



## Basic Impact Analysis (BIA)

Visitor Enhancements: St. Peters Canal National Historic Site



December 2015

**File Number: CBFU2015-047**



**1. PROJECT TITLE**

Visitor Enhancements: St. Peters Canal National Historic Site of Canada

**2. PROJECT LOCATION**

St. Peters Canal National Historic Site of Canada

**3. PROJECT SITE(S)**

Near Lock Master House, St. Peter's Canal,  
St. Peter's, Richmond County, Nova Scotia

**4. PROPONENT**

Municipality of Richmond County

**5. PROPONENT CONTACT INFORMATION**

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**6. PROJECT DATES**

Planned commencement: Tentatively Spring 2016 (subject to funding approval).  
Planned completion: To be determined

**7. INTERNAL PROJECT FILE #**

CBFU2015-047

**8. PROJECT CONTEXT**

According to the *St. Peters Canal and the St. Peters National Historic Site Management Plan* (2009), although the CBFU has important partnerships with the tourism industry, St. Peters Canal has received limited attention. The MP therefore expresses the need for continual promotion of the site, with emphasis for increased stakeholder and partnership which results in mutually beneficial opportunities (pg. 13).

*Objectives:*

- Ensure opportunities for involvement of stakeholders, public and interest groups at the site.
- Determine the potential for tourism product development associated with the site.
- Update marketing goals and strategies for the site as part of a Field Unit marketing plan.
- Encourage the inclusion of the site in marketing efforts at the local, regional, provincial and national level.

The following proposal supports these key MP objectives.

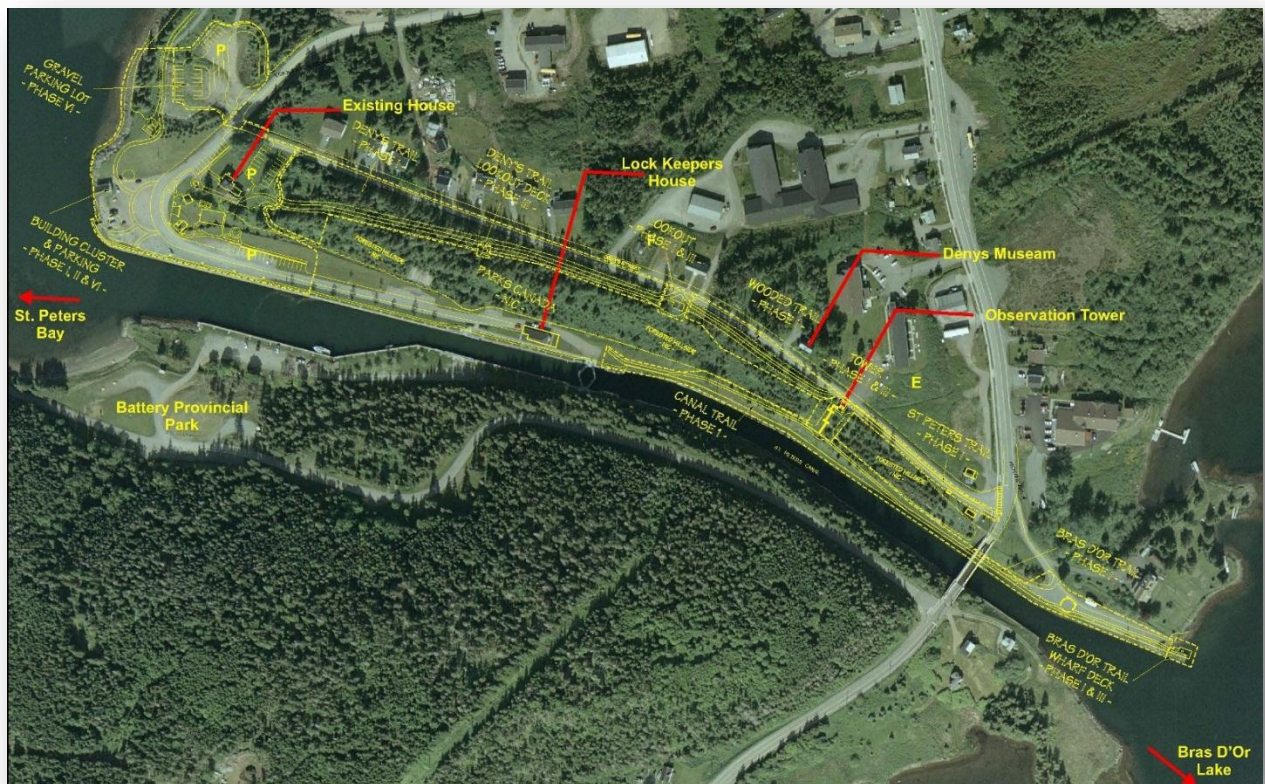


## 9. PROJECT DESCRIPTION

The proposed undertaking will occur at the designated *St. Peter's Canal National Historic Site of Canada*, St. Peter's, Nova Scotia. The project involves using existing historical connections and features to reinvigorate the site so visitors can have a full Canal experience; starting with new facilities where visitors will appreciate a new Visitor Centre, and go from there to enjoy cultural displays (existing and new), shopping (existing and new), restaurants (existing and new), trails (existing and new), lookouts (existing and new), and an observation tower.

The new facilities will include adequate parking, accessible public washrooms, an ATM, internet/wireless access, public telephone, guides to experiences, visitor advice and tips, and literature.

**St. Peter's Canal Development Proposed Site Plan** (Source: Glenn Group, 2013)







## Project Phases (not necessarily chronological)

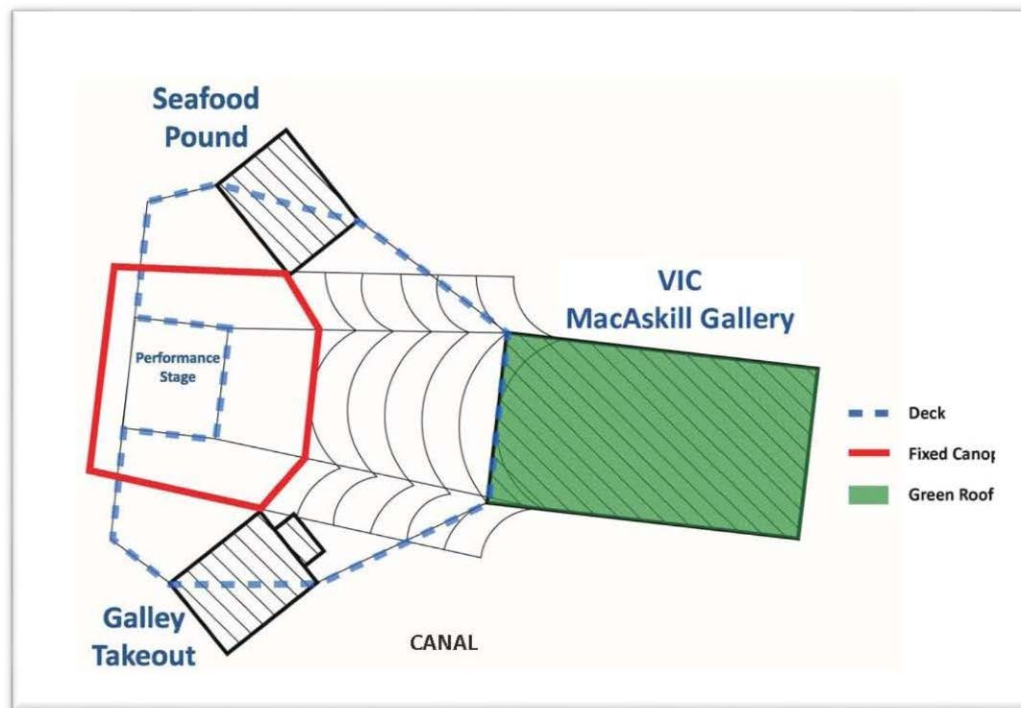
*Project description details are provided in the Richmond Tourism Recreational Spatial Planning Design Initiative, prepared by Glenn Group Ltd. for the Municipality of the County of Richmond, Nova Scotia, July 2013. The drawings provide detailed site preparation and construction information and are available upon request.*

The following summary is drawn from the above documents and should be used for high-level information only. Site management will be required to co-ordinate overlapping contract work and assign lay-down areas.

### Phase 1a: Building Cluster Commencement

To create a critical mass of retail, food, information, registration, interpretation and entertainment without overwhelming the scale of the site. Buildings will be small, simple wood-framed structures with nautical styling. Shed roofs on the two smaller structures will help to keep them small visually.

The Gallery Building will be energy efficient with reflective glass placed along the canal side exterior designed to mirror passing boat traffic and again serve to minimize the visual size. A fixed canopy will project out into the audience space in a fan pattern from the performance stage. Seasonal canopy extensions will be shaped like sails to provide partial cover for larger audiences. Partitions will serve to block cold winds. The plaza will be able to accommodate crowds of over 200 people (Glenn Group, 2013).





Building Cluster Massing Models





### Phase 1b – Trail Development

Construction of the Denys Footsteps Interpretive Trail, the Canal Trail, Lookout Trail and St. Peter's Trail is also part of Phase 1. The Denys Footsteps Interpretive Trail will involve enhancing the existing trail leading from the Nicholas Denys Museum. There is currently a modest, crusher dust trail that leads from the museum and a small deck down to the mouth of the canal. The proposed project will upgrade the trail and selective clearing of the tree cover will be conducted to allow open, framed views to the canal below. Three interpretive sections are proposed to tell the stories of Denys experiences here at St. Peter's. The trail will also have improvements to reduce erosion and to facilitate non-motorized wheel traffic such as rickshaws or bicycles.





Phase 1 activities include construction and operation of:

- Building Cluster (concrete plaza & stage foundation, seating area slab pour, canopy footings, decorative boulders)
- Gravel Parking Lot (removal of existing asphalt)
- Trail development (1.077km x 1.8m) to include - Denys Footsteps Interpretive Trail, Canal Trail, Lookout Trail and St. Peter's Trail.
- Deployment and Set-up
- Siltation & Environmental protection setup
- Fencing for public safety
- Stripping & stockpiling of topsoil and unwanted fill
- Heavy equipment use and operation
- Grading operations
- Installation of civil/septic/sub-structure drainage systems
- Installation of electrical conduit/ light base foundations
- Preparation of structural foundations and slabs minor concrete pours
- Installation of structural foundations and slabs - Large Concrete Pours
- Installation of walkways/landscaping/planting/seed/sod

### **Phase 2 *Observation Tower***

Elevated two stories above Denys Street, the Observation Tower will be a wooden structure with a curved metal canopy. A staircase with multiple observation decks or landings will lead down the slope to the canal. The Tower will offer views of the Bras d'Or Lakes, the Atlantic Ocean and serve as a beacon from Route 4 to entice visitors. A trail network system will link the Tower to the proposed building cluster, the Denys Museum, the Canal, the shopping district on Route 4, and to the Marina in the future.





Phase 2 Tower construction involves:

- Deployment set-up
- Siltation control installations
- Clearing and grubbing operations, bank stabilization and general earthwork
- Installation of structural foundations – large excavation & large concrete pours
- Erection of vertical members – crane required
- General carpentry & framing
- Erection of roof & upper lookout – crane required
- Finish carpentry

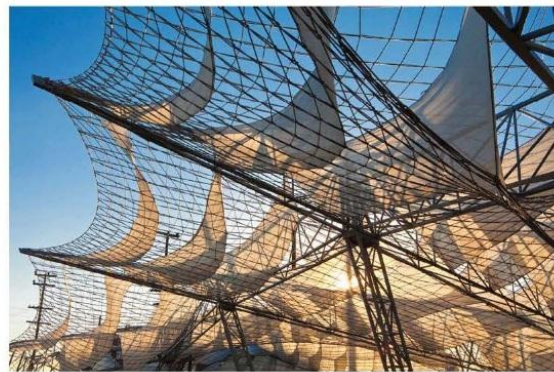
### **Phase 3 Construction of Canopied Stage & associated buildings**

This phase involves development of a steel canopied stage shelter and includes:

- Erection of large structural members – crane required
- General structural steel framing and welding operations
- Installation of roof decorative features
- Painting of structures



*Sample roof and window pattern*



*Sample of a low cost sail inspired canopy projection*



*Sample of a simple building with clean lines*

A small on site storage building will be required to house rental kayaks and bikes and for site furnishings. This building could be located close to the old house or incorporated into the Lock storage building

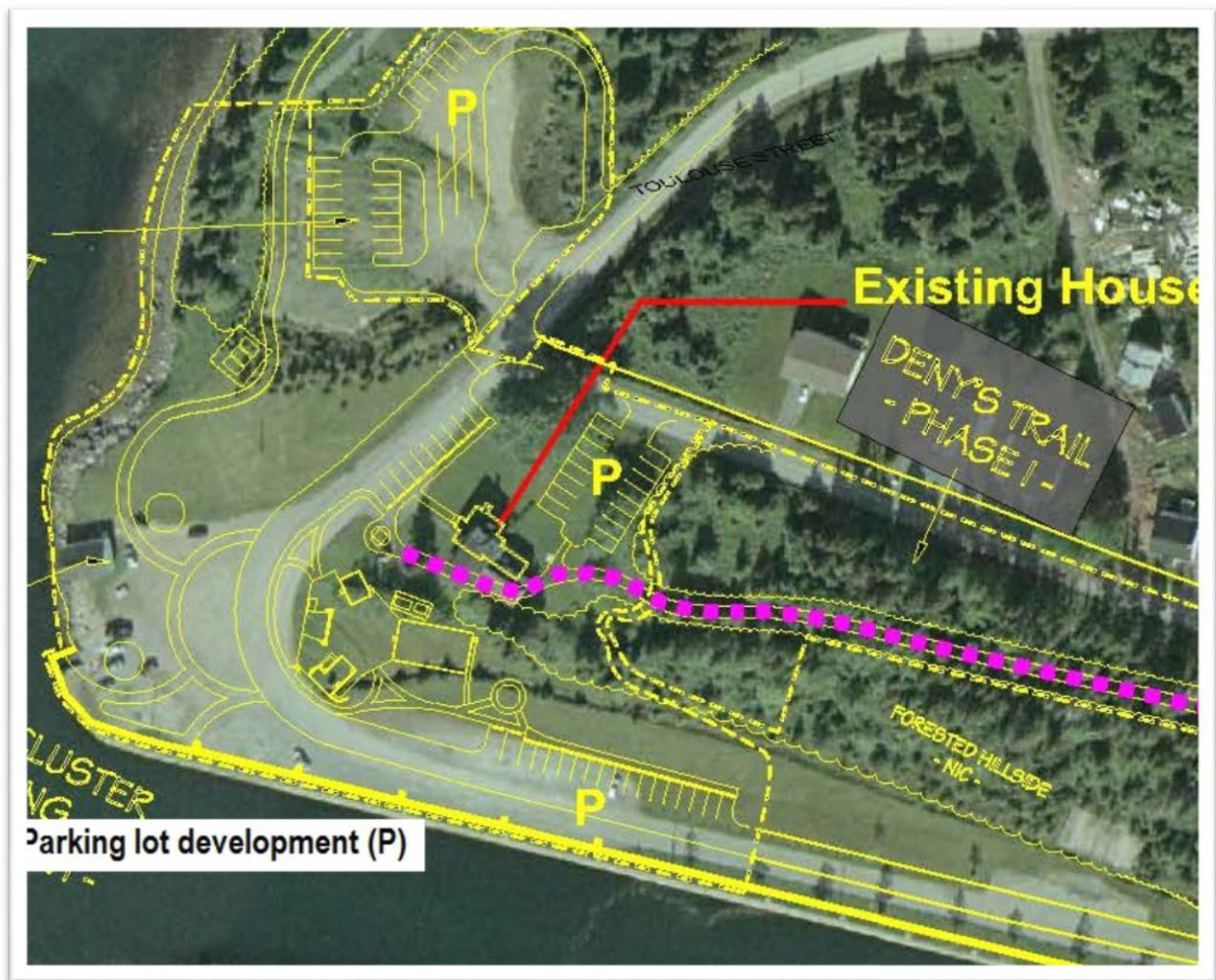




#### Phase 4 Parking Lot Installation

Development includes:

- Installation of aggregate base, asphalt base, and surface courses
- Completion of asphalt roadwork, line painting, and concrete curb stops





### **Post-construction**

Once developments become operational, jobsite facilities will require dismantling. Construction staging and any other areas used by the contractors will be reinstated to their original or equivalent condition.

Temporary impacts to the visitor experience will occur during construction. This will generally take the form of construction inconveniences; however, areas in close proximity to site development locations may be closed to the public for safety reasons.

### **Project Schedule**

In general, work will be scheduled to avoid disrupting visitor experiences. Ideally, the project will start early in 2016 and continue to the end of that year. The project schedule will be arranged in consultation with the Parks Canada Agency and the phases executed consecutively or concurrently as logistics dictate.

## **10. ENVIRONMENTAL COMPONENTS**

Few environmental components are expected to be impacted as most project areas are already developed and disturbed. Impacted components include soils, bedrock, landform and vegetation.

Cultural Resources have been identified in the vicinity of the subject work areas and therefore have the potential to be impacted by excavation activities.

Short-term disturbance has been identified with regard to the visitor experience; short-term disturbance to terrestrial wildlife may occur during the site preparation and construction period.

Environmental components not anticipated to be affected by the project include fish, Species at Risk and cultural resources. Environmental components are discussed below.

### **Climate**

The area climate is characterized by cold but not severe winters and warm summers. Spring comes later to areas near the coast because of the sea-ice cover and persistent cold water (Davis, D.S., and Browne, S, 1996). In January, mean daily temperatures are less than 6°C but by July, the regional temperatures have warmed to a mean daily temperature of over 17°C. Total annual precipitation is between 1,200 to 1,600 mm. The snow-cover season lasts more than 130 days, with generally low snow accumulations (Davis, D.S., and Browne, S, 1996). The main features of the bioclimate of the Atlantic coastal forest are the long frost-free period and long growing period, combined with cool summer temperatures, low evapotranspiration rates, and exposure to wind (Davis, D.S., and Browne, S, 1996).



## Soils and Landforms

The St. Peters Canal is located on a narrow isthmus between the Bras d'Or Lakes and the Atlantic Ocean. The Provincial Park (east) side of the Canal has areas of high relief and steep slopes. The canal landscape is an already human impacted environment, including blasted slopes, mowed areas, access roads, and signs of previous development.

St. Peters Canal is found on the northern edge of the *Sedimentary Lowlands* of Chedabucto Bay at the southeast end of the Strait of Canso and is part of the Avalon Terrane of Nova Scotia (Parks Canada, 1999). The bedrock of the Canal Property is gabbro and overlying this east and west of the property are Carboniferous sandstones and shales (Parks Canada, 1999).

## Vegetation

The vegetation of the St. Peters Canal area is typical of the vegetation found in eastern Canada. The completed biophysical inventory (Parks Canada, 1999) surveyed several areas that could be categorized as either mowed grounds, non-forested slopes, or forested slopes



## Mowed lawns

This area includes most of the flat ground along the west side of the canal including the area southeast of the locks. This area is dominated by a lawn planting mix of grasses, various legumes (creeping white clover *Trifolium repens*, alsike *Trifolium hybridum*, birdfoot trefoil *Lotus corniculatus*) and several non-native herbs (red clover *Trifolium pretense*, Plantain *Plantago major*, stinking willie *Senecio jacobea*, and speedwell *Euphrasia officinalis*). Sweet grass *Hierchloe cf odornata* (L.) Beauv., identified as having aboriginal importance, was surveyed in this area. The exact survey location is not known.





### **Non-Forested Slope**

This area is located on the west side of the canal. Dominant species include yarrow (*Achillea millefolium* L.), speckled alder (*Alnus incana*), and various grasses.

### **Forested Slope**

This area is located on the west side of the ravine between the Denys Museum Lookoff and the Lock Master House and the slope east of the canal from the east edge of the mowed area north to the swinging bridge. The observation tower will be built in this habitat on the slope on the west side of the canal. Dominant species include speckled alder and white spruce (*Picea glauca*). Several shrubby plants were also noted in the survey (*Amelanchier*, *Myrica*, *Vaccinium*).

### **Battery Provincial Park**

Battery Provincial Park is located within the Cape Breton Coastal Ecodistrict where the dominant forest is white spruce (*Picea glauca*), balsam fir (*Abies balsamea*) and black spruce (*Picea mariana*) mix. The dominant hardwood component of the coastal forests includes red maple (*Acer rubrum*) and white birch (*Betula papyrifera*) (NSDNR, 2003). Personal communication with a Department of Natural Resources ecologist indicated that vegetation species within the vicinity of the park are mature stands of balsam fir, white spruce and white birch. No significant species of interest were noted.

## **Wildlife and Wildlife Habitat**

### **Mammals**

Red squirrel is common in the area and the occasional red fox, coyote, white tailed deer and bobcat have been observed within the vicinity of the canal bridge (Parks Canada, 1999).

### **Birds**

The area surrounding St. Peter's provides suitable habitat for numerous migratory and resident bird species. Approximately 120 breeding bird species have been reported within the region. The biophysical survey completed by Parks Canada identified bird species present within the Canal area and adjacent woodland including Herring Gulls, Belted King Fisher, Black Duck, Blue Jay, American Goldfinch, White-throated Sparrow, Downy Woodpecker and Grackle.

### **Fisheries**

Fish habitat has not been typified within the canal, however sampling surveys were not completed as part of the Biophysical Survey (Parks Canada, 1999). Recreational fishing has been reported to occur from the canal walls (Parks Canada, 2009).

A commercial fishery exists in the Bras d'Or Lakes. Lobster, oysters, scallops and rock crab are the most significant commercial benthic invertebrate species in the lake, while historically, herring, mackerel and cod have been fished. In 1999 the herring fishery was closed due to low population numbers (DFO, 2007).



Historically, Rainbow trout, Atlantic salmon, and Arctic char have all been reared at one time within the Bras d'Or Lakes for commercial purposes, however there is currently no significant sustained finfish aquaculture in the Bras d'Or Lakes (DFO, 2007). At present, oysters are the only aquaculture species cultured in the lake (DFO, 2007).

### Species at Risk

Of the wildlife identified within the region, several are designated as Species at Risk under the Federal *Species at Risk Act* (2002) and the Provincial Nova Scotia *Endangered Species Act* (1998).

Table 1 below lists the identified species and the potential presence of habitat within the Canal area and adjacent forest within the Battery Provincial Park. It should be noted that Species at Risk have not been reported in the surroundings of the Canal area or within Battery Provincial Park.

**Table 1: Species at Risk**

Species	SARA	NS ESA	Presence of Habitat
Common Nighthawk	THR	THR	Possible breeding evidence has been identified within the watershed (DFO, 2007). Foraging habitat may exist due to the abundance of insects and the openness of the area. Suitable nesting habitat is not present in the area as it occurs in vegetation-free habitats such as dunes, beaches, recently harvested forests, rock out crops and burnt-over areas. Impacts are not anticipated as a result of the project.
Canada Warbler	THR	END	Probable breeding evidence has been identified within the watershed (DFO, 2007). Foraging and nesting habitat generally occurs in wet, mixed deciduous-coniferous forest with a well-developed shrub layer. The Canal area and adjacent Battery Park generally lack the dense undergrowth required for foraging and nesting. Impacts are not anticipated as a result of this project.
Savannah Sparrow	SC	Not Listed	Confirmed breeding evidence within the watershed (DFO, 2007). Habitat generally consists of open areas with few trees such as cultivated fields, meadows and pastures. Suitable foraging and nesting habitat is not present within the Canal or adjacent areas. Impacts are not anticipated as a result of this project.
Rusty Blackbird	SC	END	Confirmed breeding evidence in the watershed (DFO, 2007). The preferred nesting and foraging habitat includes the shores of wetlands such as slow-moving streams, peat bogs, marshes, swamps and beaver ponds in the boreal forest. Suitable foraging and nesting habitat is not present within



Species	SARA	NS ESA	Presence of Habitat
			the Canal or adjacent areas. Impacts are not anticipated as a result of this project.
Barn Swallow	Not Listed	END	Confirmed breeding evidence in the watershed (DFO, 2007). Suitable foraging habitat present due to the abundance of insects and openness of the area. Nesting occurs on man-made structures where there is suitable cover. There is potential for barn swallows to nest on the storage shed near the shore.
Little Brown Myotis	END	END	Suitable foraging habitat present at the canal site due to the openness and abundance of insects. There is potential for the bats to roost in the storage shed near the shore. There is likely plentiful roosting habitat in the woods of Battery Park.

SP – Special Concern, THR- Threatened, END- Endangered

### Cultural Resources

Archaeological monitoring will be performed by a Parks Canada archaeologist or one agreed upon by Parks Canada. Areas of potential concern for disturbance of cultural resources have been identified in areas adjacent to the site. The cultural resources have been identified as Haulover Road (a traditional portage trail), and Aboriginal and 18<sup>th</sup> century sites. It was noted in the Parks Canada Management Plan (Parks Canada 2009) that remains could be buried under fill placed during the construction of the canal. The Plan also notes that it is unclear if any remnants of the Portage Route have survived.

### Archaeological Investigations

An Archaeological investigation was completed in 2005 within the Parks Canada Property and Battery Provincial Park to identify Aboriginal Camps relating to the portage route indicated on a Historical Map (ca. 1714). No Traces of Mi'kmaq Camps were found during the investigation; however, there is a relatively high potential for finding Aboriginal resources relating to the camps at the lake end of the Canal (Parks Canada, 2003).

The Lockmaster's House is to be left undisturbed as is the land around it which has an old cemetery and archaeological site. Undocumented oral tradition has it that a skeleton was discovered during the construction of the basement of the Lockmaster's House (Parks Canada 2009). Parks Canada will be consulted to mark the no-go areas prior to construction and excavation.





## Visitor Enhancements: St. Peter's Canal National Historic Site



Area of Potential Concern for Cultural Resources Source: Parks Canada, 2000



Lockmaster House (to remain undisturbed)



## Visitor Experience

As identified in the SPCNHSC Management Plan (2009), the goal for Parks Canada as it relates to visitor experience is to *“ensure that visitors have memorable experiences at St. Peters Canal and St. Peters National Historic Site, and that appropriate services and facilities are available to enhance the visitor experiences for a range of interests, ages and abilities”*.

Visitors to the St. Peters Canal can experience the site by both land and water. More than 1000 vessels transit the canal each year. Land-based visitors include local residents and tourists; residents generally visit the site for recreational purposes. The Canal operates from May to October and serves pleasure craft, fishing, commercial and government vessels.

Current site facilities include picnic tables, benches along the canal, washrooms and waste disposal facilities. An information desk is available to help direct tourists.

St Peters Canal is well positioned to benefit local businesses and promote activity at the Battery Provincial Park Campground. The proposed project involves using existing historical connections and features of the St. Peters Canal to reinvigorate the site so visitors can have a full Canal experience, starting with the 100% Point Concept, where visitors will appreciate a new Visitor Capture Centre, and go from there to enjoy cultural displays, shopping, restaurants, trails, lookouts, and an observation tower.

## 11. EFFECTS ANALYSIS

The following section provides an effects analysis summary. Appendix 1 also provides an overview and matrix of the identification of potential effects from the proposed project

### Air Quality and Noise

Air quality effects related to dust and particulate emissions and arising from construction activities and the operation of machinery may occur. A Dust Management Strategy will be developed and implemented by the proponent. The effects on air quality from construction activities are generally controlled by good construction practice and proper equipment function.

### Soil and Landforms

Project activities will result in disturbance to soil. There may be potential contamination of soil within the construction area through spills of deleterious substances and from machinery and storage of chemicals/petroleum products. Potential effects related to the removal of soil will include dust, noise and vibration. Equipment will be maintained in proper working order. All lubricants, petroleum products and chemicals should be stored in secure, impermeable areas. In addition, a Spill Response and Action Plan, a Contaminant Prevention Plan and an Environmental Protection Plan will be implemented. These and **other recommended** plans will be provided to the EA Coordinator prior to project development as these plans are an important part of the EA process and environmental management of the project.



## **Surface Water**

Vegetation removal on the embankments, soil disturbance, and stockpiling of material during construction activities may increase the risk of erosion and sediment transport to the canal. There is the potential for spills/leaks during construction to result in the degradation of surface water quality. As well, debris from the roadway and trails during the site operation has the potential to enter the canal.

An Erosion and Sediment Control Plan will be implemented and will include provisions for inspection and monitoring. All machinery should be in good working condition, free of fluid leaks, and inspected daily. Refueling of equipment should be conducted in designated fueling areas located away from slopes and at least 100m from the Canal.

The following plans will also be implemented to mitigate potential effects on surface waters: Environmental Protection Plan, Spill Response Plan, and a Waste Management Plan.

## **Vegetation**

Vegetation removal will occur within the work areas during the site preparation phase of the project particularly in the area of the trails and viewing areas, and within the footprint of the new structures. Construction fencing will be installed around construction and staging areas to ensure machinery and construction activities do not occur outside of designated areas. A Landscape Management Plan will be implemented to clearly illustrate the removal of trees and the reinstatement of grassed areas. Planting lists should include species native to the area such as sweet grass. Heavy equipment must be cleaned prior to entering the site to reduce the potential for introduction of invasive plant species. As part of the Landscape Management Plan, only native species will be used, or, non-native ornamentals will first require vetting by the Park ecologist for approval. Vegetation removal will be selective for increased viewing area from tower sites, but as directed by the landscape architect or Parks Canada.

## **Wildlife**

Short-term disturbance to terrestrial wildlife is anticipated for the duration of the construction period within the construction area. Animals may temporarily avoid the area due to machinery activity and increased noise levels. Tree and vegetation removals must be conducted outside of Environment Canada's bird nesting window (April 1-August 31) or proceed on the basis of the recommendation of a qualified biologist following an active bird nest survey. Construction fencing will be installed around the construction area to keep wildlife out. If encountered within the construction area, wildlife shall not be harmed and left alone.

## **Species at Risk**

There is no known use of the NHS as habitat or breeding habitat by Species at Risk. There is no critical habitat for Species at Risk within the Parks Canada site or in adjacent areas. Impacts to Species at Risk are not anticipated.





## **Cultural Resources/Archaeological Resources**

The potential for Cultural Resources and Aboriginal sites has been identified in the vicinity of the proposed project. It is anticipated that the proposed project will not impact archaeological resources. Although impact is not anticipated, excavation activities in undisturbed subsurface material could disrupt unidentified cultural resources. Parks Canada identified Areas of Potential Concern for Cultural Resources (18<sup>th</sup> century sites, Aboriginal sites and Haulover Road) within the proposed work area (Parks Canada 2000 and 1999). It was noted in the Parks Canada Management Plan (Parks Canada 2009) that remains could be buried under fill placed during the construction of the project components. If any are discovered the PCA Directive on discovery of Human Remains will be strictly followed. There is a potential for the discovery of unidentified cultural resources.

As indicated on Parks Canada's *Areas of Potential Concern for Cultural Resources map*, Aboriginal sites have been identified on the west side of the Highway 4 bridge. It is anticipated that these Aboriginal sites will not be impacted by the construction of the proposed St. Peters Canal Development Project.

The Lockmaster's House is to be left undisturbed as is the land around it which has an old cemetery and archaeological site. Parks Canada will be consulted to mark the no-go areas prior to construction.

Archaeological monitoring will take place during excavation activities for the construction and installation of the building structures. If cultural remains are encountered, work will stop immediately and a Parks Canada Archaeologist will be contacted. The historic lock building is not to be damaged during construction. No excavation below 600 mm is to occur within 5 m of the building without an onsite archaeologist. The trail adjacent to the existing concrete canal wall will be hand-tamped, with no use of heavy equipment. The Lockmaster's House is to be left undisturbed as is the land around it which has an old cemetery and archaeological site. Parks Canada will be consulted to mark the no-go areas.

## **Visitor Experience**

Construction of the new facilities will have some impact to Visitor Experience. Land-based visitors will experience the greatest impact as areas may be closed during construction, such as the existing Visitor Information Centre or the mouth of the canal near the work site. Municipal streets will remain open unless a permit is obtained from the municipality.

Construction will take place throughout the year. Construction activities pose a risk to visitor safety during the construction period. Traffic delays are unlikely as the project is located away from high use areas. Temporary delays or closures may occur if large vehicles must be maneuvered into place.

Overall, the intent is that, when complete, the proposed project will be a positive benefit that will enhance the St. Peters Canal visitor experience.



## 12. MITIGATION MEASURES

Environmental Effect	Mitigation Measures
<i>Air quality &amp; soundscape degradation through construction activities and the operation of machinery.</i>	<ol style="list-style-type: none"> <li>1. Implement Dust Management Strategy</li> <li>2. The effects on air quality and noise from construction activities are generally controlled by good construction practice and proper equipment function.</li> <li>3. Noise from construction will be during the construction period only.</li> <li>4. Construction activities must conform to local Municipal Noise By-Law current at the time of the work.</li> <li>5. The project manager will receive and verify noise complaints and take steps to ensure that the works are completed within the specifications relating to noise.</li> </ol>
<i>Potential contamination of soil through spills of deleterious substances and from machinery and storage of chemicals/petroleum products.</i>	<ol style="list-style-type: none"> <li>6. Maintain equipment to ensure no fluid leaks</li> <li>7. All lubricants, petroleum products and chemicals should be stored in secure, impermeable areas</li> <li>8. Develop and implement Spill Response and Contaminant Prevention Plan</li> <li>9. Develop and implement Environmental Protection Plan (for air, terrestrial and aquatic)</li> <li>10. Once completed, provide copies of all Plans to EIA Coordinator for filing and documentation purposes.</li> </ol>
<i>Project activities resulting in soil disturbance.</i>	<ol style="list-style-type: none"> <li>11. To minimize disturbance, the construction area will be clearly marked, fenced and be as small as possible.</li> <li>12. Implement Erosion and Sediment Control Plan. Will include a provision for inspection and monitoring</li> <li>13. All exposed soil must be stabilized as soon as possible; both during and after construction.</li> <li>14. Stockpiled material shall be stored away from watercourses and embankments and covered to protect from erosion. Silt fencing must encompass stockpiled materials.</li> <li>15. Seeding or sodding of permanently exposed soil areas with local species or varieties of vegetation is required.</li> <li>16. Prior to removal of Erosion and Sediment Control measures, all silt and sediment must be removed.</li> </ol>



Environmental Effect	Mitigation Measures
<i>Vegetation removal on the embankments, soil disturbance and stockpiled material from construction activities may increase the risk of erosion and sediment transported to the canal.</i>	<p>17. Implement Erosion and Sediment Control Plan. Will include a provision for inspection and monitoring</p> <p>18. All exposed soil following the completion of the construction works must be stabilized as soon as possible</p> <p>19. Stockpiled material shall be store away from watercourses and embankments. Silt fencing must encompass stockpiled materials.</p> <p>20. - Prior to removal of Erosion and Sediment Control measures, all silt and sediment must be removed</p>
<i>There is the potential for spills/leaks during construction to result in the degradation of surface water quality.</i>	<p>21. All machinery should be in good working condition, free of fluid leaks, and inspected daily.</p> <p>22. -Refueling of equipment should be conducted in <u>designated</u> fuelling areas, away from slopes and at least 100 m from the Canal and any surface water</p> <p>Implement Environmental Protection Plan</p> <p>23. Implement Spill Response and Action Plan</p> <p>24. - Any contaminant-laden water will be contained, treated and disposed of in accordance with Federal, Provincial and Municipal legislation</p>
<i>Debris from the roadway and trails during the site operation has the potential to enter the canal.</i>	<p>25. Develop waste management plan/strategy</p> <p>26. -Recycle material where feasible</p>
<i>Permanent removal of vegetation will be required to accommodate the new trail and structures. Grassed areas within the construction area may also be affected.</i>	<p>27. Construction fencing to be installed around construction and staging areas to ensure machinery and construction activities do not stray outside of designated areas.</p> <p>28. -Implementation of Landscape Plan to clearly illustrate the removal of trees and the reinstatement of grassed areas. Planting lists should include species native to the area such as sweet grass. As part of the landscape Management Plan, only native species will be used. Non-native ornamentals will first require vetting through Park ecologist for approval.</p>





Environmental Effect	Mitigation Measures
	29. - Observation Tower: Selectively cut trees for increased viewing from tower and as directed by landscape architect and Park ecologist.
<i>Heavy equipment delivered to the site may inadvertently spread non-native plants and seeds.</i>	30. -Heavy equipment must be cleaned prior to entering the site. Non-native ornamentals will first require vetting through Park ecologist for approval.
<i>Removal of vegetation within the construction area may adversely impact nesting birds.</i>	31. -Tree and vegetation removals must be conducted outside of Environment Canada's bird nesting window (April 1-August 31) or proceed on the recommendation of a qualified biologist following an active bird nest survey
<i>Terrestrial Wildlife of the area will be temporarily disturbed during the site preparation and construction phase of the project due to noise and general construction activity in the area.</i>	<p>32. -Terrestrial wildlife will temporarily avoid the area as a result of disturbance from noise generated during construction.</p> <p>33. -Survey existing structures in project area for nesting bats, swallows, migratory birds and develop follow-up plan.</p> <p>34. -Survey areas to be affected for nesting, denning mammals and birds.</p> <p>35. -Schedule work to avoid breeding and denning seasons, as advised by Park ecologist.</p>
<i>Wildlife could potentially be encountered within the construction area.</i>	<p>36. -Construction fencing to be installed around the construction area to keep wildlife out</p> <p>37. -If encountered within the construction area, wildlife shall not be harmed and must be left alone to leave the site.</p> <p>38. -Garbage containing food must be kept in closed containers</p> <p>39. -Wildlife and birds must not be fed.</p>
<i>Concrete used in construction of the new buildings and structures could potentially enter the canal and impact fish and</i>	40. -Measures must be implemented to ensure all works involving the use of concrete, cement, mortar or lime containing construction materials do not enter the Canal, directly or indirectly.



Environmental Effect	Mitigation Measures
<i>aquatic life.</i>	<p>41. -Placement of cement must be carried out in accordance with provincial/federal standards.</p> <p>42. -No cleaning of concrete chutes on or near the site.</p>
<p><i>The potential for Cultural Resources and Aboriginal sites has been identified at the project site.</i></p> <p><i>Although impact is not anticipated, excavation activities within undisturbed subsurface material could disrupt unidentified cultural resources.</i></p>	<p>43. Archaeological monitoring during excavation activities during the construction and installation of the building structures. If cultural remains are encountered, work will stop immediately and a Parks Canada Archaeologist will be contacted</p> <p>44. Monitoring shall be undertaken by a Parks Canada archaeologist or one agreed upon by Parks Canada.</p> <p>45. Historic lock keepers building not to be damaged during construction. No excavation below 600 mm to occur within 5 m of building without an onsite archaeologist.</p> <p>46. Trail to be hand tamped against existing concrete canal wall. No use of heavy equipment.</p> <p>47. The Lockmaster's House is to be left undisturbed as is the land around it which has an old cemetery and archaeological site. Parks Canada is to be consulted to mark the no-go areas.</p> <p>48. Identify who will conduct the CR monitoring before the work is undertaking.</p> <p>49. Need to notify the CR manager two weeks prior to any work in order to establish site-specific CR monitoring needs, schedules, identify personnel, etc. Maura M. at FOL is the contact for this.</p> <p>50. Public/park notification informing of project commencement? Communication plan development &amp; implementation? This requirement may be beyond the scope of this EA but sometimes it's included, contextual. PCA's CR contact is Maura McKeough 902-733-3530. <a href="mailto:Maura.McKeough@pc.gc.ca">Maura.McKeough@pc.gc.ca</a></p>
<i>Viewscales and Soundscapes may be impacted by construction activities during the construction period.</i>	<p>51. -Views of the National Historic Site will be temporarily impacted during the construction period only</p> <p>52. -Noise from construction will be temporary during the construction period only. Construction activities must conform to local Municipal Noise By-Law current at the time of the work. The project manager will receive and</p>



Environmental Effect	Mitigation Measures
	verify noise complaints and take steps to ensure that the works are completed within the specifications relating to noise.
<i>Construction Activities pose a risk to visitor safety during the construction period.</i>	53. -Implement Pedestrian Control Plan 54. -Implement Traffic Control Plan 55. -Construction fencing to be installed around all work areas to keep visitors out 56. -Implement a Blast Management Plan prior to any blasting activities, if undertaken. 57. -A Marine visitor Safety Plan is required to protect boats docked or transiting the canal.
<i>Activities associated with the construction will create waste.</i>	58. -Develop waste management plan/strategy 59. -Recycle material where feasible
<i>Some waste associated with construction cannot be recycled.</i>	60. -For waste that cannot be recycled, it shall be assessed prior to removal off site to ensure disposal at a proper facility in accordance with Federal, Provincial and Municipal legislation





### 13. Consideration of the Need for Public Participation & Aboriginal consultation

Indicate whether opportunity for public participation should be offered:

☐ No ☒ Yes

Going back to May 2012, the Municipality of Richmond consulted with the Isle Madame and St. Peter's community on a regular basis. The Municipality wanted input from all community stakeholders. Discussions were held at the St. Peter's community group dinners and meetings, through the St. Peter's tourism committee, and through the Municipal newsletter, mailed to residents in the County, and through televised Council meetings.

A presentation of the St. Peter's Canal Project will be made to the Richmond County Council and will include a project description, design, construction staging schedule and the next steps in the process. Additional public consultation will be held prior to construction to inform the local residents of the project.

Indicate whether there is a requirement for Aboriginal Consultation in relation to project impacts:

☐ No ☒ Yes

Potlotek First Nation has been consulted in regards to the St. Peter's Parks Canada Canal Development project. In 2015, The Municipality of Richmond and Potlotek First Nation entered into a Memorandum of Understanding with an initial focus on tourism and the St. Peter's Parks Canada Canal project. This would include items such as potential staffing during construction and operation.

Among the outcomes, the Visitor Information Center will provide visitors and introduction to different communities, cultures and experiences around Richmond County. The Municipality is hopeful that Potlotek First Nation will play a major role and focus in the cultural design of the Canal Center.

In 2014, the Municipality of Richmond consulted with Potlotek First Nation on a Trans Canada Water Trail (TCWT) opportunity that would help connect different communities on the Bras d'Or Lake to North Sydney in the hopes of completing the Trans Canada Trail by 2017. This notoriety of the Trans Canada Trail would greatly assist in the marketing of the Potlotek Paddling center as it would also be the location for the TCWT site.

In 2012, as the Municipality of the County of Richmond began to reinvigorate tourism, consultant Harvey Sawler determined that the Cape Breton Blueways theme could be a unique water activity brand that Richmond County could live up to. The Municipality and our consultants met with Potlotek First Nations to discuss the potential of a paddling center in Robertson Cove. The concept



would be to provide qualified instructors, have paddling tours in and around the iconic and historic Chapel Island, and provide experiences such as canoe making and other cultural skills or crafts. The marketing of the Potlotek Paddling opportunity would be done through a partnership of Potlotek First Nation and the Municipality of Richmond and the paddling would be introduced to visitors at the St. Peter's Canal site.

#### **14. EFFECT SIGNIFICANCE**

The temporal and spatial scope of the project is generally limited. With the implementation of the proposed mitigation measures, it is anticipated that residual environmental effects resulting from the St. Peter's Canal Development Project will be negligible. Thus, significant environmental effects are not anticipated for this project.

Cumulative effects are expected to be insignificant. The land to be developed has been disturbed throughout centuries of habitation and use of the canal. Some elements of the project will replace existing structures. New structures are planned to be harmonious with the existing environment.

#### **15. SITE INSPECTION**

Document whether a site inspection program will be required while the project is underway.

☒ Site inspection required (required to verify mitigation measures are implemented)  
☐ Site inspection not required

PCA Resource Conservation is required in various capacities during project implementation, including include but not limited to attending pre-construction meetings, surveillance monitoring and field support, consultation on various environmental-related issues that may arise and so forth. Contact CBFU EIA Coordinator for further direction.

#### **16. SPECIES AT RISK MONITORING**

Species at Risk have not been identified within the project area. Species at Risk Monitoring is not required.

#### **17. SARA NOTIFICATION**

Species at Risk have not been identified nor are impacts to aquatic species anticipated. As such, SARA notification is not required.



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## DECISION

Taking into account implementation of mitigation measures outlined, the project is:

- ☒ Unlikely to cause significant adverse environmental effects.  
☐ Likely to cause significant adverse environmental effects.

## SIGNATURES AND APPROVAL

**BIA Author:** *Stephen E Barbour, Senior Biologist, Environmental Services, Public Services & Procurement Canada*

### BIA Recommender

**Name:** Archie Doucette Environmental Assessment Coordinator, CBFU

**Signature:** *Archie Doucette* **Date:** December 2015

### BIA Recommender

**Name:** Maura McKeough, A/ Cultural Resource Manager, CBFU

**Signature:** *Maura McKeough* **Date:** December, 2015

### BIA Recommender

**Name:** Derek Quann, Resource Conservation Manager, CBHNPC

**Signature:** *Derek Quann* **Date:** DEC 2015

### Project Manager (Functional)

**Name:** Jeff Stanley, Director of Tourism & Economic Development

**Signature:** *Jeff Stanley* **Date:** December 2015

*I have read and commit to following the mitigations set out in this report*

### APPROVED BY:

**Name:** Blair Pardy, Superintendent, CBFU

**Signature:** *Blair Pardy* **Date:** Jan 11, 2016

### Comment:

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## **20. REFERENCE LIST**

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## Appendix 1 Environmental Impact Analysis Tools: Effects Identification Matrix

			Components potentially directly affected by the proposed project											
			Direct Effects (during preparation/construction phases)					Cultural Resources		Visitor Experience				
			Air	Soil & Sediment	Water / Surface	Flora / Vegetation	Fauna (specify, if possible)	Potential Cultural	Historic Value	Visitor access	Recreational / Other	Views and Scapes	Visitor Safety	Essence of Place
Phase	Examples of Associated Activities													
Project Components	Preparation / construction	Supply and storage of materials	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Burning	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Clearing	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Deconstruction	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Disposal of waste	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Blasting/ Drilling	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Dredging	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Drainage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Excavation	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Grading	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Backfilling	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Use of machinery	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
		Transport of materials/equipment	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Building of fire breaks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Use of Chemicals	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>





Visitor Enhancements: St. Peters Canal National Historic Site

Operation/Disassembly	Set up of temporary facilities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Waste disposal	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Wastewater disposal	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Maintenance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Use	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Use/Removal of temporary facilities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Use of Chemicals	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Active Fire Stage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Prescribed burn clean up	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Planting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Culling	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Vehicle Traffic	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Other...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>