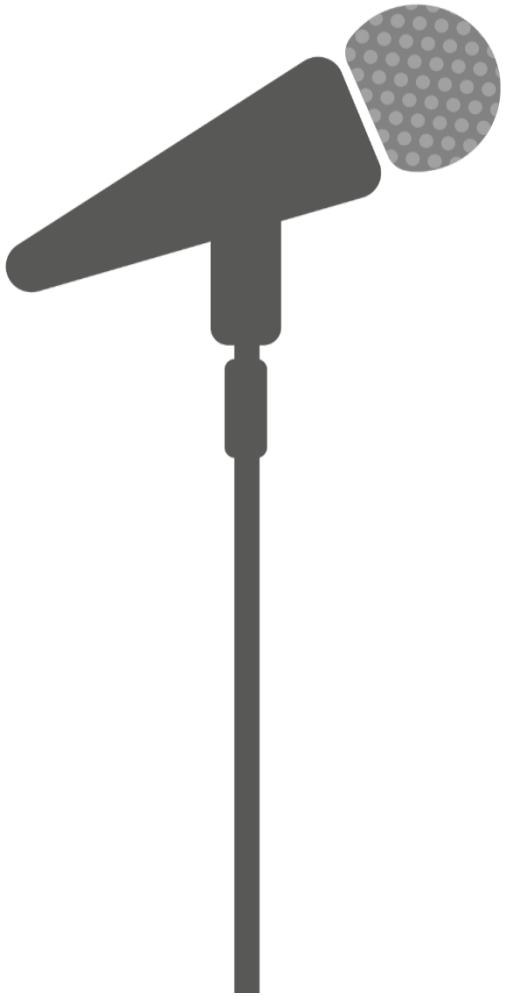


Public Consultation

LIONEL-GROULX SECTORAL ELECTRICAL SUBSTATION

May 25, 2017

OBJECTIVES OF THE PRESENTATION

- Present the sectoral electrical substation rehabilitation project
- Gather the public's comments to:
  - Ensure harmonious integration of the new Lionel-Groulx building with the environment
  - Account for the neighbours' concerns during construction

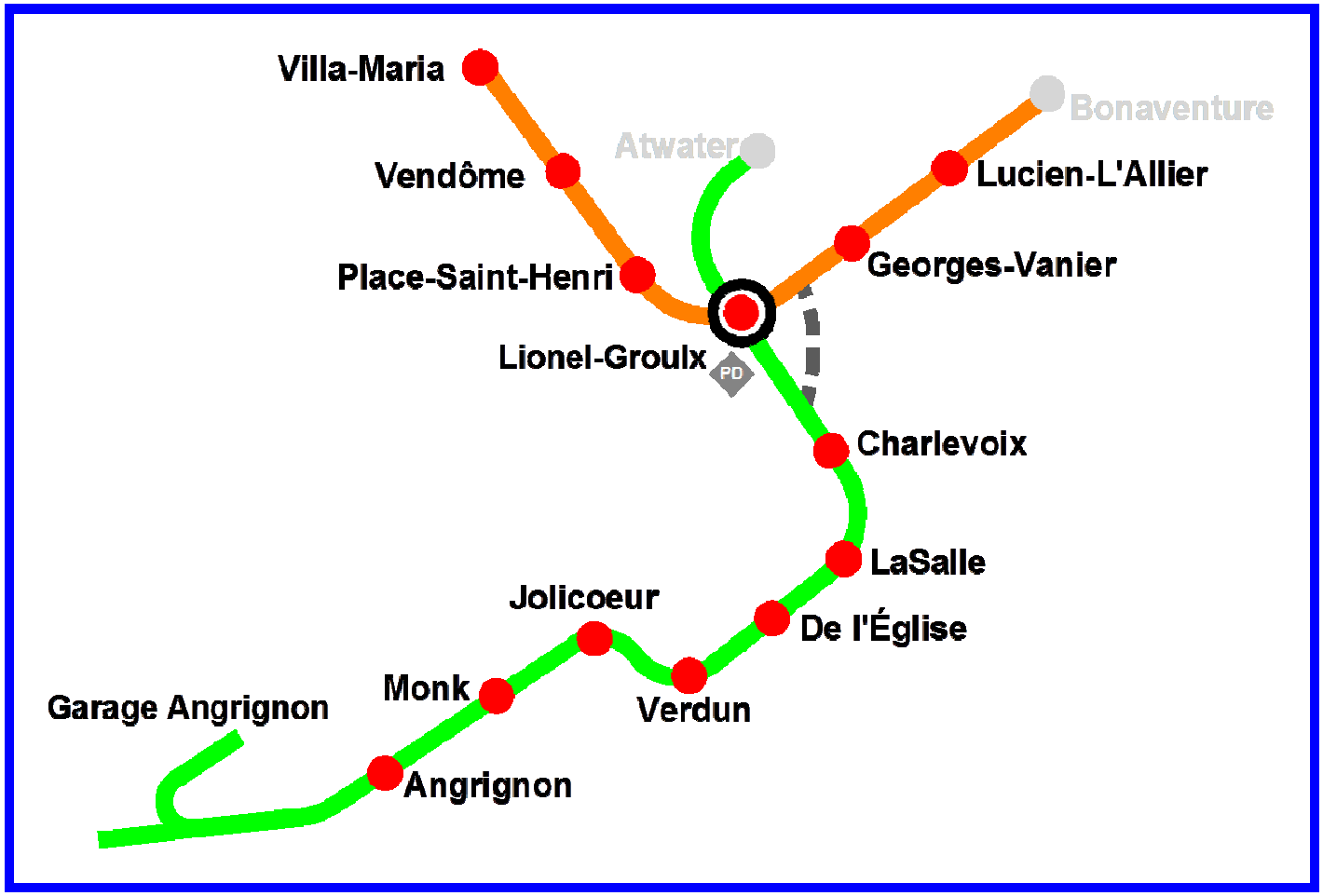
BACKGROUND

WHAT IS A SECTORAL ELECTRICAL SUBSTATION?

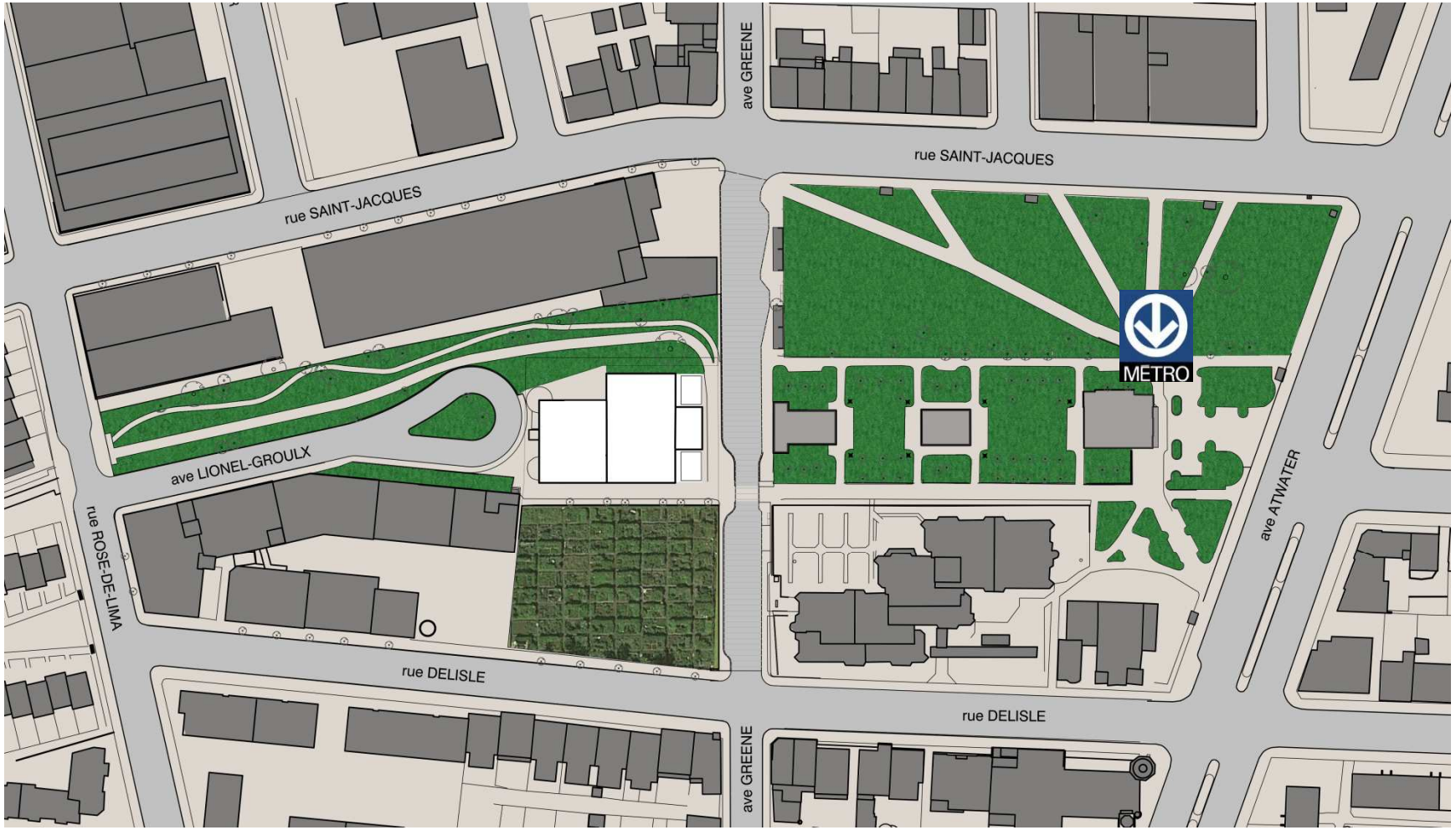
- Strategic installation for distribution of power in the Métro network
- The STM Métro network includes 7 sectoral electrical substations
- The equipment of the Lionel-Groulx electrical substation has reached the end of its useful life and must be replaced
  - Medium voltage equipment (12 kV)
  - Generator sets

LIONEL-GROULX SECTORAL ELECTRICAL SUBSTATION

Power supply to Orange and Green lines (13 stations)



SECTOR PLAN


ave GREENE
rue SAINT-JACQUES
rue SAINT-JACQUES
METRO
ave LIONEL-GROULX
rue ROSE-DE-LIMA
ave ATWATER
rue DELISLE
rue DELISLE
ave GREENE

DESCRIPTION OF THE PROJECT

OBJECTIVES OF THE PROJECT

- Ensure the reliability of the Métro power supply
- Ensure the sustainability of the Métro equipment
- Supply the new loads necessary for operation of the Métro
- Integrate the new building into the built environment and the urban environment according to the Borough's planning directions for the sector

SCOPE OF THE PROJECT

- Replacement of the medium-voltage equipment
- Replacement of the generator sets
- Replacement of the sealing membrane above the underground infrastructures located under the park between the Métro station entrance and the Lionel-Groulx garage

CHOSEN SOLUTION

1. Construction of a storey above the Lionel-Groulx garage by maintaining essentially the same footprint
2. Installation and commissioning of the new equipment
3. Nighttime switchover of equipment between the old and new sectoral electrical substation
4. Dismantling and disposal of the old equipment

CURRENT GARAGE

THE PROPOSED CONCEPT

VIEW OF BUILDING FROM LIONEL-GROULX

CONCEPT PROPOSAL

VIEW OF BUILDING FROM GREENE

CONCEPT PROPOSAL

ARCHITECTURAL DIRECTIONS

- Limit the height of the building
- Preserve clearance on the ground floor for the bicycle path and the walkway
- Generate a dynamic composition of the facades
- Provide for a rooftop mechanical room, set back from the perimeter, to hide the equipment
- Add lighting integrated into the building
- Create a transition between the buildings through a 2-volume structure and a reminder of the materials
- Develop the pedestrian link

AN INTEGRATED DEVELOPMENT

CONCEPT PROPOSAL

A USER-FRIENDLY LAYOUT

- Create a transition between the architecture of the Métro entrance and the new building
  - Restoration of the concrete panel cladding
  - Addition of decorative frames with integrated lighting
- Design a layout structured by the skylights
- Add varied waiting areas
- Deploy urban furniture and lighting
- Repeat the shapes and materials to unify the interventions

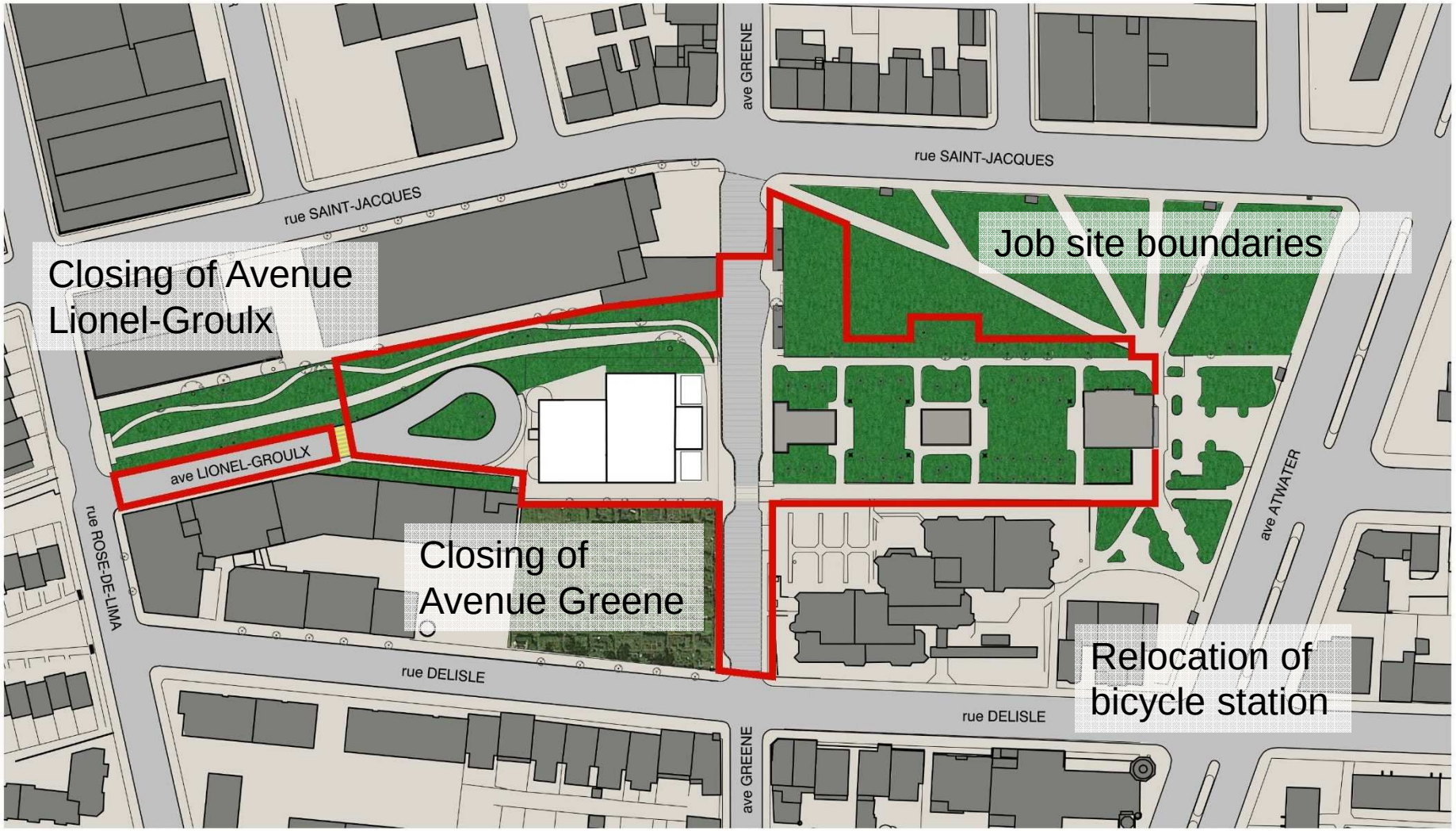
AN INTEGRATED DEVELOPMENT

CONCEPT PROPOSAL

KEY PLANNED DEVELOPMENT STAGES

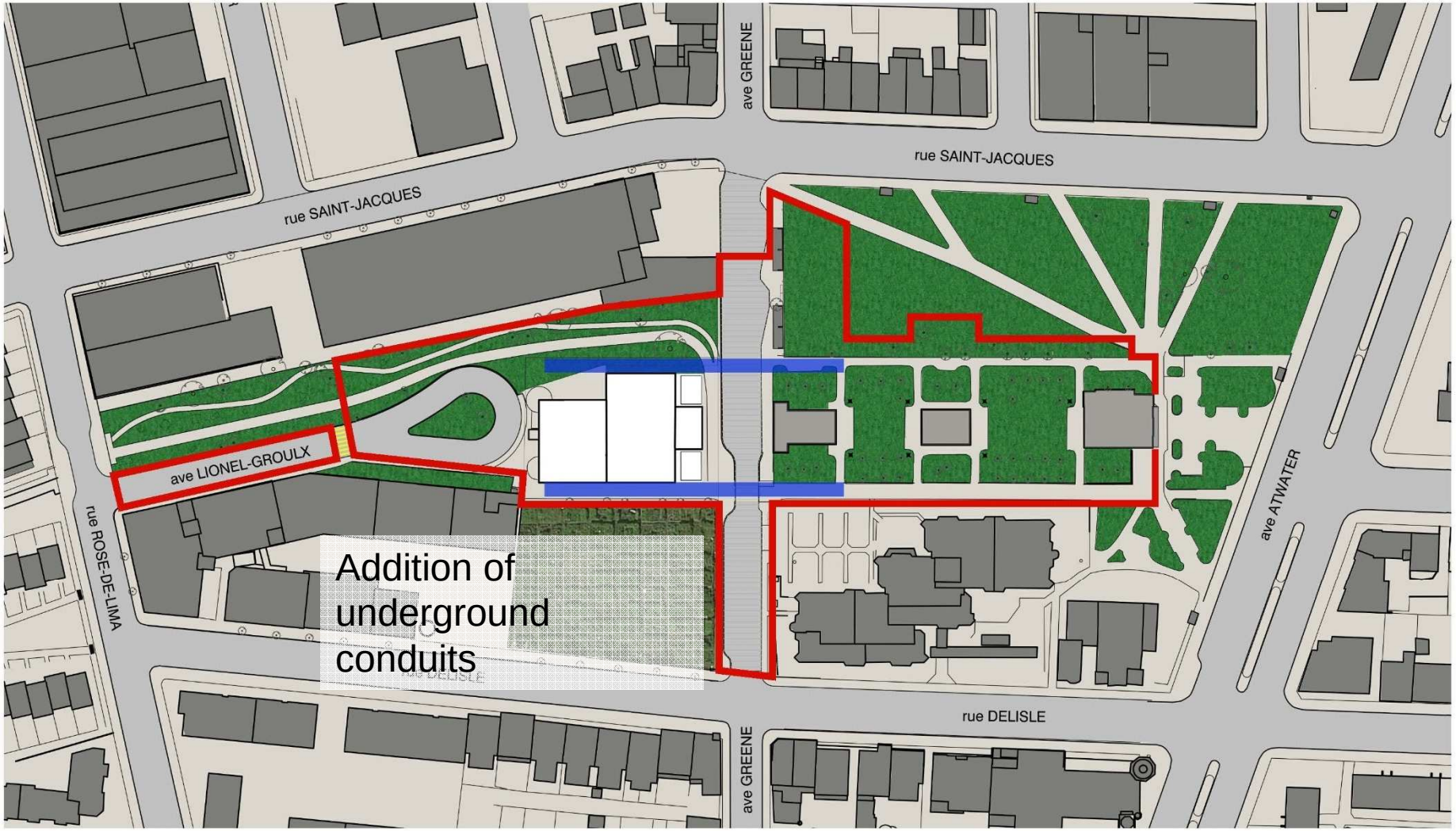
PHASE 1 PLANNING (5 MONTHS)

SUMMER TO FALL 2019



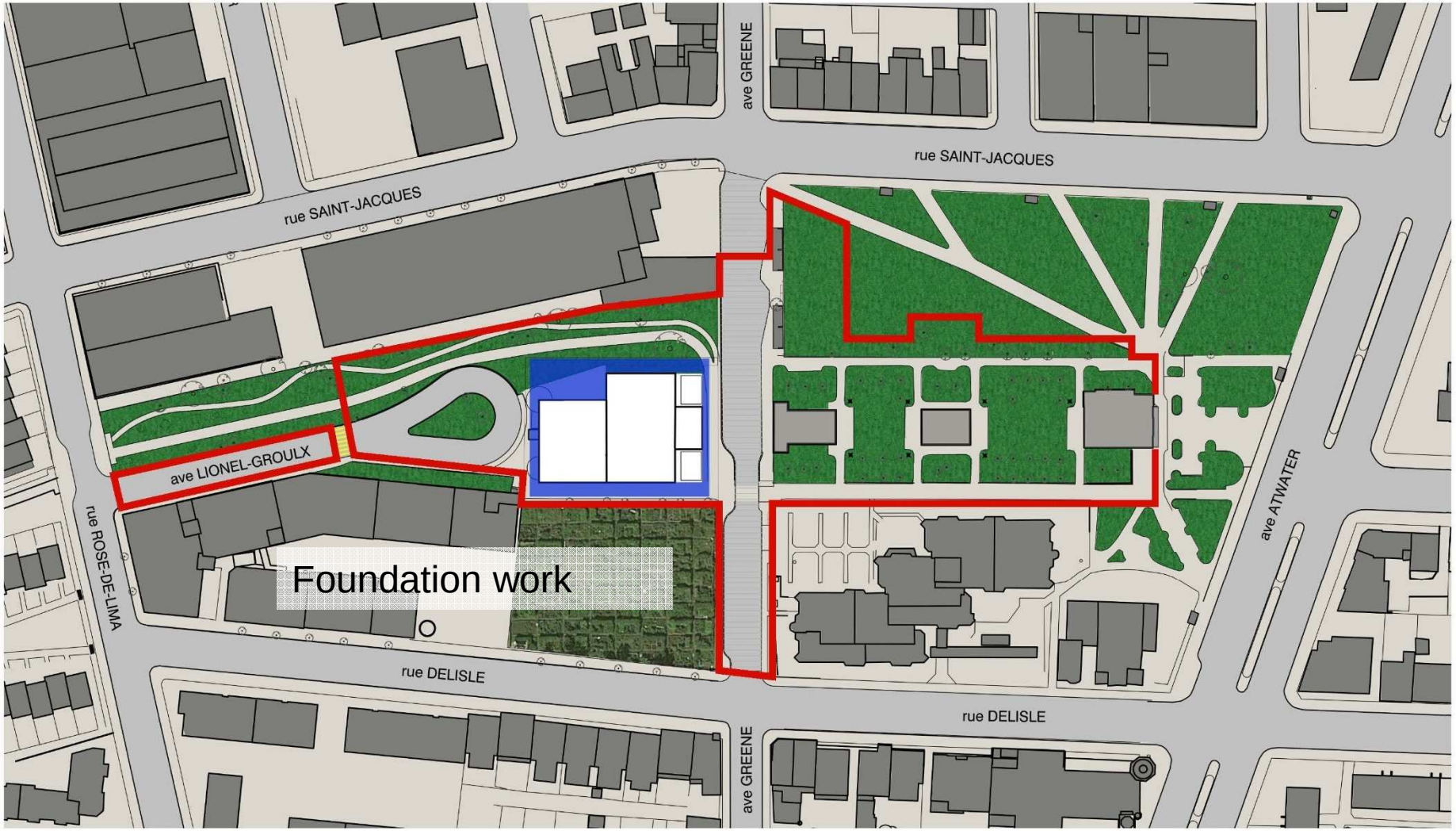
PHASE 1 PLANNING:

SUMMER TO FALL 2019

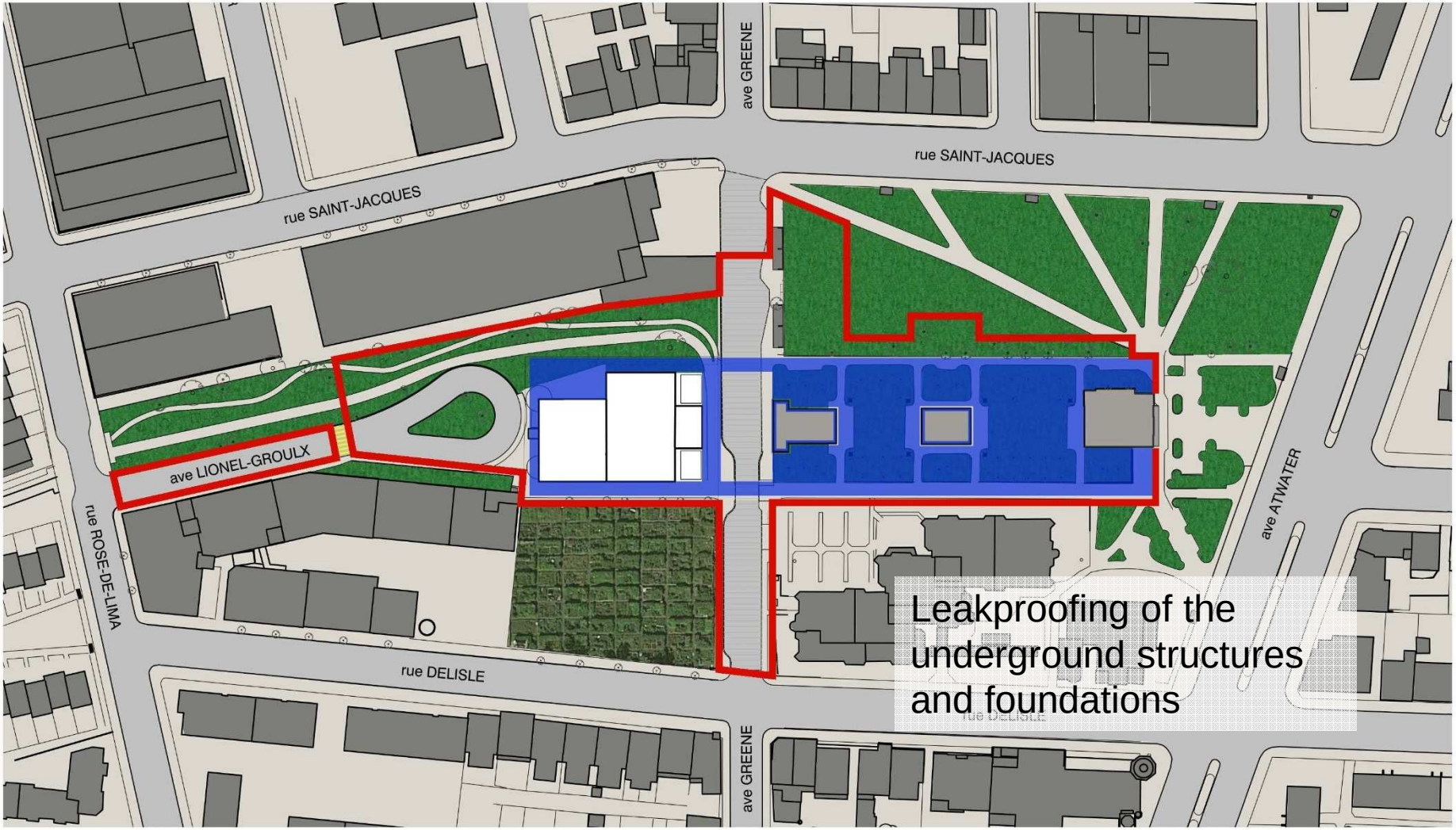


PHASE 1 PLANNING:

SUMMER TO FALL 2019

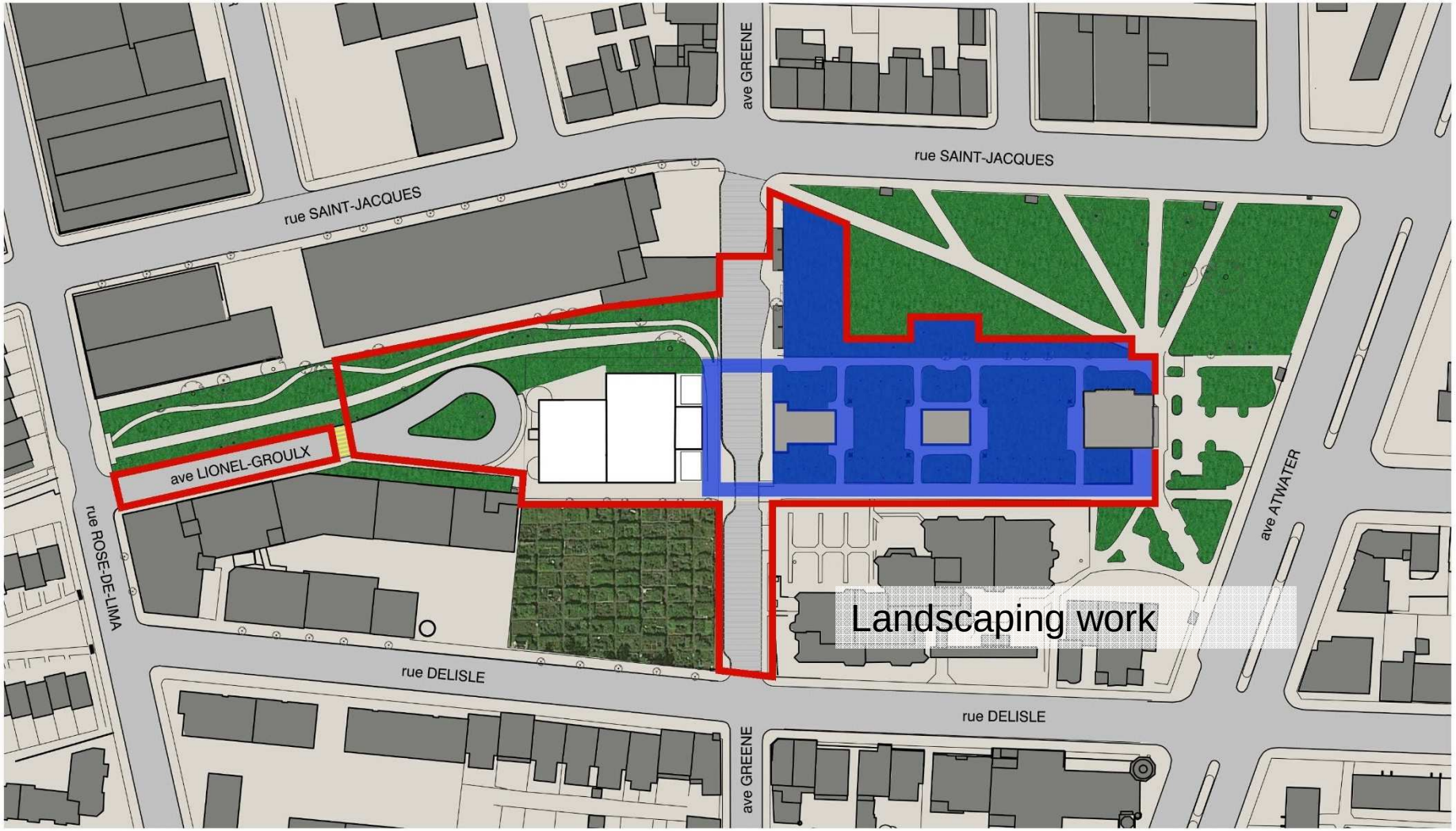


PHASE 1 PLANNING:
SUMMER TO FALL 2019

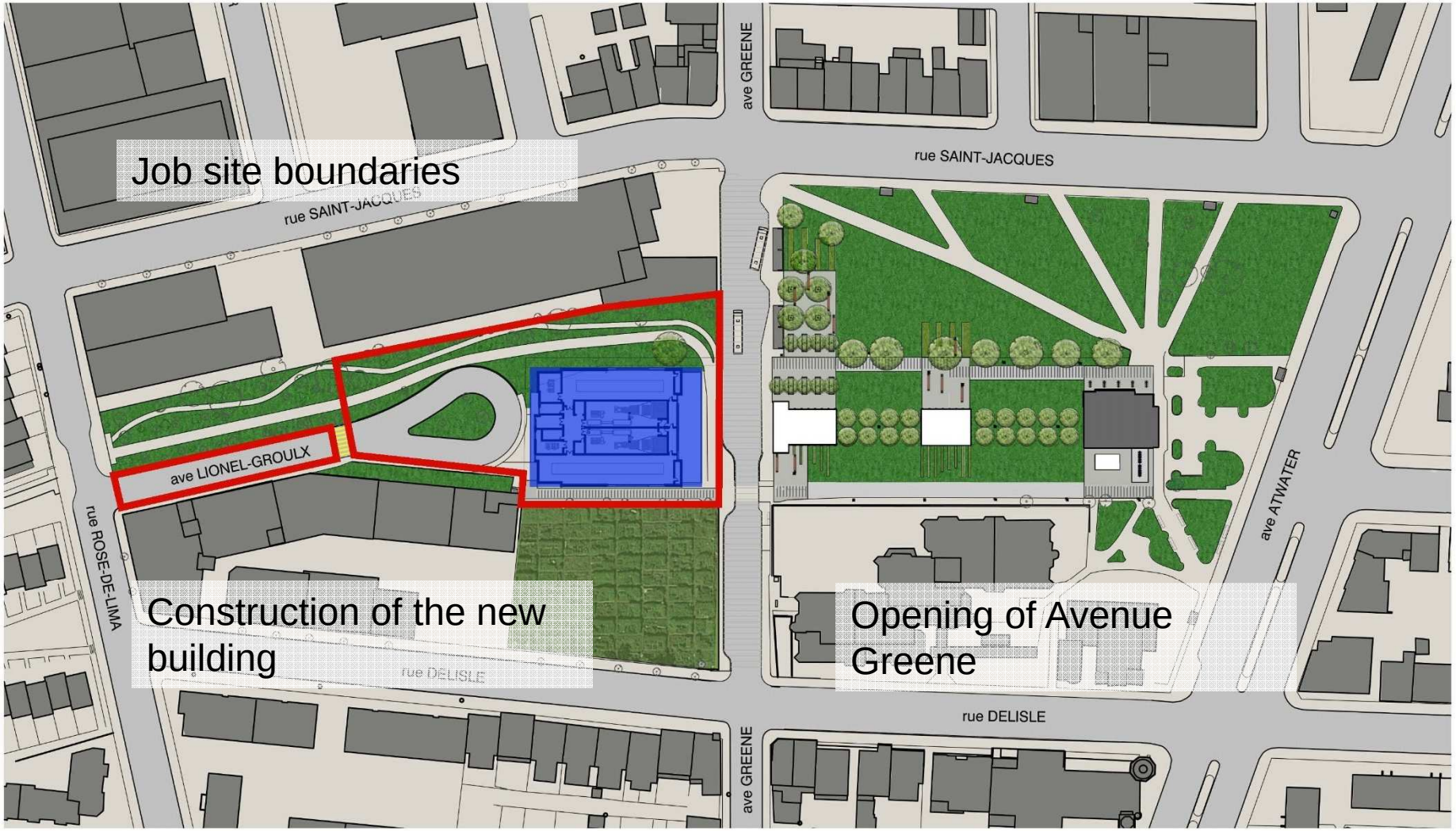


PHASE 1 PLANNING:

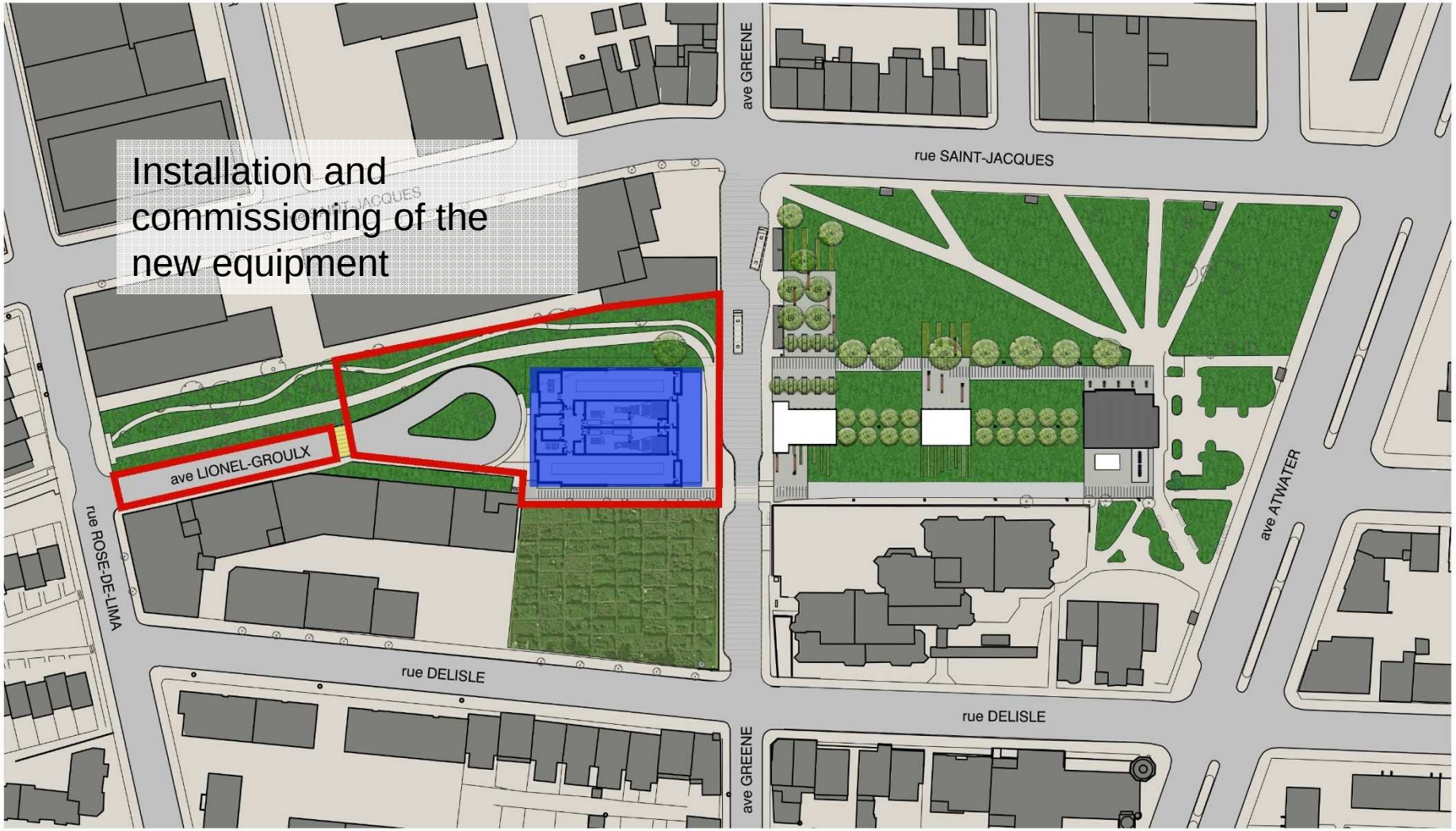
SUMMER TO FALL 2019



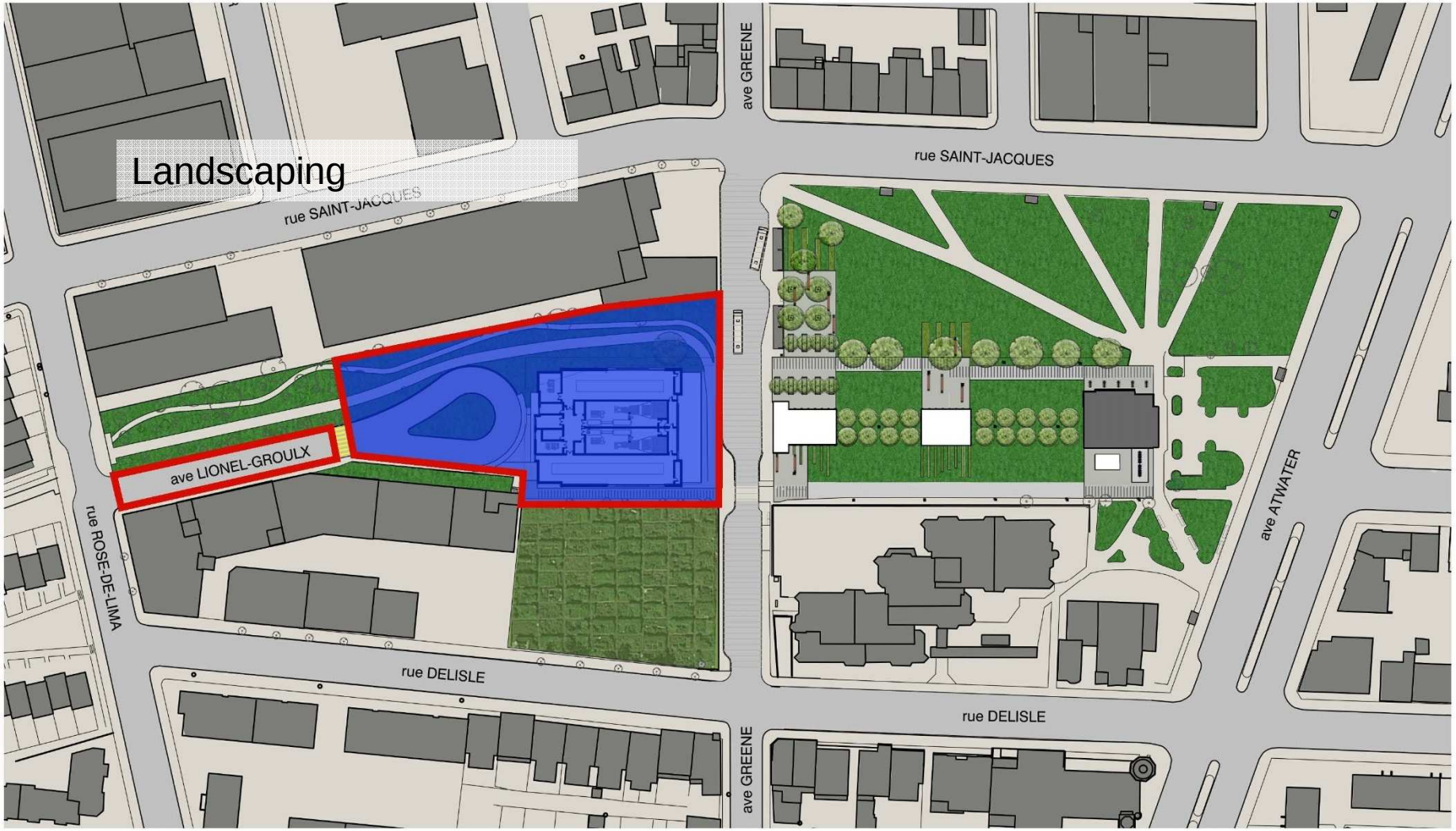
PHASE 2 PLANNING:
FALL 2019 TO FALL 2021 (26 MONTHS)



PHASE 2 PLANNING:
FALL 2019 TO FALL 2021

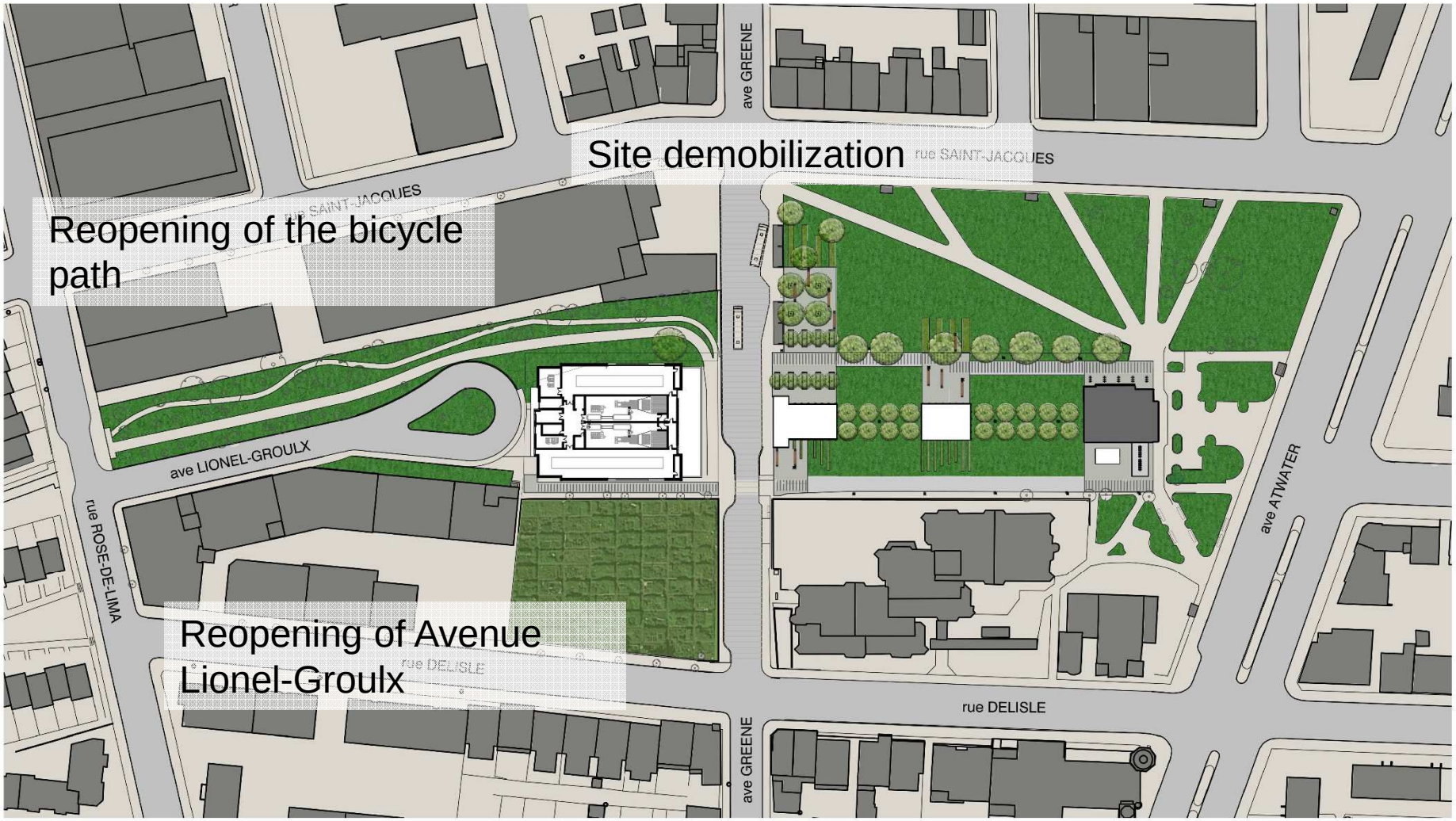


PHASE 2 PLANNING:
FALL 2019 TO FALL 2021



END-OF-WORK PLANNING:

LATE FALL 2021



PLANNED TIME FRAME

	Main milestones/activities	2019		2020				2021			
		Summer	Fall	Winter	Spring	Summer	Fall	Winter	Spring	Summer	Fall
1	**Beginning of the work**	◆									
2	**Phase 1 work**										
3	Excavation and backfilling										
4	Leakproofing work										
5	Landscaping of neighbouring park										
6	**Phase 2 work**										
7	Construction of new building										
8	Indoor development work										
9	Installation and commissioning of new equipment										
10	Landscaping of Avenue Lionel-Groulx										
11	**End of the work**										◆

MAINTENANCE OF SERVICES AT ALL TIMES
(BUS, MÉTRO)

IMPACTS OF THE WORK AND PROPOSED MITIGATION MEASURES

DEFINITION OF MITIGATION MEASURES

Mitigation measures are defined based on several factors:

- Benchmarking of best practices performed on similar and larger-scale job sites
- Alignment with the project partners and the community
- Consultation approach
- Studies
  - Traffic study
  - Sound level analysis
  - Biomass assessment

COMPONENT: TRAFFIC

- A traffic study will identify the trips that will be impacted by the zone and access to the job site
- The necessary measures will be defined to assure safe trips to strategic locations
- The traffic plan for motorists, pedestrians and cyclists will be established by a firm specialized in the field
- This plan will be aligned with the Sud-Ouest Borough

COMPONENT: AUTOMOBILE TRAFFIC

Sources

- Closing of Avenue Lionel-Groulx (duration of the work)
- Trucking: 4 heavy vehicles/hour
  - Greene Terminus
  - Avenue Lionel-Groulx

Considering the nature of the work, the anticipated impact on automobile traffic flow is negligible

Mitigation

- No heavy site vehicles on Rue Delisle
- No automobile traffic lane will be lost on Rues Saint-Jacques, Delisle and Rose-de-Lima, or on Avenue Atwater

COMPONENT: BUS TRAFFIC

Source

- Closing of the Greene terminus (summer-fall 2019: 5 months)

Bus service will be maintained at all times for the passengers. The STM will prefer main streets for bus route detours.

Mitigation

- No increase in the number of trips on Rue Delisle and Avenue Greene
- Passenger information

COMPONENT: BICYCLE TRAFFIC

Source

- Obstruction of a section of the bicycle path (duration of the work)

Mitigation

- The bicycle link will be maintained
- The temporary location will be determined with the Sud-Ouest Borough and with Vélo-Québec

COMPONENT: SOUND LEVEL

Sources

- Site vehicle traffic
- Use of heavy machinery
- Use of specialized tooling

Mitigation

- Compliance with the by-laws concerning the noise level and working hours
- Continuous monitoring of noise levels
- Installation of mufflers on noisy equipment when required
- Possibility of variable-intensity backup alarm on vehicles

COMPONENT: CLEANLINESS

Sources

- Demolition, excavation, backfilling
- Movement of vehicles

Mitigation

- Tarps and shelters
- Watering during demolition and soil excavation
- Cleaning of heavy vehicles at the site exit

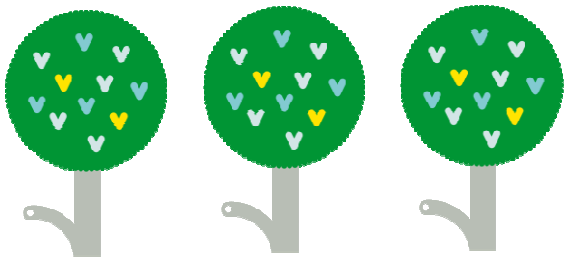
COMPONENT: LANDSCAPING

Source

- Excavation of a developed site with 54 trees

Mitigation

- Maintenance of the biomass and the canopy
- Protection or transplanting of the trees
- Landscaping integrating the Borough’s directions



COMPONENT: SUNLIGHT

Source

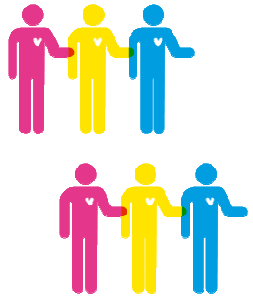
- Addition of a storey

Conclusions of the sunlight study

- Little impact on neighbouring spaces
- Shadow mainly oriented to the bicycle path and Avenue Greene
- Shadow on the community garden only in late afternoon

Summer sunlight – June at 4 p.m.

COMMUNICATIONS ANTICIPATED DURING THE WORK



- Sending electronic bulletins
- Distribution of pamphlets to the neighbours upstream of each of the key phases
- Creation of a specific section on the project on the STM website
- Dissemination of a central phone number to receive comments

BENEFITS OF THE PROJECT

- Increase the reliability and maintainability of the Métro
- Ensure the sustainability of Métro equipment
- Value-added factors
  - Harmonious integration of the new building into the built environment
  - Improvement of landscaping
  - Improve safety of the approaches to the new building and in the neighbouring park

NEXT STAGES

- June 15, 2017: session for expression of comments and opinions
- Winter 2019: public call for tenders
- Spring 2019: award of the construction contract
- Summer 2019: beginning of the work
- Fall 2021: end of the work