

# Turcot Complex Reconstruction Project



## The project

The Turcot Complex is located on the Island of Montréal south-west of downtown, specifically in the cities of Montréal, Montréal-Ouest and Westmount.

The Turcot interchange was built in 1967 and has almost reached the end of its useful life after more than 41 years of service. The interchange is a major passenger and freight transportation axis, and is used by approximately 280,000 vehicles per day. The infrastructures are in poor condition and require an ever-increasing amount of repair work.

The result is a growing number of partial or total lane closures, causing detours and delays for users as well as increased traffic on the local road network. There are road safety problems, primarily due to infrastructure configuration and signage.

Reconstruction has been deemed the best solution to ensure structure durability, improve highway safety, minimize impact on the local area and ensure adequate integration of the project with the urban setting.

## The four major objectives

1. Optimize structure safety, reliability, functionality and durability;
2. Integrate infrastructures with the natural and urban setting;
3. Redesign the urban landscape of this portion of the territory;
4. Foster and support regional economic development.



### Reconstruction of the Turcot Complex includes:

- Reconstruction of the Turcot interchange;
- Reconstruction of the de La Vérendrye interchange;
- Reconstruction of the Angrignon interchange;
- Reconstruction of the Montréal-Ouest interchange;
- Reconstruction of Highway 15 between the Turcot and de La Vérendrye interchanges;
- Reconstruction of Highway 720 between the Turcot interchange and Atwater avenue;
- Northward relocation of Highway 20 between the Turcot and Montréal-Ouest interchanges;
- Northward relocation of CN tracks along the Saint-Jacques escarpment, relocation of a portion of the Domtar rail spur and modification of the Lachine rail spur access route;
- Installation of new local road links.



## Benefits of reconstruction

- Increase infrastructure serviceable life;
- Increase road safety and structure reliability;
- Redevelop the former Turcot Yard;
- Improve access to various local activity sectors;
- Increase integration of infrastructures with their natural and urban settings;
- Reduce structure surfaces by 65%;
- Improve regional mobility with a view to sustainable development;
- Facilitate the maintenance of traffic during construction work of the new infrastructures.

## Construction schedule and costs

Construction and dismantling work will be spread over seven years, from late 2009 to late 2016. However, the infrastructures will be commissioned gradually as of 2015, five years after the start of work.

The total cost of the project is estimated at \$1.5 billion in current dollars, which includes construction costs for new road infrastructures and work on railway infrastructures, and costs related to preparing the project, real estate operations and site decontamination.



— Highway network  
 — Local network

The Turcot Complex is situated in Ville de Montréal, specifically in the Sud-Ouest, Verdun, LaSalle, Lachine and Côte-des-Neiges/Notre-Dame-de-Grâce boroughs, as well as the cities of Montréal-Ouest and Westmount.

Cazelais Street – BEFORE



Cazelais Street – AFTER





## Description of the setting

### Physical setting

In general, the study area represents the flat topography characteristic of the catchment area of the St. Lawrence River in the Montréal area, with a low incline, perpendicular to the Lachine Canal, which flows into the river at the Old Port of Montréal. North of the CN railway track, the Saint-Jacques escarpment is a 20-to 30-metre-high geological feature, oriented SW-NE.

The study area contains two main watercourses, both man-made—the Lachine and Aqueduct Canals. Since the flow of the Lachine Canal is regulated by sluice gates, the study area has no flood zones.

As result of past or current activities, several lands necessary to the project are contaminated and must undergo rehabilitation work according to their intended uses.

### Built-up environment

Nearly the entire surface of the study area is in urban territory and includes few vacant lots, with the exception of Turcot Yard.

Several urbanized sectors are present, which comprise various types of dwellings (single-family, duplex, triplex, etc.) as well as vast commercial and industrial sectors along the length of boulevard de Maisonneuve Ouest, rue Saint-Jacques, rue Notre-Dame Ouest, rue Saint-Patrick and rue Angrignon.

The Lachine Canal, which crosses the study area from east to west, is an historic site managed by Parks Canada that presents a linear structure in the landscape. A range of recreational activities are practiced there, such as recreational fishing, pleasure boating, cycling, walking, etc.

In total, the study area comprises 47 parks, three recreational or leisure centres, three seniors' centres and two community centres. Also of note is the Gadbois recreation centre, second largest in the Montreal area, located on the north bank of the Lachine Canal and east of the Turcot interchange.

The study area includes 22 schools (elementary, secondary and other teaching institutions) as well as several daycares and nursery schools.

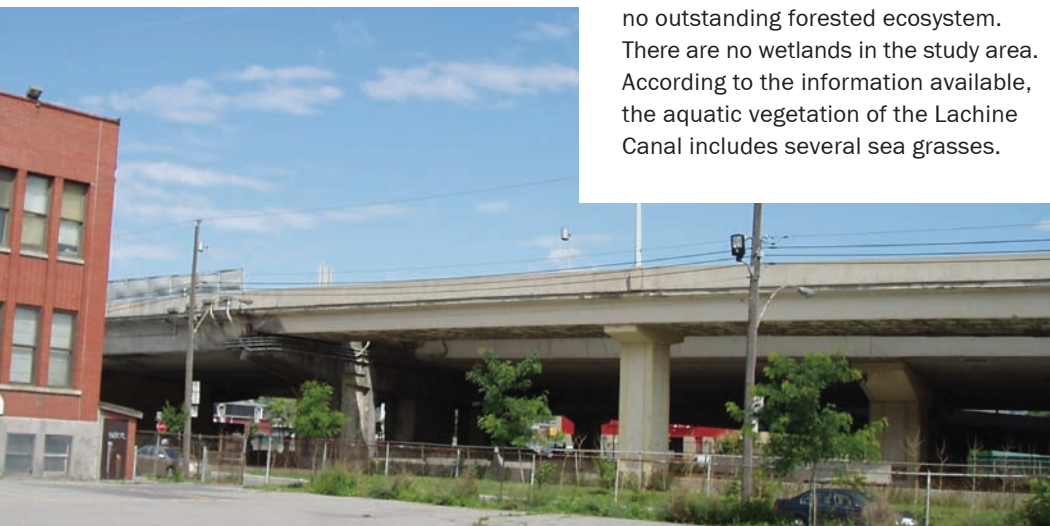
### Natural setting

The entire study area represents a highly urbanized setting. The natural setting comprises mainly the Lachine Canal and the Saint-Jacques escarpment, identified by Ville de Montréal as an ecoterritory.

The Ministère des Ressources naturelles, de la Faune et des Parcs has identified no outstanding forested ecosystem. There are no wetlands in the study area. According to the information available, the aquatic vegetation of the Lachine Canal includes several sea grasses.

No specific wildlife habitat has been identified in the study area. Recent inventories indicate that at least eight mammal species common in urban settings are present in the Saint-Jacques escarpment territory (e.g., groundhogs). A few other species can also be found on the banks of the Lachine Canal (e.g., beavers, eastern cottontails).

No amphibian species were observed during the wildlife inventories conducted on the Saint-Jacques escarpment. However, brown snakes, a vulnerable species, have been observed. The ornithological survey found 65 bird species.





Roberval Street – **AFTER**

# Project features and impacts

## Features

### Optimal integration with the setting

- The selected design proposes building new highway infrastructures below or beside existing infrastructures. Most of these will be built at ground level.
- The project has opted for greening. Slopes, plateaus and embankments as well as the residual spaces within the interchanges will be laid out and landscaped (trees and shrubs planted, public spaces created, etc.) to integrate harmoniously with the surrounding urban fabric.
- The roads to be built or redesigned during this project will include sidewalks wide enough for pedestrians to use safely. Special attention will be given to planning pedestrian and cyclist paths beneath the overpasses.
- A multi-use path will be created at the foot of the Saint-Jacques escarpment.
- Particular attention will be paid to the architectural treatment of structures.

### Regional economic development

- Shifting Highway 20 and relocating CN tracks to the foot of the Saint-Jacques escarpment will make it possible to re-open the former Turcot Yard.
- The project will maintain or create more than 23,000 jobs during the seven years of the project.

### Access to activity sectors

- The Gadbois centre, the new McGill University Health Centre (MUHC) and many industrial and commercial zones that adjoin the project site will become more accessible as a result of the new developments.

### Development of public and active transportation

- A corridor is planned to facilitate the possible rail link between downtown, the airport and the west of Montréal Island.
- A corridor is planned for a reserve public transit lane (taxi, bus, carpooling) down the centre of Highway 20, in both directions, between the western limit of the project and the Turcot interchange.
- Preferential measures are planned for buses on rue Notre-Dame and rue Pullman.
- The project integrates building or re-designing infrastructures for pedestrians and cyclists in the project intervention areas.



Roberval Street – **BEFORE**

## Project impacts

Several mitigation measures have been proposed to reduce or even eliminate any anticipated impacts on natural and human setting components during construction and the serviceable life of the new infrastructures.



### Human impact

- The MTQ, along with the Société d'habitation du Québec and the City of Montréal, is finalizing an Accès-Logis project with the goal of retaining the existing affordable housing stock and offering people the chance to live in the sector.
- Support and relocation assistance measures for individuals and households affected by the project are also planned by the MTQ in partnership with the Office municipal d'habitation de Montréal.

### Noise impact

- Eight noise-protection walls will be installed—two in the de La Vérendrye sector, four in Saint-Henri and two in the Montréal-Ouest sector. A segment of an existing wall in the western portion of rue Elm (Montréal-Ouest) will be raised. In general, the noise level decreases by 1 to 15 decibels.

### Impact on air quality

- The project's overall impact on air quality will be neutral.
- Air quality in 2016 will be better than it is today.





Saint-Jacques escarpment – **AFTER**

### Impact on landscape and heritage

- Mitigation measures will be applied to minimize cutting and stabilization activities and maintain the integrity of the Saint-Jacques escarpment.
- A development and urban integration study has been completed and the elaborated concepts have been integrated to the project.
- Special measures are planned to protect the Lachine Canal and Tanneries village sector, which is of heritage and social interest.
- In the route selected for the reconstruction project, drilling and exploratory archaeological digs will be completed to check for the presence of archaeological sites in those spaces required for project construction.

### Impact on public transit and active transportation

- A corridor is planned for future construction of a railway link between the West Island, Trudeau International Airport and downtown. Public transit priority measures along rue Notre-Dame and the option of building a reserved lane to service future developments in Turcot Yard are also planned.
- A corridor is planned for a reserved public transit lane (taxi, bus, carpooling) down the centre of Highway 20, in both directions, between the western limit of the project and the Turcot interchange. A multifunctional link connected to the bike paths planned to the west and east of the project will be developed in the buffer zone set aside at the foot of the Saint-Jacques escarpment.



Saint-Jacques escarpment – **BEFORE**

## Impacts during work

### On the local network

- Traffic flow on existing structures will be maintained throughout the construction period to avoid traffic overload in the local network.

### On the natural setting

- Special measures are also proposed to protect special status wildlife species that may be present. With respect to wildlife (terrestrial, avian and aquatic), limiting the work duration as much as possible and carrying out the work outside of peak wildlife activity periods have been proposed.
- The anticipated impacts on vegetation are mainly related to clearing activities. Applying current mitigation measures will help minimize the negative environmental effects. Planting new trees as part of the project will replace and exceed clearing losses.



Saint-Rémi and Laurendeau Streets – BEFORE

### On the worksite

- In general, site contractors must comply with municipal standards by implementing appropriate mitigation measures, including Ville de Montréal's measures relating to water management and dust control.
- To minimize the noise impact associated with construction work, the contractors must comply with the requirements stipulated in the Ministère's special specifications on noise control during roadwork and implement the appropriate mitigation measures.
- The contractors will also have to conduct occasional acoustic monitoring during the work in noise-sensitive areas to ensure compliance with authorized levels and the effectiveness of the mitigation measures in place.
- The anticipated impacts of dust on air quality will be reduced by applying current mitigation measures, including spraying structures during demolition and daily street cleaning.
- Several standard measures will be applied relating to soil stabilization, movement of heavy equipment and site access, as well as appropriate hydrocarbon management.
- All necessary measures will be taken to ensure that no contamination reaches the federal property of the Lachine and Aqueduct canals. During works in the water, special measures will be applied and the work will be completed during periods when the aquatic setting is the least sensitive.

Saint-Rémi and Laurendeau Streets – AFTER



- During dismantling of existing works and construction work that could affect water quality in the Aqueduct Canal, it is proposed that drainage water from the site and water required during the dismantling operation be recovered and sent to an approved processing site.
- Soil will be managed in compliance with the requirements of the Ministère du Développement durable, de l'Environnement et des Parcs, specifically those for contaminated soils contained in the Politique de protection des sols et de réhabilitation des terrains contaminés (Soil Protection and Contaminated Sites Rehabilitation Policy).

