



 BOUSFIELDS INC.

Shadow Study

1489 Hurontario Street
City of Mississauga

The Milani Group

August 2024



Job Number
20251

www.bousfields.ca

Urban Planning
Urban Design
Community Engagement

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Introduction and Purpose

The following shadow study has been prepared by Bousfields Inc., on behalf of the Milani Group, in support of an application to amend the City of Mississauga Official Plan and Zoning By-law No. 0225-2007, as amended, for a 0.16 hectare parcel of land that is municipally known as 1489 Hurontario Street (the "subject site").

This shadow study demonstrates the general shadow impacts for the proposed 3-storey (11.9m) townhouses on the subject site. The shadow study is based on the requirements set out in *Mississauga's Urban Design Terms of Reference – Standards for Shadow Studies July 2024*.

1.1 Site Latitude and Longitude

The subject site's geographical location was taken from OpenStreetMap. The site's coordinates are as follows:

- Latitude: 43° 33' 54.072" N
- Longitude: 79° 35' 39.948" W

Astronomic north was determined by geolocating the 3D model in SketchUp based on OpenStreetMap. The 3D model of the proposed development was prepared by Bousfields Inc., based on the architectural drawings by RN Design.

1.2 Time Zone

Eastern Time Zone (ET)

Standard Time: UTC - 5 hours - applies on December 21st

Daylight Time: UTC - 4 hours - applies on June 21st and September 21st

1.3 Software Used to Prepare Shadow Analysis

- SketchUp Pro - modelling the proposal and surrounding context
- AutoCAD / Excel – generating calculations
- Adobe Photoshop – producing final composite images

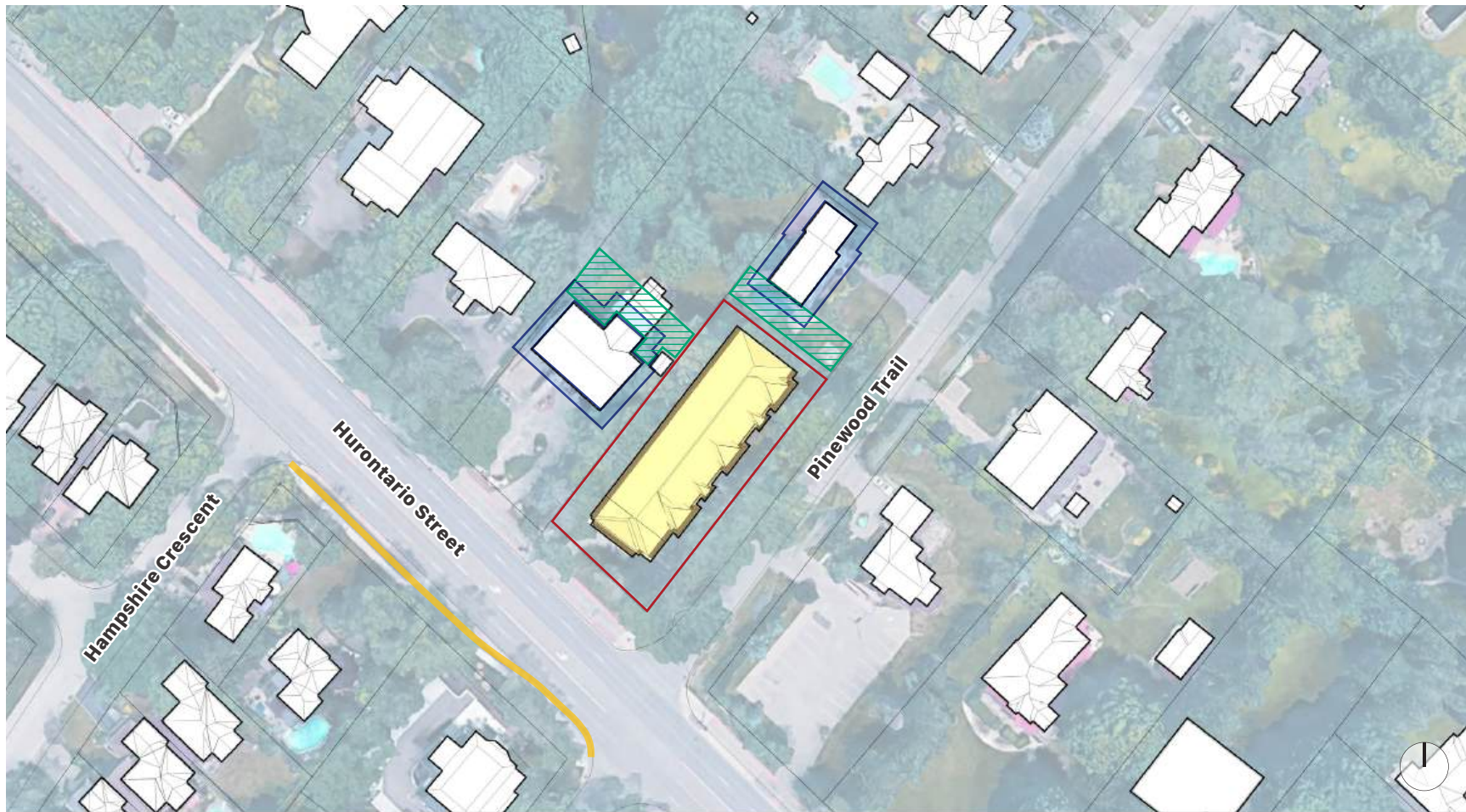
1.4 Identified Areas

As per *Mississauga's Urban Design Terms of Reference – Standards for Shadow Studies July 2024*, the study identifies potential key areas surrounding the proposal that may be impacted by shadows cast by the development. These areas include:







- Residential Private Outdoor Amenity Spaces, including private rear yards, decks, patios and pools of surrounding residential dwellings;
- Communal Outdoor Amenity Areas, including public amenity areas and common outdoor amenity areas that are part of proposed or existing development;
- Public Realm, including sidewalks, open spaces, parks and plazas;
- Turf and Flower Gardens in public parks within the public realm, and;
- Building Faces to Allow for Possible Use of Solar Energy.

Figure 1 - Key Map identifies potential areas that may be impacted by shadows cast by the proposal. (see page 2).

Figure 1 - Key Map



Legend

-  Subject Site
-  Proposed Development
-  Building Faces for Potential Solar Use ("No Impact Zone")
-  Residential Private Outdoor Amenity Spaces (7.5m from exterior wall)
-  Existing Buildings
-  Public Realm (Hurontario Street Sidewalk - South Side)

2

Shadow Analysis

2.1 Residential Private Outdoor Amenity Spaces

Section 3.1 of *Mississauga's Urban Design Terms of Reference – Standards for Shadow Studies July 2024*, states that shadow impacts cast from a proposed development should not exceed one hour in duration on areas such as private rear yards, decks, patios and pools of surrounding residential dwellings on each of the following dates: June 21st, September 21st. The criteria is met if there is shadow impact for no more than two consecutive hourly test times within the space between the exterior wall of the dwelling that abuts the amenity space and the line of impact assessment ("No Impact Zone").

Assessment:

There is shadow impact for more than two consecutive hours on June 21st and September 21st on residential private amenity spaces associated with 1495 Hurontario Street and 29 Pinewood Trail.

In our opinion, this is an acceptable level of impact given that the shadow impact occurs on the shoulder season (September 21st) where, typically, these residential amenity areas are less utilized during daylight hours.

During the peak season (June 21st), the overall shadow impact on both amenity spaces are minimal. The portions of the amenity space adjacent to the southwest exterior wall of 29 Pinewood Trail experiences the most shadow impact from the proposed development. However, the overall amenity space area maintains a sun access factor of 84% on June 21st. Moreover, the proposed shadows begin to impact 29 Pinewood Trail at 3:20pm and beyond.

A majority of the shadows cast onto the amenity space of 1495 Hurontario Street are caused by the existing building on the property

itself. Additionally, shadows cast by the proposed development completely leave the amenity space around 10:20am on June 21st and 12:12pm on September 21st. We believe there is a deck on the property attached to the back facade of the building, extending around 10.0 metres into the rear yard. Our findings demonstrate that the decked area has not been impacted by shadows cast from the proposed development at any time of the day on June 21st, and on September 21st, where the shadow completely leaves the amenity area at approximately 10:12am.

2.2 Communal Outdoor Amenity Areas

Section 3.2 of *Mississauga's Urban Design Terms of Reference – Standards for Shadow Studies July 2024*, states that shadows from proposed developments should allow for full sun on areas such as children's play areas, school yards, tot lots, park features (such as sandboxes and wading pools) and outdoor amenity areas used by seniors and those associated with commercial and employment areas for at least half the time - or 50% sun coverage all the time - on June 21st, September 21st, December 21st. The criteria is met if the "sun access factor" is at least 50% or 0.5 on each of the test dates ($As(ave)/AT = 0.5$ or more). This criterion also applies to public amenity areas and common outdoor amenity areas that are part of a proposed or existing development.

Assessment:

This criteria does not apply as we have identified no communal outdoor amenity areas within the vicinity of what would be affected by the shadows cast by the proposed development.

2.3 Public Realm

Section 3.3 of *Mississauga's Urban Design Terms of Reference – Standards for Shadow Studies July 2024* requires the identification of public realm elements within the vicinity of the proposed development. Public realm elements - such as sidewalks, open spaces, parks and plazas - are identified in yellow in this shadow study.

2.3.1 Low and Medium Density Residential streets

As defined by the Terms of Reference, developments should be designed to allow for full sunlight on the opposite boulevard, including the full width of the sidewalk on September 21st, for a total of at least 4 hours between 9:12am to 11:12am and between 3:12pm to 5:12pm.

Assessment:

Criteria has been met as the proposal does not cast any incremental shadows on the opposite sidewalk along Hurontario street at any time on September 21st. There are currently no existing sidewalks along Pinewood Trail.

2.3.2 Public Open Spaces, Parks and Plazas

As defined by the Terms of Reference, shadows from proposed developments should allow for full sun on public open spaces, parks and plazas for at least half the time, or 50% sun coverage all the time. If the "sun access factor" is at least 50% or 0.5 on each of the test dates ($As(ave)/AT = 0.5$ or more), then the shadow impact is considered to be in compliance with these Terms of Reference.

Assessment:

This criteria does not apply as we have identified no public open spaces, parks and plazas within the vicinity of what would be affected by the shadows cast by the proposed development.

2.4 Turf and Flower Gardens

Section 3.4 of *Mississauga's Urban Design Terms of Reference – Standards for Shadow Studies July 2024* states that proposed development should allow for adequate sunlight during the growing season from March to October by allowing for a minimum of 6 hours of direct sunlight on September 21st.

Assessment:

This criteria does not apply as we have identified no turf and flower gardens within the vicinity of what would be affected by the shadows cast by the proposed development.

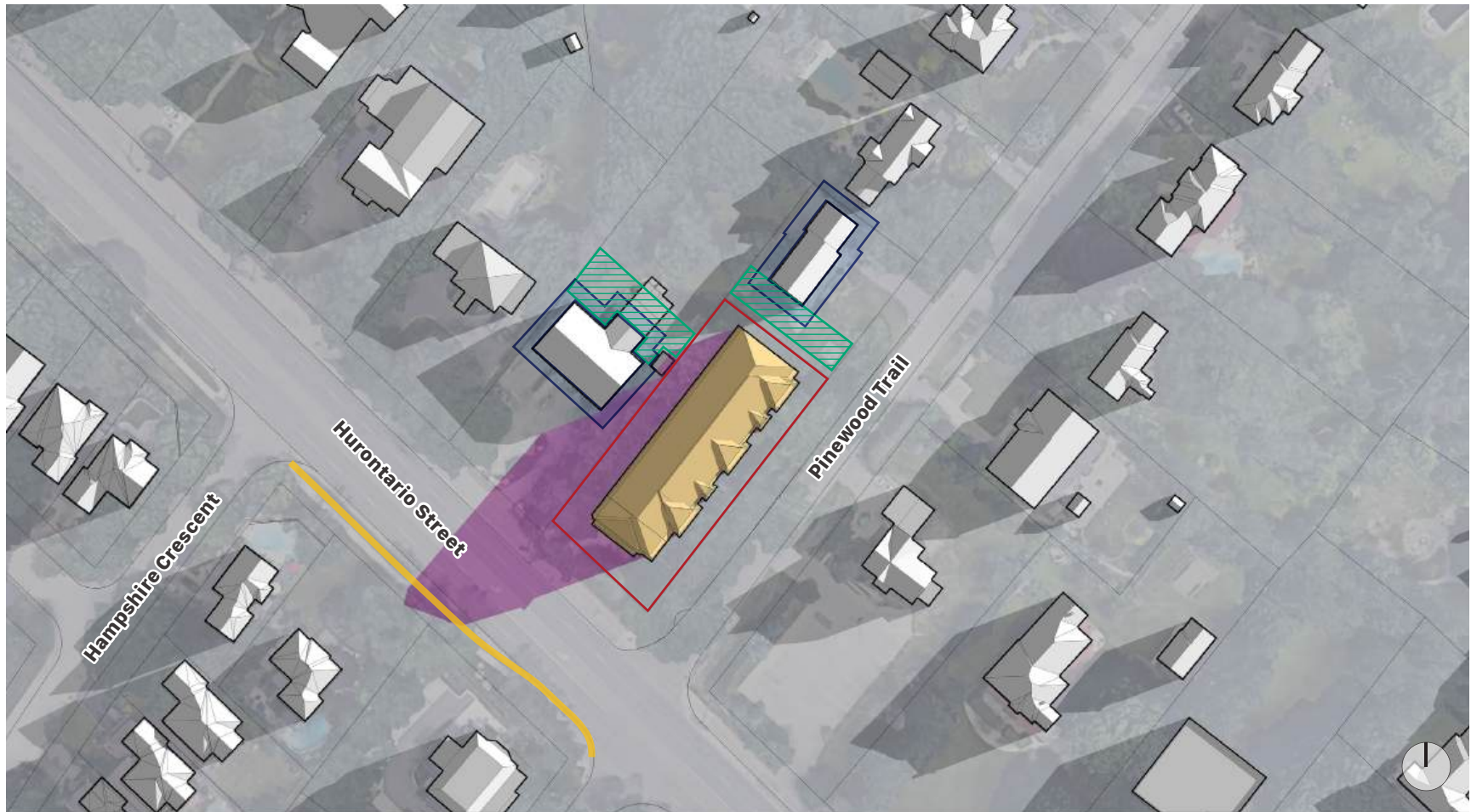
2.5 Building Faces to Allow for the Possibility of Using Solar Energy

Section 3.5 of *Mississauga's Urban Design Terms of Reference – Standards for Shadow Studies July 2024* states that shadow impacts from proposed developments should not exceed one hour in duration on roofs, front, rear and exterior side walls of adjacent low rise (one to four storeys) residential buildings on September 21st. Criteria is met if there is shadow impact for no more than two consecutive hourly test times in the "No Impact Zone" - in particular, the space between the front, rear and exterior side walls of the adjacent low rise residential buildings and the respective lines of impact assessment.

Assessment:

There is shadow impact for more than two consecutive hours on September 21st in the "No Impact Zone areas" associated with 1495 Hurontario Street and 29 Pinewood Trail. In our opinion, this is completely appropriate given that the proposal does not cast shadows on the roof of these properties, which in our opinion would be the most appropriate location for any future solar panels.

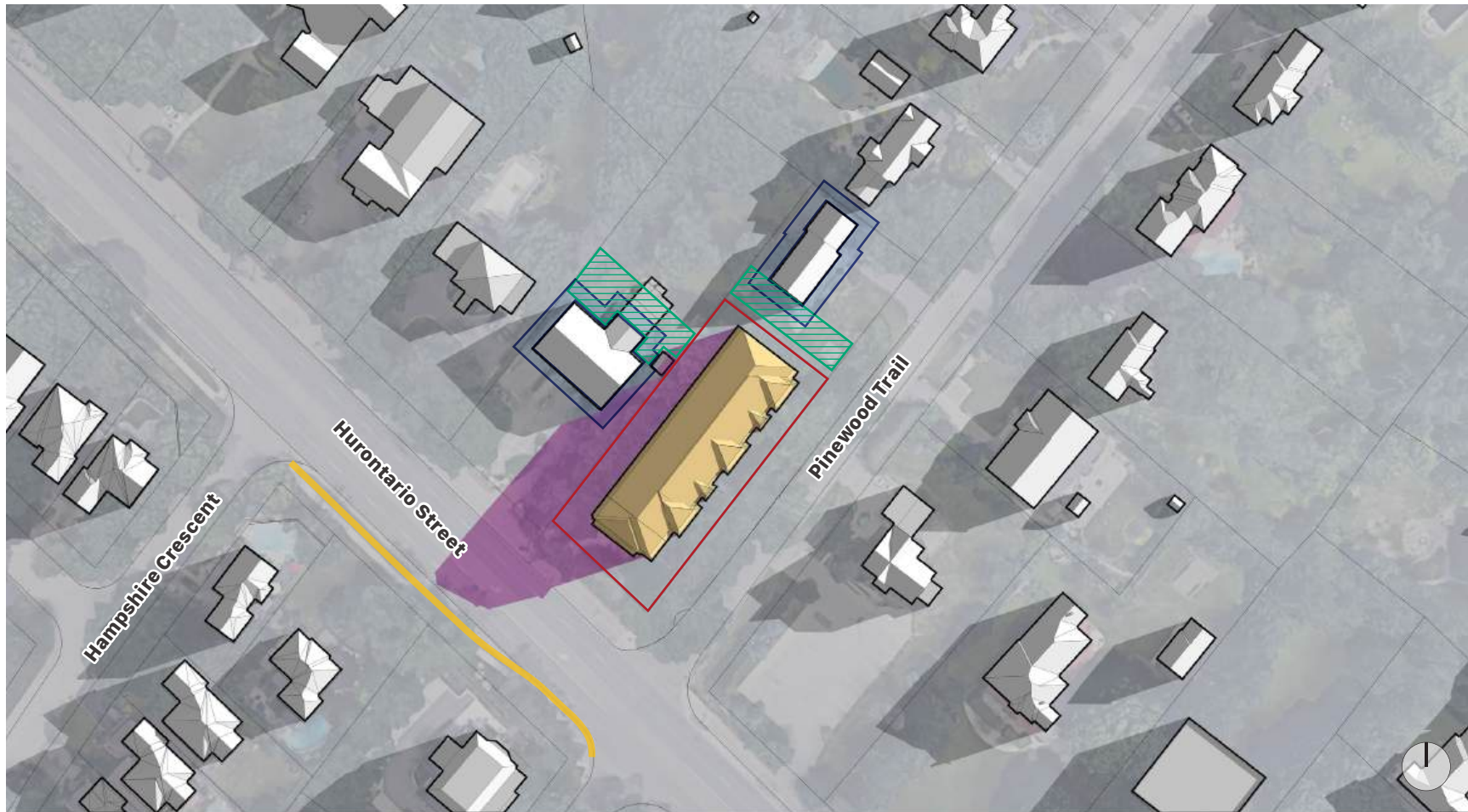
7:07am - June 21st



Legend

- Subject Site
- Proposed Development
- Shadows Cast by Proposed Development
- Residential Private Outdoor Amenity Spaces (7.5m from exterior wall)
- Shadows Cast by Existing Buildings
- Building Faces for Potential Solar Use ("No Impact Zone")
- Public Realm (Hurontario Street Sidewalk - South Side)

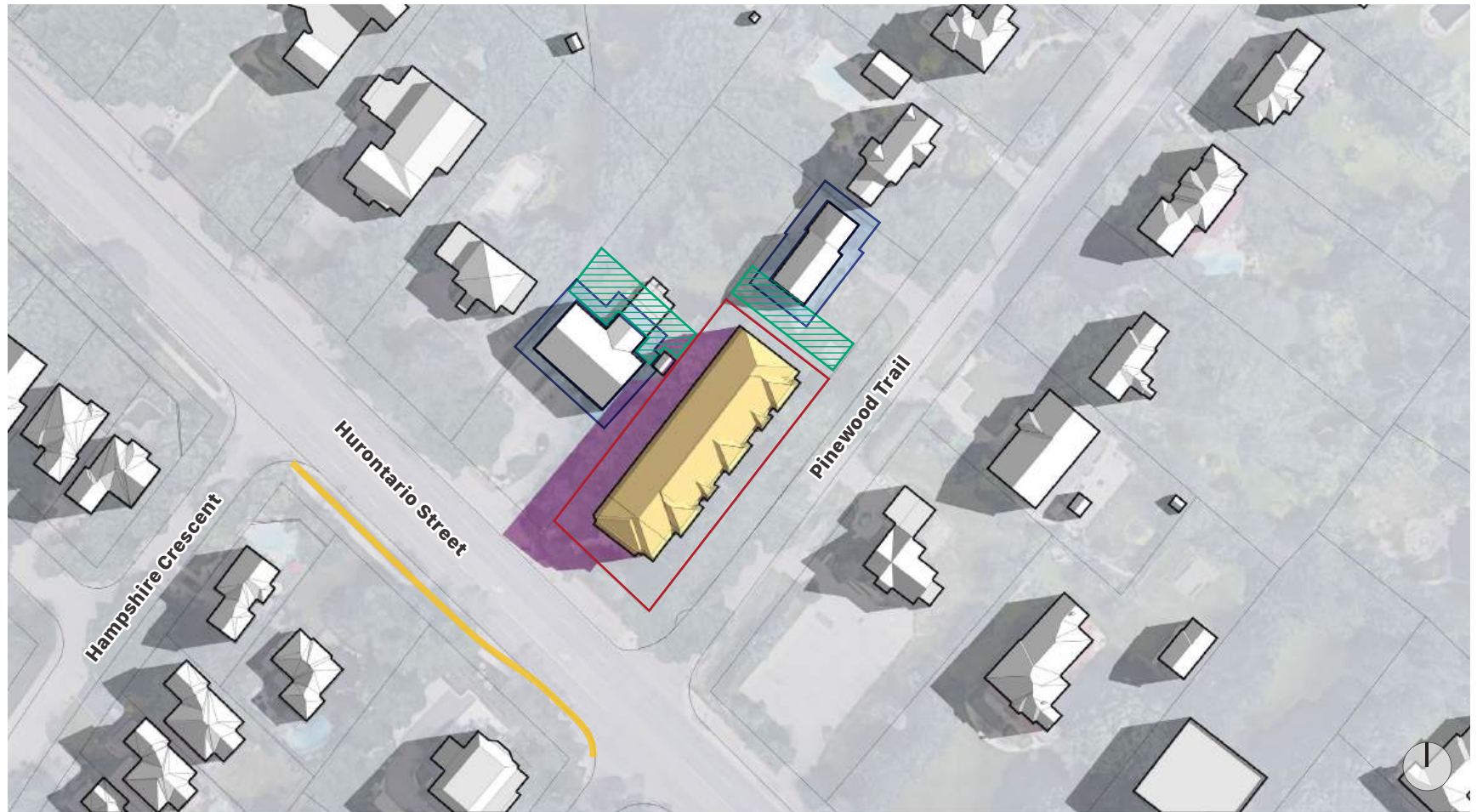
7:20am - June 21st



Legend

- Subject Site
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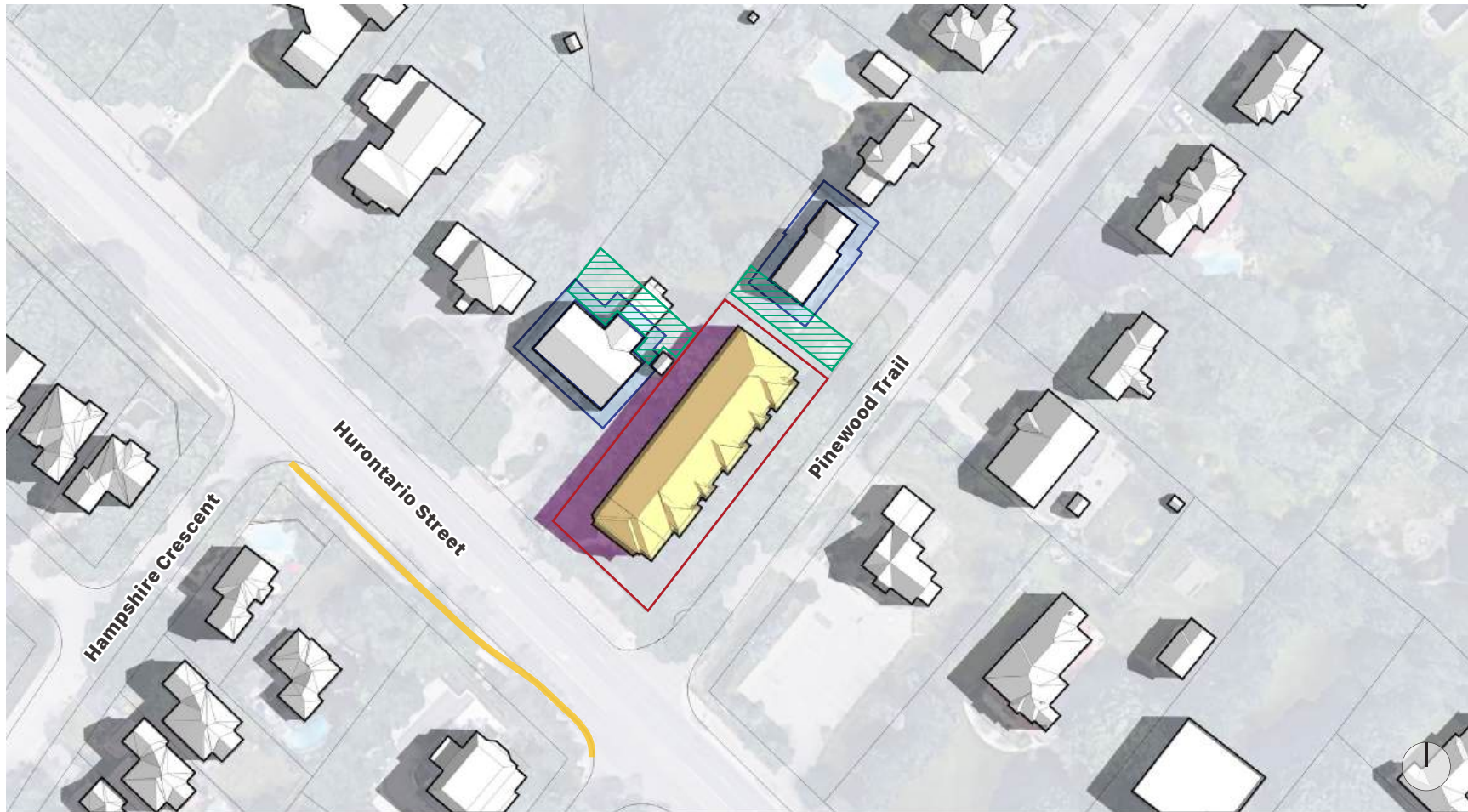
8:20am - June 21st



Legend

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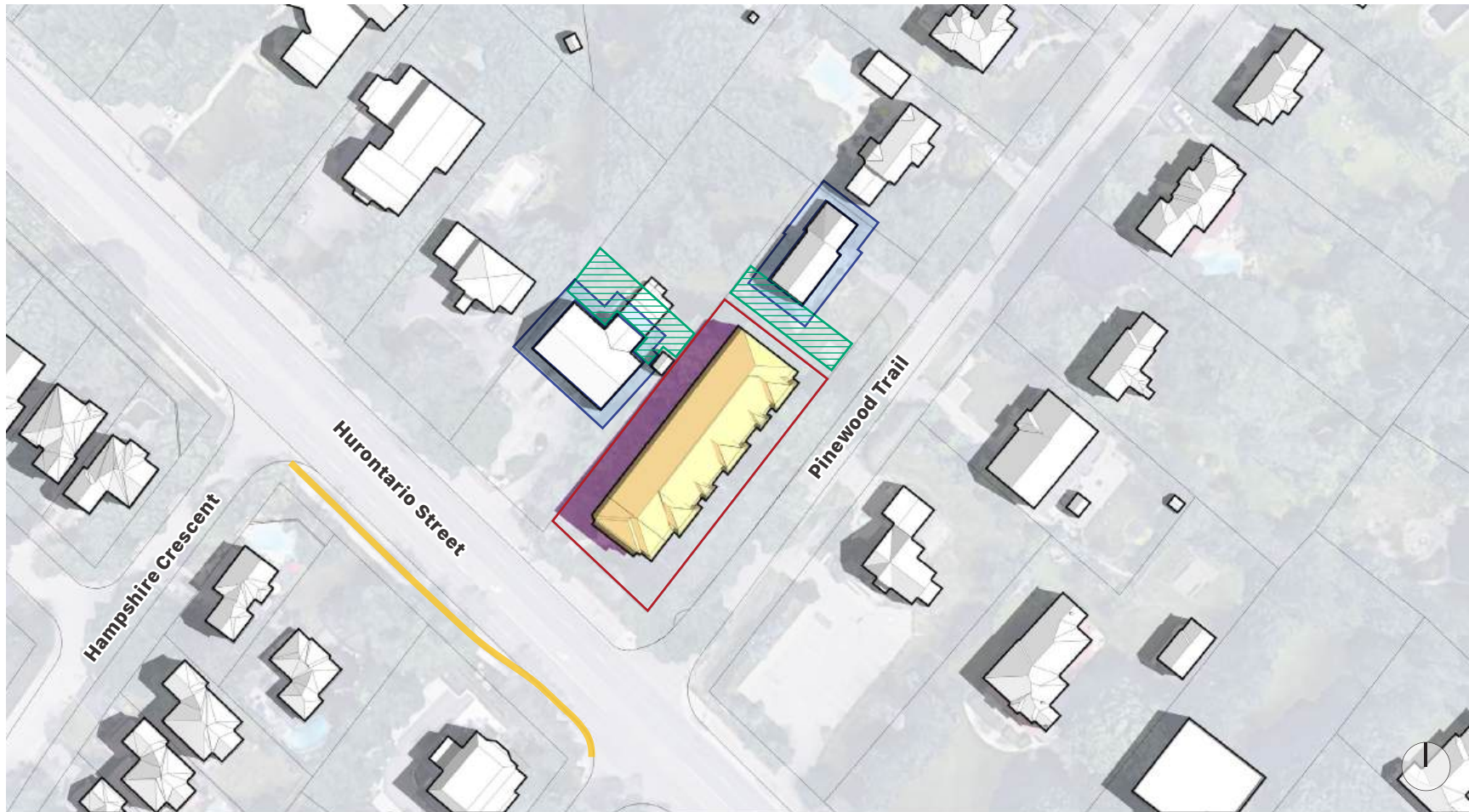
9:20am - June 21st










Legend

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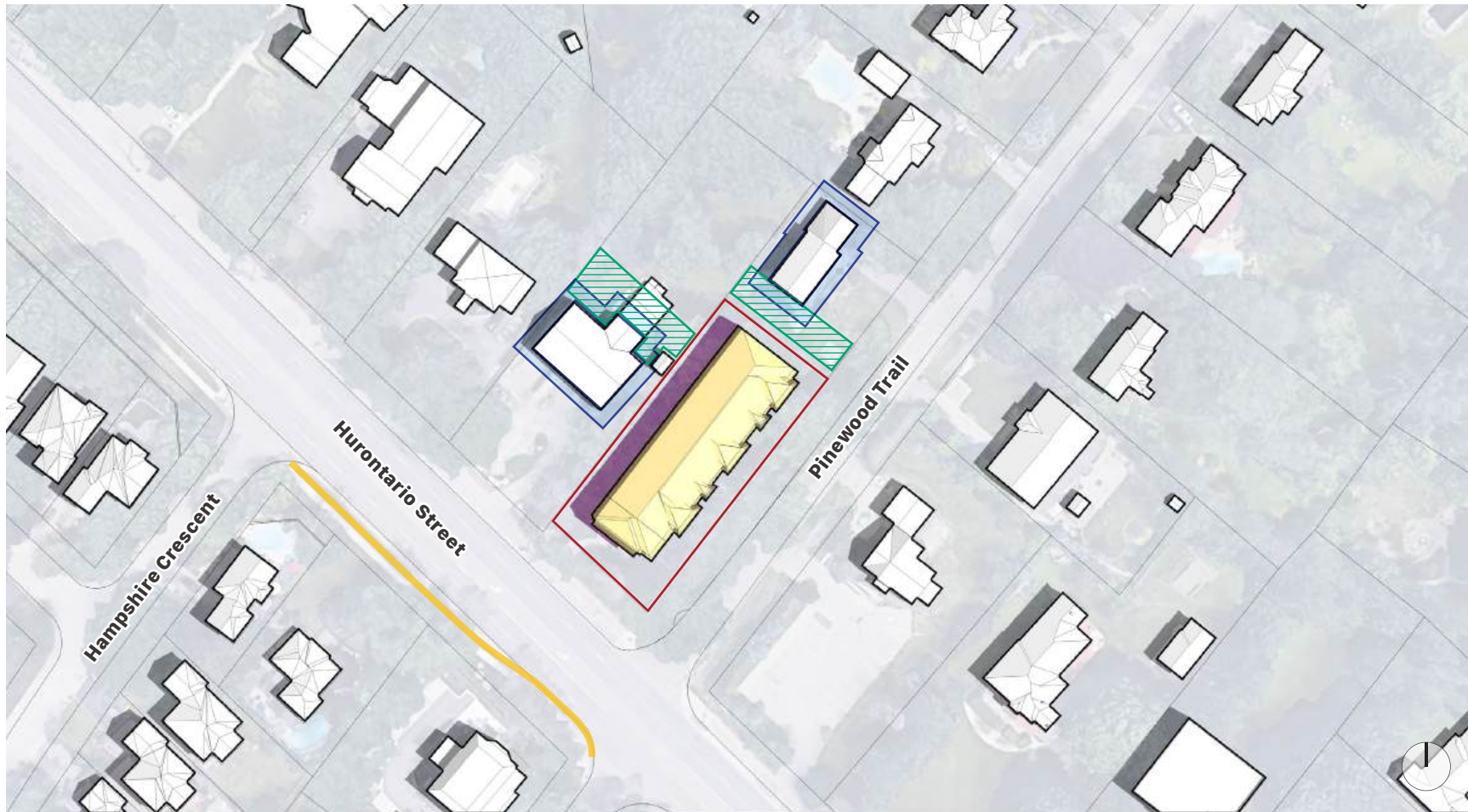
10:20am - June 21st



Legend

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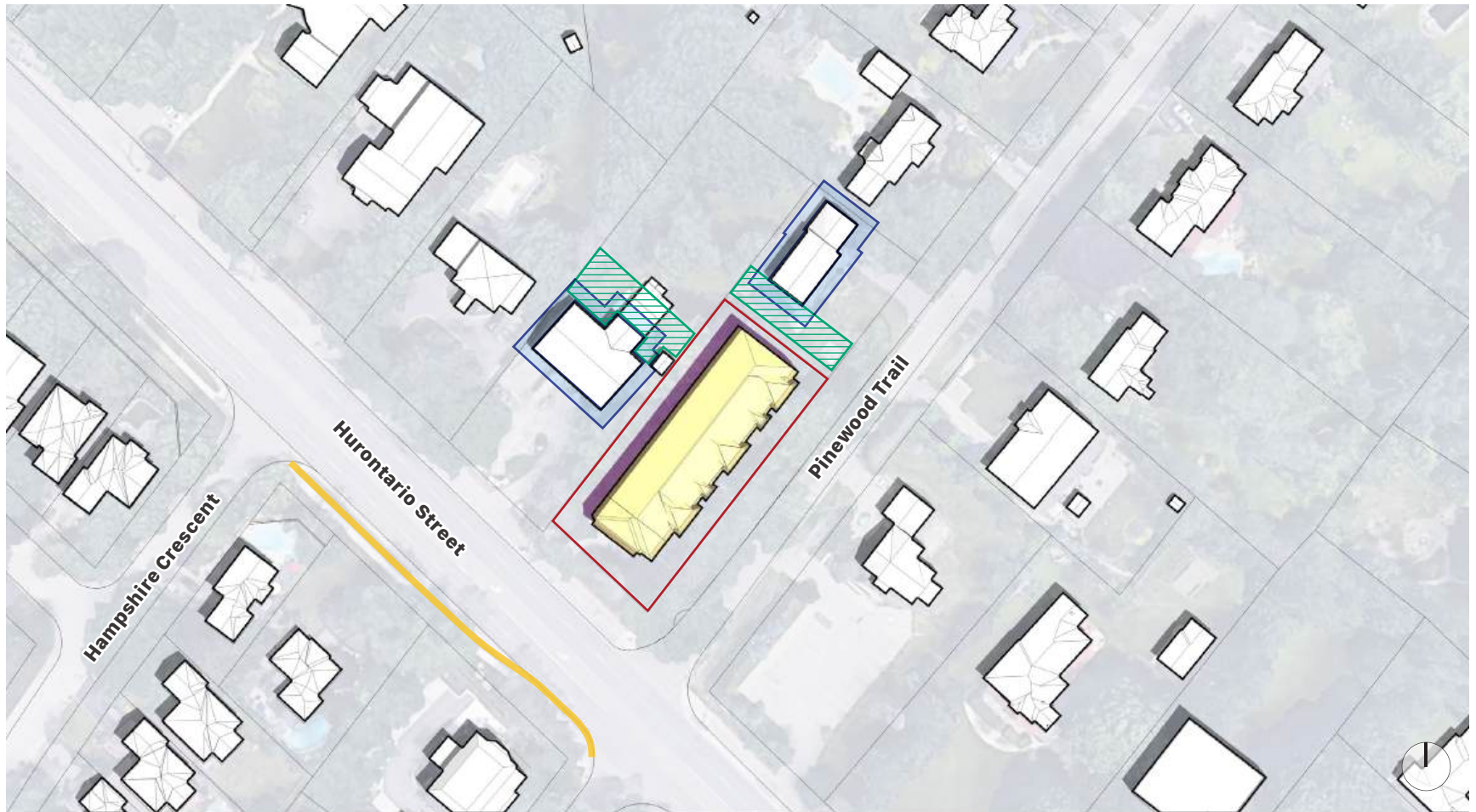
11:20am - June 21st



Legend

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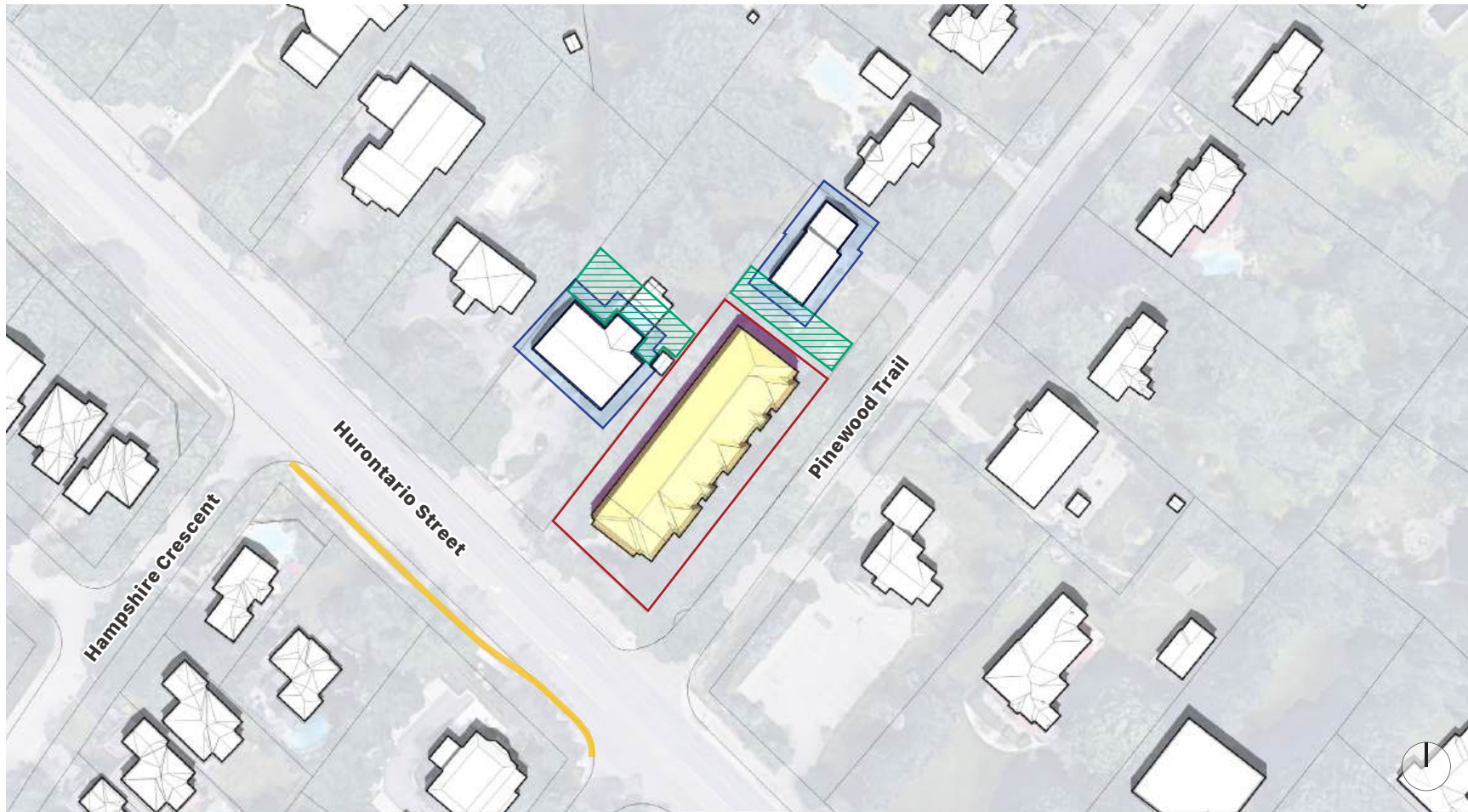
12:20pm - June 21st



Legend

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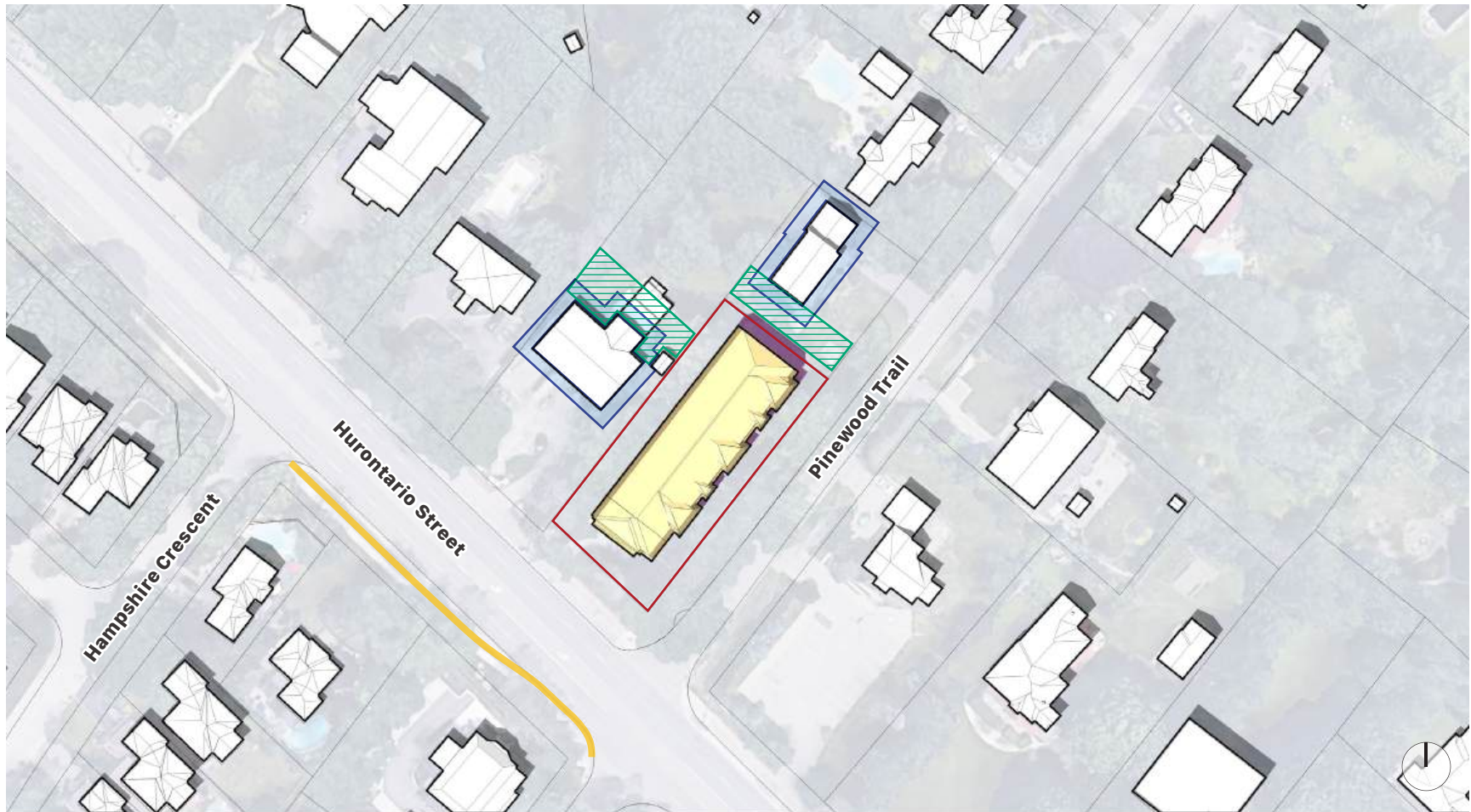
1:20pm - June 21st



Legend

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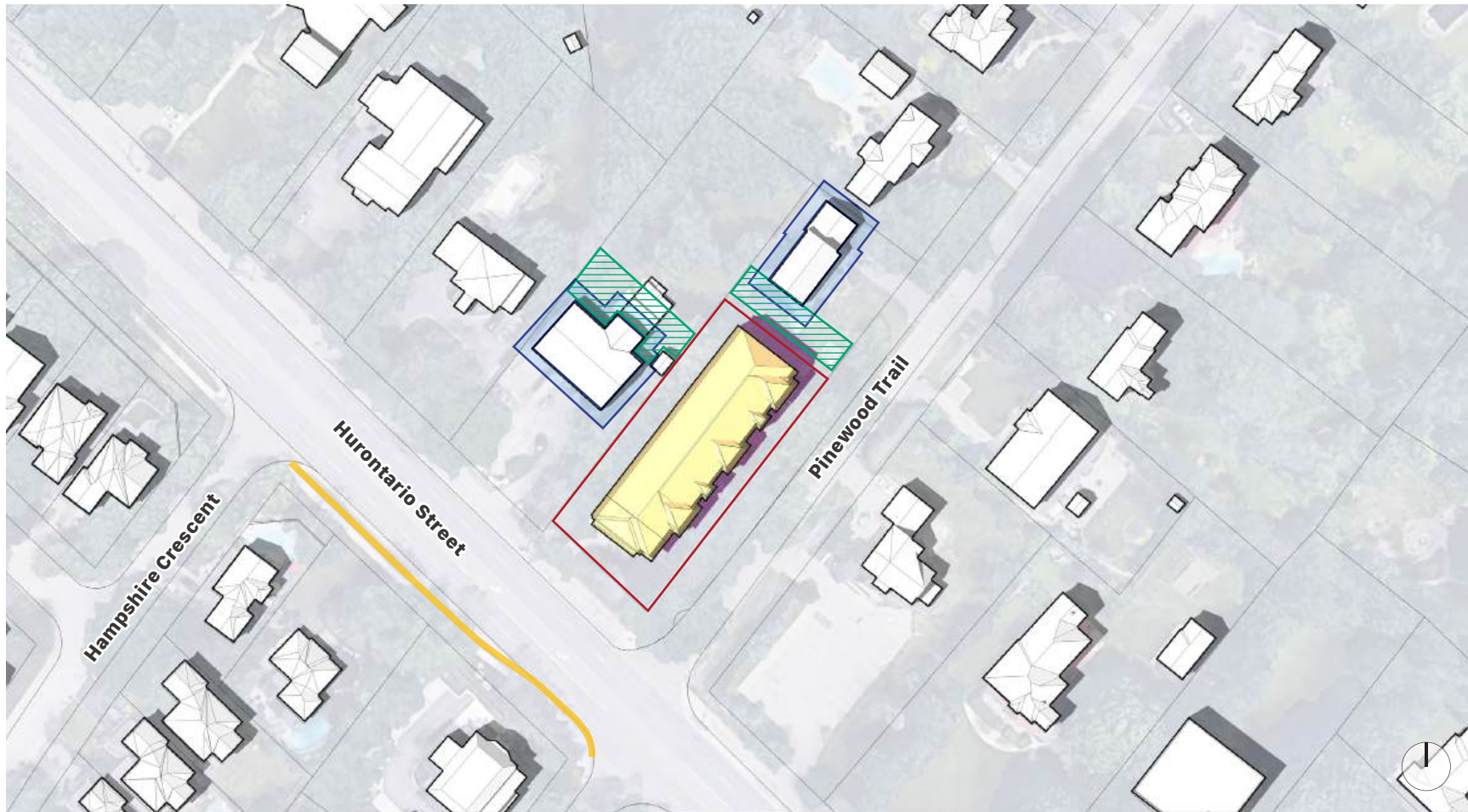
2:20pm - June 21st



Legend

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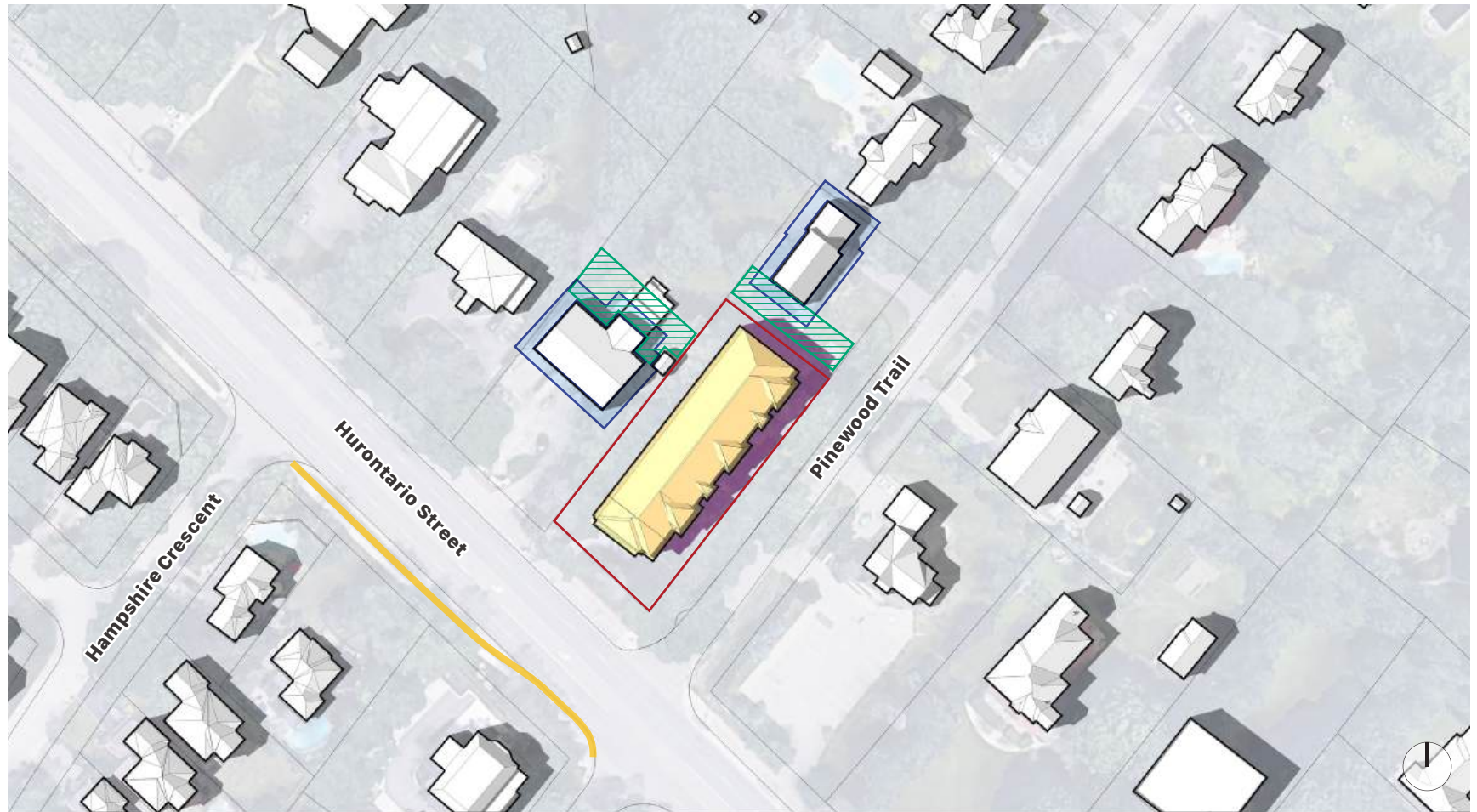
3:20pm - June 21st










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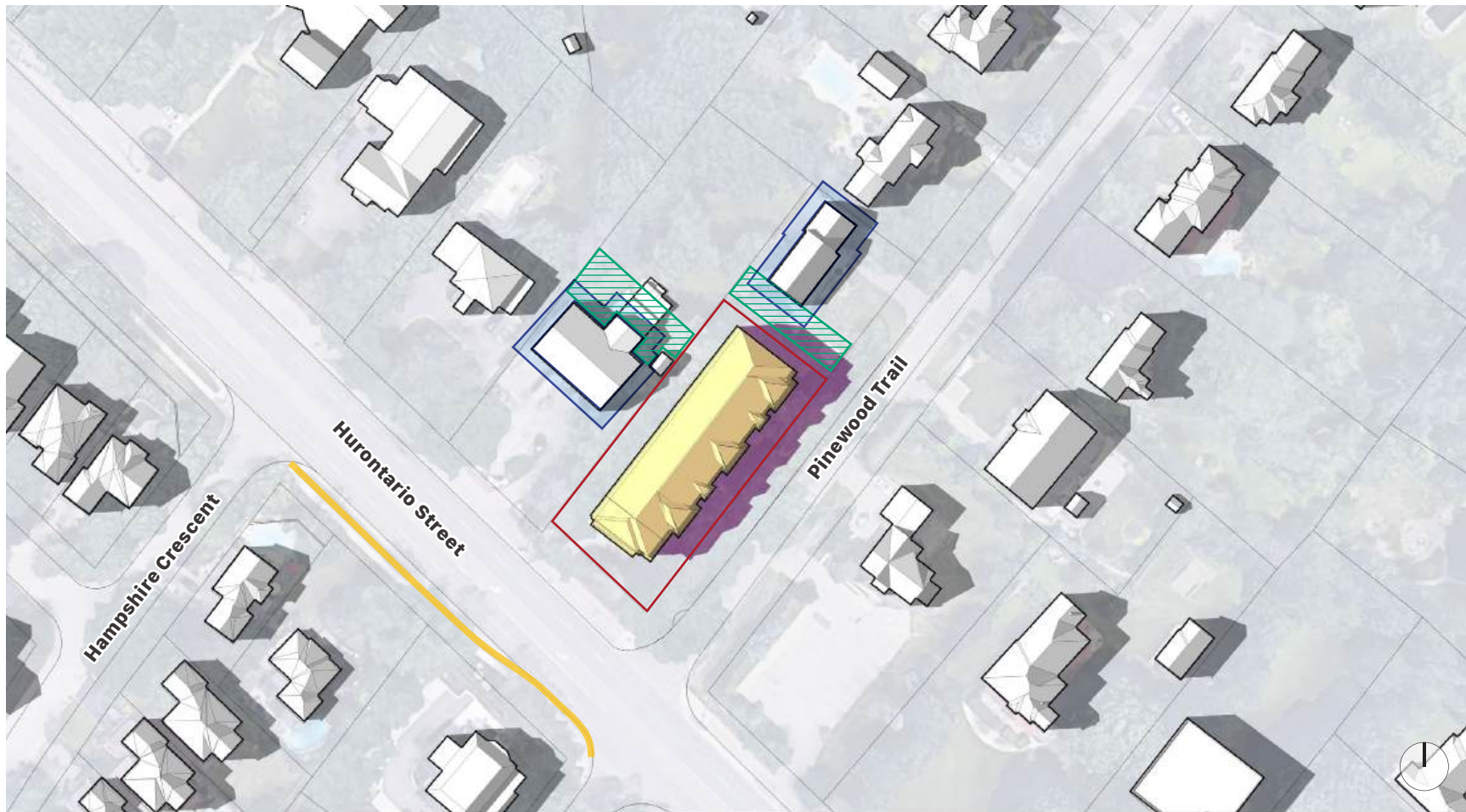
4:20pm - June 21st



Legend

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5:20pm - June 21st





Legend


 Subject Site


 Proposed Development

 Shadows Cast by Proposed Development

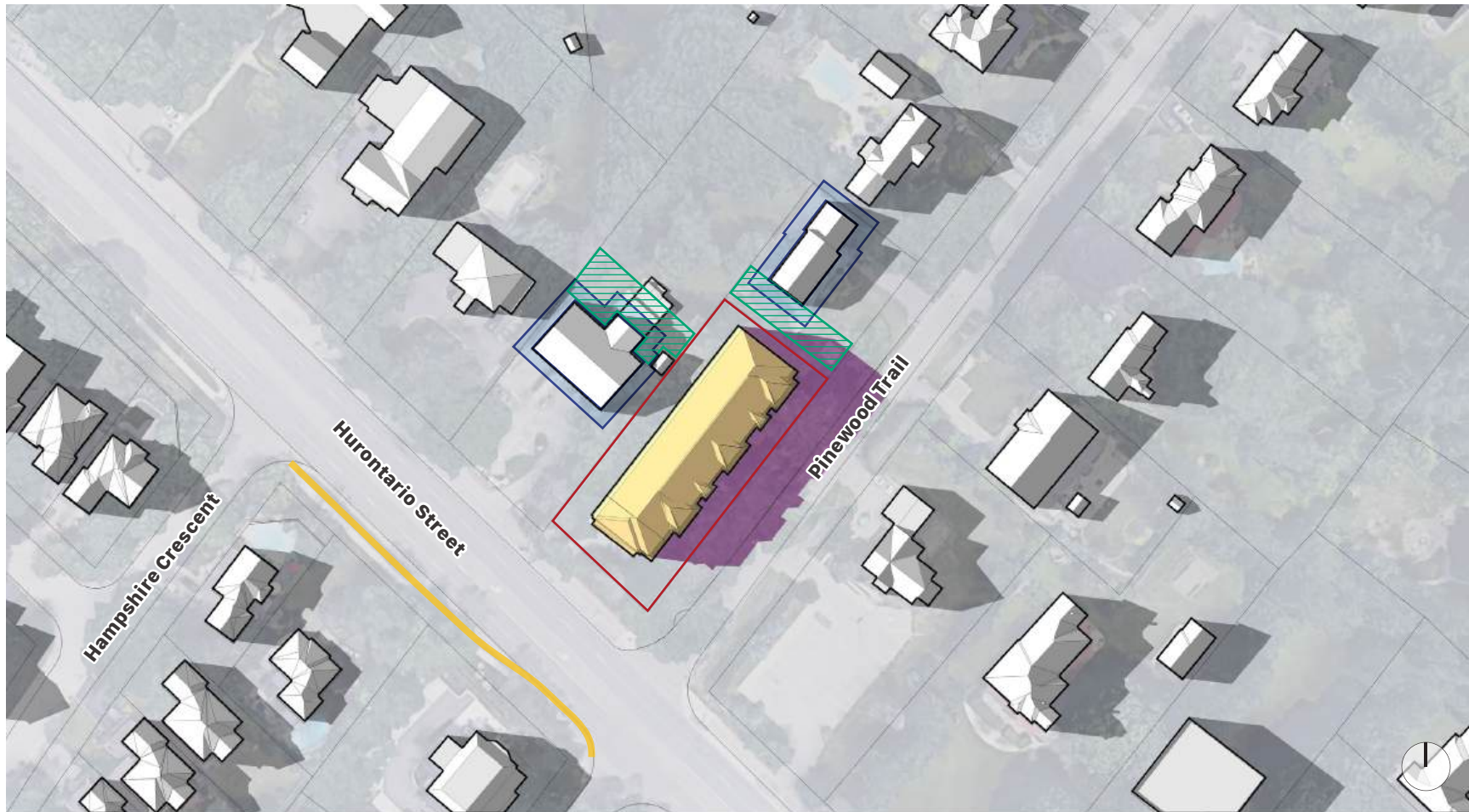
 Residential Private Outdoor Amenity Spaces (7.5m from exterior wall)

 Shadows Cast by Existing Buildings








 Building Faces for Potential Solar Use ("No Impact Zone")

 Public Realm (Hurontario Street Sidewalk - South Side)

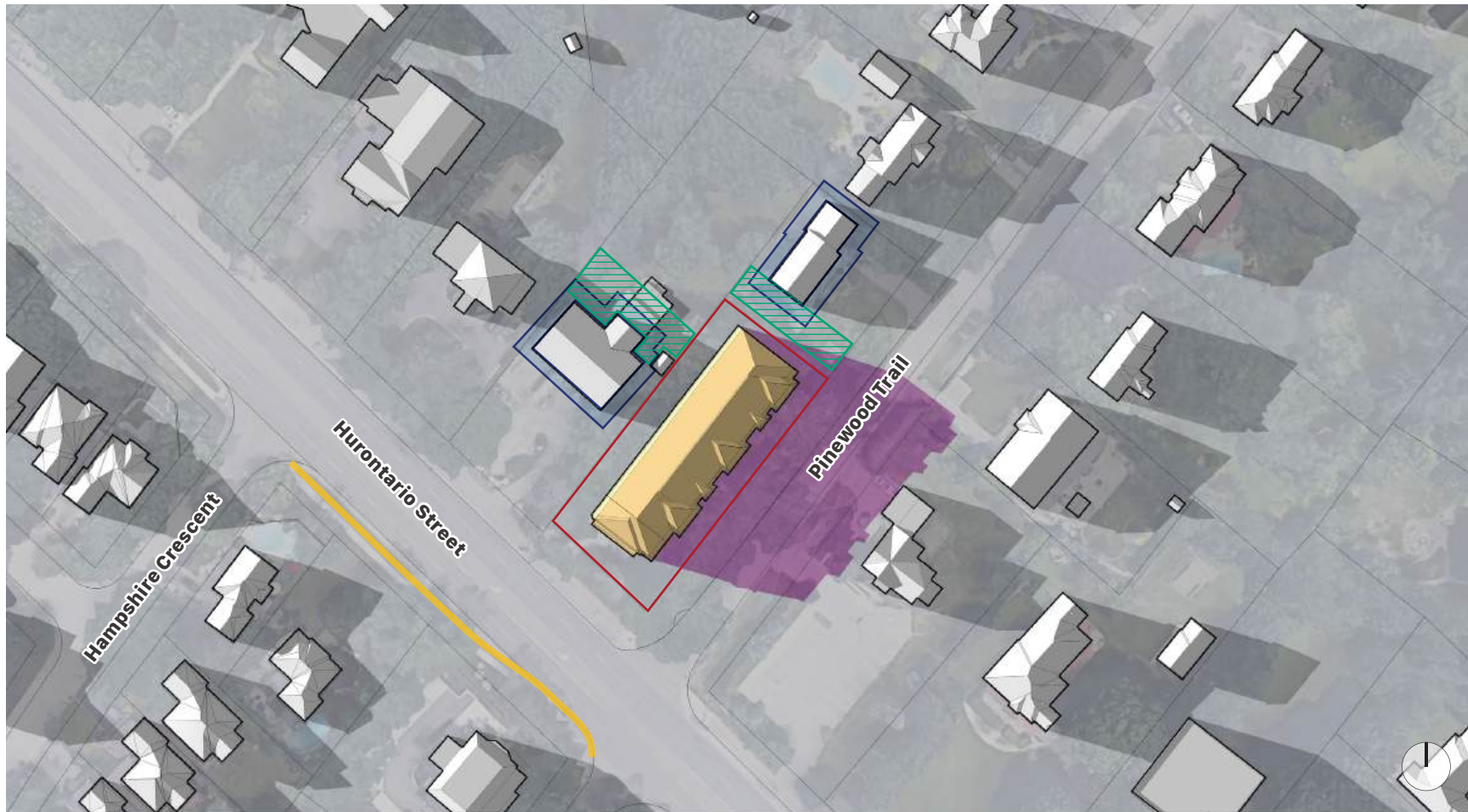
6:20pm - June 21st



Legend

-  Subject Site
-  Proposed Development
-  Shadows Cast by Proposed Development
-  Residential Private Outdoor Amenity Spaces (7.5m from exterior wall)
-  Shadows Cast by Existing Buildings
-  Building Faces for Potential Solar Use ("No Impact Zone")
-  Public Realm (Huronario Street Sidewalk - South Side)

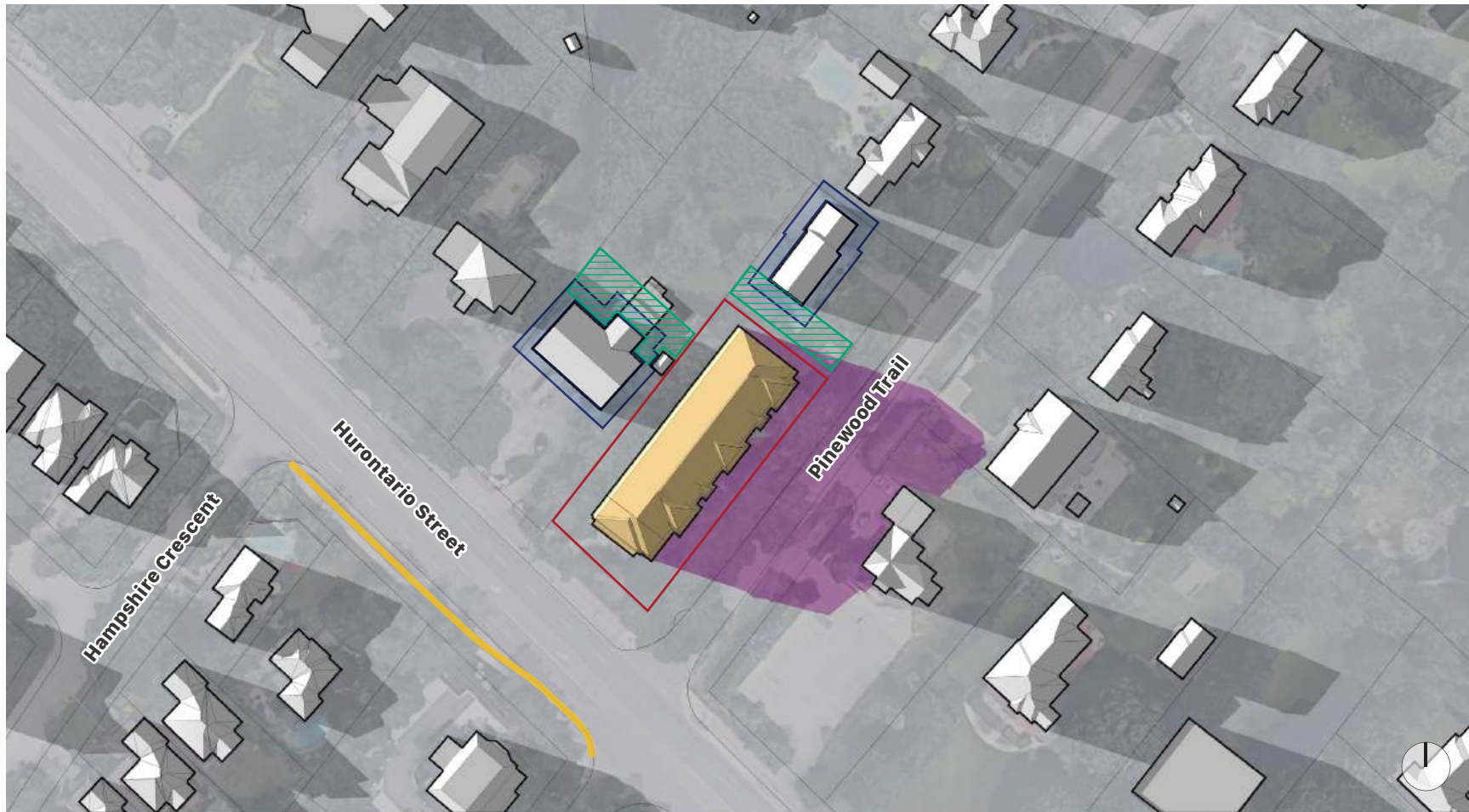
7:20pm - June 21st



Legend

- | | | | |
|------------------------------------|---|--|--|
| Subject Site | Proposed Development | Shadows Cast by Proposed Development | Residential Private Outdoor Amenity Spaces (7.5m from exterior wall) |
| Shadows Cast by Existing Buildings | Building Faces for Potential Solar Use ("No Impact Zone") | Public Realm (Hurontario Street Sidewalk - South Side) | |

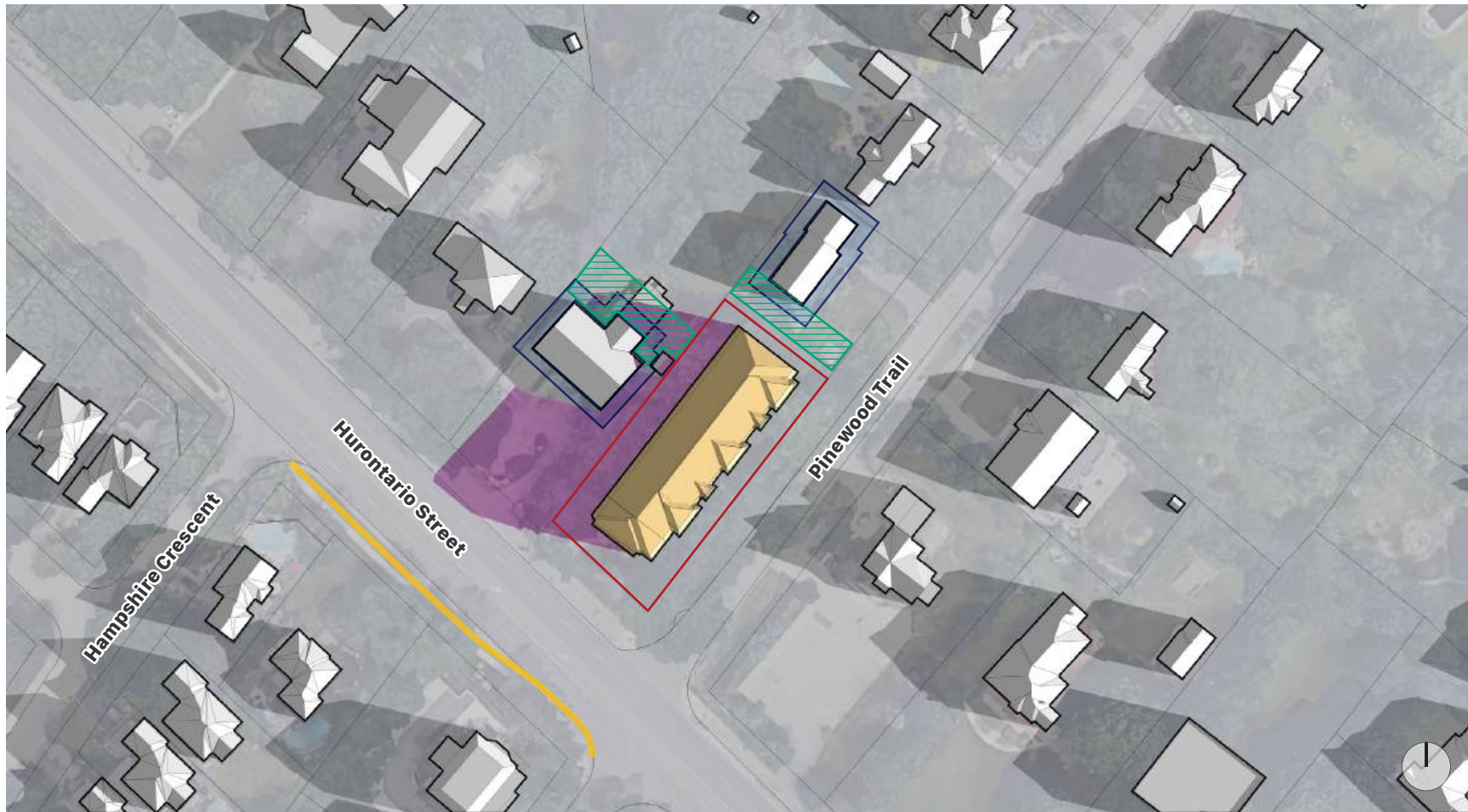
7:33pm - June 21st




Legend

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- Residential Private Outdoor Amenity Spaces (7.5m from exterior wall)
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- Public Realm (Hurontario Street Sidewalk - South Side)

8:35am - September 21st





Legend

 Subject Site


 Proposed Development

 Shadows Cast by Proposed Development

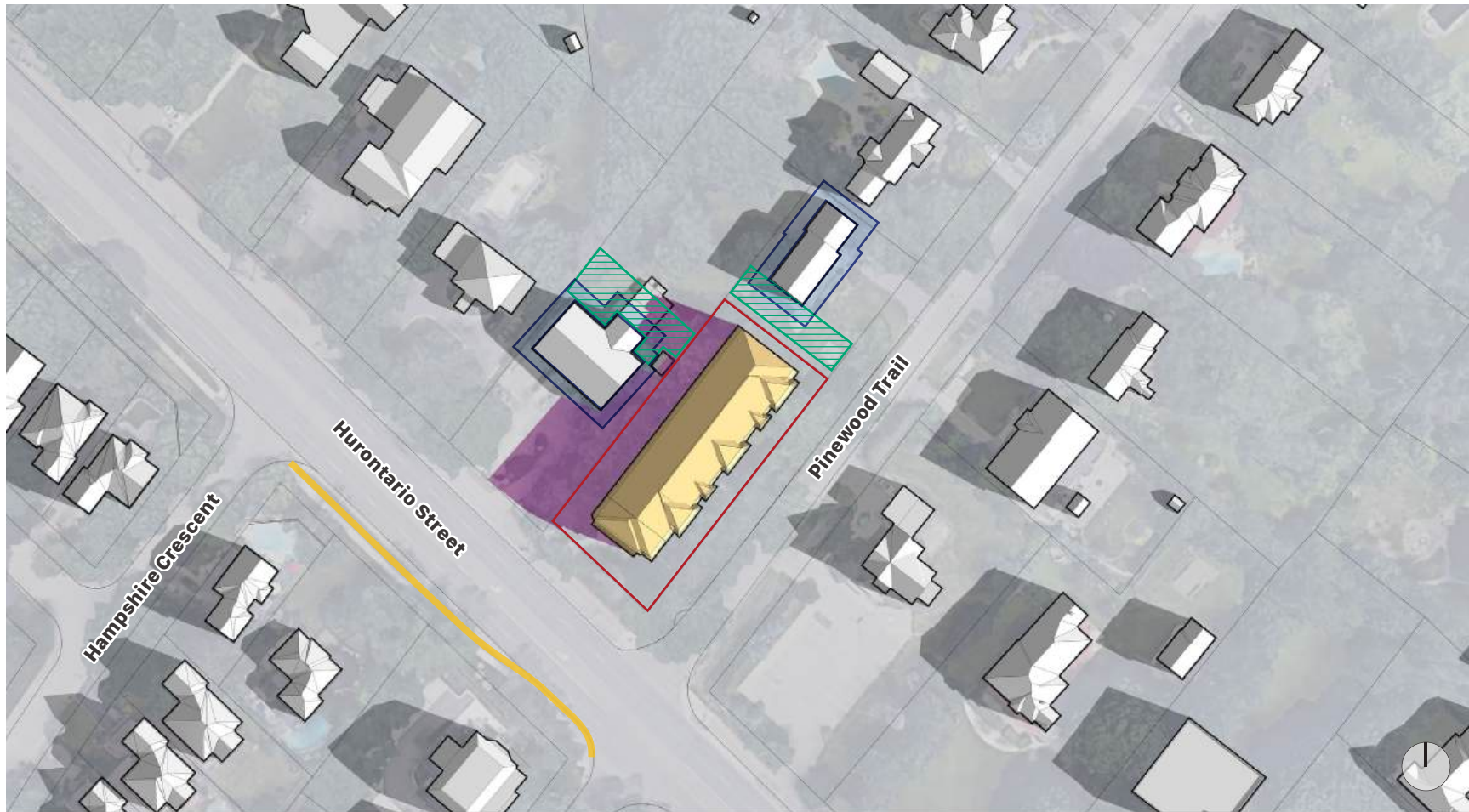
 Residential Private Outdoor Amenity Spaces (7.5m from exterior wall)

 Shadows Cast by Existing Buildings








 Building Faces for Potential Solar Use ("No Impact Zone")

 Public Realm (Hurontario Street Sidewalk - South Side)

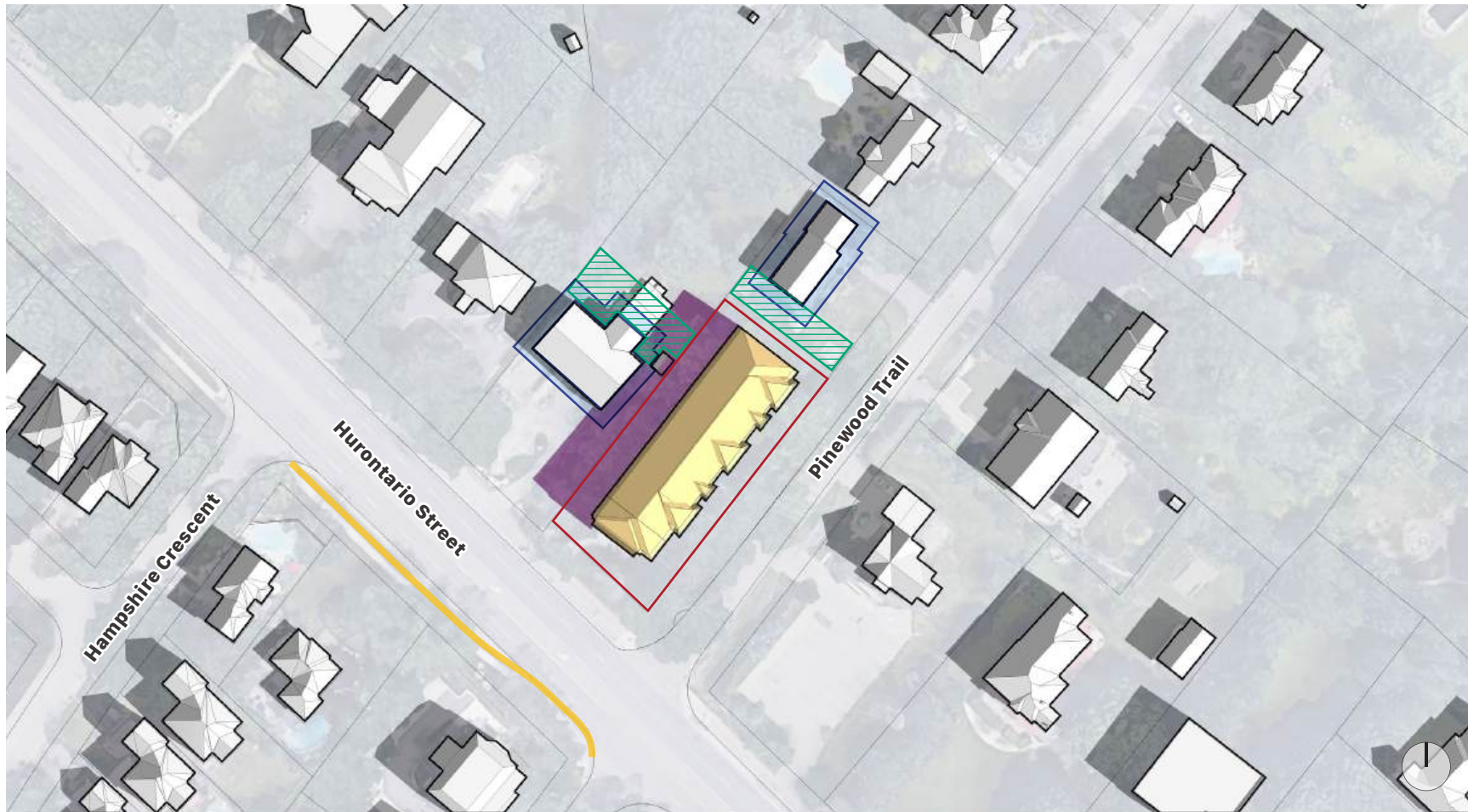
9:12am - September 21st



Legend

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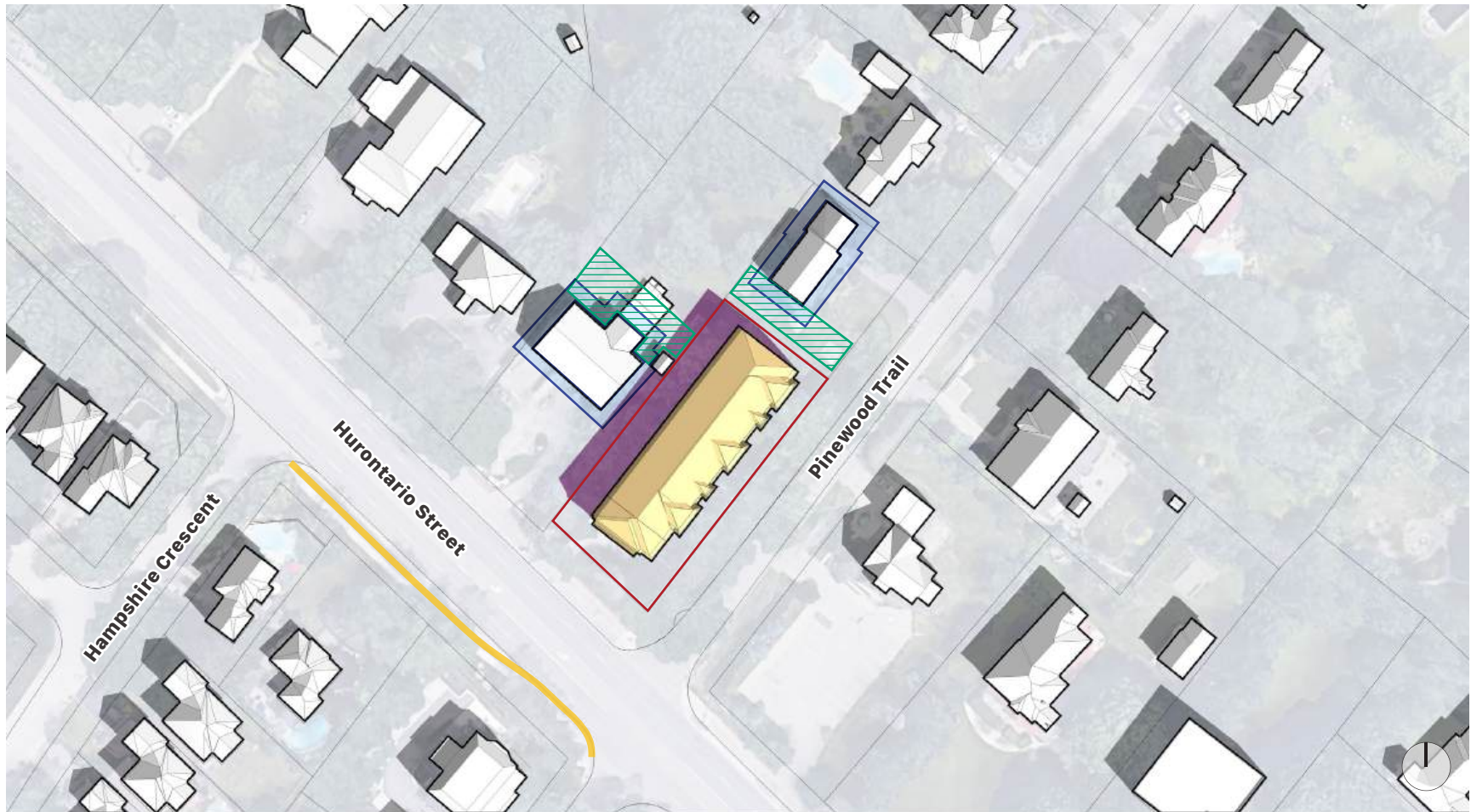
10:12am - September 21st



Legend

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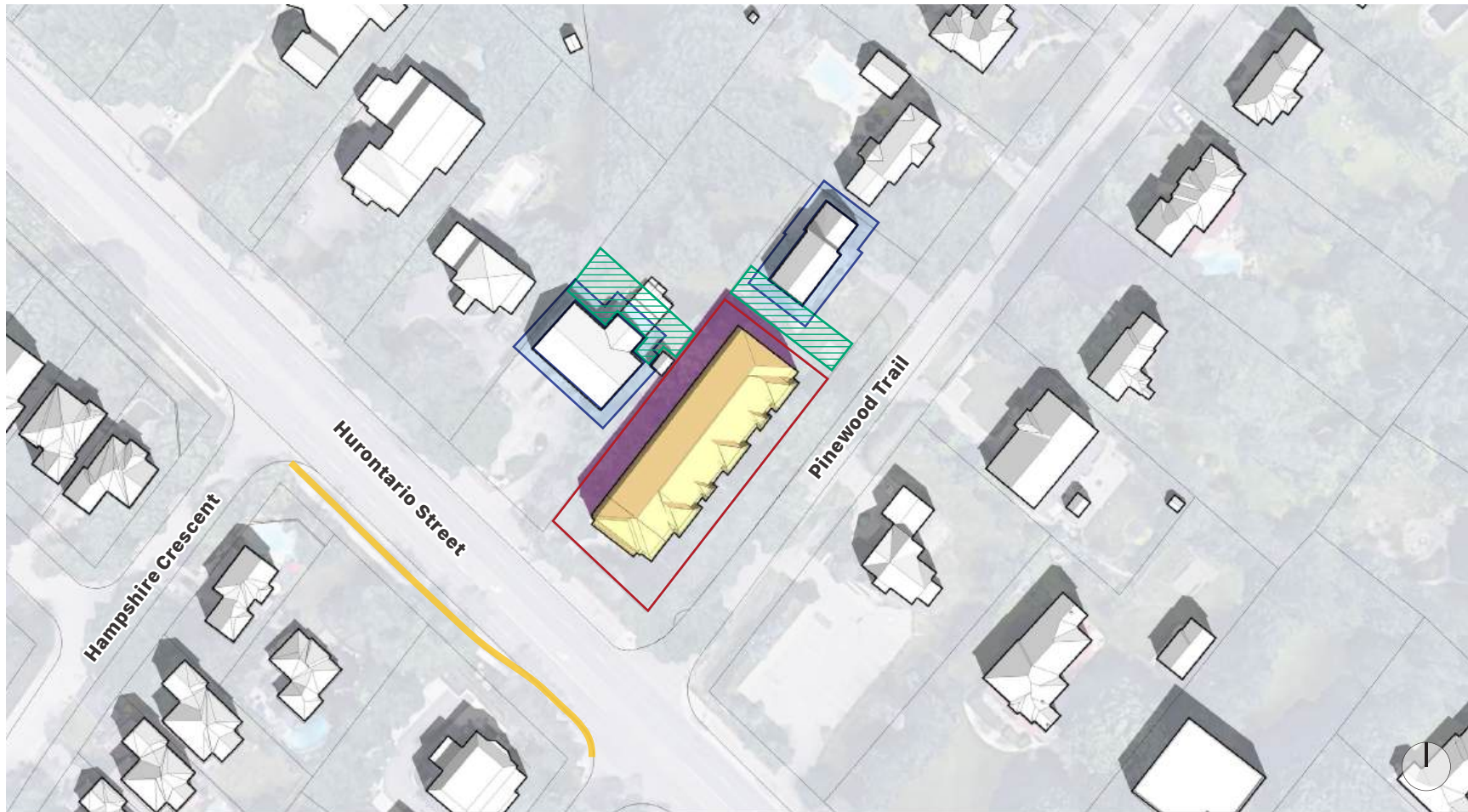
11:12am - September 21st



Legend

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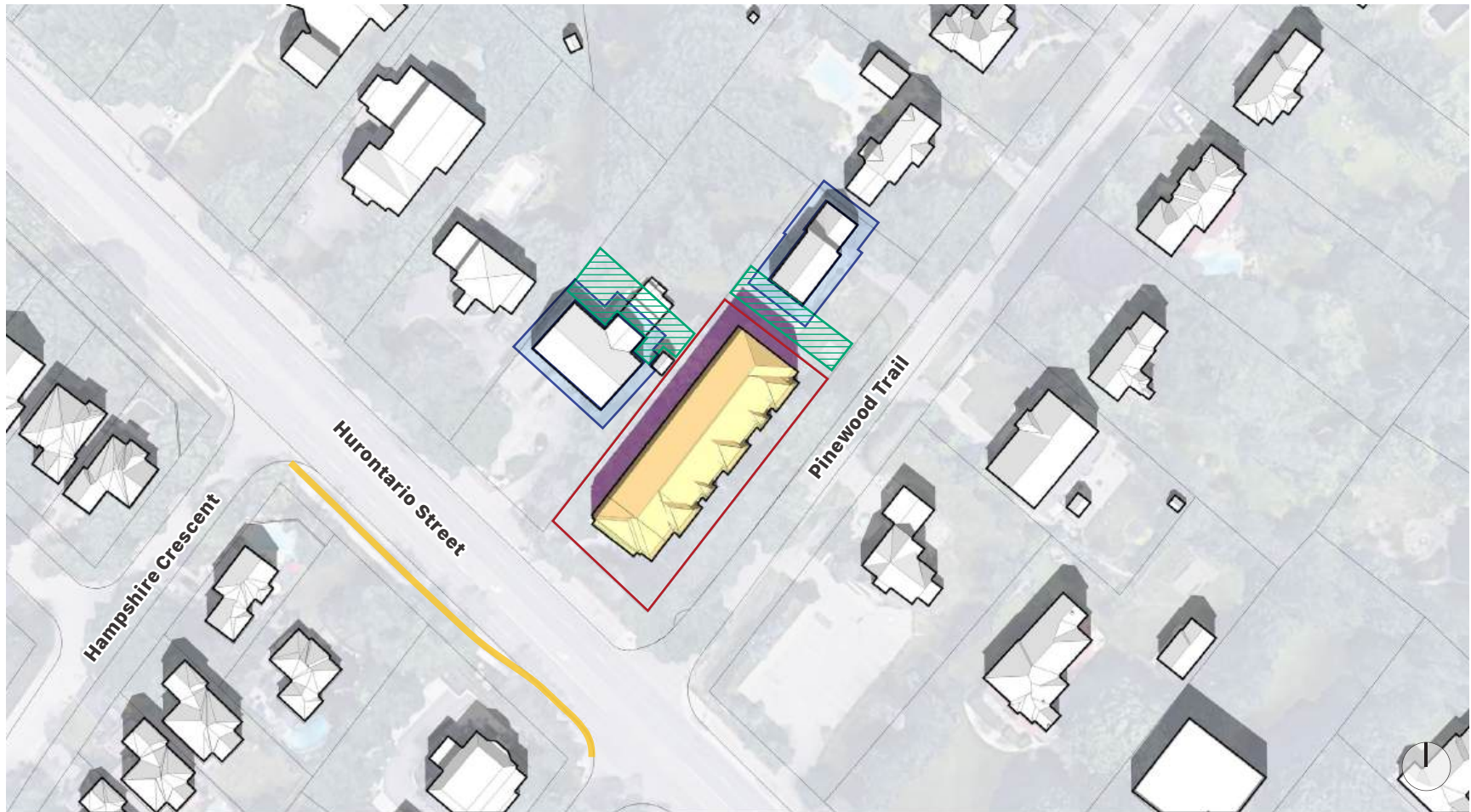
12:12pm - September 21st










Legend

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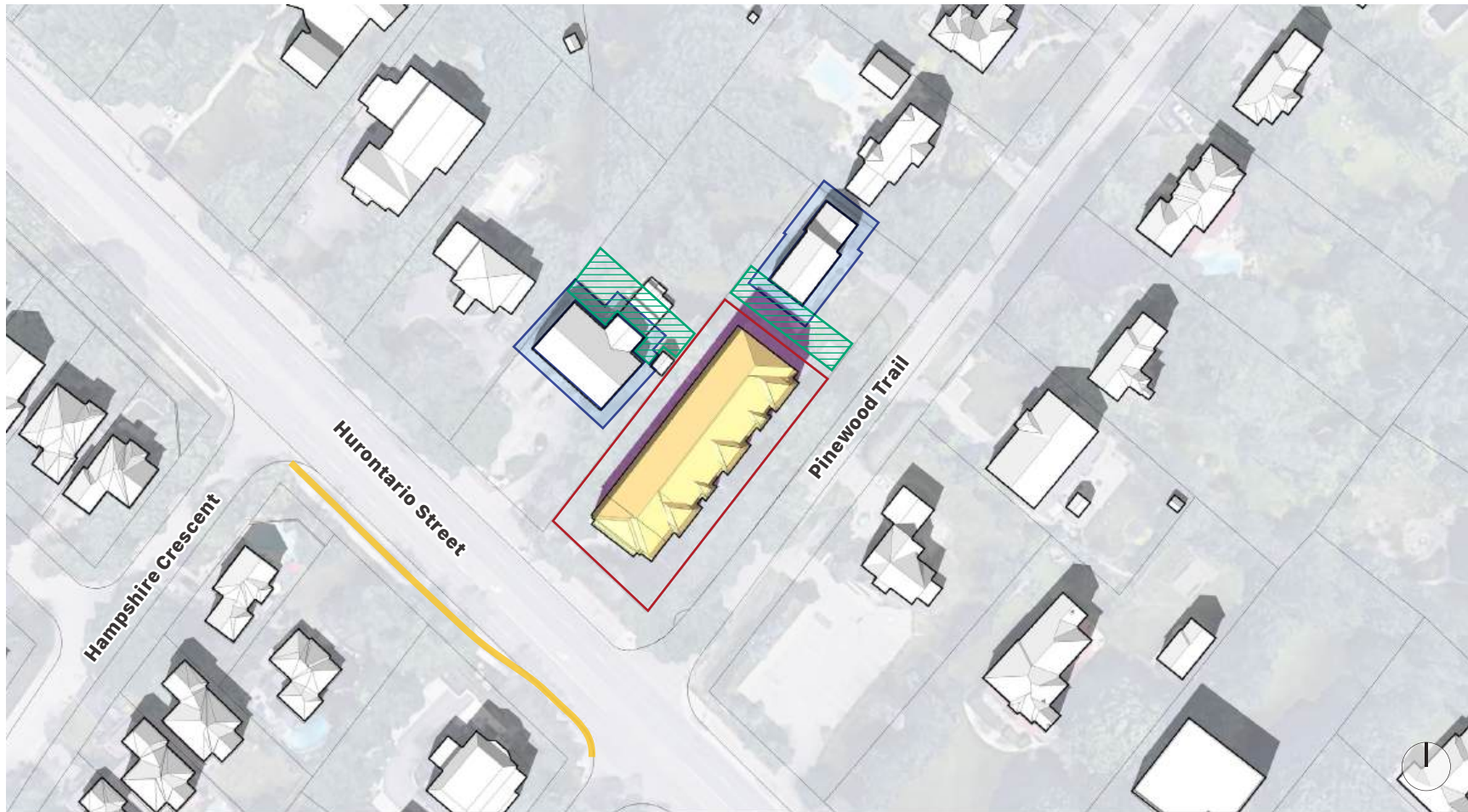
1:12pm - September 21st



Legend

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2:12pm - September 21st



Legend

Subject Site

Proposed Development

Shadows Cast by Proposed Development

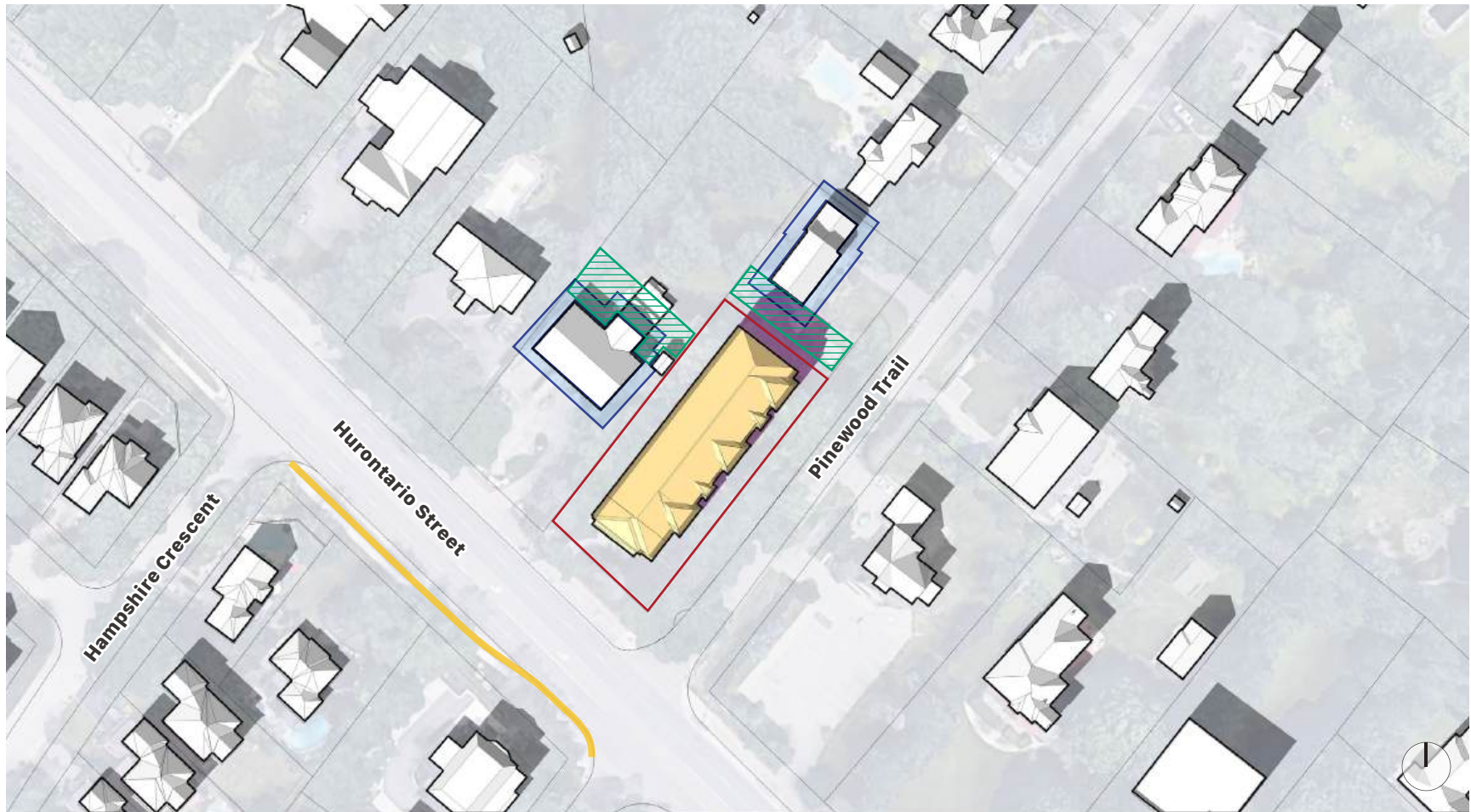
Residential Private Outdoor Amenity Spaces (7.5m from exterior wall)

Shadows Cast by Existing Buildings

Building Faces for Potential Solar Use ("No Impact Zone")

Public Realm (Hurontario Street Sidewalk - South Side)

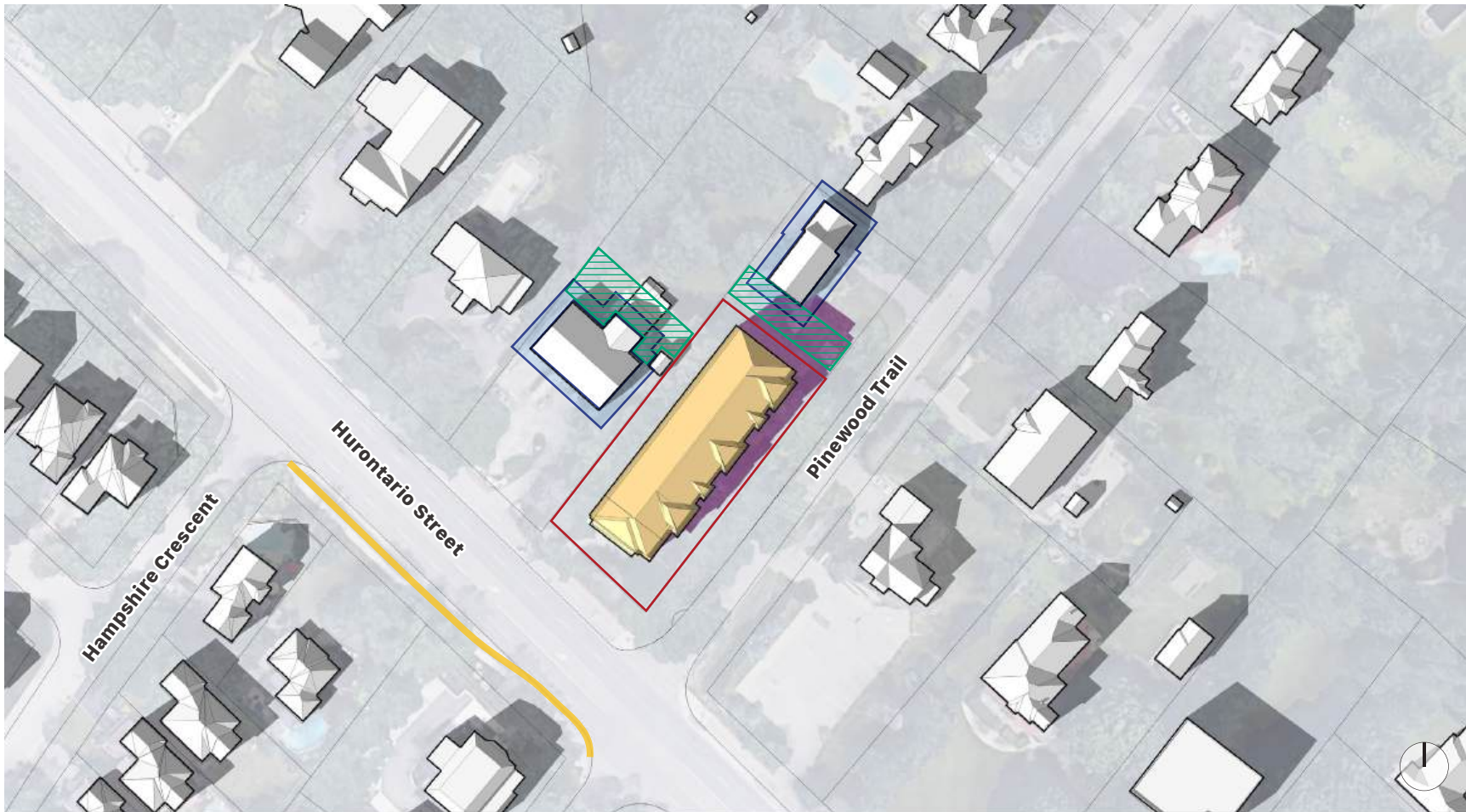
3:12pm - September 21st



Legend

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- Shadows Cast by Existing Buildings
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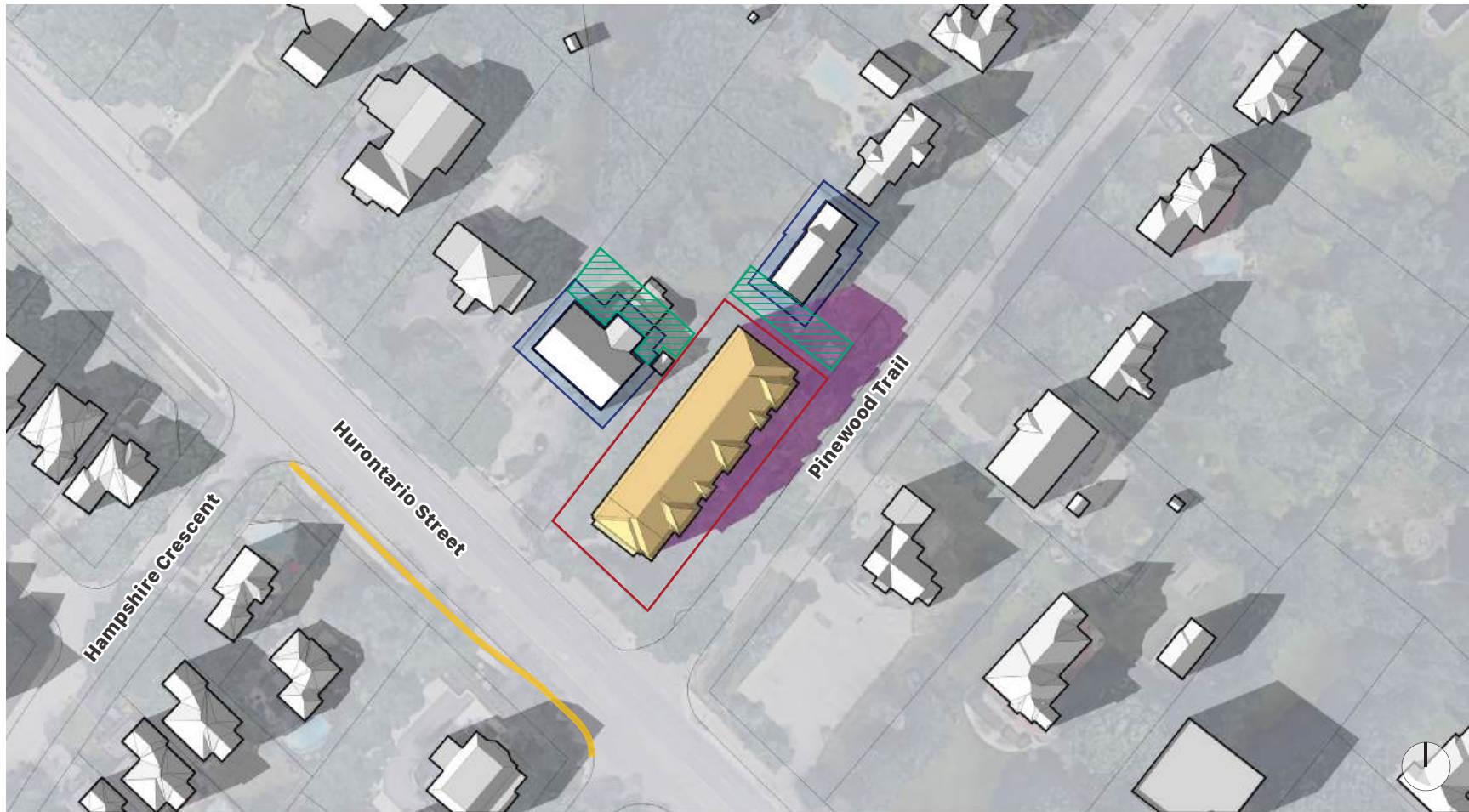
4:12pm - September 21st










Legend

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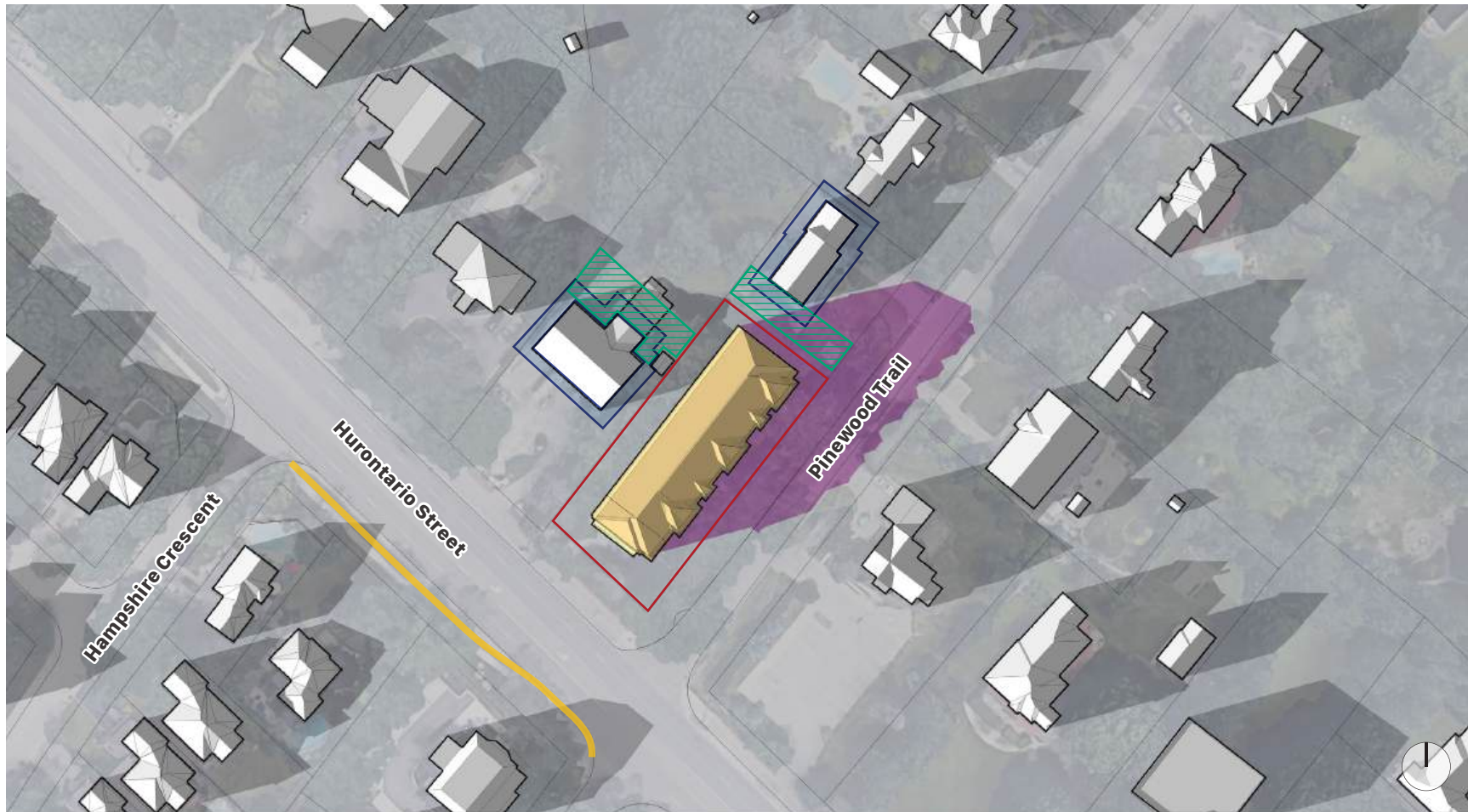
5:12pm - September 21st



Legend

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5:48pm - September 21st





Legend


 Subject Site


 Proposed Development

 Shadows Cast by Proposed Development

 Residential Private Outdoor Amenity Spaces (7.5m from exterior wall)

 Shadows Cast by Existing Buildings

 Building Faces for Potential Solar Use ("No Impact Zone")

 Public Realm (Hurontario Street Sidewalk - South Side)

9:19am - December 21st



Legend

- Subject Site
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10:17am - December 21st



Legend

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11:17am - December 21st



Legend

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12:17pm - December 21st










Legend

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1:17pm - December 21st



Legend

-  Subject Site
-  Proposed Development
-  Shadows Cast by Proposed Development
-  Residential Private Outdoor Amenity Spaces (7.5m from exterior wall)
-  Shadows Cast by Existing Buildings
-  Building Faces for Potential Solar Use ("No Impact Zone")
-  Public Realm (Hurontario Street Sidewalk - South Side)

2:17pm - December 21st



Legend

Subject Site

Proposed Development

Shadows Cast by Proposed Development

Residential Private Outdoor Amenity Spaces (7.5m from exterior wall)

Shadows Cast by Existing Buildings

Building Faces for Potential Solar Use ("No Impact Zone")

Public Realm (Hurontario Street Sidewalk - South Side)

3:15pm - December 21st



Legend

- Subject Site
- Proposed Development
- Shadows Cast by Proposed Development
- Shadows Cast by Existing Buildings
- Building Faces for Potential Solar Use ("No Impact Zone")
- Residential Private Outdoor Amenity Spaces (7.5m from exterior wall)
- Public Realm (Hurontario Street Sidewalk - South Side)

