

3016, 3020, 3026 & 3032 KIRWIN AVENUE
AND 3031 LITTLE JOHN LANE
CITY OF MISSISSAUGA

SHADOW STUDY ANALYSIS



MARCH 2019

1. INTRODUCTION

The accompanying shadow study has been prepared by Weston Consulting to illustrate the shadow impacts of the proposed residential development. The development is to be located in the City of Mississauga in the Region of Peel, with frontages on Little John Lane and Kirwin Avenue.

The scheme proposes a compact, pedestrian friendly, community development with associated parking and rooftop terraces. The development consists of three blocks of horizontal-multiple town homes that are 3.5 storeys in height. The development parcel fronting Little John Lane is partially located within the floodplain area. The John C. Price Park abuts the property to the north.

There exists significant shadowing from neighbouring residential properties within the study area, particularly at 3170 Kirwin Avenue at 16 storeys and 120 Dundas Street East at approximately 12 storeys.

The shadow study is based on the Terms of References provided by the City of Mississauga. The shadow study encompasses dates and times shown in Tables 2, 3 and 4 of the Urban Design Terms of Reference, from 1.5 hours after sunrise to 1.5 hours before sunset. The Base Mapping shows an area 4.0 times the height of the development north, east and west at a minimum coverage of 56m, and 1.5 times the building height south at a minimum coverage of 21m.

The shadow drawings in appendix 1-3 have been prepared by Holly Templeton under the direction of Shane Morgan, Design Manager.

The following is a summary of the shadow impacts:

2. ANALYSIS

2.1 September 21

The morning shadows of the spring and fall equinoxes project partially onto the south side of the neighboring park bordering the development. This communal outdoor amenity area retains access to over 50% sun coverage during the times required in this study for September 21st. No other impacts have been identified upon outdoor amenity areas within the study area.

Shadow impacts are minimal on or after midday. There is no incremental shade impacting the public realm between 9:12 and 11:12. Throughout the afternoon and evening, impacts upon the public realm, primarily the sidewalk of Kirwin Avenue immediately bordering the development, begins at approximately 13:12 and remains in partial shadow until sundown. There are no discernible impacts upon neighbouring commercial uses.

In the morning there is shadowing on the rear yard of the neighbouring property immediately to the north of the site between 8:35 and 10:12. However, existing tree coverage from the neighbouring park and within the rear yard of the property already cause shadowing in this area. There are no other impacts upon residential amenity during the times shown for September 21.

See appendix 1.

2.2 June 21

In general, the shadows during the summer solstice on June 21 are comparatively shorter. Early morning shadows impact a small area of the open space areas to the north that includes a playground. This area is partially overshadowed in the morning between 7:07 and 8:20 but retains full sun access at over 50% of the study times shown. Similarly to the September study, though with a shorter shadow extent and impacting later in the day, the sidewalk at Kirwin Avenue immediately fronting the site is overshadowed from 15:20 to sundown. Shadow impacts are minimal on or after midday. Towards evening, impacts upon the public realm, primarily the sidewalk of Kirwin Avenue immediately bordering the development begin at approximately 13:12 and remains in shadow until sundown.

The Service Centre at the intersection of Kirwin Avenue and Dundas Street East is partially impacted by shadow between 19:20 to sundown. Shadows between 18:20 to sundown fall onto the rear parking area of the commercial properties at 129-123 Dundas Street East. This is not considered to be a significant impact according to the criteria parameters set out in this study.

See appendix 2.

3. SUMMARY

2.3 December 21

Shadows during the winter solstice are longer than other seasons. Morning shadows can be seen to have the most significant impact on neighbouring properties, but for no longer than two consecutive hours. The shadow impact on outdoor space is however considered in the criteria, but has no discernible impact on the play area to the north east of the development during the study times for December 21st. The morning shadows cause shadowing on the south side of the park bordering the property between the hours of 9:19 and 12:17 but are not extensive during this period.

See appendix 3.

In summary, it can be concluded that shadow impacts upon urban green space and community outdoor areas are not of significant coverage and duration. The shadows have a reasonably acceptable impact on neighbouring areas for the following reasons:

- The majority of the areas affected are parking areas and the subject property land itself;
- The shadow impact on community outdoor areas, specifically the park playground neighbouring the development, receives over 50% sun access for the times outlined in this study for the dates of June, September and December 21st, and for no longer than two consecutive hours;
- The sidewalk fronting the development on Kirwin Avenue is in shadow from approximately 13.12 to sundown on September 21st. The majority of this impact however falls primarily to the south east side of the sidewalk at the entrance to the development for vehicle access.

References:

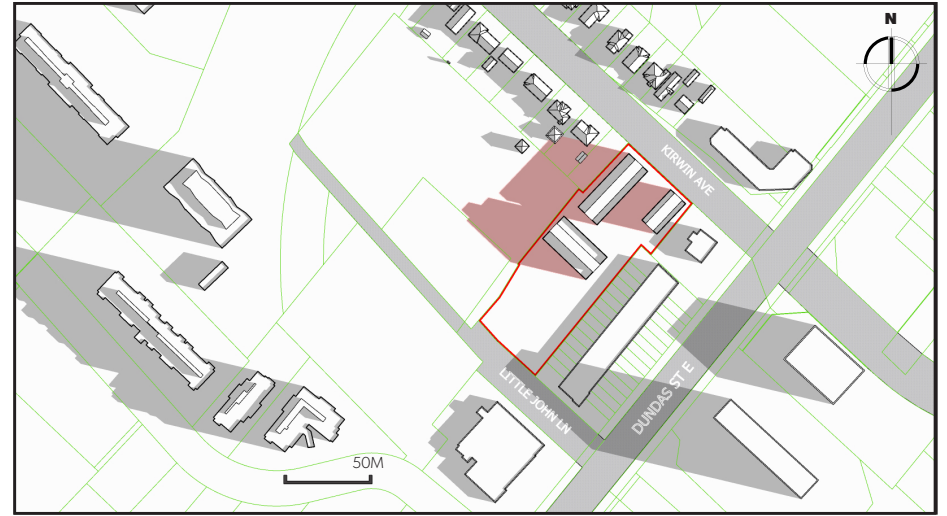
Base Plan Source: Mississauga Parcel Open Data 2016

Longitude/Latitude at Kirwin Avenue and Dundas Street East intersection: 43°35'00.7"N, 79°36'45.4"W

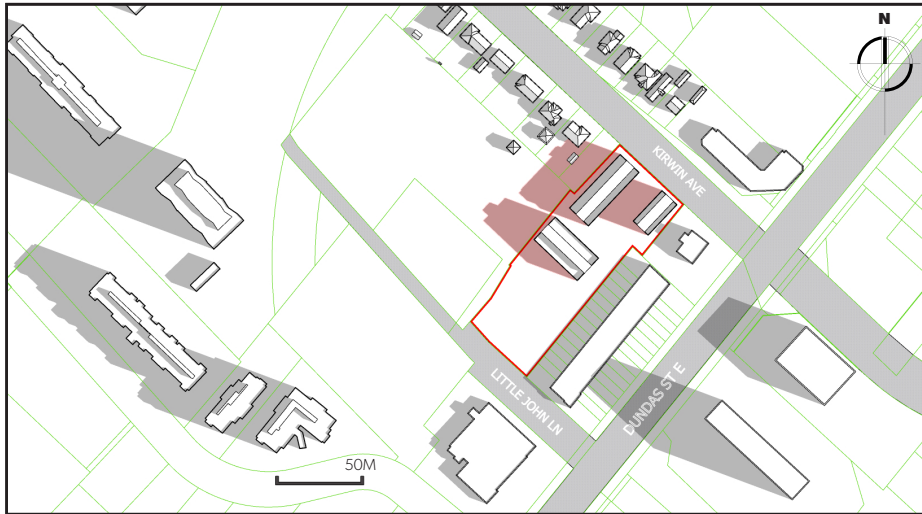
Astronomic or True North determined using GPS Google Map Data 2019



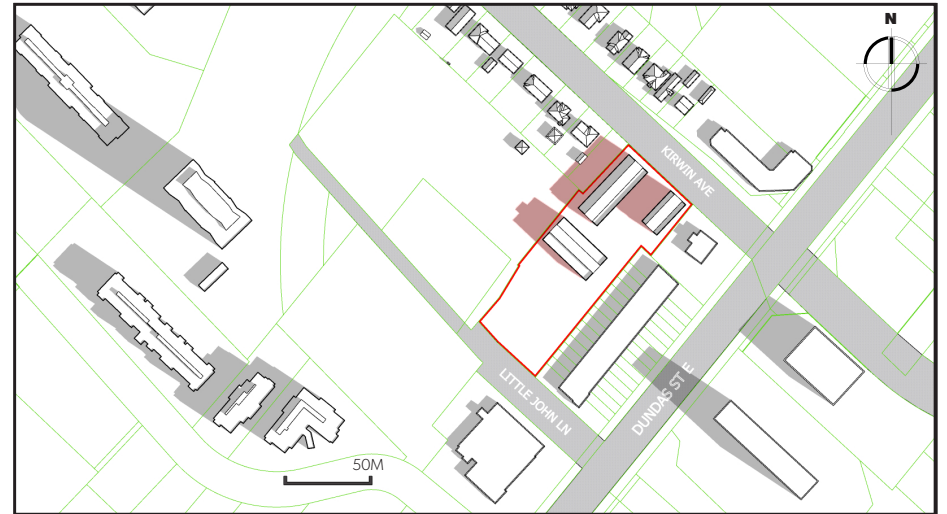
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SEPT 21 8.35 AM



SEPT 21 9.12 AM



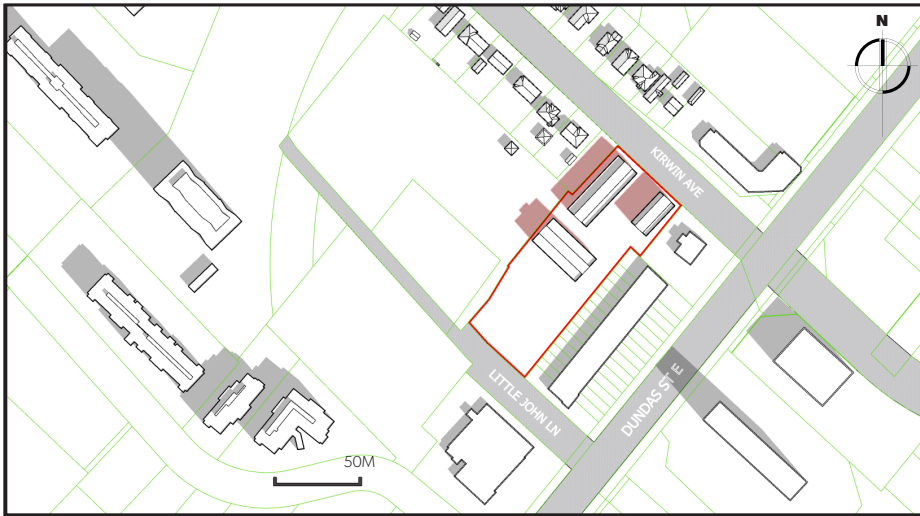
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SHADOW STUDY - SEPTEMBER 21

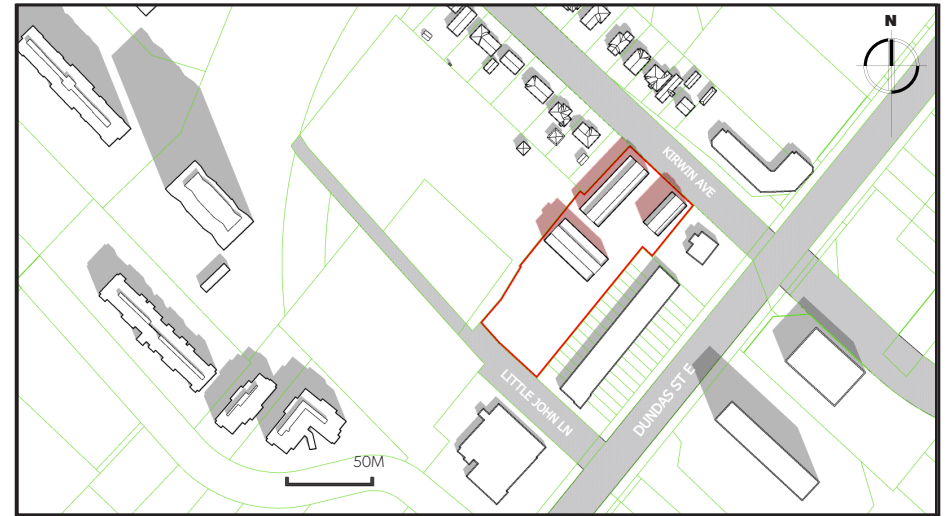
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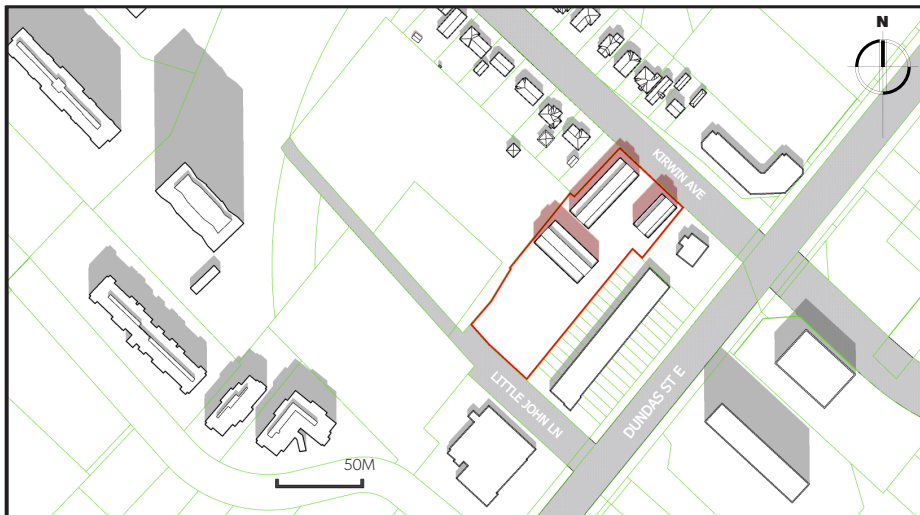
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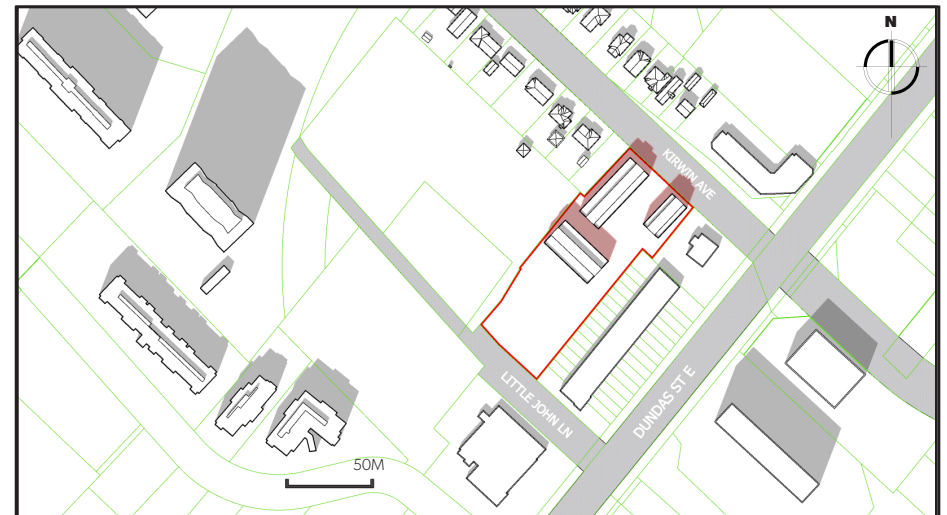
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SEPT 21 12.12 PM



SEPT 21 13.12



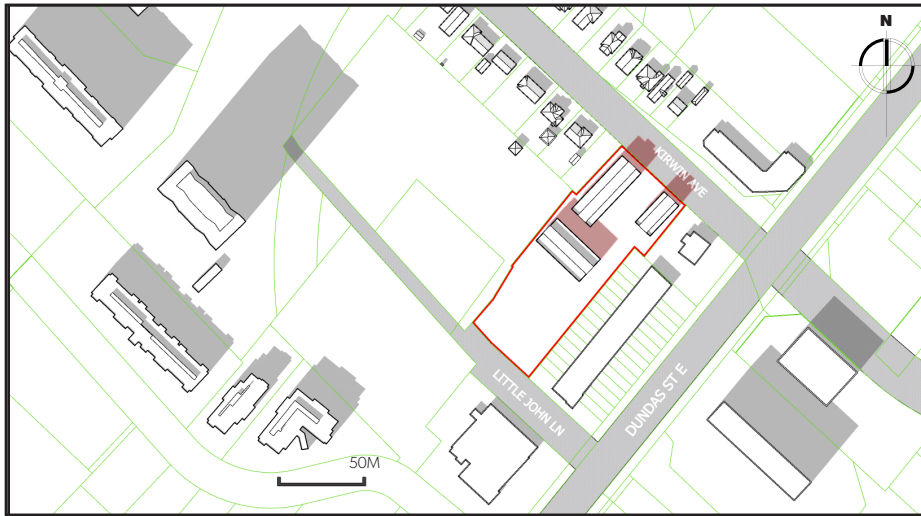
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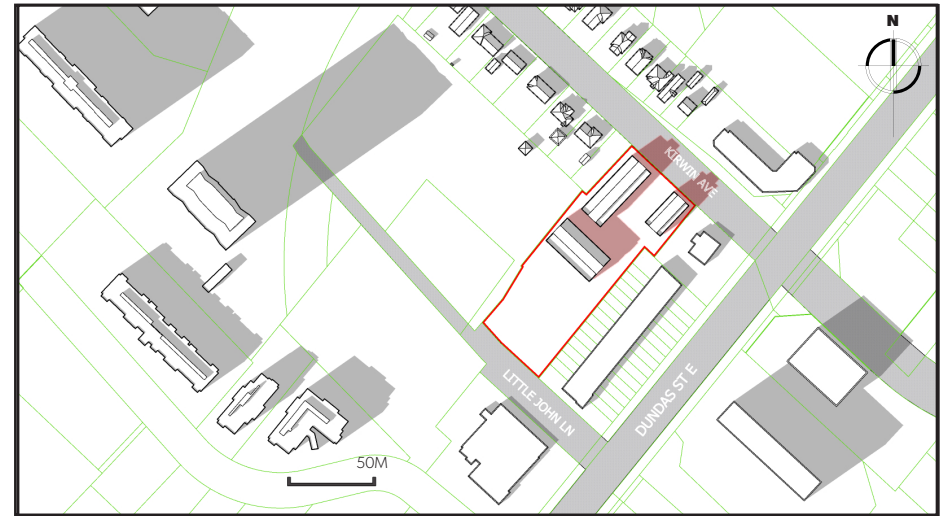
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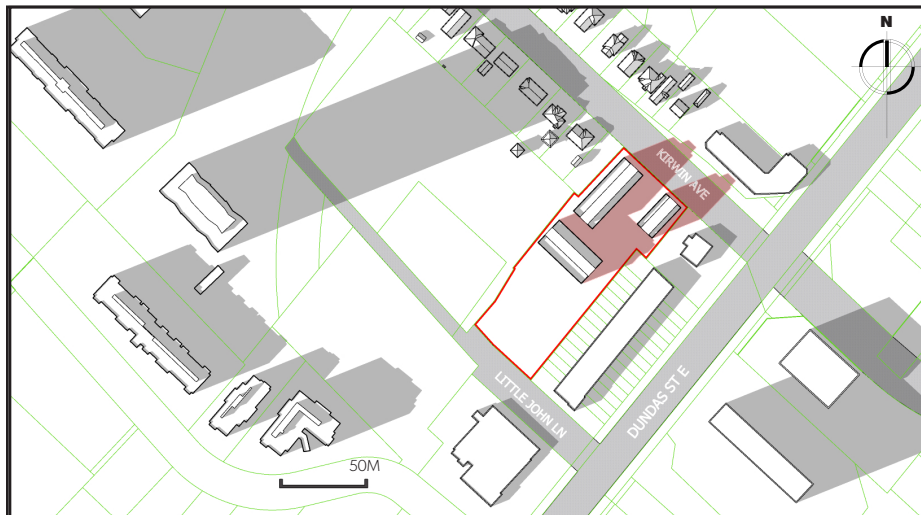
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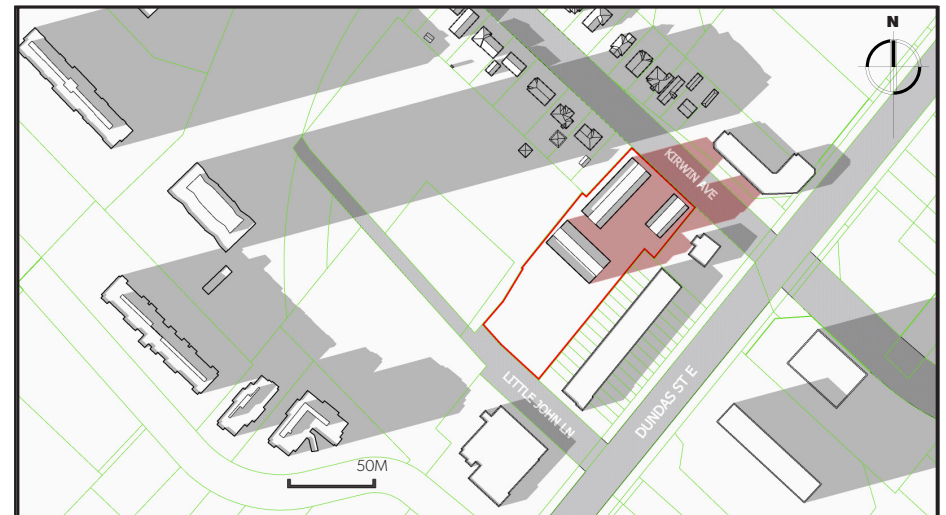
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SEPT 21 16.12



SEPT 21 17.12



SEPT 21 17.48

SHADOW STUDY - SEPTEMBER 21

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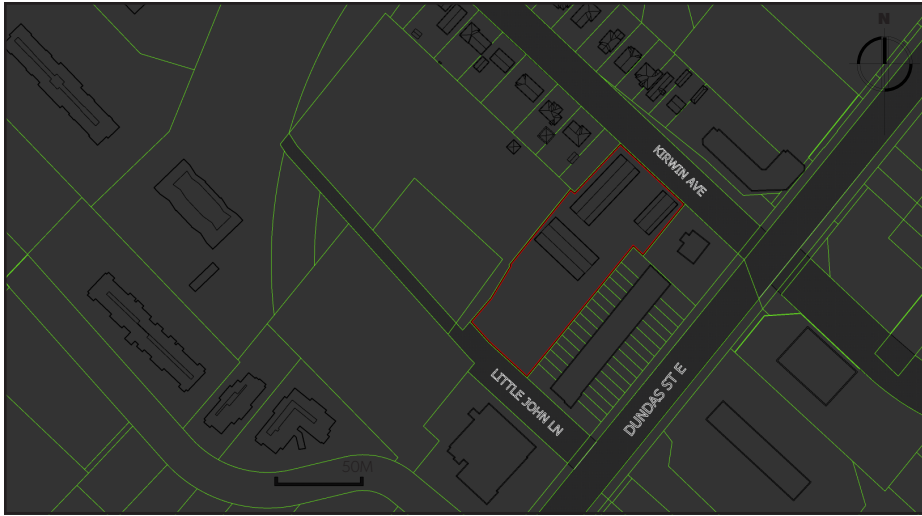
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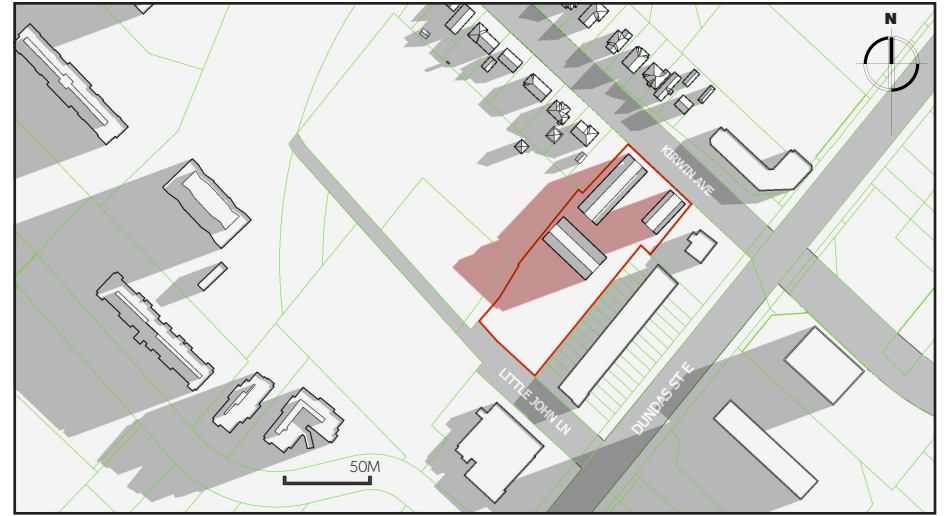
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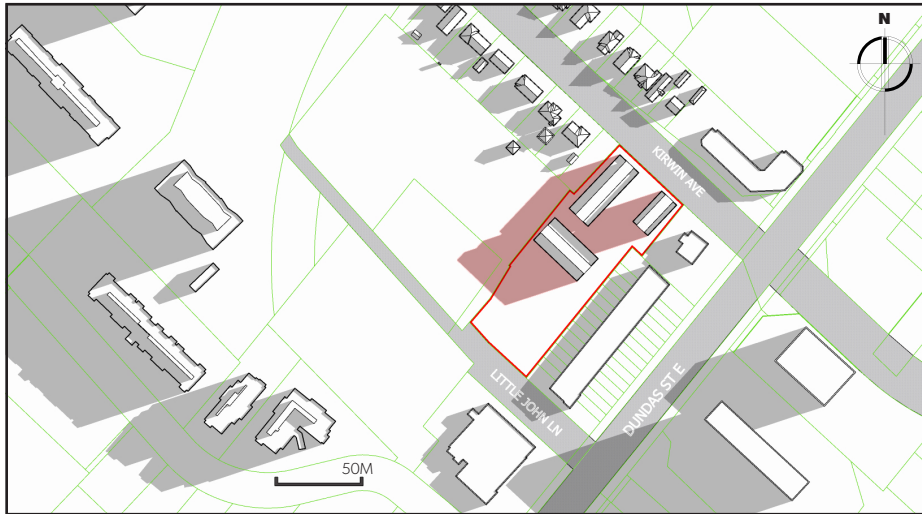
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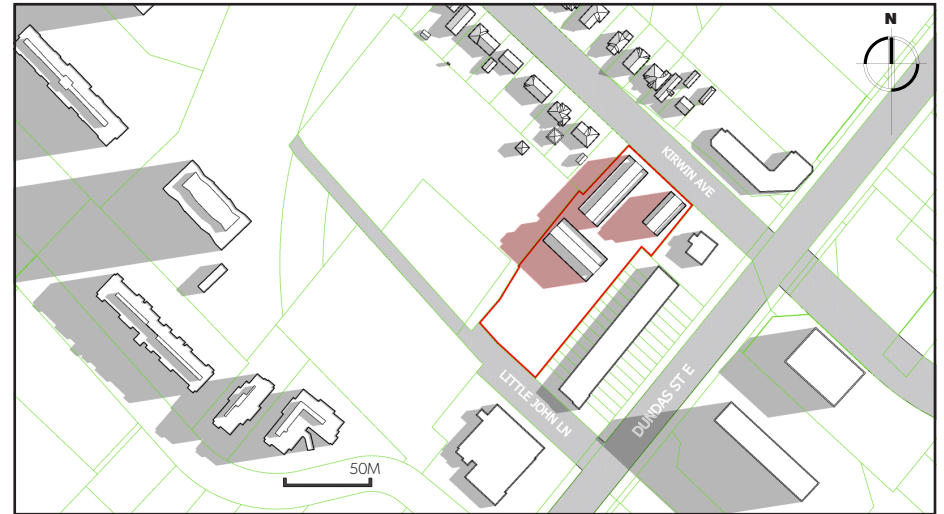
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JUNE 21 7.07 AM



JUNE 7.20 AM



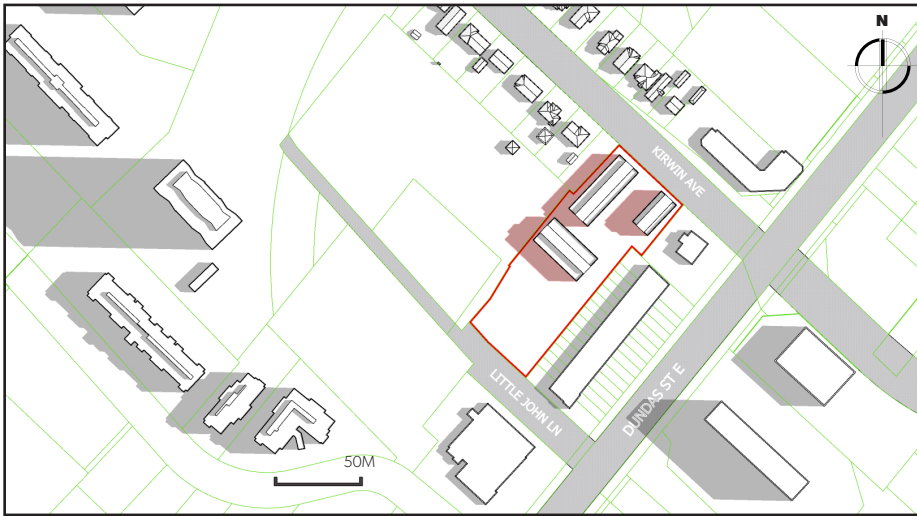
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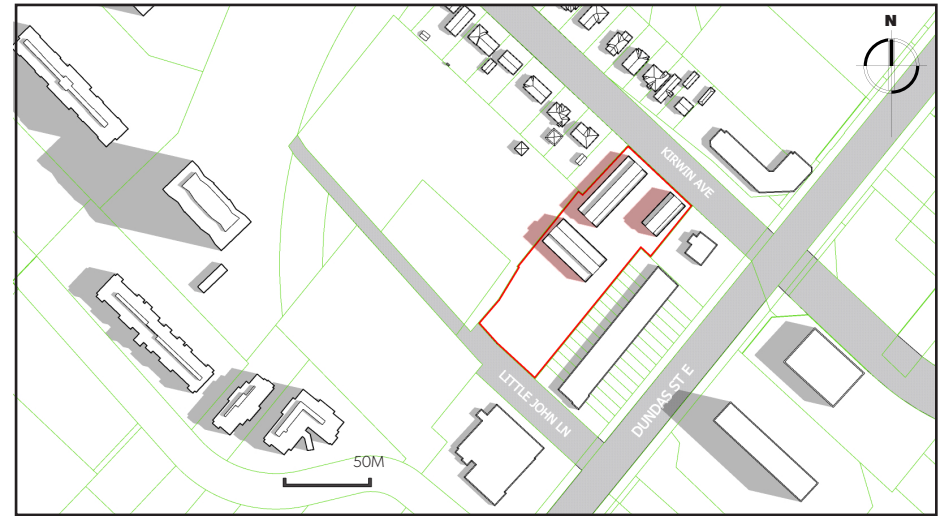
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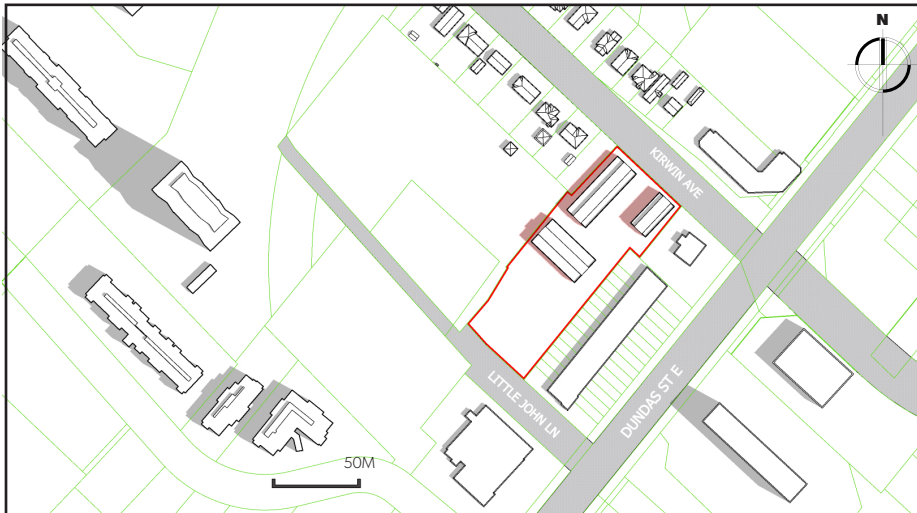
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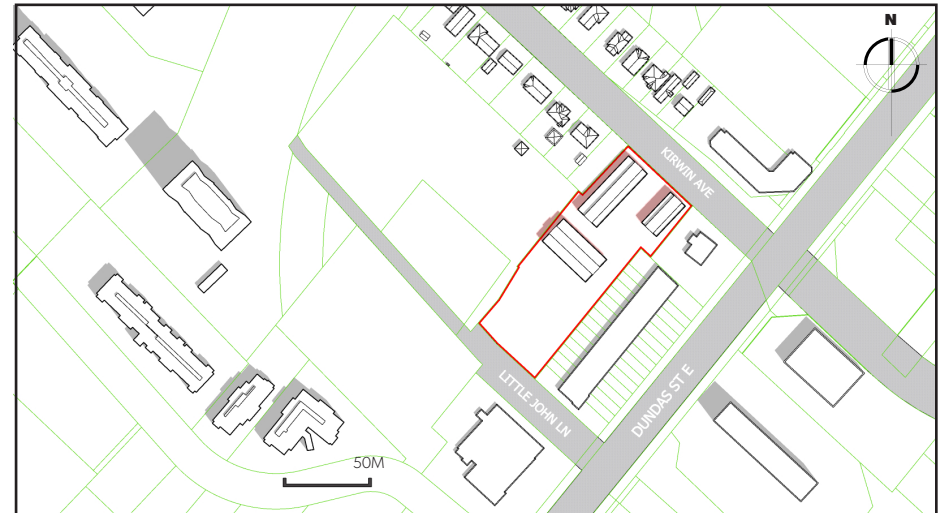
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JUNE 21 10.20 AM



JUNE 21 11.20 AM



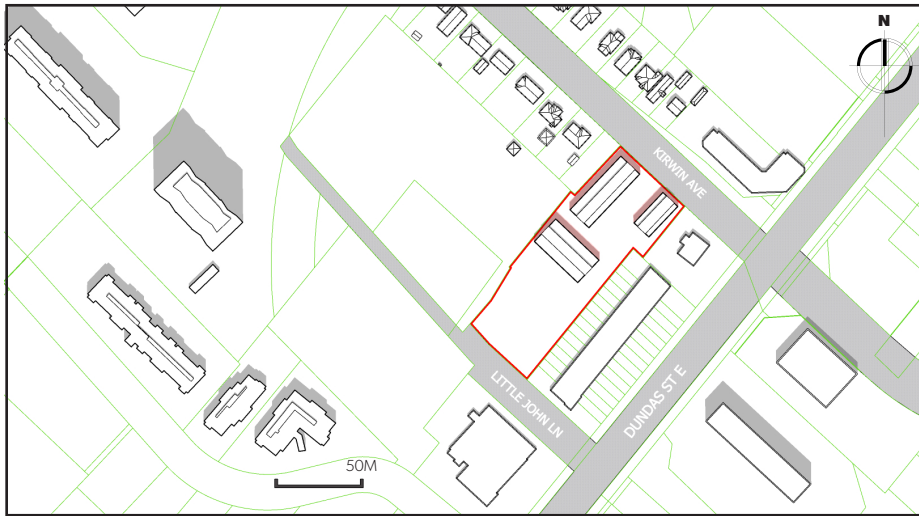
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SHADOW STUDY - JUNE 21

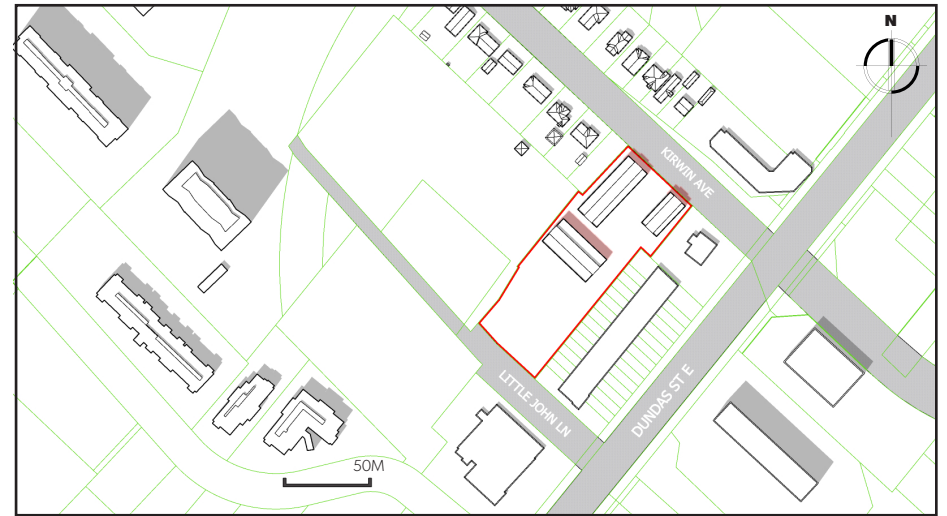
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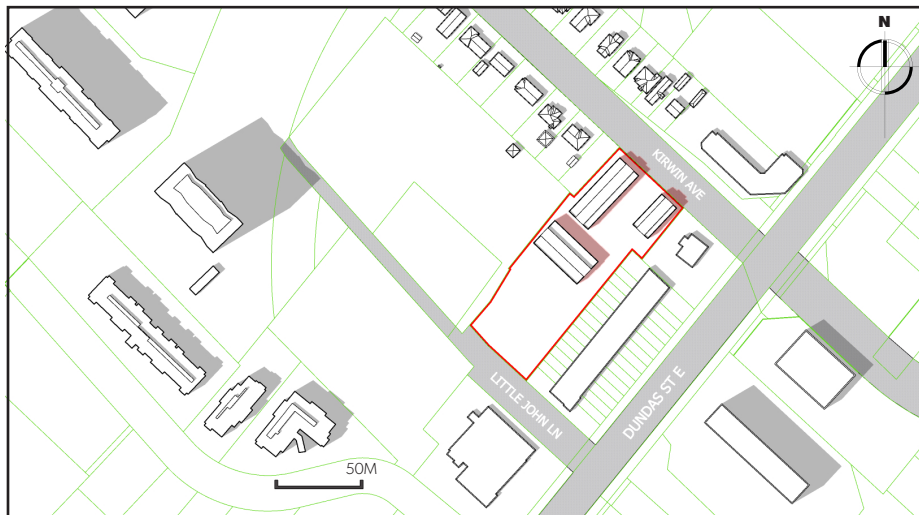
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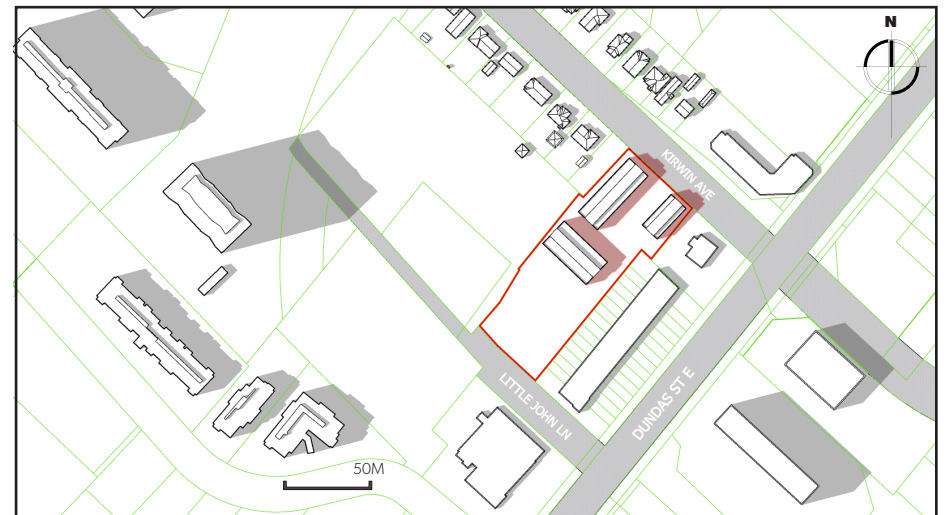
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JUNE 21 14.20



JUNE 21 15.20



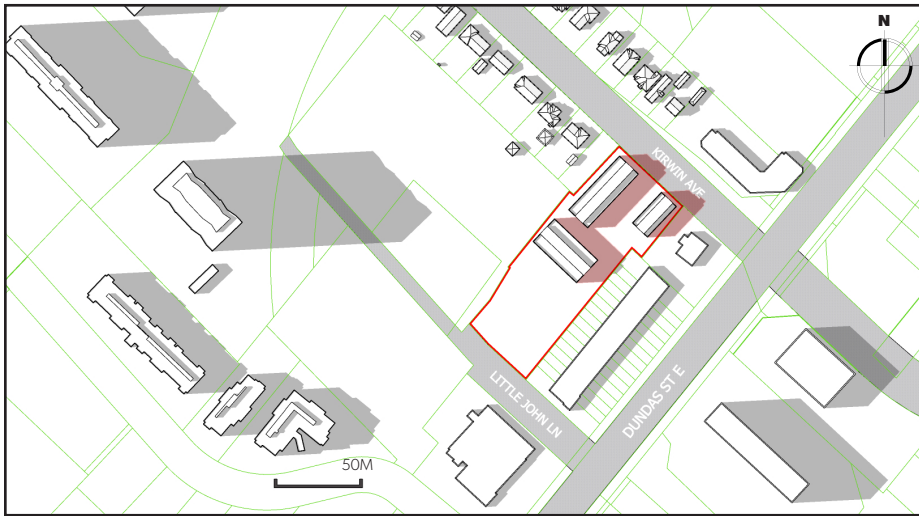
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SHADOW STUDY - JUNE 21

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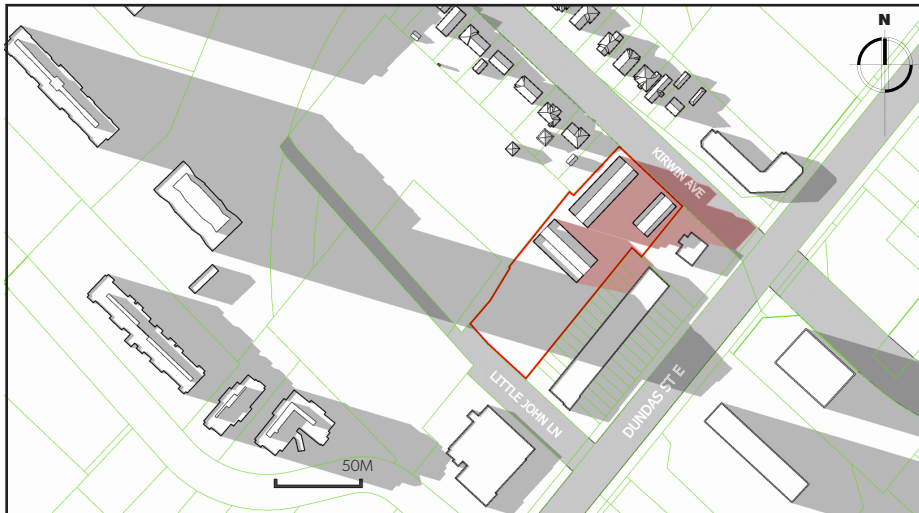
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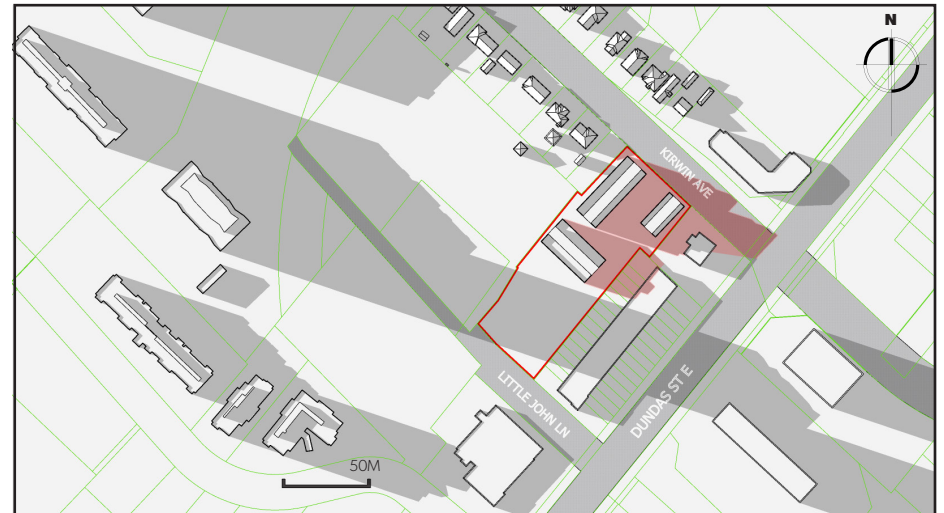
JUNE 21 17.20



JUNE 21 18.20



JUNE 19.20



JUNE 21 19.33

SHADOW STUDY - JUNE 21

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JUNE 21 21.03

SHADOW STUDY - JUNE 21

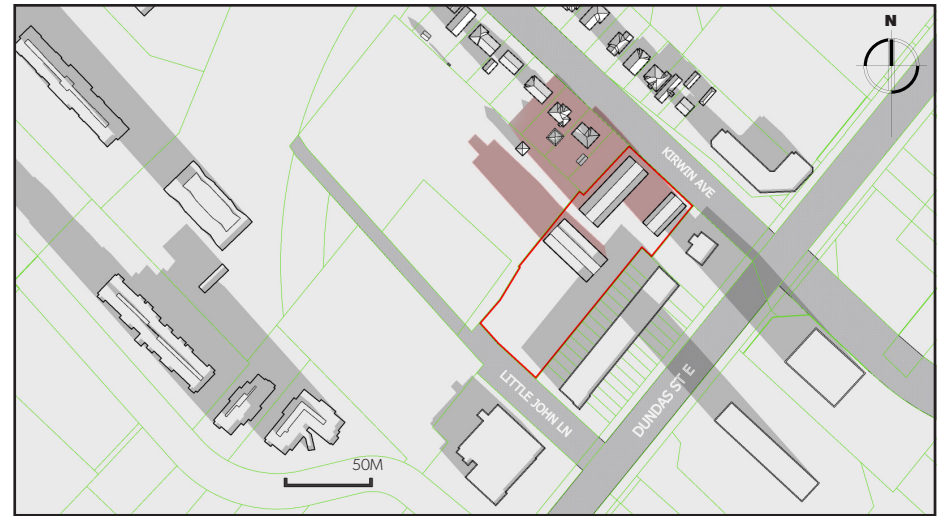
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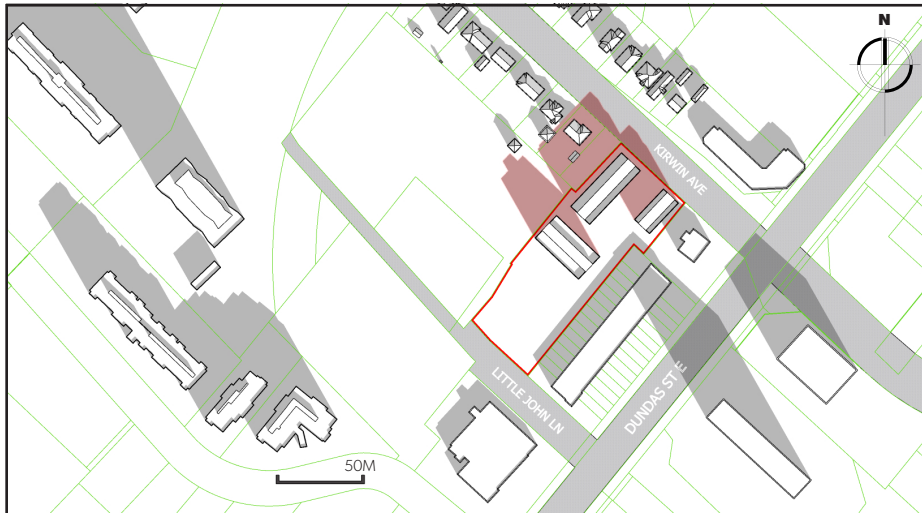
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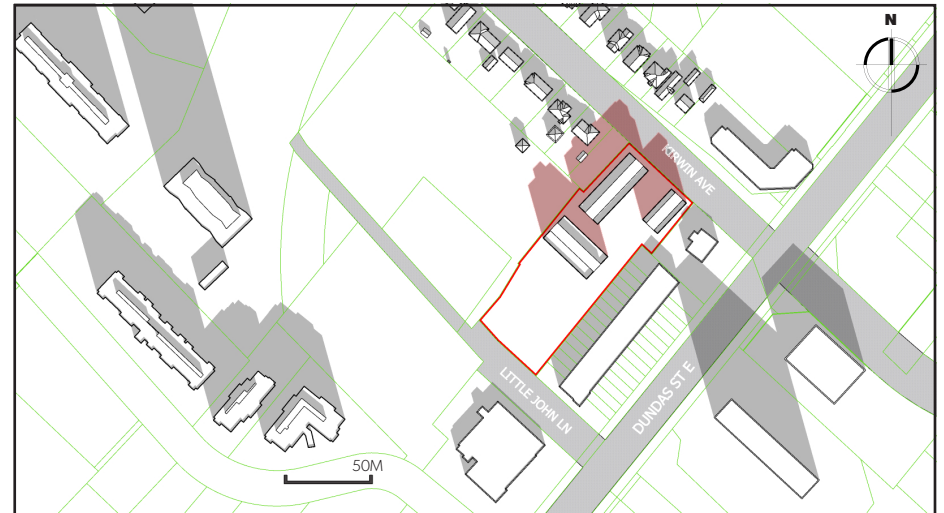
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DEC 21 10.17 AM



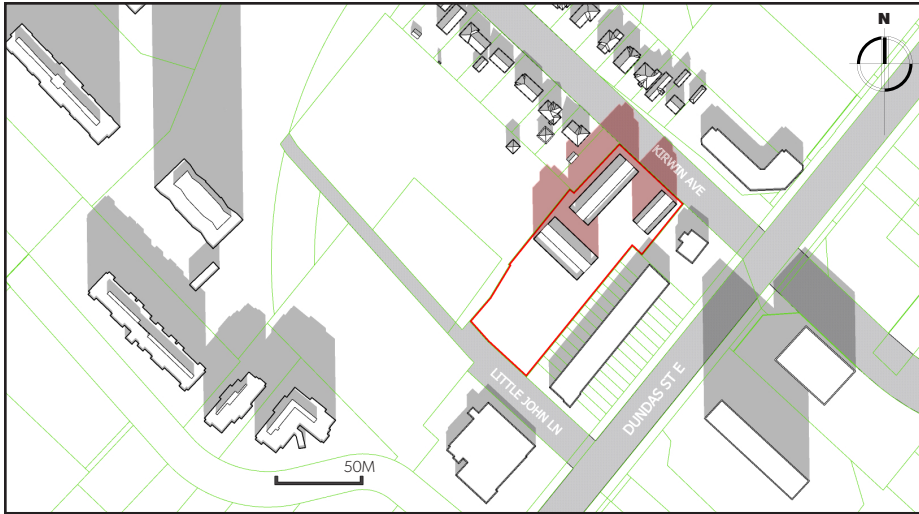
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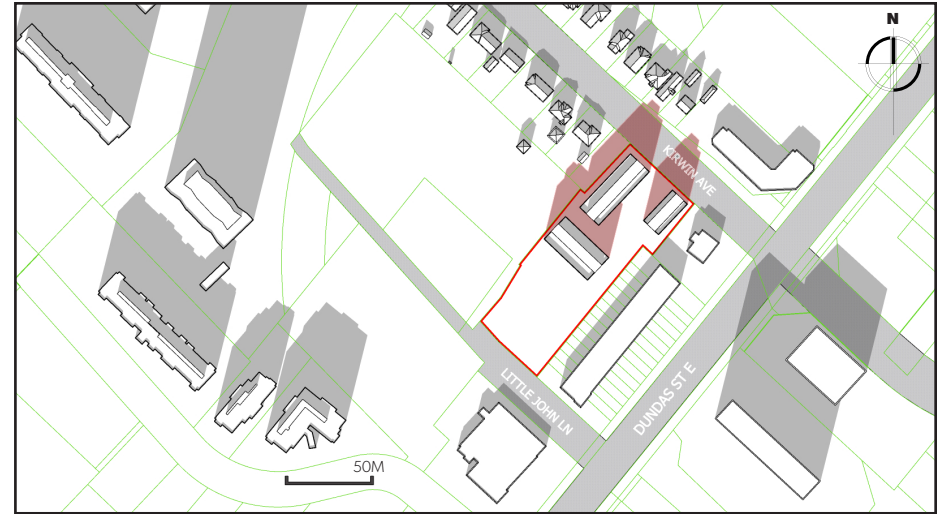
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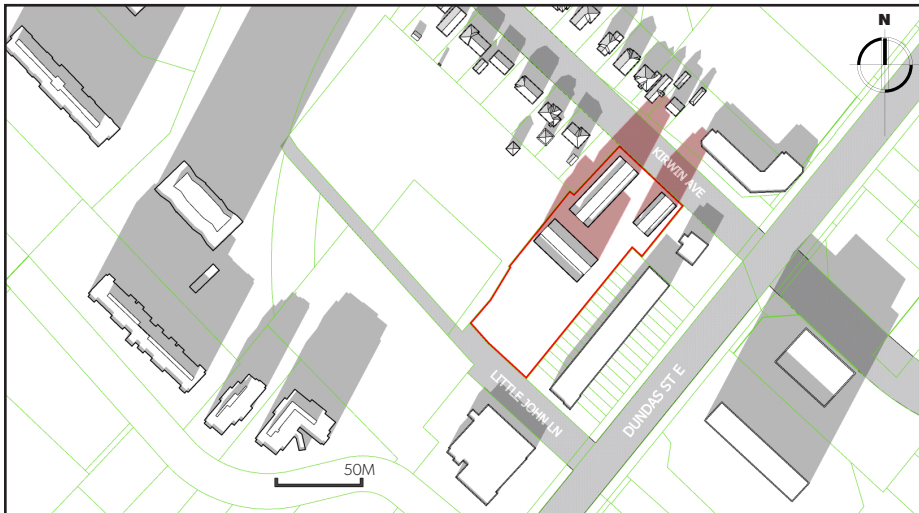
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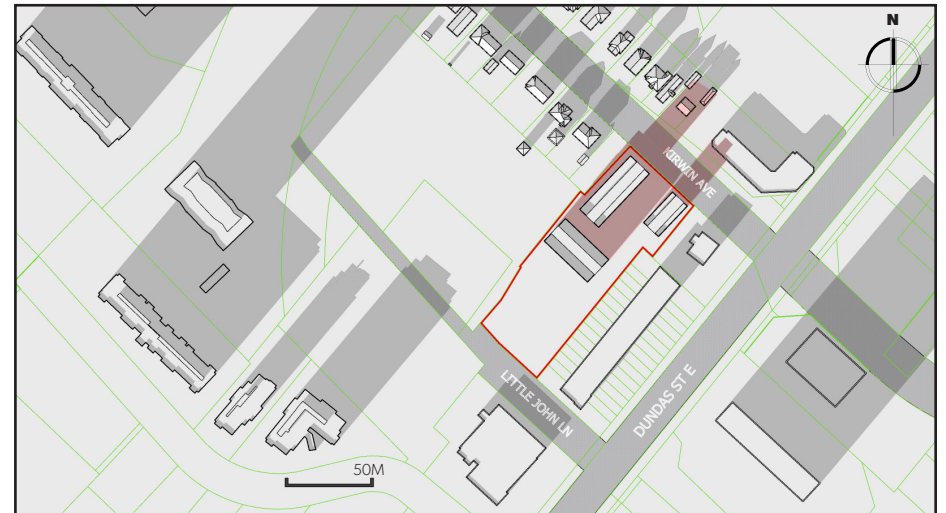
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SHADOW STUDY - December 21

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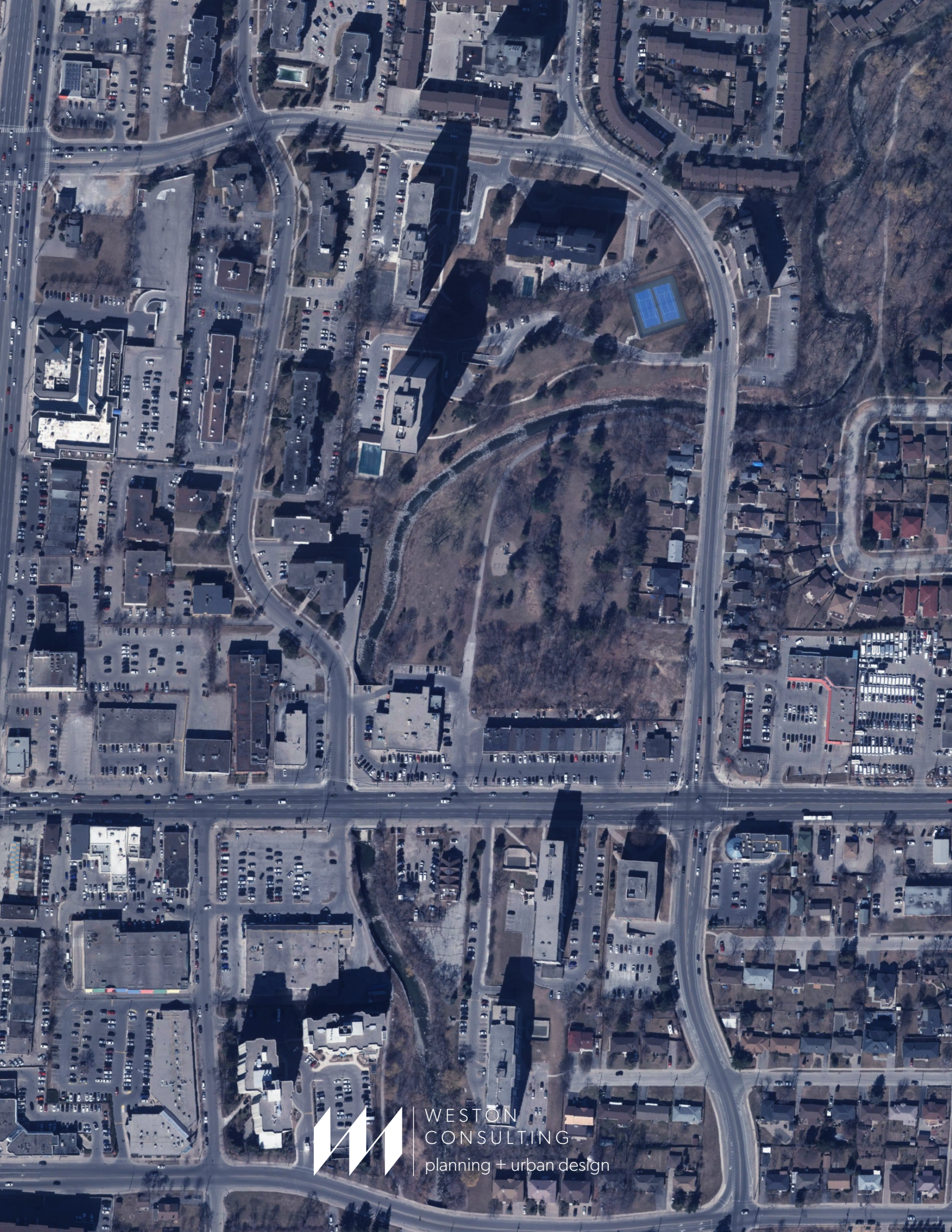
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