

# PRESENTATION OF THE NOMINATION

## City of Laval

The City of Laval is a suburban municipality of 376,000 inhabitants located in the northern part of metropolitan Montreal. The city's municipal government has made it a major priority to balance development, economic vitality, and quality of life.

## CIMA+

CIMA+ is a multidisciplinary firm active in several Quebec regions, including the Greater Montreal Area and, more specifically, the City of Laval.

CIMA+'s Transportation Division is involved at a high complexity level in various studies related to traffic, road safety and road geometry as well as in the implementation, design and building of all types of road infrastructure.

CIMA+'s traffic department also has teams skilled in performing transportation analysis related to the planning of road projects (transportation plans, traffic forecasts, O-D studies, travel forecasts) and conducting road safety studies (audits and solution development), opportunity studies, etc.

CIMA+'s Urban Services possess the 3D technology and qualified resources needed to bring engineering work "to life," whether the work involves road projects or the development of sites, structures, buildings or other infrastructure. This value-added approach allows the various stakeholders affected by the feasibility, approval or execution of projects to visually consider the impact of such projects on the existing environment. Our technology can generate static or dynamic "before and after" mock-ups that allow viewers to examine a project's impact from several different vantage points or, better yet, to move through a project as if they were actually there.

## BACKGROUND

As part of its roadway rehabilitation program, the City of Laval examined the need to preserve the current design of Daniel-Johnson Boulevard. This boulevard is one of the city's important arterial roads, serving residential as well as commercial areas and providing direct access to the expressway system.

With respect to the traffic conditions, the variety of uses in the vicinity of the boulevard generate motorized and non-motorized travel (pedestrians, cyclists). Although a bicycle path exists along a portion of the boulevard, the artery's current environment strongly favours motorized travel, and conditions are not supportive of other road users. The high number of lanes exceeds the service demands/requirements within the sector and results in frequent lane changes, long pedestrian crossings, and high travel speeds.

Figure 1 displays the boulevard in relation to the region's road system (see appendices).

With respect to the information given above, CIMA+ was asked by the City of Laval to develop a new concept for Daniel-Johnson Boulevard to better meet its users needs, and to increase their level of safety.

This presentation demonstrates how the project in question can make a major innovative contribution to protecting and improving the environment and urban space while at the same time increase the artery's safety and attractiveness.

### **Present day: a boulevard poorly tailored to sustainable development**

Daniel-Johnson Boulevard, a rectilinear road providing direct access to the expressway system, is designed to provide motorists with optimal mobility. Despite the presence of mixed uses such as shopping centres, an educational institution, and multifamily housing, the boulevard appears unattractive to its users.

With respect to the notions entailed by sustainable development, the boulevard does not promote active travel modes nor multi-modal transportation and is therefore not environmentally friendly.

Several specific issues are noted:

***High number of traffic lanes inducing high speeds***

Daniel-Johnson Boulevard for the most part consists of four lanes in each direction with on-street parking in certain sections. The low traffic density resulting from the high number of lanes allows motorists to change lanes freely when passing slower vehicles.

***Imbalance between roadway surface and sidewalk surface***

The corridor is disproportionately devoted to motorized modes over active modes. This observation can be noted even in sectors generating pedestrian traffic. This type of infrastructure is unappealing and unsafe for people travelling by means other than automobiles.

***Lack of pedestrian crossing signals and crosswalks at some intersections***

The lack of pedestrian crossing signals and crosswalks at some intersections increases pedestrians' vulnerability because their priority and visibility are not promoted at the intersections.

As well, the lack of pedestrian crossing signals leaves pedestrians unaware of the time available to cross. This situation may encourage them to disregard traffic signals, thereby increasing the risk of accidents.

These conditions do not encourage active travel, especially by seniors and young children.

***Long pedestrian crosswalks***

The excessive width of Daniel-Johnson Boulevard increases the crossing distance for pedestrians and exposes them to more traffic conflict in intersections.

### *Channelized right turns at intersections*

Channelized right turns force pedestrians to cross a lane without having the right of way, which increases their exposure to traffic conflict.

### *Deficient cycling infrastructure on Daniel-Johnson*

In the vicinity of the study area, it is observed that a bicycle path ends abruptly in a right turning lane with high traffic volume. Furthermore, no cycling access is provided for the high school and neighbouring residential area.

## **In the near future: a pleasant and attractive urban artery**

The concept proposed by CIMA+ features several characteristics illustrated in Figure 2 in the appendices. These images demonstrate the changes brought to the existing boulevard through the proposed concept.

### **A more compact boulevard: reducing the number of lanes**

-  Reducing the number of lanes on the boulevard from four to two each way will encourage motorists to reduce their speeds. Slower traffic **will diminish the negative impacts of motorized transportation on the environment**, such as atmospheric pollution, noise (from motors and tire-pavement contact), and pedestrian-vehicle and cyclist-vehicle conflicts. Hence, environmental considerations will be taken into account by the reduction in the number of lanes.

### **Vegetation**

-  Developing a landscaped strip between the current sidewalks and the roadway will help make the boulevard more attractive and safer for pedestrians and cyclists. This characteristic of the presented concept **respects and improves the quality of life, particularly for the boulevard's residents.**

## Priority to active modes of transportation!

-  Adding pedestrian crosswalks and crossing signals as well as reducing crossing distances **will promote pedestrian traffic** by making it more attractive and safer to cross the boulevard.
-  Eliminating channelized right turns will promote pedestrian traffic by making the boulevard intersections more attractive and safer to cross. The **continuity of pedestrian routes** will also be improved by these initiatives.
-  The concept prioritizes the extension of the bicycle path along the boulevard. The development of bicycle paths complies with the principle of sustainable transportation development by **encouraging the use of active modes**. It is also expected that the path will be extended to the parking lot of the *Carrefour de l'Agence Metropolitaine de Transport (AMT)*, **which would create an intermodal hub for bicycle and public transit use**.

## A FINANCIALLY FEASIBLE PROJECT FOR THE MUNICIPALITIES

To reduce the boulevard's redevelopment costs, no changes to the existing central divider are included in the concept. Only the outer lanes adjacent to the sidewalk will be replaced by vegetation and cycling infrastructure. Thus, the mature trees overlooking the central divider will be protected and the current drainage infrastructure will require no major modifications.

## APPROVAL BY ELECTED MUNICIPAL OFFICIALS AND THE PUBLIC: an innovative and collaborative approach

To gain the approval of elected municipal officials and the public, an innovative approach was taken to present the proposed concept. A dynamic animated presentation was developed using cutting-edge technology through the know-how of a consulting firm in this field.

Dynamic animation is an ideal tool for conveying information at town hall meetings, and it allowed the audience to experience the modified boulevard virtually—as

would pedestrians, cyclists or motorists. Audience members were able to appreciate the features of the concept as the landscape unfolded before them. This made it easier for individuals and elected officials to question the experts on specific characteristics of the concept and to make well-informed comments, which led to some enhancements to the proposed concept.

Such an approach is very helpful to any municipality wishing to involve the public in a collaborative process designed to improve existing road infrastructure.

All the simulated images shown in Figure 2 are taken from the dynamic animation prepared for this leading project.

## **A SLIMMED DOWN ARTERIAL ROAD**

The reduced design of Daniel-Johnson Boulevard is in line with the City of Laval's roadway rehabilitation program. However, by focusing on integrating Daniel-Johnson Boulevard into its surroundings and by addressing socio-economic and environmental issues, the proposed concept goes well beyond the initial aspect. In short, every facet of the notion of sustainable development is addressed.

The boulevard's dimensions have been redesigned to limit automobile use, to meet its mobility needs and to favour active transportation modes. Intersections have been brought up to the design code and surrounding areas bordering the boulevard have been upgraded to make the environment more attractive to pedestrian traffic. Beyond the boulevard itself, it is planned to extend the current bicycle path up to the AMT's parking lot, thereby promoting intermodality between active modes and public transit. These principles promote public health and sustainable transportation and are in harmony with the Kyoto Protocol.

# Appendix

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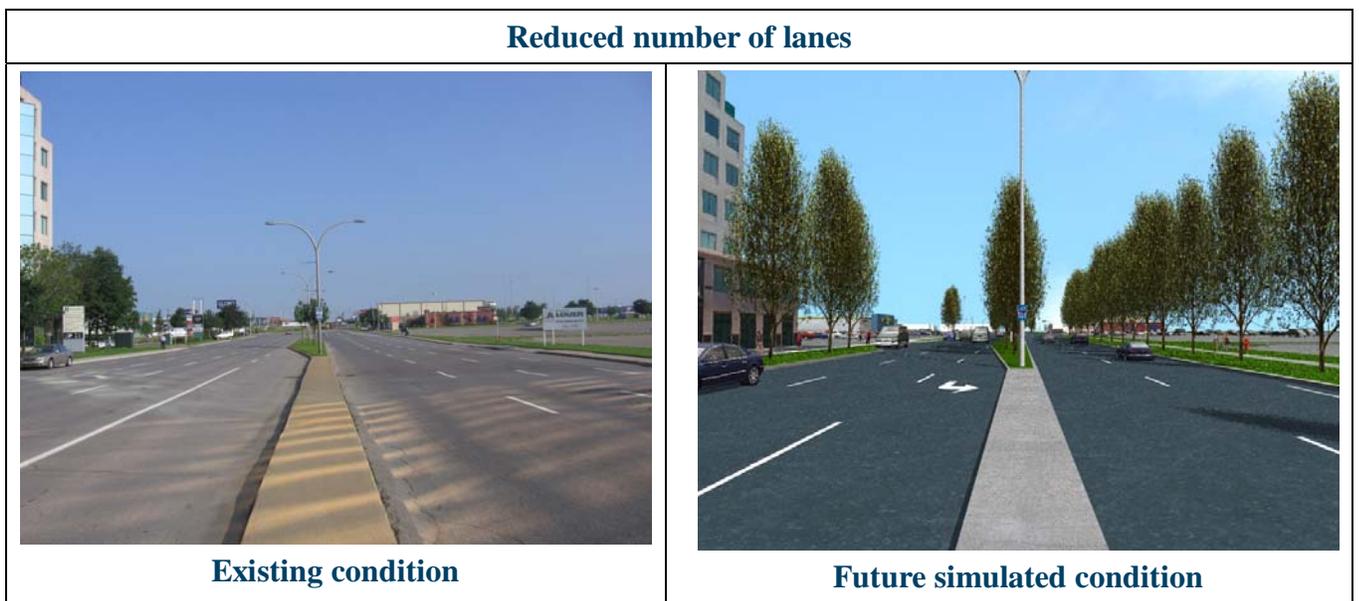
**Figure 1: Study Area**

**Figure 2: Current infrastructure compared to a simulation of the proposed concept**

**Figure 1: Location of Study Area**



**Figure 2: Current infrastructure compared to a simulation of the proposed concept**



**Introduction of a landscaped strip between the current sidewalks and the roadway**



**Existing condition**



**Future simulated condition**

**Redesign of crosswalks, and reduction in pedestrian crossing distance**



**Existing condition**



**Future simulated condition**

**Elimination of channelized right turning lanes at intersections**



**Existing condition**



**Future simulated condition**

**Cycling infrastructure on Daniel-Johnson**



**Existing condition**



**Future simulated condition**