

MORE

SHADOW STUDY

RETIREMENT HOME

PROPOSED MIXED-USE DEVELOPMENT

1866 RYMAL RD, HAMILTON, ON

MASRIO ARCHITECTS

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TABLE OF CONTENTS

TABLE OF CONTENTS.....	0
1. Scope & Study Criteria.....	1
2. Proposed Development.....	2
3. Findings.....	3
3.1. Spring.....	3
3.2. Fall.....	3
3.3. Shadow Impact Analysis.....	3
3.3.1. Public Realm.....	4

1. SCOPE & STUDY CRITERIA

This shadow study has been prepared by Masri O Inc. Architects for inclusion in the submission for a Zoning by-law amendment, Official Plan Amendment and Site Plan Application. The shadow study model has been prepared by Natalie Ryan, Intern Architect at Masri O.

The study is based on computer modeling of the shadows and their impact on surrounding areas around the proposed development. The shadow study has been prepared using a digital three-dimensional model that represents the proposed building per the design proposal. The model is geo-located to provide an accurate representation of the shadowing that would occur on the site.

The analysis demonstrates shadowing in the spring (March 21) and fall (September 21), at 0900, 1000, 1100, 1200, 1300, 1400, 1500, 1600, 1700 and 1800 hrs. Each diagram indicates what shadows are cast by neighbouring existing buildings – those cast by the hypothetical as-of-right building massing, and those cast by the development proposal (*new net shadow* indicated in yellow).

To locate the proposal in the model, we used Site address 1866 Rymal Rd E to determine the geolocation for shadows, citing Latitude 43.18 and Longitude -79.81. True North was determined with the use of a registered survey prepared by A.T. McLaren Ltd. Legal and Engineering Surveys. The base image used to demonstrate shadowing impact was found on Google Earth and scaled to match that of the computer modeling program (Revit 2021) used to generate shadow locations.

2. PROPOSED DEVELOPMENT

The proposed development at the Site is an 8-story mixed-use development consisting of commercial at grade; this includes a daycare, retail units, and access to the retirement home lobby and auxiliary spaces. Above this, 7 floors of retirement home dwelling units are proposed, with various amenities such as lounges, dining rooms, a theatre and a salon.

The Site is at the corner of Dakota Boulevard and Rymal Road East. The property has a frontage on Dakota Boulevard facing West and on Rymal Road E facing North. Although the Site is located near the suburban edge of the City, it is also along a corridor (Rymal Rd) and very close to a community node at the corner of Rymal Road and Upper Centennial Parkway. These are defined in the Urban Hamilton Official Plan as areas of growth. Specifically, the immediate area surrounding the Site is planned under the Rymal Road Secondary Plan.

3. FINDINGS

The shadow impact is modeled based on 1.0-hour intervals starting approximately 1.5 hours after sunrise and ending approximately 1.5 hours before sunset. The results are summarised below seasonally.

3.1. SPRING

On March 21, 2022 sunrise was at 7:21am. Sunset occurred at 7:33pm. As illustrated in the diagrams depicting shadows on March 21 (figures 1-10), the shadow impact on the neighboring North, West, and East properties is not significant from 10 a.m. until 5 p.m. The shadow is long at 6 p.m.; however, in the spring due to the low angle of the sun, the shadow moves quickly along its short path especially during the early spring months.

3.2. FALL

On September 21, 2022 sunrise was at 7:06am. Sunset occurred at 7:21pm. As represented by the modeling on September 21 depicted in figures 11-20, the shadow impact generated by the proposed building is minimal. Only the shadow at 6 p.m. is marginally more pronounced as compared to the other times of the day, due to the low angle of the sun. At this time of day, shadows move very quickly, and become long in the hour prior to sunset (as demonstrated by the change of the shadow from 5:00 p.m. to 6:00 p.m.)

3.3. SHADOW IMPACT ANALYSIS

Shadow impact criteria have been met for most areas adjacent the subject development proposal. The proposal Site is not adjacent to any public parks. The nearest public open space is the Eramosa Karst Conservation Area. A small portion (approximately 12m of the 67m frontage) of the public sidewalk along Rymal Road does not meet the criteria of 3 hours of sun coverage between 10:00am and 4:00pm. This is true for both the proposed development and the as-of-right building massing. This condition is caused by the minimal as-of-right setback (1.5m) along the right of way.

This section of sidewalk is expected to be used for walking, and has no amenity programming or use. The sidewalk does get sun coverage in the morning, adjacent to the east half of the property, and in the afternoon, adjacent to the west half of the property.

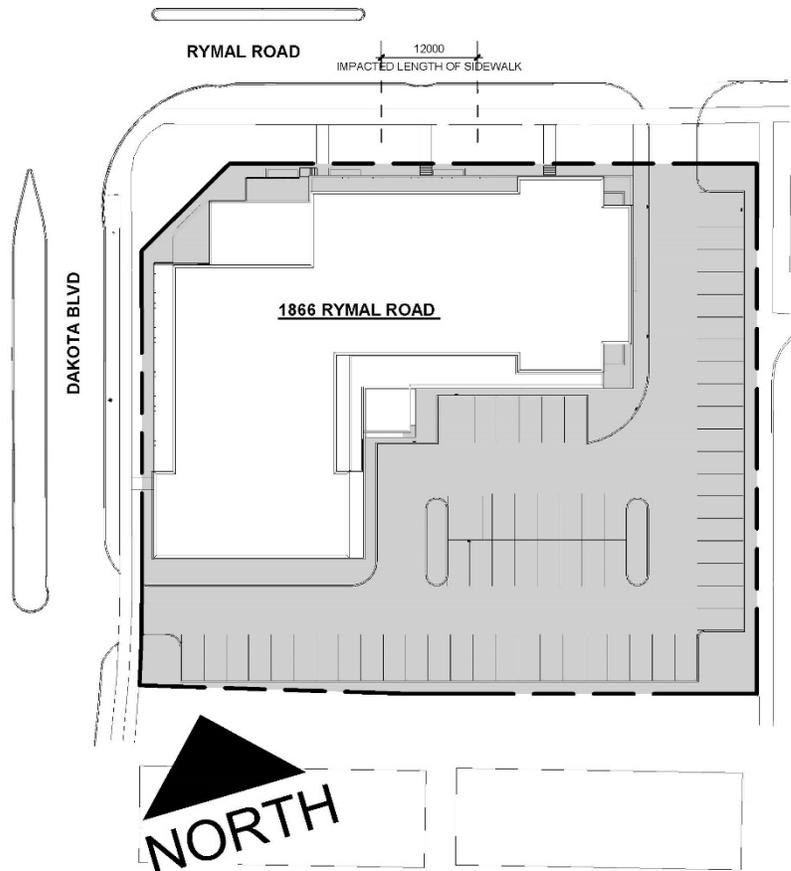


Figure 1 - Key Plan

The resulting shadow impacts have been mitigated in a number of ways. The pedestrian experience has been considered in the design of the building, from its siting, to its massing and its relationship to the street/street corner. Commercial units have designated entrances accessed from the sidewalk along Rymal Rd E. On the north side of the building, the entrances are set back into the building mass to provide shelter for pedestrians pausing before entering or after leaving the establishment. Principal accessible entrances have been carefully designed and located on the south side of the building. Here, there are wider sidewalks and larger gathering areas for visitors and potential customers. This area is naturally more suited to strolling or lingering pedestrians, and provides the potential for seating areas. The entrances on the south side of the building also include a large green roof canopy that provides shelter and shade to users.

3.3.1. PUBLIC REALM

Shadows from the proposed development (as well as the as-of-right development shadows) move from west to east along the sidewalk adjacent to Rymal Road. Due to the Site location directly to the South of the sidewalk, and the minimal building setback of 1.5m, both instances of shadows impact the sidewalk, regardless of the increased building height of the proposed development. The east part of the sidewalk adjacent to the property gets morning sun, and the west part of the sidewalk gets afternoon sun. There are no public or private amenity spaces, patios, or sitting areas in this location.

In the morning, the sidewalk to the west of the proposed building (adjacent to Dakota Blvd.) is in shadow, but gets sunlight all afternoon in March through September.

Shadows from this development do not affect any public plazas, parks or open spaces, school yards or playgrounds.

This development is not located Downtown Hamilton and therefore does not have any shadow impact on Downtown parks, squares, plazas or open space areas.

SPRING



Figure 1 - March 21 at 9:00am



Figure 2 - March 21 at 10:00am



Figure 3 - March 21 at 11:00am



Figure 4 - March 21 at 12:00pm

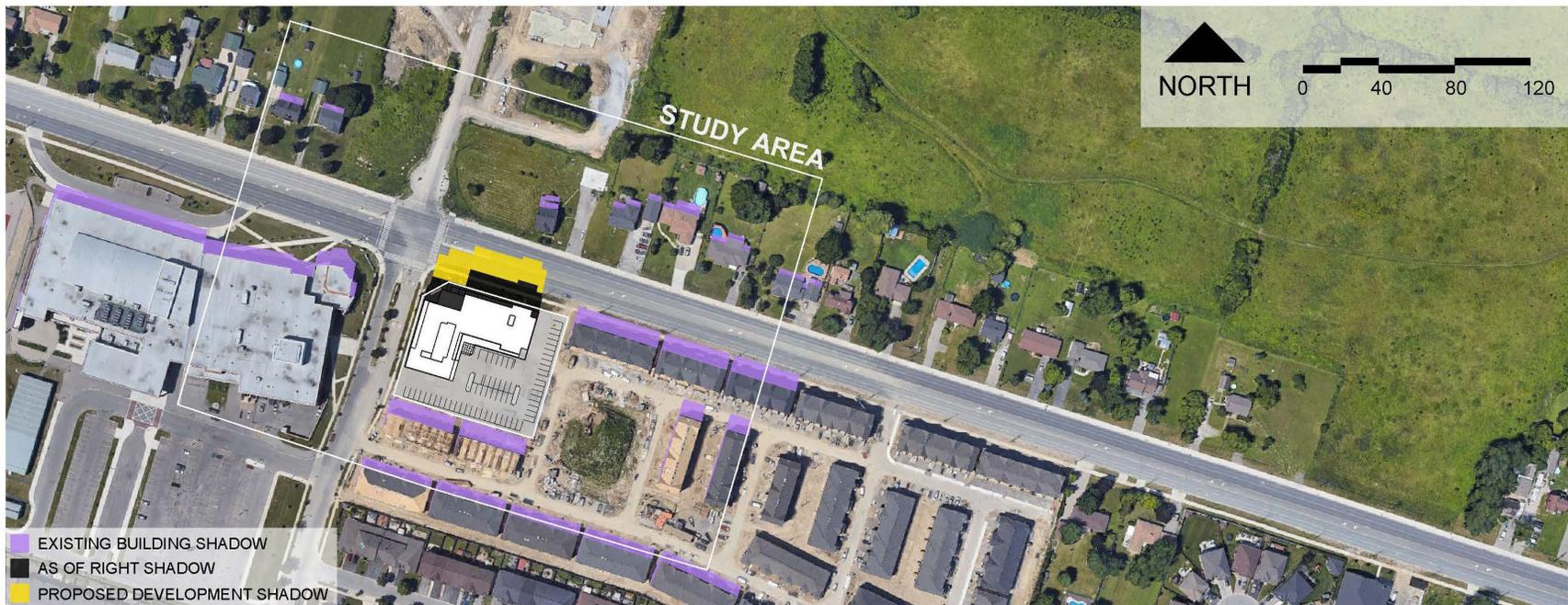


Figure 5 - March 21 at 1:00pm

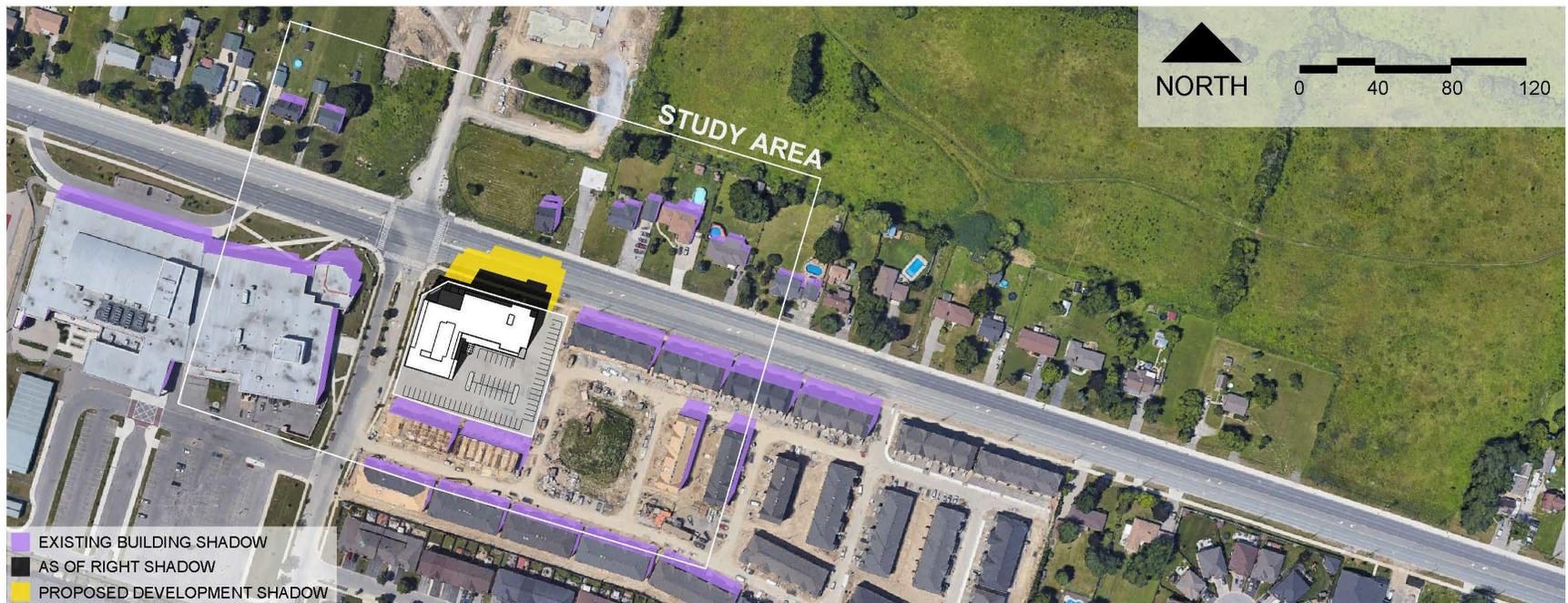


Figure 6 - March 21 at 2:00pm



Figure 7 - March 21 at 3:00pm



Figure 8 - March 21 at 4:00pm



Figure 9 - March 21 at 5:00pm



Figure 10 - March 21 at 6:00pm

FALL



Figure 11 - September 21 at 9:00am



Figure 12 September 21 at 10:00am

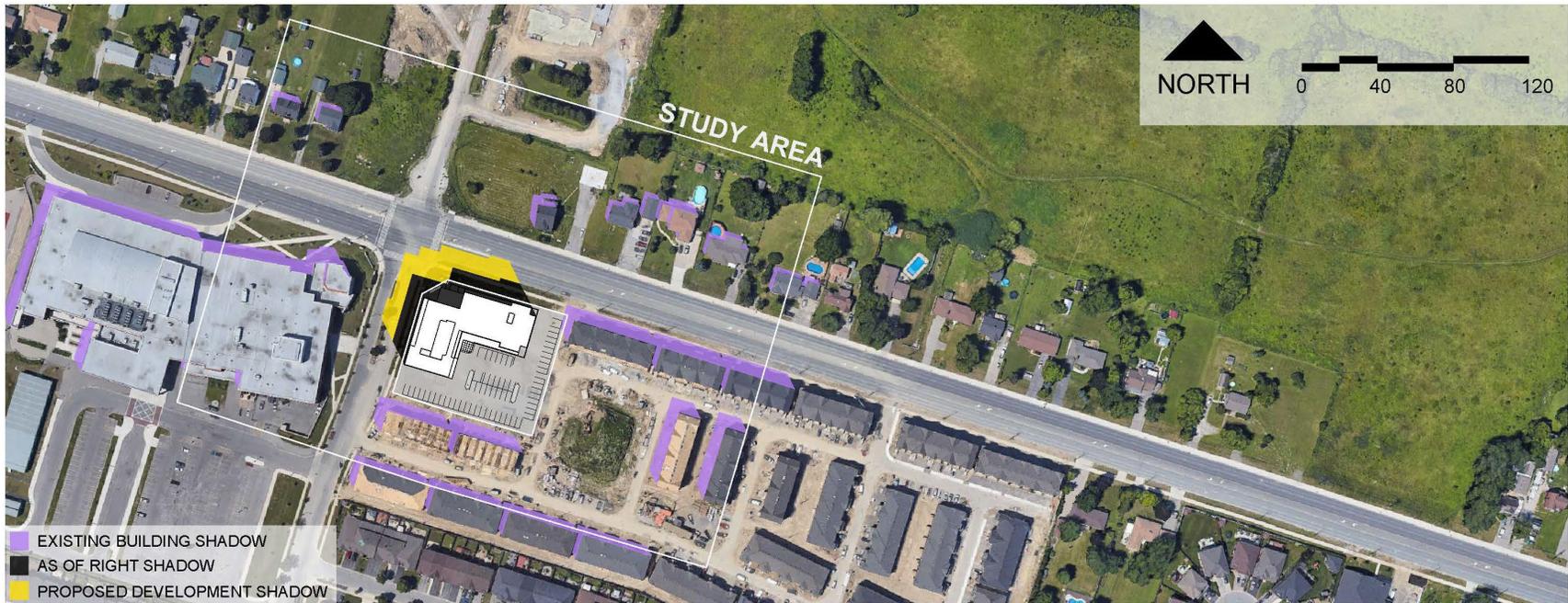


Figure 13 September 21 at 11:00am

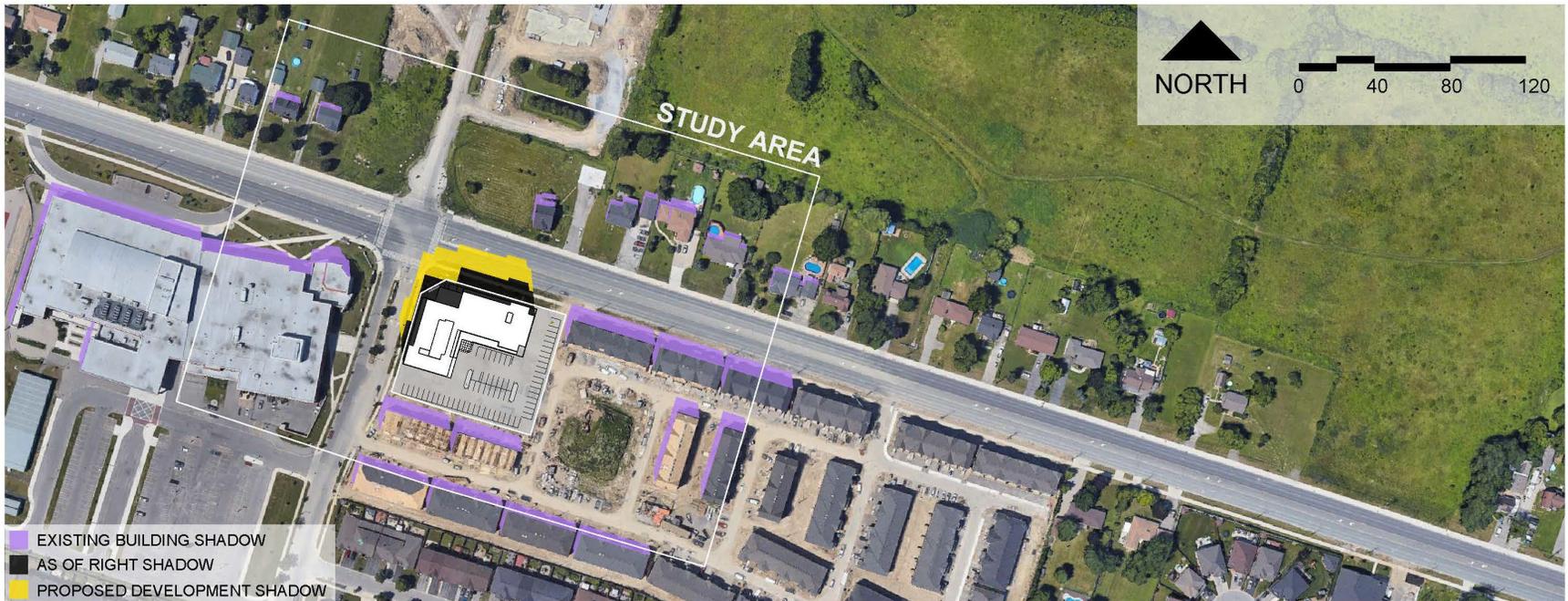


Figure 14 September 21 at 12:00pm

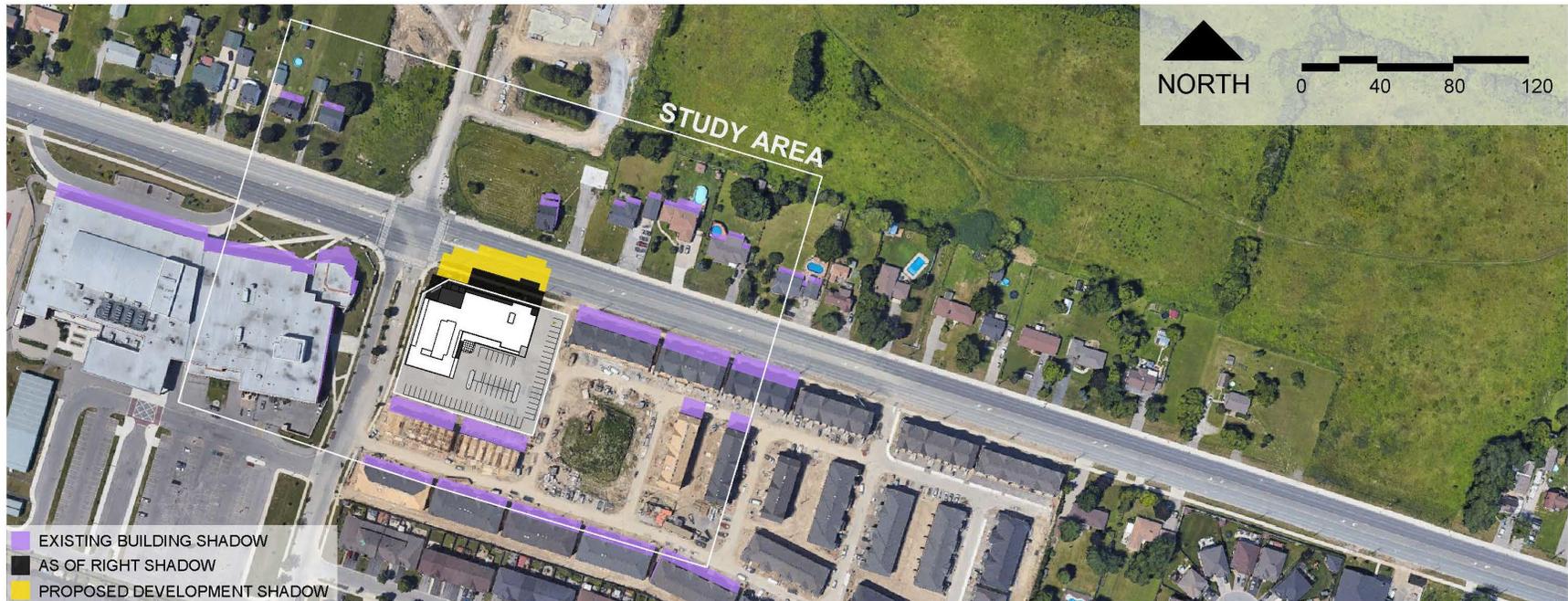


Figure 15 September 21 at 1:00pm



Figure 16 September 21 at 2:00pm



Figure 17 September 21 at 3:00pm



Figure 18 September 21 at 4:00pm



Figure 19 September 21 at 5:00pm

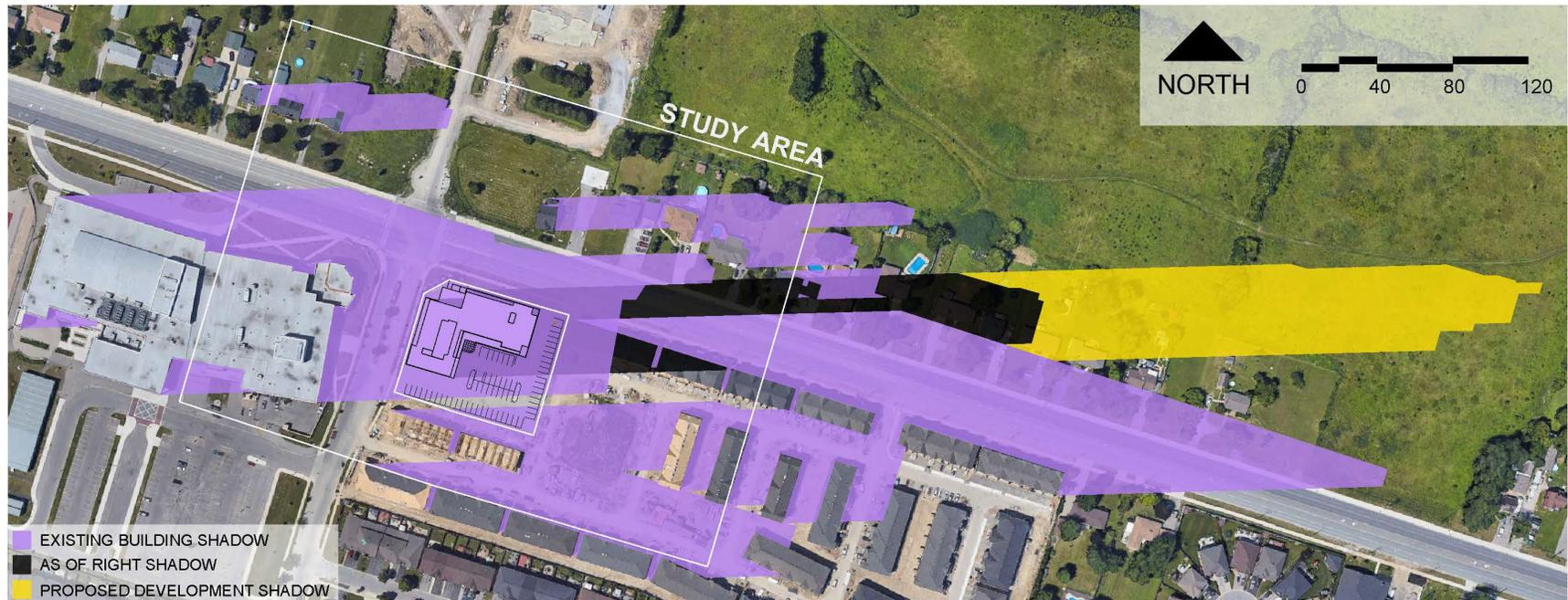


Figure 20 September 21 at 6:00pm