

DEMAND FORECASTING (RIDERSHIP) – REM EXTENSION

MANDATE

CDPQ Infra decided to develop a 24-hours modelling for forecasting the ridership of the Lavoie project (connecting Laval to Montreal) in order to avoid the uncertainty caused by the application of a coefficient for transitioning from the morning peak time (PPAM) to the entire day. This uncertainty was indeed caused by differences between OPUS (ticketing system) data and findings from the departure-destination survey (OD2018) for the PPAM (Δ 30 %). There are also differences for the other periods of the day.

DESCRIPTION

The 24-hour modelling aims to forecast the demand to calibrate the main network components, as well as to make a preliminary estimate of the income to be received by the contractor (CDPQ Infra) during the concession period. SYSTRA Canada designed these models by using QUETZAL. This is an open-source tool using a Python library. This 24-hour modelling is based on models over specific time periods.

The five periods of the day simulated, which are consistent with the departure-destination survey data, are the following:

- Morning peak time (PPAM): same period as the one modelled during the first study, from 06:00 a.m. to 9:00 a.m.
- Off-peak time (HC): from 9:00 a.m. to 3:00 p.m.;
- Afternoon peak time (PPPM): from 3:00 p.m. to 7:00 p.m.;
- Evening time: from 7:00 p.m. to 00:00 a.m.;
- Night-time: 00:00 a.m. to 6:00 a.m.

Ridership results are presented for two modelling scenarios:

- **Baseline situation:** simulation of main mass transit network of Great Montreal (metro, train, bus) with the REM under construction and the future projects already budgeted and under execution of engineering (such as the Blue line extension) and construction (such as Pie-IX Bus Rapid Transit).
- **Project situation:** the same baseline with the Lavoie project.

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CDPQ Infra



TRANSIT

CLIENT
CDPQ Infra

COUNTRY
Canada

YEARS
2020-2021

DURATION
1 year

VALUE OF PROJECT
\$6B

TYPE OF SERVICES
Transport planning and demand analysis, modelling, traffic forecast