

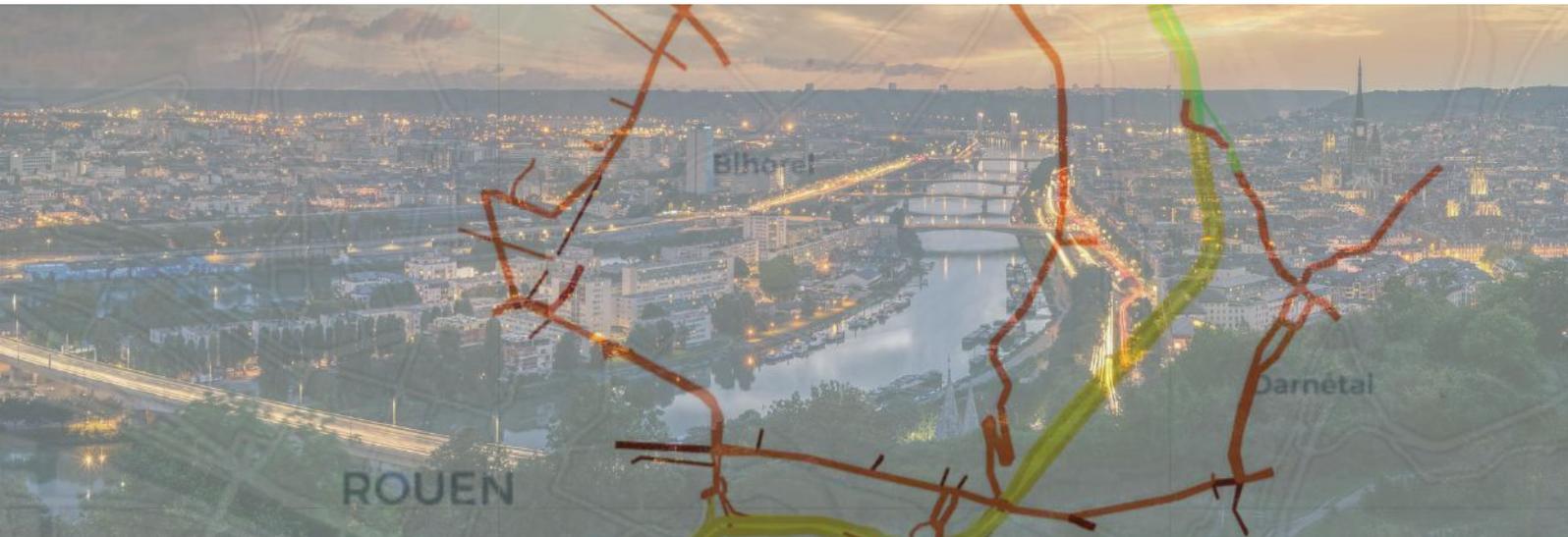


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GRAND'MARE ROAD TUNNEL IN THE CITY OF ROUEN, FRANCE: A TRAFFIC SIMULATION SOLUTION FOR ROADWORKS PLANNING



CHALLENGE

Grand'Mare's road tunnel is a strategic infrastructure for mobility within Rouen's urban area. With a crowded traffic of 42 000 vehicles per day, it is a critical link for people's daily commute and the international traffic transportation of goods. Upgrading the infrastructure to safety standards requires major renovation works (exhaust gas evacuation and emergency exits). To carry them out, the road tunnel operator DIRNO (North-West Road Directorate) needs to organize roadworks, which will have a strong impact on the infrastructure capacity and traffic flow on the RN28 highway and its alternative routes. To do so, The DIRNO decides to support its decision-making process with a dynamic simulation solution. The objective is to minimize the impact on congestion and carbon emissions of the considered traffic management measures and estimate deviated traffic volumes particularly on alternative routes within Rouen's dense urban area.

The Neovya Hubsim SaaS platform is selected to build the dynamic traffic simulation solution and assess the impact of the planned roadworks.



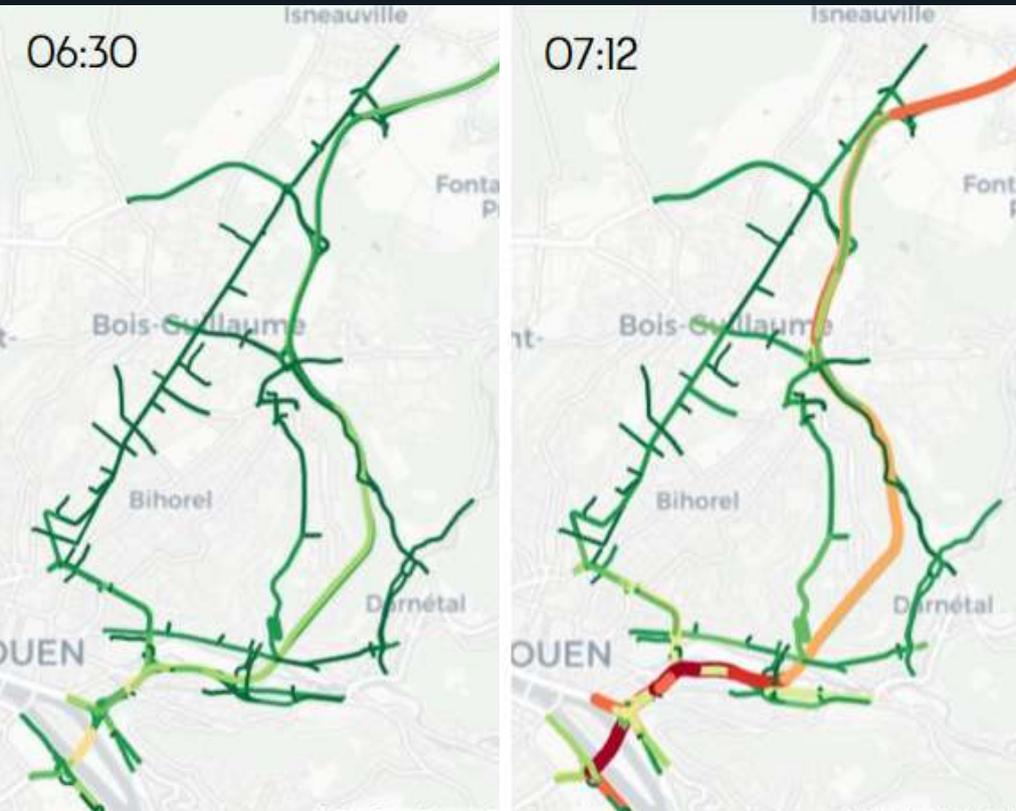
The solution implemented with the Neovya Hubsim platform is a powerful tool to inform our decisions for roadworks planning. It provides us with key indicators to assess many scenarios in a complex problem: a main infrastructure in a mesh urban network with impacts on alternative routes in a dense urban area. The collaboration and sharing functions available with the platform are also bringing significant benefits to smooth dialogue with all stakeholders involved.

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ABOUT THE DIRNO

The North-West Road Directorate is part of the 11 regional public road network operators in France. It covers 11 departments split in 3 regions: Normandy, Centre Val de Loire, and Hauts-de-France.

It oversees maintenance, operations, and engineering of a road network made of 1 070 km of national roads.



SOLUTION

Dynamic simulation solution modeling the urban area concerned by the Grand'Mare's tunnel.

- Integration of a multi-source traffic counting dataset with 100 data collection points.
- Integration of a travel time dataset with a 1-year historical depth.
- Integration of O/D matrices (various forecasting horizons) from the strategic model available on the urban area.
- Calibration of the simulation model on an extended peek time from 6 to 11 am as to recreate the dynamic of the traffic flow conditions.
- Implementation of a unique integrated simulation engine, combining dynamic simulation of traffic flow conditions and dynamic traffic assignment on the diverse alternative routes.
- « What-if » scenarios manager module to assess over 30 scenarios recreating traffic management measures taken by the DIRNO for the roadworks.
- Dashboards reporting key indicators on travel time, congestion levels and pollutants emissions (CO², Nox, particles, and noise).



BENEFITS

- A unique dynamic simulation solution to tackle a complex topic, combining traffic flow conditions on the tunnel's route and dynamic traffic assignment on the alternative routes.
- A ready-to-use platform within a few weeks, with a calibrated reference situation aligned with the contracting authority's requirements.
- Assessment of many scenarios in a very quick time thanks to a unique combination on the market: ultra-fast simulation engine, easy-to-use "what-if" scenarios manager module and clear dashboards to compare scenarios at a glance.
- Smooth dialogue between all involved parties thanks to the extended collaboration functions available on the Neovya Hubsim cloud platform.