

REFERENT PROJECT

Trajectory study - Structure on the Seine of the EOLE project upstream of the Bezons viaduct



CONTACT

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PURPOSE OF THE INITIATIVE

Cerema has been asked by SNCF Réseau to carry out a manoeuvrability study as part of the Eole project to extend the RER E. This study allowed to evaluate the compatibility of this project with the navigation of boats and convoys during the crossing of the SNCF bridge at Bezons in the final situation, after completion of the works. This study also made it possible to propose solutions to minimize the inconvenience to navigation and minimize the risks for navigation both in the final situation and during the construction phase.

CLIENT/PARTNER NEEDS

As part of the extension of the RER E to the west of Paris Paris, a crossing of the Seine is to be created upstream of the Bezons viaduct, also known as the Pont des Anglais also known as the Pont des Anglais or Pont de la Folie by boaters. This sector is considered particularly delicate by boaters in its current configuration. SNCF Réseau therefore wanted to have a manoeuvrability study to assess the impact on traffic during the construction phase and to determine measures to be taken to ensure the safety of the worksite while allowing navigation. In a normal situation, the presence of two adjoining structures made it necessary to verify the conditions of passage of this new complex by the navigation.

CEREMA'S SOLUTION

To carry out manoeuvrability studies, Cerema uses the Navmer software developed by the Water, Sea and Rivers Directorate. This software calculates the forces on a vessel from its characteristics, the pilot's orders, the site, the wind and pilot's orders, the site, the wind and the current. The orders (helm, engine), transmitted via the interface of the software allow the simulated ship to move. The results (trajectory, speed) and orders are saved, compared compared, analysed and edited.

Cerema was therefore responsible for building the simulation program by setting the parameters of the software (hydraulic conditions, navigation rules, wind, ...). Two sessions of simulations were then carried out with experienced navigators of the CFT (Compagnie Fluviale de Transport). For both sessions, the simulations were conducted on the most unfavourable situations, namely, the largest convoy (180 m) and current conditions close to the Highest Navigable Water (HWW). The passage by the arm of the new river which is the only one navigable for certain types of boats and for which the bridge crossing is the most delicate because it is off-centre with respect to the channel. Some simulations were nevertheless carried out for a passage by the Marly arm confirming that the navigation did not present any particular difficulty. The simulations were carried out in both downstream and upstream navigation directions, including with one or the other of the navigable passes to simulate an alternating flow.

CLIENT

SNCF Réseau
City of Paris (75)

PROJECT PILOT

Directorate of Cerema Water, Sea and Rivers
Infrastructure and Transportation Department
Transportation Division

SCHEDULE

2017