



## Client

CTMA

## Vessel Type

Ferry

## Location

Magdalen Islands, Canada

## Manoeuvrability Study

The CTMA has acquired a new ferry for an inter-island service between the ports of Souris, Prince Edward Island and Cap aux Meules in the Magdalen Islands.

In order to familiarize its captains with the new ferry, test its manoeuvring capabilities in high wind situations, and evaluate whether the manoeuvring spaces in the two ports allow the new vessel to operate safely, CTMA mandated the Maritime Simulation and Resource Centre (MSRC) to perform a series of berthing and departure manoeuvres in the two designated ports.

For the purposes of this study, the CTMA captains submitted a list of exercises that would cover the planned objectives. The MSRC staff integrated these exercises into the simulator and validated them using the mathematical model of the new ferry that they designed.

For this study, the ship Villa de Teror (renamed the Madeleine II) was modeled by the MSRC team with various loading conditions. The MSRC team also modeled the geographical database of the site, including the ports of Cap-aux-Meules and Souris.

- Official Canadian Hydrographic Service data was used to model bathymetry, shoreline contours, harbour infrastructure configuration and terrain elevations.
- The main buildings were modeled and geographically positioned. Navigational landmarks were integrated and other objects that are normally present on the site were also added to optimize the overall visual appearance.
- The current generally experienced at the approach of the two ports was integrated in each database.

On December 3 and 4, 2020, four captains performed on the MSRC's simulator twenty-three (23) manoeuvres required to fulfill the mandate. There were three (3) or four (4) vessels in each scenario.