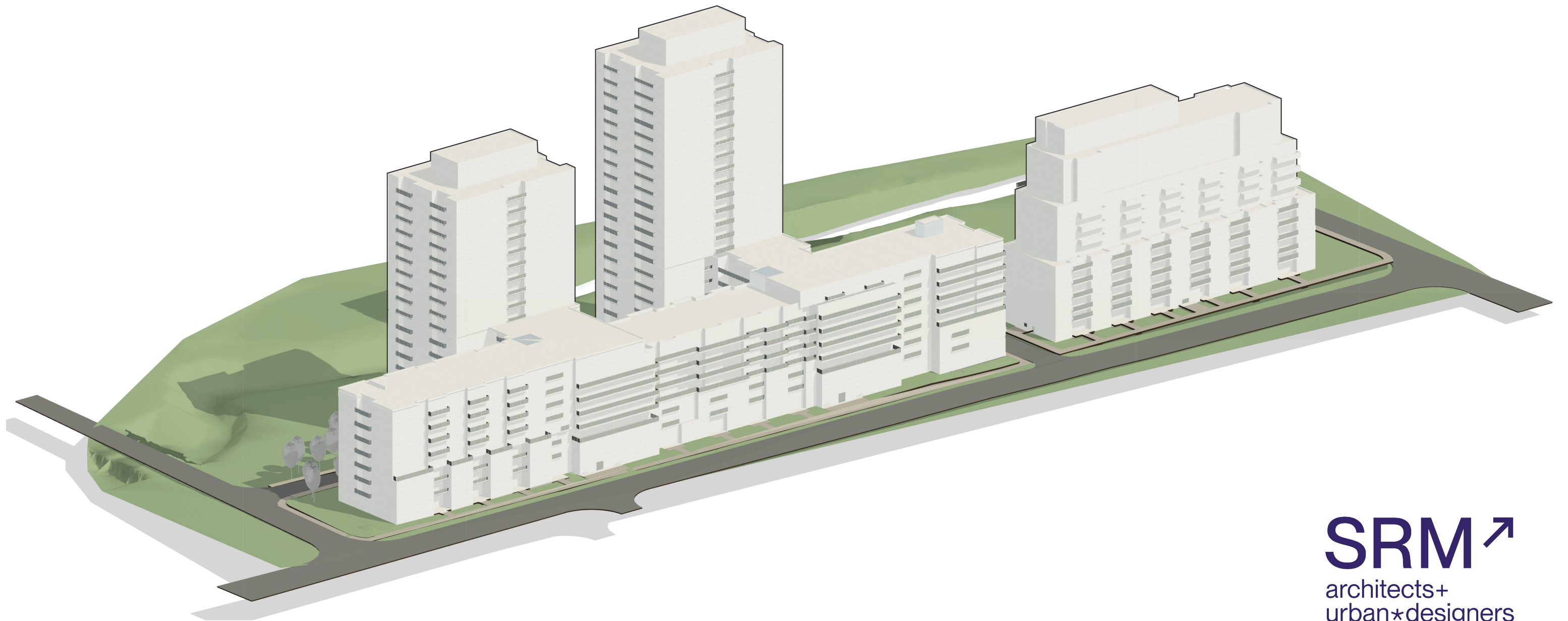


Shadow Study

Joymar Drive and Tannery Street, Mississauga
December 2024



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urban*designers

Introduction

SRM Architects + Urban Designers is pleased to submit this Shadow Study in support of the Proposed Development located at 64 - 66 Thomas Street, 95 Joymar Drive, and 65 Tannery Street (the Site). The applicant proposes a residential development with heights ranging from 7 to 22 storeys. This Shadow Study Cover Letter will provide an overview of the shadow study methodology, summarize the shadow impacts resulting from the Proposed Development, and detail the mitigating features included in the site design.

Study Methodology

The Shadow Study was prepared according to the City of Mississauga's Standards for Shadow Studies (February, 2023). A 3D model of the Proposed Development was prepared by SRM Architects + Urban Designers. The model was placed into a 3D massing model created using data from the City's open data portal, with surrounding buildings modeled to reflect existing heights. The combined model was then geolocated to ensure accurate sun position based on the Site's latitude and longitude (43.582640, -79.716426).

The Sun/Shadow Study captures representative days and times as specified in the City's Standards as detailed below.

Test Date	Test Times
June 21 (UTC -4)	7:07am, hourly intervals from 7:20am to 7:20pm, and 7:33pm
September 21 (UTC -4)	8:35am, hourly intervals from 9:12am to 5:12pm, and 5:48pm
December 21 (UTC -5)	9:19am, hourly intervals from 10:17am to 2:17pm, and 3:15pm

After export, the images for each test time were edited to highlight the net new shadows cast by the Proposed Development beyond those cast by the surrounding buildings. Final images for each test time are presented on the following pages.

Shadow Impact Summary

The City's Standards require a written analysis and mitigation plan detailing how the shadow impact criteria have or have not been met and any mitigation features that have been incorporated into the design. The Standards describe five criteria for analysis, measuring sunlight on:

- Residential private outdoor amenity spaces (3.1)
- Communal outdoor amenity areas (3.2)
- Public realm (streets and open spaces) (3.3)
- Turf and flower gardens in public parks (3.4)
- Building faces to allow for the possibility of using solar energy (3.5)

Communal outdoor amenity areas and public open spaces surrounding the Site are shown on the following page together with a sun factor analysis for each space.

There are no impacts beyond the City's criteria for residential private amenity outdoor amenity spaces (3.1), Public Realm (3.3), turf and flower gardens in public parks (3.4), and building faces to allow for the possibility of using solar energy (3.5).

Within communal outdoor amenity areas (3.2), 3 of the 5 amenity areas receive shadow impacts beyond the City's criteria.

- The amenity area that runs parallel to Mullet Creek has a sun access factor of 46%.
- The courtyard amenity area has a sun access factor of 4%
- The Phase 2 amenity area has a sun access factor of 33%

Mitigating Features

The Proposed Development includes several design features that help to mitigate shadow impacts on the surrounding neighbourhood. The project provides a transition in height from a mid-rise (7 and 8 storeys) and tall midrise form (12 storeys) along Joymar Drive, and concentrating taller buildings towards the centre of the block where shadow impact falls predominately on Mullet Creek and on the industrial uses to the north of the Site. The proposal uses tall mid-rise building typologies with a reduced floorplate of 775m² to mitigate shadow impact on neighbouring properties. As Tall-midrise buildings, this reduced floor plate results in smaller shadow profiles that move more quickly across the landscape.

In relation to the shadow impact on the outdoor amenity spaces (Mullet Creek amenity space, courtyard amenity space, and phase 2 amenity space) mentioned above, the taller heights are located towards the north of the site to limit shadow impacts on amenity areas. In this way, the proposal attempts to balance the need to provide a continuous street wall along Joymar Drive, with the need to provide protected and well overlooked amenity areas.

Conclusion

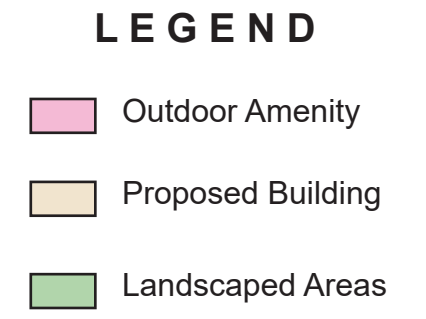
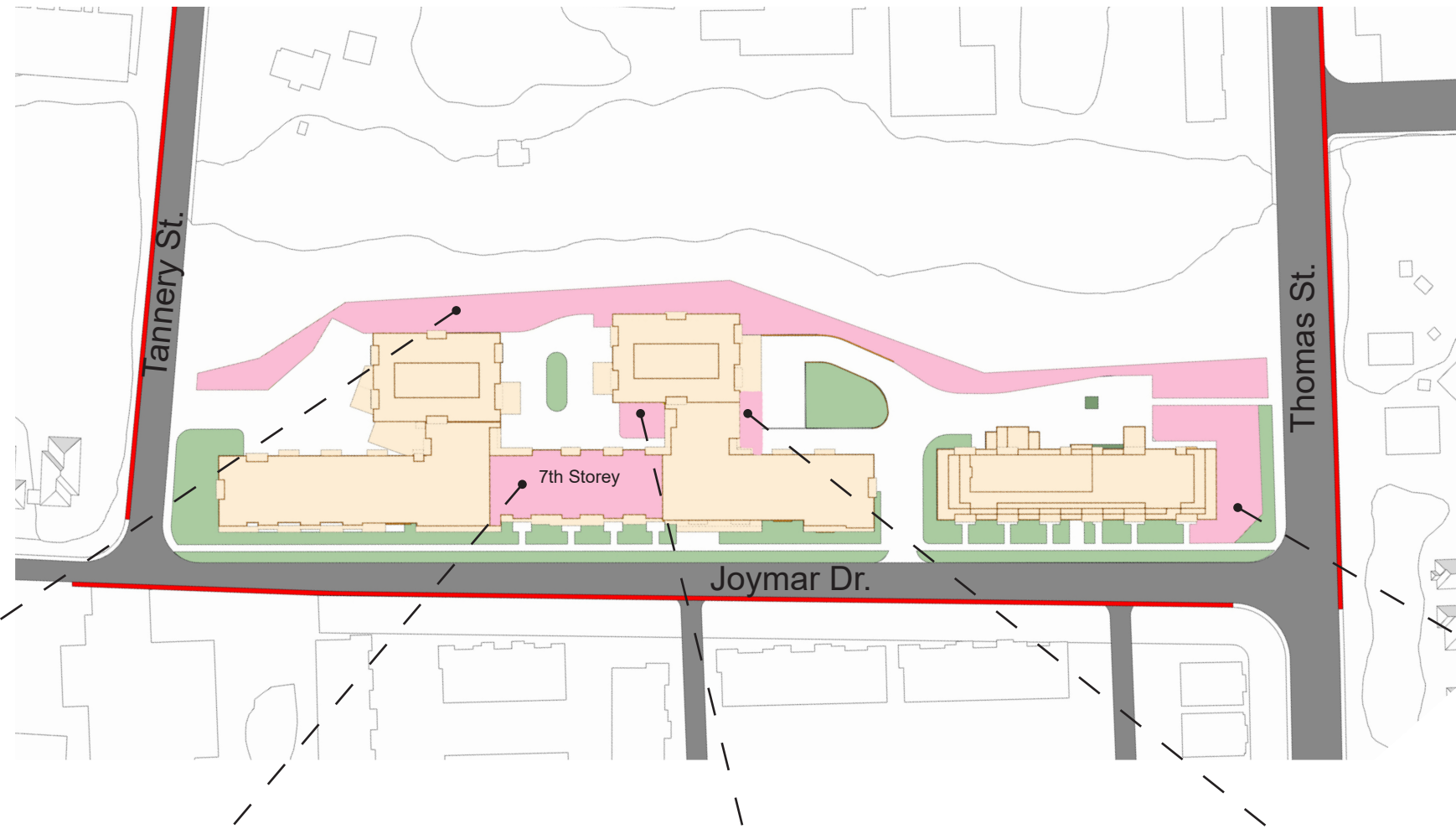
Overall, the net new shadows cast by the Proposed Development have an acceptable impact on the surrounding neighbourhood. Any shadow impacts - beyond the city's criteria - fall on the proposed shared amenity areas within the Site and do not impact the public realm or private amenity areas of other residents in Streetsville. Based on the sun factor analysis, the development will cast an acceptable shadow on public spaces, turf and flower gardens, and potential solar energy collection have been recorded. The Site's design and massing, including height limits, concentration of massing, and limited tower floor plate result in a development that is compatible with the existing context.

Sun Factor Analysis	Outdoor Amenity Areas				
	Mullet Creek Amenity	Rooftop Amenity	Courtyard Amenity	Phase 2 Amenity	South Building Amenity
June	68%	75%	13%	57%	72%
September	49%	93%	0%	43%	79%
December	22%	89%	0%	0%	84%
Average %	46%	86%	4%	33%	78%

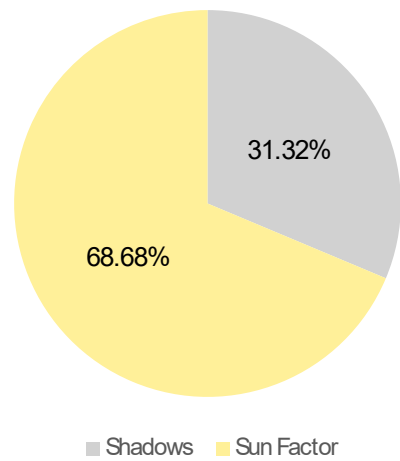
TOR 3.2: Outdoor Amenity Areas

	ADDITIONAL			CONTINUOUS			ADDITIONAL			CONCLUSION
	9:12am	10:12am	11:12am	12:12pm	01:12pm	02:12pm	03:12pm	04:12pm	05:12pm	
Tannery St.	[Shaded]			[Shaded]			[Shaded]			Compliant
Joymar Dr.	[Shaded]			[Shaded]			[Shaded]			Compliant
Thomas St.	[Shaded]			[Shaded]			[Shaded]			Compliant

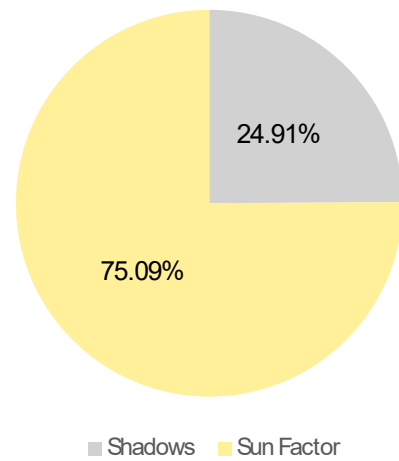
TOR 3.3 Public Realm: High Density Residential Streets.



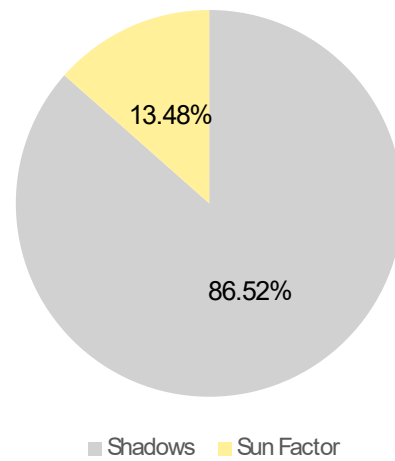
Mullet Creek Amenity



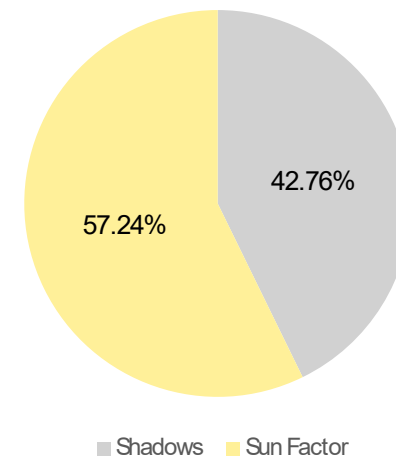
Rooftop Amenity



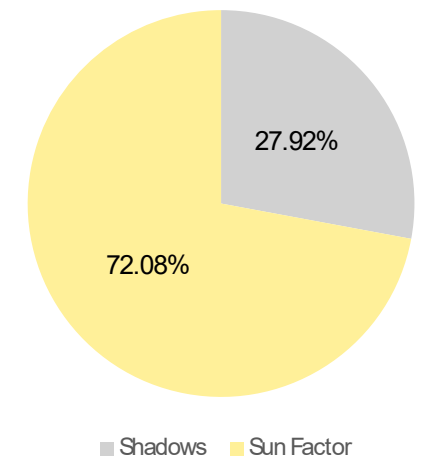
Courtyard Amenity

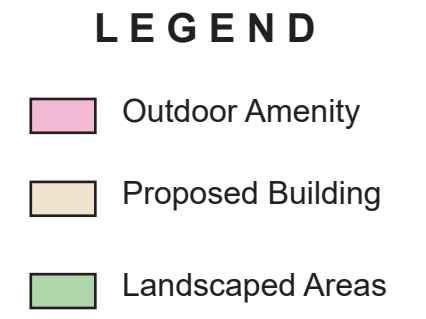
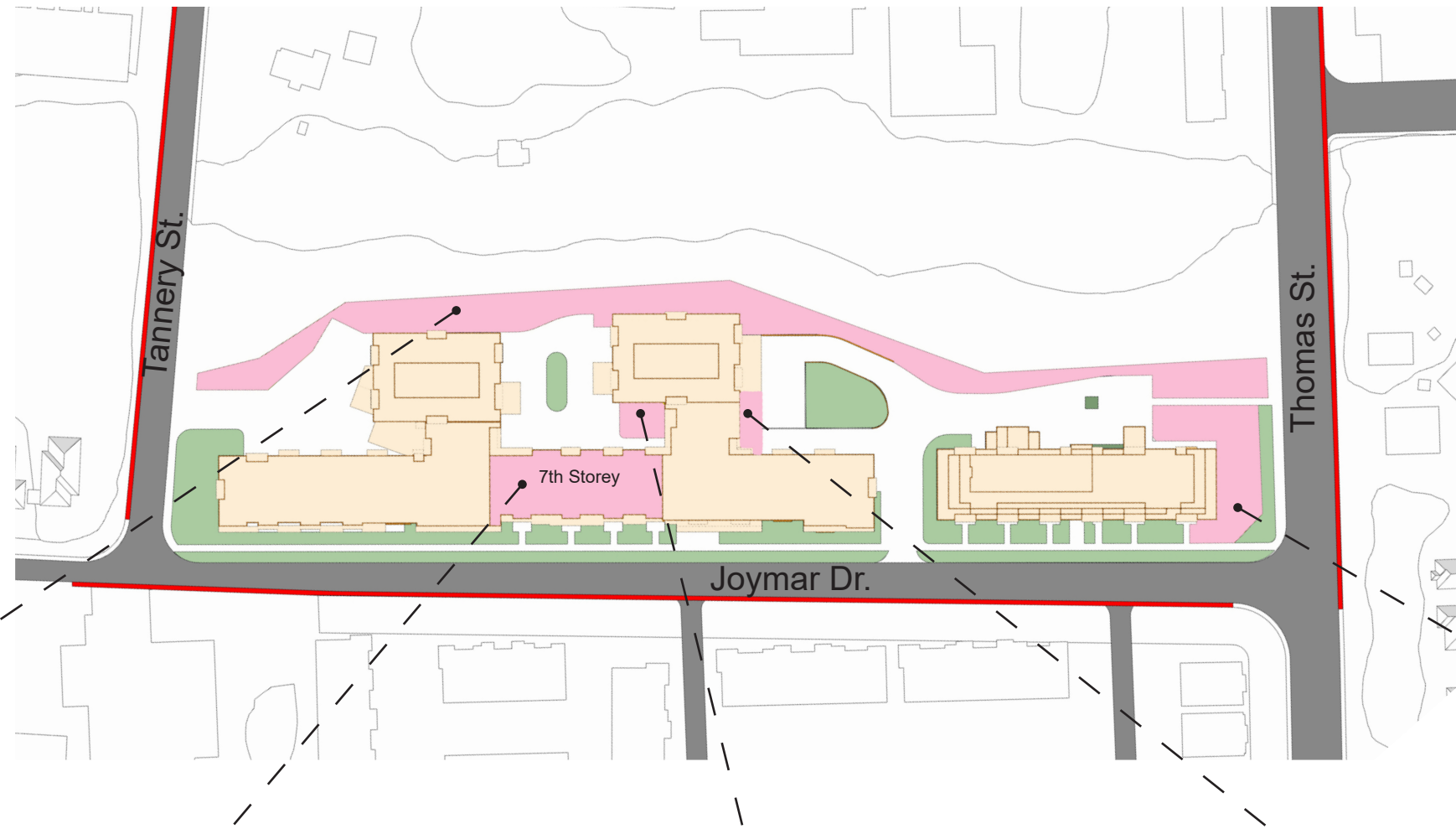


Phase 2 Amenity

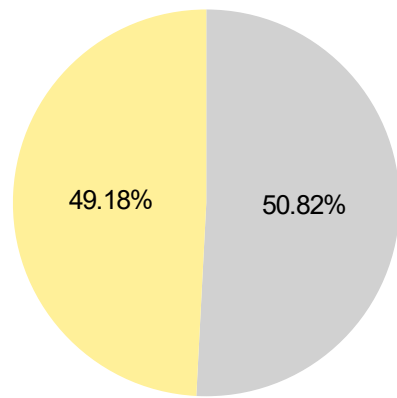


South Building Amenity



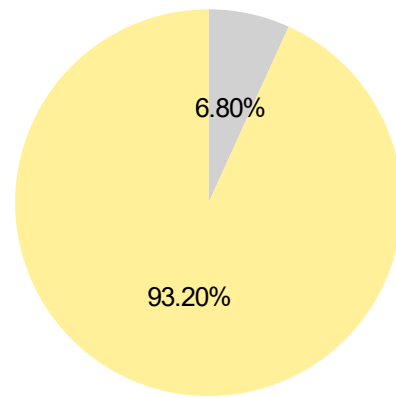


Mullet Creek Amenity



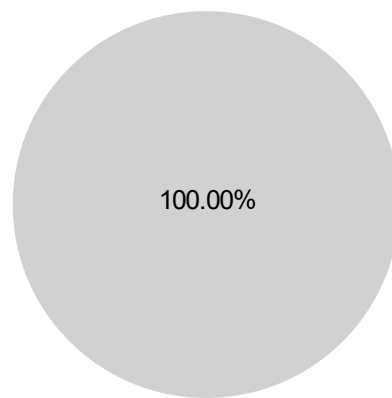
Shadows Sun Factor

Rooftop Amenity



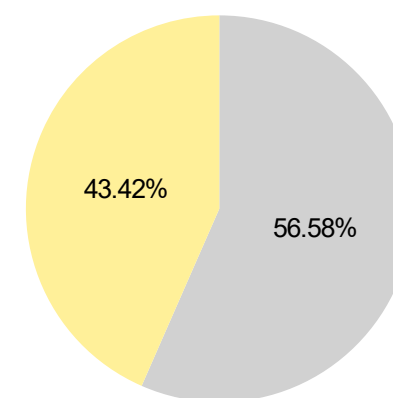
Shadows Sun Factor

Courtyard Amenity



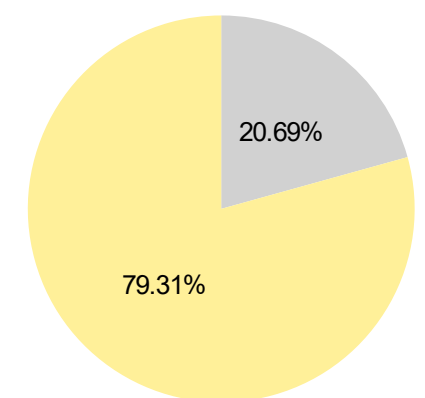
Shadows Sun Factor

Phase 2 Amenity



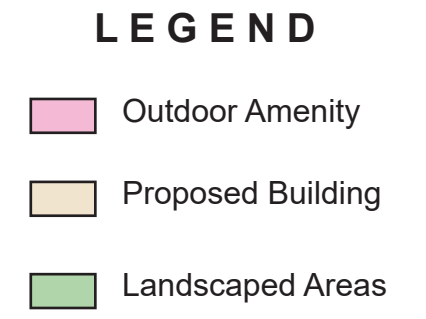
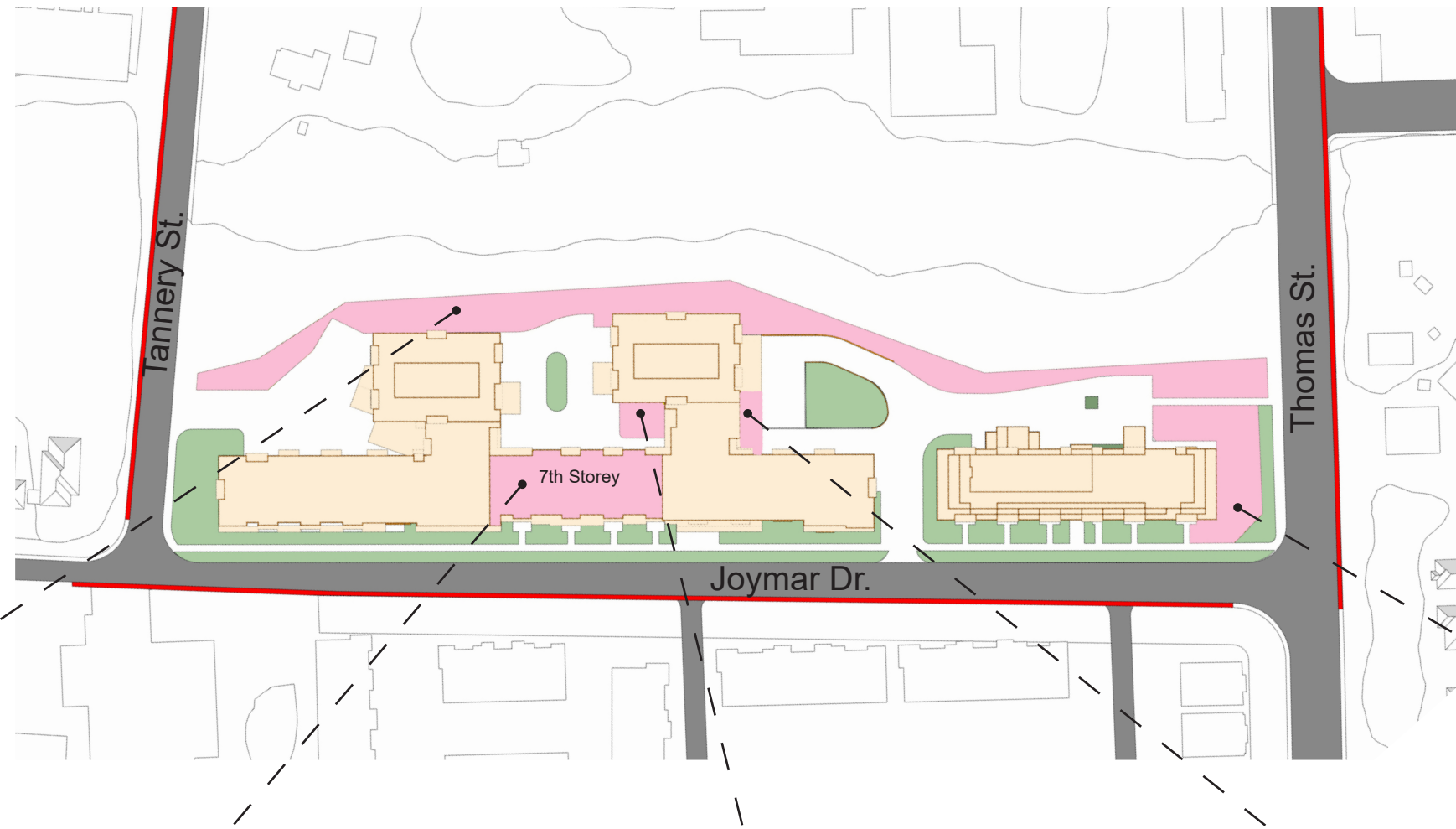
Shadows Sun Factor

Phase 2 Amenity

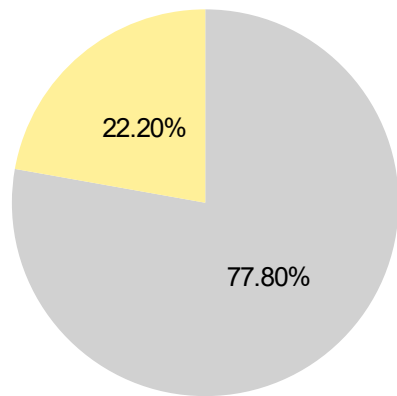


Shadows Sun Factor



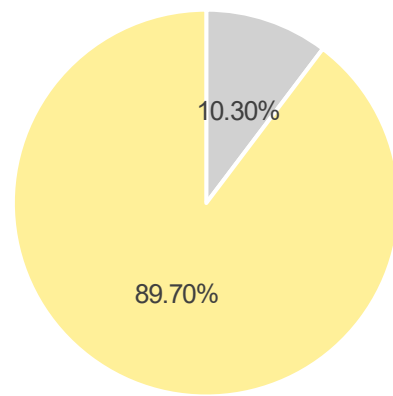


Mullet Creek Amenity



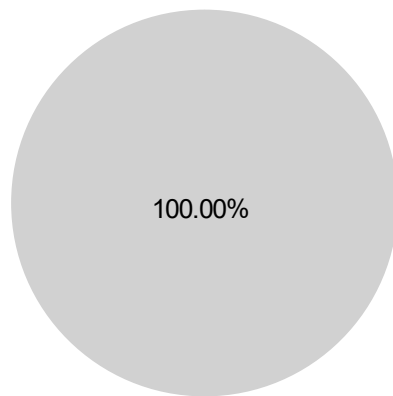
■ Shadows ■ Sun Factor

Rooftop Amenity



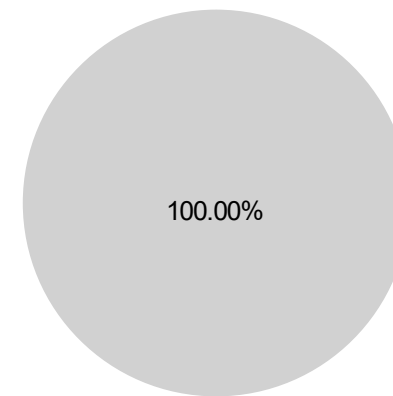
■ Shadows ■ Sun Factor

Courtyard Amenity



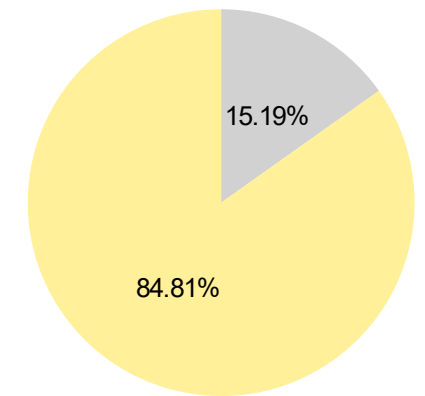
■ Shadows ■ Sun Factor

Phase 2 Amenity



■ Shadows ■ Sun Factor

South Building Amenity



■ Shadows ■ Sun Factor

Shadow Study - December 21: Sun factor for outdoor amenity areas

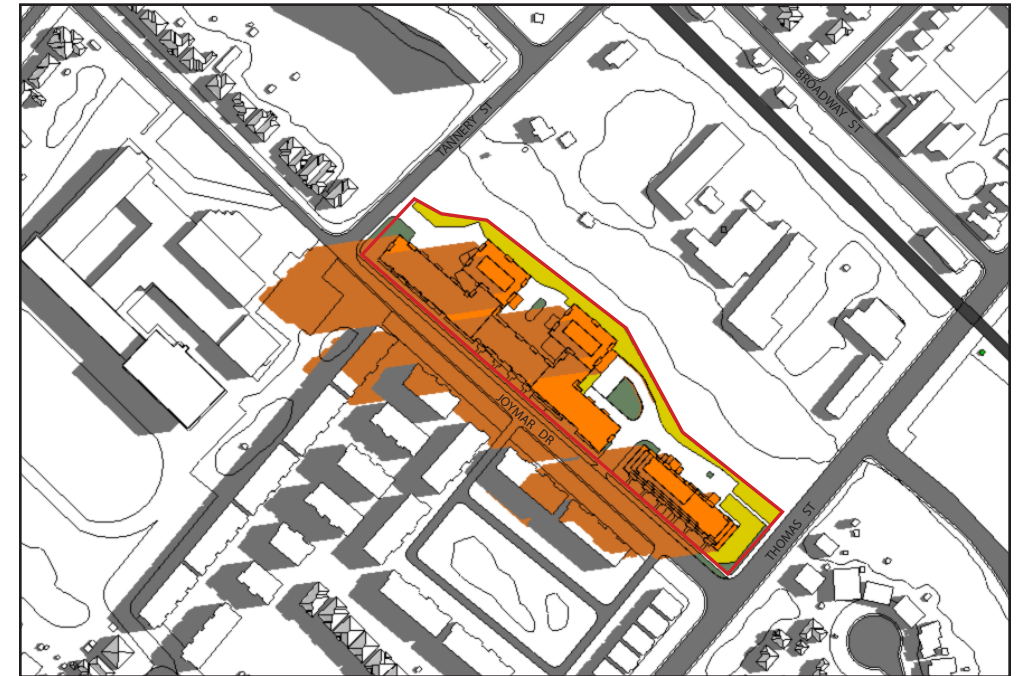
Joymar Drive & Tannery St, Mississauga (De Zen)

24025
Shadow Study
December 2024





7:20am



8:20am



9:20am



10:20am



11:20am

- Subject Site
- Shadow Cast by Existing
- Shadows Cast by Proposed Development

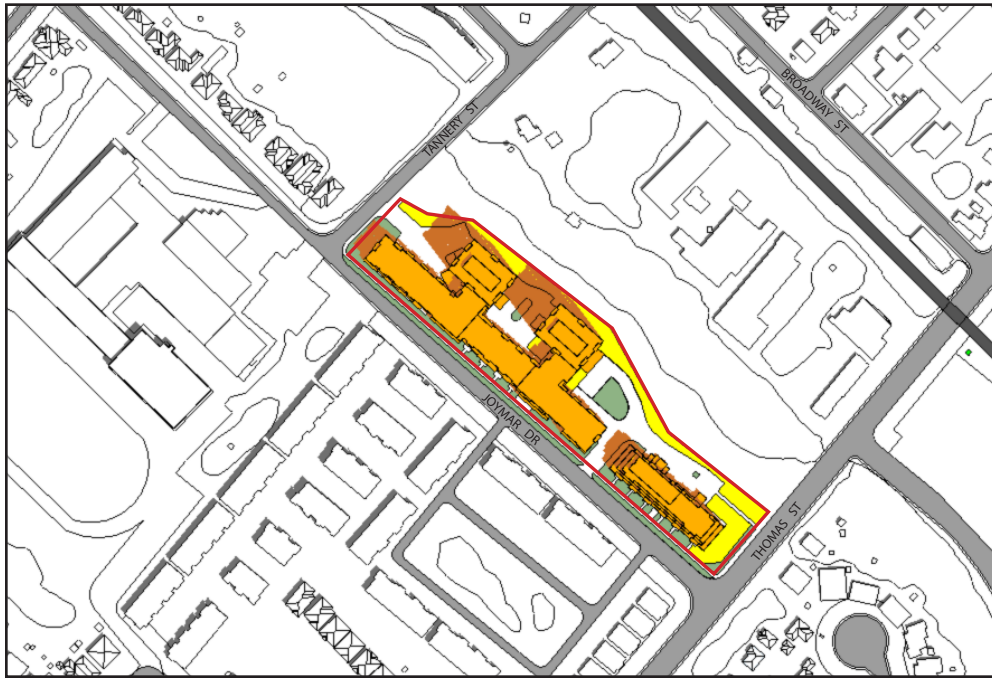


Shadow Study - June 21

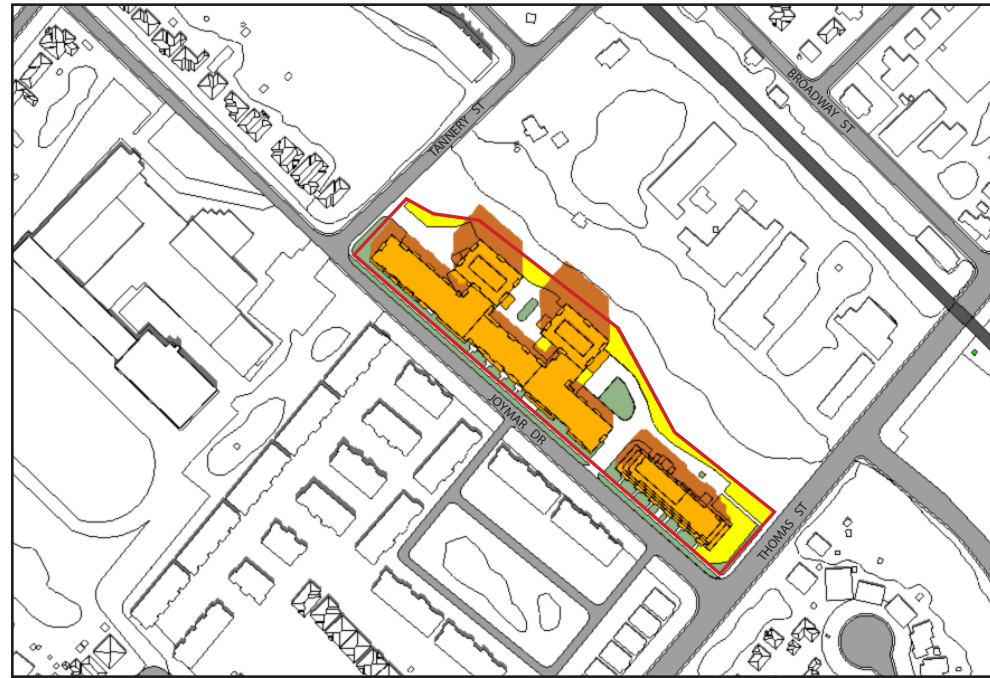
Joymar Drive & Tannery St, Mississauga (De Zen)

24025
Shadow Study
December 2024

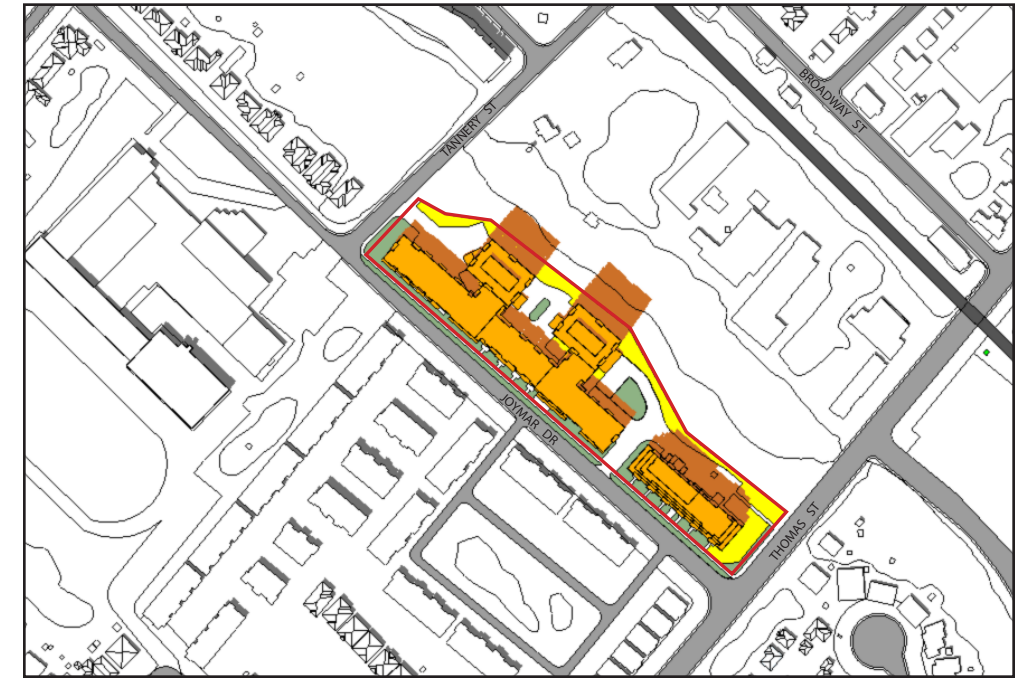
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12:20pm



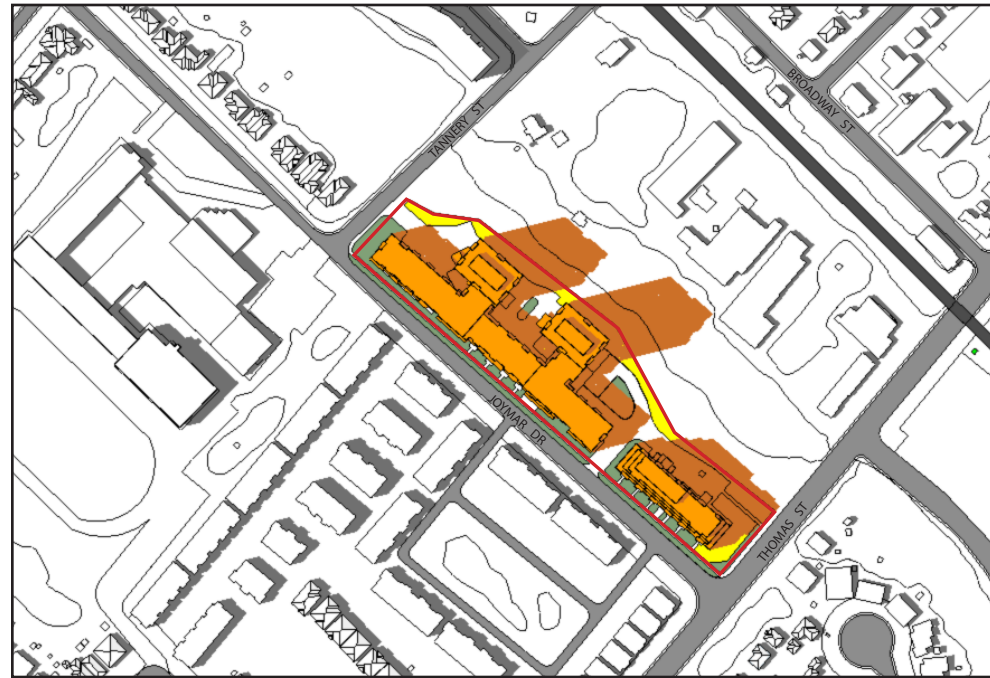
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2:20pm



3:20pm



4:20pm



5:20pm

- Subject Site
- Shadow Cast by Existing
- Shadows Cast by Proposed Development



Shadow Study - June 21

Joymar Drive & Tannery St, Mississauga (De Zen)

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December 2024





6:20pm



7:20pm

- Subject Site
- Shadow Cast by Existing
- Shadows Cast by Proposed Development

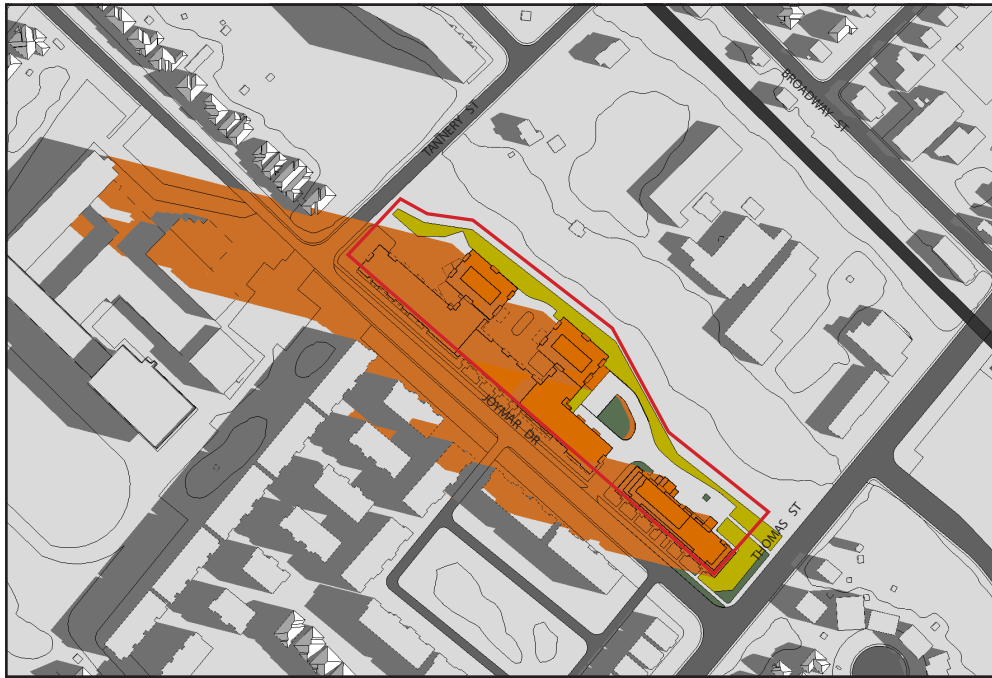


Shadow Study - June 21

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Shadow Study
December 2024

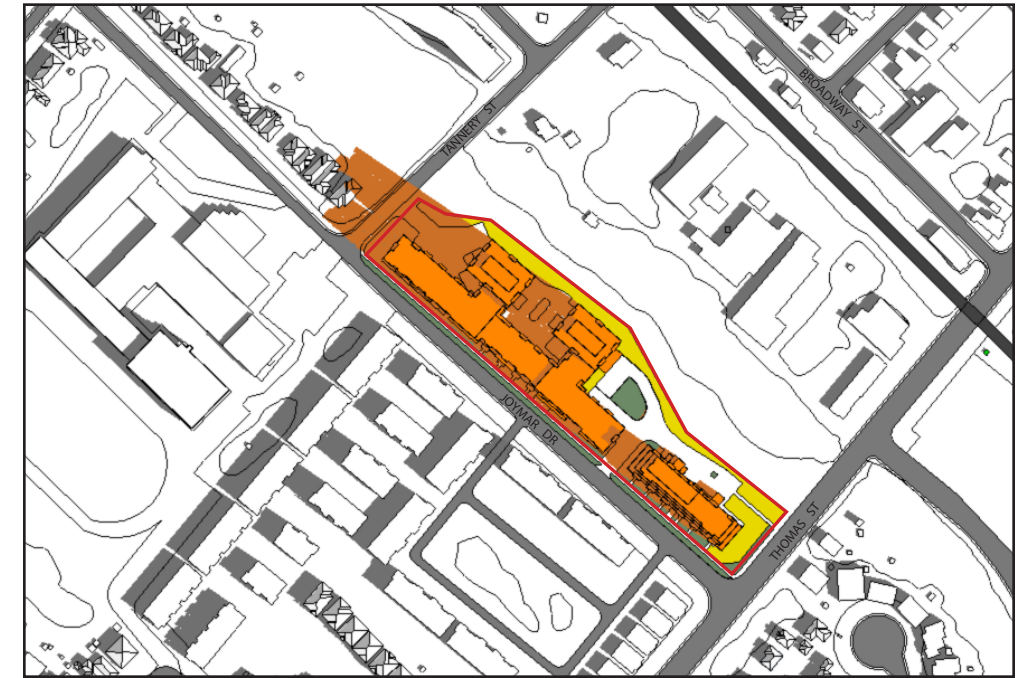




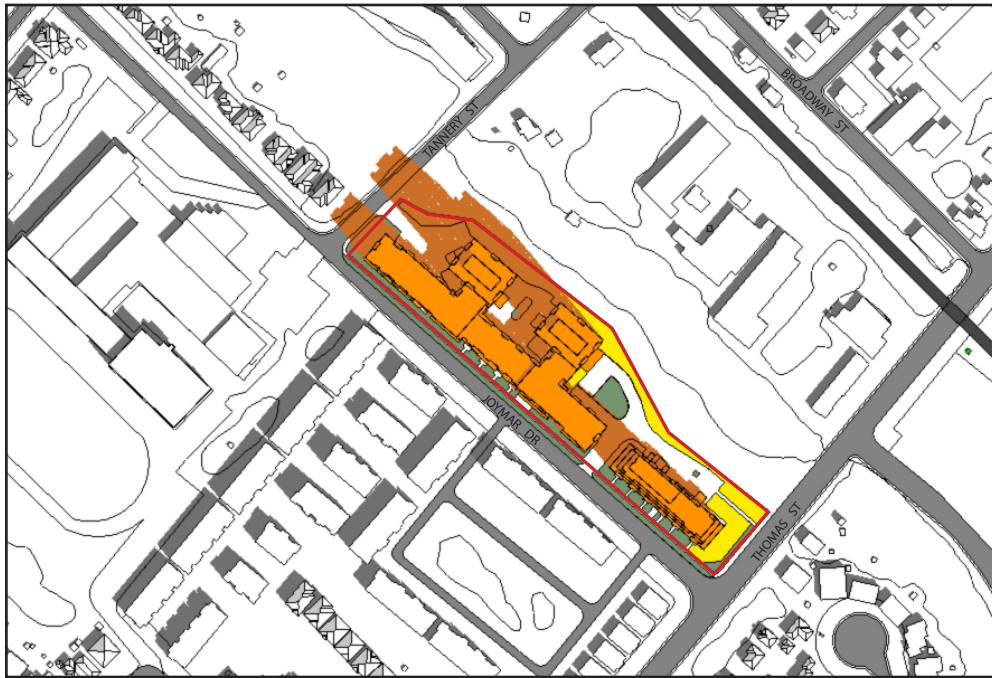
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9:12am



10:12am



11:12am



12:12pm



1:12pm

- Subject Site
- Shadow Cast by Existing
- Shadows Cast by Proposed Development



Shadow Study - September 21

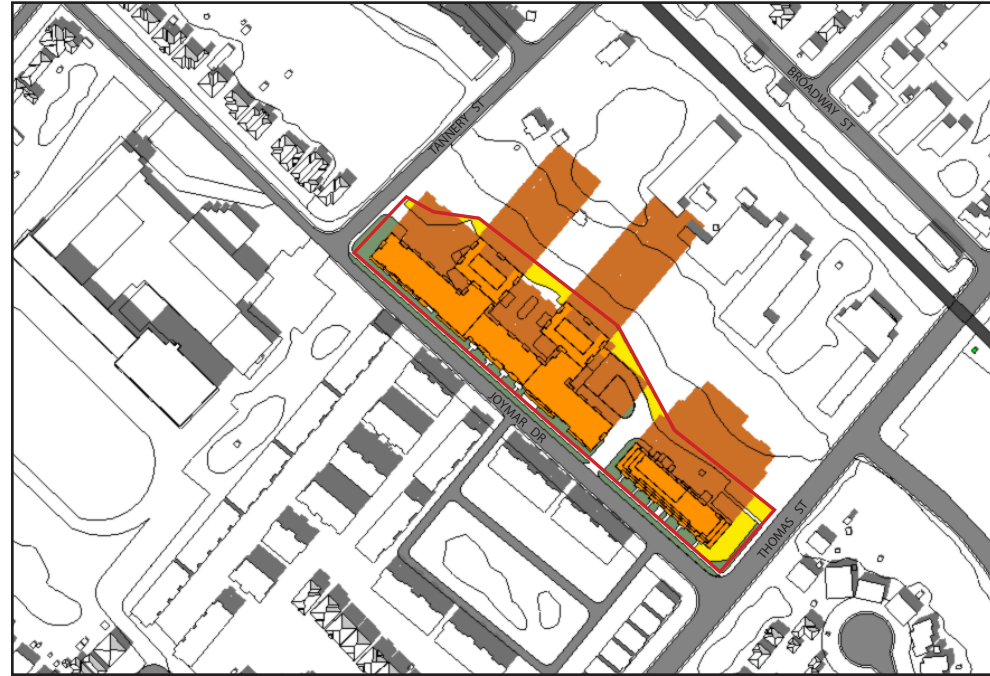
Joymar Drive & Tannery St, Mississauga (De Zen)

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December 2024





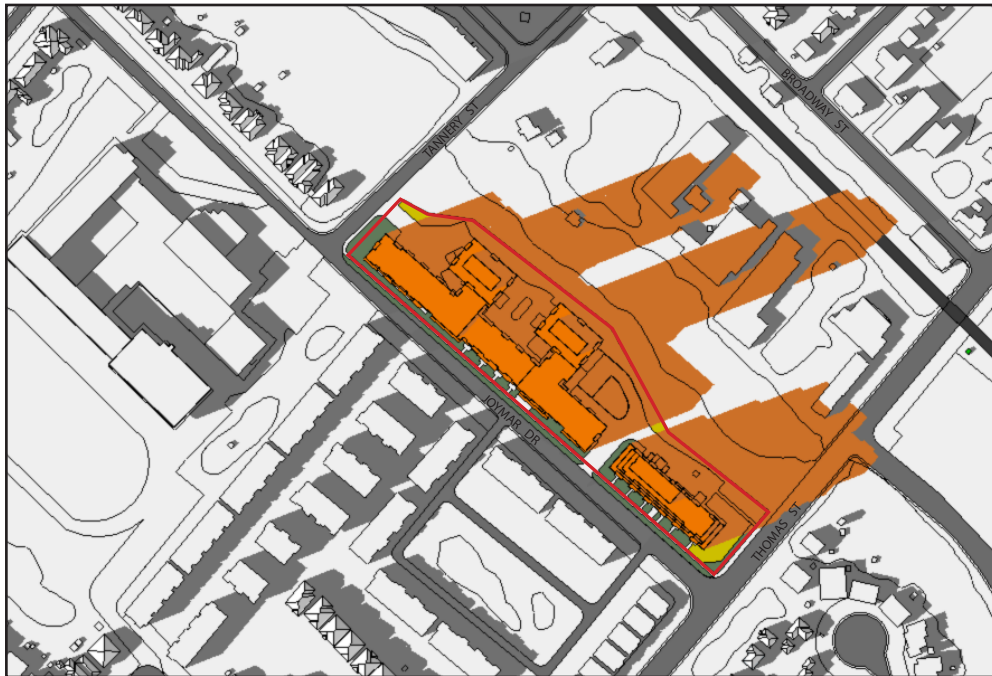
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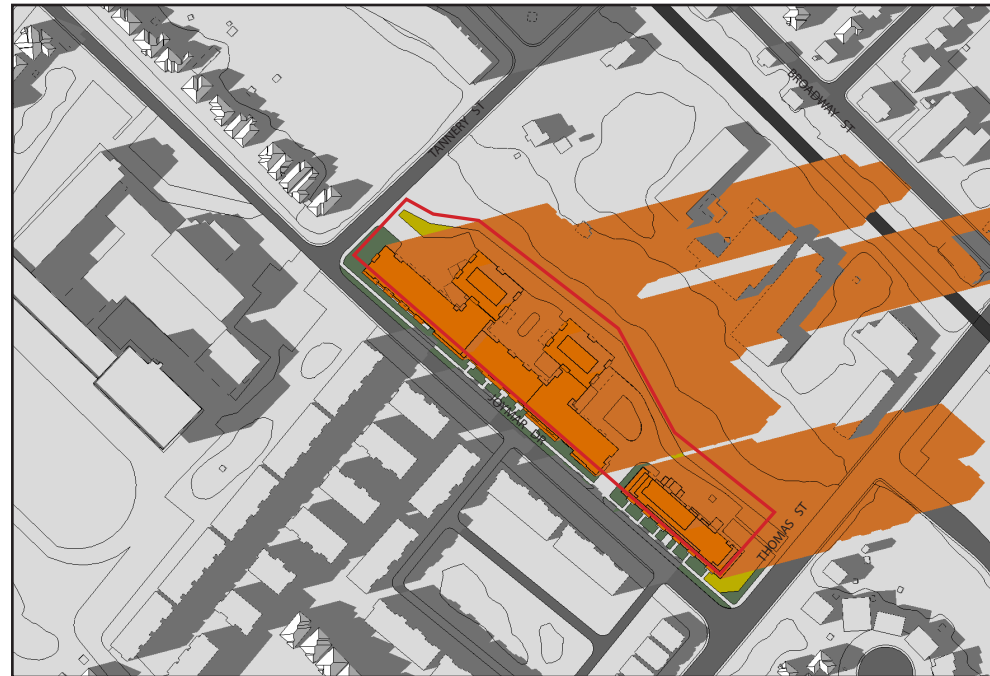
3:12pm



4:12pm



5:12pm



5:48pm

- Subject Site
- Shadow Cast by Existing
- Shadows Cast by Proposed Development



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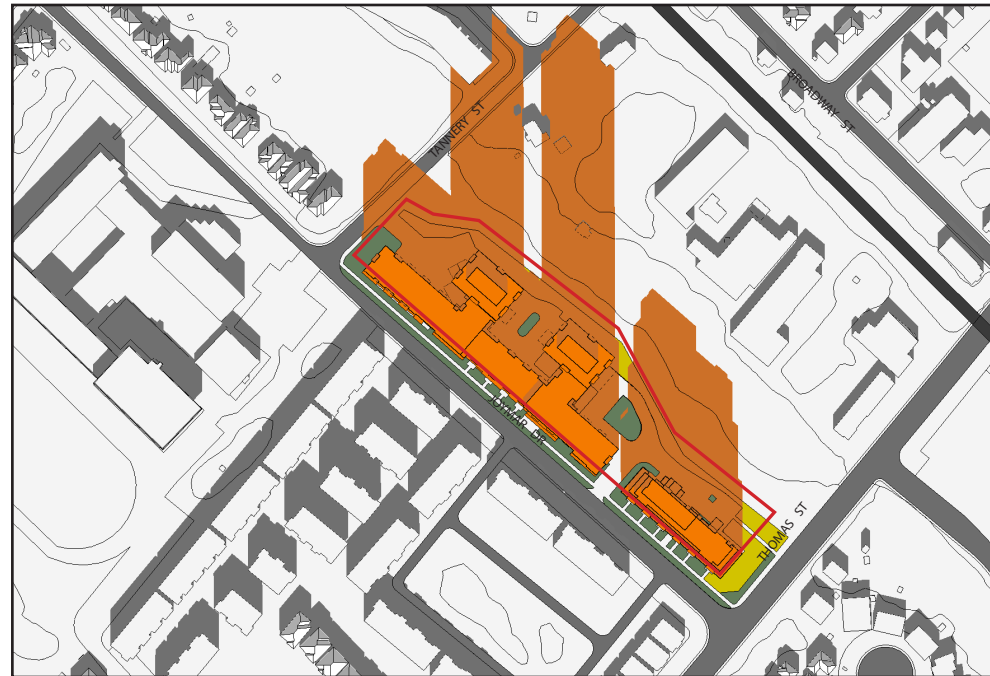
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10:17am



11:17am



12:17pm



1:17pm

- Subject Site
- Shadow Cast by Existing
- Shadows Cast by Proposed Development

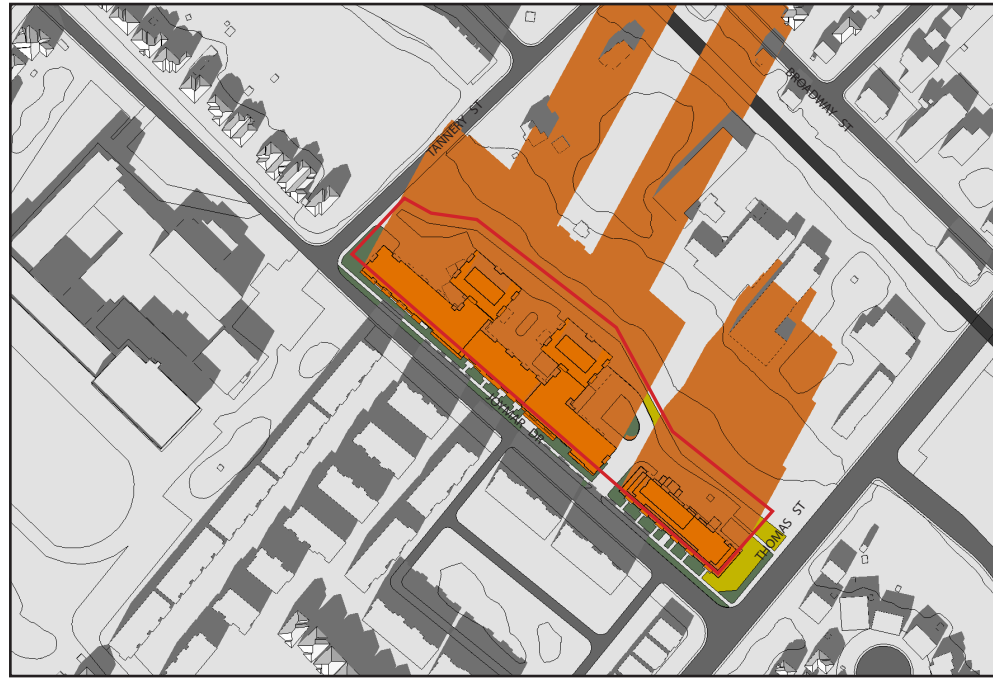


Shadow Study - December 21

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2:17pm



3:15pm

-  Subject Site
-  Shadow Cast by Existing
-  Shadows Cast by Proposed Development

Shadow Study - December 21

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