

Town of St. Vincent's-St. Stephen's-Peter's River  
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Environmental Assessment Registration  
File Ref No. 200 20 2489

**NAME OF UNDERTAKING:** Replacement of St. Vincent's Breakwater

**PROPONENT:**

(i) **Name of Corporate Body:** Town of St. Vincent's-St. Stephen's-Peter's River

(ii) **Address:** P.O. Box 39, St. Vincent's, NL A0B 3C0

**Chief Executive Officer:**

**Name:** Daniel St. Croix

**Official Title:** Mayor

**Address:** P.O. Box 39, St. Vincent's, NL A0B 3C0

**Telephone No:** 709-525-2540

**Principal Contact Person for purposes of environmental assessment:**

**Name:** Marilyn Gibbons

**Official Title:** Town Clerk

**Address:** P.O. Box 39, St. Vincent's, NL A0B 3C0

**Telephone No:** 709-525-2540

## THE UNDERTAKING:

- (i) **Name of Undertaking:** Replacement of St. Vincent's Breakwater
- (ii) **Purpose/Rationale/Need for the undertaking:** The existing breakwater has been there for 40+ years and is in disrepair (Figure 13). It is constructed of spruce timber. When we have strong winds, high waves and storm surge, the ocean water washes over and between the breakwater, threatening the fourteen homes that are in the direct path of the potential flooding. There is also a boatshed owned by the Fishermen's Committee and two local roads owned by the Town that can and have been damaged by high seas. When there is a storm surge and high seas with the waves reaching and going through the breakwater there has been flooding of our local roads, Beach Road and Boat Shed Road,(Figure 6) and destruction of parts of the breakwater with a lot of the actual sticks being broken down and washed away. (Figure 13)

## DESCRIPTION OF THE UNDERTAKING:

**Geographical Location:** St. Vincent's is located on the Southern Avalon Peninsula (Figure 1). The breakwater is located on the St. Vincent's beach to the West of the existing breakwater owned and maintained by the Department of Transportation and Works. St. Vincent's beach is part of a 5km beach system that runs from St. Vincent's to Peter's River (Figure 2). The Transportation and Works breakwater serves to protect Route 90 and the Town of St. Vincent's while the Town breakwater provides some protection to local roads and 14 homes and structures in the local area known as "The Flats" (Figure 5). There is a barrier that connects St. Vincent's to the rest of the southern shore (Figure 3). This barrier also separates the ocean from Holyrood Pond. When the water level in Holyrood Pond rises, Transportation & Works open the Gut (Figure 3) to allow the water to run out. This protects route 90 and our residents from flooding. After a period of time and wave action (Figure 8), the Gut fills in again. (Figure 4).

### Large Scale Map/Photos:

- Figure 1. Map of the location of St. Vincent's on the Avalon Peninsula.
- Figure 2. Aerial Photo of the entire beach system from St. Vincent's to Peter's River.
- Figure 3. Barrier system from the open Gut to The Flats. (2009)
- Figure 4. Barrier system from the closed Gut to the Flats. (2008)

- Figure 5. Map of St. Vincent's beach indicating the Town's and the Dept. of Transportation's breakwaters.
- Figure 6. Aerial photo of opening between the Town's breakwater and the Dept. of Transportation's breakwater.
- Figure 7. Photo of the Town's breakwater and the Dept. of Transportation's Breakwater.
- Figure 8. Photo of high waves/storm surge on the entire beach. Please note the wave action on the Gut.
- Figure 9. Photo of high waves/storm surge on the Town's breakwater.
- Figure 10. Photo of high waves/storm surge on the Dept. of Transportation's Breakwater and the Gut.
- Figure 11. Photo of high waves going over the Dept. of Transportation's Breakwater in March, 2014.
- Figure 12. Photo of high waves going over the breakwater and damaging Route 90 in March 2014.
- Figure 13. Photo of present condition of the Town's breakwater.
- Figure 14. Drawing of the proposed new breakwater.

- (i) **Physical Features:** The major physical feature of the undertaking is that it is a wooden breakwater constructed with spruce timber. Access to the site is from Route 90 onto our local gravel road known as Boat Shed Road (Figure 6). There are no residents on this road. There is another breakwater on the St. Vincent's Beach that is the responsibility of the Department of Transportation and Works. It is also constructed from timber and runs from our breakwater to the bridge which is the end of Route 90 and the beginning of Route 10. There is an opening of 86ft between the Town's breakwater and the Department of Transportation's breakwater (Figure 6). When there are high seas the water sometimes comes in through this opening (Figure 11).

**The size of the area to be affected by the undertaking:** The size of the breakwater with the cribbing will be approximately 6ft wide by 1000ft long. The area on the landward side of the proposed breakwater will be where most of the construction will take place. Once the new breakwater is in place the cribbing will be constructed and filled with rocks. The seaward side should have very little disruption only to remove the old timber and prepare the ground for the new breakwater.

**The physical and biological environments within the area:** The area consists of sand and some old armour stone that has been uncovered over the years. There is some vegetation on the beach but the type is unknown. Berms do build by the high water mark in the summer and erode to a flat beach in the fall and winter. In early summer, June and early July, the whales visit the St. Vincent's Beach. Due to a sudden drop off the ocean floor, the whales come very close to shore and visitors and locals get to enjoy a close up view of these majestic whales for free. There is an opening between the Town's breakwater and the Dept. of Transportation breakwater that allows people to access the beach from Route 90 via Boat Shed Road. St. Vincent's Beach is also visited by seals, caplin, gulls, other sea birds and shorebirds.

(ii) **Construction**

**The approximate total construction period:** Three months (August to October) this year and three months (August to October) 2017. If possible full construction may be completed from August to October 2016.

**The proposed date of the first physical construction:** August 1, 2016.

**Potential sources of pollutants:** Chain saws and other carpentry tools will be used along with heavy equipment to dig the old breakwater out and prepare the ground for the new breakwater. There is a potential of pollutants from oil, gas, lubricants or diesel fuel but every precaution against pollution will be taken. The contractor will have a spill kit on site at all times. All employees will be made aware that there will be no littering and that all material will be removed from the site every day. The contractor will be instructed to make sure there are no leaks in his equipment.

There should not be any resource conflicts. Our beach is used in the early summer for whale watching and for people just enjoying a walk on the beach. Signs will be posted prior to the beginning of construction so that people will be aware when construction will begin.

**Operation:**

**Period of operation:** This is a permanent facility. The breakwater will provide protection for our residents and our Town's infrastructure from the destruction of high waves and storm surge. The Town will monitor the breakwater to correct any breaches that may occur in the structure. Special attention will be focused on the build up of sediment in front of the breakwater as this allows waves to run up and over the breakwater (Figure 11).

(iii) **Occupations:**

**Number of employees required for the construction and operation:** 10 employees for 10 weeks construction and 0 for operation.

**Enumeration and occupations:** The employees will be provided under a program sponsored by the Department of Education Skills and Development and there will be 1 carpenter foreperson NOC 7271 and 9 labourers NOC 7611. The contractor will provide 1 heavy equipment operator NOC 7521, 1 truck driver NOC 7511 and 1 labourer NOC 7302.

**Work to be carried out:** The construction of the breakwater will be constructed by the 1 foreperson and 9 labourers hired and a contractor will be hired to remove the old breakwater and prepare the ground for the new breakwater. The contractor has experience in the construction of breakwaters. They have constructed several in the past years.

**Employment equity:** Applications will be requested with no restrictions to age or gender and hiring will be for applicants that qualify under the job creation project with the Department of Education Skills and Development.

**Project Related Documents:** We have contacted Dr. Norm Catto, Head of the Department of Geography, Memorial University of Newfoundland, asking for any information he may have on erosion occurring on the St. Vincent's beach. Dr. Catto informed us that with the ongoing sea level rise of about 3 mm/y, and assuming storm activity stays at the same rate as for the past decade and that winter ice cover remains minimal, erosion of ~20-30 cm/y, punctuated by larger amounts from individual hurricanes, seems to be a reasonable initial estimate.

We also contacted Natural Resources for any reports they may have. Melanie Irvine M.Sc, Project Geologist with Geochemistry, Geophysics and Terrain Sciences Section sent us a copy of the report from 2014 which shows the results of their studies on the barrier and cliffs near St. Vincent's. The beach in front of the community is remaining pretty stable, however erosion of the cliff is substantial.

## **APPROVAL OF THE UNDERTAKING**

**Authorization required for the undertaking:** Department of Municipal Affairs, Crown Lands Division approval is required. Contacted Water Resources to see if a permit was required. We do not require a permit. Mineral/Lands, Mines Division was contacted and we were told that we do not need a permit because the contractor will have their permit to supply the rock needed, but to check their website for further information for the construction of a breakwater. We also checked with Wildlife Division and we do not require a permit from them.

## **SCHEDULE:**

The earliest date the project could start is the first of August, 2016. This is the date applied for under the Job Creation Program. The latest date would be September 1 2016 due to being finished before the winter season.

## **FUNDING:**

This project depends partially on a project under the Government of Newfoundland and Labrador, Department of Education Skills and Development, Job Creation Partnership. P.O. Box 8700, St. John's, NL, A1B 4J6. We also have permission under the Gas Tax Funding to use \$37,535.57 for this project.

**Drawing of the new breakwater**

(Figure 14) There will be a rock base in the bottom of the trench. The 14ft. 6x6 breakwater posts will be 6ft. underground and 8ft. above ground. 4x4x6 cribbing will be placed in the trench every 8ft to stabilize the breakwater. The cribbing will be 2ft. above ground and 4ft. below ground.

Not sure if we will be using 6x6x14 (salt water treated lumber) or black spruce 8" x 14 '

Capital Cost Estimate:

**2016 Construction**

**800 6x6x14 (Salt water treated) @59.95 = \$47,960.00**  
**125 tons of rock @ 71.00/ton = \$8,875.00**  
**Total = \$56,835.00**

**2017 Construction**

**800 6x6x4 (Salt water treated) @59.95 = \$47,960.00**  
**125 tons of rock @71.00/ton = \$8,875.00**  
**Total = \$56,835.00**

**Grand Total 2016/2017 = \$113,670.00**

**Capital Cost if we use Black Spruce**

**2016 Construction**

**1700 8"x14' spruce sticks @20.00 = \$34,000.00**  
**125 tons of rock @71.00/ton = \$8,875.00**  
**Total = \$42,875.00**

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Date

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Signature of Chief Executive Officer/ Mayor

Fig.1 Location of St. Vincent's on the Southern Avalon

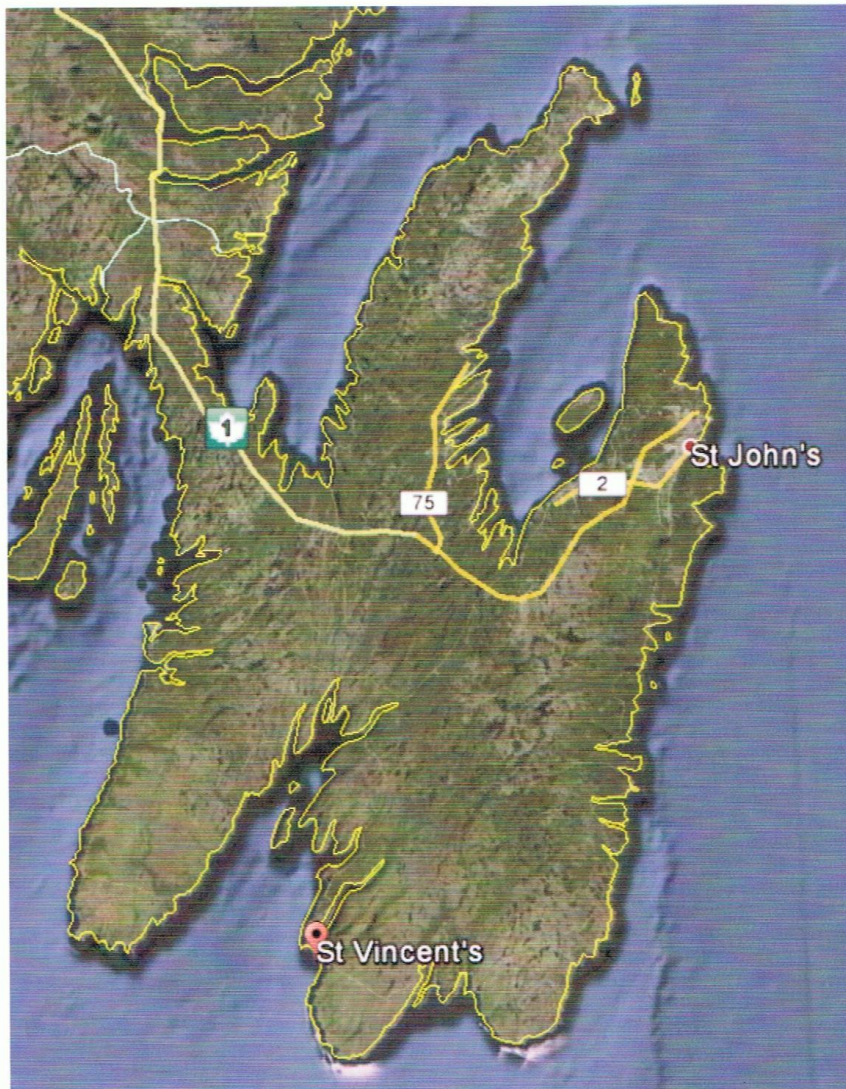




Fig.2 5km Beach from St. Vincent's to Peter's River

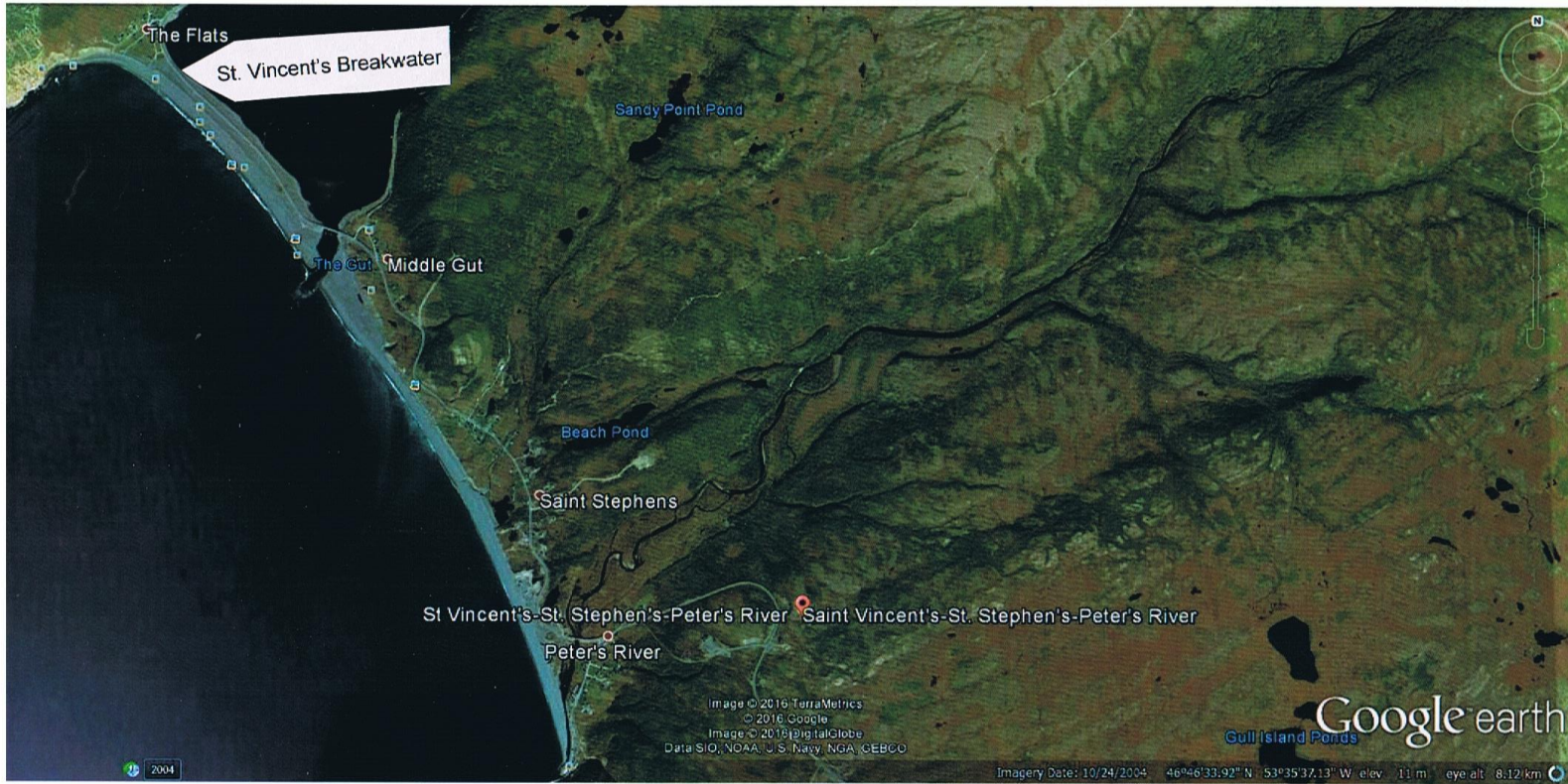


Fig.3 Barrier System from the open Gut to the Flats(2009)



Fig.4 Barrier System from the closed Gut to the Flats(2008)



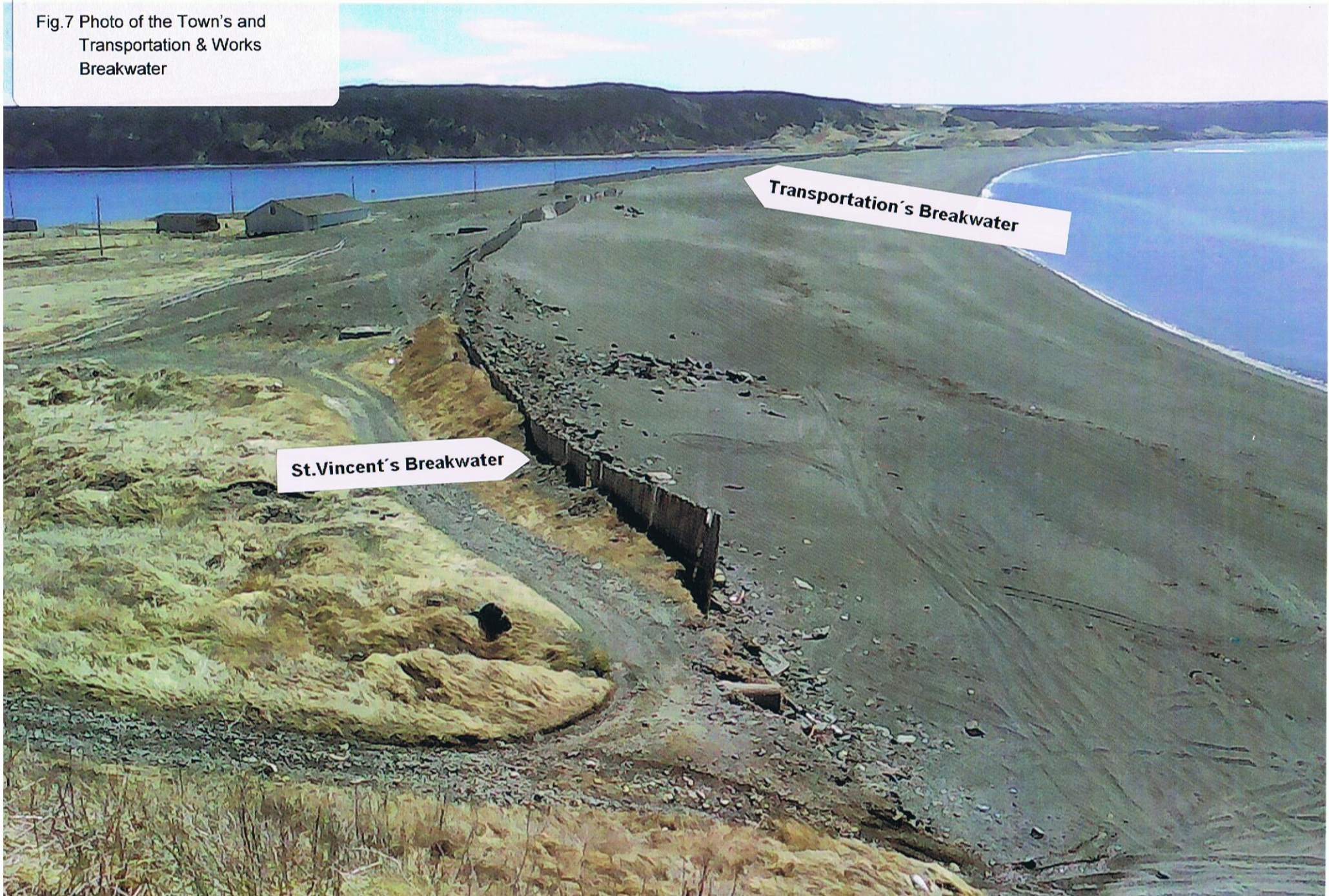
Fig.5 Barrier system with breakwaters



Fig 6 Map of the opening



Fig.7 Photo of the Town's and Transportation & Works Breakwater



St. Vincent's Breakwater

Transportation's Breakwater

Fig.8 Photo of high waves/storm surge  
For the entire beach system.



The Gut

Fig.9 Photo of high waves/storm surge  
On the Town's Breakwater.





Fig.10 Photo of high waves/storm surge on the Dept. of Transportation & Works breakwater and on the Gut.



**The Gut**

Fig.11 Photo of high waves going over the Highroads breakwater in March 2014. Lower left hand corner shows the opening between the two breakwaters.



Fig.12 Photo of high waves going over the breakwater and damaging Route 90 in March, 2014.



Fig. 13 Photo of present condition of the Town's Breakwater



Fig. 14a Drawing of breakwater

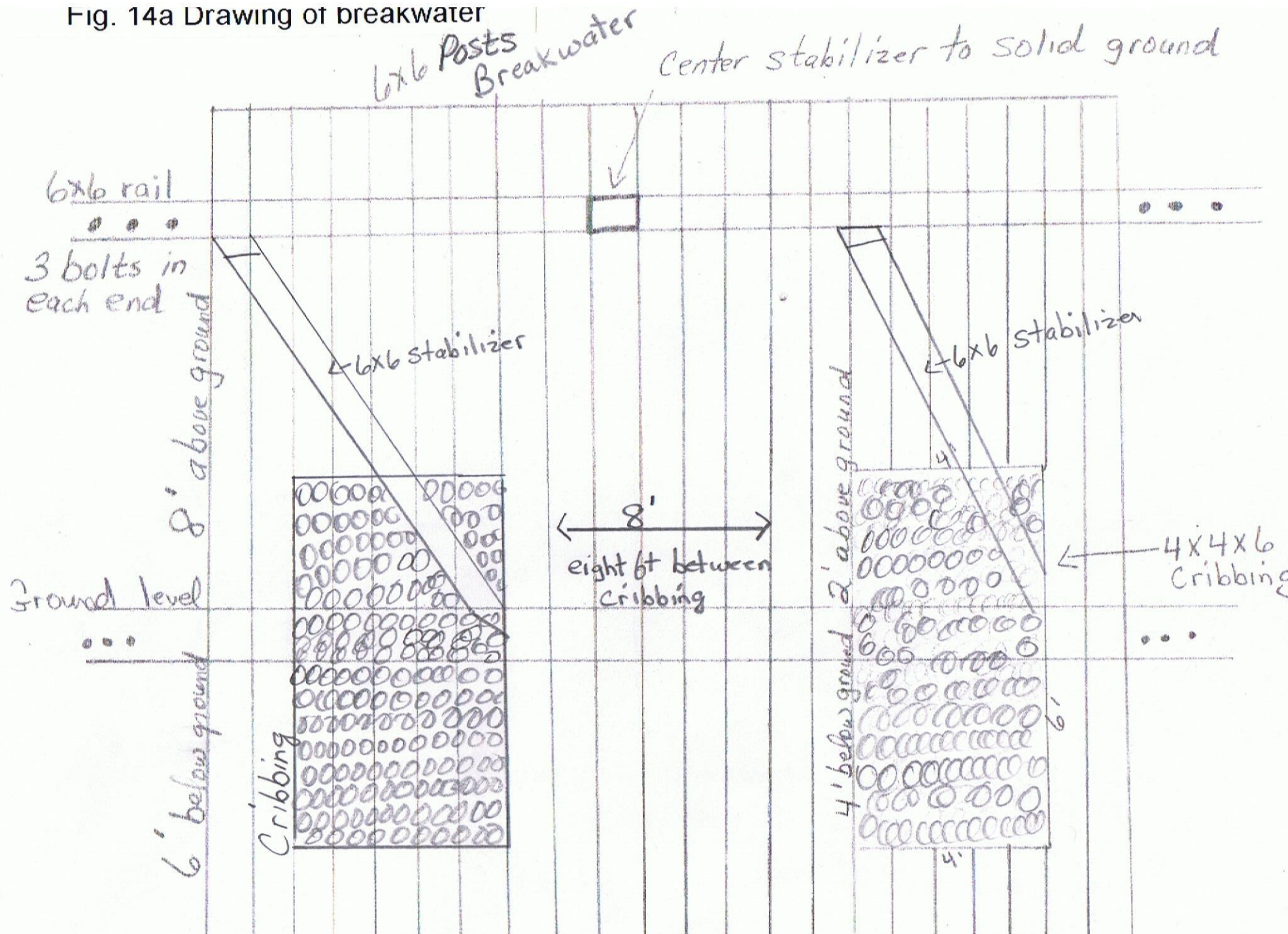


Fig. 14b Drawing of breakwater

