

# EXPANSION OF THE TROIS-RIVIÈRES PORT INFRASTRUCTURE Description of a Designated Project

## Summary



**Trois-Rivières Port Authority**

131-P-0007772-0-01-100-EN-R-0004-01

April 2015



**EXPANSION OF THE TROIS-  
RIVIÈRES PORT FACILITIES**

**Description of a Designated  
Project Under the Canadian  
Environmental Assessment Act  
2012**

SUMMARY



Prepared for:  
Trois-Rivières Port Authority

Prepared by:  
Stantec Consulting Ltd.

April 2015

131-P-0007772-0-00-100-EN-R-0004-01





## Sign-off Sheet

This document entitled Description of a Designated Project According to the Canadian Environmental Assessment Act (2012) was prepared by Stantec Consulting Ltd. ("Stantec") for the account of Trois-Rivières Port Authority (the "Client"). Any reliance on this document by any third party is strictly prohibited. The material in it reflects Stantec's professional judgment in light of the scope, schedule and other limitations stated in the document and in the contract between Stantec and the Client. The opinions in the document are based on conditions and information existing at the time the document was published and do not take into account any subsequent changes. In preparing the document, Stantec did not verify information supplied to it by others. Any use which a third party makes of this document is the responsibility of such third party. Such third party agrees that Stantec shall not be responsible for costs or damages of any kind, if any, suffered by it or any other third party as a result of decisions made or actions taken based on this document.

Prepared by Valérie Robichaud  
(signature)

**Valérie Robichaud, M.E.I.**  
**Environmental Professional**

Verified by Yanick Matteau  
(signature)

**Yanick Matteau, B. Sc., M. Sc. A.**  
**Senior Environmental Professional**  
**Project Manager**

REVISION RECORD		
Revision No	Date	Description
01	2015-04-01	Final revised version
00	2015-03-26	Final version



## Table of Contents

<b>1.0</b>	<b>INTRODUCTION .....</b>	<b>1</b>
<b>2.0</b>	<b>GENERAL INFORMATION .....</b>	<b>2</b>
<b>3.0</b>	<b>PROJECT INFORMATION .....</b>	<b>3</b>
3.1	BACKGROUND .....	3
3.2	DESIGNATED PHYSICAL ACTIVITIES .....	3
3.3	COMPONENTS AND ACTIVITIES .....	4
3.3.1	Structures and Options .....	4
3.3.2	Project Activities .....	5
3.3.3	Description of Ancillary Concrete Activities .....	8
3.4	EMISSIONS, DISCHARGES AND WASTES .....	8
3.5	SCHEDULE .....	8
<b>4.0</b>	<b>PROJECT LOCATION .....</b>	<b>10</b>
4.1	SITE DESCRIPTION .....	10
4.1.1	Coordinates .....	10
4.1.2	Maps and Drawings .....	10
4.1.3	Sensitive Elements Near the Project .....	10
<b>5.0</b>	<b>FEDERAL GOVERNMENT PARTICIPATION .....</b>	<b>11</b>
5.1	FINANCIAL ASSISTANCE .....	11
5.2	FEDERAL LAND .....	11
5.3	LIST OF PERMITS, LICENCES AND AUTORISATIONS .....	11
<b>6.0</b>	<b>ENVIRONMENTAL IMPACTS .....</b>	<b>12</b>
6.1	DESCRIPTION OF THE BIOPHYSICAL ENVIRONMENT .....	12
6.1.1	Physical Environment .....	12
6.1.2	Biological Environment .....	13
6.1.3	Navigation .....	17
6.1.4	Fishing .....	17
6.2	ENVIRONMENTAL EFFECTS OF THE PROJECT .....	18
<b>7.0</b>	<b>PROPONENT ENGAGEMENT AND CONSULTATION WITH ABORIGINAL GROUPS .....</b>	<b>20</b>
7.1	ABORIGINAL GROUPS AFFECTED BY OR HAVING AN INTEREST IN THE PROJECT .....	20
<b>8.0</b>	<b>CONSULTATION WITH PUBLIC AND OTHER NON-ABORIGINAL PARTIES .....</b>	<b>21</b>

## LIST OF TABLES

Table 1 Summary of the proposed options for the Trois-Rivières Port Facility Expansion Project .....	5
Table 2 Calendar of planned activities.....	9
Table 3 Flood risks occurring every 2, 20 and 100 years at the limits of the project. ....	13
Table 4 Listed species (provincial and/or federal) potentially present near the project site .....	15
Table 5 Anticipated effects on the environmental elements implicated with the project.....	18

## LIST OF APPENDICES

### APPENDIX 1 MAPS

### APPENDIX 2 CROSS-SECTION OF THE OPTIONS

## **PROJECT TEAM**

Sylvie Côté, geogr., M.Env. Director of Expertise

Yanick Matteau, B. Sc., M. Sc. A. Project Manager

Valérie Robichaud, biol., M.E.I. Professional in Environment

Sylvain Deslandes, M. Sc. Specialist in Geomatics



## 1.0 INTRODUCTION

This document summarizes the designated project description prepared pursuant to the Canadian Environmental Assessment Act, 2012 (S.C. 2012, c. 19, s. 52) for the Trois-Rivières Port Facilities Expansion Project. It contains the information required under the Prescribed Information for the Description of a Designated Project Regulations (SOR/2012-148).

The designated project description contains the general description of the project and adjacent environment and assesses the anticipated impacts that fall within federal jurisdiction.

## 2.0 GENERAL INFORMATION

The Trois-Rivières Port Authority (TRPA) project entitled Expansion of the Trois-Rivières Port Facilities involves the extension of wharf 20 upstream by adding three new berths adjacent to the property of the Port of Trois-Rivières. In order to carry out the project, it is necessary to acquire part of the property owned by the paper company Kruger Inc. as well as a strip of seabed belonging to the Government of Quebec.

This project is a part of the activities included in the TRPA strategic development plan titled On Course for 2020: Developing Modern, Productive, Community-Integrated Infrastructures in Support of a Skilled Workforce, tabled in 2008.

The proponent is the Trois-Rivières Port Authority. The contact information of the proponent and consultant is presented below.

### Proponent Contact Information

Name	Trois-Rivières Port Authority
Address	1545 Rue du Fleuve, Suite 300, Trois-Rivières, Quebec, G9A 6K4
Head Officer	Michel Parent
Telephone	819-378-2887 extension 203
E-mail	<a href="mailto:michel.parent@porttr.com">michel.parent@porttr.com</a>

### Contact Information for the Consultant Hired by the Proponent

Name	Stantec Consulting Ltd.
Address	1080 Côte du Beaver Hall, Suite 300, Montreal, Quebec, H2Z 1S8
Project Manager	Yanick Matteau
Telephone	514 281-1033 extension 2941
E-mail	<a href="mailto:yanick.matteau@stantec.com">yanick.matteau@stantec.com</a>

No consultation took place as part of the project description.

No regional environmental study under section 73 of the CEEA, 2012, is available for the Trois-Rivières sector.

The project is not subject to a review of the environmental impacts under the *Loi sur la qualité de l'environnement* of the Quebec Province. Considering the encroachment of the project in the aquatic environment, the TRPA will make a request for review with Fisheries and Oceans Canada under the *Fisheries Act*. A notice of work under the *Navigation Protection Act* will also be submitted to Transport Canada.



## 3.0 PROJECT INFORMATION

### 3.1 BACKGROUND

Since 1999, the TRPA has managed the Port of Trois-Rivières in accordance with the *Canada Marine Act* through a board of directors composed of regional representatives. The mission of the TRPA is to ensure that the objectives of the *Canada Marine Act* are met through sound management of the public infrastructure under its responsibility while encouraging commercial activity and regional and national development.

In 2008, the TRPA prepared an important strategic development plan titled *On Course for 2020: Developing Modern, Productive, Community-Integrated Infrastructures in Support of a Skilled Workforce*. Although redevelopment, construction or rebuilding projects have been carried out since 2008, there is a need to increase storage capacity and transshipment areas in order to meet the port demand and traffic requirements. However, given the geographic location of the Port of Trois-Rivières, there is very little room for expansion; the property is bordered by the downtown core to the east, residences in the centre and commercial and industrial businesses to the west.

The TRPA therefore wishes to acquire private property upstream of the existing port in order to expand the port facilities through the construction of three new berths (21, 22 and 23). This will allow it to continue its long-term growth and meet the needs of current and future clients.

The proposed site runs along the St. Lawrence River for a distance of 698 m, covering an area of 1.6 ha. A strip of seabed owned by the Government of Quebec would be backfilled over a maximum area of 8.2 ha. This would represent a total additional area of 9.7 ha, which would be used for transshipment and storage of goods.

### 3.2 DESIGNATED PHYSICAL ACTIVITIES

Pursuant to item 24(c) of the Schedule to the *Regulations Designating Physical Activities*, the following is deemed to be a physical activity:

The construction, operation, decommissioning and abandonment of a new marine terminal designed to handle ships larger than 25 000 DWT unless the terminal is located on lands that are routinely and have been historically used as a marine terminal or that are designated for such use in a land-use plan that has been the subject of public consultation.

The TRPA project meets the criteria of item 24(c) as no land-use plan provides for this use for the study sector. As such, the expansion of the TRPA port facilities is considered a designated physical activity.

## 3.3 COMPONENTS AND ACTIVITIES

### 3.3.1 Structures and Options

The proposed development includes three berths and transshipment areas behind the wharf. Six options for the berths were set out in the proposed expansion of the Trois-Rivières Port facilities near wharf 20.

A different option can be chosen for each of the proposed berths, but all of the proposed options have the following elements in common:

- ▶ each wharf is 231.05 m wide (wharfs 21, 22 and 23)
- ▶ lowering of the seabed from -7.5 m to -11.5 m by dredging
- ▶ retention of the approach to wharf 20
- ▶ demolition of two dolphins and walkways at the west end of wharf 20
- ▶ creation of an access road to join the road on the property of Kruger Inc.

The three berths can be built in one phase or in separate phases, depending on the layout option selected. Appendix 2 shows wharf cross-sections for five of the six options.

#### 3.3.1.1 Option 1. Concrete Caissons and Backfill up to the Shore

This option involves the installation of filled concrete caissons from the wharf face to the shore in order to create a flat storage area (elevation +4.5 m) measuring approximately 8.2 ha for the three berths. A retaining wall and riprap are planned upstream to ensure closure.

It is planned to maintain the approach to wharf 20 and to build new roads along the shore.

#### 3.3.1.2 Option 2. Concrete Caissons with 25 m Large Backfilled Area

Option 2, like Option 1, involves the installation of filled concrete caissons from the wharf face over a width of 25 m and an embankment with riprap protection sloping towards the shore. The flat storage area created by the backfill and embankment is approximately 1.7 ha for the three wharfs of this type.

In addition to access via berth 20, an approach measuring roughly 9 m wide by 100 m long is planned.

#### 3.3.1.3 Option 3. Slab on Piles With a Bridge but No Storage Area

Option 3 consists of the construction of berths composed of a slab on piles measuring 21 m in width. If the three wharfs are built using this method, the area of the wharf will be approximately 1.5 ha. No filling is planned. In addition to access via berth 20, an approach measuring approximately 8 m wide by 130 m long is planned on a bridge also composed of slab on piles.

#### 3.3.1.4 Option 4. Slab on Piles With Storage Area

Option 4 is similar to Option 3, but includes a storage area in addition to the area of the berth. Filling from the shore to approximately 25 m from the new berths is planned. The flat storage area created by filling the area is roughly 6.2 ha.

In addition to access via berth 20, two additional approaches measuring roughly 8 m wide by 5 m long to each berth are planned to allow safe travel between the wharfs and the storage area. The approaches are made of slabs on piles.

#### 3.3.1.5 Option 5. Dolphins Without Storage Area

Option 5 involves building three berths composed of dolphins and walkways. The dolphins are made of a slab on piles. The walkways are 7.5 m wide in order to accommodate small maintenance vehicles and piping. Reservoirs will likely be required and should be planned. In addition to access via wharf 20, a 140-m long approach consisting of dolphins and walkways is planned.

#### 3.3.1.6 Option 6. Dolphins With Storage Area

Option 6 is similar to Option 5, but includes a storage area formed by filling the area from the shore out to a distance of approximately 25 m from the new berths, similar to the area of Option 4.

Table 1 summarizes the main characteristics of the six options. The values are approximate and should be validated before beginning construction.

**Table 1 Summary of the proposed options for the Trois-Rivières Port Facility Expansion Project**

CHARACTERISTICS	OPTIONS					
	1	2	3	4	5	6
Type	Concrete Caissons		Slabs on Piles		Dolphins	
Storage (ha)	8,2	1,7	None	6,2	None	6,2
Volume of fill (m <sup>3</sup> )	675 500	295 000	None	447 000	None	447 000
Paving (ha)	6,8	1,6	None	5,2	None	5,2
Retaining Wall (m. lin.)	22	22	n/a	n/a	n/a	n/a
Dredging (m <sup>3</sup> )	170 000	170 000	65 000	65 000	65 000	65 000

#### 3.3.2 Project Activities

Although the construction details are not yet known, a general description of the main construction steps is provided below. Details of the project activities will be provided as the project moves forward.

### **3.3.2.1 Construction Phase**

#### **Site Mobilisation**

Prior to starting construction, the contractor must mobilize the site and set up trailers, sanitary services and public utilities, storage areas, parking and maintenance areas. Their location will take the TRPA port operations into consideration.

#### **Dredging**

The area around the wharf will have to be lowered to a depth of -11.5 m to ensure the safety of ships. Open-water mechanical dredging is recommended for this project. The seabed is dredged using a barge-mounted clamshell and the sediment is transported to the wharf for transshipment. Depending on the option selected and the level of contamination and geotechnical properties of the dredged sediment, the sediment could be reused as fill for the storage area behind the wharf. If this option is not possible, land-based management of sediment is the preferred approach.

#### **Stripping, Cut and Fill Management**

The construction of the wharfs and other structures could require stripping the shoreline. Material from the cuts could be reused as fill for the wharf expansion. This material would be temporarily stored near the worksite before being used as fill.

#### **Construction of the Structures**

Depending on the option selected, the infrastructure will be built either using piles (dolphins and slabs on piles) or by installing caissons with backfilling behind the wharf (caisson wharf).

In the first case, for example, piles will be sunk into the seabed using a pile driver. The concrete piles serve as the foundation for the construction of the aboveground wharf structure, which can consist of concrete or metal walkways.

In the second case, the concrete caisson wharf consists of a concrete slab supported by a series of concrete caissons placed on a granular foundation on the seabed. The area behind the caissons must be backfilled and compacted in order to create proper load-bearing conditions.

#### **Paving**

In cases where a storage area is planned, it will be paved, as will the access roads leading to it. The transshipment area will be drained so that the water is directed towards a settling basin before being discharged to the environment.

The wharf may be fitted with the usual equipment—bollards, ladders, wheel guards and a security system—that meets the typical standards for industrial or commercial wharfs accommodating ships similar to those that use the Port of Trois-Rivières.

similar to those that use the Port of Trois-Rivières.

### **3.3.2.2 Operations Phase**

#### **Traffic**

Port traffic should increase by approximately 100 ships per year once the three berths are added. The expansion of the facilities will increase the number of ships berthed simultaneously at the port.

#### **Transshipment**

In addition to the wharf, adding the storage areas (included in certain options) will allow for more versatility, better supervision and better coordination of activities. At this time, the use of the new infrastructure is not yet known. However, it can be said that the facilities will be used for all types of industrial transshipment activities (bulk liquids and/or solids, general and container cargo). Part of the transshipment operations will be carried out by truck or existing railroad.

The port will operate 24 hours a day, 7 days a week, depending on traffic.

#### **Water/Electricity Supply**

The new wharfs and storage areas would be equipped with a water supply system to provide ships with drinking water and for fire protection. In addition, the entire new terminal will have a power supply for lighting storage areas and for the use of equipment by handling personnel. A power connection station may also be built to allow ships to connect to an electrical power supply while docked.

#### **Maintenance**

It is estimated that pavement rehabilitation will be required after 15 to 20 years of wharf use. Repairs to ladders, replacement of lighting, painting of wheel guards and bollards, and other generally minor repairs could also be required during this period. In addition, depending on the results of bathymetric surveys, maintenance dredging may be required to maintain sufficient depth. The dredged sediment would be disposed of in open water provided it is not contaminated.

#### **Snow**

Snow will be managed in the same way as it is on the current port property. It will be collected and stored on a paved surface on port property with a snowmelt collection system. In the event that the storage site is not large enough, the snow will be loaded onto trucks and shipped to the authorized snow dump of the city of Trois-Rivières.

### **3.3.2.3 Closure Phase**

At this moment, neither closure nor decommissioning phase is planned for this project.

## **Rehabilitation at the End of Operating Life**

The estimated useful life of the new facilities is more than 70 years. Depending on the option selected, sections of damaged piles, aboveground structures or caissons may be replaced in order to increase the life of the port facilities. The port of Trois-Rivières has been operating for over 150 years and has undergone previous rehabilitation.

### **3.3.3 Description of Ancillary Concrete Activities**

Depending on the contractual agreements negotiated with future users of the berths, it is possible that additional facilities will be required, such as conveyors or piping, depending on the type of cargo being handled. The planning and implementation of the work will be the responsibility of the users and will follow practices established by the TRPA.

## **3.4 EMISSIONS, DISCHARGES AND WASTES**

The main sources of air and greenhouse gas emissions are construction equipment, transport trucks and berthing ships. In-water work can lead to suspension of sediment in the St. Lawrence River.

The port facilities themselves will not produce liquid waste. During the construction phase, the drainage of work areas will result in increased particulate loads in the water. This water will undergo settling prior to discharge to reduce the particulate load.

Under the current regulations, ships cannot discharge their wastewater directly to sewers or to the St. Lawrence River. If the option selected includes a storage area, the treatment of storm water will be carried out in accordance with the applicable regulations. The water will be collected in catch basins and directed to a Stormceptor hydrodynamic separator before being discharged to the River.

The project will not produce a large quantity of waste. The construction and maintenance phases will generate waste materials that will be properly managed by the contractor in accordance with the regulations.

## **3.5 SCHEDULE**

The project schedule is based on the requirements of the environmental assessment.

**Table 2 Schedule of planned activities**

PERIOD	ACTIVITIES
January 2015	Submission of the designated project description to the Agency
2015	Federal Environmental Assessment
2016	Final project design
	Fisheries Act and Navigation Protection Act authorizations
Winter 2017	Plans and specifications
2017-2018	Construction of the new port facilities
2018-2088	Operations
2088	Rehabilitation of facilities

## 4.0 PROJECT LOCATION

### 4.1 SITE DESCRIPTION

#### 4.1.1 Coordinates

The coordinates of the project boundaries are as follows:

- ▶ Downstream: latitude : 46°19'38"N longitude : 72°32'56"W
- ▶ Upstream: latitude : 46°19'19"N longitude : 72°33'13"W

#### 4.1.2 Maps and Drawings

Maps 1 to 3 in Appendix 1 show the location of elements found in the area.

Near to the project there are:

- ▶ No known archeological or historical sites.
- ▶ No reserve lands.
- ▶ No sensitive ecological zones. The project is located in a heavy industrial zone.
- ▶ Crown lands under TRPA administration are located downstream of the site, near to the new wharfs and storage areas.
- ▶ No provincial or international borders affecting the project.

#### 4.1.3 Sensitive Elements Near the Project

There is a residential area approximately 700 m upstream from the project.

The Lake Saint-Pierre Biosphere Reserve as defined by UNESCO is located more than eight kilometers upstream from the project.

The terrestrial part of the site, composed of a part of lot 1 017 684, is owned by Kruger Inc. This lot forms part of the industrial zone IN-2303 of the city of Trois-Rivières. The aquatic part of the site is not zoned and is owned by the Government of Quebec. According to the zoning plan of the City of Trois-Rivières, the neighbouring areas are zoned industrial, commercial or residential. The targeted area does not appear as a port zone in the land use plan approved by the TRPA in 2004.

The project does not require access to reserve lands or, according to available information, to land currently used for traditional uses by Aboriginal communities.



## 5.0 FEDERAL GOVERNMENT PARTICIPATION

### 5.1 FINANCIAL ASSISTANCE

At this point, the expansion of the Trois-Rivières port facilities has not received any financial assistance. Federal government funding is anticipated through one of its infrastructure programs.

### 5.2 FEDERAL LAND

The project may require that the TRPA purchase private property. In that case, the property could become federal land.

Some work, such as the dismantling of dolphins, will occur on federal lands. These lands are administered by the TRPA and are adjacent to the project. Their location is indicated in Appendix 1.

### 5.3 LIST OF PERMITS, LICENCES AND AUTORISATIONS

Federal authorizations could be required under the following acts:

- ▶ *Fisheries Act* (R.S.C., 1985, c. F-14) if Fisheries and Oceans Canada determines that the project could cause significant harm to fish habitat.
- ▶ *Species at Risk Act* (S.C. 2002, c. 29) if the project could have an impact on a species that appears on the official list of species at risk.
- ▶ *Navigation Protection Act* (R.S.C., 1985, c. N-22) if Transport Canada determines that the works impede navigation.

## 6.0 ENVIRONMENTAL IMPACTS

### 6.1 DESCRIPTION OF THE BIOPHYSICAL ENVIRONMENT

#### 6.1.1 Physical Environment

##### 6.1.1.1 Physical Geography

The City of Trois-Rivières is located in the St. Lawrence Lowlands region, between the Canadian Shield and the Northern Appalachians. The St. Lawrence River Valley runs the length of the geographic fault line that separates the Canadian Shield from the Appalachian Mountain Chain. At the point in the fluvial estuary where this project is located, the shoreline is variable, the width of the river varies between 2 to 5 km and the channel is generally not very deep. At the project site, a bathymetric survey carried out in 2012 showed that the shore slopes gently towards the river and that the elevation of the seabed is approximately -7.5 m (tide gauge level) in line with wharf 20. The water level of the river varies between -0.3 m and +4.0 m continuously (without tides) throughout the year.

##### 6.1.1.2 Sediments

Sand and gravel sediments dominate the fluvial segments area between Lake Saint-Pierre and Sainte-Anne-de-la-Pérade. In areas where temporary accumulation occurs, the sediments consist of clay loam, silty sand and clayey sand. The temporary deposit zones are mainly found on the south shore, near the Bécancour River and along the Gentilly Flats as well as on the north shore, at the mouth of the Batiscan River.

For the project site, no data on the sediment quality in the area off the Kruger property is available.

As for the area around the Port of Trois-Rivières, the historical characterization data indicate that the sediments in the sectors regularly dredged within the Port show relatively uniform physical characteristics composed of fine silty sand and clay, sometimes with traces of sand and plant fragments. Some samples show concentrations of polycyclic aromatic hydrocarbons (PAH) above the occasional effect level (OEL) of the Quebec Criteria for the Assessment of Sediment Quality.

##### 6.1.1.3 Contaminated Sites

According to the federal Treasury Board Secretariat, there are three federal contaminated sites within the study area (1 km radius). The Trois-Rivières port facilities site (site number 06434001) is one of these sites. At the provincial level, an old sulphite workshop within the Kruger Inc. facilities is identified in the Quebec inventory of contaminated sites. It is located approximately 300 m north of the project site. The soils at this site were contaminated with sulphur and the groundwater with hydrogen sulphide (H<sub>2</sub>S). Remediation was completed in 2000.

#### 6.1.1.4 Hydrography

The port zone of Trois-Rivières is found on the north shore of the St. Lawrence River, upstream of the mouth of the Saint-Maurice River. The proposed development is located along the fluvial estuary, in a freshwater section subject to tides. In this area, the tide has two cycles per day with a tidal range of 0.3 m. The Saint-Maurice River is located more than 2 km east of the project and is not affected by the proposed project.

#### 6.1.1.5 Water Quality

The water quality of the St. Lawrence River at Laviolette Bridge, upstream of the study site, is measured every six months at river network station 00000091 as part of a surface water quality monitoring program. According to the results, the water quality is considered satisfactory in terms of bacteriological and physicochemical water quality indicators.

#### 6.1.1.6 Flood Zone

According to Appendix II of the City of Trois-Rivières urban plan, the risks are as follows:

**Table 3 2-, 20- and 100-year recurrence intervals at the limits of the project site.**

RECURRENCE OF THE FLOOD RISK	UPSTREAM	DOWNSTREAM
2 years	6.01	6.00
20 years	7.03	7.01
100 years	7.39	7.37

### 6.1.2 Biological Environment

#### 6.1.2.1 Flora

##### 6.1.2.1.1 Terrestrial Vegetation

There is approximately 0.79 ha of shrub wildland on the project site. The entire shoreline downstream of the project site is artificial as it is part of the Port of Trois-Rivières. Upstream, the shore is more natural, but is rarely wooded over a width of more than 10 m. The areas of shrub wildland at the project site generally consist of young shade-intolerant species (poplar and birch).



Photo 1: Project site shoreline, downstream sector

Photo 2: View of project site shoreline and industrial activities of Kruger Inc

#### 6.1.2.1.2 Aquatic Vegetation and Wetlands

No information is available on the presence of aquatic vegetation at the project site.

There are no wetlands on the project site or nearby. The nearest wetland is located upstream of Laviolette bridge.

#### 6.1.2.1.3 Species of Special Status

According to the literature, no species designated or likely to be designated threatened or at risk occur at the project site. However, there are five species considered threatened or at risk and 15 species likely to be designated within a 10-km radius of the project site. Three of these species also have federal status (green dragon, American water-willow, and butternut).

It is unlikely to observe these species at the project site. The distribution of the green dragon ends at Lake Saint-Pierre, while the American water-willow occurs primarily in the Greater Montreal Area, with the exception of a population near the Godefroy River close to Bécancour. The butternut generally occurs in mature deciduous forests, which are not present at the project site.

### 6.1.2.2 Fauna and Habitats

#### 6.1.2.2.1 Ichthyofauna and Habitats

A total of 70 species potentially occur near the study site. According to previous studies, there are *potential* brown bullhead, pumpkinseed, rock bass, northern pike, black crappie, white sucker, Northern sucker and yellow perch spawning grounds between the Laviolette bridge and the mouth of the Saint-Maurice River. There are no spawning grounds at the site.

It is likely that these species use the area around the project site for different stages of their life cycle. It is assumed, however, that the generally artificial shoreline, wave action from passing boats and currents limit the attractiveness of the site to fish.

#### 6.1.2.2.2 Terrestrial Fauna

The dense urban area and sparse plant cover at the study site suggests a limited diversity of terrestrial wildlife. The species most likely to use the project site are common species that can easily adapt to this level of alteration of the natural environment, such as rodents.

#### 6.1.2.2.3 Avifauna

The area around the project is highly urbanized and industrial, offering little in the way of potential bird habitats. In terms of terrestrial areas, the vegetation and buildings present are of interest only species that are commonly observed in urban environments, such as house sparrow, European starling, American robin, American crow, ring-billed gull, rock pigeon, mourning dove. Hundreds of rock doves feed on grain from the grain elevators at the Trois-Rivières Port, which are also frequented by a peregrine falcon.

In terms of the aquatic environment, shoreline development has removed all of the habitats that could have attracted common aquatic species within the St. Lawrence corridor.

#### 6.1.2.2.4 Wildlife Species with Special Status

The following table lists all species with provincial or federal status potentially present near the project site. The information comes from the CDPNQ as well as documentation and databases consulted.

**Table 4 Listed species (provincial and/or federal) potentially present near the project site**

GROUP	ENGLISH NAME	LATIN NAME	STATUS		
			PROVINCIAL	FEDERAL <sup>1</sup> COSEWIC	FEDERAL <sup>1</sup> SARA
Avifauna	Harlequin duck	<i>Histrionicus histrionicus</i>	At Risk		
	Red-shouldered hawk	<i>Buteo lineatus</i>		Not at risk	Special Concern
	Common nighthawk	<i>Chordeiles minor</i>	Likely to be designated threatened or vulnerable		
	Peregrine falcon anatum	<i>Falco peregrinus</i>	At Risk		

GROUP	ENGLISH NAME	LATIN NAME	STATUS		
			PROVINCIAL	FEDERAL <sup>1</sup> COSEWIC	FEDERAL <sup>1</sup> SARA
	Barrow's goldeneye	<i>Bucephala islandica</i>	At Risk	Special Concern	Special Concern
	Bank swallow	<i>Riparia riparia</i>		Threatened	No Status
	Barn swallow	<i>Hirundo rustica</i>		Threatened	No Status
	Chimney swift	<i>Chaetura pelagica</i>	Likely to be designated threatened or vulnerable		
	Least bittern	<i>Ixobrychus exilis</i>	At Risk		
	Eastern wood pewee	<i>Contopus virens</i>		Special Concern	No Status
	Bald eagle	<i>Haliaeetus leucocephalus</i>	At Risk		
	Caspian tern	<i>Hydroprogne caspia</i>	Threatened		
Herpetofauna	Pickrel frog	<i>Lithobates (Rana) palustris</i>	Likely to be designated threatened or vulnerable		
	Four-toed salamander	<i>Hemidactylium scutatum</i>	Likely to be designated threatened or vulnerable		
	Wood turtle	<i>Gleptemys insculpta</i>	At Risk	Threatened	Special Concern
Ichthyofauna	American shad	<i>Alosa sapidissima</i>	At Risk	Threatened	Threatened
	Striped bass <sup>2</sup>	<i>Morone saxatilis</i>		Endangered	
	Copper redhorse	<i>Moxostoma hubbsi</i>	Threatened		
	Eastern sand darter	<i>Ammocrypta pellucida</i>	Threatened		
	Lake sturgeon	<i>Acipenser fulvescens</i>	Likely to be designated threatened or vulnerable	Threatened	
	Atlantic sturgeon	<i>Acipenser oxyrinchus</i>	Likely to be designated threatened or vulnerable		
	Channel darter	<i>Percina copelandi</i>	At Risk	Threatened	Threatened
	Silver lamprey	<i>Ichthyomyzon unicuspis</i>		Special Concern	No Status
	Bridle shiner	<i>Notropis bifrenatus</i>	At Risk		

GROUP	ENGLISH NAME	LATIN NAME	STATUS		
			PROVINCIAL	FEDERAL <sup>1</sup> COSEWIC	FEDERAL <sup>1</sup> SARA
	Rosyface shiner	<i>Notropis rubellus</i>	Likely to be designated threatened or vulnerable		

1. **Endangered:** A wildlife species facing imminent extirpation or extinction / **Threatened:** A wildlife species that is likely to become endangered if nothing is done to reverse the factors leading to its extirpation or extinction / **Special Concern :** A wildlife species that may become threatened or endangered because of a combination of biological characteristics and identified threats.

2. St. Lawrence River population

As previously mentioned, the highly artificial banks in addition to the industrial and port activities make the site unattractive for the majority of species mentioned above. Fish and bird species are more likely to be found near the project site.

### 6.1.3 Navigation

Commercial navigation occurs in the area, in the shipping channel and in the Trois-Rivières approach channel. There is also significant recreational navigation is also important in the Trois-Rivières region, specifically near Lake Saint-Pierre.

### 6.1.4 Fishing

#### 6.1.4.1 Commercial Fishing

Between Lake Saint-Pierre and Île d'Orléans, the main commercial fish species are eel, lake sturgeon, Atlantic sturgeon, brown bullhead and yellow perch. In 2014, 24 commercial fishing licences were issued. Most licence holders land their catch on the south shore of the river.

#### 6.1.4.2 Recreational Fishing

The main recreational fish species are northern pike, walleye, largemouth bass, brown bullhead and muskellunge. Fishing for yellow perch is currently prohibited. There are few wading sites near the work zone given that the east sector is industrialized. The boat launch upstream (see Figure 2 of Appendix 1) is one of the sites in the sector.

#### 6.1.4.3 Native Fishery

The Quebec Government and the Abenaki First Nations signed a specific agreement regarding fishing activities. A communal fishing licence was provided to the Abenaki First Nations Communities in order to continue family and community traditions.

## 6.2 ENVIRONMENTAL EFFECTS OF THE PROJECT

The following table describes the anticipated impacts for the environmental elements affected by the project if the three concrete caissons berths are constructed with backfilling to the shore (Option 1). This option is believed to have the greatest negative impacts on the environment.

**Table 5 Anticipated effects on the environmental elements implicated with the project.**

ENVIRONMENTAL ELEMENTS	ANTICIPATED EFFECTS	SUMMARY ASSESSMENT OF THE EFFECT
Fish and their habitats (including species at risk)	<p>Loss of approximately 8 ha of fish habitat by dredging and backfilling for the construction of the new wharfs.</p> <p>Temporary degradation of the aquatic environment due to resuspension of fine particles in the St. Lawrence River during dredging and construction work.</p>	<p>Mostly artificial shoreline between Laviolette bridge and the Saint-Maurice River.</p> <p>The implementation of best practices will limit degradation and ensure it is restricted to the site.</p> <p>No known habitats are present at the site or 300 m downstream.</p> <p>Fish habitat potential is considered to be low.</p> <p>An application for authorization under the <i>Fisheries Act</i> will be submitted to DFO for this project.</p>
Marine plants	No anticipated effects	No marine plants as defined by s. 47 of the <i>Fisheries Act</i> occur in the area.
Migratory birds	Loss of approximately 1 ha of bird habitat.	<p>The areas of shrub wildland cover a small area within the project site and are composed primarily of young shade-intolerant species (poplars and birch).</p> <p>The habitat potential for migratory birds is considered to be negligible.</p>
Federal land	Increased noise and dust on the Port of Trois-Rivières territory.	<p>The adjacent federal lands are used as port facilities and generate noise and dust.</p> <p>This project will result in negligible noise or dust nuisance.</p>
Territory outside of the province or Canada	No anticipated effect	Trois-Rivières is located more than 140 km from the U.S. border and more than 165 km from the Ontario border.
Aboriginal people Health and socio-economic conditions	No negative effects anticipated	<p>The project will not result in significant or recurrent releases of contaminants that could affect the health of Aboriginal people.</p> <p>The project could improve the socio-economic conditions of Aboriginal peoples through the possibility of work contracts.</p>



ENVIRONMENTAL ELEMENTS	ANTICIPATED EFFECTS	SUMMARY ASSESSMENT OF THE EFFECT
Aboriginal people Cultural and natural heritage	No anticipated effect	No historical element or land used for traditional purposes is present near the project site.  The area has been heavily disturbed by backfill on the shore. The natural and cultural heritage is therefore limited.
Aboriginal people Current land use and historical importance	Potential to restrict traditional fishing in the backfilled zone (maximum of 8 ha) and suspension of sediments during the work.	The area has been highly disturbed by backfill on the shore. Based on the information received, only fishing could be affected by the project. Additional information is required.
Navigation	Restriction of ship manoeuvring space due to the construction and presence of equipment at berth 20.  Increase in the number of ships at the port.	Space restriction limited to the upstream end of the Port of Trois-Rivières.  Downstream area is already used for port activities.

## **7.0 PROPONENT ENGAGEMENT AND CONSULTATION WITH ABORIGINAL GROUPS**

### **7.1 ABORIGINAL GROUPS AFFECTED BY OR HAVING AN INTEREST IN THE PROJECT**

No participation or consultation activities took place with the three communities located nearby (Wôlinak, Odanak and Manawan). Should Aboriginal groups show interest for the project, the TRPA is committed to consult on the details of the project and incorporate their concerns in the development of the project.

## 8.0 CONSULTATION WITH PUBLIC AND OTHER NON-ABORIGINAL PARTIES

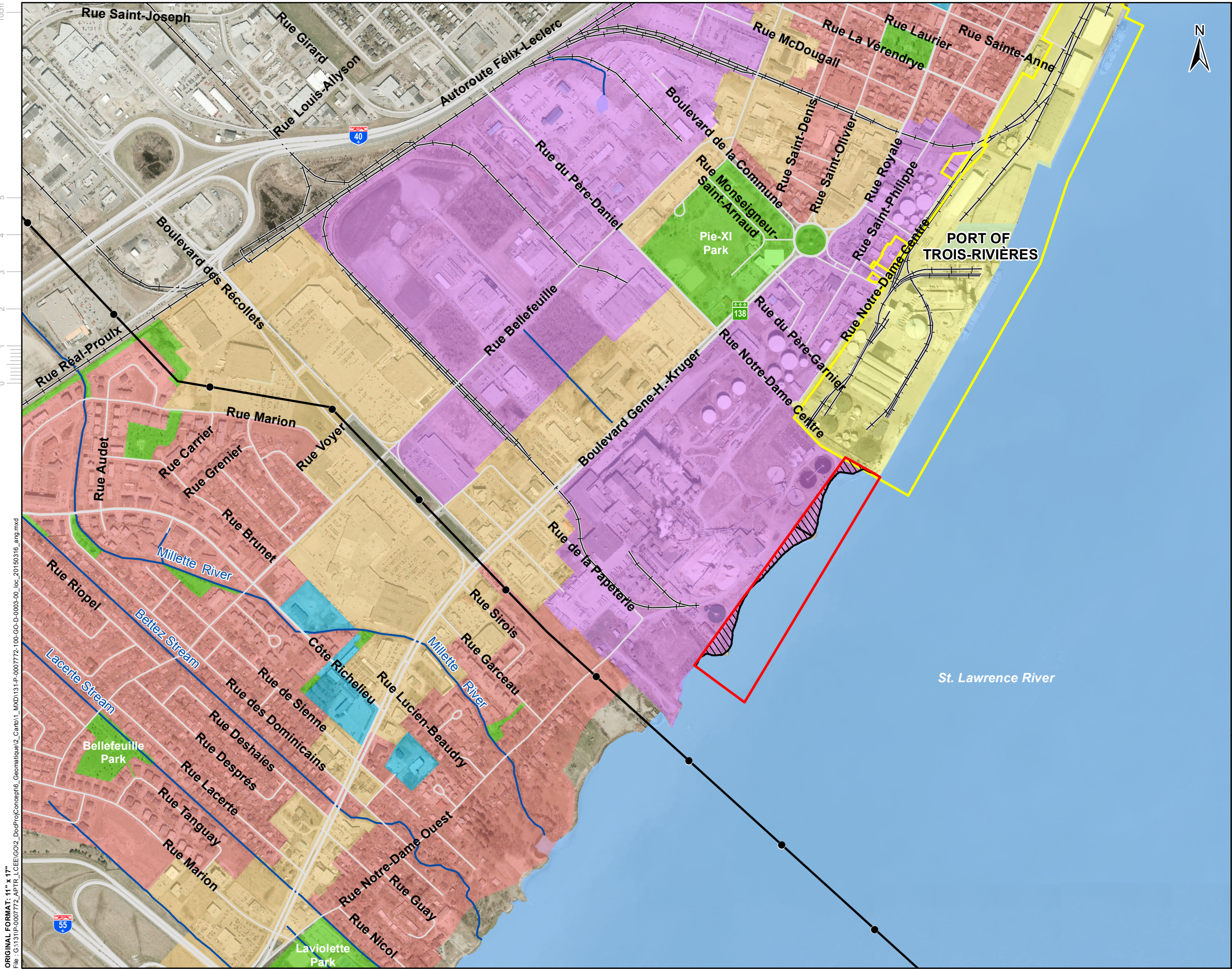
At the time of tabling of the designated project description, the project had not undergone any public consultation. As the project progresses, the TRPA will inform the concerned parties (citizens, municipalities, users) of the project details and integrate their concerns into the project development.



## APPENDIX 1 MAPS

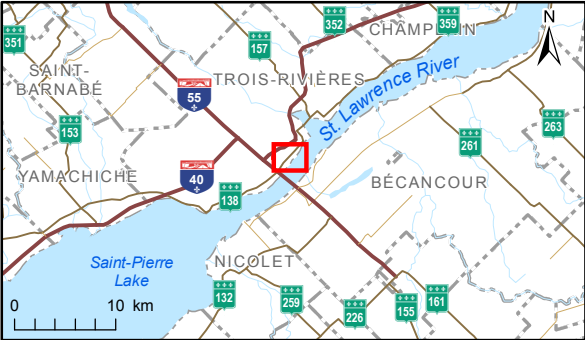






- Project Components**
- Project site
  - Lot affected by the project (part of lot 1 017 694, area 15 856 m²)
  - Port of Trois-Rivières
- Infrastructure**
- Power transmission line
  - Railway track
- Hydrography**
- Watercourse
  - St. Lawrence River
- Zonage**
- Industrial
  - Harbour (industrial)
  - Commercial
  - Residential
  - Public and institutional
  - Park

Sources :  
- Image: Ortho-image, Ville de Trois-Rivières, 2012  
- Zonage: Ville de Trois-Rivières, 2014  
- Railways: CanVec, 1/50 000, RNCan, 2011  
- Hydrography: Carte écoforestière, MRNF Québec, 1998



Client:

Project: Expansion of Trois-Rivières Port Facilities

Title: **Map 1**  
**Key Components - Local Zone**

Prepared:	V. Robichaud	N/D:	131-P-0007772-100-GO-D-0003-00
Drawn:	S. Deslandes	Scale:	1:10 000
Checked:	Yanick Matteau	Date:	March 16, 2015

0 500 m

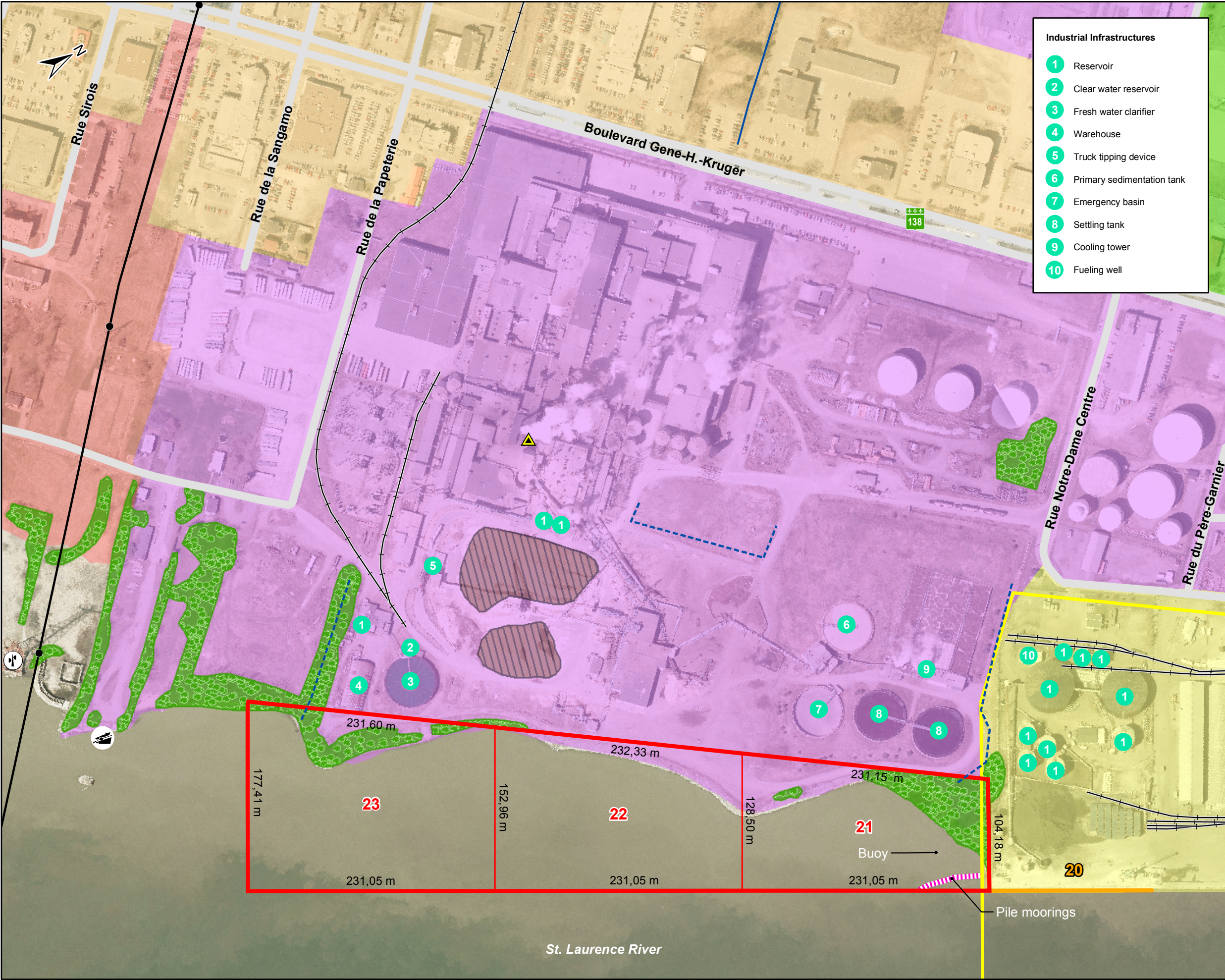
Projection MTM, zone 8, NAD 83







ORIGINAL FORMAT: 11" x 17"  
File: \\beaverhall\si2\projets\131P-0007772-100-GO-D-0002-00\_milieu\_20150324\_ang.mxd




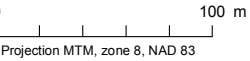
- Industrial Infrastructures**
- 1 Reservoir
  - 2 Clear water reservoir
  - 3 Fresh water clarifier
  - 4 Warehouse
  - 5 Truck tipping device
  - 6 Primary sedimentation tank
  - 7 Emergency basin
  - 8 Settling tank
  - 9 Cooling tower
  - 10 Fueling well

- Project Components**
- Project site
  - 21 Berth
  - Port of Trois-Rivières
  - Warf 20
- Physical and Natural Environment**
- Wooded area
  - Contaminated land (MDELC)
  - Pile
- Infrastructure**
- Power transmission line
  - Railway track
  - Dolphin
  - Boat launch
  - Relay tower
- Hydrography**
- Watercourse
  - Drainage ditch
- Zoning**
- Industrial
  - Harbour (industrial)
  - Commercial
  - Residential
  - Park

Sources:  
- Image: Ortho-image, Ville de Trois-Rivières, 2012  
- Contaminated land: MDELC, 2014  
- Railways: CanVec, 1/50 000, RNC, 2011  
- Hydrography: Carte écoforestière, MRNF Québec, 1998  
- Boat launch and relay tower: Photo-interpretation, Stantec  
- Base layers: 20141202-P-0007772-2014-013-PRO-2\_V\_YM.dwg



Client			
Project	Expansion of theTrois-Rivières Port Facilities		
Title	<b>Map 2</b> <b>Key Components within the Response Area</b>		
Prepared:	V. Robichaud	N/D:	131-P-0007772-100-GO-D-0002-00
Drawn:	S. Deslandes	Scale:	1:3 500
Checked:	Yanick Matteau	Date:	March 24, 2015









## Aboriginal Communities

- ★ Abénakis
- ★ Atikamekw

Client



Project

Expansion of Trois-Rivières Port Facilities

Title

### Map 3 Aboriginal Communities near the Project

Sources :

- Base map: MRNF, 2012; ESRI 2008  
- Communities: MRNF, 2012

Prepared: Yanick Matteau

Drawn: Alex Rutherford

Checked: Yanick Matteau

N/D: 131-P-000772-100-GO-D-0004-00

Scale: 1:1 750 000

Date: March 24, 2015

0 50 km

Projection: UTM, zone 18, NAD83





## **APPENDIX 2 CROSS-SECTION OF THE OPTIONS**



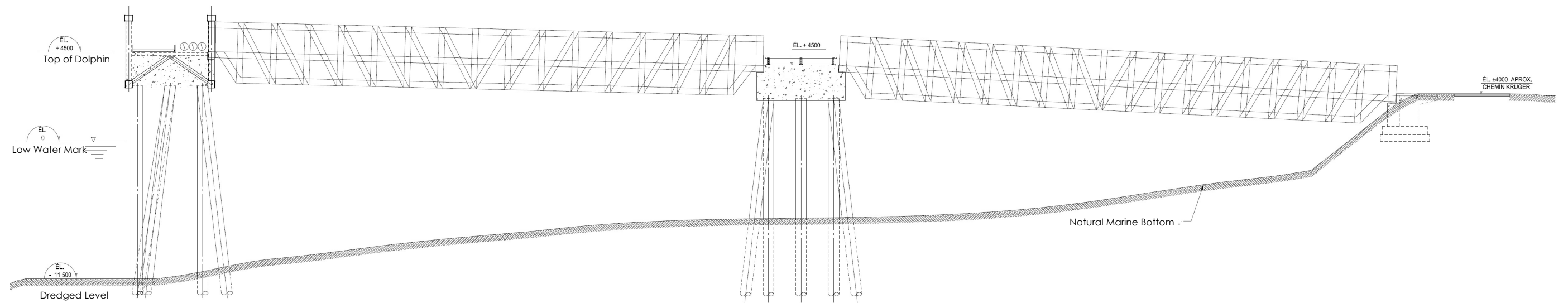


Figure 5 : Cross-Section - Option 5 Dolphins with no Storage Area





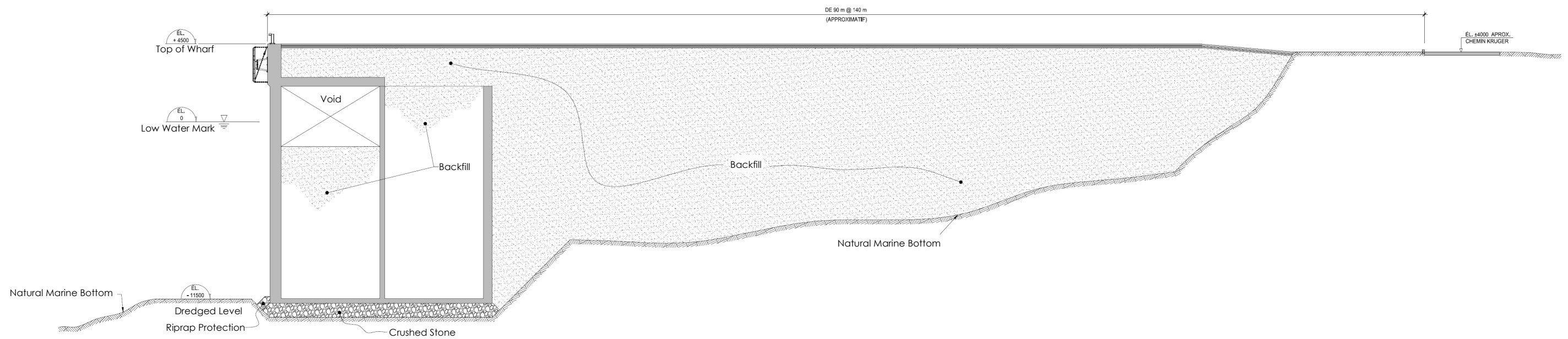


Figure 1 : Cross-Section - Option 1 Cribwork Structure with full-size storage area

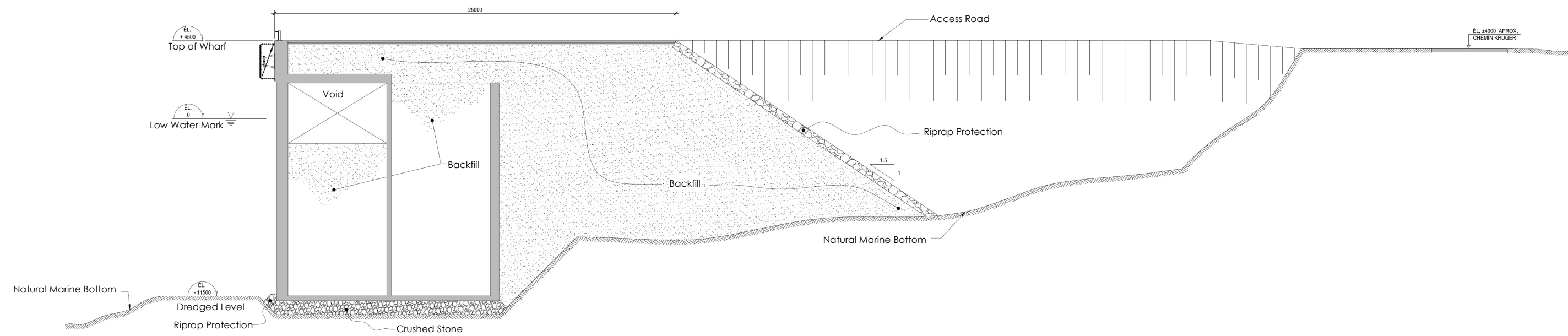


Figure 2 : Cross-Section - Option 2 Cribwork Structure with 25-m wide storage area



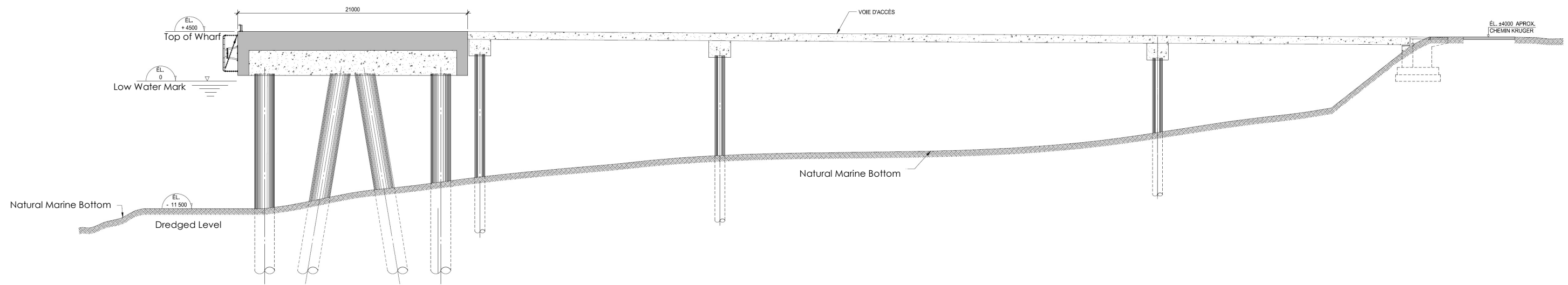


Figure 3 : Cross-Section - Option 3 Slab on Pile with an access bridge and no storage

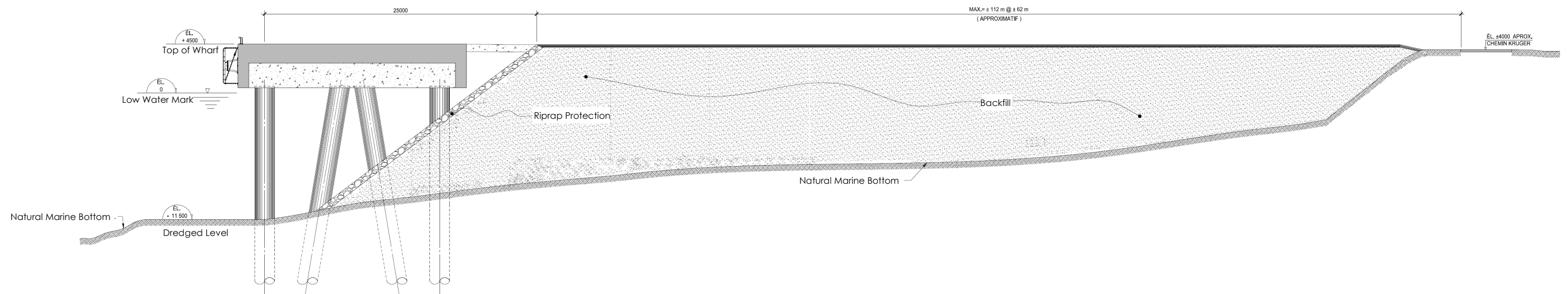


Figure 4 : Cross-Section - Option 4 Slab on Pile with storage

