

Connection Seine-Escaut Est

Nautical evaluation Part 2 – Bottleneck Canal Nimy - Blaton

Background

The purpose of the project “Connection Seine-Escaut Est” is to create a wide-gauge waterway network between the Scheldt and the Seine basins to link up the waterway networks of France, Benelux and Germany.

In the framework of the project is also an upgrade of the connection between the Scheldt and the Meuse basins for inland vessels from Class IV to Class Va included. The following waterways are part of the nautical evaluation: Haut Escaut, Canal Pommeroeul - Conde, Canal Nimy - Blaton, Canal du Centre, Canal Charleroi - Bruxelles and Basse-Sambre.

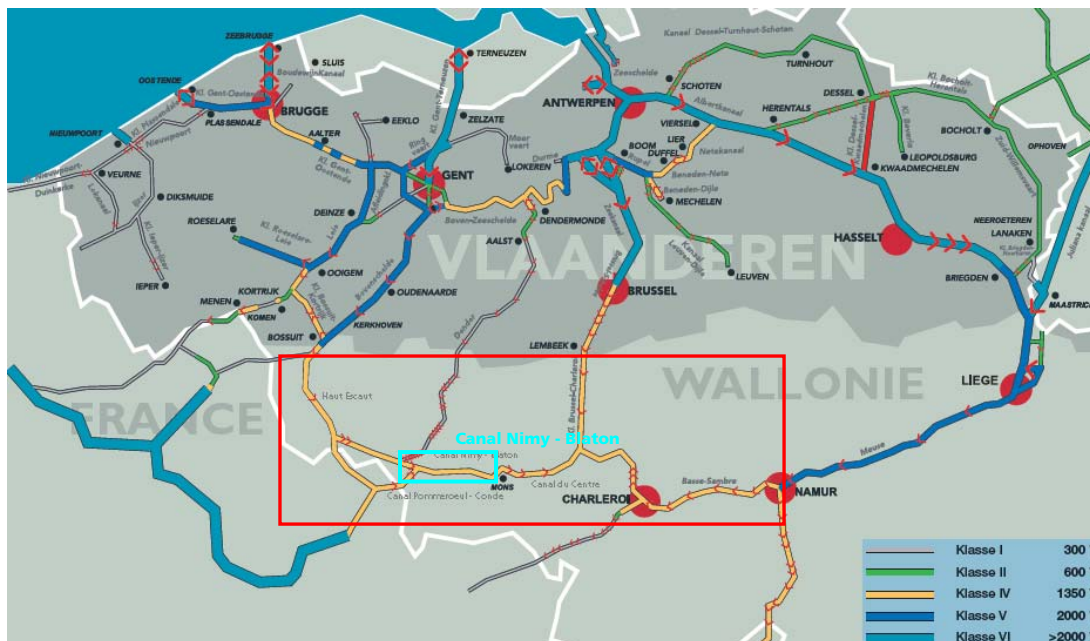


Figure 1: Project area

Objective

The Canal Nimy - Blaton was designed for vessels with dimensions which correspond roughly with Class III vessels. At present it is allowed for inland vessels Class IV. The waterway is in many sections too narrow and the radius of curvature of several bends is not sufficient for Class Va vessels.

The scope of work includes the nautical evaluation of three alternatives to make the section accessible for Class Va vessels (single lane and double lane design). These alternatives were studied and compared on the basis of desktop studies and manoeuvring simulations.

Type of project	Inland navigation
Location	Belgium
Client	Service Public de Wallonie
Period	November 2008 – present

Study approach

The dimensions and the alignment of the present waterway were evaluated by comparing common guidelines (e.g. Richtlijn Vaarwegen 2005) with the present situation at the Canal Nimy – Blaton between the Canal du Centre (lock Obourg) and the Canal Pommeroeul-Conde (lock Pommeroeul).

Bottlenecks were identified and traffic restrictions between both locks were determined (*Alternative 0*). Two alternatives were designed on the basis of the nautical evaluation to make the waterway accessible for Class Va vessels.

Alternative 1 is based on a single-lane design including sufficient passing areas for two-way traffic.

For *Alternative 2* a double-lane design for two-way traffic over the whole length of the waterway was designed.

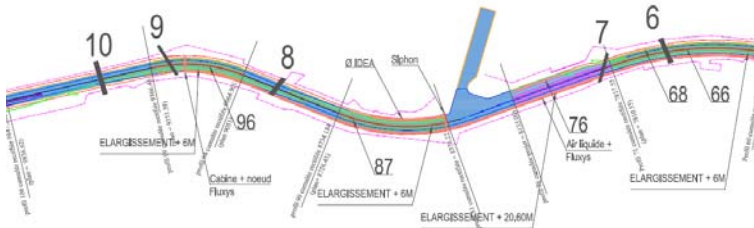


Figure 2: Design of Alternative 1

The nautical feasibility of the alternatives was checked by carrying out manoeuvring simulations with Alkyon's simulator SHIP-Navigator. The simulations were carried out by experienced inland shippers and supervised by nautical experts of Alkyon.

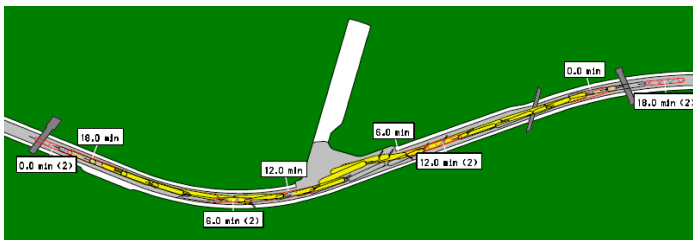


Figure 3: Passing ship manoeuvre for Alternative 1 (SHIP-Navigator)

For Alternative 1 the new design passing areas were evaluated by carrying out passing ships manoeuvres. Also for the layout of Alternative 2 passing ship manoeuvres were carried out for critical sections of the waterway. For these simulations a second inland shipper was assisting.

The technical feasibility including a cost estimate was carried out by civil engineering experts from ARCADIS Belgium.



Figure 4: SHIP-Navigator bridge

Applied tools

AutoCad
SHIP-Navigator

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