areas on both abutment steelwalls. PLB
- 09/18/2008 - The overall condition of this bridge is fair due to ongoing progressive corrosion of the steel beams and deterioration of the corner end areas on both abutment steelwalls. PLB

Tuesday, July 28, 2009
RESOURCE RELATED INFORMATION
Important Farmland Soils

Legend

- Not Prime or Statewide
- Prime
- Statewide

SCALE: 1:2,400  DATE: JULY 2010  FIGURE: C-1

BAY ROAD OVER LAPLATTE RIVER

CCMPO
SHELBURNE, VT
ARCHAEOLOGY

Archaeologically Sensitive Areas

Information derived from
"ARCHAEOLOGICAL RESOURCE INITIAL IDENTIFICATION LETTER REPORT", September 20, 1999,
by Hartgen Archeological Associates, Inc.
RARE SPECIES

Vermont Natural Heritage Ecological Occurences

<table>
<thead>
<tr>
<th>TYPE</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>Animal</td>
<td>Brown</td>
</tr>
<tr>
<td>Natural Community</td>
<td>Yellow</td>
</tr>
<tr>
<td>Plant</td>
<td>Green</td>
</tr>
</tbody>
</table>

**CCMPO**
SHELBURNE, VT

**BAY ROAD**

SCALE: 1:12,000
DATE: JULY 2010
FIGURE: C-5

- White Water-crowfoot
- False Hop Sedge
- Narrow Blue-eyed Grass
- Obedience
- Channel Darter
- Border Meadow-rue
- False Hop Sedge
- Narrow Blue-eyed Grass
- Virginia Bugleweed
- Eastern Silvery Minnow
- Silver Lamprey
- Rosyface Shiner
- Four-toed Salamander
- Yellow Water-crowfoot
- Dion Skipper
- Hidden-fruited Bladderwort
- Blue-spotted Salamander
- Gray's Sedge
- Deep Bulrush Marsh
- Valley Floodplain Forest
- Lakeside Floodplain Forest

Path:

[Map Image]
CONSERVED LANDS

Legend

- The Nature Conservancy
- Town of Shelburne

PROJECT LOCATION

CCMPO
SHELBURNE, VT

BAY ROAD OVE LAPLATTE RIVER

SCALE: 1:12,000
DATE: JULY 2010
FIGURE: FIGURE C-6
Lake Champlain "The Narrows"
DELINEATED WETLANDS

Delineated Wetland Boundary
Thanks!

>>> "Lepre, Anthony ME1" <Anthony.J.Lepre@uscg.mil> 4/27/2010 9:40 AM >>>
A couple of minor changes to your last email to further clarify on our conversation. If there are any other questions don't hesitate to call. Thanks.

Respectfully,

ME1 Anthony J. Lepre
Bridge Branch
First Coast Guard District
Battery Park Bldg
1 South Street
New York, NY
Phone: 212-668-6380
Fax: 212-668-7967

Prepare for the Worst, Expect the Best. There is no security on this earth. There is only opportunity.
-Douglas MacArthur

-----Original Message-----
From: dbenoit@mjinc.com [mailto:dbenoit@mjinc.com]
Sent: Tuesday, April 27, 2010 9:23 AM
To: Lepre, Anthony ME1
Subject: RE: Bay Road over the LaPlatte River Shelburne, VT

Anthony,

Thanks for taking time to further clarify your e-mail. Below is my understanding of our discussion. Please let me know if this does not represent what your understanding of the project requirements will be.

My understanding is that if we choose to rehabilitate the bridge, the project team will need to provide the Coast Guard documentation on the project and the Coast Guard may visit the project during construction.

If the existing bridge is significantly modified by widening or raising the bridge it will most likely require a permit. Acquisition of that permit can be expected to take a minimum of 6-9 months.

If the bridge is reconstructed, the bridge can not be lowered from the existing condition and may be required to be raised. A bridge replacement or modification would require a Coast Guard permit.
Typically the Coast Guard will solicit the public for input on the clearance for the bridge. That local input may influence the final clearance required for the bridge.

In this case where the channel historically has not been subject to larger water craft and the depth of the channel would not support larger boats without dredging, it is unlikely that a significant increase (over three (3) feet) in the vertical clearance would be required by the Coast Guard without significant public demand for the modification. (Coast Guard Cannot say with certainty, there are too many outside factors and unanswered questions.)

Thanks,

-Darren

>>> "Lepre, Anthony ME1" <Anthony.J.Lepre@uscg.mil> 4/8/2010 9:21 AM >>>
Good Morning,

If you are looking to rehabilitate the bridge or make repairs we would need a copy of the construction plans and construction timeline. A formal permit would not be required for such work, however we do oversee all construction and rehabilitation projects. If you were planning on changing the configuration, clearances of the bridge or completely rebuilding the bridge a permit may be likely. The clearance set by the existing bridge is your minimum clearance, we cannot predict what the future height of a proposed bridge would be until we have received all of the local input about the project first. If there are any more questions or concerns please contact me.

Respectfully,

ME1 Anthony J. Lepre
Bridge Branch
First Coast Guard District
Battery Park Bldg
1 South Street
New York, NY
Phone: 212-668-6380
Fax: 212-668-7967
Prepare for the Worst, Expect the Best. There is no security on this earth. There is only opportunity.
-Douglas MacArthur

-----Original Message-----
From: dbenoit@mjinc.com [mailto:dbenoit@mjinc.com]
Sent: Tuesday, March 30, 2010 3:25 PM
To: Lepre, Anthony ME1
Subject: Bay Road over the LaPlatte River Shelburne, VT

Anthony,

Per my phone call today we are working on a Scoping study for a bridge in Shelburne VT. The bridge is over the LaPlatte River, but within 200 feet or so of Lake Champlain. There is only about six feet clearance between ordinary high water and low steel of the bridge. The river is between 3 and 5 feet deep, and is also shielded by a sand bar in the Lake where the water is as shallow as 2-3 feet.
Attached is a USGS location map, an aerial, and a photo of the bridge looking southeast from the lake side. I also included a surveyed plan including environmental resources and contours. It does not show depths of water, but it does show the causeway where the bridge was constructed.

Alternatives:

No Build - Leave existing structure as is.
Alt 1-Safety Improvements - Update roadway guard rail, approach rail, and bridge rail to current standards.
Alt 2-Safety Improvements and minor approach (profile) modifications Alt 3-Safety Improvements, Minor approach work, Sandblast and repaint exterior beams, cantilever sidewalk Alt 4-Safety Improvements, Minor Approach Work, Sandblast and repaint outside beams, cantilever sidewalk, replace deck Alt 5-Alt-4 with widened deck and abutments Alt 6-Reconstruction of Bridge New substructure (abutments) and superstructure (deck and steel beams)(Existing profile) Alt 7-Reconstruction of Bridge New substructure (abutments) and superstructure (deck and steel beams) (Raise profile 2-5 feet)

What I need to know is if the bridge is reconstructed, is there a statutory clearance between ordinary high water (or 50 year, etc) to low steel that will have to be met? Is there anything for a bridge rehabilitation (new deck, but retaining the existing profile and abutments) and for a widening of the bridge if the profile is not changed (rehab or reconstruction).

Feel free to give me a call if you need any clarification.

-Darren

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FYI:

Lakes & Ponds will permit this project through the Shoreland Encroachment permit process, the Stream Alteration Program will not be involved. Steve Hanna is the WQD permitting authority for this project; contact Steve directly with inquiries/comments. The consultant would like a meeting next week in Essex with involved programs to get a grasp on the NFIP\natural\cultural\non-game and natural heritage resources issues. No date or time selected at this time.

Thanks,

Chris

My Program will take this in case you are asked.

Steven Hanna

Shoreland Encroachment

Water Quality Division

802-241-3791

802-241-4537(fax)

steven.hanna@state.vt.us
Good Morning,

McFarland Johnson is providing engineering and environmental permitting services for the Chittenden County Metropolitan Planning Organization (CCMPO) for improvements to the Bay Road Bridge in Shelburne. The bridge is at the mouth of the La Platte River, where it empties into Lake Champlain. The surrounding area is resource rich - several rare species occurrence records, Class II wetlands, archaeological sensitivity, and both Section 4(f) and Section 6(f) land associated with a public boat launch on the north side of the bridge.

At this time, we are in the preliminary planning stages, and alternatives have not yet been developed. Given the sensitive nature of the study area, our hope is to meet with the regulators now to help shape planning for the project.

We would like to meet next week, if possible, in Marty Abair's office in Essex Junction. Available times and dates are Thursday the 21st in the morning, or late morning on the Friday the 22nd.

Please let me know of your availability on those dates, or if you are unable to attend, if you would like to provide feedback in advance of the meeting.

I will follow this email with some pdf figures and photos depicting the site. The attachment is about 4 MB.

Thanks

Vicki Chase
Environmental Analyst

McFarland-Johnson, Inc.
53 Regional Drive
Concord, NH 03301

Phone:  603-225-2978
Fax:     603-225-0095

www.mjinc.com

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HEREBY NOTIFIED that any dissemination, distribution or copying of this communication is strictly prohibited. If you are not the intended recipient of this message, please destroy any printed version and delete this email.
January 4, 2010

To Whom It May Concern:

This project was reviewed for the presence of federally-listed or proposed, threatened or endangered species or critical habitat per instructions provided on the U.S. Fish and Wildlife Service’s New England Field Office website:

(http://www.fws.gov/newengland/EndangeredSpec-Consultation.htm)

Based on the information currently available, no federally-listed or proposed, threatened or endangered species or critical habitat under the jurisdiction of the U.S. Fish and Wildlife Service (Service) are known to occur in the project area(s). Preparation of a Biological Assessment or further consultation with us under Section 7 of the Endangered Species Act is not required.

This concludes the review of listed species and critical habitat in the project location(s) and environs referenced above. No further Endangered Species Act coordination of this type is necessary for a period of one year from the date of this letter, unless additional information on listed or proposed species becomes available.

Thank you for your cooperation. Please contact Mr. Anthony Tur at 603-223-2541 if we can be of further assistance.

Sincerely yours,

Thomas R. Chapman
Supervisor
New England Field Office
Vicki Chase - RE: Bay Road Bridge, Shelburne

From: Vicki Chase
To: Marshall, Everett
Subject: RE: Bay Road Bridge, Shelburne

>>> "Marshall, Everett" <everett.marshall@state.vt.us> 8/5/2009 2:48 PM >>>

Vicki,
You are correct that the area is highly sensitive. Because of this the Department is interested in avoiding and minimizing environmental impacts to the greatest degree possible. I have created an updated list of rare plants, animals, and natural communities in vicinity of the project below. I also have attached a shape file with the occurrence locations and a legend for species rank and status. In the list below, I have included occurrences from the mouth of the river up to Falls Road as some of the species may also be present by the Bay Road Bridge that are known from further upstream. The Department recommends that an inventory be conducted for rare plant species with the focus on those listed below that are threatened and endangered or have a state rank of S1 to S2. Contact Bob Popp, our Departments Botanist, if you have any questions. I am copying Mark Ferguson for his input on what field work may be necessary for animals. I am copying John Austin so he can bring forward any additional wildlife concerns. I am copying Mike Wichrowski with our Department so he is aware that there may be impacts to the Vermont Fish and Wildlife Access Area.

Everett Marshall
Biologist/Information Manager

Vermont Fish & Wildlife Department
103 South Main St.
Waterbury, VT 05671-0501
Tel: 802-241-3715; Fax: 802-241-3295
http://www.vtfishandwildlife.com/wildlife_nongame.cfm
http://www.vtfishandwildlife.com/nnhp_Review.cfm
From: Vicki Chase [mailto:vchase@mjinc.com]
Sent: Monday, August 03, 2009 9:33 AM
To: Marshall, Everett
Subject: Bay Road Bridge, Shelburne

Good Morning,

Mcfarland-Johnson, Inc. (MJ) has been retained by the Chittenden County Metropolitan Planning Organization (CCMPO) for the purpose of developing scoping reports to identify alternatives for the replacement or rehabilitation of the Bay Road Bridge over the LaPlatte River in the town of Shelburne. To that end, we are requesting information about rare species and natural communities in the vicinity of the bridge.

A data request made in 1999 for a previous scoping report for the bridge identified nine rare plant species, a natural community, and a rare animal in the vicinity of the bridge. (See attached letter dated April 5, 1999.) A recent data check using available GIS data reveals that there are several ecological occurrences in the vicinity of the bridge. The attached "Rare Species" map identifies the location of the bridge and of the ecological occurrences mapped by Vermont Natural Heritage.

The alternatives may include widening and/or raising of the bridge, which may involve additional wetland fill. The area is obviously highly sensitive for rare species, and any guidance you can provide on surveys that may be required or other considerations would be appreciated.
Thank you for your assistance.
# MEETING MINUTE MEMORANDUM

**DATE:** January 22, 2010  
**MEETING:** Resource Agencies, ACOE  
Office, Essex Junction, VT  
10:00 AM

**PROJECT:** Bay Road Bridge, Shelburne

## ATTENDANCE:

<table>
<thead>
<tr>
<th>Organization</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Army Corps of Engineers</td>
<td>Marty Abair</td>
</tr>
<tr>
<td>CCMPO</td>
<td>Christine Forde</td>
</tr>
<tr>
<td>Town of Shelburne</td>
<td>Bernie Gagnon</td>
</tr>
<tr>
<td>VT Dept. of Fish and Wildlife</td>
<td>Bernie Pientka</td>
</tr>
<tr>
<td>(Fisheries)</td>
<td></td>
</tr>
<tr>
<td>VT Dept. of Fish and Wildlife</td>
<td>Mark Ferguson</td>
</tr>
<tr>
<td>(Natural Heritage)</td>
<td></td>
</tr>
<tr>
<td>VT Division for Historic Preservation</td>
<td>Scott Dillon</td>
</tr>
<tr>
<td>VT DEC</td>
<td>Steve Hanna</td>
</tr>
<tr>
<td>VT ANR – Wetlands</td>
<td>Alan Quackenbush</td>
</tr>
<tr>
<td>VT ANR</td>
<td>Jeannine McCrumb</td>
</tr>
</tbody>
</table>
| McFarland Johnson (MJ):             | Darren Benoit, Project Manager  
Vicki Chase, Environmental Analyst |                    |

The purpose of the meeting was to introduce the project to the resource agencies and to receive feedback on potential alternatives. Darren Benoit introduced the project and gave a brief history of the project development to date. Bay Road Bridge crosses the LaPlatte River at the mouth of the river into Lake Champlain. The bridge is 24 feet wide and has very low boat clearance (approximately 5-7 feet). The bridge is functionally obsolete, but not structurally deficient, with a sufficiency rating of 43. The town would like to develop plans to correct the deficiencies of the existing bridge and have the plans and permits in hand as a plan of action before the deterioration of the bridge forces emergency action. Issues at the bridge include deterioration of the bridge, narrow roadway widths, and a vertical sight distance deficiency. This is a complex corridor used by vehicular traffic, bikes, pedestrians including school children walking to school, and fisherman. The La Platte River is also a travel corridor, with small boats passing below the bridge to an adjacent marina on the upstream side of the bridge.

The bridge is the subject of a planning study at the CCMPO. Funding sources for the bridge repair or replacement have not been determined, but may include federal funding sources.

Potential design elements for a bridge replacement could include bridge and approach widening, an addition of a cantilevered sidewalk, and/or changes to the vertical height of the bridge and approaches. Alternatives may include filling along the causeway into Class II wetlands or into Lake Champlain. There is no practical detour route at this location. There is a large development off Bay Road located
between a railroad overpass with an 11-foot height restriction and this bridge. During construction, if this bridge is closed, large fire trucks would not have access to this neighborhood.

Environmental resources at the bridge include Class II Wetlands, archaeologically sensitive areas, rare species, Section 6(f) property, Section 4(f) property (if the project were funded by FHWA), and surface waters.

Bernie Gagnon (Shelburne DPW) is concerned about the risk of having to close the bridge before the replacement has been permitted as the bridge provides the only access for several miles. Bridge replacement is still four or five years away, but the hope would be to get an alternative permitted early. The town would like to see a sidewalk on the south side of the bridge from the subdivision to the east of the bridge connecting to a trail on the west of the bridge that connects to the elementary school. Optimally, they would like to see a green strip between the sidewalk and the roadway.

There was discussion that the bridge crosses a U.S. Coast Guard (USCG) navigable waterway, and that a bridge replacement at this location would likely require compliance with USCG clearance requirements. Steve suggested that they might require clearance as high as 30’. Initial review of whether the bridge was in navigable waters was not conclusive, as the USCG list of Navigable Waters includes simply “Lake Champlain”, although the Army Corps list of Navigable Waters, as listed in the Programmatic General Permit, includes Lake Champlain up to the Ordinary High Water mark (which would extend up the La Platte River for at least some short distance). Marty’s opinion was that the presence of the marina directly upstream of the bridge made it hard to argue that it is not a navigable water.

Following the meeting, MJ conducted additional research on the navigable water issue. USCG navigable waters are not as inclusive as ACOE navigable waters, and as stated above, simply include “Lake Champlain”. Navigational clearances for bridges funded under Federal-aid local bridge programs are regulated under 23 C.F.R. H § 650.801 et. seq. Under these regulations, it is the responsibility of FHWA to determine whether a USCG permit is necessary. The regulation states that a USCG permit is not necessary if “the FHWA determines that the proposed construction, reconstruction, rehabilitation, or replacement of the federally aided or assisted bridge is over waters (I) which are not used or are not susceptible to use in their natural condition or by reasonable improvement as a means to transport interstate or foreign commerce...” The navigability of the waters that the bridge crosses (la Platte River / Lake Champlain) will have to be definitively determined with the USCG.

If it is determined that the bridge meets the above criteria and requires a USCG permit, the United States Coast Guard Bridge Administration Manual (2004) provides guidance on determining vertical clearances for bridges over navigable waterways.

http://www.uscg.mil/directives/cim/16000-16999/CIM_16590_5C.pdf

The manual does not provide a formulaic approach for determining vertical clearances; rather, it recommends the use of a design vessel, a review of all other fixed bridges on the waterway, and consultation with local interests (such as the marina) and regulatory authorities in determining an appropriate bridge design.

If the bridge is determined to not require a USCG permit, ACOE would provide guidance on navigational clearance requirements for the bridge.
It was offered that if the bridge were rehabilitated in place, the vertical clearance would not be required to change. It is possible that the rehabilitation could include widening, but additional discussions would need to occur with ACOE and USCG.

Other resources in the project area were discussed.

**Rare Species:**

Mark stated that a rare plant and animal survey would likely be required as permitting proceeded for the bridge rehab / replacement. There are 18 Natural Heritage occurrence records in the vicinity of the project, including 3 natural communities, 7 animals, and 8 plants. Mark pointed out that there could also be rare mussels present.

**Fisheries**

Bernie Pientka said that the fishing activity was probably confined to about one month the spring, when people were fishing for brown bullhead. He said that there was other lake access available nearby, and that fishing access could be secondary to bridge design concerns.

**Archaeology**

Scott Dillon said that there are several known archaeological sites near the project area, including one that was discovered after the 2000 Scoping Report was written. Needs for additional archaeological survey would be determined as design proceeded. One of the first inhabited sites is in the southeast quadrant of the project. The second most sensitive area would be the southwest quadrant.

**Wetlands**

Alan Quackenbush stated that the permitability of a bridge and approach widening option would depend on the extent of the impacts. Marty pointed out that the VT PGP requires an individual permit for “≥5,000 SF waterway/wetland fill and secondary impacts (e.g. areas drained, flooded, fragmented, mechanically cleared or excavated). Fill area includes all temporary and permanent waterway fills.” If an individual permit is required, mitigation would be required.

The meeting was adjourned at 11:00.
MEETING MINUTES
TOWN OF SHELBURNE

SELECTBOARD
MINUTES OF MEETING

July 28, 2009

MEMBERS PRESENT: Robert Roesler (Chairman); Bill Smith, Tim Pudvar, Al Gobeille, Gary von Stange.

ADMINISTRATION: Paul Bohne, Town Manager; Peter Frankenburg, Financial Officer; Bernie Gagnon, Public Works Director, Dean Pierce, Town Planner.

OTHERS PRESENT: Jim Donavan, Ron Joy, Darren Benoit, Hugh Knapp, John Kerr, Jim Washburn, Melissa Fletcher, Steven “Rocco” Antinozzi, Rob Donahue, Christine Forde, Jim Dudley, Lisa Merrill, Don Rendall, Danielle Frawley (Shelburne News).

1. CALL TO ORDER
Chairman Robert Roesler called the meeting to order at 6:02 p.m.

MOTION by Bill Smith, SECOND by Tim Pudvar, to go into Executive Session and invite the Town Manager, Town Clerk Colleen Haag and Attorney Steve Stitzel. VOTING: unanimous (5-0); motion carried.

The Board exited Executive Session at 7:00 p.m.

Mr. Roesler reconvened the meeting at 7:03 p.m.

2. APPROVAL OF AGENDA
Add: Discharge of lien on properties owned by Benjamin Tier and Gerard & Elizabeth Roberts relative to the Shelburne Heights sewer assessment district.

3. CITIZEN PARTICIPATION
There were no comments from the public at this time.

4. CONSIDER ALTERNATIVES FOR SEGMENT V OF THE BIKE/PED PATH PRESENTED IN THE DRAFT REPORT BY JIM DONAVAN, CONSULTANT
Rob Donahue, Chairman of the Shelburne Bike and Pedestrian Paths Committee, and Steve “Rocco” Antinozzi, member of the Paths Committee, were introduced. Town Planner, Dean Pierce, gave a brief history of Shelburne’s shared use path system, noting funding is sought segment by segment. Segment IV is the pathway on Webster Road which is designed and engineered. Segment V will go along the north side of the LaPlatte River to the Athletic Drive/Harbor Road intersection. The bulk of the funding, $20,000 out of $25,000 from an enhancement grant was used for a feasibility study. The process has been lengthy and after five years of study the original conclusion still stands as the best alignment. A second alternative has been explored. Cost is an issue as is the railroad right-of-way.

Jim Donavan, consultant, reported Segment V offers the opportunity to serve users north of the river and allows students to avoid biking on Route 7 to get to school on Harbor Road. Alternate alignments for the shared use path were reviewed. The tunnel under the railroad significantly increases the cost of the project ($600,000 for the tunnel). The railroad will not allow any additional or new crossings over the
tracks, especially a pedestrian crossing, but will allow an open cut tunnel. There is a slightly more expensive tunnel option that allows for quicker construction. A temporary approach is to add a bike lane on the road by striping and widening the shoulder. There was continued discussion of the bridge and the path. The path on the south side of the bridge will be high enough to go under the bridge and still be out of the flood plain. A prefab bridge between the old abutments can be done or the existing bridge could be extended as options. Mr. Donavan noted the benefit of moving the path under the bridge and going west means getting to Harbor Road and the school without having to cross Route 7. Paul Bohne mentioned crossing under the new Route 7 road bridge puts the path on material that is already in place. There was further discussion of the path alignment. It was noted many different alternatives were examined, but the Agency of Natural Resources raised objections due to impact on wetlands, complicated path loops, and possible historic preservation issues.

A gentleman in the audience asked about a bridge over the railroad versus a tunnel. Mr. Donavan said a bridge was not pursued because the clearance over the tracks would require a 500’ long ramp on either side. There was mention of using the existing sidewalk on Route 7 into the village. Mr. Donavan stated there are many commercial driveways on Route 7 and it is not recommended to channel bikes through these areas. The interim solution works for pedestrians and with wider shoulders on Route 7 bicyclists will be accommodated as well. The bike/ped path provides an off road facility through the village area.

Jim Washburn, Bay Road resident, asked if the path is a priority project. Robert Roesler explained the present step is the feasibility study. The town is not actually applying for funding. Dean Pierce noted there were cost estimates for all six segments of the path and the segment has been included in the capital program, but now there are better numbers to determine a more realistic timeframe. Rob Donahue stated the Webster Road bike path will set the tempo for the entire system. The path is 10’ wide and paved for all uses, walkers, bikes, skateboards. The path is four years out in the capital improvement program.

MOTION by Bill Smith, SECOND by Gary von Stange, to accept the alternative approach report on the bike/ped path as presented by Wilbur Smith Associates. VOTING: unanimous (5-0); motion carried.

5. CONSIDER ALTERNATIVE APPROACHES TO REPAIR/REPLACE BAY ROAD BRIDGE OVER THE LAPLATTE RIVER DEVELOPED IN SCOPING REPORT PREPARED BY McFARLAND-JOHNSON

Bernie Gagnon, Public Works Director, gave a brief history on the scoping study to look at alternatives for fixing the Bay Road Bridge in the future. Potential alternatives will be evaluated. CCMPO was asked to update the scoping study done in 2000 when minimal repairs were made to the bridge. The objective is to identify alternatives, seek funding, get the design done and be ready to take action on the bridge.

Darren Benoit with McFarland-Johnson reviewed the process which includes data collection, holding a local concerns meeting, drafting a Purpose and Needs statement, drafting different alternatives, presenting alternatives for public comment, choosing an alternative and preparing a scoping document. There are archeological significant areas, wetlands, and natural areas to consider. There are no good alternatives for a temporary bridge so either the bridge is closed for a short time (three or four months) or work is done on one side then the other side. Ron Joy also with McFarland-Johnson noted a fabricated bridge could be installed in a shorter timeframe, but at a greater cost. Cost figures will be
presented at the next stage. Mr. Benoit stated there will be a widening of the bridge approximately six feet to allow a shoulder for a bike path. Also, the vertical sight distance issue will be corrected. The boat landing area will remain open and active. Raising the height of the bridge would likely mean a full bridge replacement. Robert Roesler commented at a minimum the height that is there should be maintained. Al Gobeille stated there needs to be a means to get to the activities that takes place in the area (fishing access, boating, paths).

A woman in the audience expressed concern about access to the area by fire/rescue trucks if the bridge is closed because the only other access point is under the railroad bridge which is of limited height.

Rob Donahue, Paths Committee, said the Paths Committee recommends bike lanes on both sides of the bridge as well as pedestrian access (sidewalk on both sides). Darren Benoit pointed out that in the previous plan there are four foot wide lanes on the road and sidewalk on one side.

Robert Roesler asked about the viability of the bridge. Bernie Gagnon said the rating is “fair” (40 out of 100 points). The bridge does not meet current standards. The town wants to avoid having the state put a weight limit on the bridge or closing the bridge. The town is being proactive in preparing the design at this time. The weight limit on the bridge as originally designed is 27 tons. Modern design standard is 45 tons. Federal funding has weight, width, sidewalk, and bike path requirements. The bridge is 60 years old. The five steel support beams are deteriorating. The outside beams are in worse shape than the interior beams. There are no rust holes as yet, but the deterioration is progressing steadily. The beams can be cleaned and painted to help slow deterioration.

Jim Washburn suggested the bridge have a higher clearance by two feet and the dip in the approach be removed. Ron Joy said a shallow super structure can be designed and the grade raised to gain height. Mr. Washburn suggested the bridge be 40’ wide to accommodate a bike path on both sides. There was discussion of the bike lane being on the through girder system and the need for a barrier curb to prevent cars from hitting the main structure. Aesthetics is a consideration. It is recognized there are vehicular and pedestrian issues as well as having to deal with a multitude of state and federal agencies in doing the bridge work.

Hugh Knapp, Shelburne Bay Boat Club, stated the boat club would like the bridge to remain open, especially in the summer months. A drawbridge would be an ideal replacement, but the boat club does manage with the height of the existing bridge. There is only a problem with high water.

A woman in the audience asked how far the project might go beyond the bridge for pedestrian and bike access. Darren Benoit added improvements will be done within the limits of the project. The state will then expect the town to do any additional work. Al Gobeille suggested the path continue at least to the convergence of the existing paths. Rob Donahue noted the town plan shows bike path along the entire roadway as a long term goal.

A resident from the area mentioned the activity at night at the fishing access (fishing, bonfires and such) and stressed the need for a safe crossing site. Lighting in the area is limited to one streetlight at the fishing access and the lights at the boat club. These lights provide plenty of background lighting. Children ride their bikes to the Ti-Haul path to get to school on school days. Bay Road is treacherous for bikers. The alignment is critical on the causeway side. Good layout and design is needed. It was asked if
a crosswalk could be painted by the Ti-Haul path. Bernie Gagnon will investigate the matter to ensure all applicable criteria for a crosswalk at the site can be met.

Jim Washburn mentioned the issue of speed on Bay Road, noting most vehicles are exceeding the 35 mph speed limit on a regular basis creating a safety issue for bikers and pedestrians.

It was summarized points to be emphasized in the Purpose of Needs statement include pedestrian safety, bicycle safety, connectivity, boating access, and fishermen.

Hugh Knapp asked about the project timeline. Robert Roesler said the study will be done and a plan generated then work will begin on funding. The project is years out. A gentleman in the audience asked if the Bay Road Bridge is on the town’s list of priority projects. Robert Roesler confirmed there is a priority list and the Selectboard will discuss whether the bridge project will be added. Darren Benoit stated alternatives for the bridge work will be presented to the Selectboard in September for consideration. Hugh Knapp asked about the role of the Corps. of Engineers relative to the bridge and the waterway under the bridge. Darren Benoit stated the Coast Guard is the entity that controls the bridge construction, but that other agencies would be involved.
MEETING MINUTES MEMO

Attendees:
Shelburne Selectboard
Members of the Public/Local TV station
Paul Bohne   Shelburne Town Manager
Bernie Gagnon  Shelburne Public Works Director
Christine Forde    CCMPO Manager of Project Development (CCMPO)
Ron Joy, P.E.        McFarland-Johnson, Inc.
Darren Benoit, P.E.  McFarland-Johnson, Inc.

Date: 6/22/10 7:00 PM
Location: Shelburne Town Offices

RE: Alternatives Presentation Meeting Bay Road Bridge over the LaPlatte River

The Alternatives Presentation Meeting for the Bay Road Bridge (Bridge 7 Bay Road over the LaPlatte River was scheduled during the regular Shelburne Selectboard’s meeting.

Bernie Gagnon began the meeting by introducing the project and McFarland-Johnson as the consultant.

Darren Benoit described the scoping process, highlighting the steps that have occurred and those to follow.

Darren described the design constraints for project focusing on the need for balance between the many social uses including cars, bicycles, pedestrians, fishermen, children going to school and boats under the bridge and the historical and ecological resources including wetlands, rare and endangered species and archeological resources. Darren explained the Purpose and Need statement for the project and showed pictures to highlight concerns on the bridge.

Ron Joy described the condition of the bridge and the alternatives that had been developed
The Town Manager noted that there had been three fatalities at the bridge over the course of the last 20 years.

Proposed alternatives included:
- Alternative 1- Maintenance Alternative (fixing roadway and bridge railing)
- Alternative 2- Maintenance and Approach Alternative (Alternative 1 and a profile modification to correct sight distance)
- Alternative 3- Rehabilitation and Deck Replacement Alternative (retain existing beams)
- Alternative 4- Superstructure Replacement Alternative, No profile change at Bridge (Widen abutments, new beams & deck)
- Alternative 5-Superstructure Replacement Alternative raise profile at Bridge (two foot increase)

Darren explained the reasoning behind not having a series of options describing different profile increases. The two foot increase with some optimizing of the beams could provide an increase of up to three feet of underclearance for boats going under the bridge.

Increasing the profile would potentially increase impacts to wetlands and threatened species. If wetland impacts are greater than 5000 square feet mitigation is required. In order to limit impacts retaining walls are proposed at the four corners of bridge for alternative 5. Raising the profile of the causeway and bridge also increases the risk of settlement. That could potentially increase the cost of the project and the amount of time that the road is out of service. The two foot increase was the recommended compromise between the underclearance and the impacts and risks of further increasing the clearance.

During final design it was recommended that a fishing platform could be added either at the side of the bridge or along the adjacent causeway to increase safety for the fishermen without adding a sidewalk on the lakeside of the bridge.

There seemed to be general consensus that one sidewalk on the marina side was the right approach allowing students to stay on the side of the road between the residential area and the paths.

A question was asked about the limits of the shoulder improvements. The sidewalk would be tapered to the shoulders on either side of the bridge and the widening of the shoulders would be maintained within the limits of the profile modifications (limits of the project).

At the end of the meeting the Selectboard deliberated on the alternatives and selected Alternative 5 as the Selected Alternative for the Scoping report.
PLANS
LaPLATTE RIVER BRIDGE
SHELBURNE, VT

SHELBURNE BAY PARK
(ESF FUNDING)

LaPLATTE RIVER MARSH
NATURAL AREA
(NATURE CONSERVANCY)

VACIETY OF 19TH CENTURY
STONE WALL/ROAD EMBANKMENT

VACIETY OF SITE VT-CIS-84

LEGEND

- PROPOSED ROADS
- PROPOSED BRIDGE SPANS
- PROPOSED SLIDES
- EXISTING STUDY AREAS
- ESTABLISHED AND PROPOSED TRAILHEADS
- PROPOSED RETAINING WALL

SHEER SCALE: 1" = 200'