

Shadow Impact Analysis

Official Plan Amendment & Zoning By-law Amendment

2370-2380 Lakeshore Road West, Oakville

Amica Bronte Village Inc. & Succession Development Inc., April 2023



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Introduction

SRM Architects + Urban Designers is pleased to submit this Sun/Shadow Study on behalf of Amica Bronte Village Inc. and Succession Development Corporation in support of the Proposed Development located at 2370-2380 Lakeshore Road West (the Site). The Owners propose the development of a 6-storey mixed-use seniors residential facility, consisting of 159 units, 467 square meters of commercial space on the ground floor, and 14,105 square meters of gross floor area. This Shadow Impact Analysis 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 and building design.

Study Methodology

The Sun/Shadow Study was prepared according to the Town of Oakville's Shadow Impact Analysis Terms of Reference. A 3D SketchUp model was created of the proposed building and the surrounding built form, utilizing data from the Town's Open Data portal, Google Earth, and aerial imagery from Trimble. The model was geolocated to ensure accurate sun position based on the Site's longitude and latitude. Additional massing was created to reflect the Site Plan Approved 4-storey building, with a height of 15.0m. The Sun/Shadow Study captures representative days and times as specified in the City's Terms of Reference.

Test Date	Test Times
April 21 (UTC -4)	Hourly intervals from 7:55am to 5:55pm
June 21 (UTC -4)	Hourly intervals from 7:06am to 7:06pm
September 21 (UTC -4)	Hourly intervals from 8:33am to 5:33pm
December 21 (UTC -5)	Hourly intervals from 9:17am to 2:17pm

After export, the images for each test time were edited to highlight the net new shadows cast as a result of the Site Plan Approved building (beyond the existing massing) and the Proposed Development (beyond the existing massing and Site Plan Approved building). In addition, an overlay of the net new shadows for each test date was prepared to demonstrate the cumulative shadow impact on any particular location. These images are presented on the following pages.

Shadow Impact Summary

The City's Terms of Reference requires a summary of the analysis and the three criteria relating to residential amenity spaces, public realm, and solar energy. Nearby residential amenity spaces and public sidewalks, and public parks are highlighted on Figure 1. As the applications to permit the Proposed Development are focused on the additional two-storey height, the study is limited to net new shadows and impacts resulting from the increased building height.

Criteria 1 - Residential Amenity Spaces

The Town's Terms of Reference requires that, "Shadow impacts from proposed development should not exceed two consecutive hourly test times after 12:00pm on April 21, June 21 and September 21." As shown in Figure 2, the net new shadows cast by the Proposed Development impact a small portion of the rooftop amenity spaces at 96 Nelson Street Units 15, 16 and 17. However, at no point during the April, June, and September testing periods is the entire rooftop amenity space of these properties impacted by the Proposed Development for more than two consecutive test times. No other nearby residential amenity spaces are impacted by the Proposed Development.

Criteria 2 - Public Realm

The Town's Terms of Reference requires that, "public sidewalks, public plazas, public parks, and school yards receive at least 5 hours of continuous sunlight per day on April 21, June 21 and September 21." The south side of Lakeshore Road West experiences no new impacts from the Proposed Development, being in shadow from the existing buildings and Site Plan Approved building. Full sunlight is experienced on the northern sidewalk after the following test periods: 11:55am on April 21, 10:06 on June 21, and 12:33 on September 21. There are no impacts on Marine Drive Parkette as a result of the Proposed Development.

Criteria 3 - Solar Energy

The Town's Terms of Reference requires that, "Shadow impacts [on building faces and roofs] from proposed development should not exceed two consecutive hourly test times on December 21." As shown in Figure 3, the net new shadows cast by the Proposed Development impact the full rooftop stair penthouses of 96 Nelson Street, Units 15 and 16, as well as a portion of the rooftop stair penthouses of Units 14, 17, and 18. The remainder of the adjacent rooftops do not experience a net new shadow impact beyond two consecutive test times as a result of the Proposed Development.

Mitigating Features

The Proposed Development includes several design features that help to mitigate the shadow impacts on the surrounding amenity spaces, public realm, and rooftops. The upper two storeys are stepped back from Lakeshore Road West to allow sunlight onto the public realm. The majority of the eastern facade is setback 5.8m from the property line, limiting the shadow impact on the existing mixed-use development to the east. As the Proposed Development is limited to six storeys, the potential for shadow impacts is further restricted to the immediately adjacent parcels.

Conclusion

The net new shadows cast by the Proposed Development have minimal to no impact on the surrounding residential amenity spaces, public realm, and rooftops. A total of five units directly adjacent to the Site are impacted beyond the rigorous criteria established in the Town's Terms of Reference: three units experience partial amenity area impacts, two units experience full solar energy impacts, and three experience partial solar energy impacts. The proposed building's upper floor stepbacks, setback from the eastern property line, and height limit of six storeys, effectively reduces the overall impacts on the adjacent lands and public realm and results in a development that is compatible with the existing context.

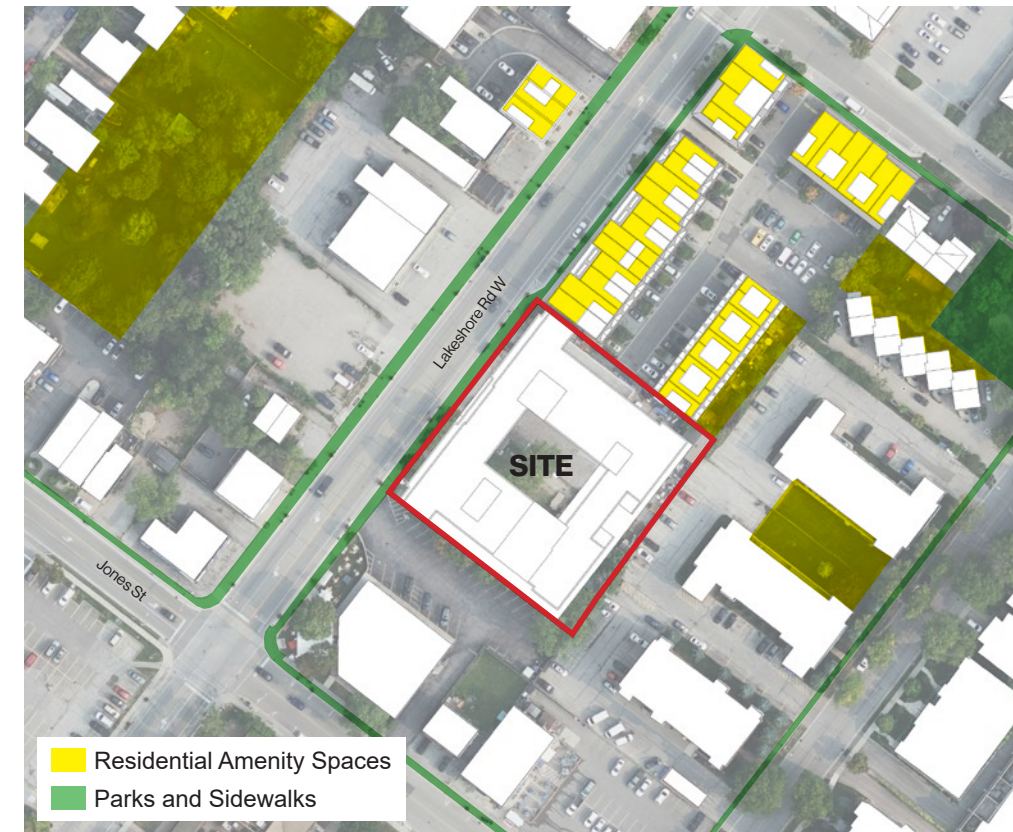


Figure 1 - Surrounding residential amenity spaces and public realm



Figure 2 (above) - Overlay of shadow impacts on adjacent residential amenity areas



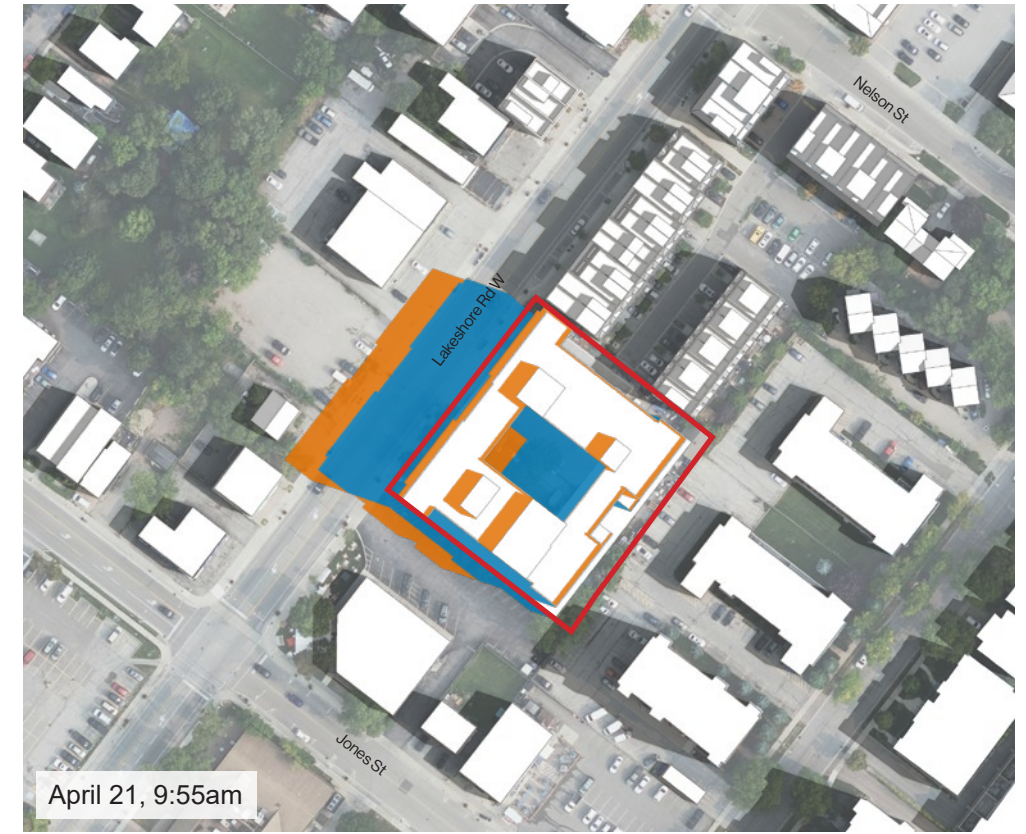
Figure 3 (right) - Overlay of shadow impacts on adjacent rooftops



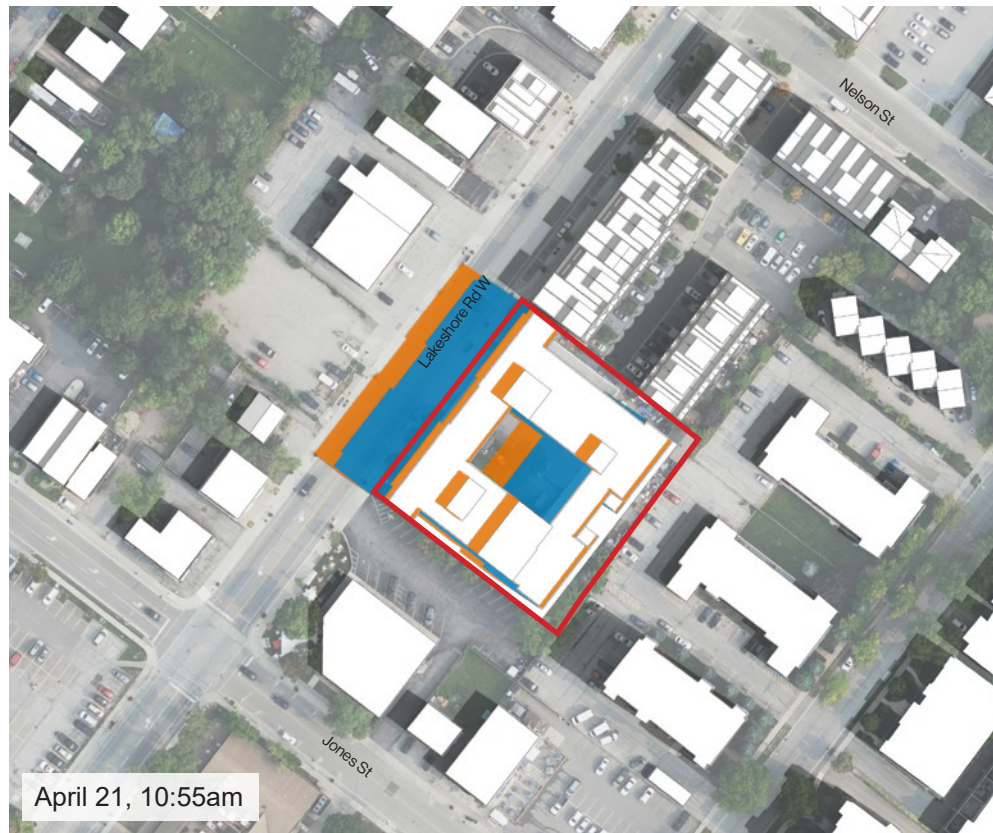
April 21, 7:55am



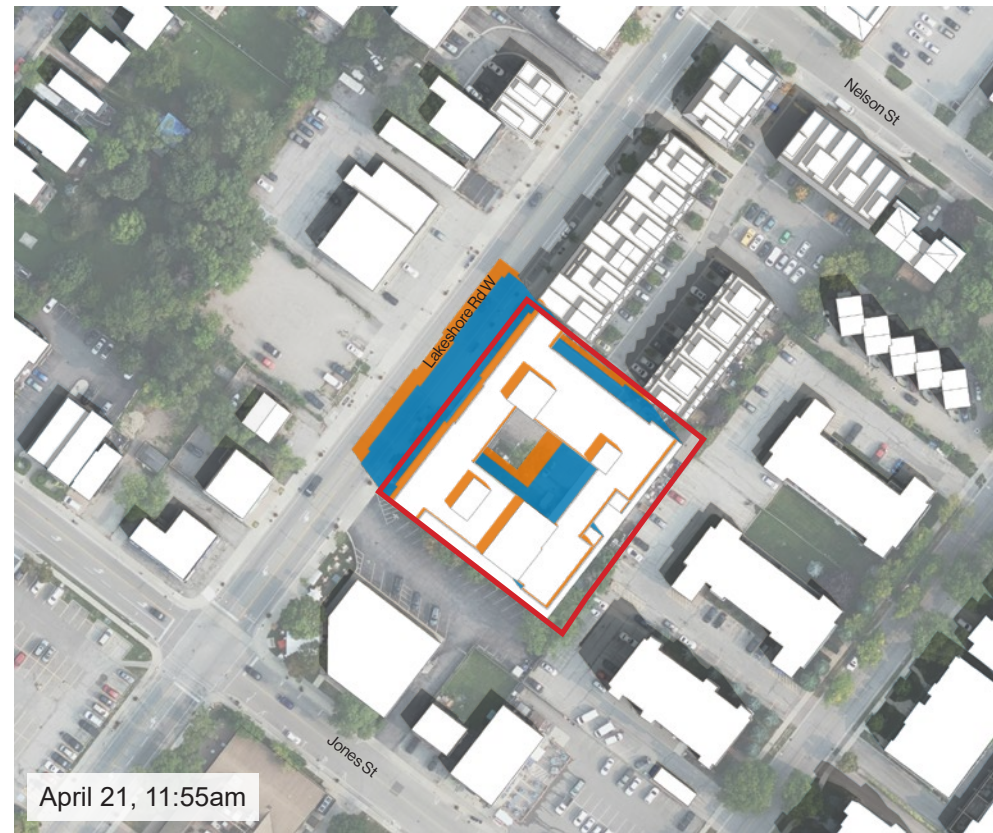
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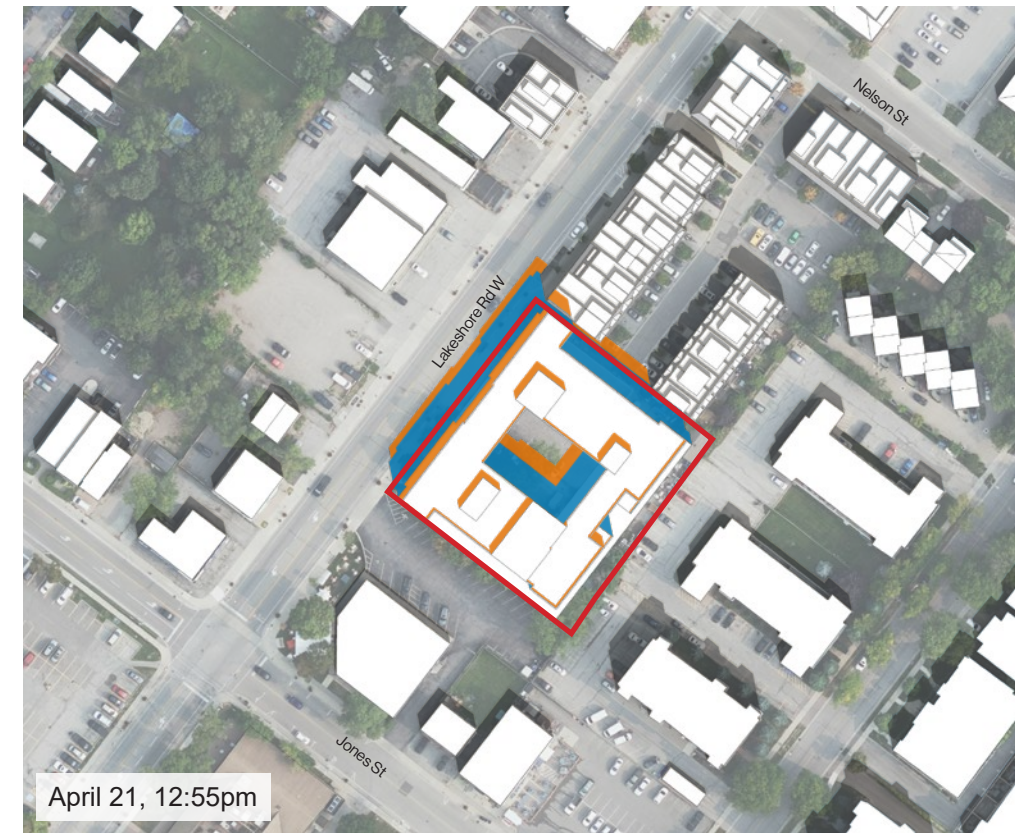
April 21, 9:55am



April 21, 10:55am



April 21, 11:55am



April 21, 12:55pm

Shadow Study - April 21

2370-2380 Lakeshore Road West, Oakville

- Subject Site
- New Shadows Cast by SPA Approved Building
- New Shadows Cast by Proposed Building

C7009
April 28, 2023





April 21, 1:55pm



April 21, 2:55pm



April 21, 3:55pm



April 21, 4:55pm



April 21, 5:55pm

Shadow Study - April 21

2370-2380 Lakeshore Road West, Oakville

- Subject Site
- New Shadows Cast by SPA Approved Building
- New Shadows Cast by Proposed Building

C7009
April 28, 2023





June 21, 7:06am



June 21, 8:06am



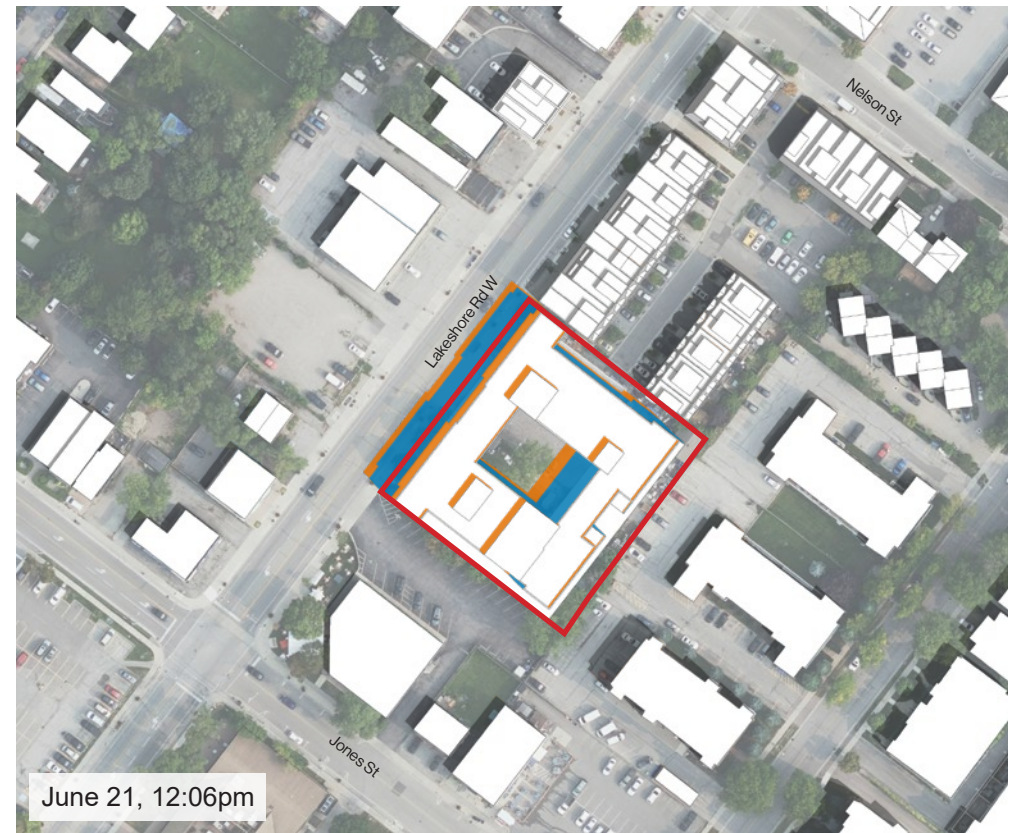
June 21, 9:06am



June 21, 10:06am



June 21, 11:06am



June 21, 12:06pm

Shadow Study - June 21

2370-2380 Lakeshore Road West, Oakville

- Subject Site
- New Shadows Cast by SPA Approved Building
- New Shadows Cast by Proposed Building

C7009
April 28, 2023





June 21, 1:06pm



June 21, 2:06pm



June 21, 3:06pm



June 21, 4:06pm



June 21, 5:06pm



June 21, 6:06pm

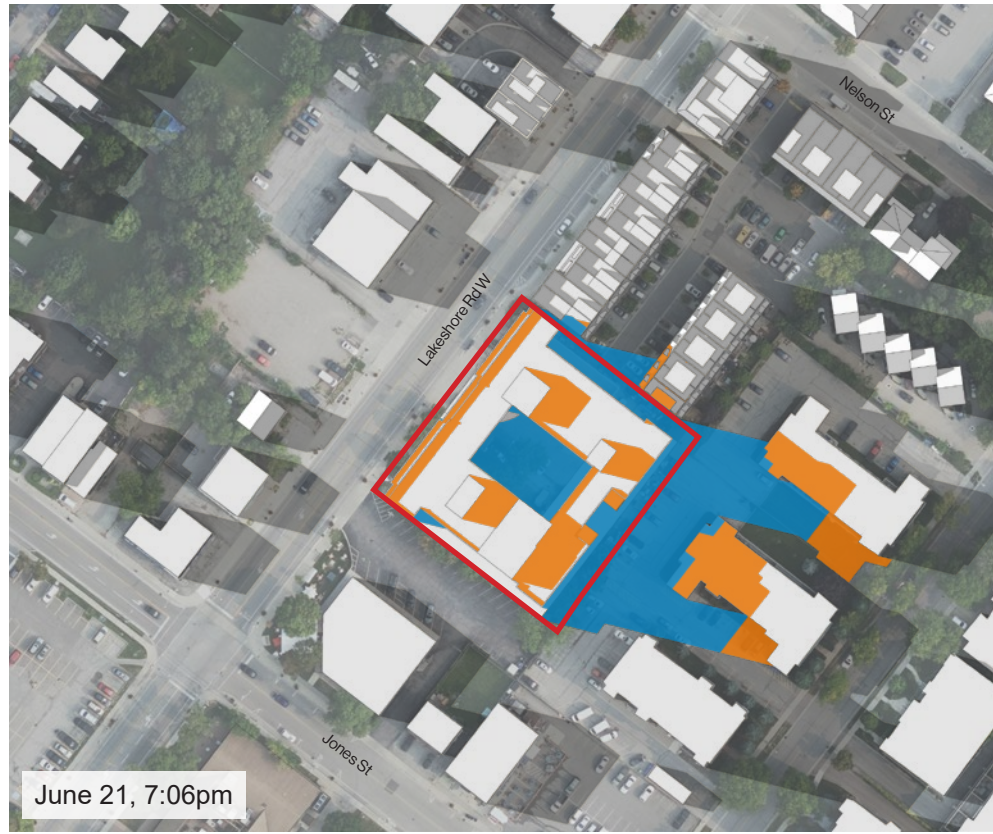
Shadow Study - June 21

2370-2380 Lakeshore Road West, Oakville

- Subject Site
- New Shadows Cast by SPA Approved Building
- New Shadows Cast by Proposed Building

C7009
April 28, 2023





Shadow Study - June 21

2370-2380 Lakeshore Road West, Oakville

- Subject Site
- New Shadows Cast by SPA Approved Building
- New Shadows Cast by Proposed Building

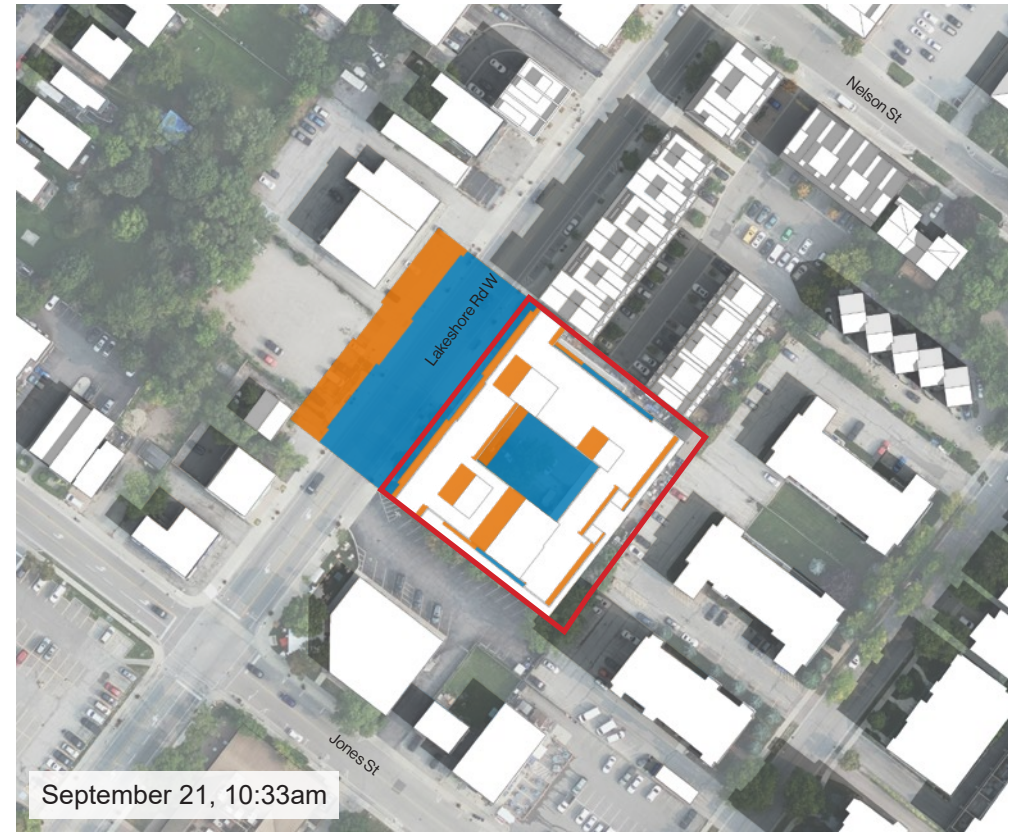
C7009
April 28, 2023



September 21, 8:33am



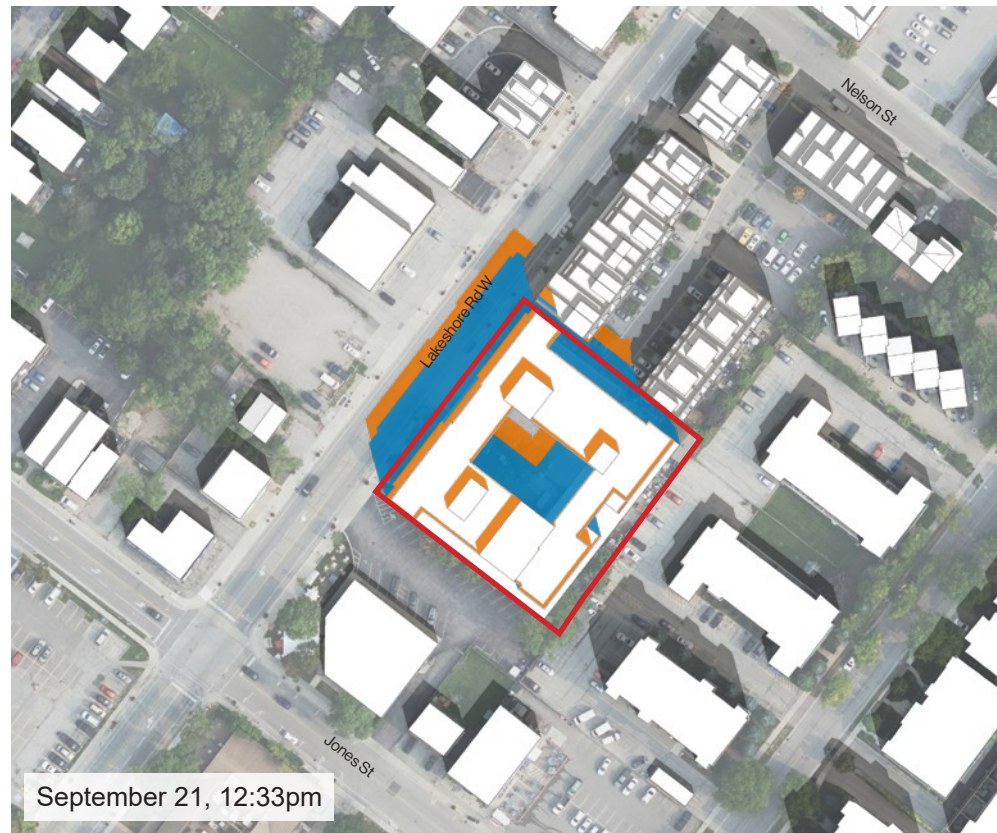
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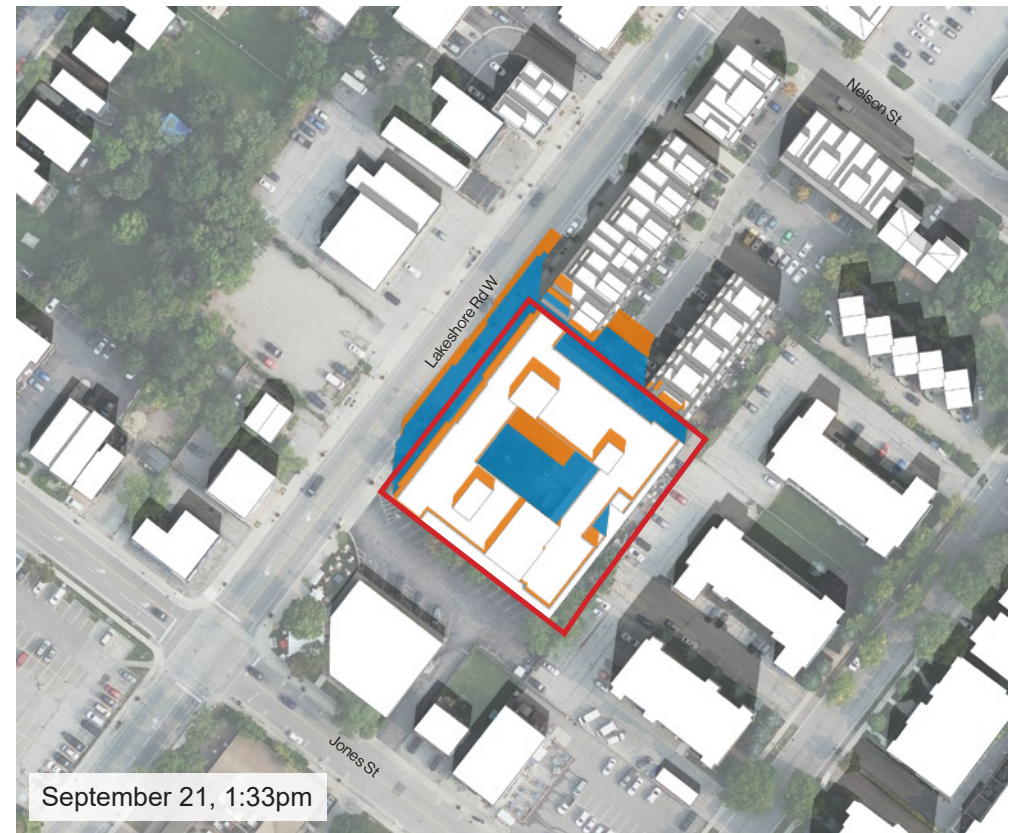
September 21, 10:33am



September 21, 11:33am



September 21, 12:33pm



September 21, 1:33pm

Shadow Study - September 21
2370-2380 Lakeshore Road West, Oakville

- Subject Site
- New Shadows Cast by SPA Approved Building
- New Shadows Cast by Proposed Building

C7009
April 28, 2023





September 21, 2:33pm



September 21, 3:33pm



September 21, 4:33pm



September 21, 5:33pm

Shadow Study - September 21
2370-2380 Lakeshore Road West, Oakville

- Subject Site
- New Shadows Cast by SPA Approved Building
- New Shadows Cast by Proposed Building

C7009
April 28, 2023





December 21, 9:17am



December 21, 10:17am



December 21, 11:17am



December 21, 12:17pm



December 21, 1:17pm



December 21, 2:17pm

Shadow Study - December 21
2370-2380 Lakeshore Road West, Oakville

- Subject Site
- New Shadows Cast by SPA Approved Building
- New Shadows Cast by Proposed Building

C7009
April 28, 2023

