SHADOW STUDY

198, 200 & 206 PLAINS RD. E, BURLINGTON, ON

DECEMBER 11 2025 | FILE NO: D4055

The Office for
Architecture &
Urban Design

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1.0 INTRODUCTION

The Office for Architecture and Urban Design (OAUD) is appointed by Concept Lines Inc (referred to as the “Owner”) to prepare a Shadow Study as part of the application for the lands municipally addressed as 198, 200 & 206 Plains Road E (‘referred to as the ‘site’’) in the City of Burlington (‘the City’).

This Shadow Study (‘Study’) has been prepared by The Office for Architecture & Urban Design to illustrate the shadow impacts of a proposed residential building on site, and the surrounding context. The proposed development integrates a 6-storey mixed-use residential with a total 66 suites as seen in the proposed site plan is illustrated in Figure 1.

The Study was prepared based on the City of Burlington’s Shadow Study Guidelines and Terms of Reference (June, 2020) and aims to illustrate the shadow impacts of development to the surrounding context to uphold the City’s Urban Design standards. The analysis interprets the impacts of net new shadows of the development onto surrounding buildings, and the adjacent public realm, as any proposed outdoor amenity is free from any new shadowing by the proposed development. It is our understanding that the the Shadow Study is required by the City to support an Official Plan Amendment (‘OPA’) and Zoning By-law Amendment (‘ZBA’) applications to allow the proposed 6-storey mixed use building on the subject lands.

Section 2.0 of the Study includes a written analysis of the proposed development shadow impacts on the following areas:

- Sidewalks and the Public Realm

Section 3.0 includes diagrams for the required test dates and times and include a base plan plotted at a standard metric scale with a bar scale on each sheet.

Following the City’s Terms of Reference, the Study has been conducted for the following dates: March 21st, June 21st, September 21st and December 21st. As per the City’s terms of reference, Daylight Savings Time (UTC-4) was used to determine shadow impacts on March 21st, June 21st, and September 21st, while Standard Time (UTC-5) was used to determine shadow impacts on December 21st. Table 1 outlines the Study test times required by the City and are listed in the terms of reference.

The Study was conducted using a geolocated 3D SketchUp model that tested shadow simulations at the required times. Surrounding building footprints sourced from the City’s open data portal as well as aerial imagery where newly buildings were not yet available via open data.

Overall, this shadow study finds that the proposed development surpasses the City’s requirements for sun access during the test time and dates outlined in the City’s Terms of Reference.

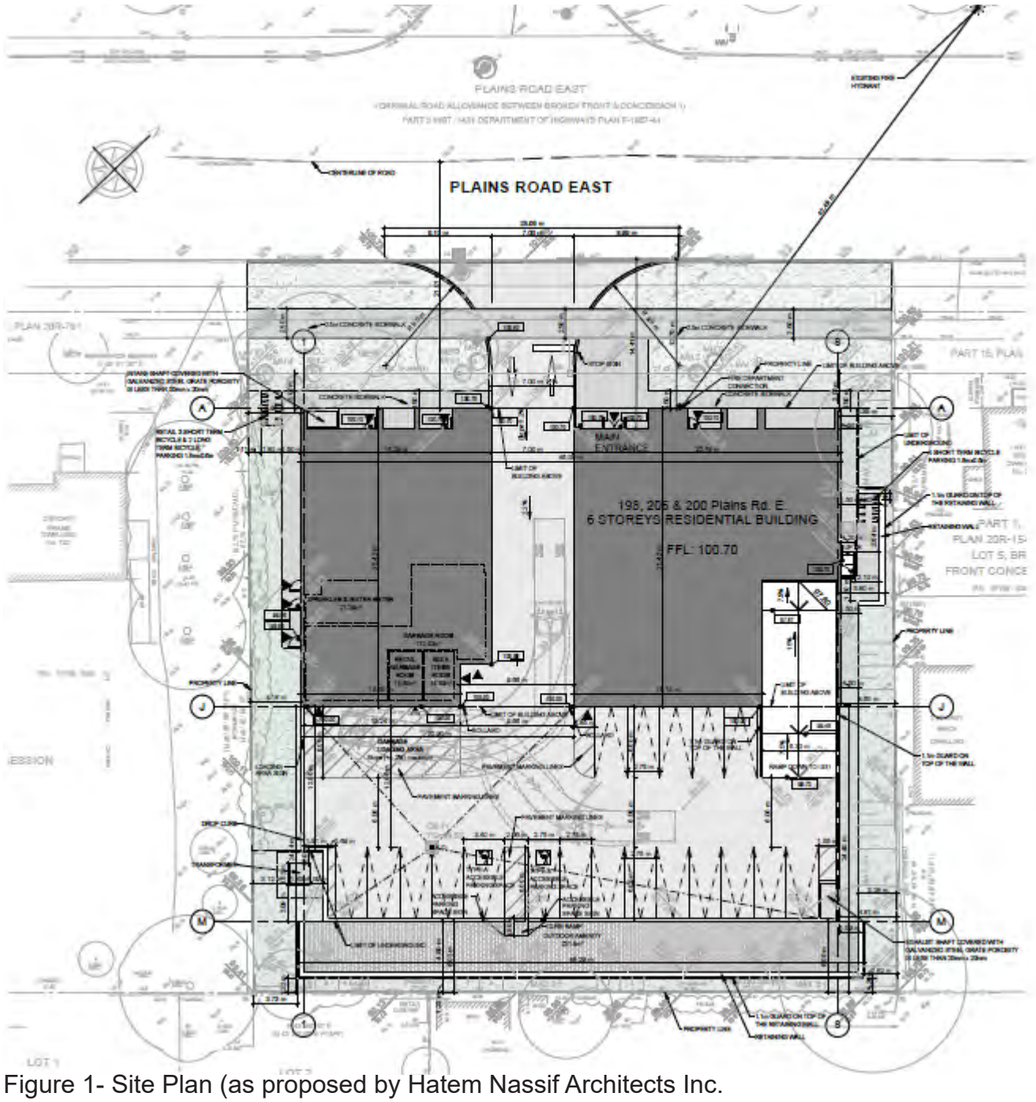


Figure 1- Site Plan (as proposed by Hatem Nassif Architects Inc.

2.0 SHADOW IMPACT ANALYSIS

2.1 Public Realm & Sidewalks

The following section assesses the shadow impacts of the proposed development on a number of areas within the surrounding context including:

- Key Civic and Cultural Spaces; **(Not Applicable)**
- Private Outdoor Amenity Spaces; **(Not Applicable)**
- Parks and Open Spaces; **(Not Applicable)**
- Places Where Children Play; **(Not Applicable)**
- Public Realm and Sidewalks.

Each area of impact was evaluated for each key applicable date throughout the year and the Sun Access Factor ('SAF') was calculated where necessary. The following section outlines the key findings for each area of impact, based on the City's Terms of Reference.

Overall, this shadow study finds that the proposed development surpasses the City's requirements for sun access during the test time and dates outlined in the City's Terms of Reference.

2.1 PUBLIC REALM AND SIDEWALKS

Based on the terms of reference, shadows cast on March 21st by all buildings and the proposed developments onto the full extents of the boulevard and sidewalk on the opposite side of the adjacent right-of-way, must allow for either:

a. Full sunlight 50% of the time,
b. 50% sun coverage at all times;

The criterion is met if the SAF is at least 0.5. The boulevard includes the area between the curb and the front property line or the building face, defined by projecting perpendicular lines from the subject site's property lines. Corner sites must include calculations for all frontages identified by the City.

Results

The following Shadow Study provides a model which illustrates the shadow impact of the proposed building at both equinoxes and solstices. This includes an analysis of the shadows cast by the proposed development, and all other buildings on the full extent of the boulevard and sidewalk on the opposite side of the adjacent right of way – identified as zones 2 and 4 on the west side of White Oak Drive -. The model shows that between 9am and 6pm on March 21st, the proposed development, together with all other buildings, would only cast shadows on the opposite sidewalk and boulevard at the 9am and 10am test times. At all other test times – from 11am through to 6pm – the sidewalk and boulevard on the opposite side of White Oak Drive would be in full sunlight, and therefore the proposed development would exceed criteria A of the Shadow Study Guidelines and Terms of Reference.

The March 21 shadow impact diagrams can be found below. Shadow impact diagrams have also been included for December 21, September 21 and June 21 for illustrative purposes only.

3.0 SHADOW IMPACT DIAGRAMS

3.1 March 21

3.1.1 March SAF Calculations

3.2 June 21

3.2.1 June 21 SAF Calculations

3.3 September 21

3.3.1 September 21 SAF Calculations

3.4 September 21

3.4.1 September 21 SAF Calculations

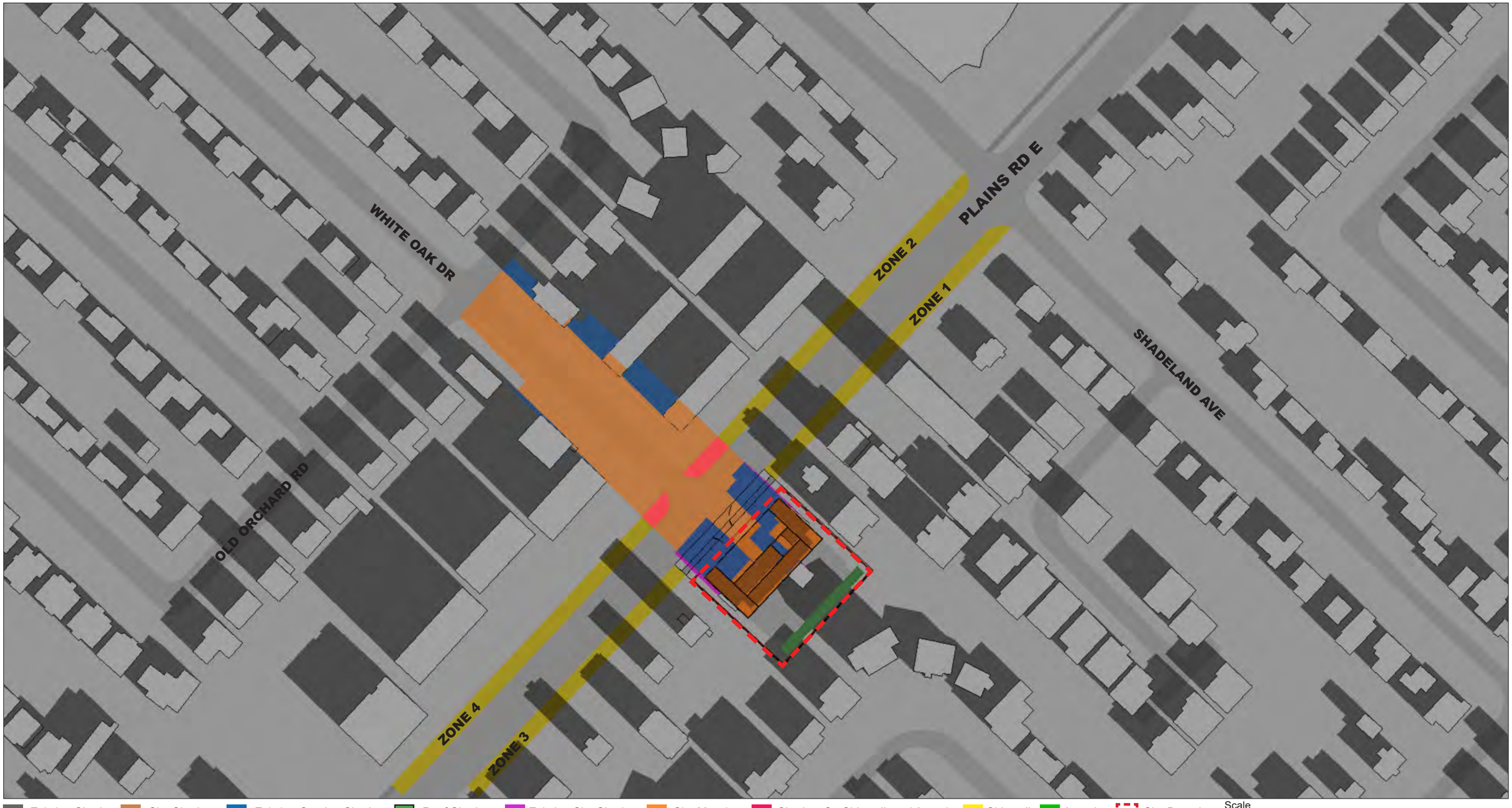
The following section illustrates the shadow impacts of the proposed development via shadow diagrams. The following areas, when present, were identified on the diagrams and assigned an identifying colour:

- Key Civic and Cultural Spaces;
- Private Outdoor Amenity Spaces;
- Parks and Open Spaces;
- Places Where Children Play; and
- Public Realm and Sidewalks.

Each area of impact was evaluated for each test date and time date throughout the year, as listed in Table 1, and the Sun Access Factor ('SAF') was calculated where necessary. The SAF was calculated using the formula outlined in the City's Terms of Reference. The SAF calculation for March 21st, which was found to be the only test date in which shadow impacts would necessitate SAF calculations, can be found after that section.

March 21st	June 21st	September 21st	December 21st
9:00 AM	8:00 AM	9:00 AM	9:00 AM
10:00 AM	9:00 AM	10:00 AM	10:00 AM
11:00 AM	10:00 AM	11:00 AM	11:00 AM
12:00 PM	11:00 AM	12:00 PM	12:00 PM
1:00 PM	12:00 PM	1:00 PM	1:00 PM
2:00 PM	1:00 PM	2:00 PM	2:00 PM
3:00 PM	2:00 PM	3:00 PM	3:00 PM
4:00 PM	3:00 PM	4:00 PM	4:00 PM
5:00 PM	4:00 PM	5:00 PM	5:00 PM
6:00 PM	5:00 PM	6:00 PM	6:00 PM
	6:00 PM		
	7:00 PM		

Table 1 - Test Dates and Times



Plains Lake
198, 200 & 206 Plains Rd. E

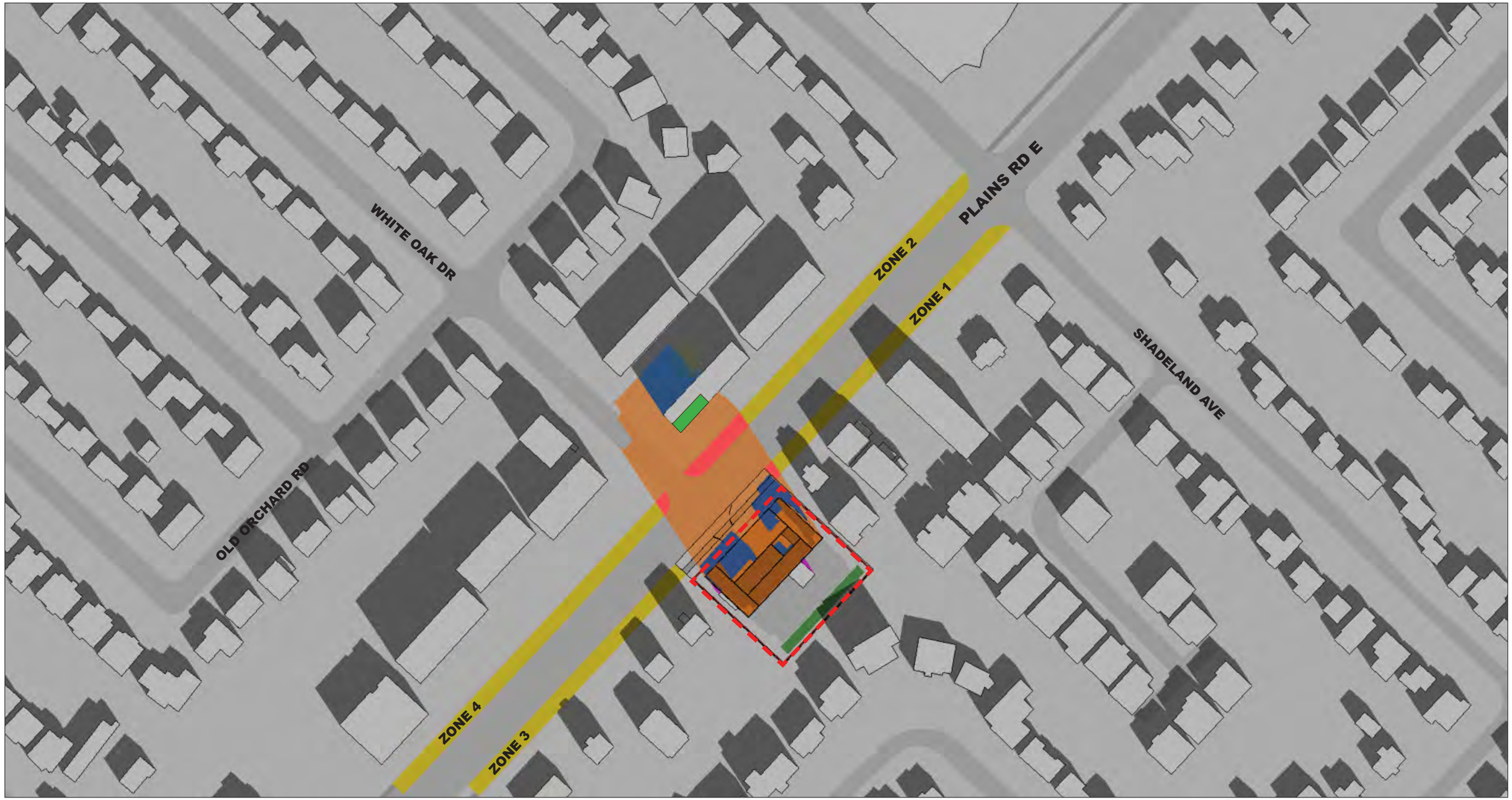
Shadow Study
Burlington, On

December 21
9:00 am

December 11 2025

D4055

The Office for Architecture & Urban Design
416 560 5910
jason@oaud.ca



Existing Shadow | Site Shadow | Existing Overlap Shadow | Roof Shadow | Existing Site Shadow | Site Massing | Shadow On Sidewalk and Amenity | Sidewalk | Amenity | Site Boundary

Scale
0m 50m 100m

Plains Lake
198, 200 & 206 Plains Rd. E

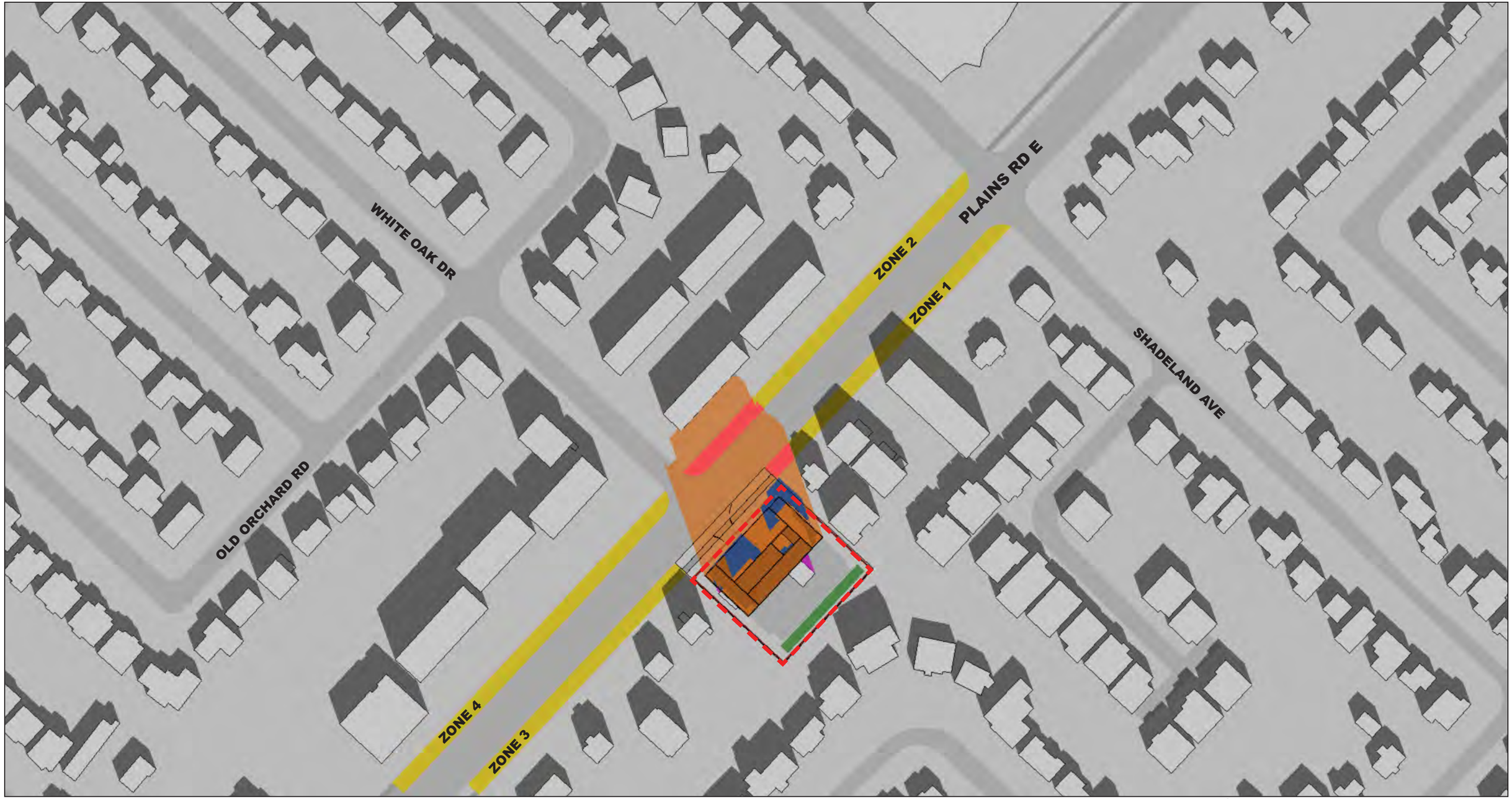
Shadow Study
Burlington, On

December 21
10:00 am

December 11 2025

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Plains Lake
198, 200 & 206 Plains Rd. E

Shadow Study
Burlington, On

December 21
11:00 am

December 11 2025

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Plains Lake
198, 200 & 206 Plains Rd. E

Shadow Study
Burlington, On

December 21
12:00 pm

December 11 2025

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Plains Lake
198, 200 & 206 Plains Rd. E

Shadow Study
Burlington, On

December 21
1:00 pm

December 11 2025

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Plains Lake
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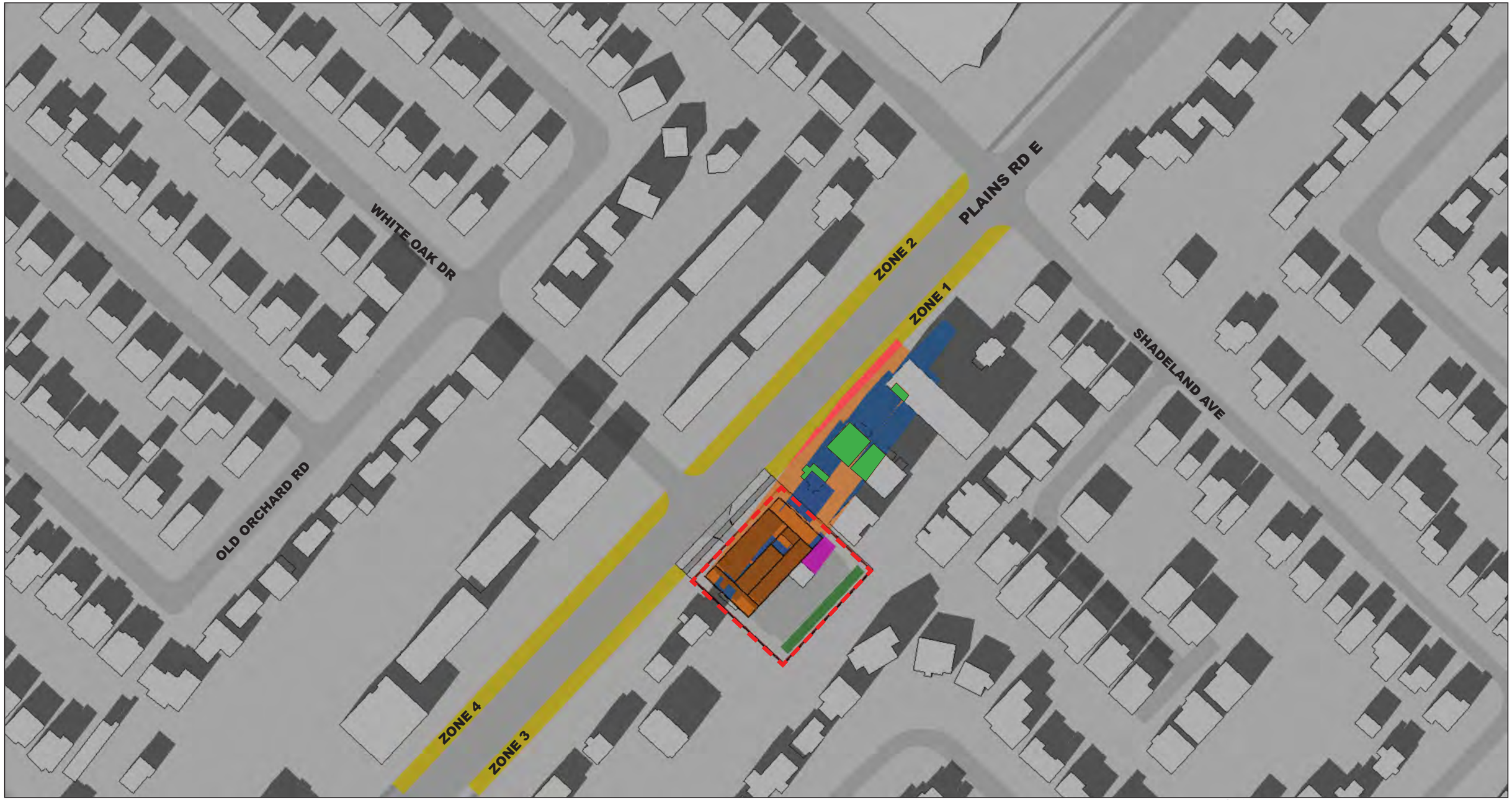
Shadow Study
Burlington, On

December 21
2:00 pm

December 11 2025

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Existing Shadow | Site Shadow | Existing Overlap Shadow | Roof Shadow | Existing Site Shadow | Site Massing | Shadow On Sidewalk and Amenity | Sidewalk | Amenity | Site Boundary

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0m 50m 100m

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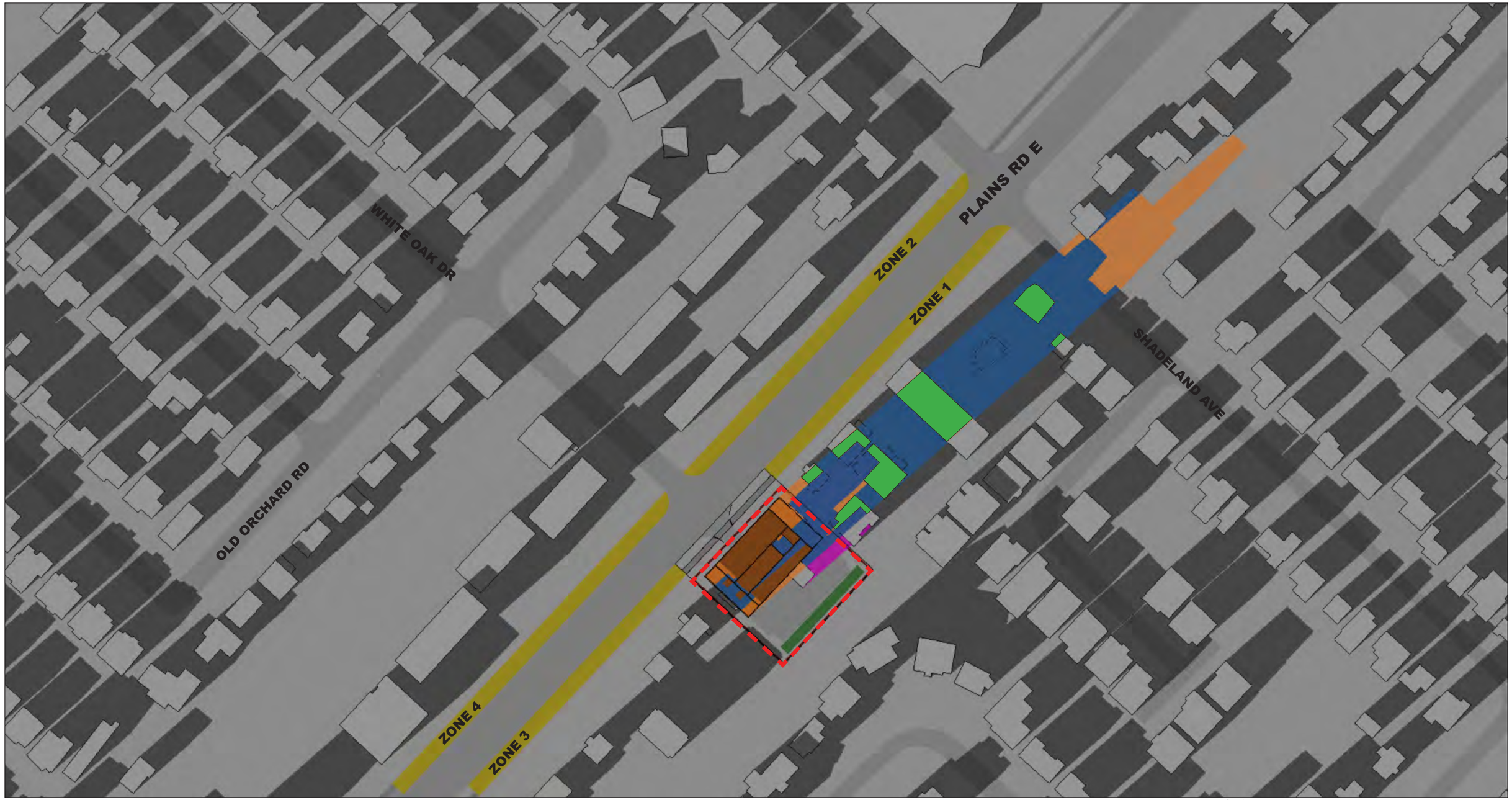
Shadow Study
Burlington, On

December 21
3:00 pm

December 11 2025

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198, 200 & 206 Plains Rd. E

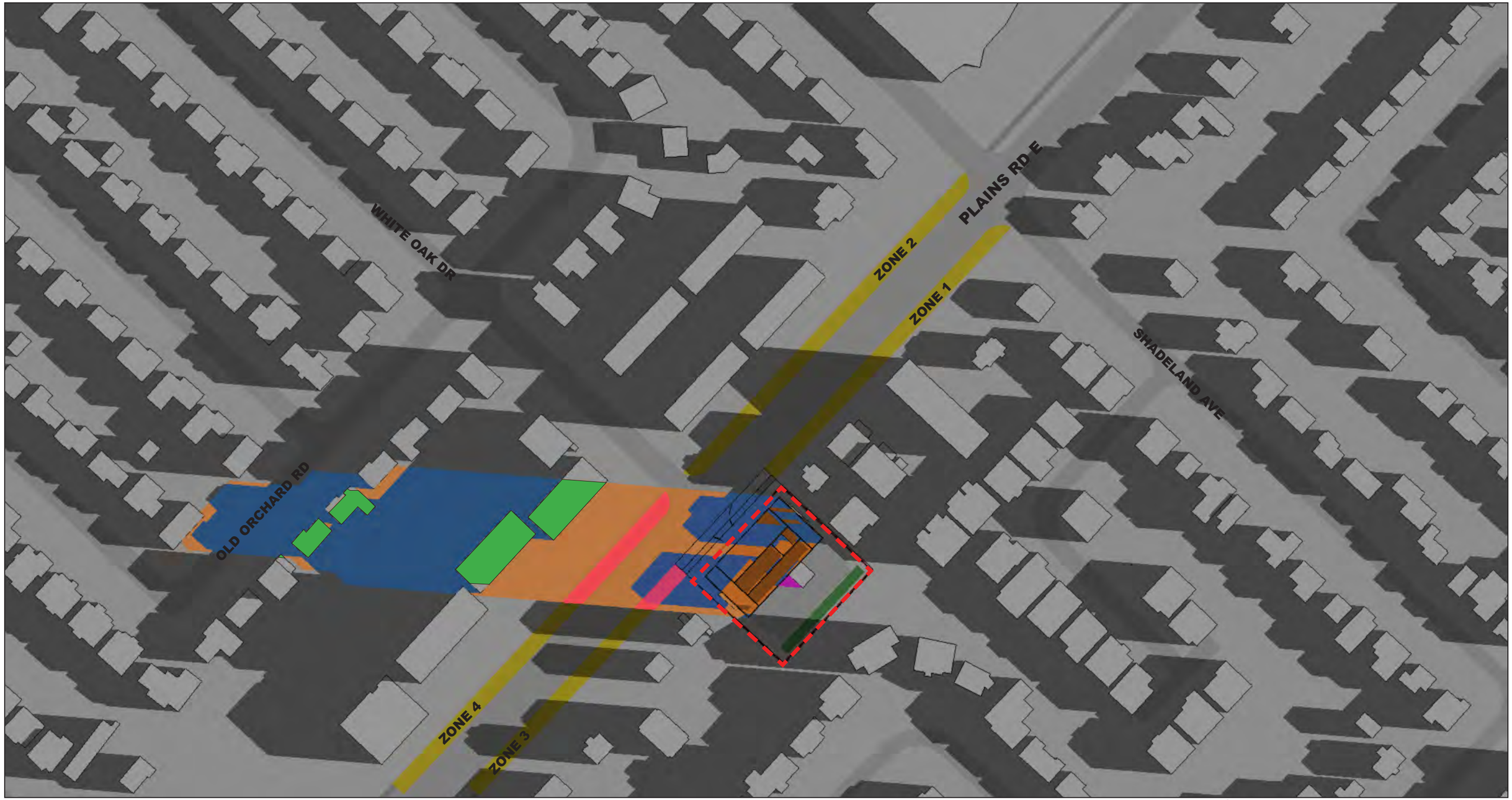
Shadow Study
Burlington, On

December 21
4:00 pm

December 11 2025

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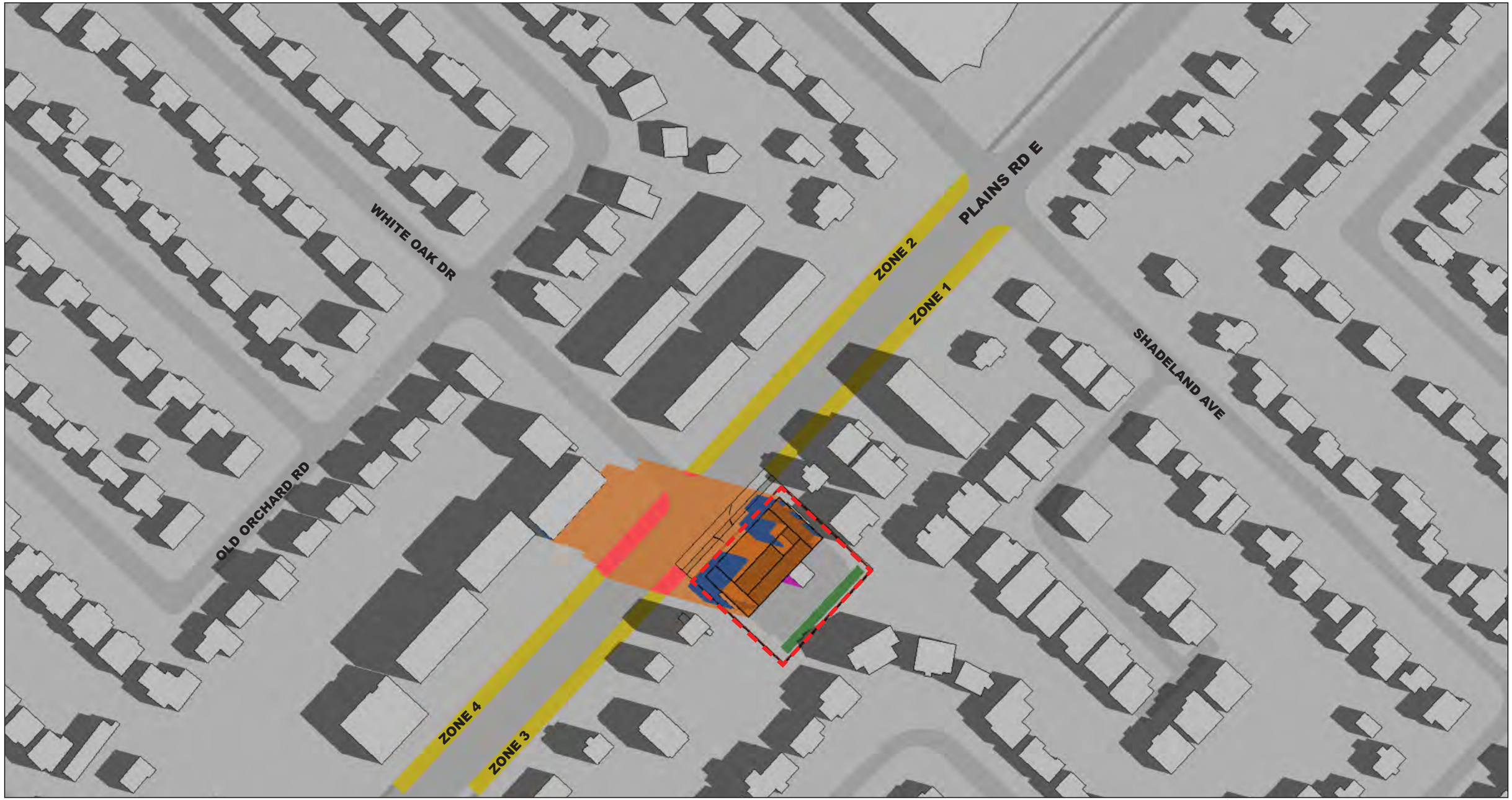
Shadow Study
Burlington, On

March 21
08:00 am

November 18 2025

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Plains Lake
198, 200 & 206 Plains Rd. E

Shadow Study
Burlington, On

March 21
09:00 am

November 18 2025

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Existing Shadow | Site Shadow | Existing Overlap Shadow | Roof Shadow | Existing Site Shadow | Site Massing | Shadow On Sidewalk and Amenity | Sidewalk | Amenity | Site Boundary

Scale
0m 50m 100m

Plains Lake
198, 200 & 206 Plains Rd. E

Shadow Study
Burlington, On

March 21
10:00 am

November 18 2025

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Existing Shadow | Site Shadow | Existing Overlap Shadow | Roof Shadow | Existing Site Shadow | Site Massing | Shadow On Sidewalk and Amenity | Sidewalk | Amenity | Site Boundary

Scale
0m 50m 100m

Plains Lake
198, 200 & 206 Plains Rd. E

Shadow Study
Burlington, On

March 21
11:00 am

November 18 2025

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Scale
0m 50m 100m

Plains Lake
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Shadow Study
Burlington, On

March 21
12:00 pm

November 18 2025

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Existing Shadow | Site Shadow | Existing Overlap Shadow | Roof Shadow | Existing Site Shadow | Site Massing | Shadow On Sidewalk and Amenity | Sidewalk | Amenity | Site Boundary

Scale
0m 50m 100m

Plains Lake
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Shadow Study
Burlington, On

March 21
1:00 pm

November 18 2025

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Scale 0m 50m 100m

Plains Lake
198, 200 & 206 Plains Rd. E

Shadow Study
Burlington, On

March 21
2:00 pm

November 18 2025

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Plains Lake
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Shadow Study
Burlington, On

March 21
3:00 pm

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Burlington, On

March 21
4:00 pm

November 18 2025

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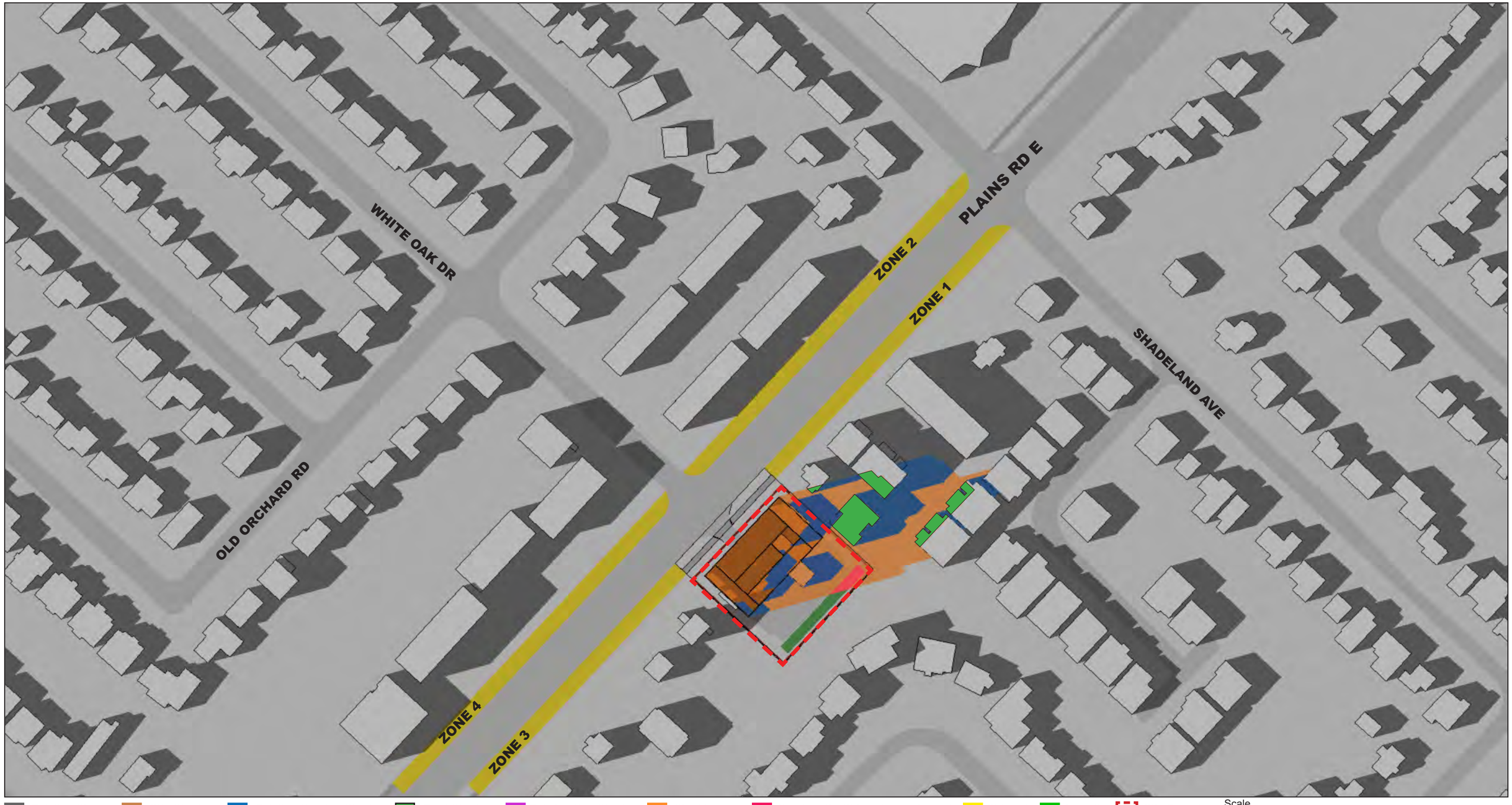
Shadow Study
Burlington, On

March 21
5:00 pm

November 18 2025

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Plains Lake
198, 200 & 206 Plains Rd. E

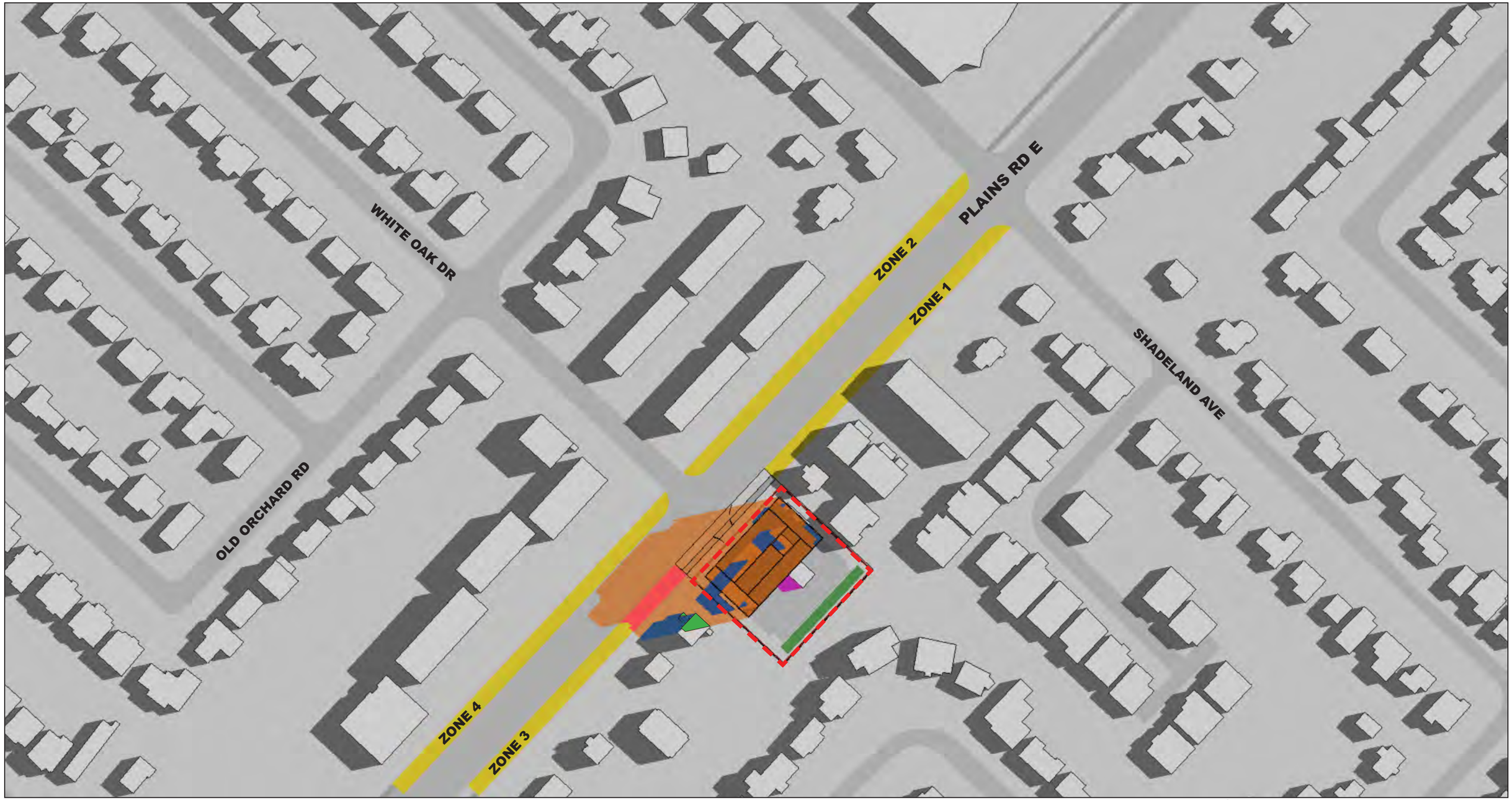
Shadow Study
Burlington, On

March 21
6:00 pm

November 18 2025

D4055

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Existing Shadow | Site Shadow | Existing Overlap Shadow | Roof Shadow | Existing Site Shadow | Site Massing | Shadow On Sidewalk and Amenity | Sidewalk | Amenity | Site Boundary

Scale
0m 50m 100m

Plains Lake
198, 200 & 206 Plains Rd. E

Shadow Study
Burlington, On

June 21
08:00 am

November 18 2025

D4055

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416 560 5910
jason@oaud.ca



Existing Shadow | Site Shadow | Existing Overlap Shadow | Roof Shadow | Existing Site Shadow | Site Massing | Shadow On Sidewalk and Amenity | Sidewalk | Amenity | Site Boundary

Scale 0m 50m 100m

Plains Lake
198, 200 & 206 Plains Rd. E

Shadow Study
Burlington, On

June 21
09:00 am

November 18 2025

D4055

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Plains Lake
198, 200 & 206 Plains Rd. E

Shadow Study
Burlington, On

June 21
10:00 am

November 18 2025

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0m 50m 100m

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198, 200 & 206 Plains Rd. E

Shadow Study
Burlington, On

June 21
11:00 am

November 18 2025

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Scale
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Plains Lake
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Shadow Study
Burlington, On

June 21
12:00 pm

November 18 2025

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Scale
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Plains Lake
198, 200 & 206 Plains Rd. E

Shadow Study
Burlington, On

June 21
1:00 pm

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Plains Lake
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Shadow Study
Burlington, On

June 21
2:00 pm

November 18 2025

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Shadow Study
Burlington, On

June 21
3:00 pm

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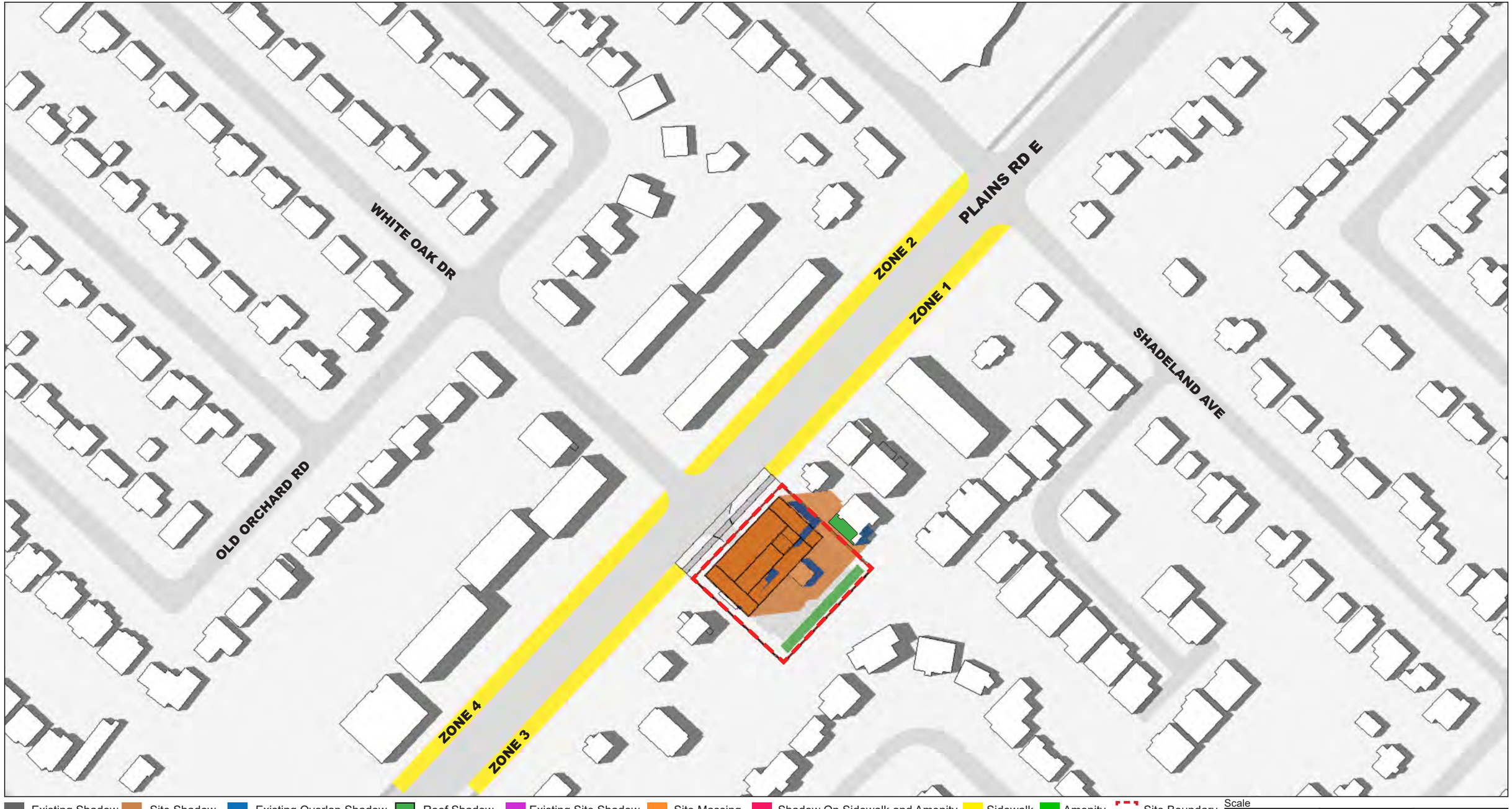
Shadow Study
Burlington, On

June 21
4:00 pm

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Shadow Study
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June 21
5:00 pm

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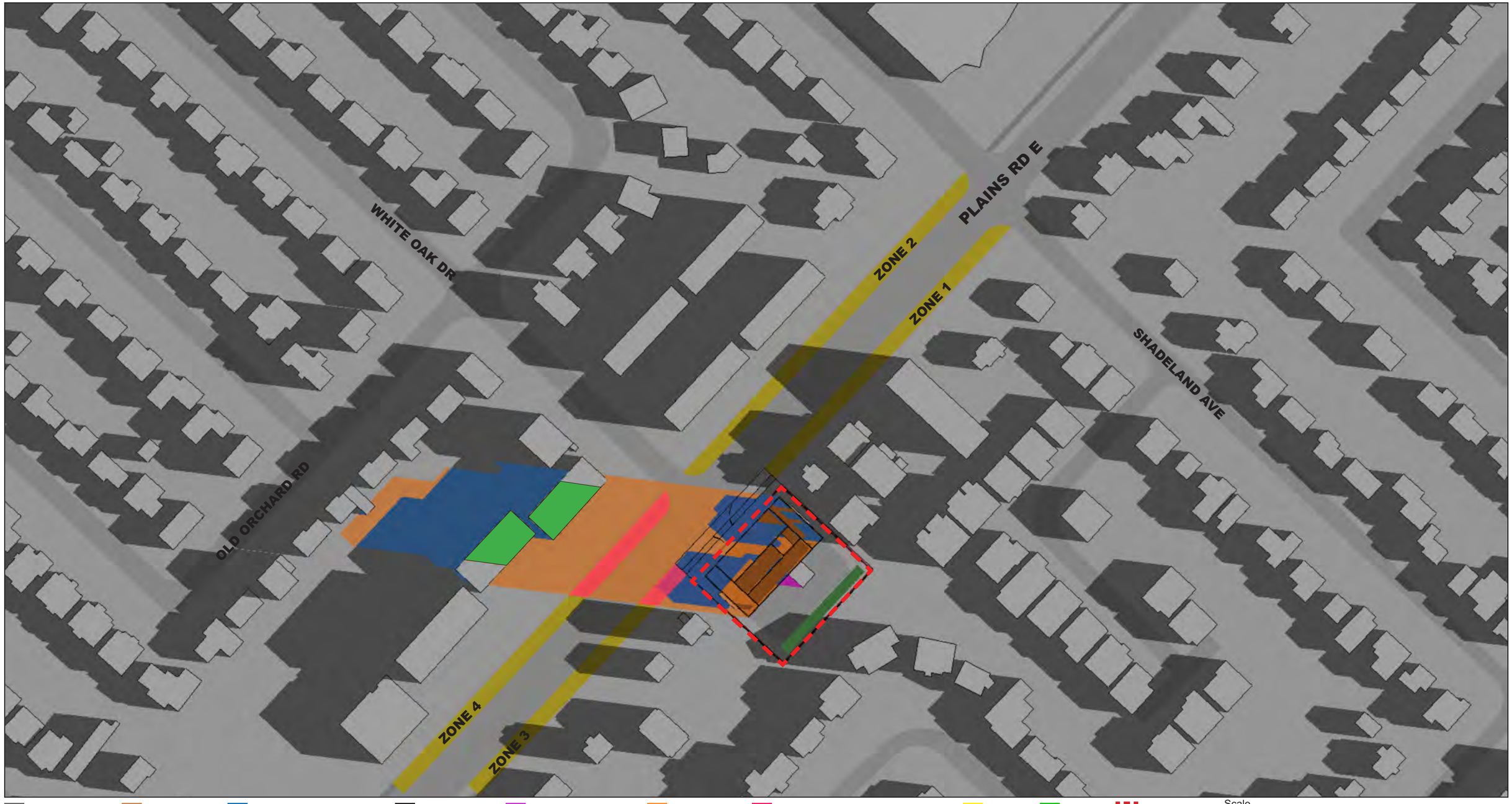
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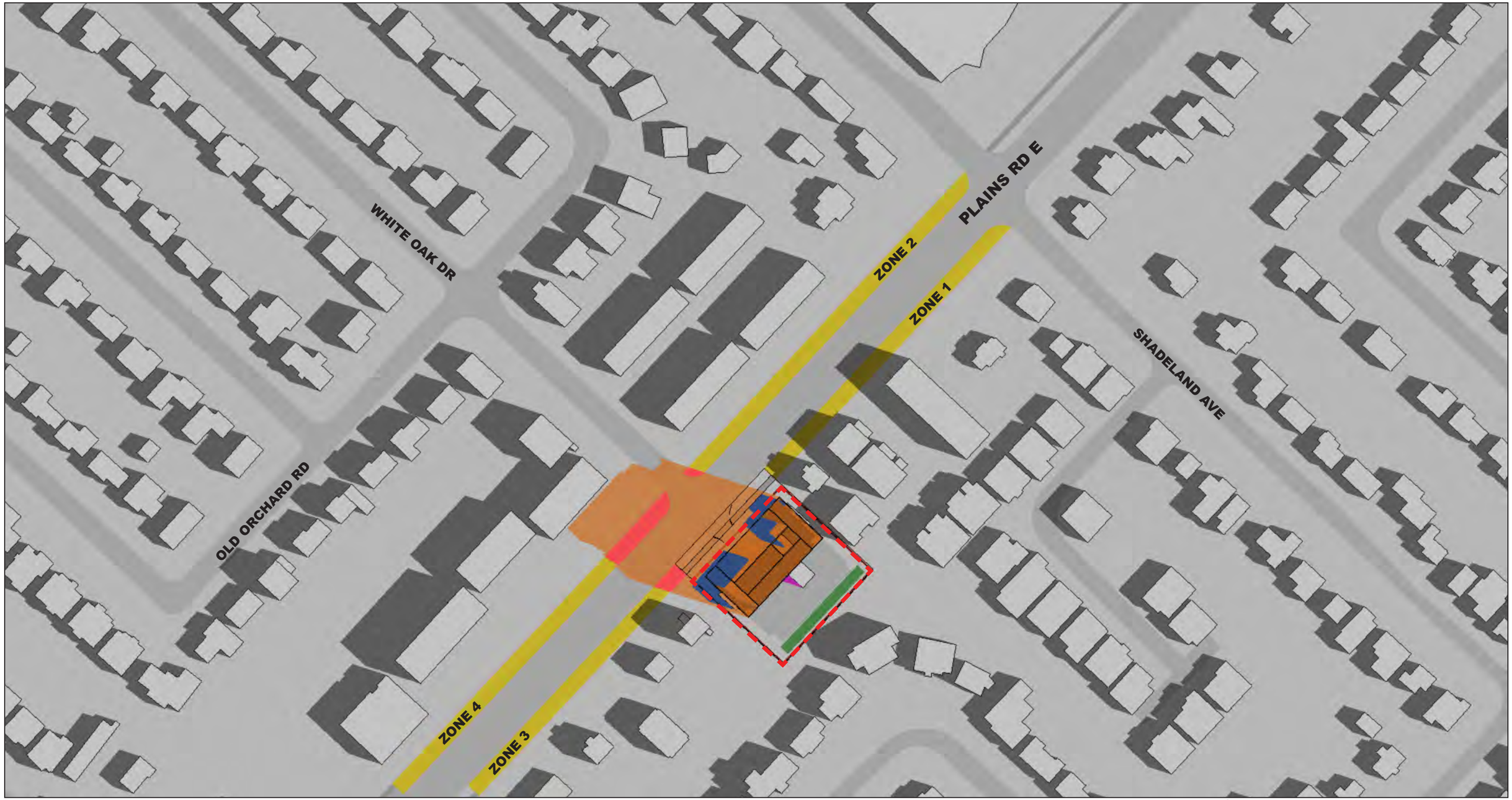
Shadow Study
Burlington, On

September 21
08:00 am

November 18 2025

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Existing Shadow | Site Shadow | Existing Overlap Shadow | Roof Shadow | Existing Site Shadow | Site Massing | Shadow On Sidewalk and Amenity | Sidewalk | Amenity | Site Boundary

Scale
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Plains Lake
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Shadow Study
Burlington, On

September 21
09:00 am

November 18 2025

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Plains Lake
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Shadow Study
Burlington, On

September 21
10:00 am

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Plains Lake
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Shadow Study
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12:00 pm

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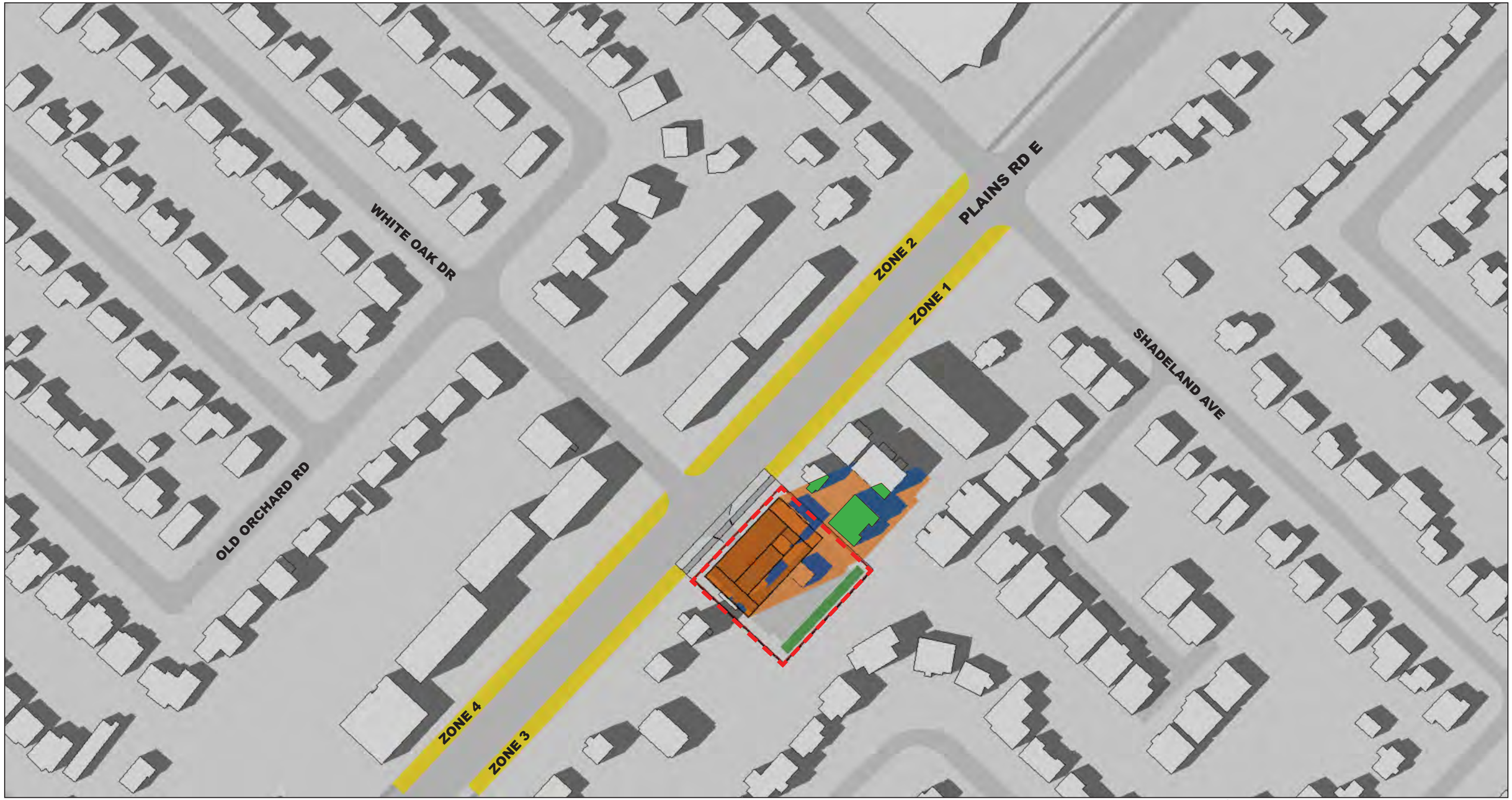
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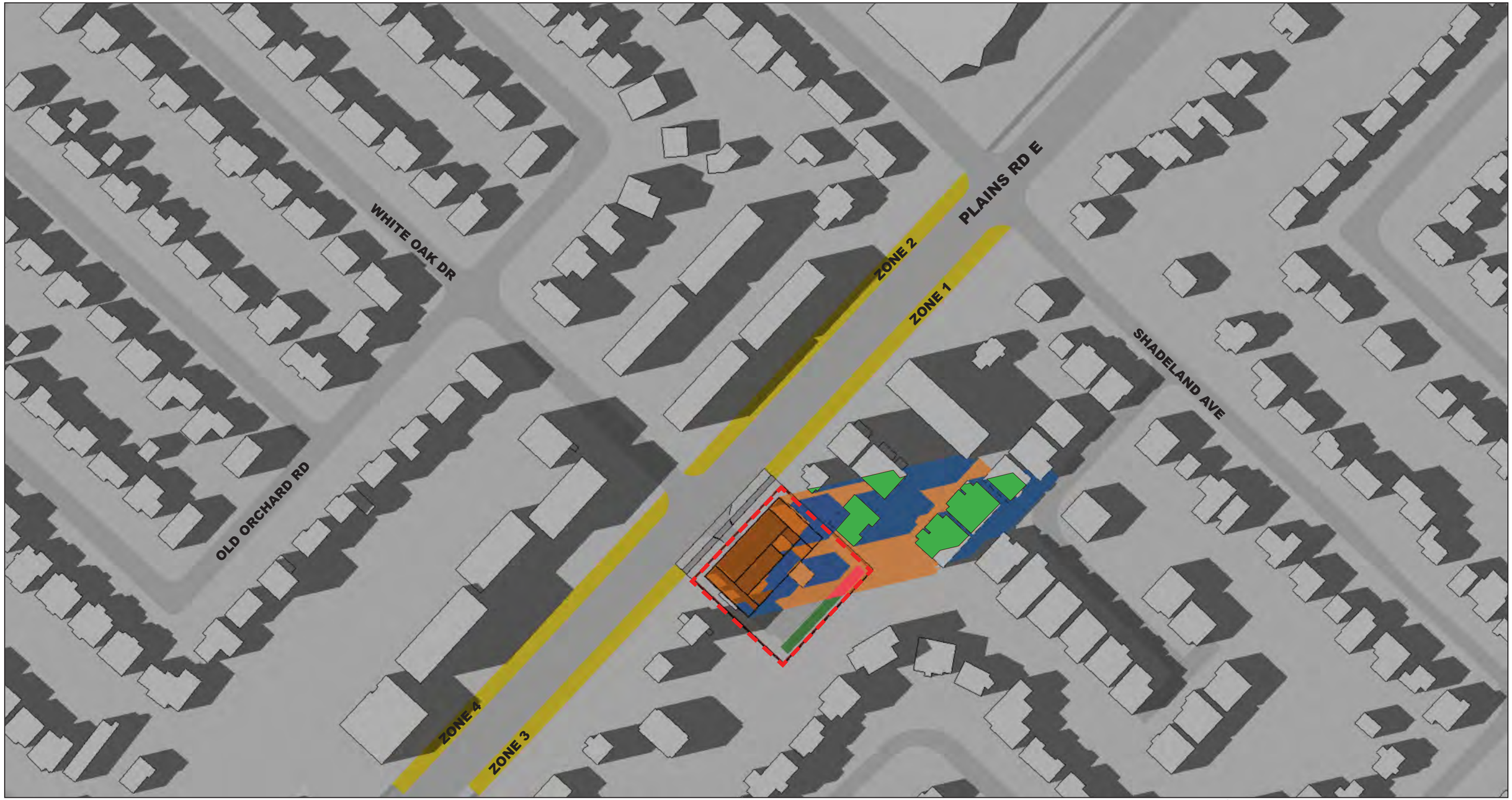
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