

SHADOW STUDY REPORT

MUSIC CITY HOTEL

4898 KITCHENER STREET, NIAGARA FALLS, ONTARIO

CONTENTS

PART A — PROJECT DESCRIPTION

- 1.0** Purpose of Study (pg.04)
- 2.0** Site Description (pg.05)
 - 2.1** Site Context
 - 2.2** Existing Site Conditions
 - 2.3** Proposed Development Description

PART B — ANALYSIS

- 3.0** Study Dates & Times (pg.07)
 - 3.1** Study Dates & Times
 - 3.2** Time Zone / Solar Data
 - 3.3** Study Coverage Area
 - 3.4** Model Assumptions
- 4.0** Shadow Impact Assessment Criteria (pg.08)
 - 4.1** Private Realm
 - 4.2** Public Realm
- 5.0** Shadow Diagram Analysis
 - 5.1** Overview of Study Area (pg.09)
 - 5.2** April 21 (pg.10)
 - 5.3** Summer Solstice - June 21 (pg.15)
 - 5.4** Fall Equinox - September 21 (pg.20)
 - 5.5** Winter Solstice - December 21 (pg.25)

PART B2 — MITIGATION

- 6.0** Shadow Mitigation Strategies (pg.31)
 - 6.1** Building Height & Massing
 - 6.2** Building Orientation & Layout

PART C — CONCLUSION

- 7.0** Overall Impact Summary (pg.33)

APPENDIX A — SUBMISSION FORM CHECKLIST

- I.** Checklist (pg.35)

APPENDIX B — DATA SOURCE REFERENCES

- II.** References (pg.37)

PART A — PROJECT DESCRIPTION

1.0 PURPOSE

The following Sun/Shadow Study has been prepared by Matthew Schmid Architecture Inc. as required for the redevelopment of the land municipally addressed as 4898 Kitchener Street, located in the City of Niagara Falls, Ontario, Canada. The report has been prepared to demonstrate the potential shadow impacts of the proposed mixed-use hotel development on the subject site and surrounding properties.

The analysis is based on a series of computationally generated shadow diagrams that utilize geographic and solar data to simulate shadow patterns cast by existing and proposed buildings. The study conforms to the Sun/Shadow Study Terms of Reference produced by the Niagara Falls Planning Department (December 2023). The study area and required shadow sample times are specified in Section 3.0 of the Terms of Reference.

As described in the City of Niagara Falls Terms of Reference, the purpose of the Sun/Shadow Study is to “contribute to and inform the design of buildings and the arrangement of buildings on sites. By understanding the nature of existing shadows and new shadows, new development proposals can ensure adequate access to sunlight enhancing the livability and sustainability of public and private spaces”.

The Shadow Impact Study is required for buildings exceeding 10 storeys and forms part of a complete development application within the City’s urban settlement area. The following analysis illustrates the projected shadow impacts of the proposed development on the surrounding urban context and identifies the mitigation strategies implemented to minimize undue shadow effects.

2.0 SITE DESCRIPTION

The site is located on the northwest corner of Kitchener St. and Hunter St. The assembled lot (Parcel 4898) is approximately 1472 m² (after road widening) and is zoned Deferred Tourist Commercial (DTC) under By-law 79-200. The site provides 50.72 m of frontage onto Kitchener Street and 77.11 m on Hunter Street.

2.1 SITE CONTEXT

The subject site occupies a corner condition between a low-rise residential neighbourhood to the northwest and a predominantly commercial district to the south-east. The residential fabric is characterized by modest building heights and regular setbacks, while the commercial zone includes hotel developments, restaurants, a church, surface parking lots and associated service infrastructure. The site is further supported by its proximity to Highway 420, with regional access provided via the Victoria Avenue arterial corridor.

2.2 EXISTING SITE CONDITIONS

The parcel is currently developed with two existing structures: a two-storey brick dwelling located toward the southern portion of the site and a three-storey brick church positioned to the north. The remaining area consists primarily of landscaped open space with limited hard surfaces associated with access and circulation. The site is generally level, exhibiting minimal grade variation. Vegetation is limited to one mature deciduous tree and informal perimeter plantings consisting of sparse young-growth deciduous trees and shrubs.

2.3 PROPOSED DEVELOPMENT DESCRIPTION

- The proposed mixed-use hotel development will require removal of the existing two-storey dwelling. The existing three-storey brick church will be retained and incorporated into the proposed building design.
- The proposed building area will be approximately ± 1064 m². The remaining site area will consist of landscaped open space, including pedestrian sidewalks and proposed deciduous tree plantings along Kitchener Street and Hunter Street. Limited accessory hard surfaces will be provided, including a loading zone located to the south-west of the building.
- The mixed-use tower (167m above-grade) will be connected to the east façade of the retained church structure through a four-storey podium. A raised patio will connect to the west façade of the church. The third level of the podium will include an uncovered terrace for guest use.
- The proposed height (50 storeys) represents site-specific intensification within the DTC zone and is subject to the requested Zoning By-Law Amendment.
- Primary pedestrian access to both the church and tower components will be located along the north side of the building. The above-grade loading zone will be positioned to the south-west of the podium, with additional controlled pedestrian access points provided as required.

PART B — ANALYSIS

3.0 STUDY METHODOLOGY

Following the guidelines from the City of Niagara Falls' Terms-of-Reference: Sun/Shadow Study (dated: December 2023), the shadow analysis is conducted for the following:

3.1 STUDY DATES & TIMES

- At hourly intervals (9hrs) from 10:00 a.m. to 6:00 p.m. (Eastern Time Zone)
- April 21 (Daylight Saving Time)
- June 21 Summer Solstice (Daylight Saving Time)
- September 21 Fall Equinox (Daylight Saving Time)
- December 21 Winter Solstice (Standard Time)

3.2 TIME ZONE / SOLAR DATA

- Eastern Standard Time: Universal Time minus 5 hours
- Daylight Saving Time: Universal Time minus 4 hours

Geographical Coordinates

- Latitude: 43°05' 43.40"N
- Longitude: 79°04' 27.27"W

3.3 STUDY COVERAGE AREA

In accordance with the City of Niagara Falls' Terms-of-Reference: Sun/Shadow Study (dated: December 2023), the study area extends a minimum of 10 times the building height to the north, east and west of the subject property and a minimum distance of 2 times the building height to the south of the subject property.

3.4 MODEL ASSUMPTIONS

The shadow analysis incorporates the following simulated conditions:

- (1). Existing shadow conditions in the coverage area are presented as black.
- (2). Shadows of existing buildings on the site are presented in the colour red.
- (3). Shadows for the As-of-Right conditions are established based on the height as per the previously approved Zoning By-Law Amendment: the Deferred Tourist Commercial Zone (DTC) under By-law 79-200 permits a maximum height of 12m (40ft). The aforementioned conditions is presented in the colour yellow.
- (4). Shadows for the proposed condition are based on the designed 50 storey tower with a 4-storey podium. The net new shadow is presented in the colour orange.
- (5). Shadows for relevant proposed developments within the coverage area are presented in the colour blue.

4.0 SHADOW IMPACT ASSESSMENT CRITERIA

The City of Niagara Falls' Terms-of-Reference: Sun/Shadow Study Section 4.0 provides a description of the Shadow Impact Criteria that is required to be applied in the analysis as follows:

4.1 PRIVATE REALM

Criteria (1): Outdoor Residential Amenity Spaces on Adjacent - adjacent residential amenity areas should receive at a minimum of 6 hours of sunlight between 10:00 a.m. to 6:00 p.m. on:

- April 21 to September 21.

Assessment of Proposed Shadows: Demonstrates that adjacent outdoor residential amenity spaces receive not less than six (6) hours of direct sunlight between 10:00 a.m. and 6:00 p.m. on all test dates from April 21 through September 21. No identified adjacent residential amenity area experiences more than approximately two consecutive hourly intervals of incremental shadow.

4.2 PUBLIC REALM

Criteria (1): Public Outdoor Amenity Spaces - Communal Outdoor Amenity Spaces include school yards, children's play areas, public outdoor pools, community gardens, privately owned public spaces, civic and cultural spaces and other public outdoor areas.

- Shadows cast by existing buildings and shadows from proposed buildings should allow for 5 hours of full sun between 10:00 a.m. - 6:00 p.m. on: April 21.
- School yards and children's play areas should receive at least 3 hours of sun between 10:00 a.m. - 3:00 p.m. on: December 21.

Assessment of Proposed Shadows: Demonstrates that no public amenity space is shadowed by the proposed development for more than one (1) hour between 10:00 a.m. and 6:00 p.m. on April 21 with all identified communal outdoor amenity spaces receiving a minimum of seven (7) hours of direct sunlight. On December 21, school yards and children's play areas retain at least three (3) hours of direct sunlight between 10:00 a.m. and 3:00 p.m. as incremental shadow introduced by the proposed development does not reduce sunlight exposure below the required threshold.

Criteria (2): Sidewalk Areas and Boulevards along the Frontage of the Development - Should continue to receive a minimum of 4 hours of sun between 10:00 a.m. - 6:00 p.m. on:

- April 21 (the south sides of streets with east and west orientations may receive less sunlight).

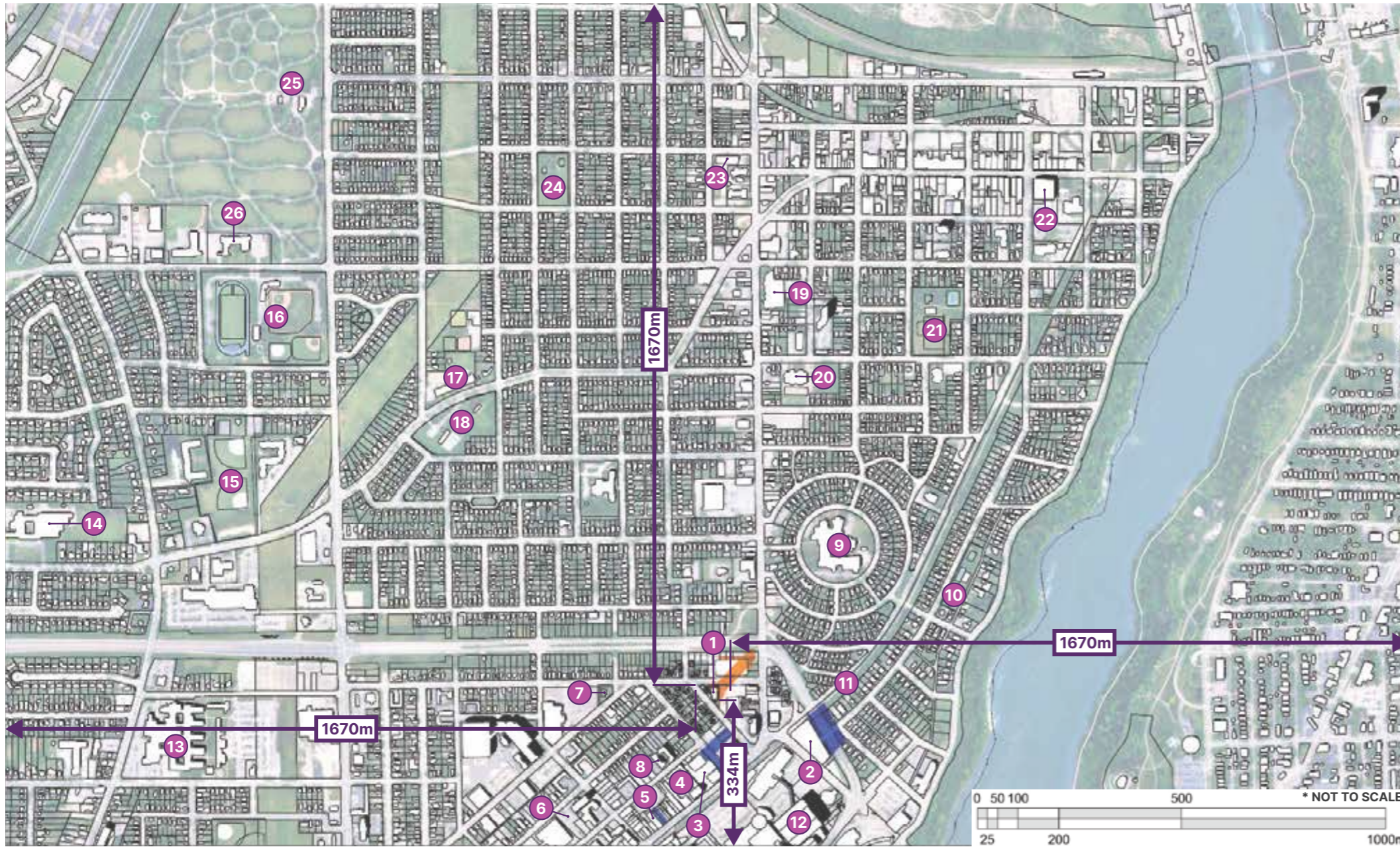
Assessment of Proposed Shadows: The subject frontage does not achieve four (4) hours of sunlight between 10:00 a.m. and 6:00 p.m. on April 21. The sidewalk is located on the south side of an east-west oriented street, where reduced sunlight exposure is anticipated due to solar path geometry in the northern hemisphere. This condition is consistent with the contextual allowance identified in Section 4.3.2 of the Terms of Reference. The impact is localized to the site's immediate frontage, mitigated by building step-backs and tower massing. The condition is orientation-driven and consistent with the contextual allowance in the Terms of Reference (Section 4.3.2).

Criteria (3): Parks, Open Spaces and Natural Heritage Areas - Shadows cast by existing buildings and proposed developments surrounding parks and other open spaces should not exceed 3 hours in duration between the hours of 10:00 a.m. - 6:00 p.m. on:

- April 21.
- September 21.

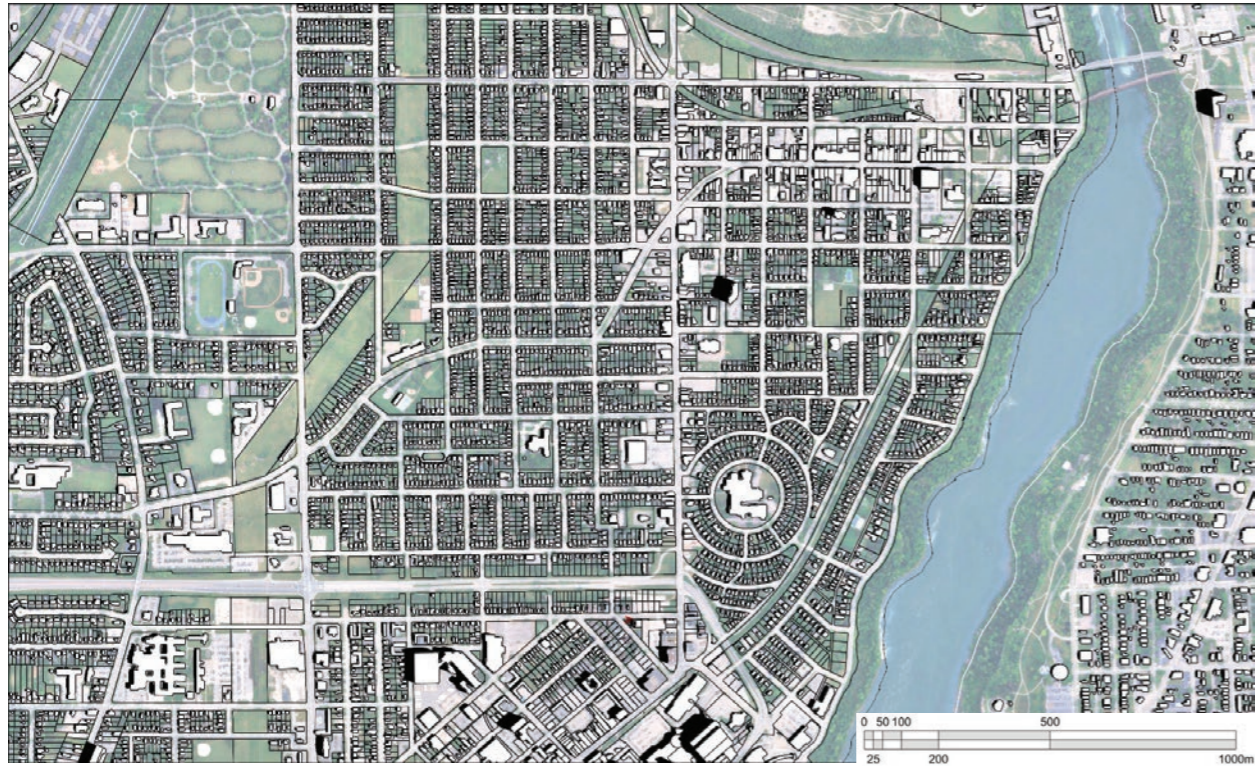
Assessment of Proposed Shadows: Demonstrates that at no point does the shadow cast by proposed development exceed three (3) hour in duration on surrounding parks and other open spaces between the hours of 10:00 a.m. - 6:00 p.m. on April 21 and September 21.

AREA OF STUDY

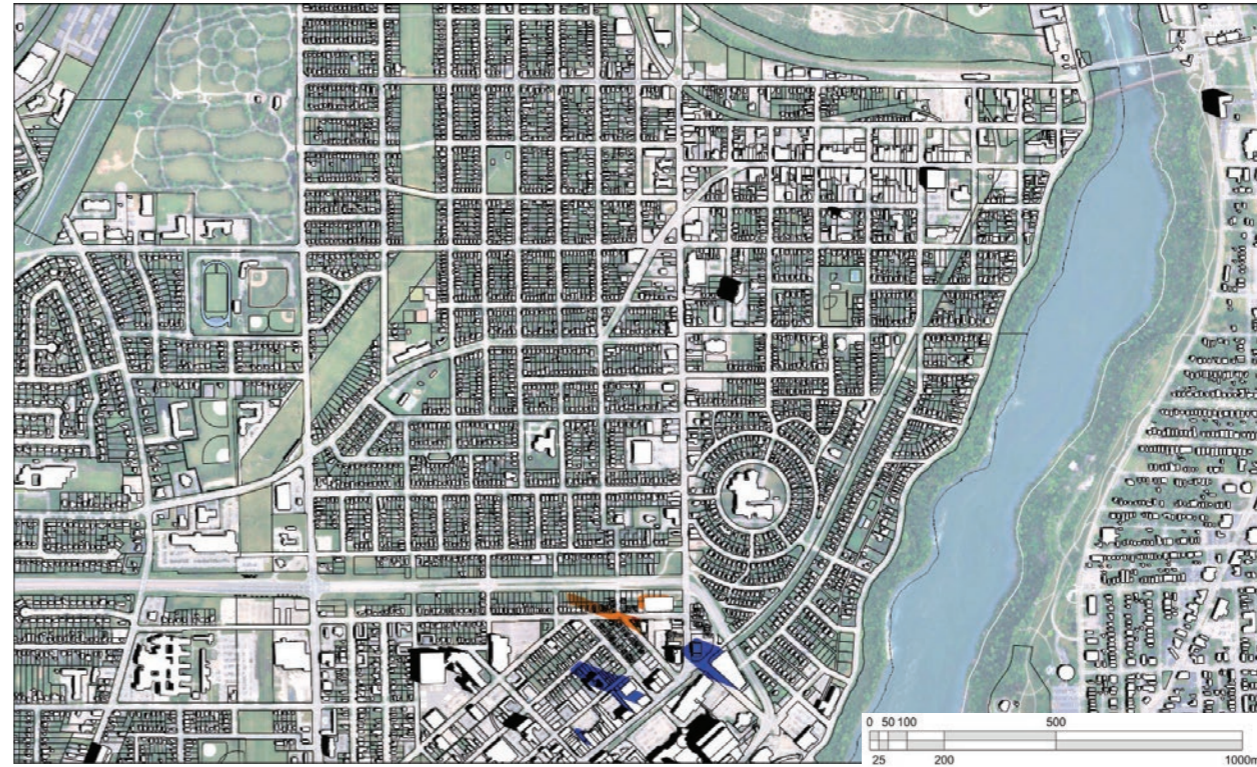


Existing Shadows
 Existing Site Shadows
 As of Right Shadow
 Proposed Building Shadow
 Approved yet Unbuilt Shadows

- | | |
|--|---|
| 1 Proposed Site | 14 Niagara Falls School of Music |
| 2 Niagara Ice Sculpture Centre & Hotel | 15 WL Houck Park |
| 3 35 and 36 Storey Development Victoria Ave | 16 Oakes Park |
| 4 5657 Victoria Ave | 17 Valley Way Public School |
| 5 5709 Victoria Ave | 18 F H Leslie Park |
| 6 5723 Ellen Ave | 19 Niagara Falls Public Library |
| 7 Kitchener Park | 20 Simcoe Street Public School |
| 8 5577 Ellen Ave | 21 AJ McKinley Park |
| 9 Kent School, Niagara Centre for the Arts | 22 University of Niagara Falls Canada |
| 10 Ontario Park | 23 St. Patrick Catholic Elementary School |
| 11 Olympic Torch Run Legacy Trail | 24 Maple Street Park |
| 12 The Crown Plaza Niagara Falls - Fallsview | 25 Fairview Cemetery |
| 13 Niagara Health - Niagara Falls Hospital | 26 St. Mary Catholic Elementary School |

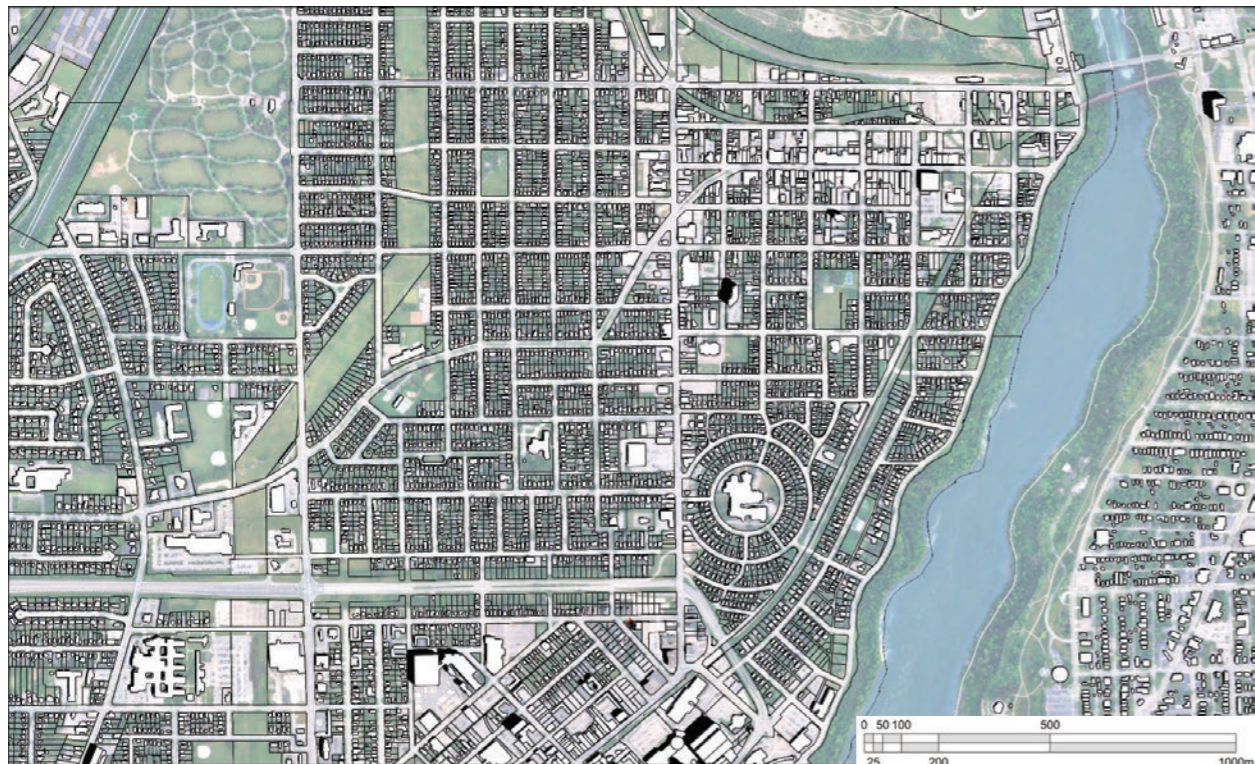


Apr. 21 (10:00 a.m.) - EXISTING CONDITION

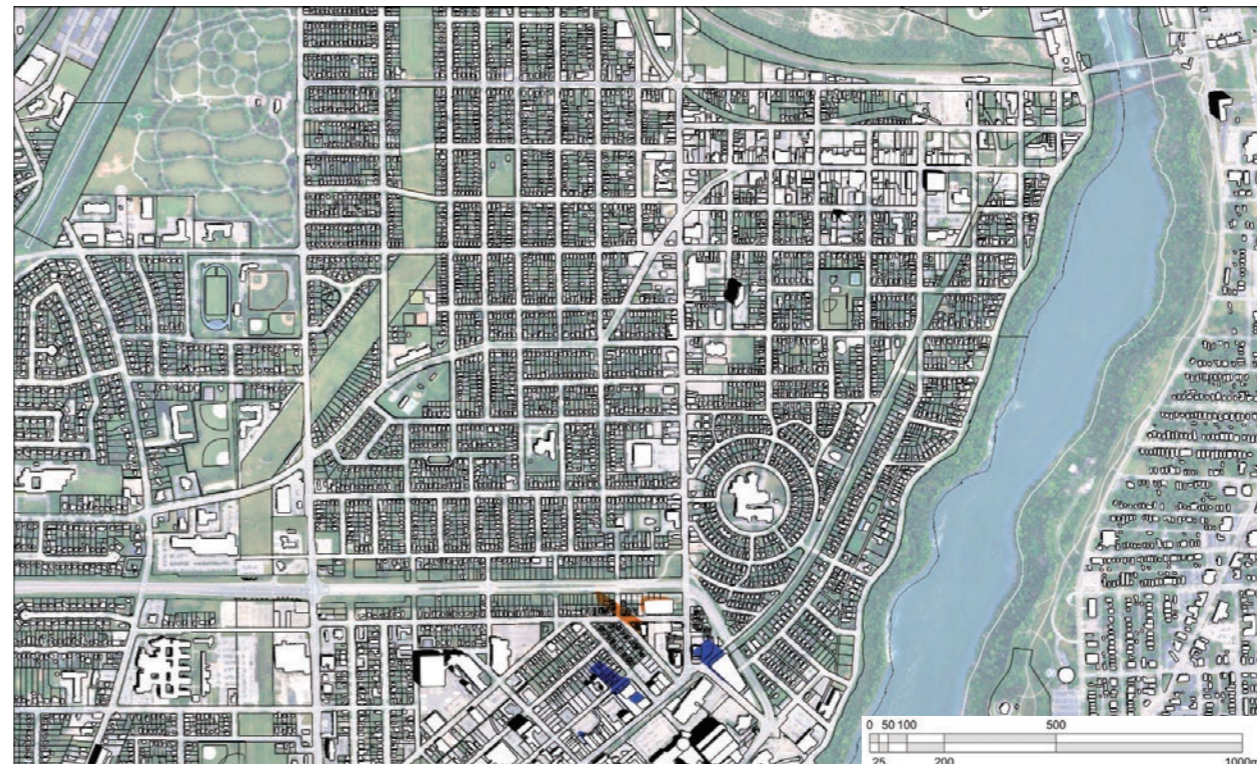


Apr. 21 (10:00 a.m.) - PROPOSED CONDITION

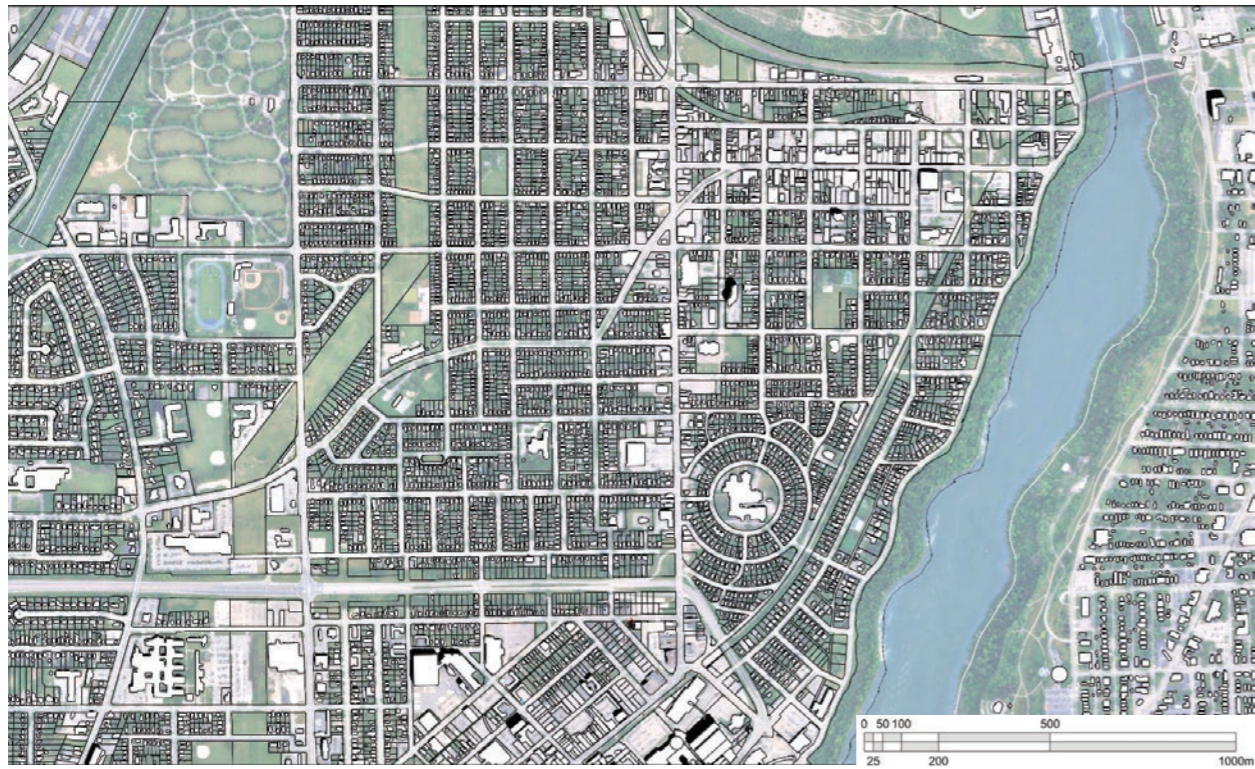
-  Existing Shadows
-  Existing Site Shadows
-  As of Right Shadow
-  Proposed Building Shadow
-  Approved yet Unbuilt Shadows



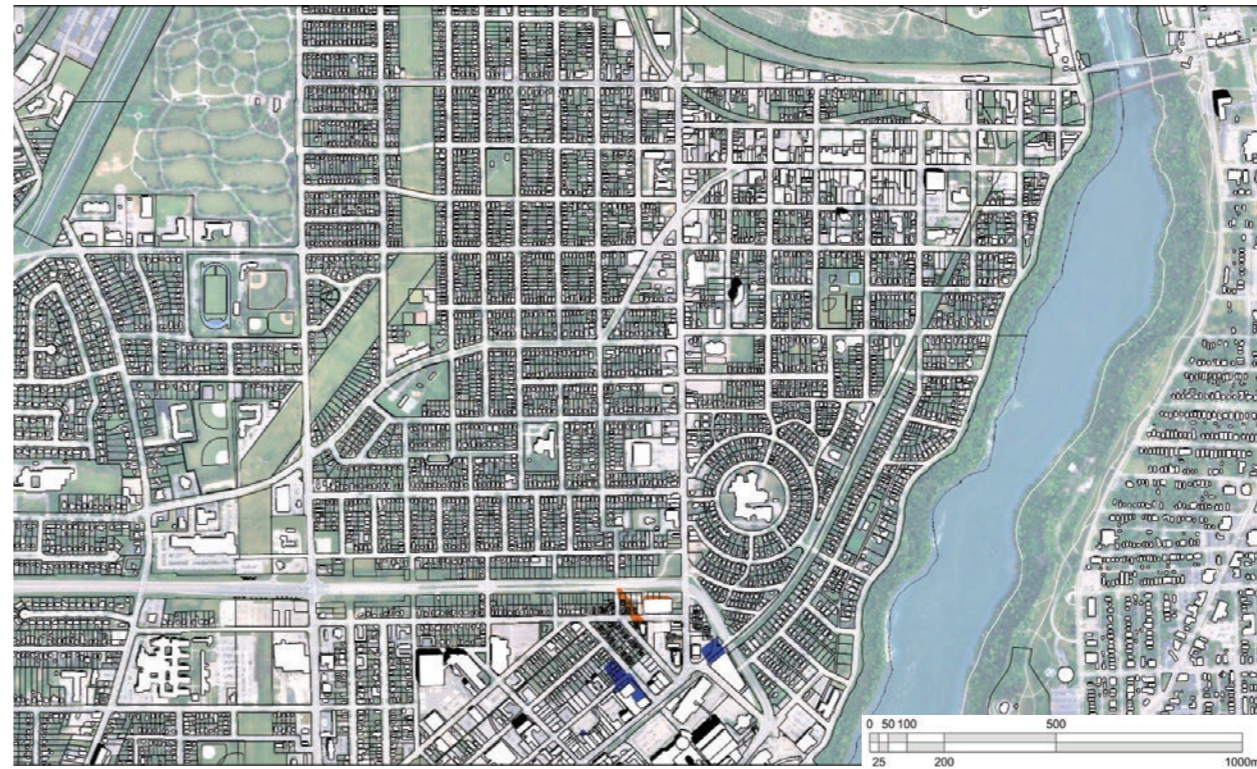
Apr. 21 (11:00 a.m.) - EXISTING CONDITION



Apr. 21 (11:00 a.m.) - PROPOSED CONDITION

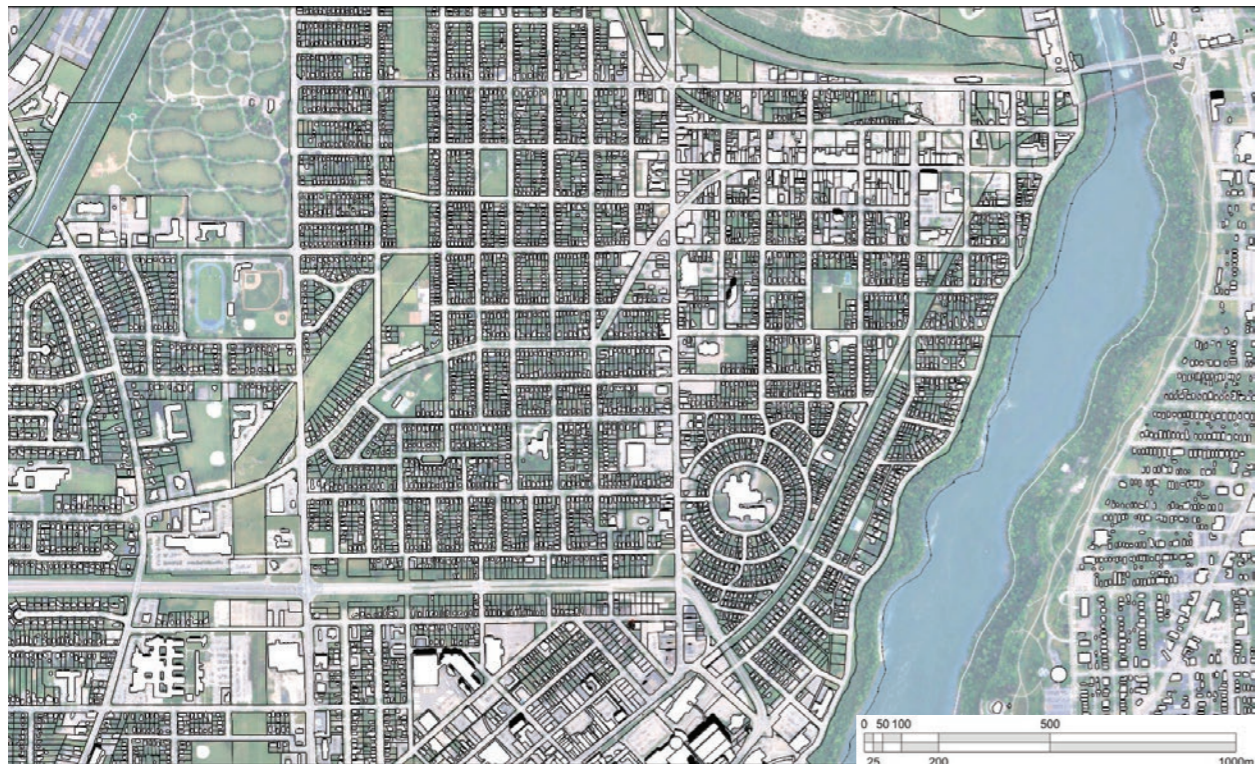


Apr. 21 (12:00 p.m.) - EXISTING CONDITION

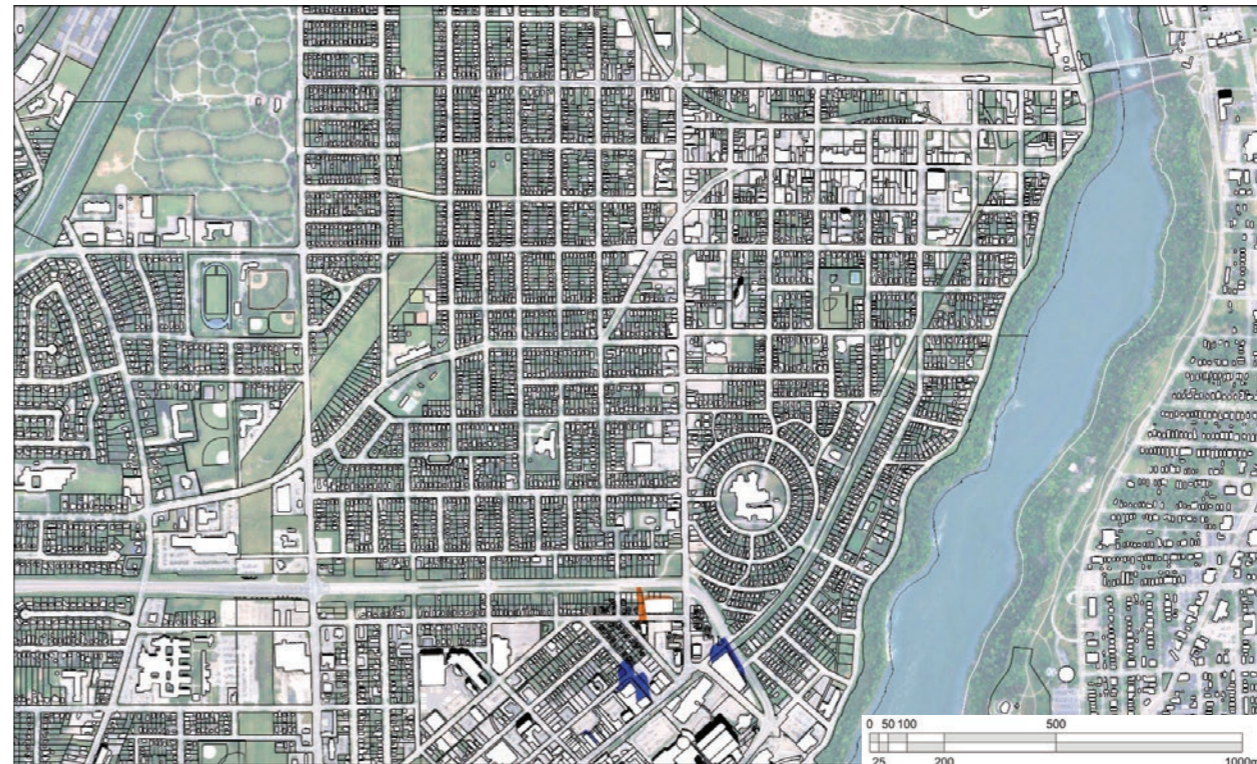


Apr. 21 (12:00 p.m.) - PROPOSED CONDITION

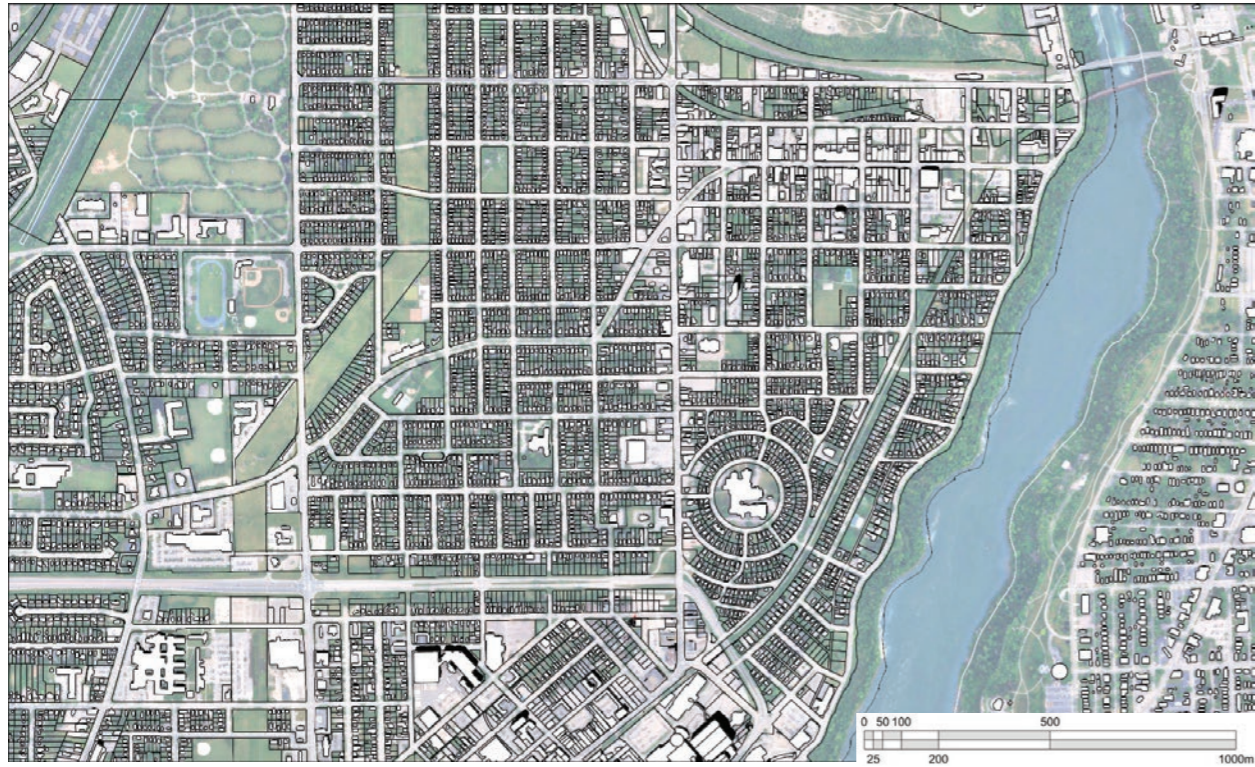
-  Existing Shadows
-  Existing Site Shadows
-  As of Right Shadow
-  Proposed Building Shadow
-  Approved yet Unbuilt Shadows



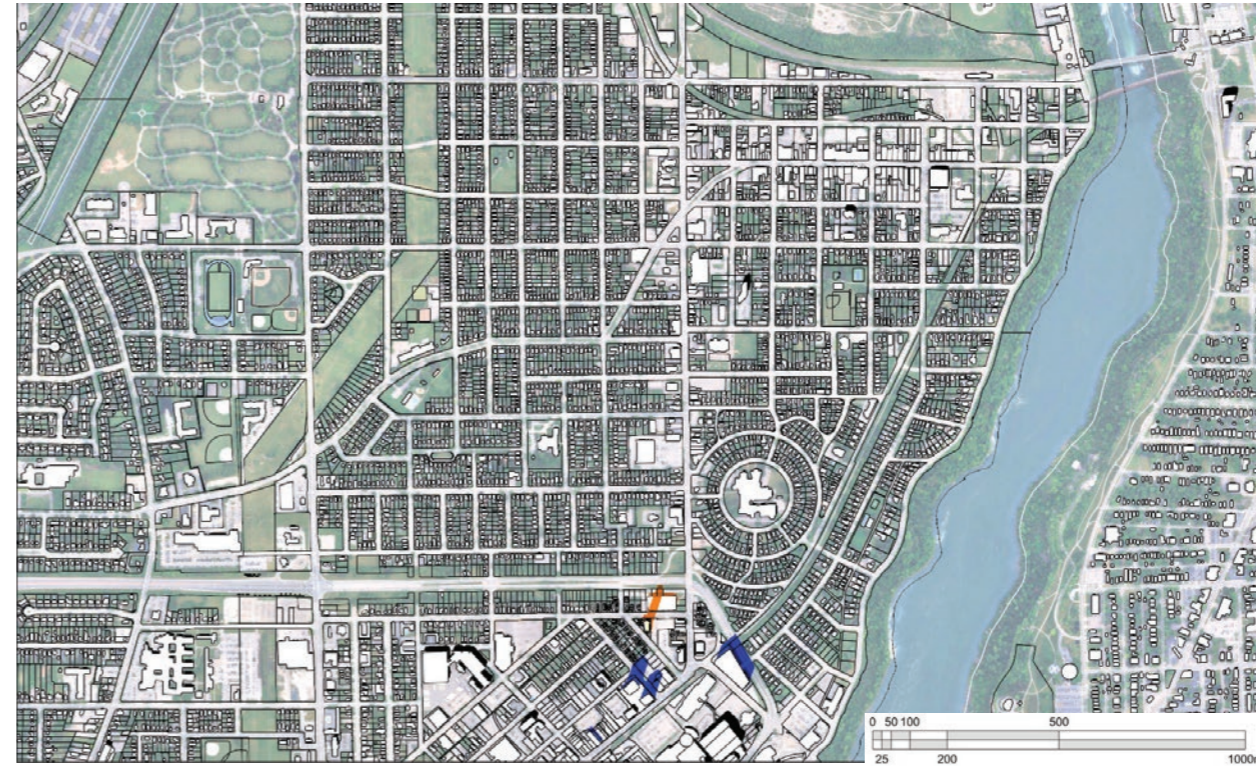
Apr. 21 (1:00 p.m.) - EXISTING CONDITION



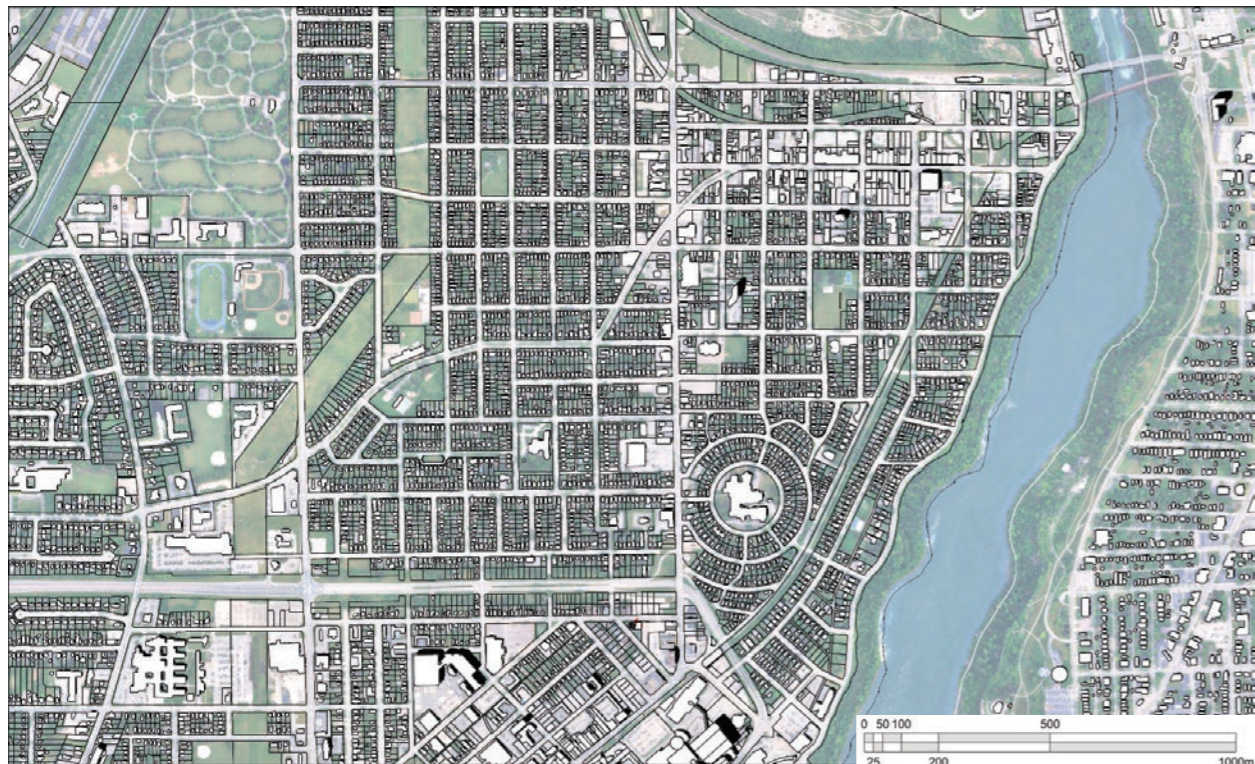
Apr. 21 (1:00 p.m.) - PROPOSED CONDITION



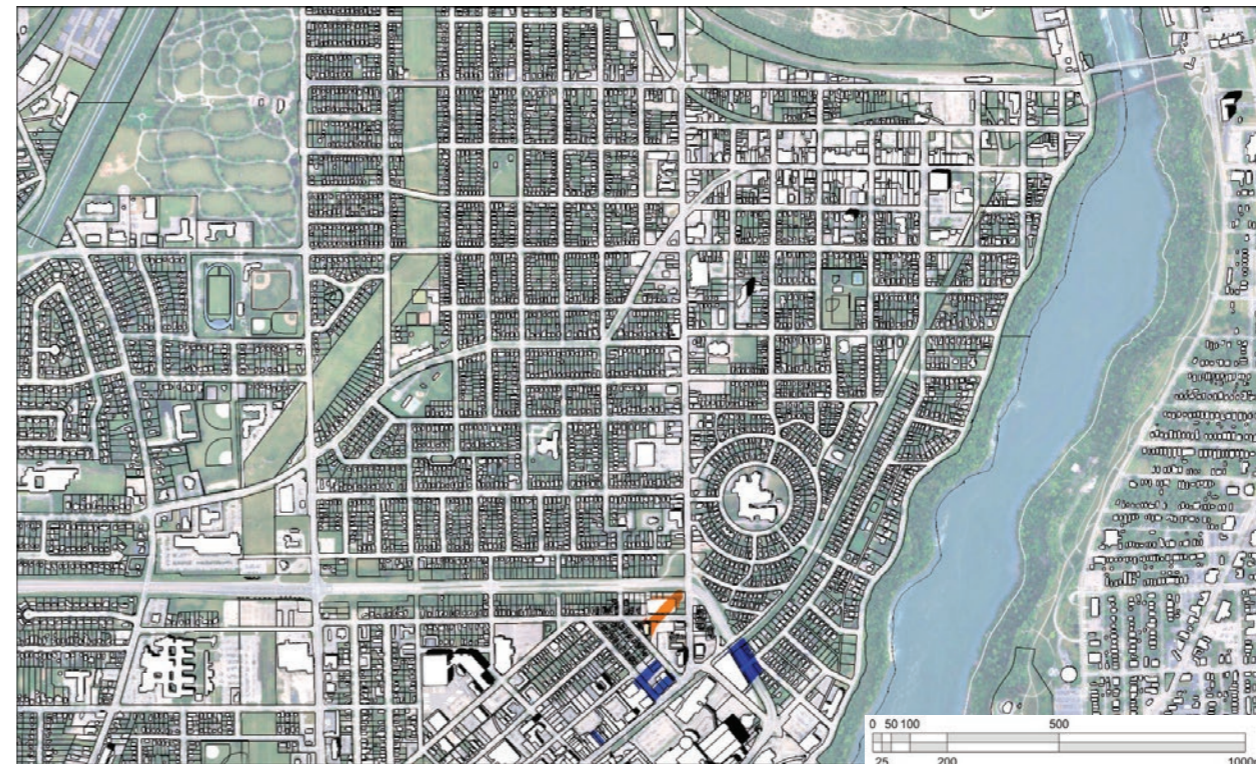
Apr. 21 (2:00 p.m.) - EXISTING CONDITION



Apr. 21 (2:00 p.m.) - PROPOSED CONDITION

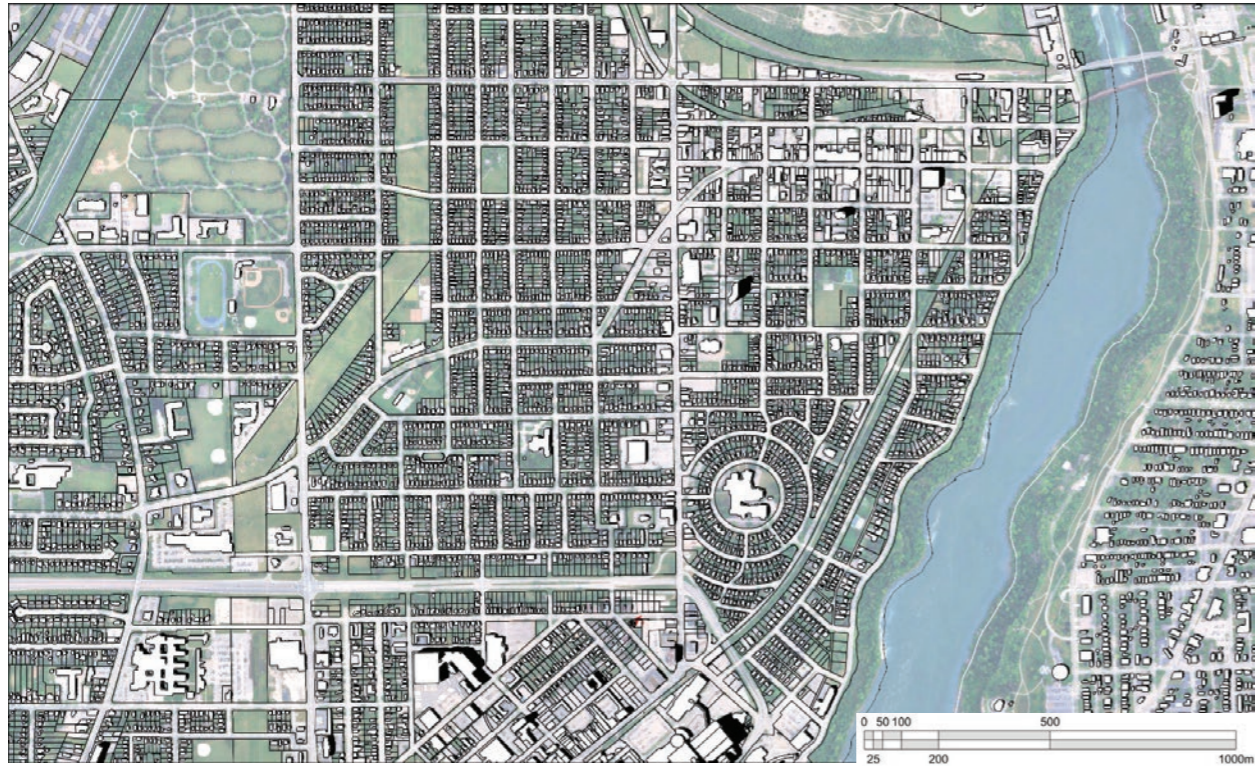


Apr. 21 (3:00 p.m.) - EXISTING CONDITION

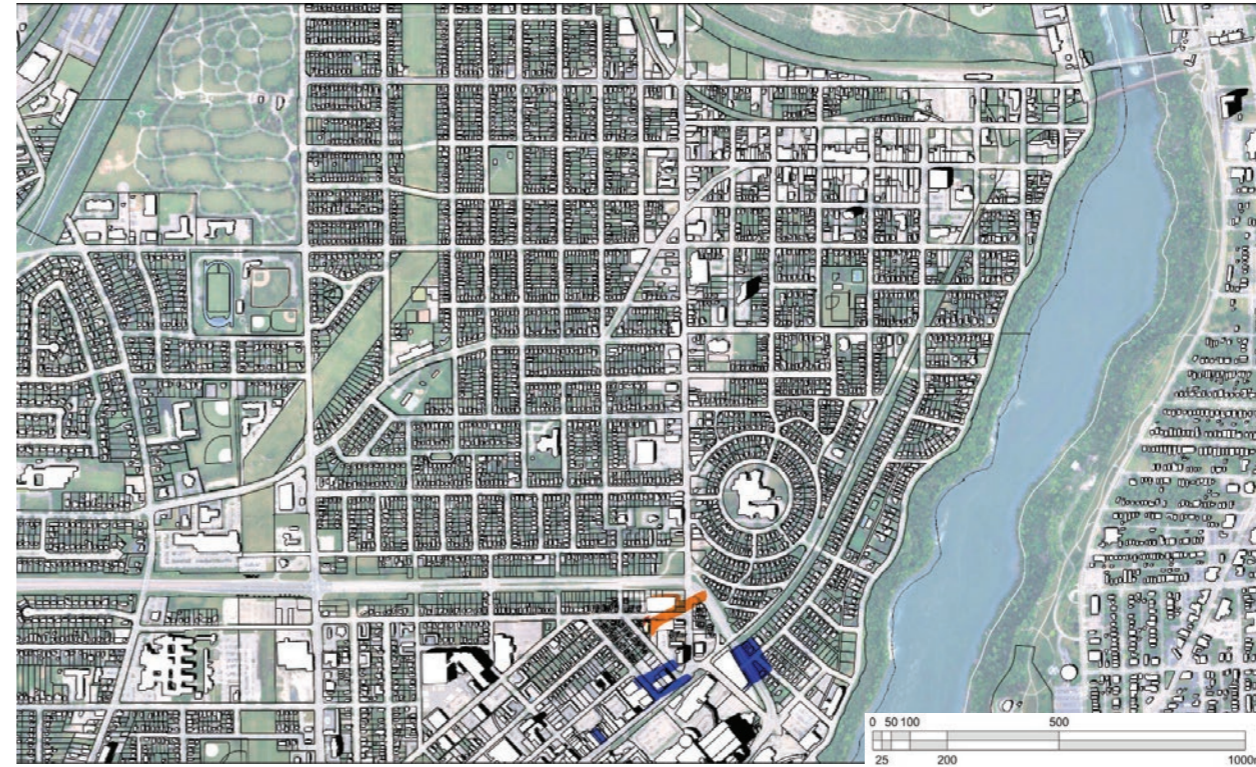


Apr. 21 (3:00 p.m.) - PROPOSED CONDITION

-  Existing Shadows
-  Existing Site Shadows
-  As of Right Shadow
-  Proposed Building Shadow
-  Approved yet Unbuilt Shadows

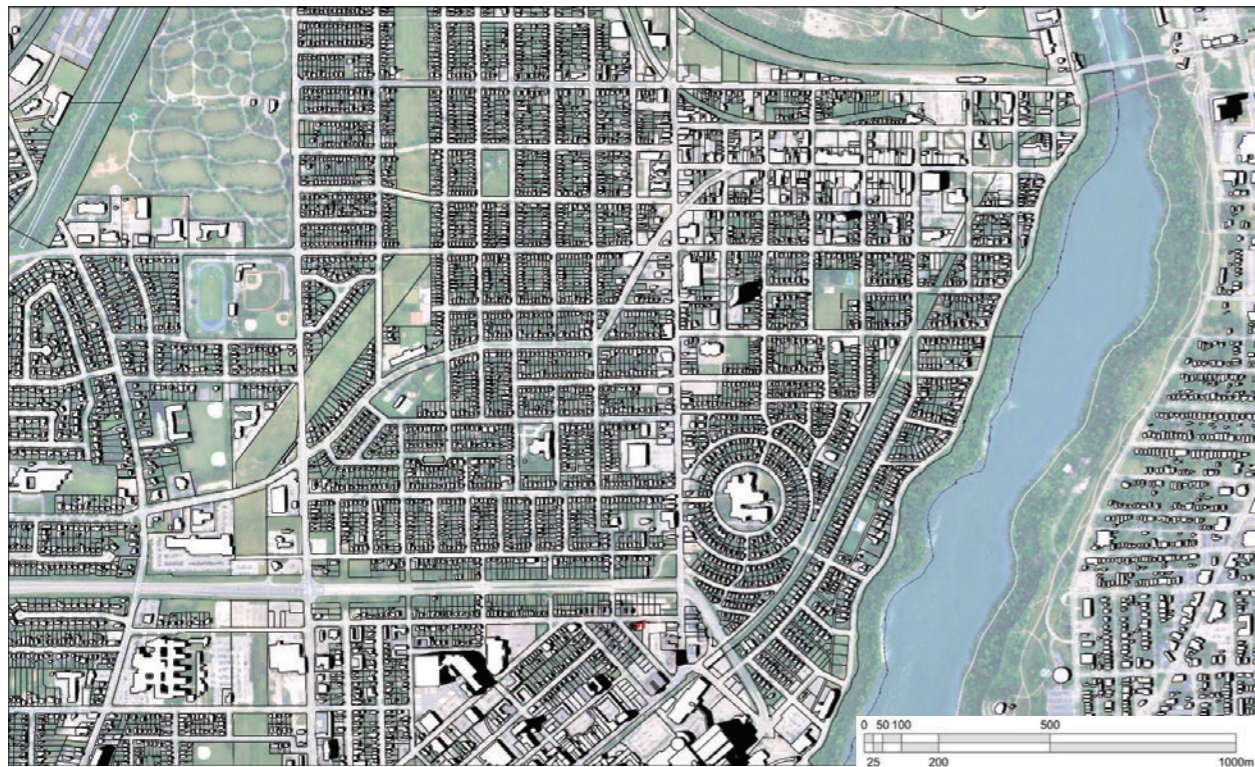


Apr. 21 (4:00 p.m.) - EXISTING CONDITION

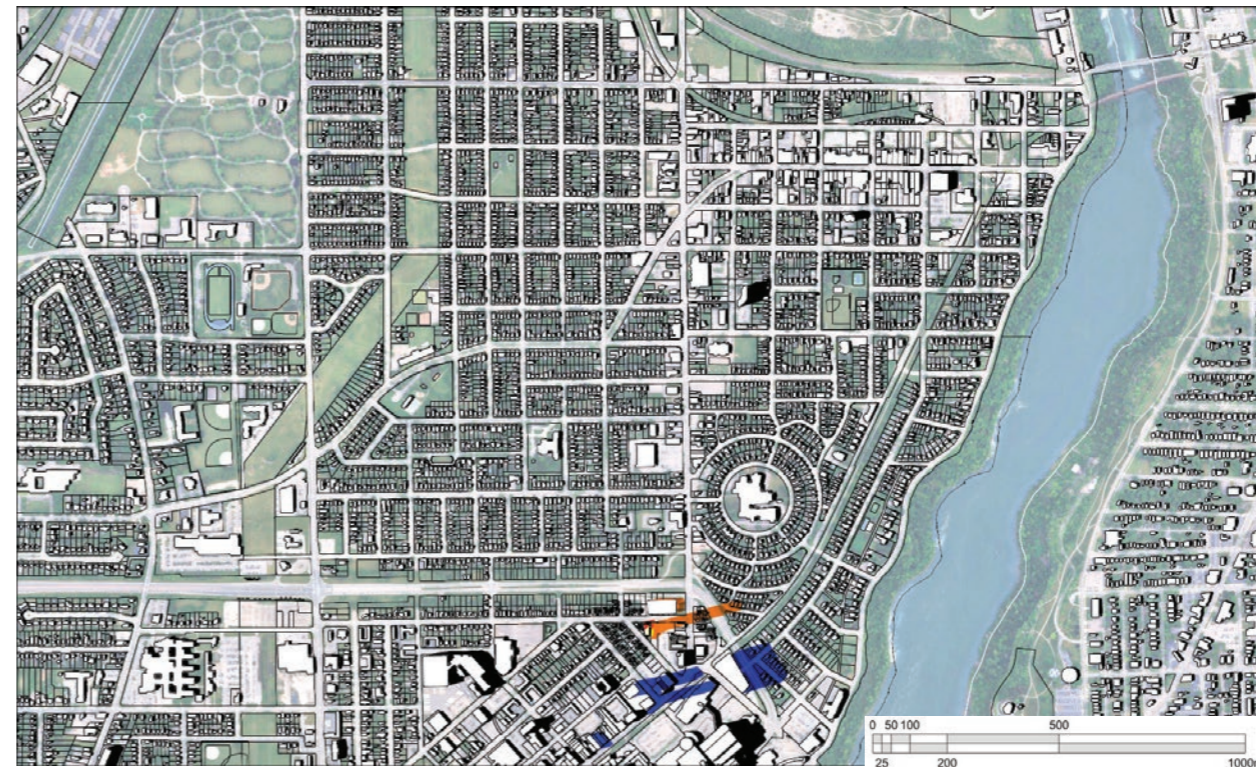


Apr. 21 (4:00 p.m.) - PROPOSED CONDITION

-  Existing Shadows
-  Existing Site Shadows
-  As of Right Shadow
-  Proposed Building Shadow
-  Approved yet Unbuilt Shadows



Apr. 21 (5:00 p.m.) - EXISTING CONDITION



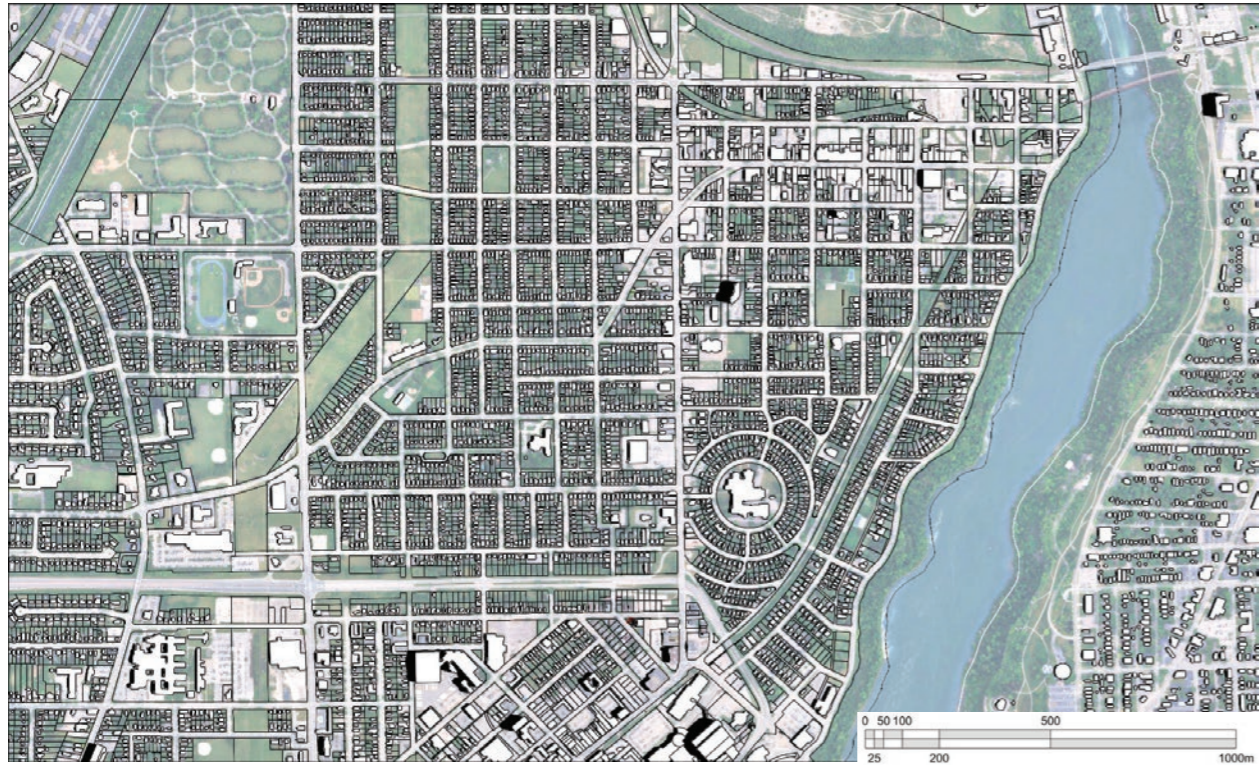
Apr. 21 (5:00 p.m.) - PROPOSED CONDITION



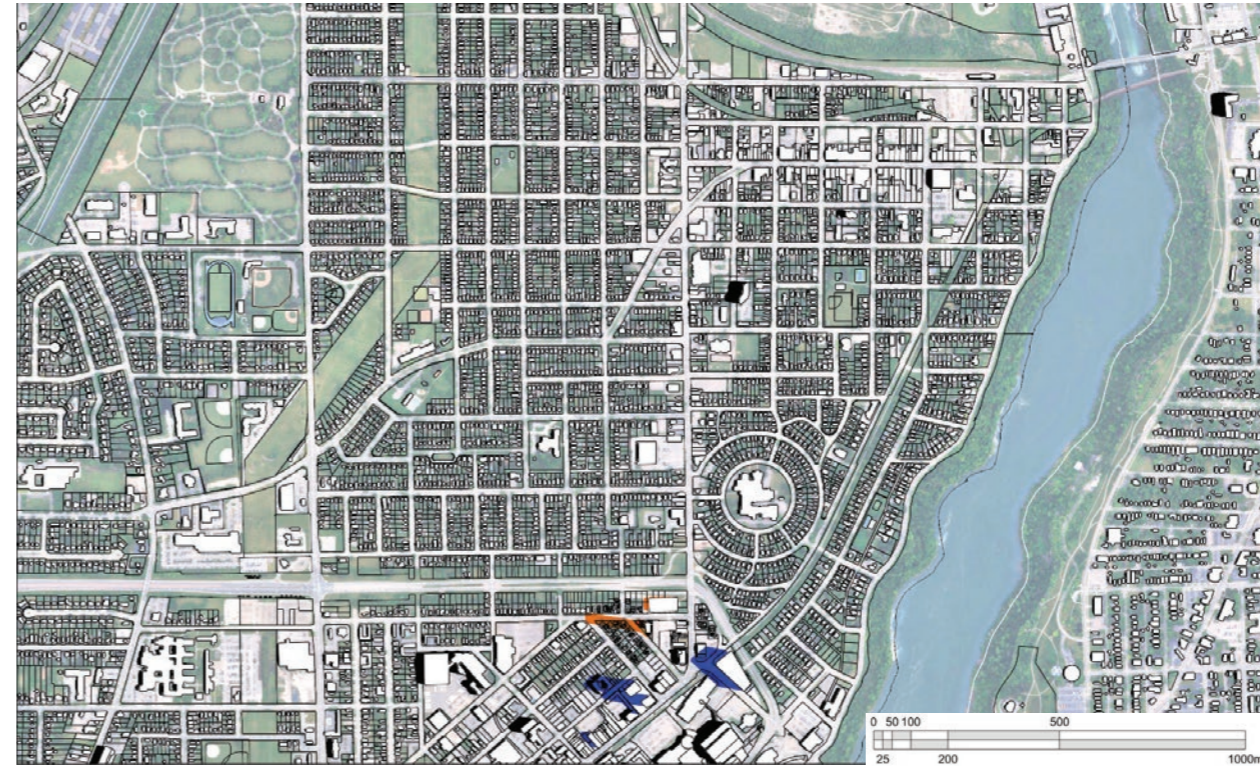
-  Existing Shadows
-  Existing Site Shadows
-  As of Right Shadow
-  Proposed Building Shadow
-  Approved yet Unbuilt Shadows

Apr. 21 (6:00 p.m.) - EXISTING CONDITION

Apr. 21 (6:00 p.m.) - PROPOSED CONDITION



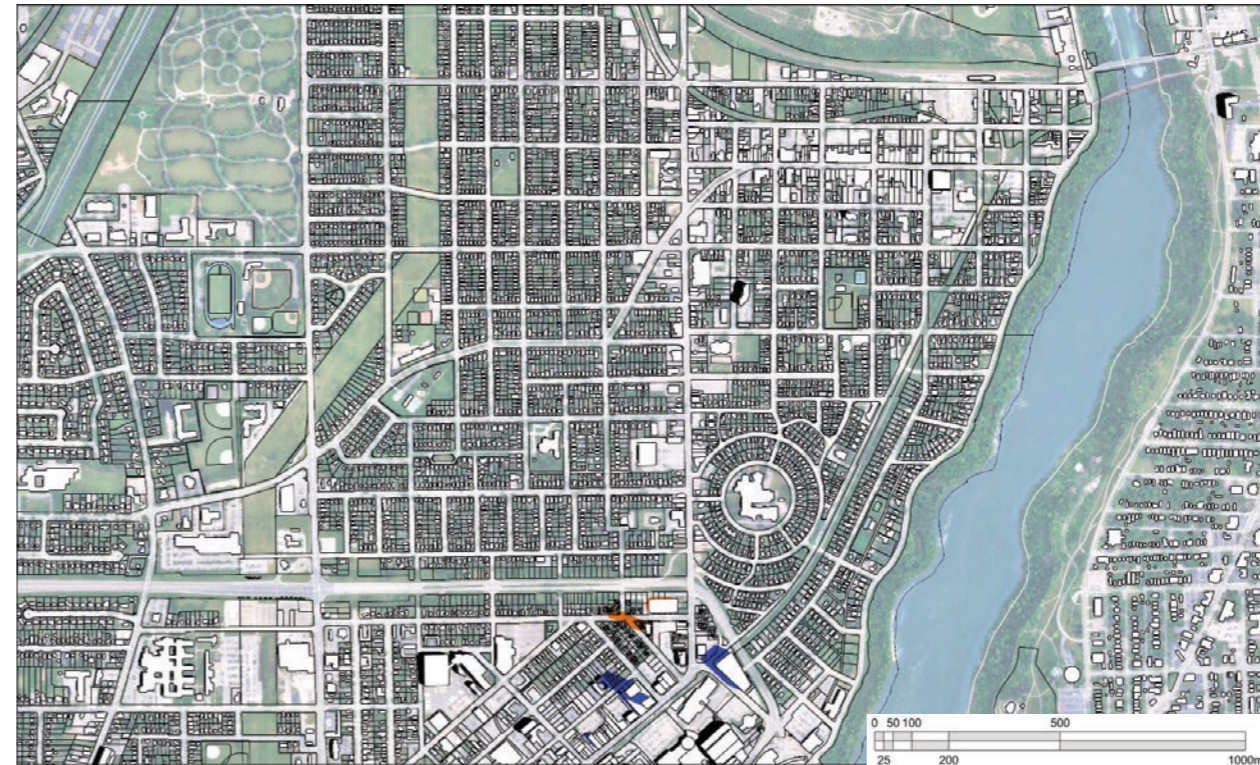
Jun. 21 (10:00 a.m.) - EXISTING CONDITION



Jun. 21 (10:00 a.m.) - PROPOSED CONDITION

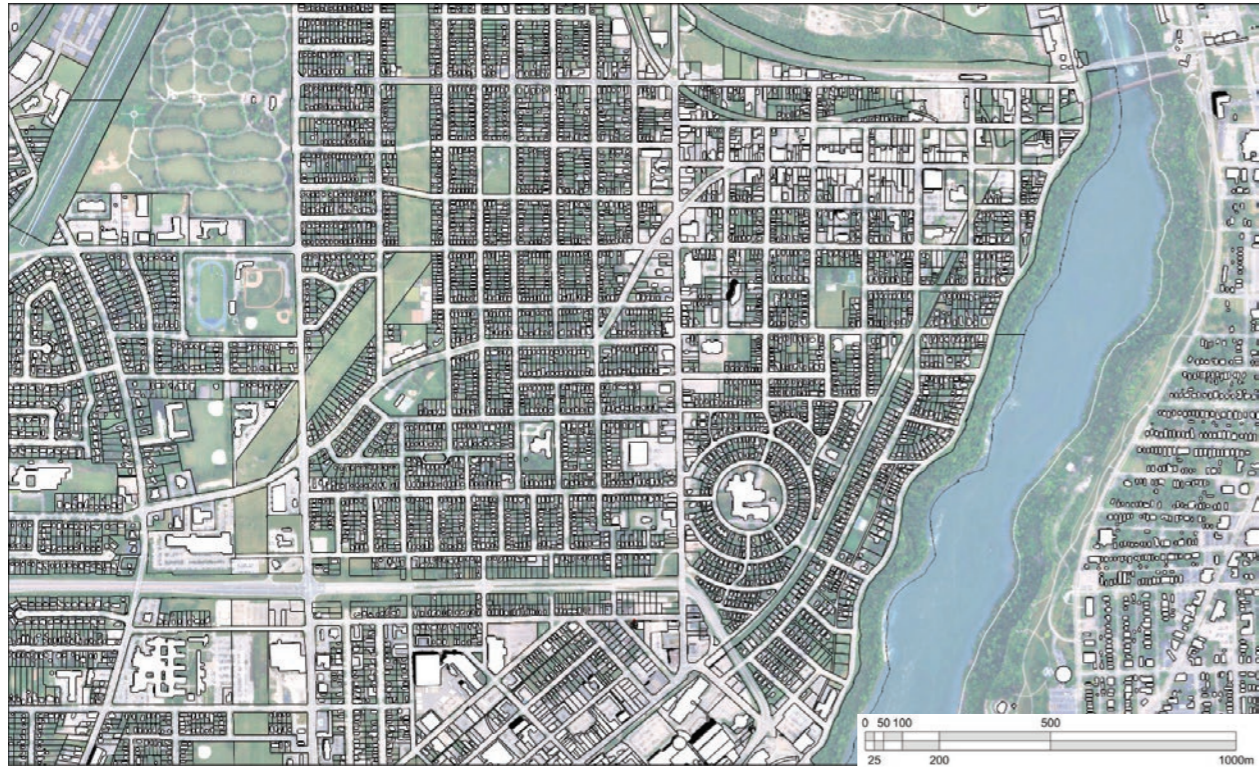


Jun. 21 (11:00 a.m.) - EXISTING CONDITION

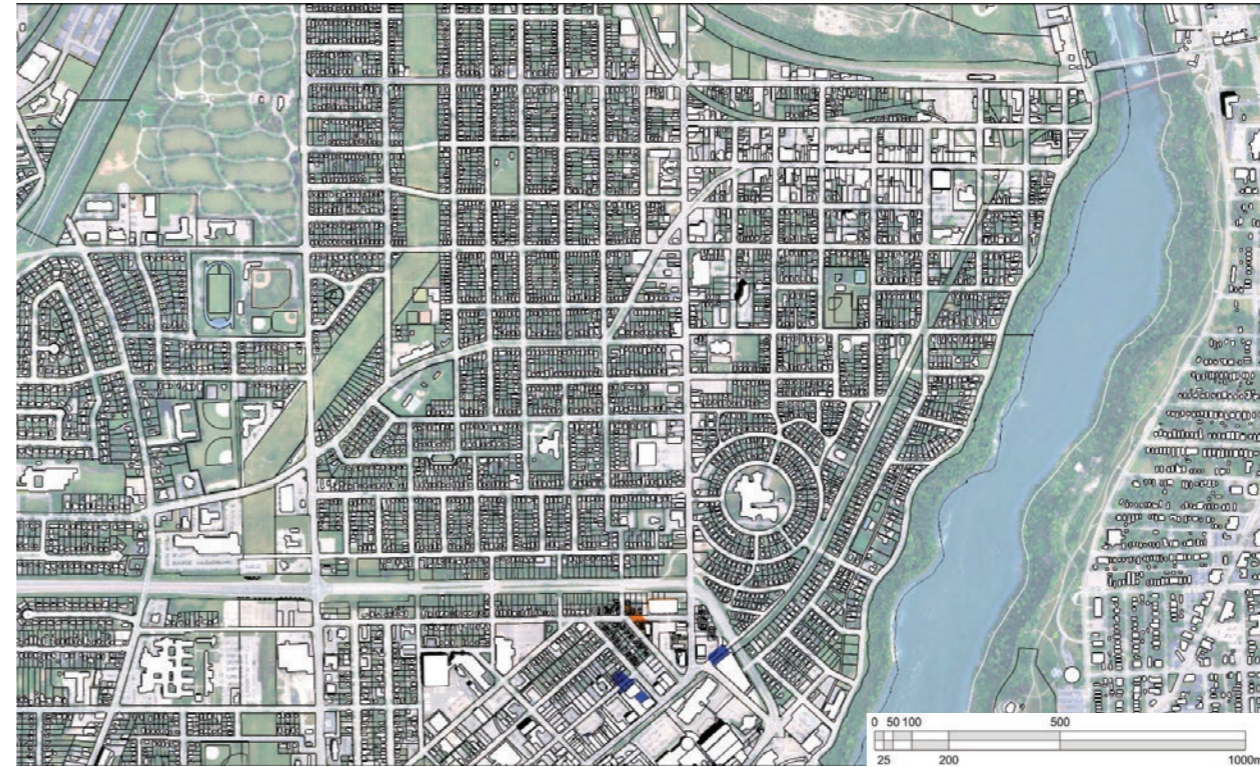


Jun. 21 (11:00 a.m.) - PROPOSED CONDITION

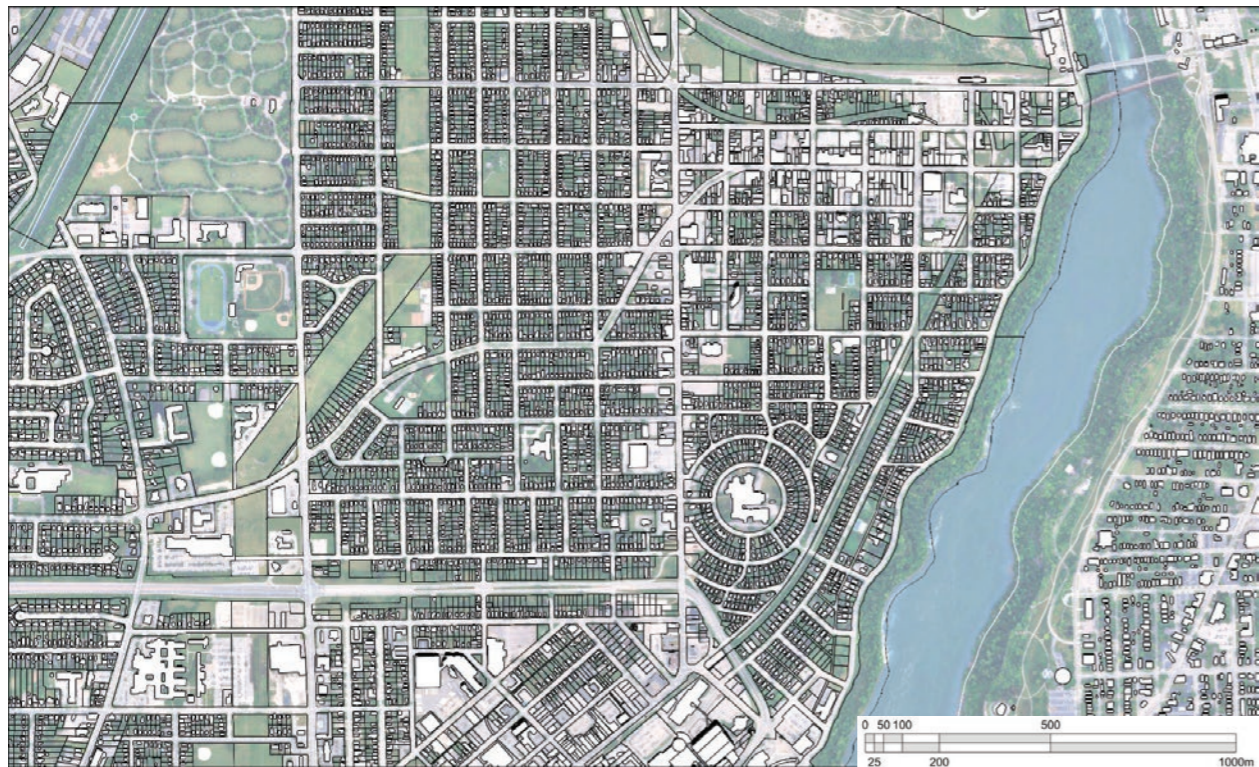
-  Existing Shadows
-  Existing Site Shadows
-  As of Right Shadow
-  Proposed Building Shadow
-  Approved yet Unbuilt Shadows



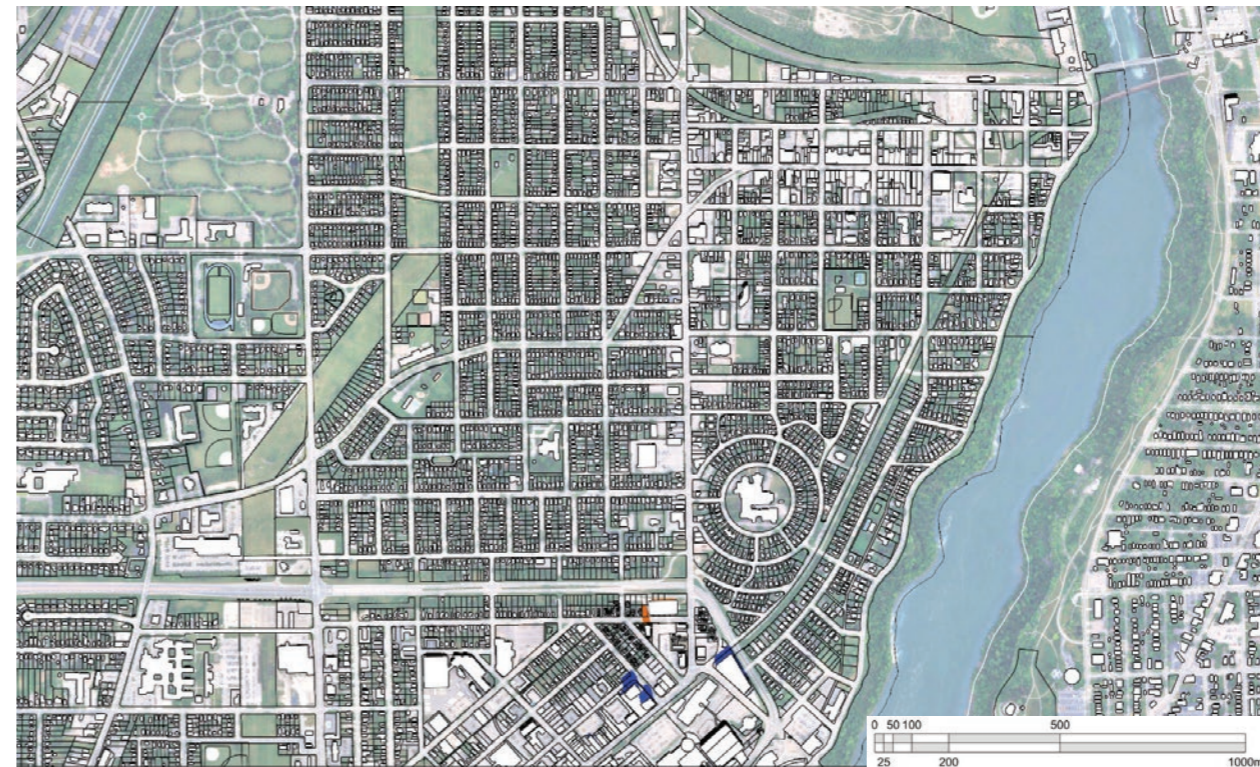
Jun. 21 (12:00 p.m.) - EXISTING CONDITION



Jun. 21 (12:00 p.m.) - PROPOSED CONDITION

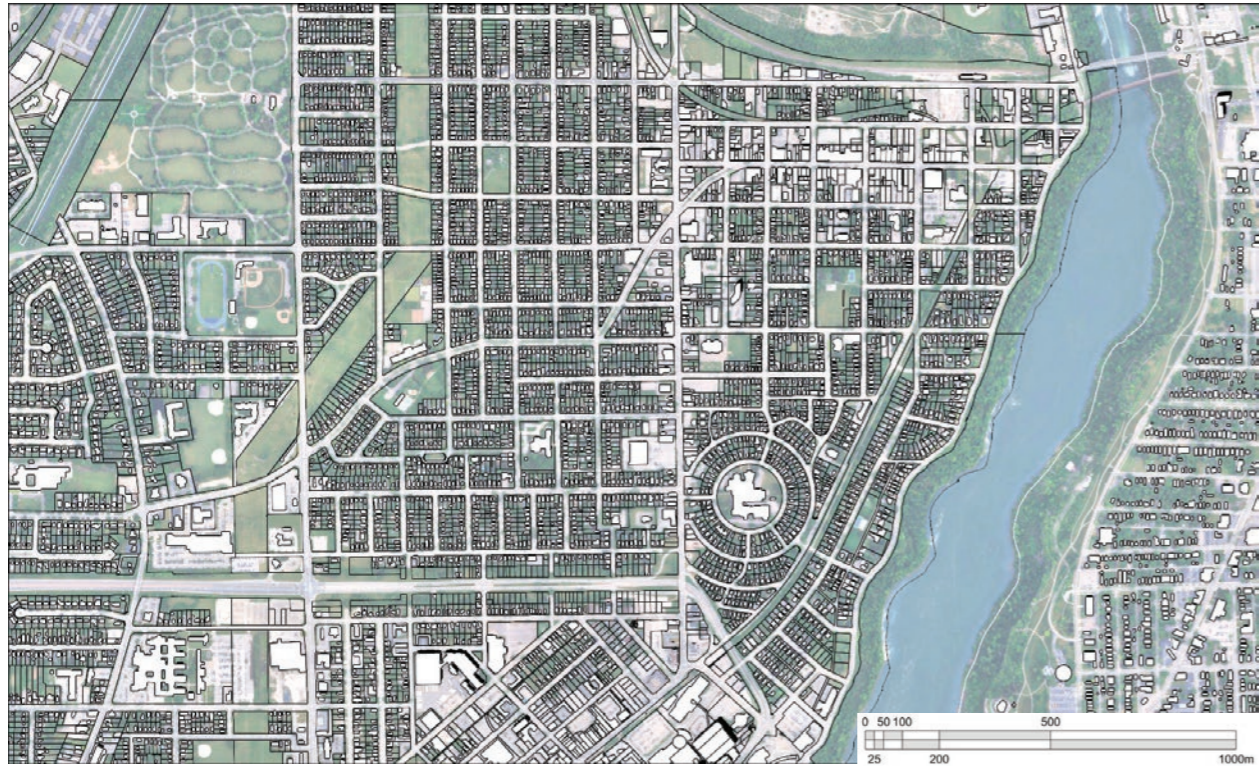


Jun.21 (1:00 p.m.) - EXISTING CONDITION

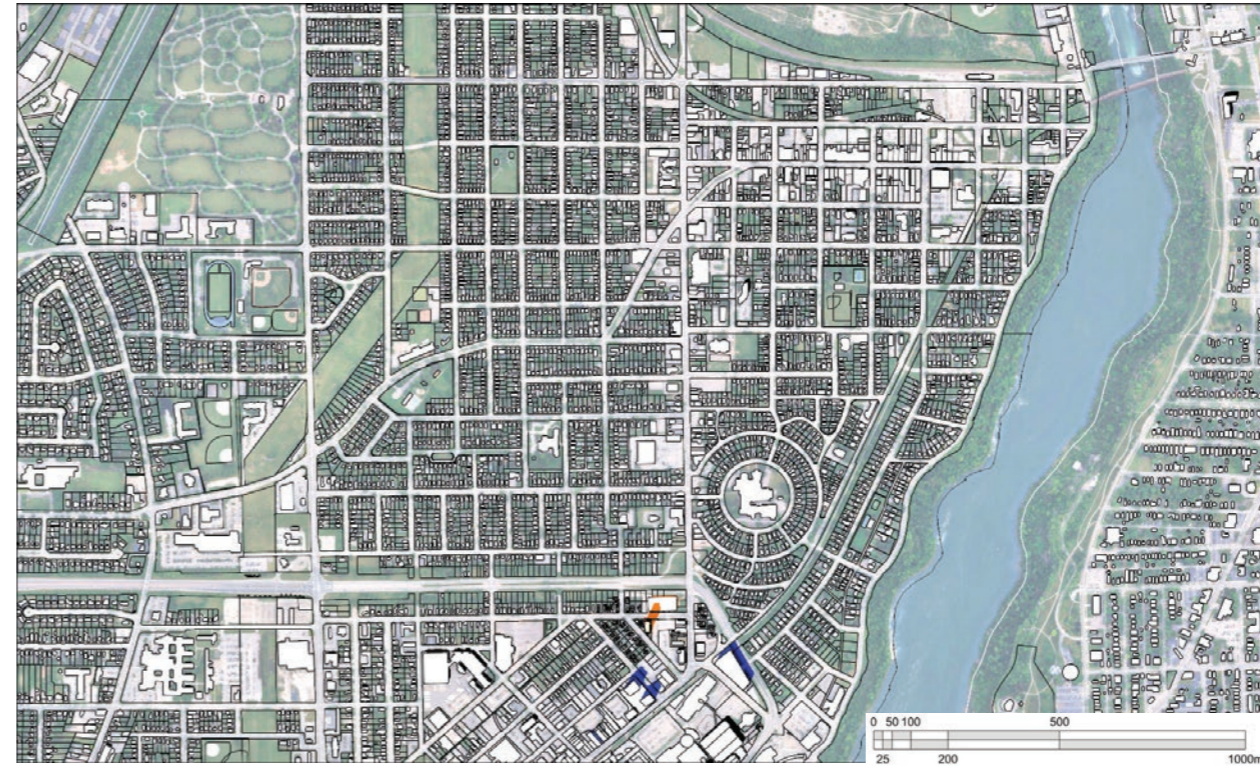


Jun. 21 (1:00 p.m.) - PROPOSED CONDITION

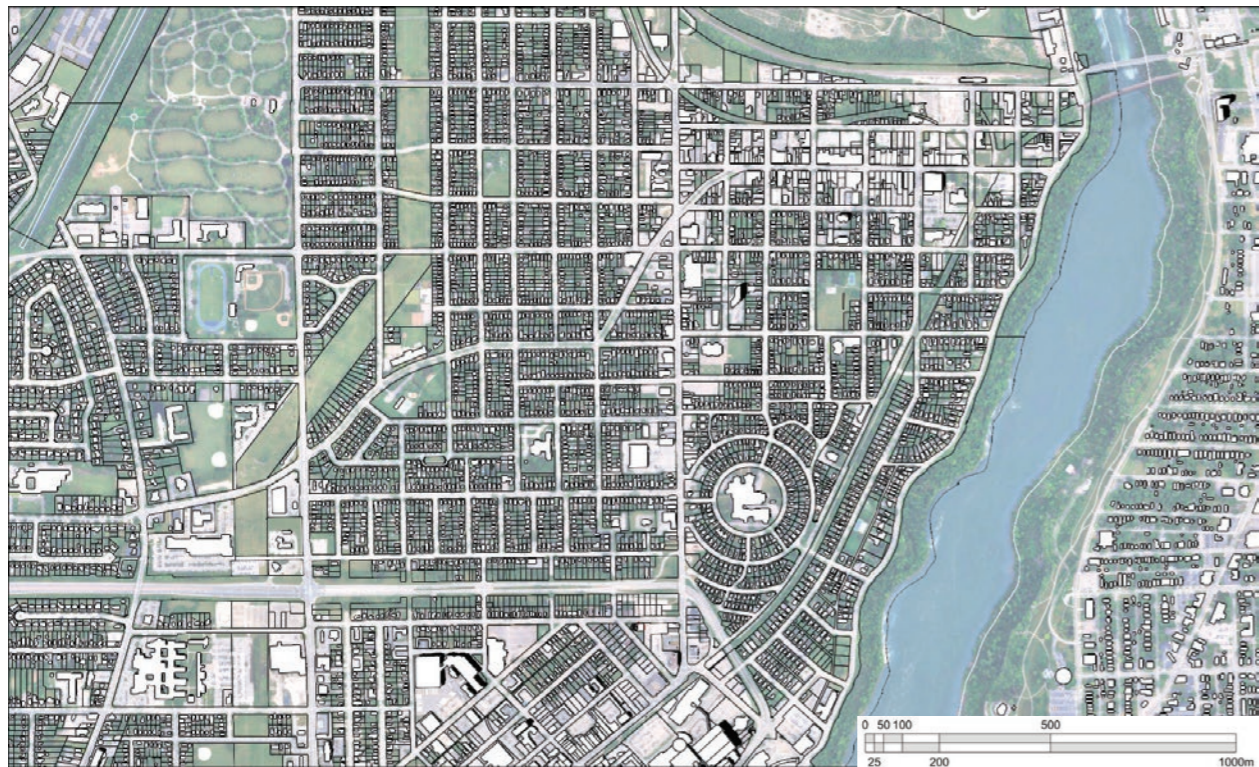
-  Existing Shadows
-  Existing Site Shadows
-  As of Right Shadow
-  Proposed Building Shadow
-  Approved yet Unbuilt Shadows



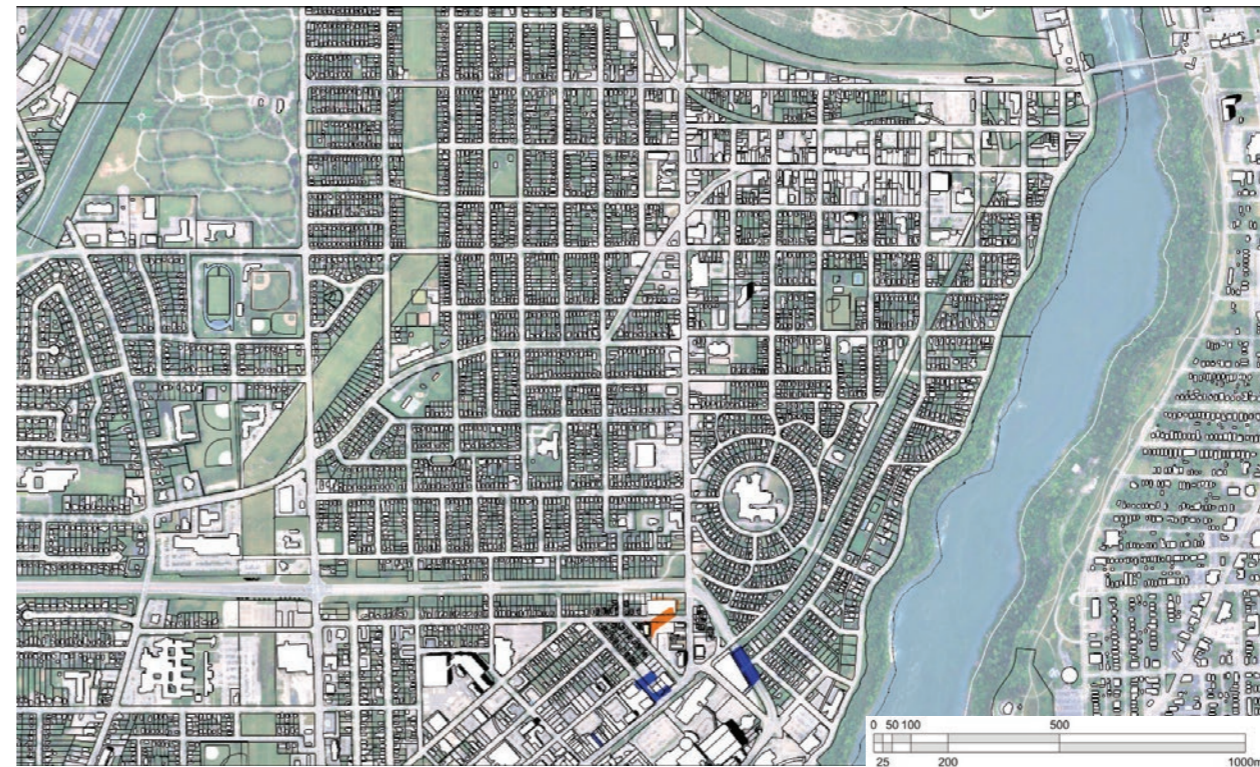
Jun. 21 (2:00 p.m.) - EXISTING CONDITION



Jun. 21 (2:00 p.m.) - PROPOSED CONDITION

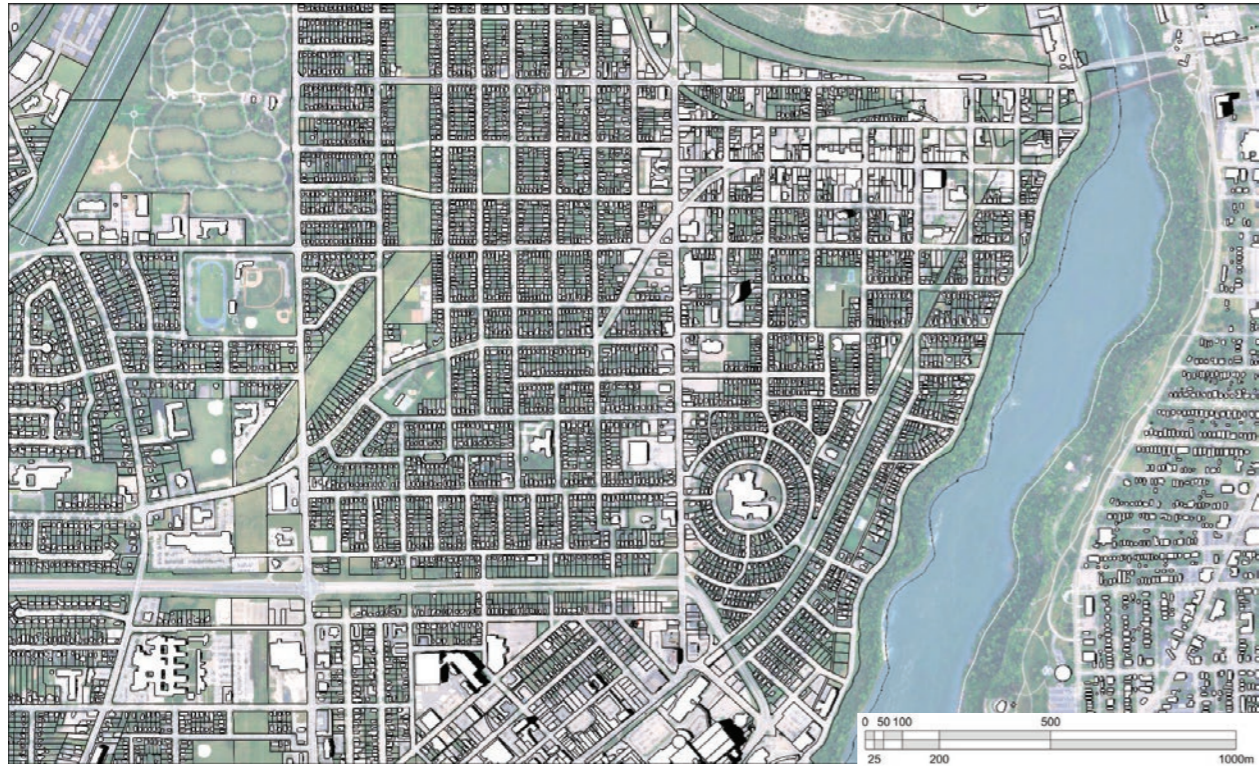


Jun. 21 (3:00 p.m.) - EXISTING CONDITION

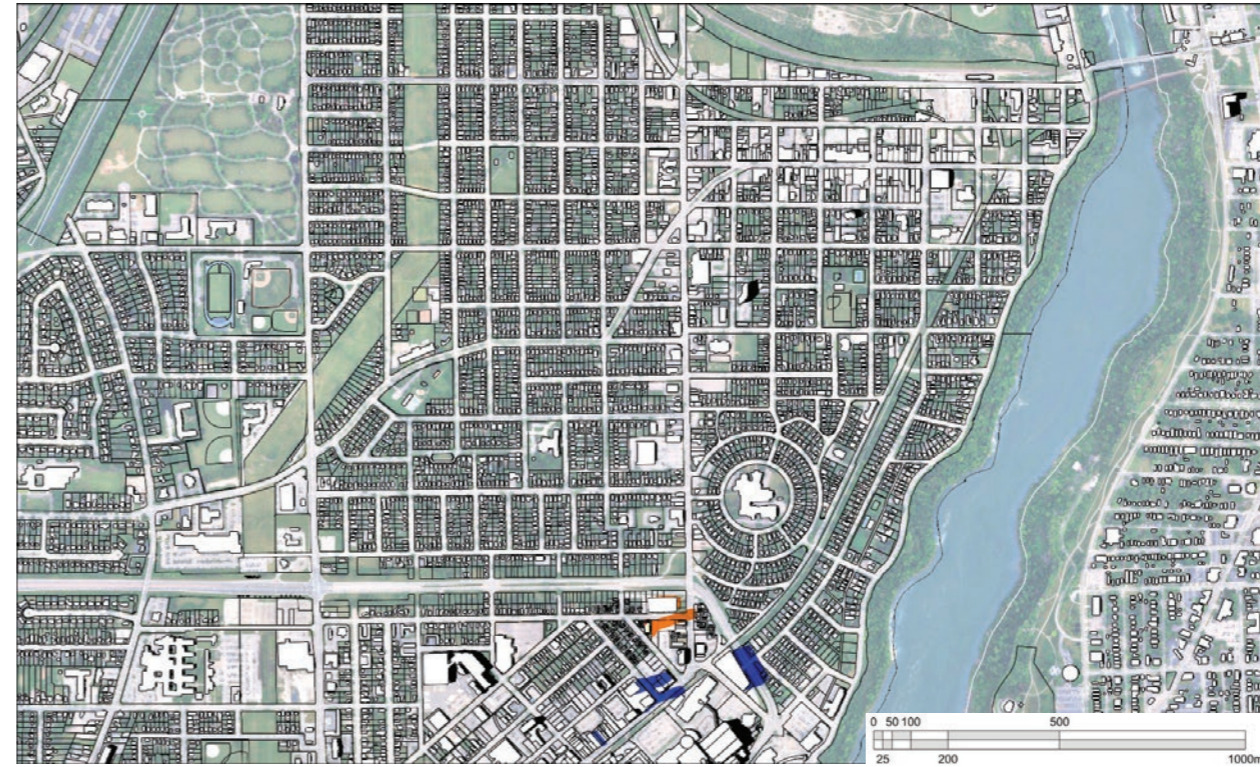


Jun. 21 (3:00 p.m.) - PROPOSED CONDITION

-  Existing Shadows
-  Existing Site Shadows
-  As of Right Shadow
-  Proposed Building Shadow
-  Approved yet Unbuilt Shadows

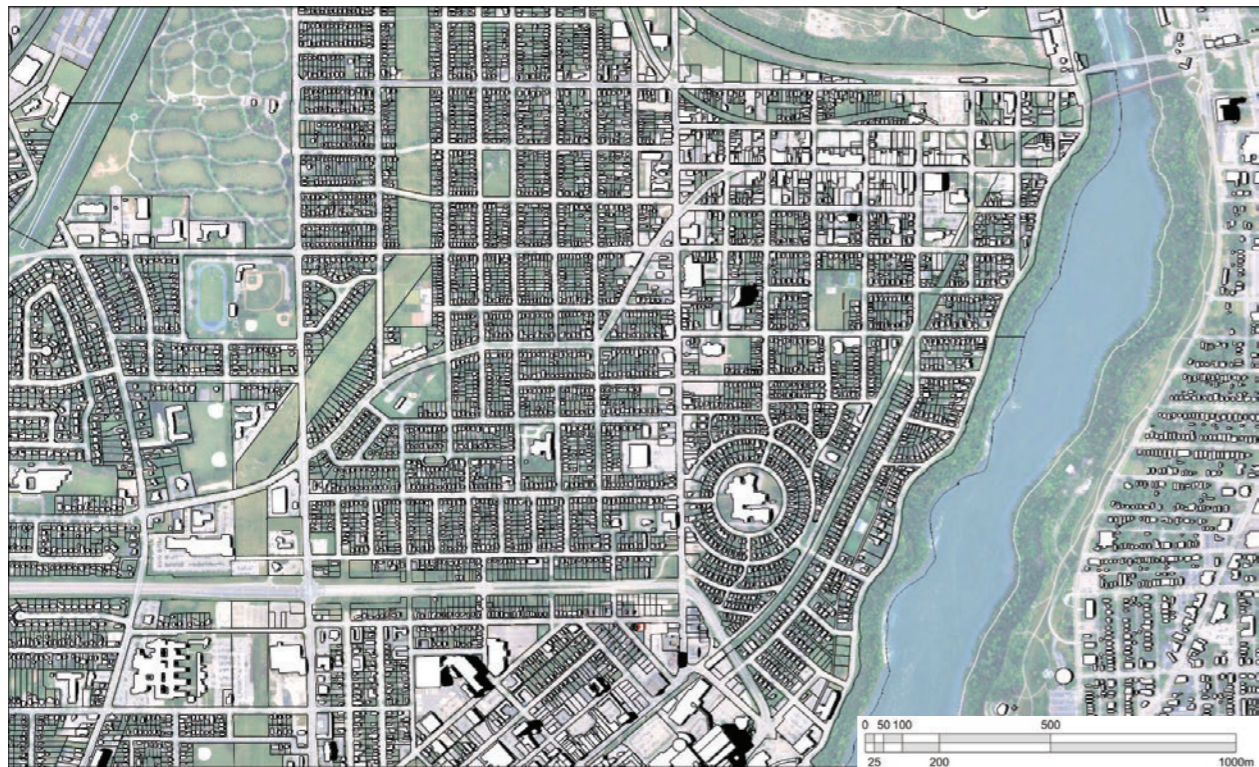


Jun. 21 (4:00 p.m.) - EXISTING CONDITION

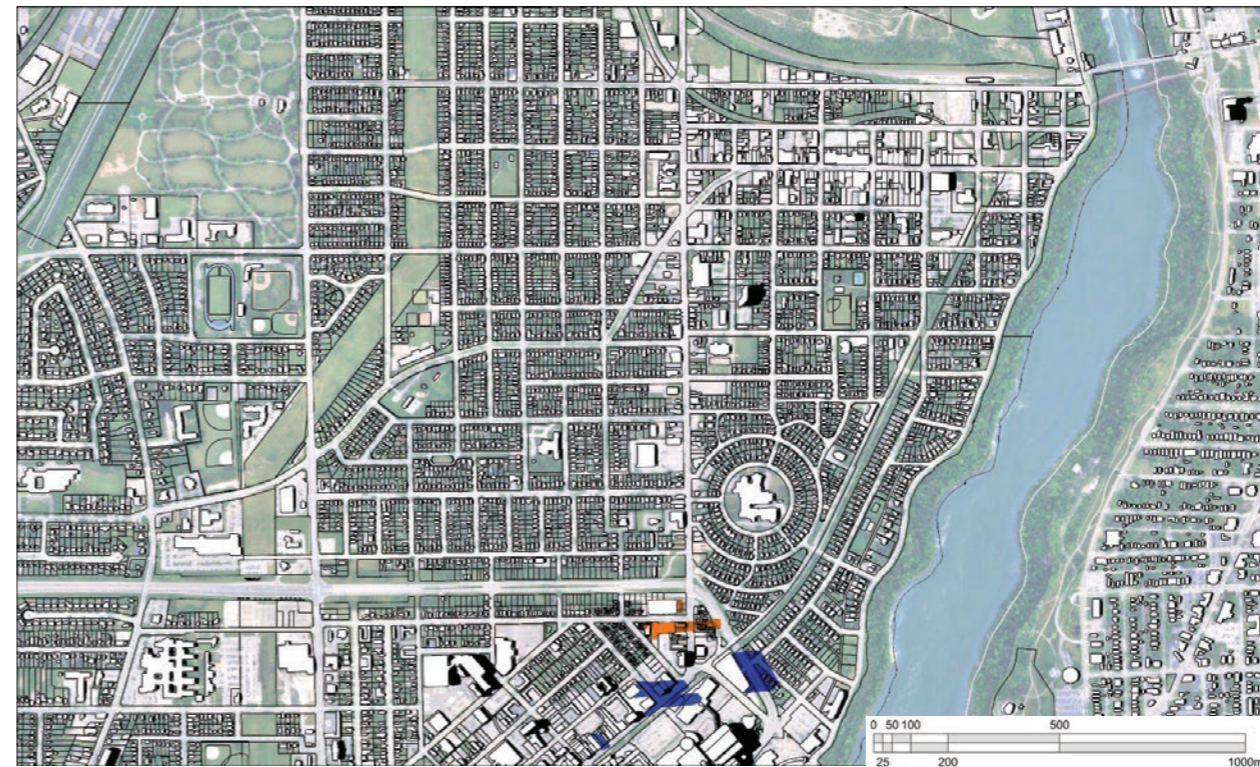


Jun. 21 (4:00 p.m.) - PROPOSED CONDITION

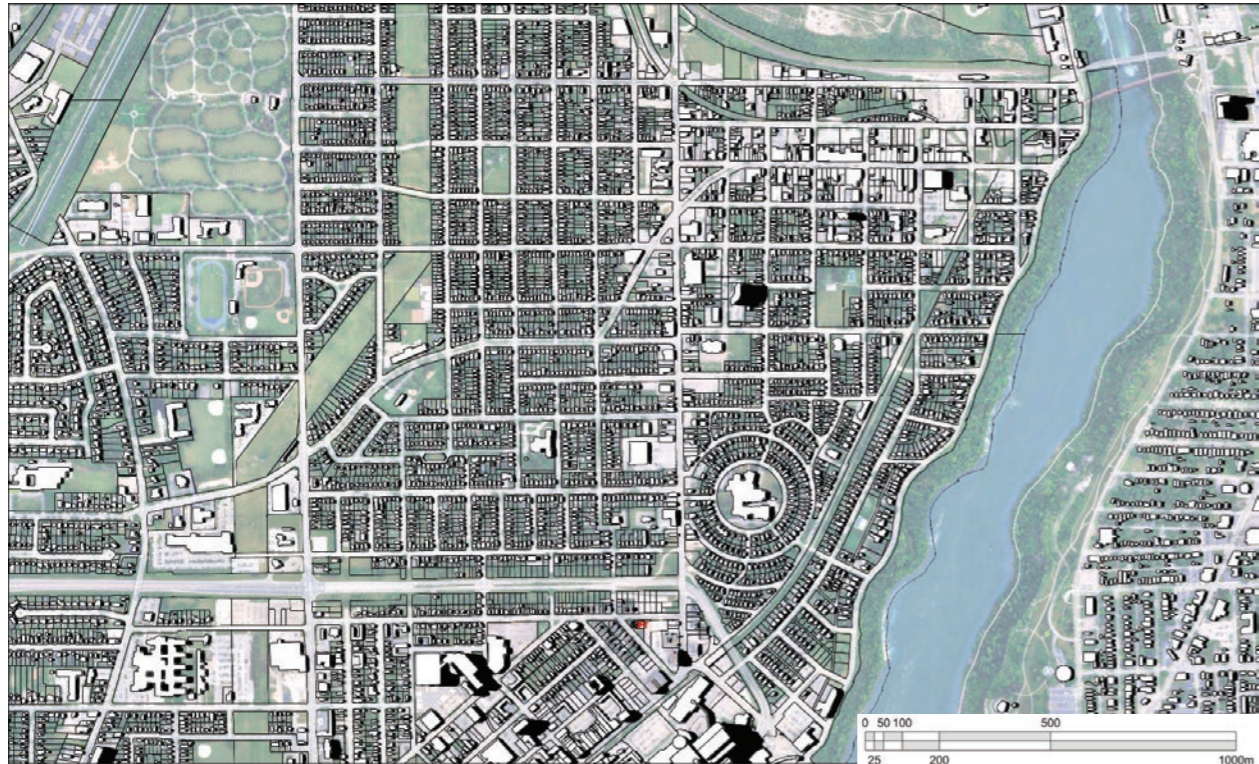
-  Existing Shadows
-  Existing Site Shadows
-  As of Right Shadow
-  Proposed Building Shadow
-  Approved yet Unbuilt Shadows



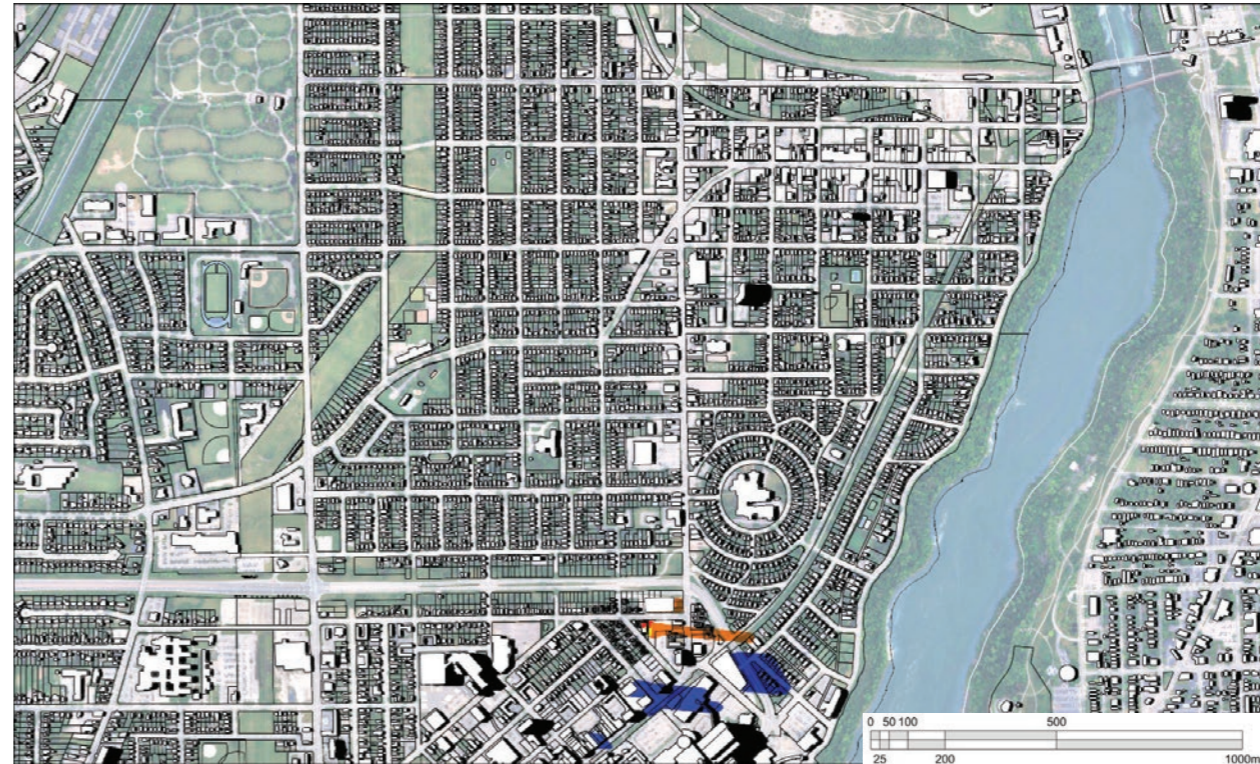
Jun. 21 (5:00 p.m.) - EXISTING CONDITION



Jun. 21 (5:00 p.m.) - PROPOSED CONDITION

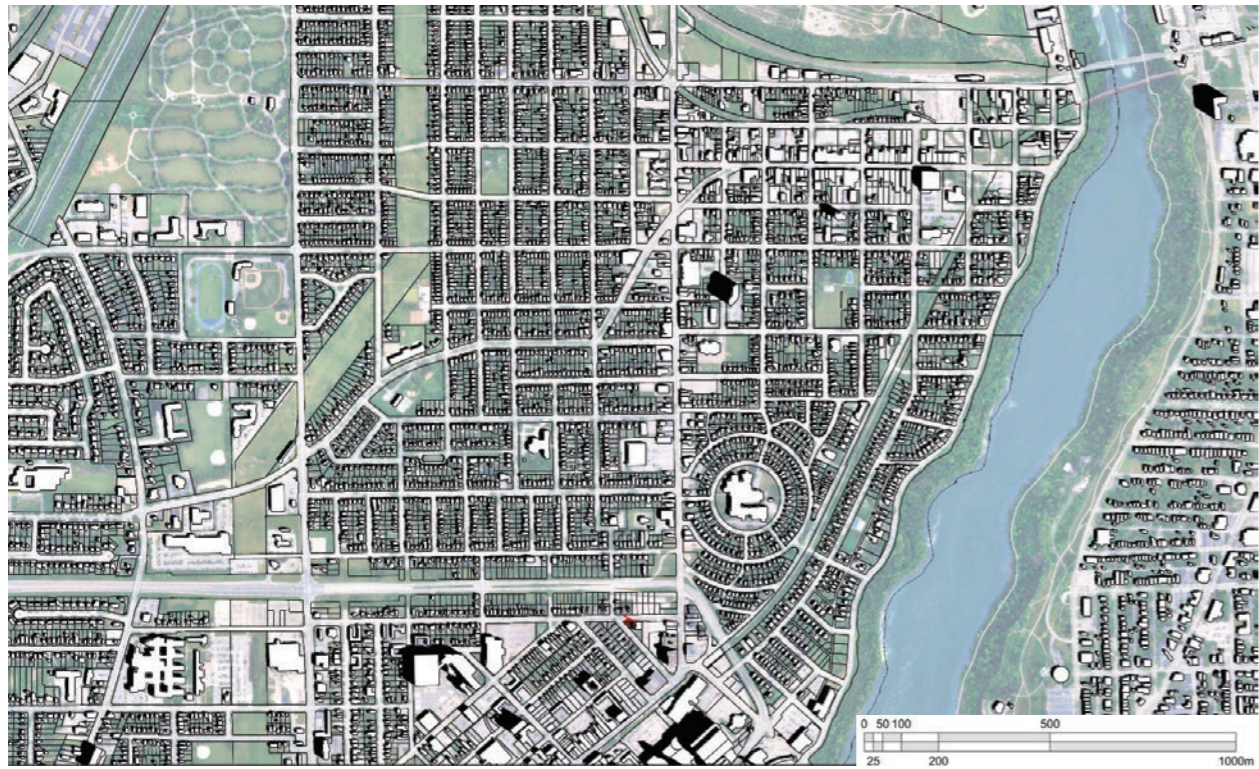


Jun. 21 (6:00 p.m.) - EXISTING CONDITION

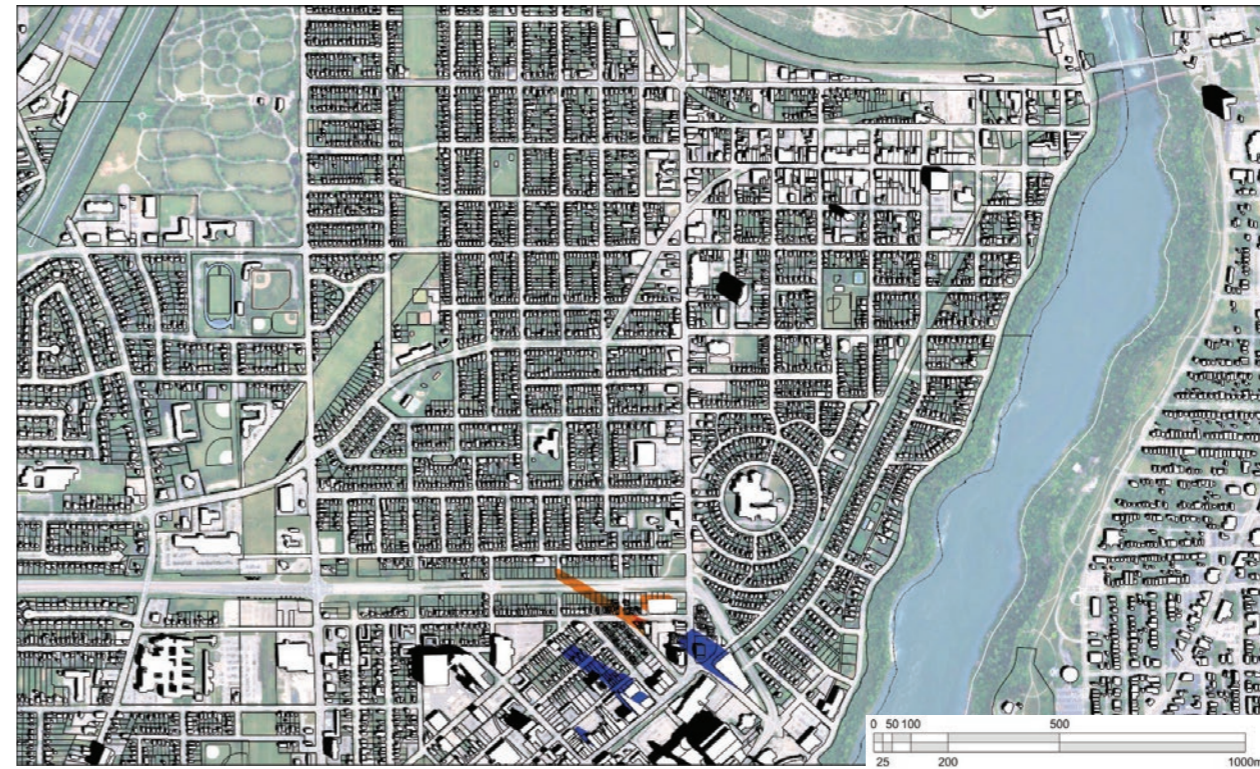


Jun. 21 (6:00 p.m.) - PROPOSED CONDITION

-  Existing Shadows
-  Existing Site Shadows
-  As of Right Shadow
-  Proposed Building Shadow
-  Approved yet Unbuilt Shadows

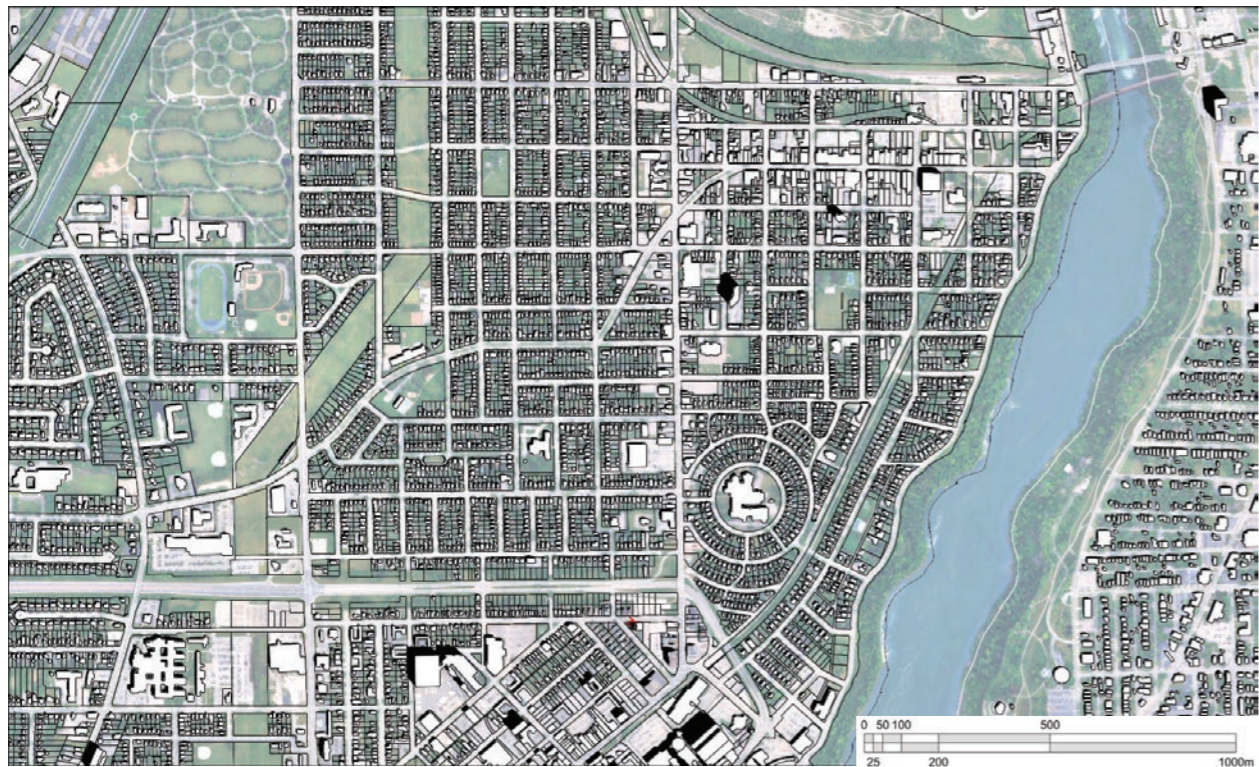


Sept. 21 (10:00 a.m.) - EXISTING CONDITION

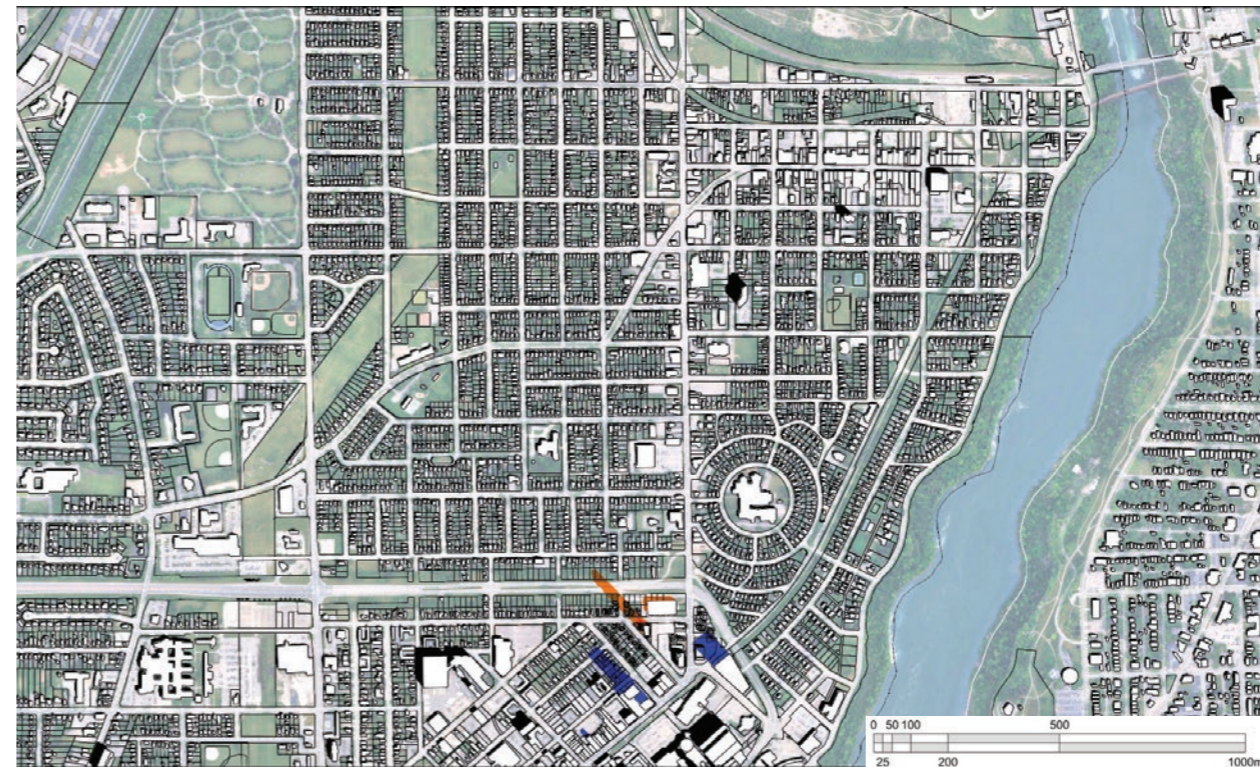


Sept. 21 (10:00 a.m.) - PROPOSED CONDITION

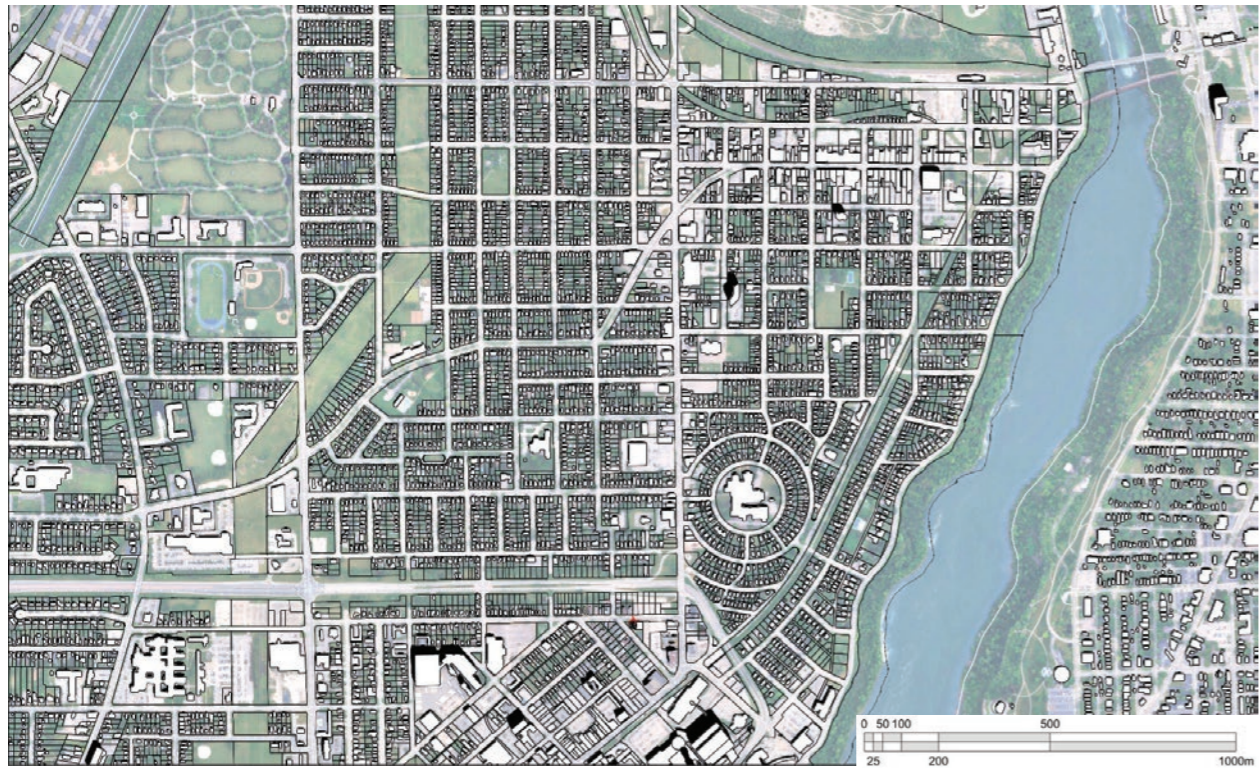
-  Existing Shadows
-  Existing Site Shadows
-  As of Right Shadow
-  Proposed Building Shadow
-  Approved yet Unbuilt Shadows



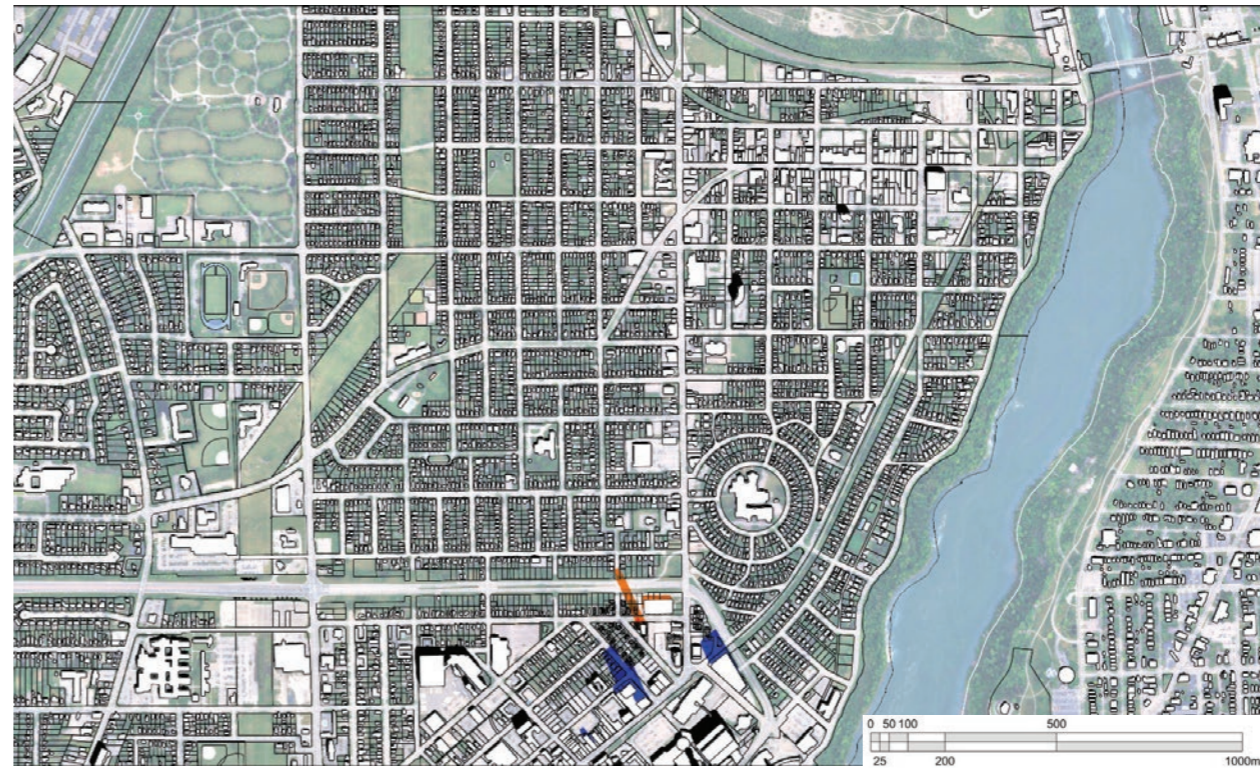
Sept. 21 (11:00 a.m.) - EXISTING CONDITION



Sept. 21 (11:00 a.m.) - PROPOSED CONDITION

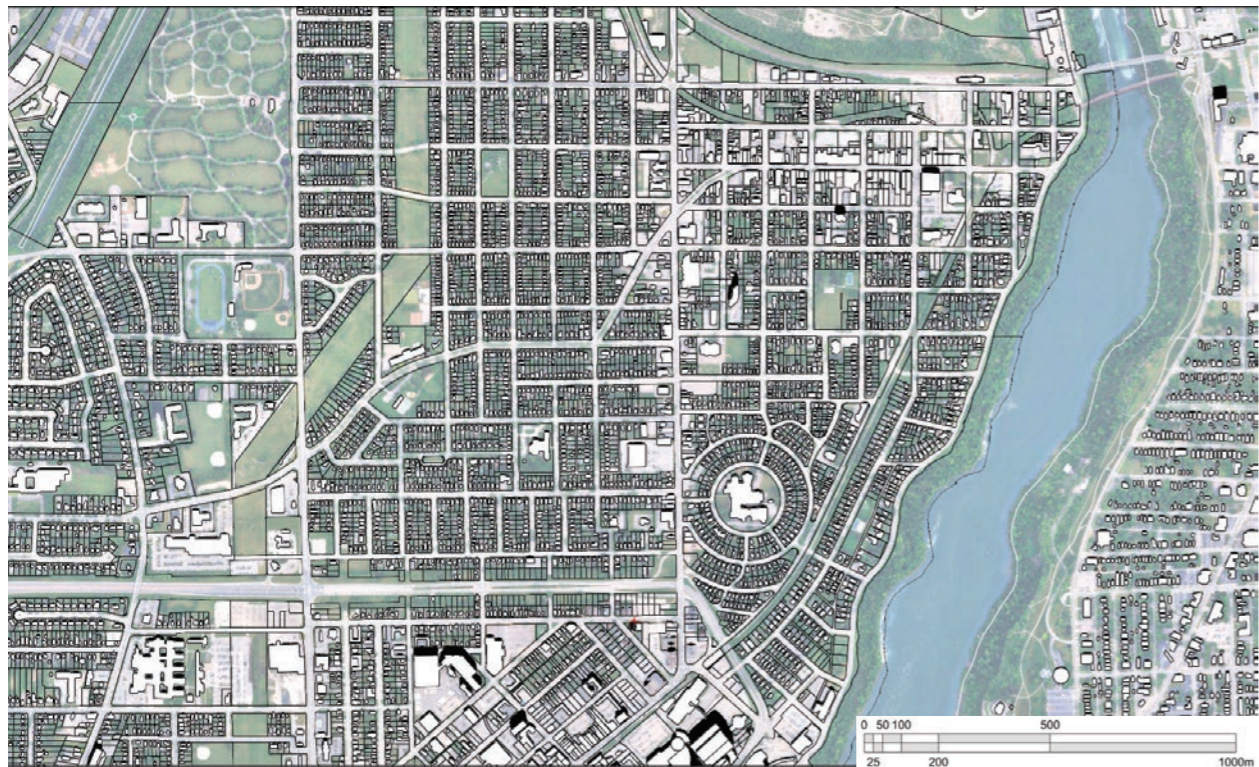


Sept. 21 (12:00 p.m.) - EXISTING CONDITION

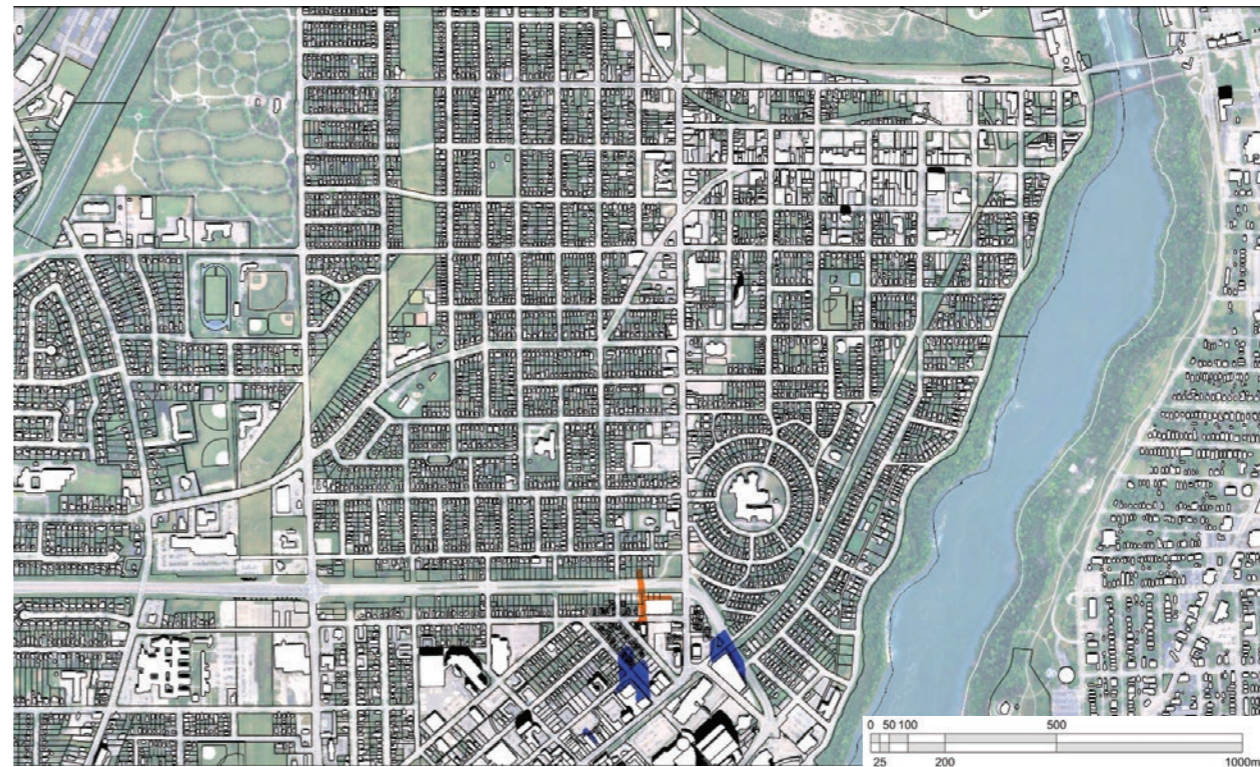


Sept. 21 (12:00 p.m.) - PROPOSED CONDITION

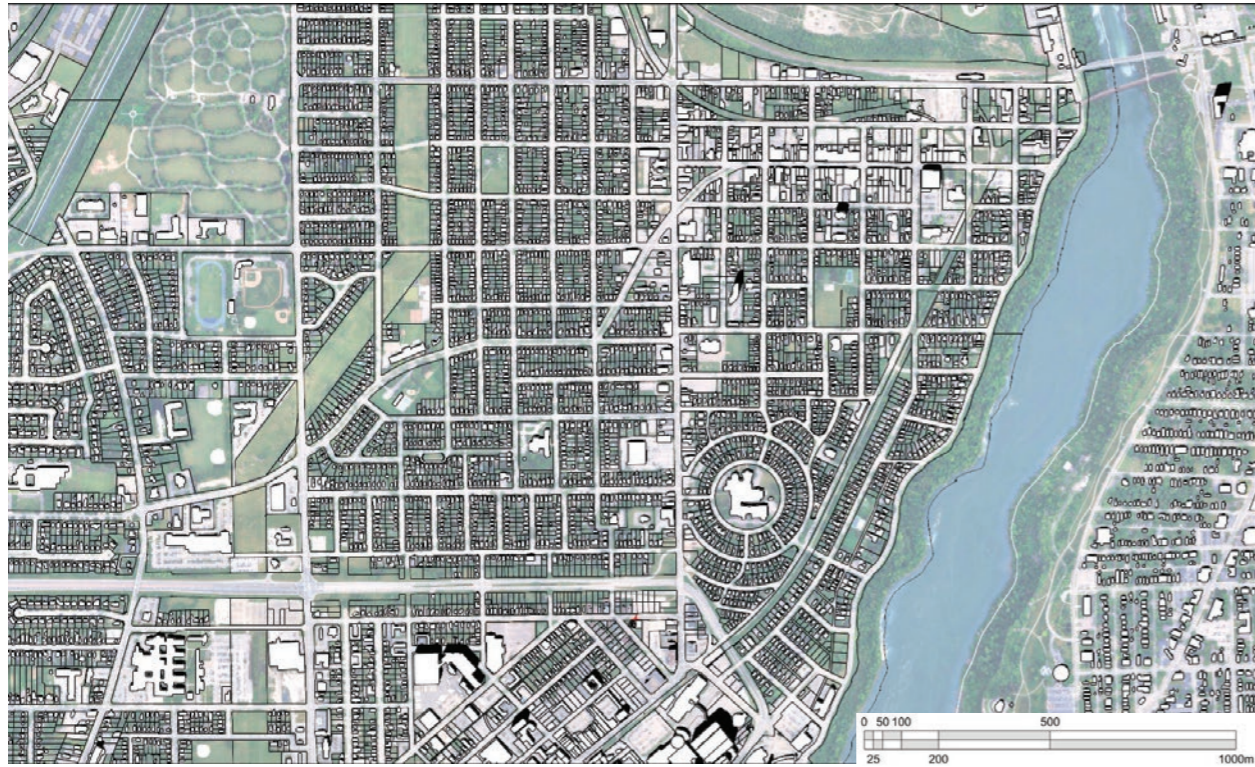
-  Existing Shadows
-  Existing Site Shadows
-  As of Right Shadow
-  Proposed Building Shadow
-  Approved yet Unbuilt Shadows



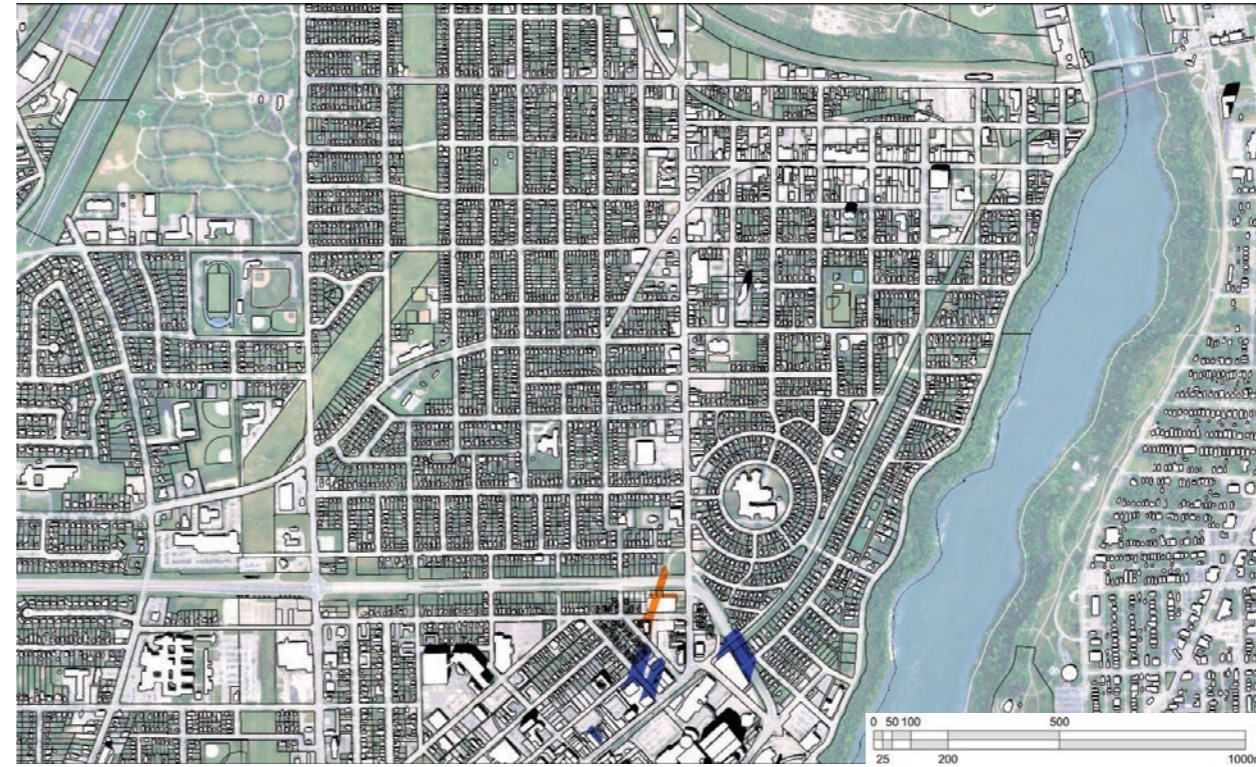
Sept. 21 (1:00 p.m.) - EXISTING CONDITION



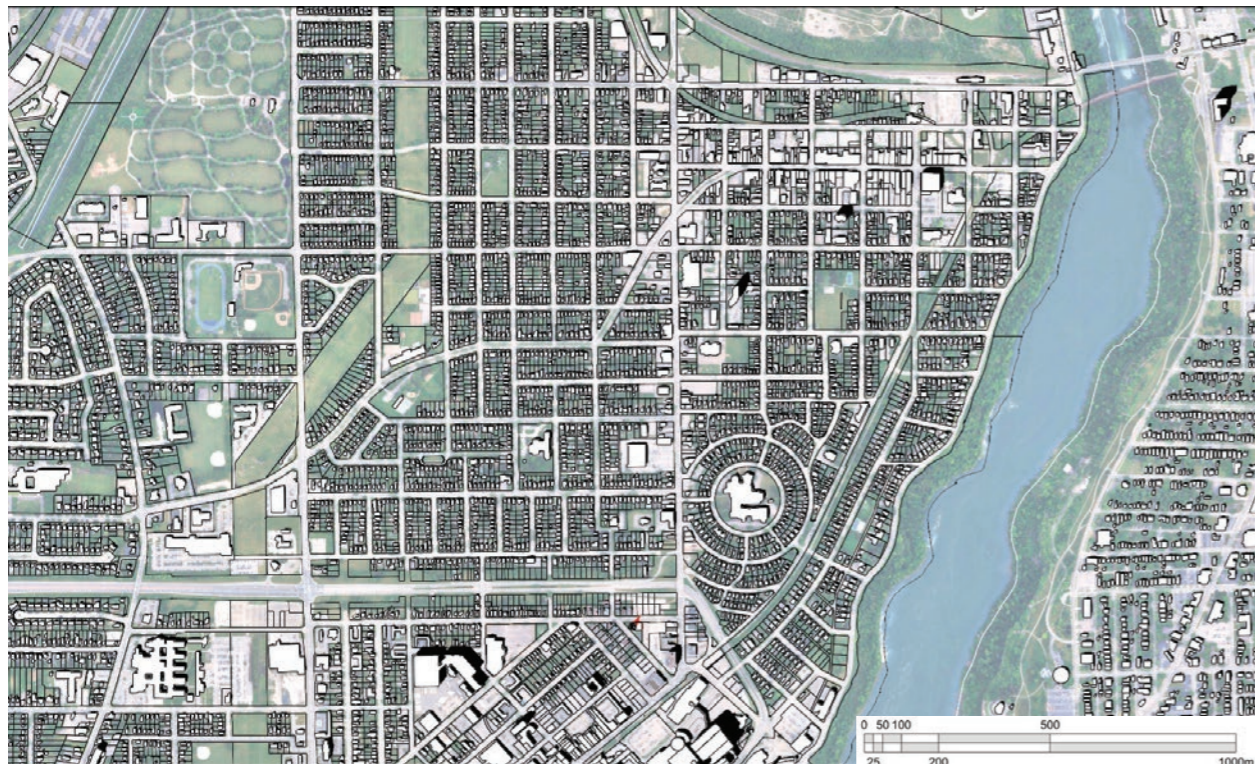
Sept. 21 (1:00 p.m.) - PROPOSED CONDITION



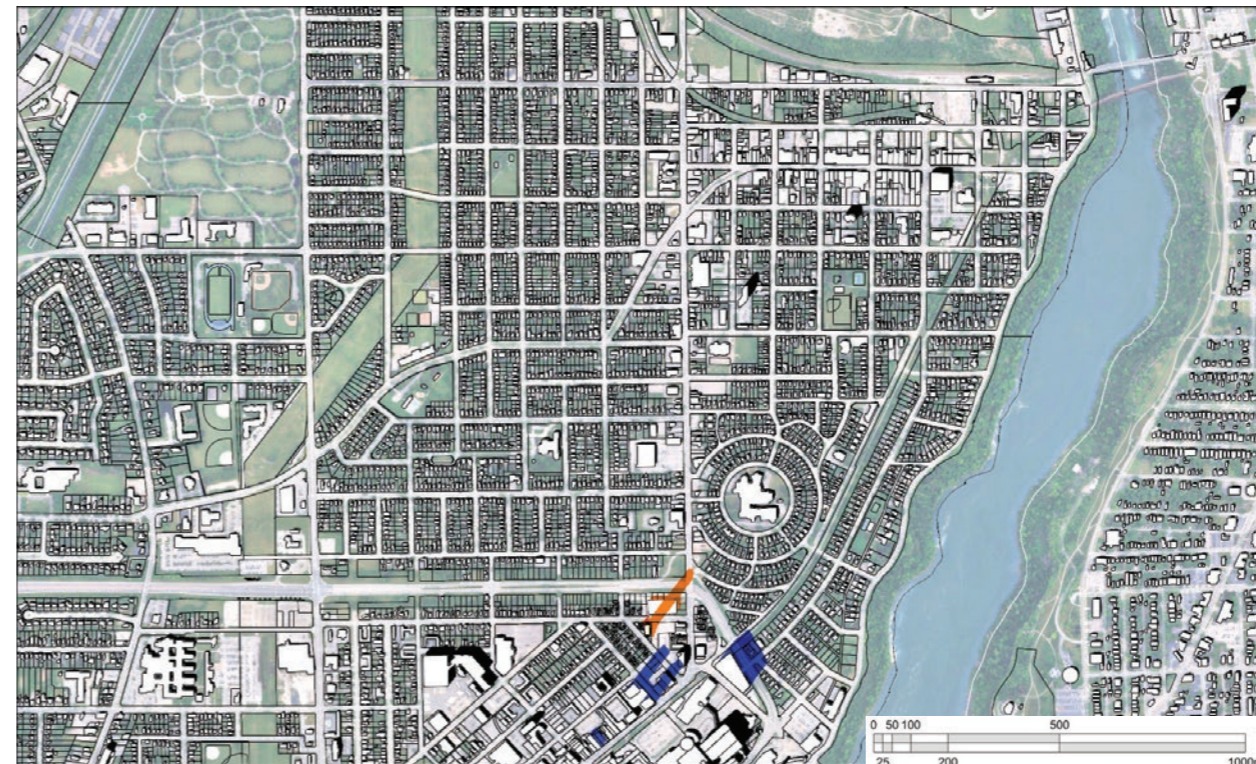
Sept. 21 (2:00 p.m.) - EXISTING CONDITION



Sept. 21 (2:00 p.m.) - PROPOSED CONDITION

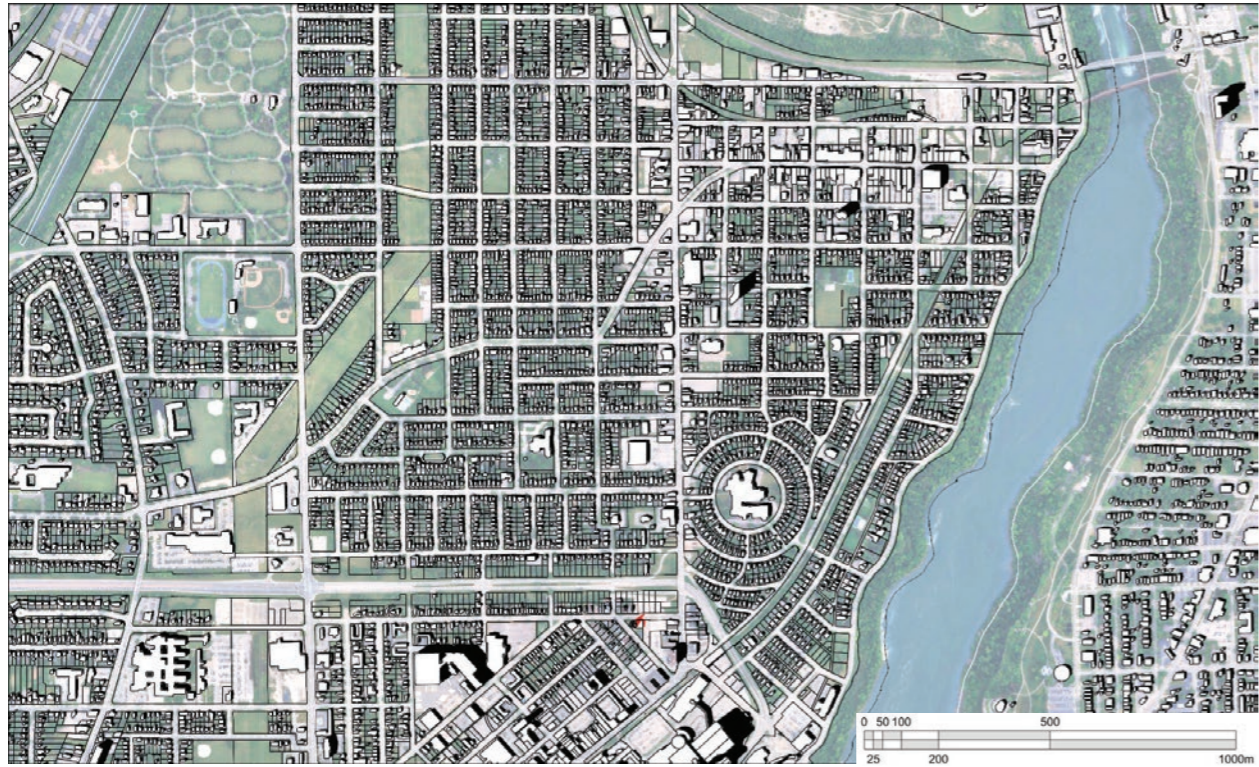


Sept. 21 (3:00 p.m.) - EXISTING CONDITION

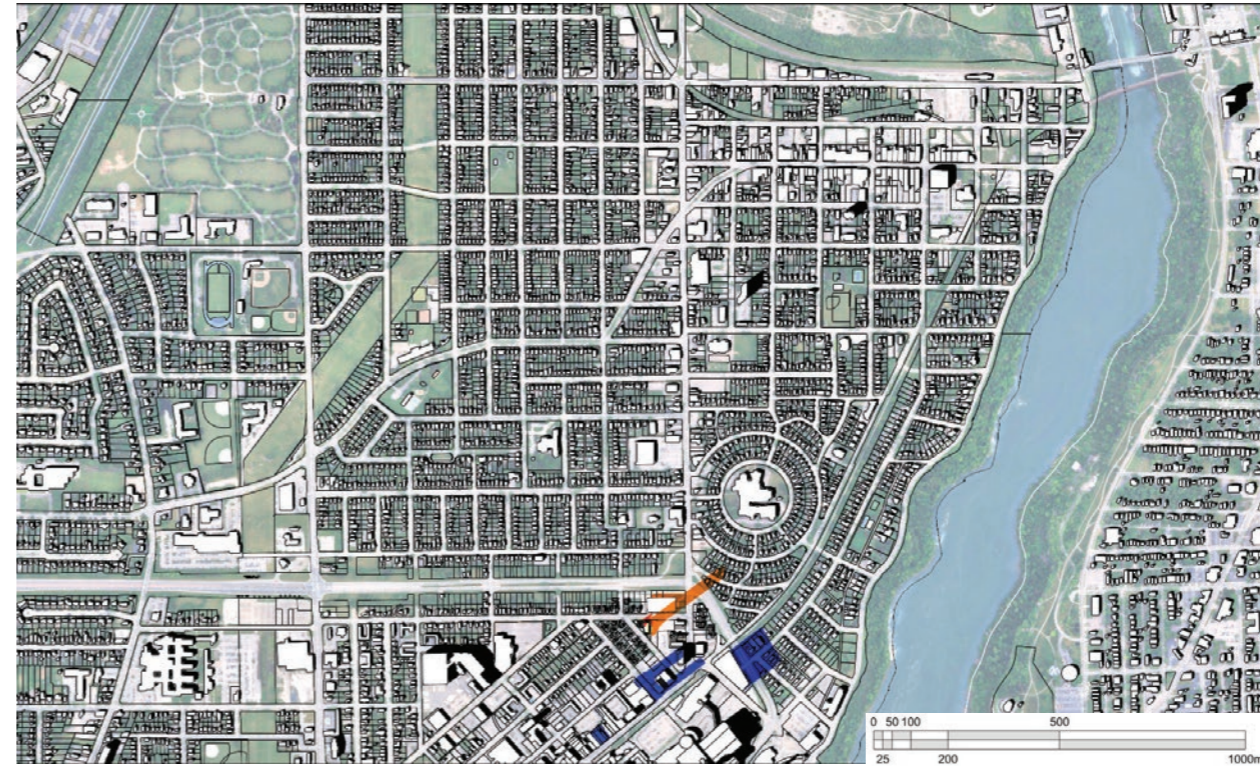


Sept. 21 (3:00 p.m.) - PROPOSED CONDITION

-  Existing Shadows
-  Existing Site Shadows
-  As of Right Shadow
-  Proposed Building Shadow
-  Approved yet Unbuilt Shadows



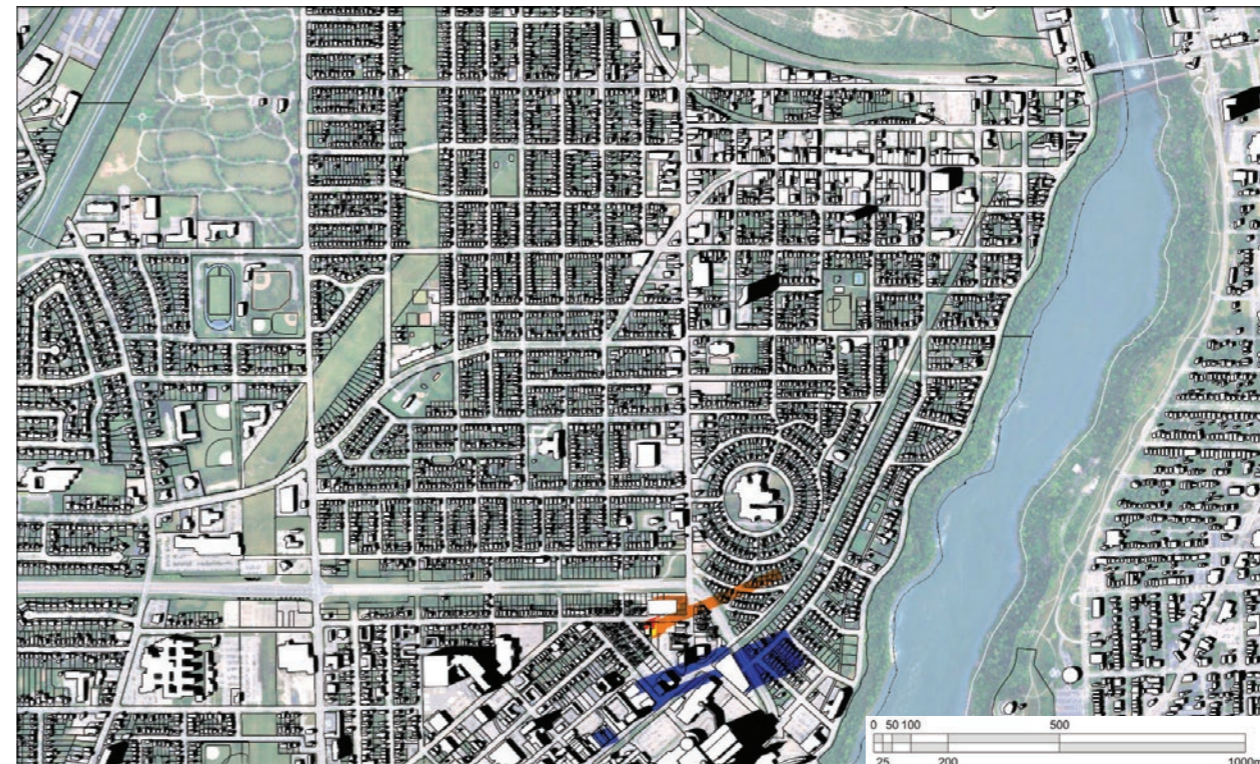
Sept. 21 (4:00 p.m.) - EXISTING CONDITION



Sept. 21 (4:00 p.m.) - PROPOSED CONDITION



Sept. 21 (5:00 p.m.) - EXISTING CONDITION

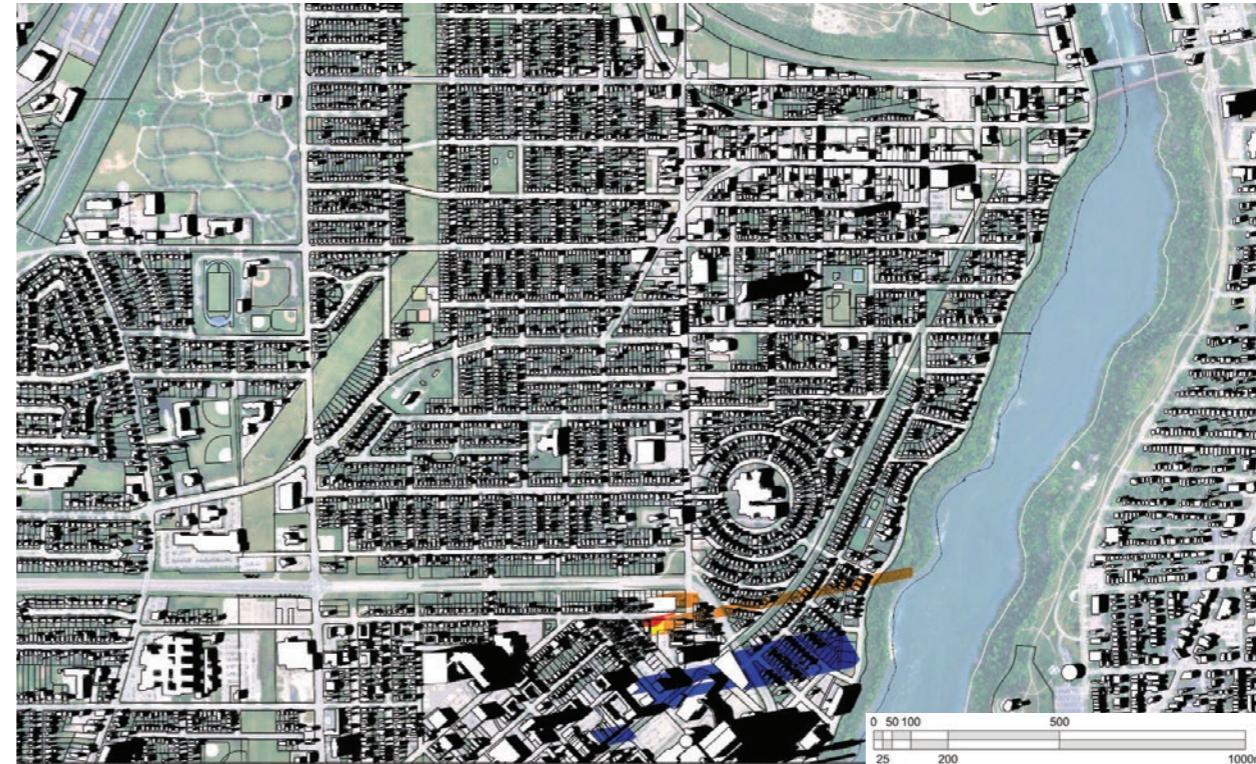


Sept. 21 (5:00 p.m.) - PROPOSED CONDITION

- Existing Shadows
- Existing Site Shadows
- As of Right Shadow
- Proposed Building Shadow
- Approved yet Unbuilt Shadows

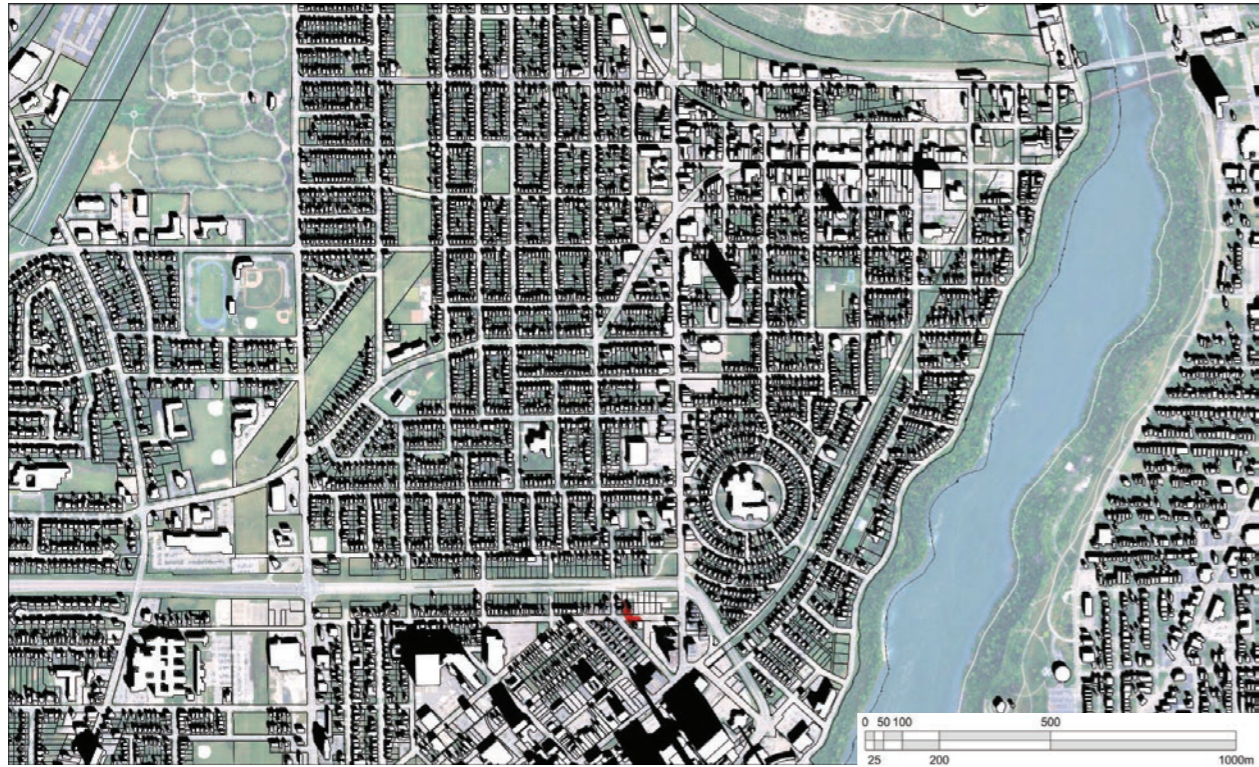


Sept. 21 (6:00 p.m.) - EXISTING CONDITION



Sept. 21 (6:00 p.m.) - PROPOSED CONDITION

-  Existing Shadows
-  Existing Site Shadows
-  As of Right Shadow
-  Proposed Building Shadow
-  Approved yet Unbuilt Shadows



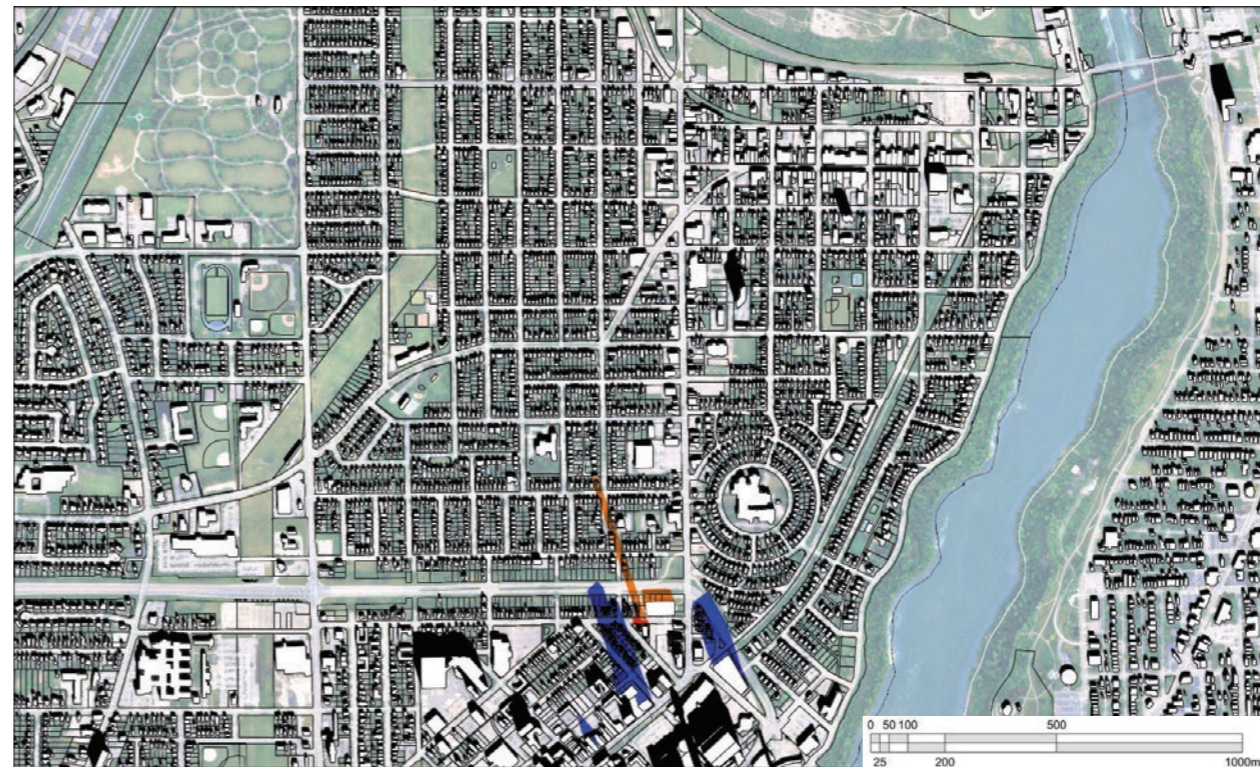
Dec. 21 (10:00 a.m.) - EXISTING CONDITION



Dec. 21 (10:00 a.m.) - PROPOSED CONDITION

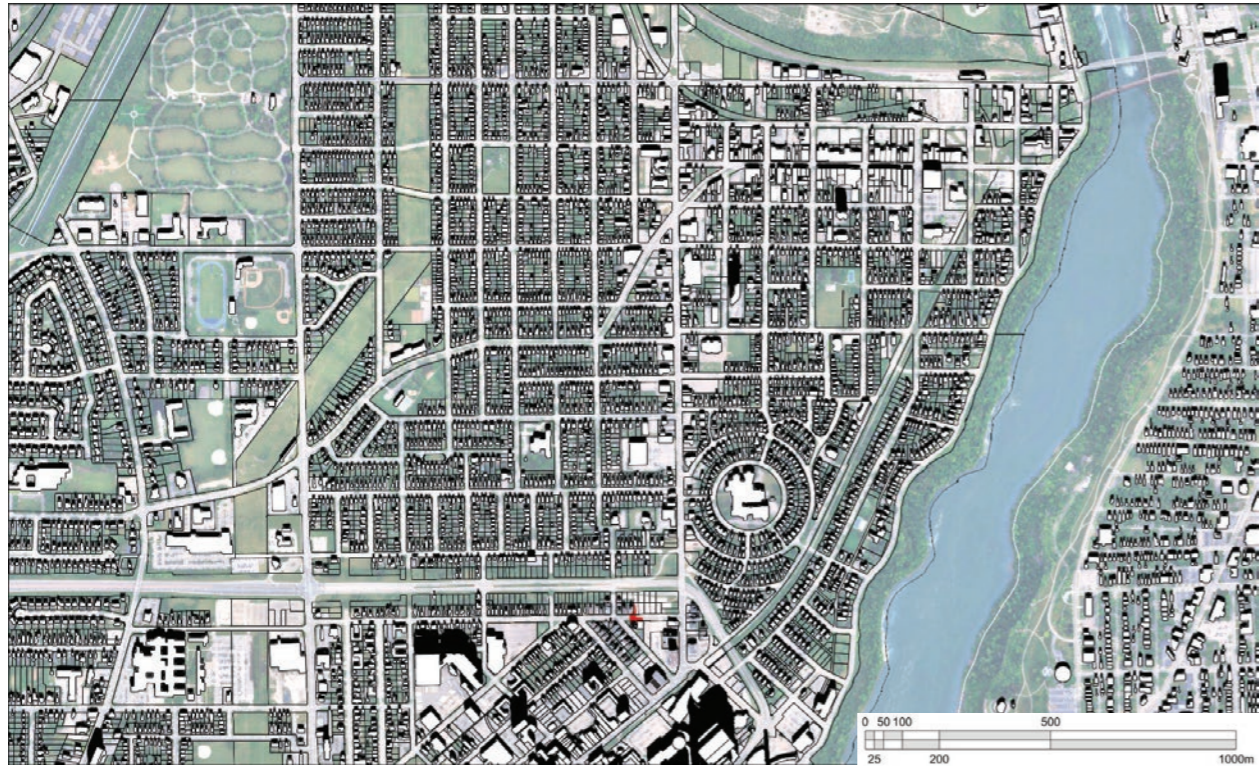


Dec. 21 (11:00 a.m.) - EXISTING CONDITION

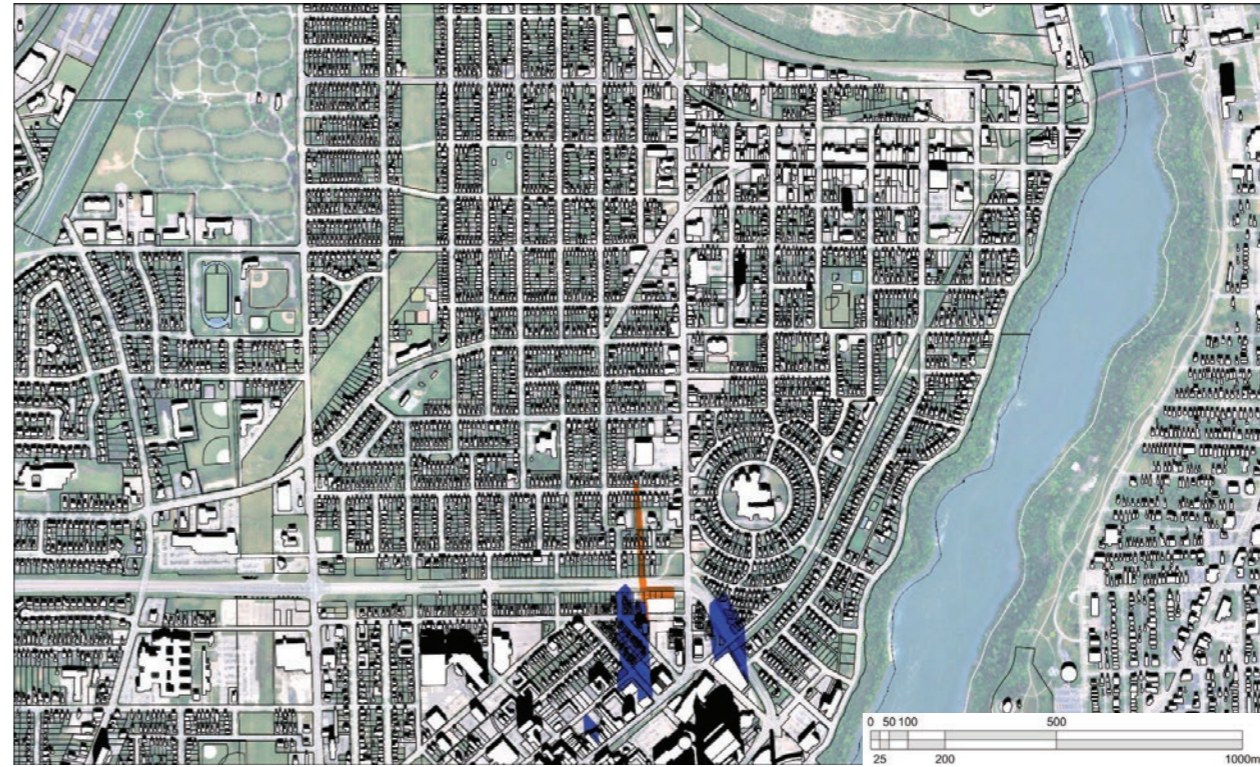


Dec. 21 (11:00 a.m.) - PROPOSED CONDITION

- Existing Shadows
- Existing Site Shadows
- As of Right Shadow
- Proposed Building Shadow
- Approved yet Unbuilt Shadows



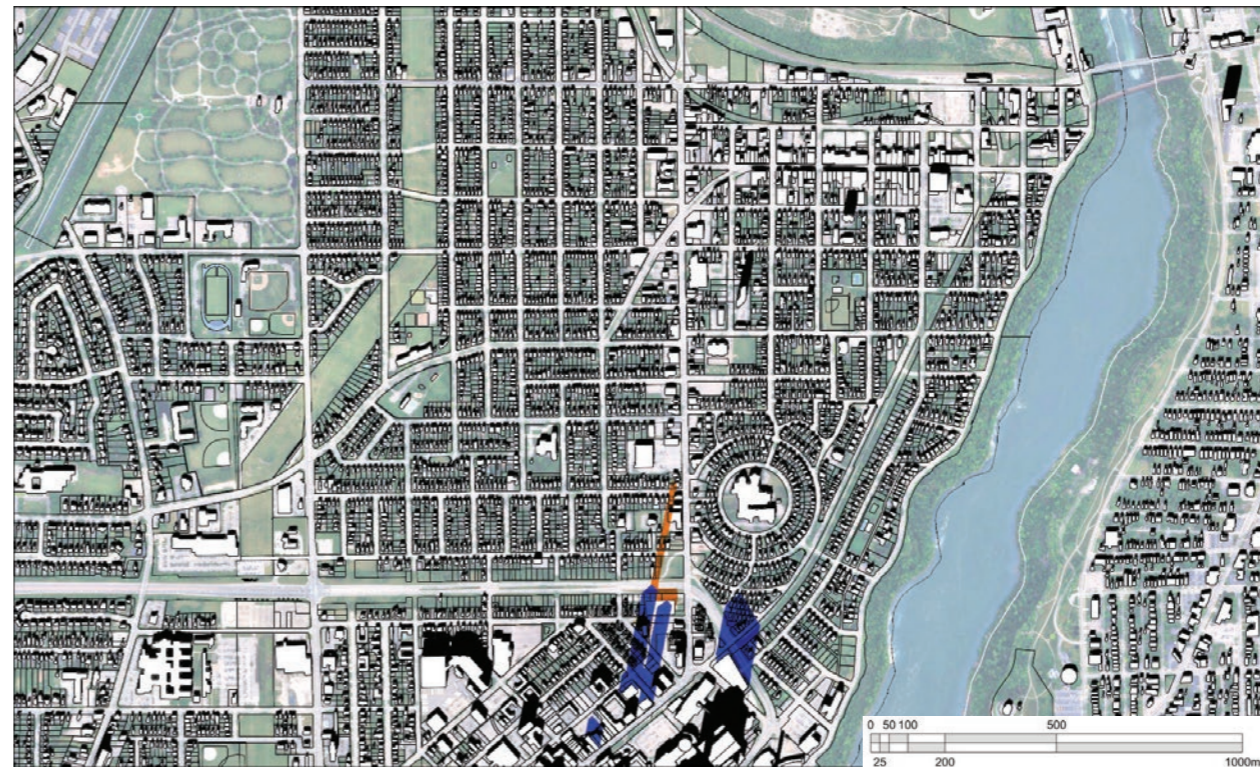
Dec. 21 (12:00 p.m.) - EXISTING CONDITION



Dec. 21 (12:00 p.m.) - PROPOSED CONDITION



Dec. 21 (1:00 p.m.) - EXISTING CONDITION

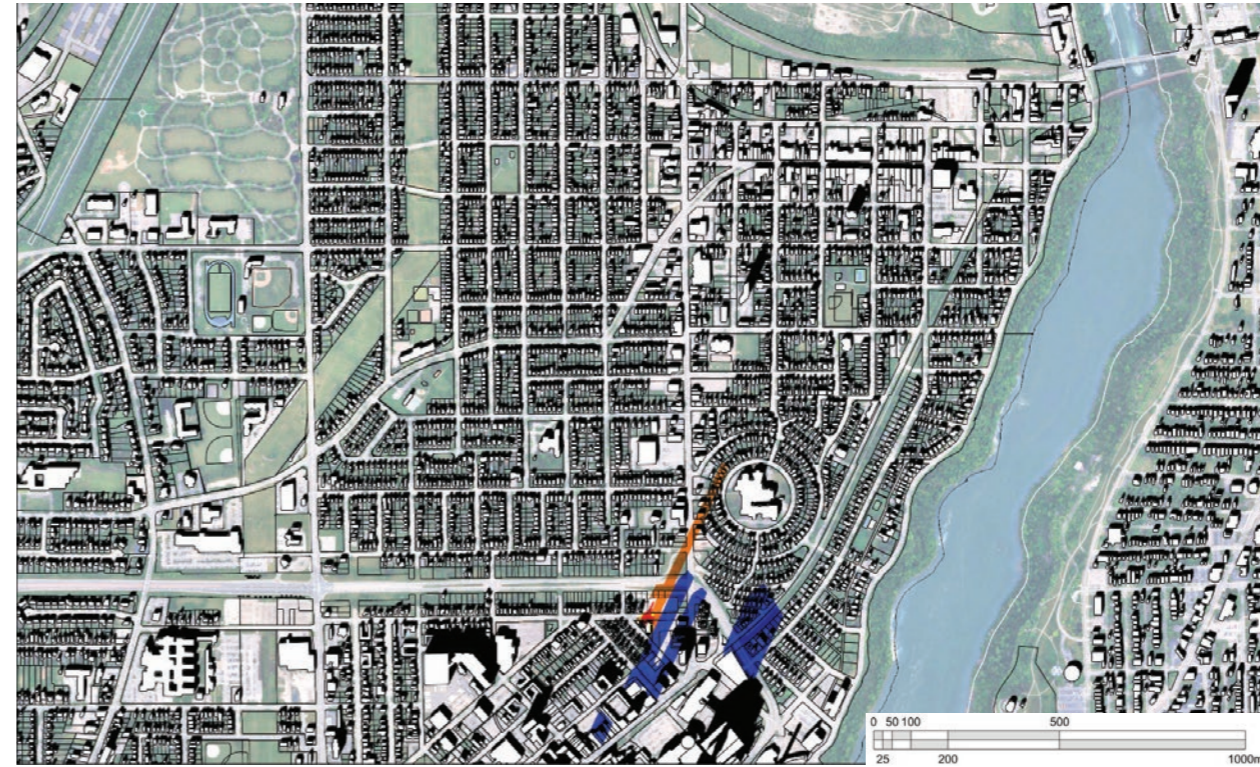


Dec. 21 (1:00 p.m.) - PROPOSED CONDITION

- Existing Shadows
- Existing Site Shadows
- As of Right Shadow
- Proposed Building Shadow
- Approved yet Unbuilt Shadows



Dec. 21 (2:00 p.m.) - EXISTING CONDITION



Dec. 21 (2:00 p.m.) - PROPOSED CONDITION



Dec. 21 (3:00 p.m.) - EXISTING CONDITION

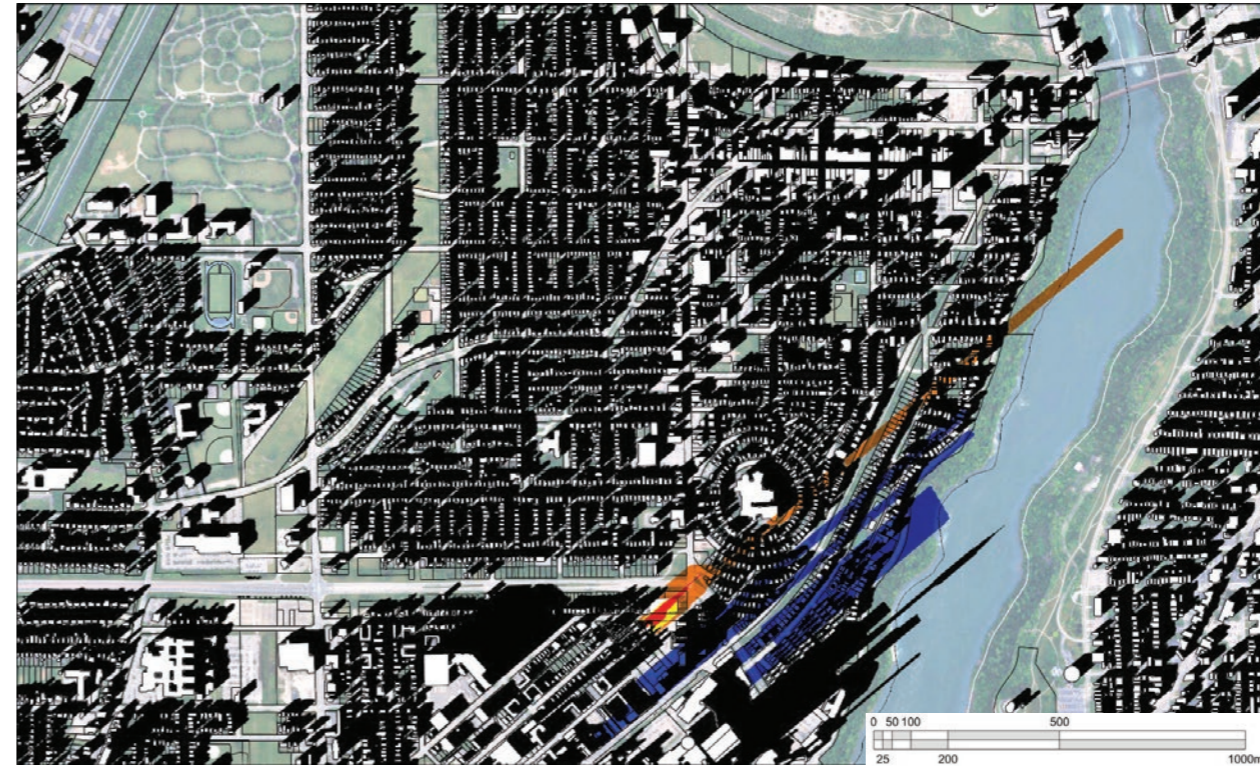


Dec. 21 (3:00 p.m.) - PROPOSED CONDITION

-  Existing Shadows
-  Existing Site Shadows
-  As of Right Shadow
-  Proposed Building Shadow
-  Approved yet Unbuilt Shadows



Dec. 21 (4:00 p.m.) - EXISTING CONDITION



Dec. 21 (4:00 p.m.) - PROPOSED CONDITION

- Existing Shadows
- Existing Site Shadows
- As of Right Shadow
- Proposed Building Shadow
- Approved yet Unbuilt Shadows



Dec. 21 (5:00 p.m.) - EXISTING CONDITION



Dec. 21 (5:00 p.m.) - PROPOSED CONDITION

*RENDER INTENTIONALLY BLACK
AS SUN SETS AT APPROX. 4:45PM

*RENDER INTENTIONALLY BLACK
AS SUN SETS AT APPROX. 4:45PM



Dec. 21 (6:00 p.m.) - EXISTING CONDITION



Dec. 21 (6:00 p.m.) - PROPOSED CONDITION

-  Existing Shadows
-  Existing Site Shadows
-  As of Right Shadow
-  Proposed Building Shadow
-  Approved yet Unbuilt Shadows

PART B2 — MITIGATION

6.0 SHADOW MITIGATION STRATEGIES

Shadow mitigation strategies were integrated early in the design process and informed key aspects of the building's massing and site layout; the application of these mitigation measures minimizes shadow impact from the proposed development.

6.1 BUILDING HEIGHT & MASSING

- The podium establishes a consistent street wall in accordance with urban design best practices, while the tower is stepped back above to reduce the perceived shadow impact at grade and enhance sky view from the public realm.
- The tall and slender tower form results in a narrower shadow profile that moves more quickly across surrounding areas, thereby reducing the duration and overall extent of shadow impacts compared to a lower, broader building of equivalent gross floor area.

6.2 BUILDING ORIENTATION & LAYOUT

- The tower floorplate has been designed as a long, narrow form oriented along the north-south axis. This alignment minimizes shadow impacts resulting from the predominant southern sun path.
- The compact floorplate limits the overall width of shadow projection onto adjacent properties and the public realm.
- The primary outdoor terrace has been positioned on the west side of the site adjacent to the music hall to take advantage of southern exposure and late afternoon sunlight during the peak spring and summer seasons.
- Podium and tower setbacks have been maximized to reduce shadow encroachment on adjacent properties and to improve solar access within the immediate context.

PART C — CONCLUSION

7.0 OVERALL IMPACT SUMMARY

The Sun/Shadow Study conducted for the proposed mixed-use hotel at 4898 Kitchener Street in Niagara Falls demonstrates that the development generally satisfies the shadow impact criteria outlined in the City's Sun/Shadow Study Terms of Reference (December 2023).

The proposal meets the required sunlight thresholds for adjacent private residential amenity areas, public outdoor amenity spaces, school yards, children's play areas, and surrounding parks and open spaces. Shadow impacts are limited in duration and remain within the prescribed performance standards.

The proposed development achieves minimal shadow impact that is localized and mitigated through various design strategies on the site with the proposed development representing a considered approach to building height and massing, and is concluded to satisfactorily address the City's shadow impact criteria.

APPENDIX A — SUBMISSION FORM CHECKLIST

1. GENERAL

- (A). Name of the Project: **Music City Hotel**
- (B). Date: **26/02/2026**
- (C). Address of Application: **4898 Kitchener Street, Niagara Falls, ON, Canada**
- (D). Name of Consultant: **Matthew Schmid**
- (E). Phone numbers and email of the Consultant: **mail@matthewschmid.ca | 647-992-7158**

2. PROJECT DESCRIPTION

- (A). Short Description of the Project: **Mixed-Use Tower Hotel Development**
- (B). Number of buildings for this application: **1**
- (C). Number of Floors: **53 (including basement & 2 level mechanical penthouse)**
- (D). Height in Metres: **167m**
- (E). Did you submit the 3D Model for this project: **No**

3. MASSING INFORMATION

- (A). Software Used: Rhino - **Rhinoceros 3D**
- (B). Terrain Corrected: **No**

4. MASSING MODEL LOCATION

- (A). Coordinates Used: Latitude: **43°05' 43.40"N | Longitude: 79°04' 27.27"W**
- (B). Solar North Matches True North: **Yes**

5. SHADOW DIAGRAMS INFORMATION

- (A). Are you fully compliant with all of the technical specifications in the Terms of Reference: **The study complies with all Terms of Reference specifications, except for 4.2 Public Realm Criterion (2), which has been assessed and addressed in accordance with TOR provisions.**
- (B). Do the Shadow Diagrams use a standard metric scale: **Yes**
- (C). Are the Shadow Diagrams provided in Colour: **Yes**
- (D). Does the Shadow Diagrams use The City's Shadow Study Drawing Standards — Colour Analysis: **Yes**
- (E). Data Used for Shadow Analysis: **Solar positions were calculated using Rhino -Grasshopper 'Ladybug' Tools based on geographic location and specified calendar dates: April 21 , June 21 , September 21 , December 21**
- (F). Daylight Savings Time Considered: **Yes.**

DECLARATION OF CONSULTANT

I, **Matthew Schmid**, certify that I have examined the contents of the application, certify that the information submitted with it is accurate and concur with the submission of the application.

Signature: 

Date: **26/02/2026**

APPENDIX B — DATA SOURCE REFERENCES

REFERENCES

(1): Criteria: **Terms of Reference for Sun/Shadow Study, December 2023.**

(2): Geo-Referencing Software: **QGIS**

(3): Context Massing Information Software: **Cadmapper.com**

(4): Sun/Shadow Study Simulation: **Rhino Grasshopper**



www.matthewschmid.ca

647.992.7158