

Junction



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MONTHLY NEWSLETTER
CONCERNING THE COMPLETION OF
AUTOROUTE 30

Planned modifications to the structure of the bridge over the Beauharnois Canal

BPA-30, in collaboration with the authorities of the St. Lawrence Seaway Management Corporation (SLSMC) and Transport Canada, agreed that the length of the central span of the future bridge over the Beauharnois Canal should measure approximately 150 metres.

Following preliminary engineering studies, the length of the main span of this future bridge, which was originally to be 220 metres, was considerably reduced. This change will result in substantial savings for the project. The bridge's new configuration, which will make it possible to span the St. Lawrence River at the level of the Seaway locks, will be more than 2,500 metres in length. It will be designed with six traffic lanes, including two designated more specifically for heavy truck traffic.



The future bridge over the Beauharnois Canal.

At the current stage of the studies, the central span of the bridge over the Beauharnois Canal is expected to be cable-stayed (see photo), with a height of approximately 40 metres, allowing the safe and unimpeded flow of all maritime traffic between the Great Lakes and the Montreal region.

Bridges on the "30" designed to withstand earthquakes

The *Bureau de projet de l'autoroute 30* (BPA-30 – Highway 30 Project Office) will require that its future private partner design various bridge components to withstand seismic activity.

In fact, all major bridges on the completed Highway 30 must be built in compliance with the new seismic design criteria of the *Canadian Highway Bridge Design Code* (CAN/CSA-S6-00). Higher resistance to stronger seismic activity obviously calls for major engineering structures to be designed in keeping with more stringent criteria.

In addition to criteria relating to seismic activity, the *ministère des Transport du Québec* (Quebec Department of Transport) will also require that these bridges have a service life of at least 100 years and can remain open to all traffic following a major earthquake. This will allow the "30" to serve as

a route circumventing the metropolitan area, even under the worst conditions.

Other quality requirements

Furthermore, within the framework of the many engineering studies needed before an agreement can be concluded with a private partner, *Tech In Situ*, a Jonquière company, in collaboration with two other firms – Qualitas and the CBR Group – recently carried out a large-diameter (200 mm) drilling operation in the Vaudreuil-Dorion area.

A drilling operation of this exceptionally large diameter was needed because of the nature of the clayey soil in the project's western sector. Results of this drilling will enable the Quebec Department of Transport to reduce the project's technical risks. This will, in turn, reduce the cost of putting up engineering structures on quick clay.



Equipment used for this type of drilling in quick clay.

A proactive project management system

The proactive project management system used on the completion of Highway 30 consists of a number of facets that go well beyond the development of a schedule and budget. Handled by a team mandated to enter information received into the project management software, this system requires all personnel to contribute to the information gathering process.

The procedure applied to a project management system involves a number of phases. Here, we will address the process applied to the management of the content, budget, schedule and changes.

The project's **content** refers to the work that is to be carried out and establishes the project's boundaries. Once the content has been determined, it is divided into smaller elements. This division is known as the project's "work breakdown structure". It provides the basis for all processes in the project management system. The smallest element in the project's work breakdown structure is known as a lot. Once the content has been divided into lots, it becomes much easier to assign a dollar value, estimate effort, a deliverable and a time-frame as well as appoint an individual who will assume responsibility for it. Ultimately, this process determines the reference contents.

Next, the **budget** and **schedule** can be developed. Phases such as the preliminary pre-project, plans and specifications as well as construction are examples of the project elements that require planning. The risk analysis determines contingencies that must obviously be included in the reference budget. Each lot is analyzed, taking into account its predecessor and successor, so as to indicate the sequence of activities and their respective duration. This makes it possible to determine the overall duration of the project. All of these elements make up the reference schedule, which also includes the critical path, i.e., the sequence of activities that control the duration of the project.

Finally, a monthly update of the content, budget and schedule along with **change management** makes it possible to compare the current project with the reference project. Any discrepancy between the two must be justified and approved by the BPA-30 manager. This process also allows BPA-30 to be proactive, make necessary modifications, and be informed of any change(s) likely to have an impact on the opening of the highway.

The relocation of Route 236: a project included in the completion of Highway 30

Since Highway 30 cuts through the southern tip of the Beauharnois Industrial Park from west to east, it was decided that, wherever possible, the park would be connected to the "30".

In light of these facts, a decision was made to build the interchange in the industrial park itself. To this end, Route 236 will be diverted westward to Route 132, parallel to Hydro-Quebec's high-tension lines. A link will be retained between



The current Route 236 (Saint-Louis Road) is to the right of the future Route 236, which will lead directly to the Beauharnois Industrial Park.

The construction of an interchange at the level of the current Route 236 would have effectively connected this regional road and served Beauharnois users well. However, Route 236 (Saint-Louis Road) is basically a municipal artery in a residential sector with a limited loadbearing capacity. What's more, it crosses railroad tracks close to Route 132.

This interchange would have taken users of Route 132, especially heavy truck traffic, from the industrial park to Route 236 (Saint-Louis Road), through the residential zone, to the Highway 30 interchange. This configuration was unacceptable, especially since the industrial park could well experience considerable growth resulting from its proximity to the highway.

Saint-Louis Road and the new four-kilometre section of Route 236. This new stretch of road will invert the flow of traffic. As a result, users from the residential sectors will be travelling through the industrial park to Highway 30 while the park's heavy truck traffic will have closer, direct access to the highway, ensuring more quiet traffic on Saint-Louis.

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