

25 Hillcrest Ave & 3154 Hurontario Street

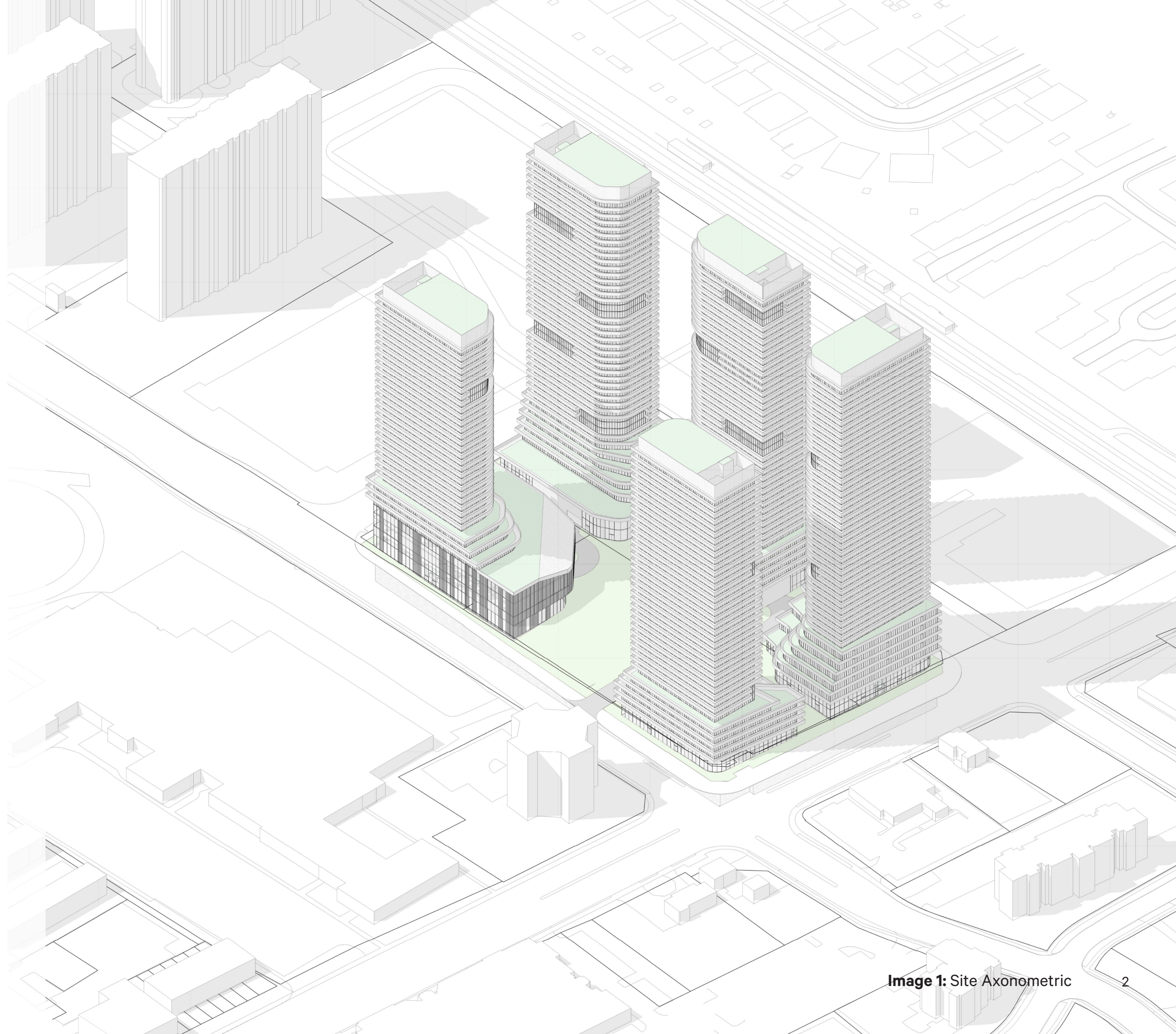
Sun Shadow Study

INTRODUCTION

The objectives of this study were to illustrate the shadow patterns for the proposed development and determine the potential exposure to sunlight and shadow on and around the study site.

SvN has conducted this analysis as per the requirements outlined in the City of Mississauga Standards for Shadow Studies. This study involved the use of a three-dimensional (3D) computer model of the existing surroundings and the proposed development in place. The 3D model was used to produce renderings of the new shadows cast by the proposed development.

The following report provides a discussion of the methodology, a summary of the key findings and the graphic results of the Sun/Shadow Study.



SITE & BUILDING INFORMATION

The proposed buildings are located at 25 Hillcrest Avenue & 3154 Hurontario Street in downtown Cooksville. The site area which includes a full city block is bordered by John Street to the north, Hurontario Street to the east, Hillcrest Avenue to the South and the Go Access Road to the west.

The latitude and longitude of the project site is 43.58236823180425° and -79.62157958271177° respectively. The location was determined by a survey prepared by R-PE Surveying Ltd. and Google Earth.

All shadow study images are oriented with true north pointing toward the top of the page and the north arrow compass located at the bottom of the page.

Currently the site consists of surface parking lots and three 1-storey buildings located along Hillcrest Avenue. The proposed development will feature five buildings with heights ranging from 34 storeys (114.95m) to 46 storeys (147.4m).

The Cooksville Go Station and its accompanying parking lots are located directly adjacent to the site on the north and west sides. A low rise residential neighbourhood is located further north on the other side of the rail line. Medium and high density residential buildings are located to the east, south and west of the site.

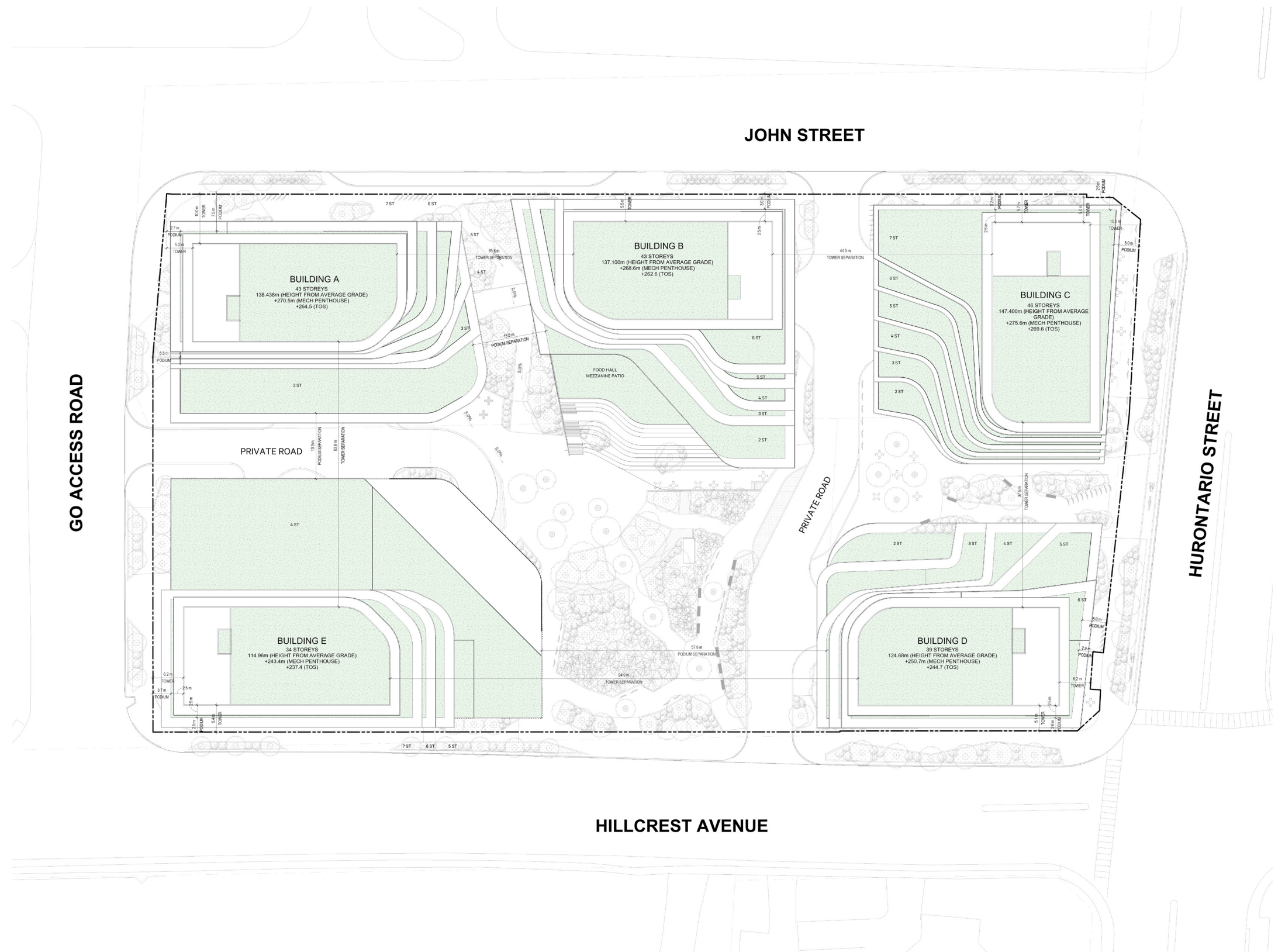


Image 2: Site Plan

METHODOLOGY

The shadow plots illustrated in this report were generated using Revit. The software was configured to simulate the appropriate geographic characteristics and solar angles for this site.

SvN produced a three-dimensional computer model of the study site. The computer-generated renderings exhibit the simulated shadow conditions anticipated to occur in the vicinity of the study site.

The tests conducted in this study assume bright sunlight from sunrise to sunset to properly identify shadow patterns created by the proposed structure.

The output of this study illustrates the net-new shadowing created by the proposed development, less any shadows that occur due to the existing built environment.

Per standard industry practice, shadowing due to trees and landscaping has been purposely omitted.

GENERAL STATEMENT OF LIMITATIONS

This report entitled “25 Hillcrest & 3154 Hurontario Street - Sun Shadow Studies” (dated May 2022) was prepared by SvN Architects + Planners for TAS Impact. The findings and conclusions presented in this report have been prepared for the Client and are specific to the project described herein (“Project”). The observations contained in this report are based on the information available when this report was prepared.

The contents of this report may not reflect the final design of the Project or subsequent changes made after the date of this report. The observations contained within this report have also been made for the specific purposes set out herein.

It is imperative that the Client and/or any party relying on the conclusions and observations in this report carefully review the stated assumptions contained herein and to understand the different factors which may impact the observations provided.

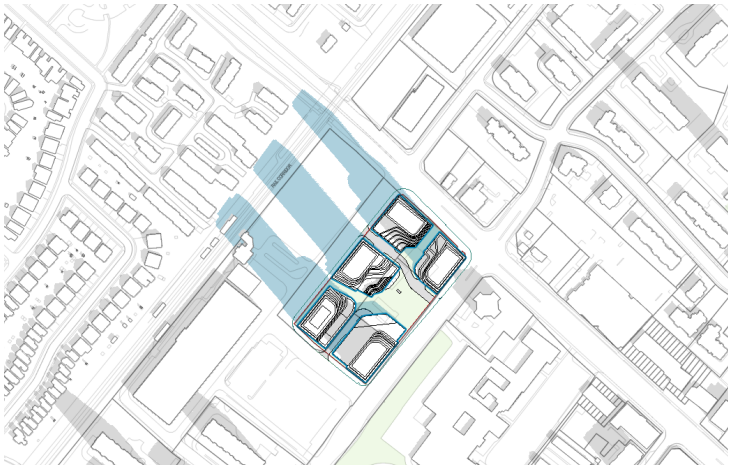
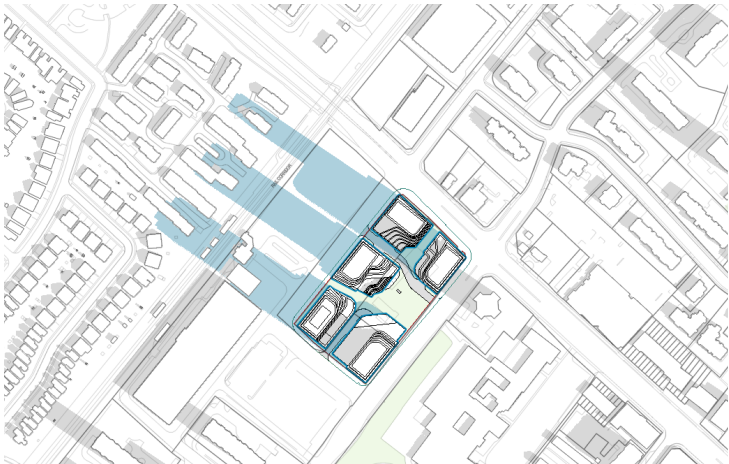


Image 3: Sample Shadow Studies
September 21st, 10:12, 11:12, 12:12 EST

SUMMARY OF OBSERVATIONS

Per the City of Mississauga requirements, the new shadows cast by the proposed buildings were predicted for every hour between 5:37 EST and 21:03 EST on June 21st, between 7:05 EST and 19:18 EST on March / September 21st, as well as for December 21st between 7:49 EST and 16:45 EST.

The following summary addresses the key findings in each of the five categories of criteria requiring adequate sunlight as described in the City of Mississauga’s Standards for Shadow Studies (2011).

1. Residential private amenities (rear yards, decks, patios, pools)

On June 21st, this criteria is largely met. No more than two consecutive hourly test times are in shadow with the exception of a few private residential yards on Surbray Grove which are impacted in the early morning. The shadow moves quickly and is clear of the private amenities by 9:20am.

On September 21st, one set of townhomes south of Hanson Road and west of Hurontario Street abutting the rail corridor is impacted with the shadow clearing by 11:12am. Similarly, a few private residential yards on Subray Grove are shadowed in the early morning but are clear by 10:12am. The shadow impacts appear minimal and move quickly.

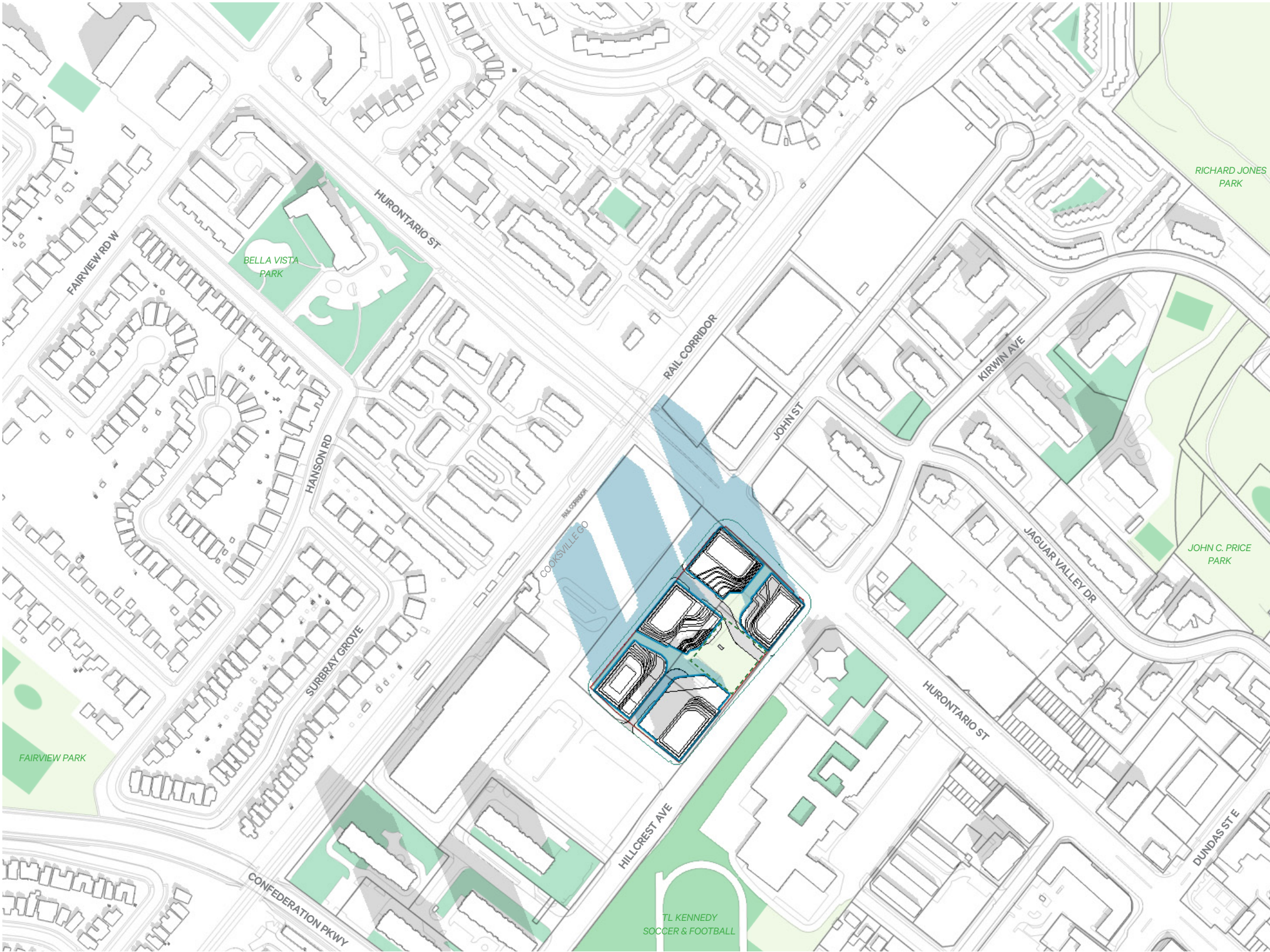


Image 4: Sample Shadow Study - September 21st, 12:12 EST

Communal Outdoor Amenity Area within development site studied for Solar Access Factor outlined in dark green



SUMMARY OF OBSERVATIONS

2. Communal outdoor amenity areas (children’s play areas, school yards, tot lots, sandboxes, wading pools, etc. and outdoor amenity areas used by seniors and those associated with commercial and employment areas)

This criteria is met for all communal outdoor areas in the subject test area. Full sun is provided at least half the time or 50% sun coverage all the time on June 21st, September 21st and December 21st. This included 12 play and sport areas.

3. Public Realm (sidewalks, open spaces, parks and plazas)

a) Low and Medium Density Residential Streets

On September 21, the criteria of providing full sunlight on the opposite boulevard for 4 hours is not met at 9:12am and 10:12am for the townhouse development south of Hanson Road and west of Hurontario Street abutting the rail corridor. A small portion of Surbray Grove is impacted at 9:12am, however the shadow moves quickly and clears the area for the remainder of the day. All other streets meet the criteria between the requested time slots.

Additionally, this criteria is not met between 3:12pm and 5:12pm on Jaguar Valley Drive and a small portion of Kirwin Avenue. The greatest impact occurs at the end of day at 5:12pm, otherwise the shadow impacts are minimal. All other streets meet the criteria between the requested time slots.

b) Mixed Use, Commercial, Employment or High Density Residential Streets

On September 21, the critiera of providing full sunlight on the opposite boulevard for 5 hours is not met between 12:12pm and 2:12pm on Hurontario Street (between the rail corridor and Hillcrest Avenue), nor on John Street (between Go Access and Hurontario Street). All other streets meet the criteria between the requested time slots. This criteria would be difficult to achieve with any building massing above six storeys given the site location. The shadow tracks along the boulevard and the same portion of sidewalk is not in shadow for any significant amount of time.

c) Public Open Spaces, Parks and Plazas

The criteria of providing a sun access factor of at least 50% on September 21st is met for all public open spaces, parks and plazas within the subject test area. These primarily include Fairview Park, Bella Vista Park, John C. Price Park, and Richard Jones Park, as well as the publicly accessible green space being planned at the centre of the development which has a sun access factor of about 61.7%.

4. Turf and Flower Gardens in Public Parks

The criteria of providing a minimum of 6 hours of direct sunlight on September 21st is met for all turf and flower gardens in public parks within the subject test area. These primarily include Fairview Park, Bella Vista Park, John C. Price Park, and Richard Jones Park.

5. Building Faces to allow for the possibility of using solar energy

The criteria of not exceeding one hour of shadow impact on roofs and exterior walls of low rise residential buildings is largely met with a few exceptions. The townhomes south of Hanson Road and west of Hurontario Street abutting the rail corridor are impacted for 2 hours with 4 of the townhomes impacted for 3 hours. The shadow clears by 10:12am providing ample time for solar exposure for energy collected, if needed. A few residences on Subray Grove are shaded for 2 hours in the early morning but the impact is minimal as the area is clear by 9:12am.

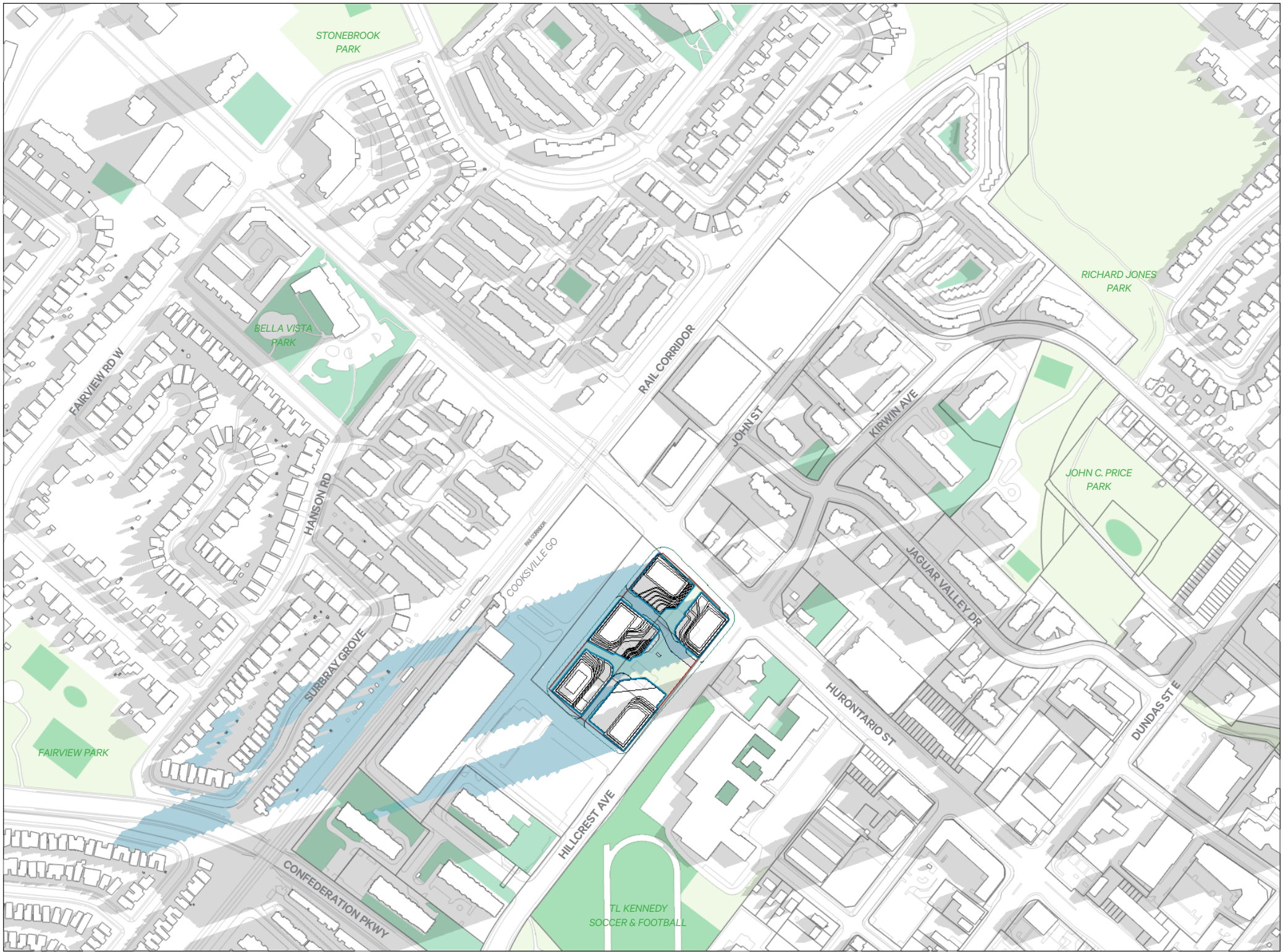
Shadow Studies

June 21st

SUN / SHADOW ANALYSIS

Proposed Site Configuration - June 21st, 7:07 EST

25 Hillcrest Ave & 3154 Hurontario St - Mississauga, ON

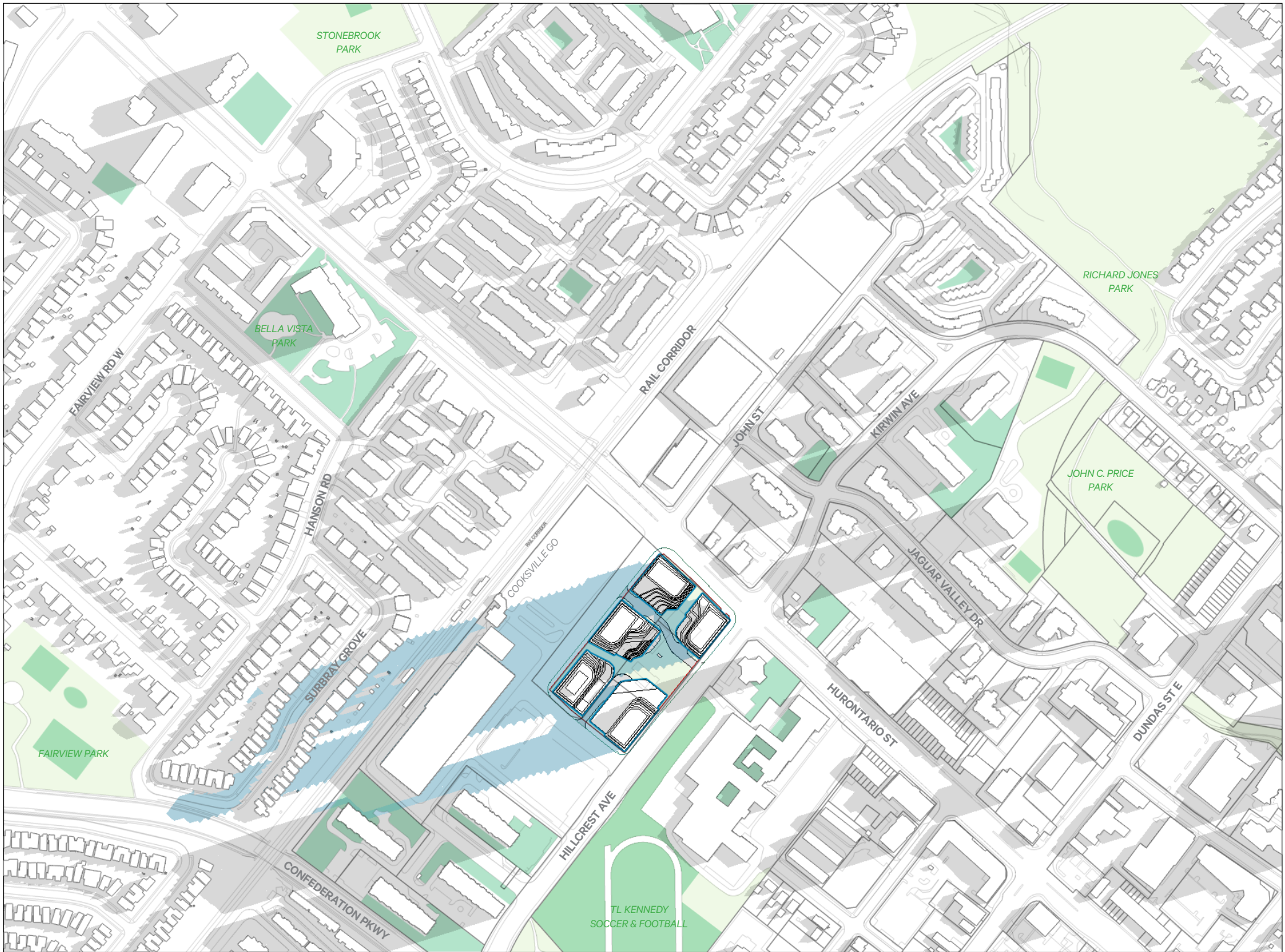


- New Net Shadows
- Shadows Cast by Existing Buildings
- Proposed Building Footprint
- Green Spaces & Parks
- Communal Amenity Areas

SUN / SHADOW ANALYSIS

Proposed Site Configuration - June 21st, 7:20 EST

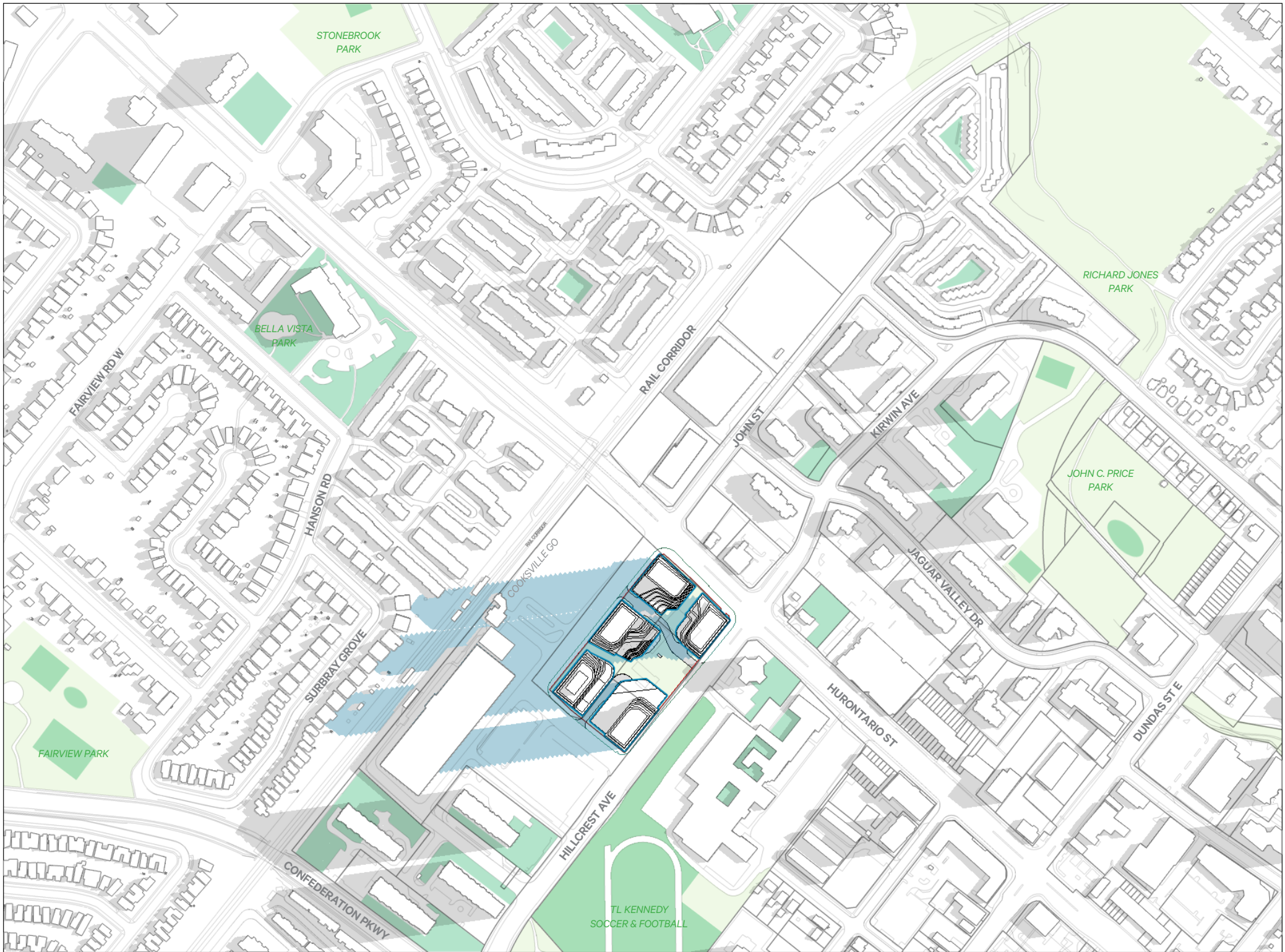
25 Hillcrest Ave & 3154 Hurontario St - Mississauga, ON



SUN / SHADOW ANALYSIS

Proposed Site Configuration - June 21st, 8:20 EST

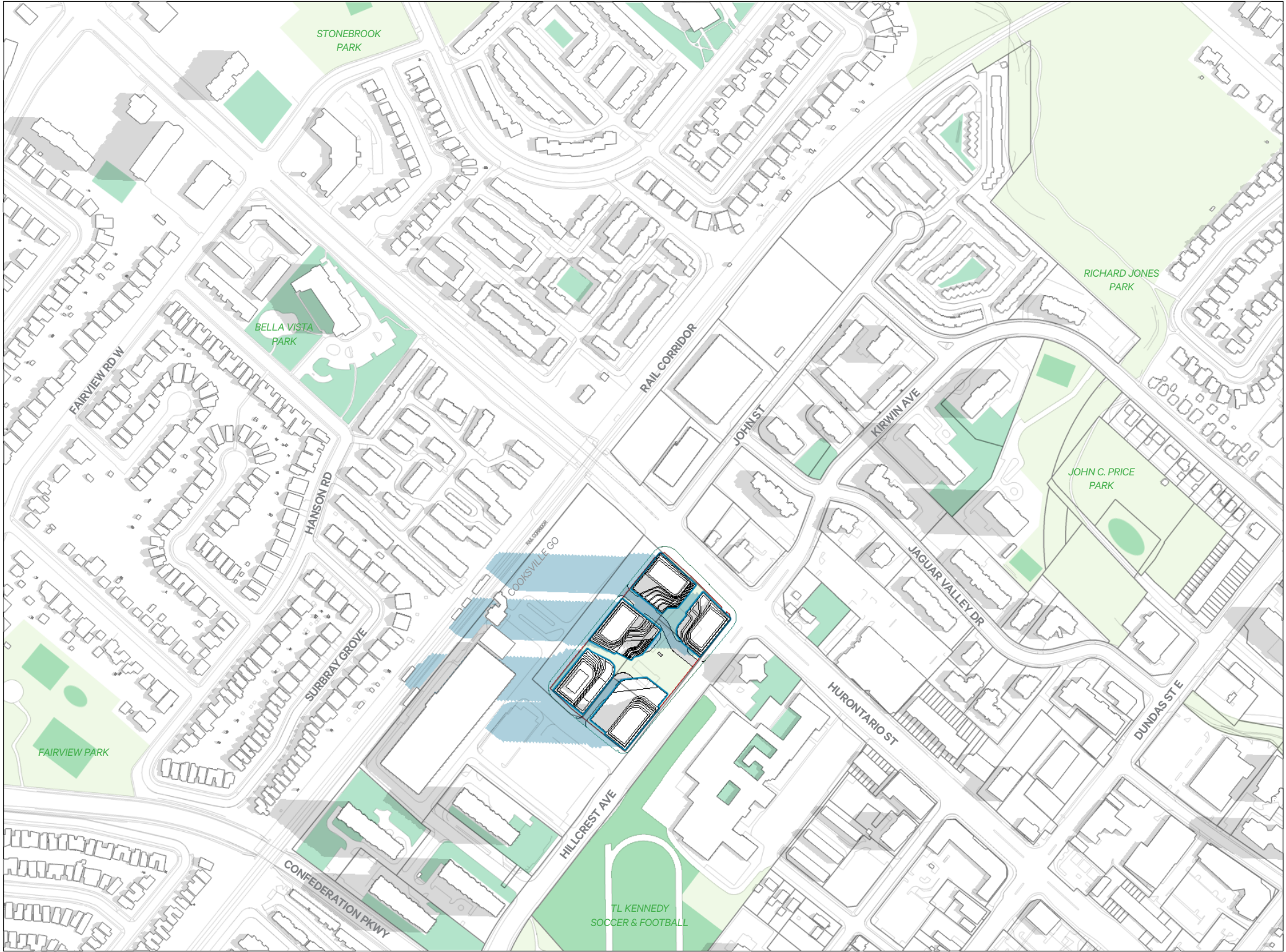
25 Hillcrest Ave & 3154 Hurontario St - Mississauga, ON



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SUN / SHADOW ANALYSIS

Proposed Site Configuration - June 21st, 9:20 EST
25 Hillcrest Ave & 3154 Hurontario St - Mississauga, ON

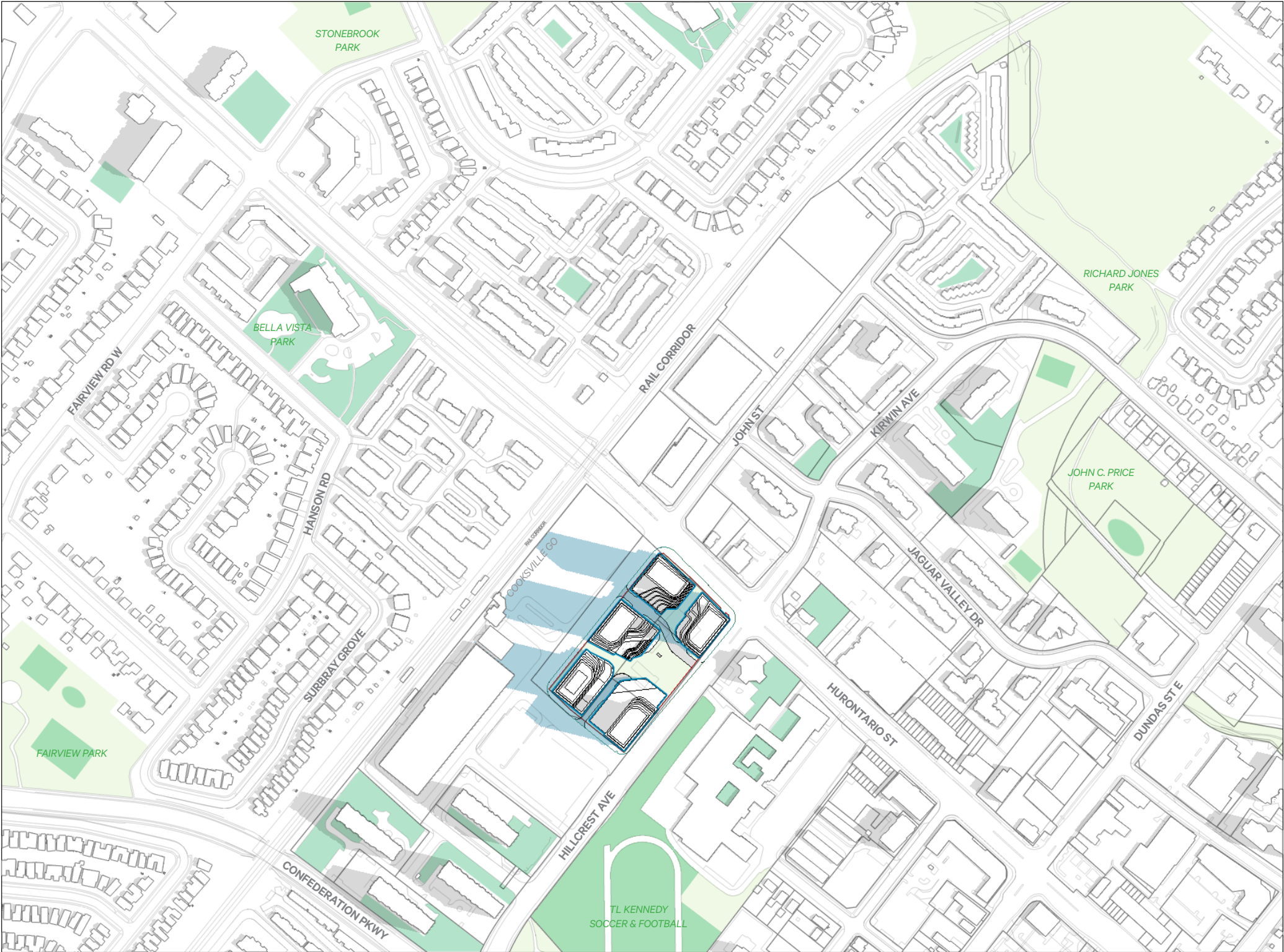


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SUN / SHADOW ANALYSIS

Proposed Site Configuration - June 21st, 10:20 EST

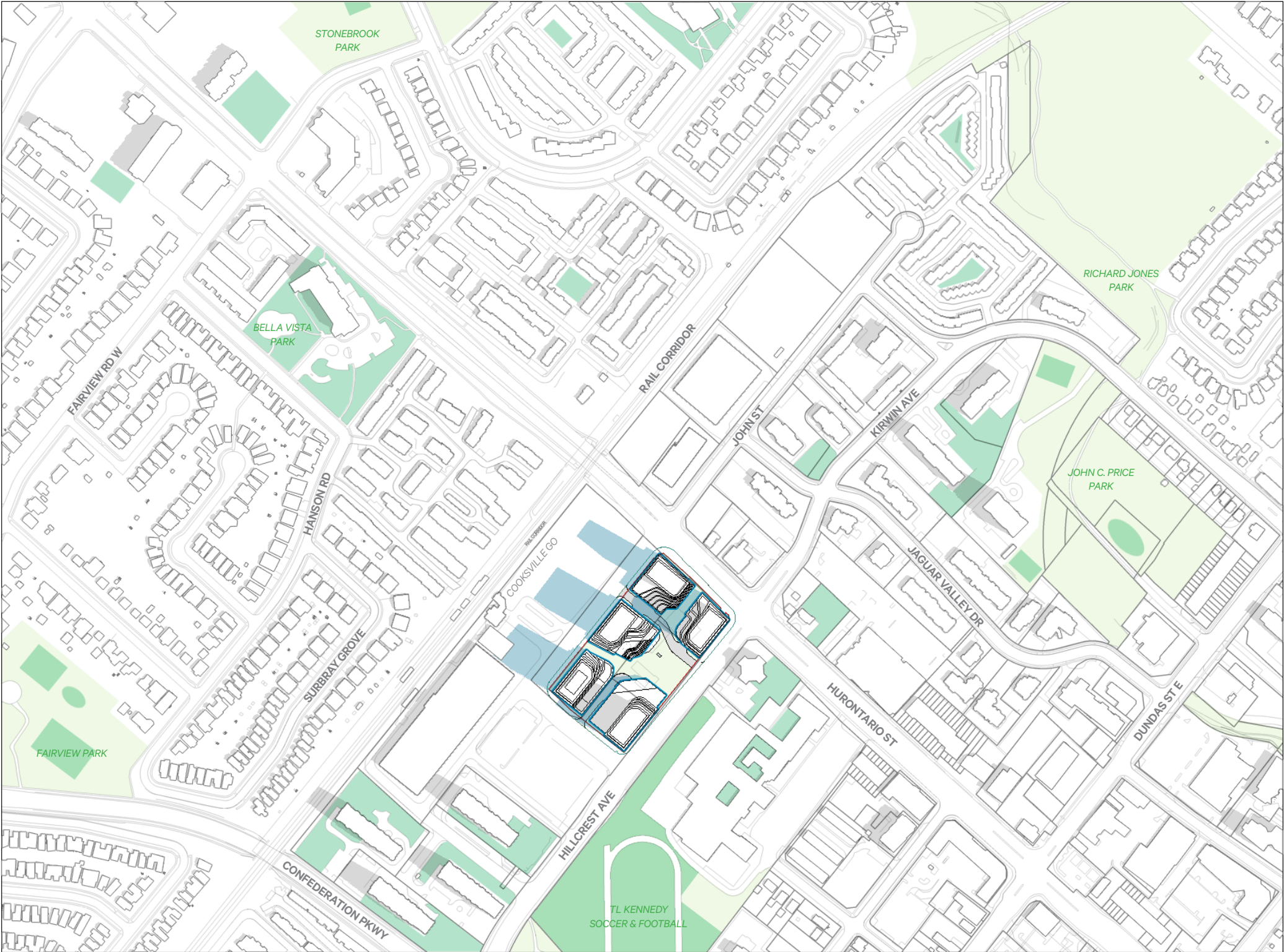
25 Hillcrest Ave & 3154 Hurontario St - Mississauga, ON



SUN / SHADOW ANALYSIS

Proposed Site Configuration - June 21st, 11:20 EST

25 Hillcrest Ave & 3154 Hurontario St - Mississauga, ON

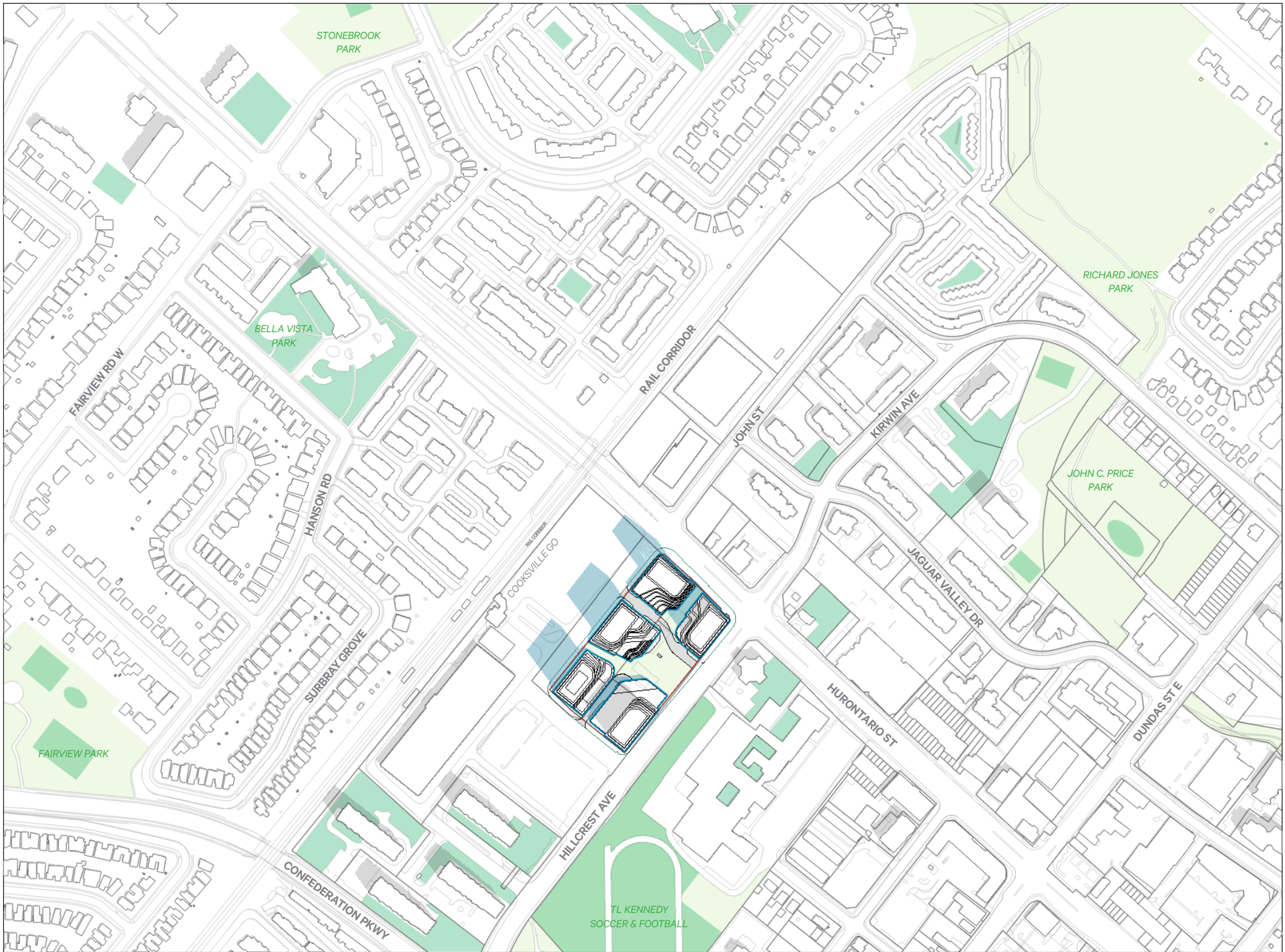


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SUN / SHADOW ANALYSIS

Proposed Site Configuration - June 21st, 12:20 EST

25 Hillcrest Ave & 3154 Hurontario St - Mississauga, ON

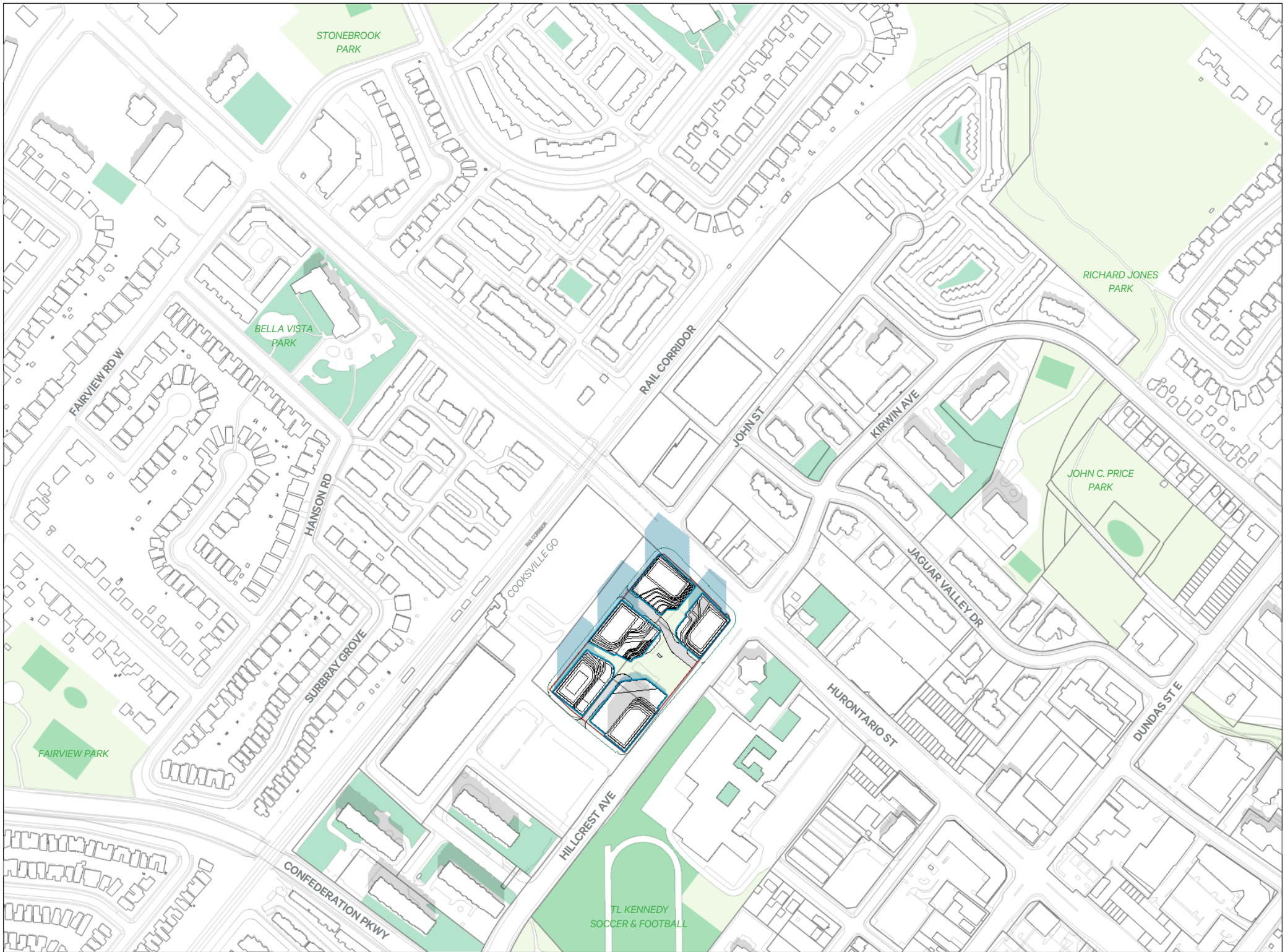


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SUN / SHADOW ANALYSIS

Proposed Site Configuration - June 21st, 13:20 EST

25 Hillcrest Ave & 3154 Hurontario St - Mississauga, ON



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SUN / SHADOW ANALYSIS

Proposed Site Configuration - June 21st, 14:20 EST

25 Hillcrest Ave & 3154 Hurontario St - Mississauga, ON

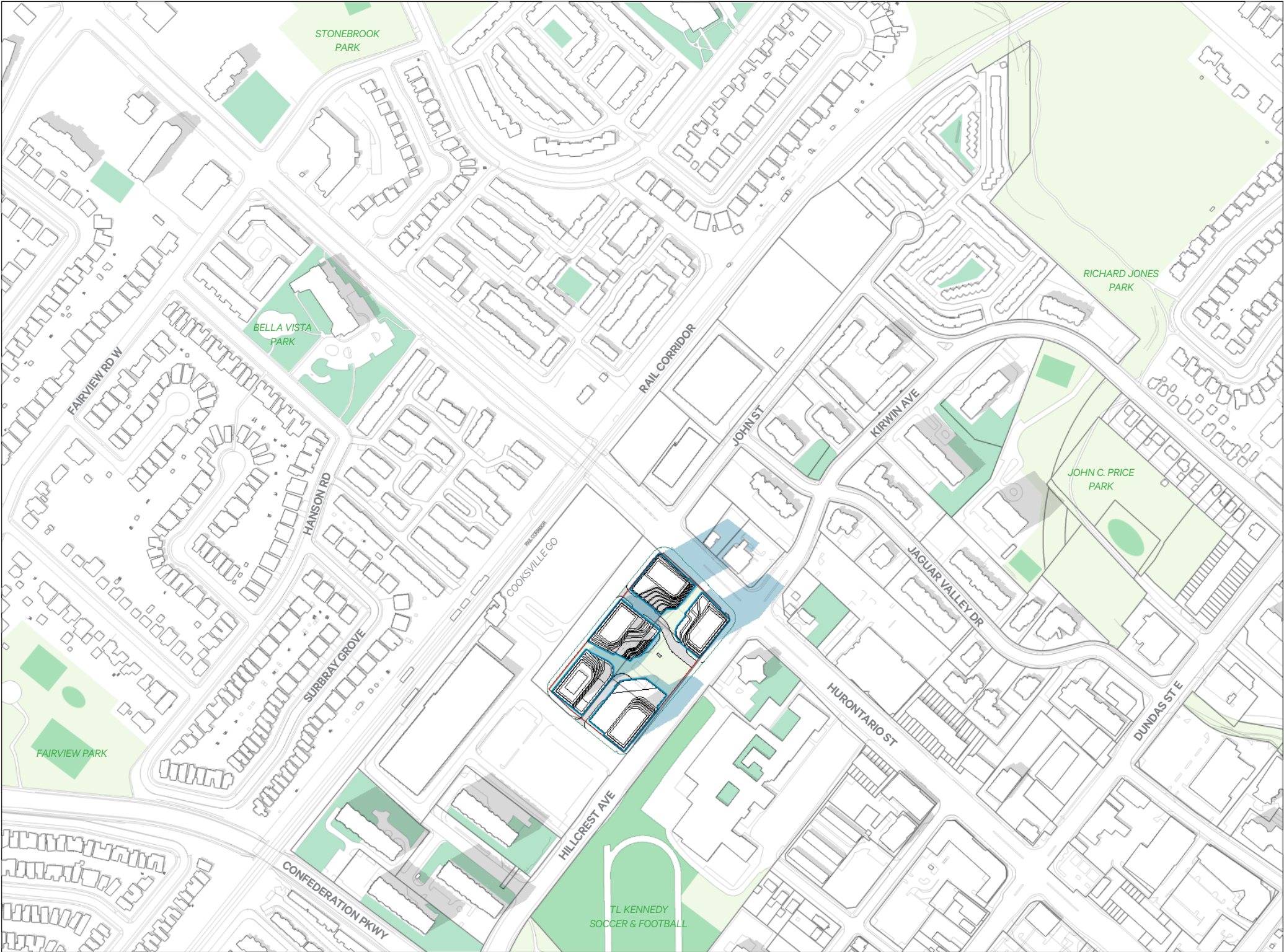


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SUN / SHADOW ANALYSIS

Proposed Site Configuration - June 21st, 15:20 EST

25 Hillcrest Ave & 3154 Hurontario St - Mississauga, ON



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SUN / SHADOW ANALYSIS

Proposed Site Configuration - June 21st, 16:20 EST

25 Hillcrest Ave & 3154 Hurontario St - Mississauga, ON



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SUN / SHADOW ANALYSIS

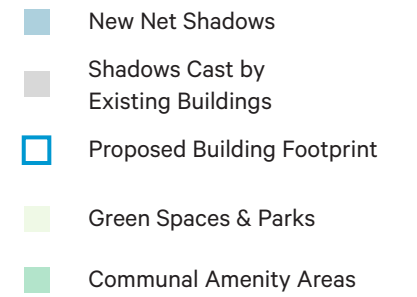
Proposed Site Configuration - June 21st, 17:20 EST

25 Hillcrest Ave & 3154 Hurontario St - Mississauga, ON



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25 Hillcrest Ave & 3154 Hurontario St - Mississauga, ON



SUN / SHADOW ANALYSIS

Proposed Site Configuration - June 21st, 19:20 EST

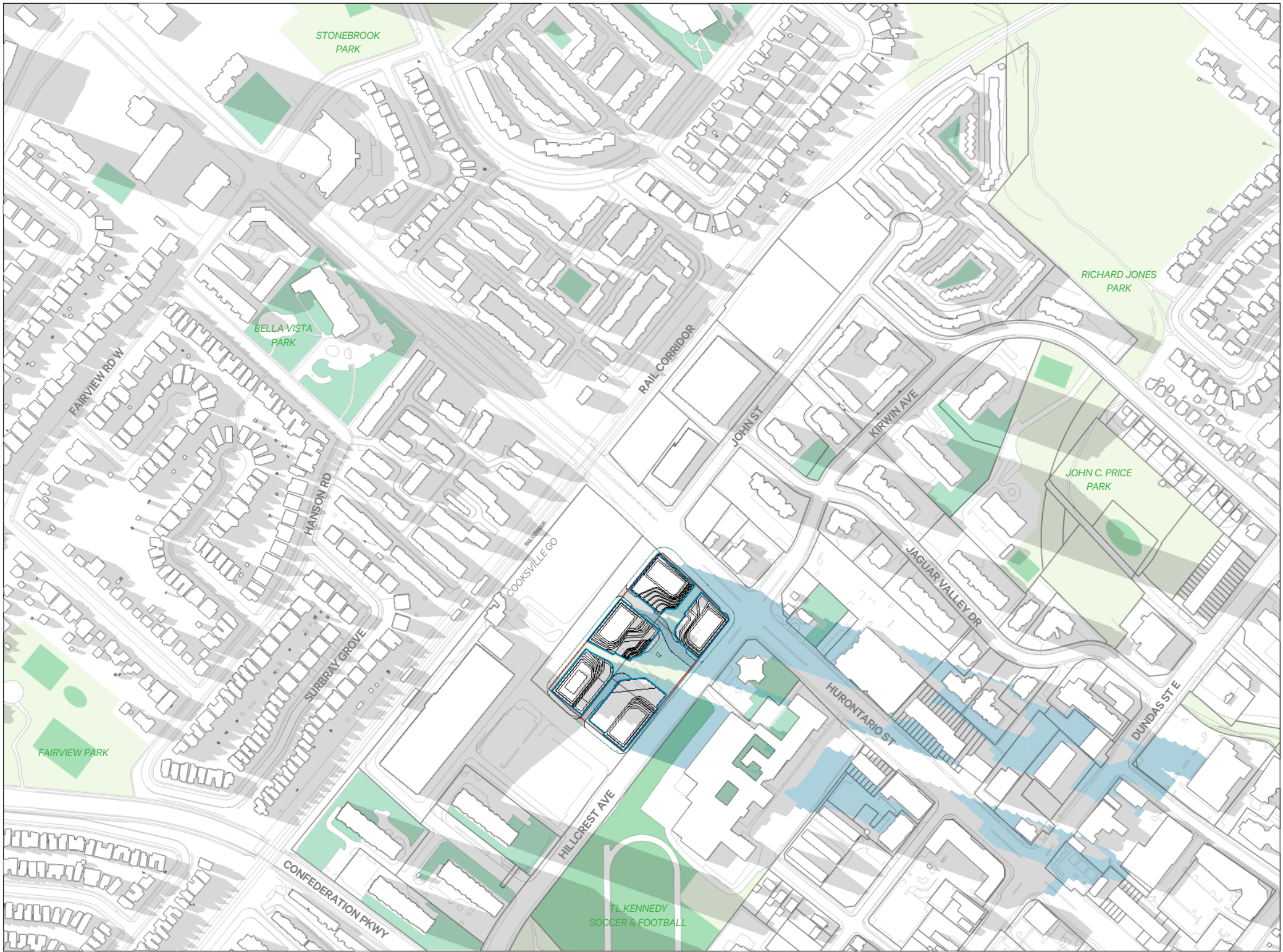
25 Hillcrest Ave & 3154 Hurontario St - Mississauga, ON



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SUN / SHADOW ANALYSIS

Proposed Site Configuration - June 21st, 19:33 EST
25 Hillcrest Ave & 3154 Hurontario St - Mississauga, ON



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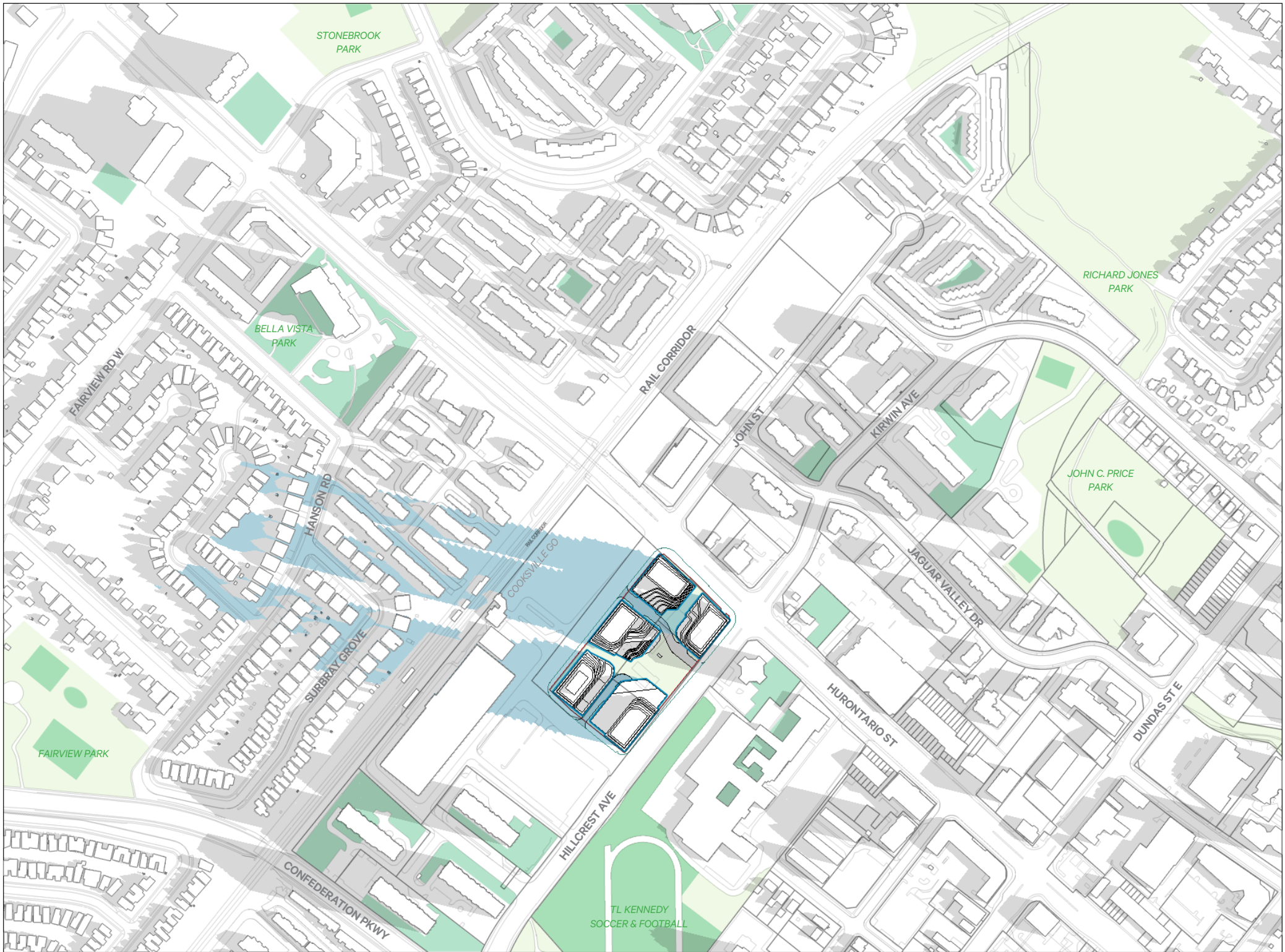
Shadow Studies

March / September 21st

SUN / SHADOW ANALYSIS

Proposed Site Configuration - March / September 21st, 8:35 EST

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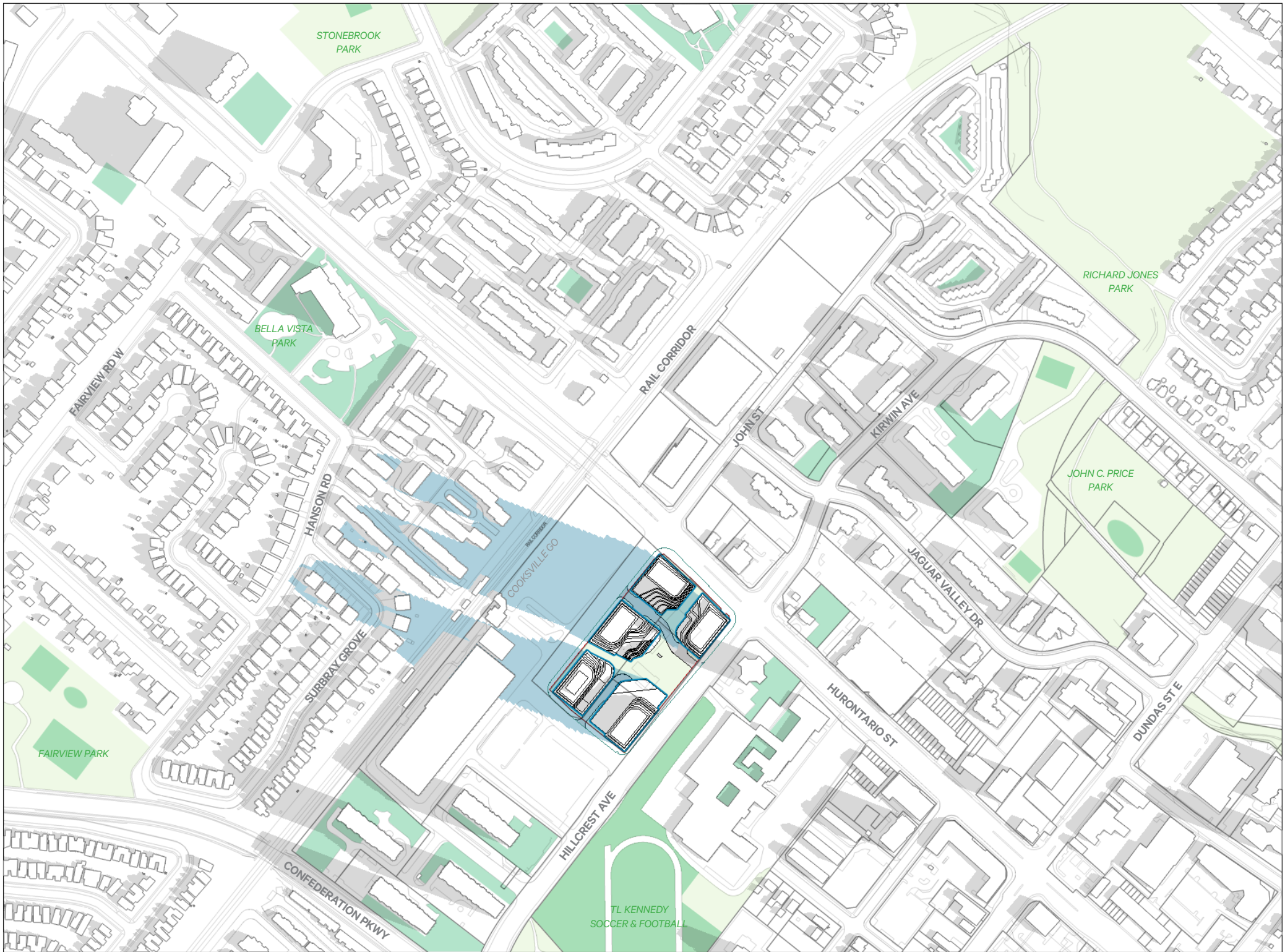


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SUN / SHADOW ANALYSIS

Proposed Site Configuration - March / September 21st, 9:12 EST

25 Hillcrest Ave & 3154 Hurontario St - Mississauga, ON

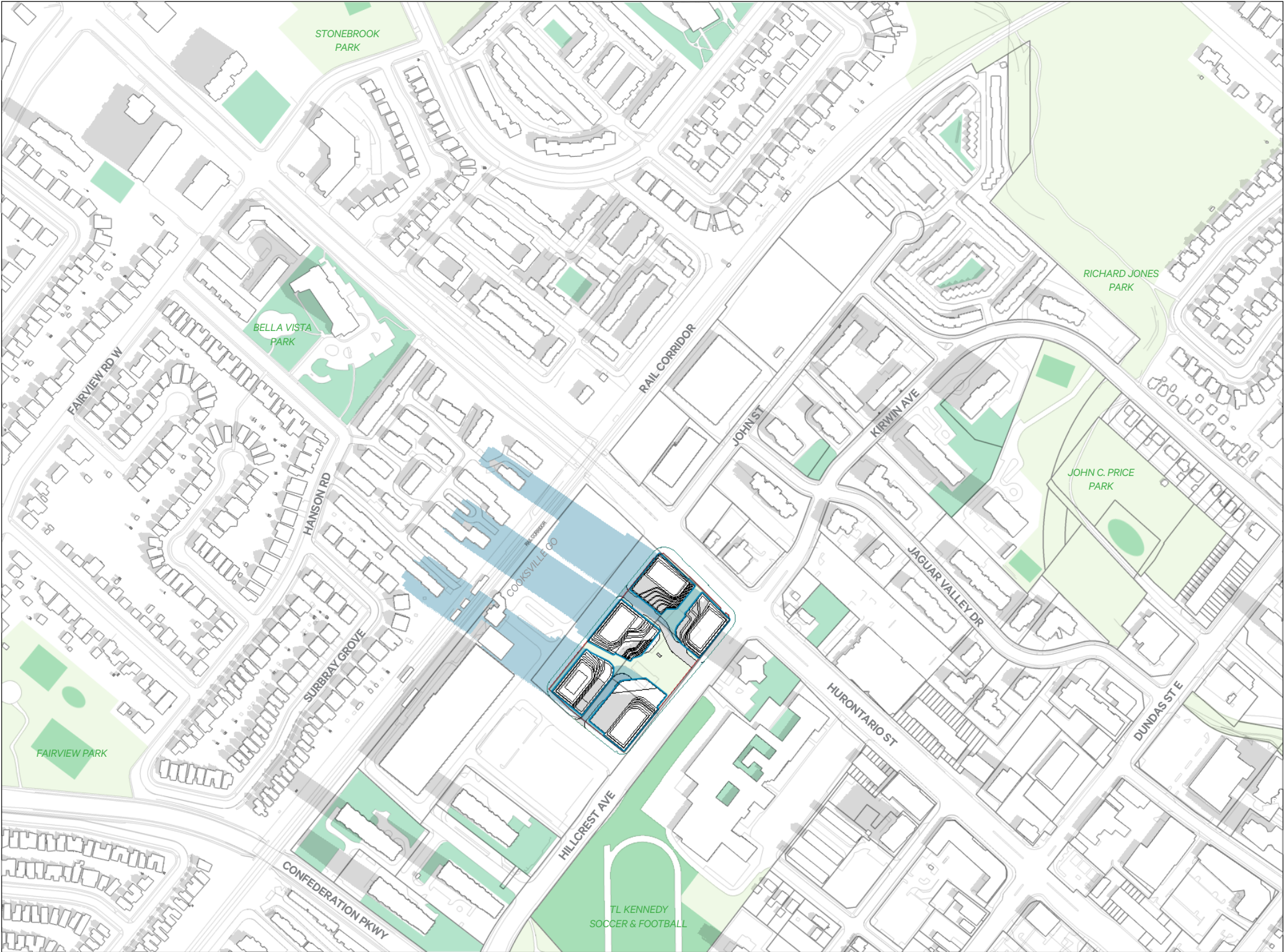


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SUN / SHADOW ANALYSIS

Proposed Site Configuration - March / September 21st, 10:12 EST

25 Hillcrest Ave & 3154 Hurontario St - Mississauga, ON

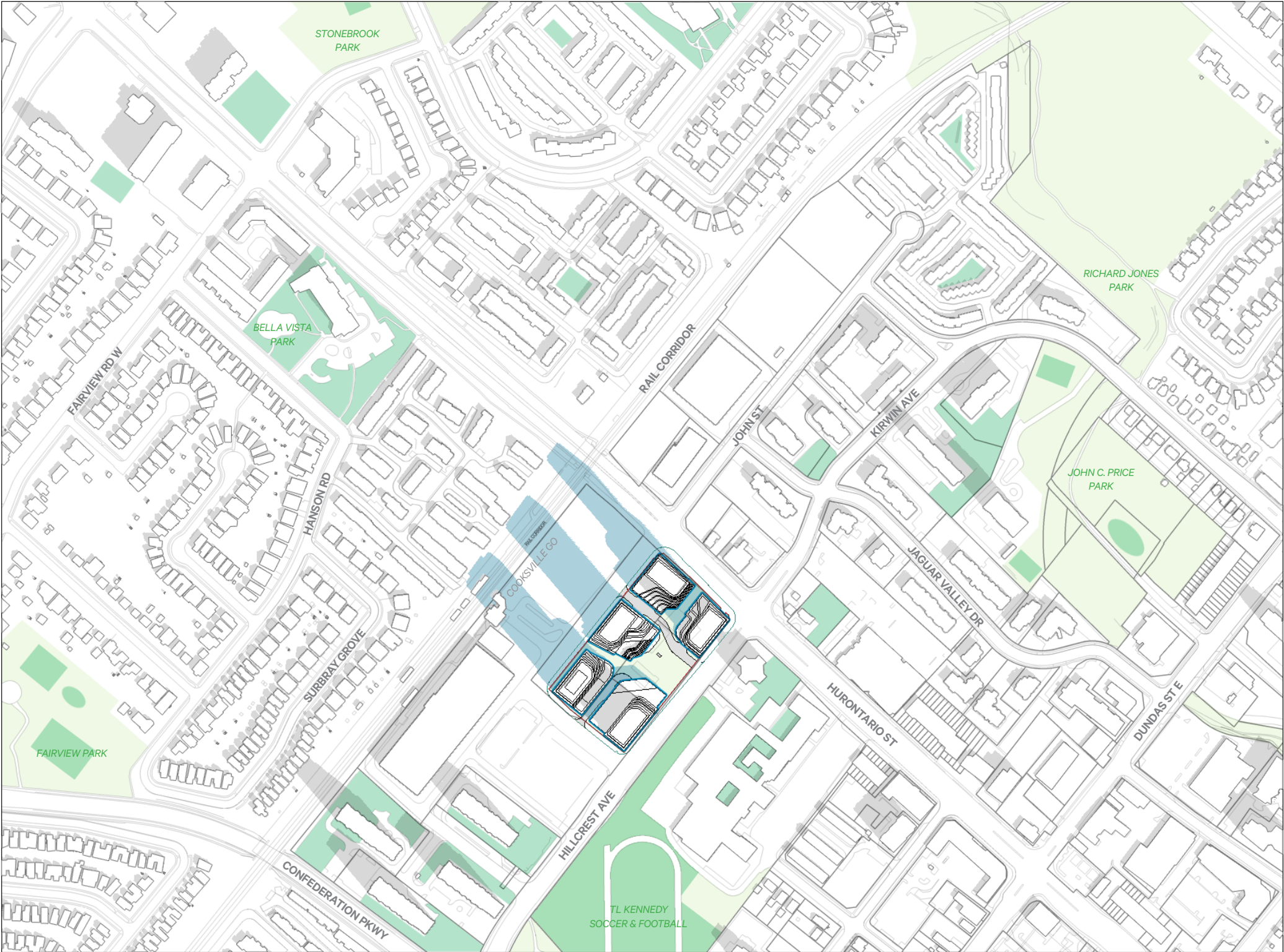


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SUN / SHADOW ANALYSIS

Proposed Site Configuration - March / September 21st, 11:12 EST

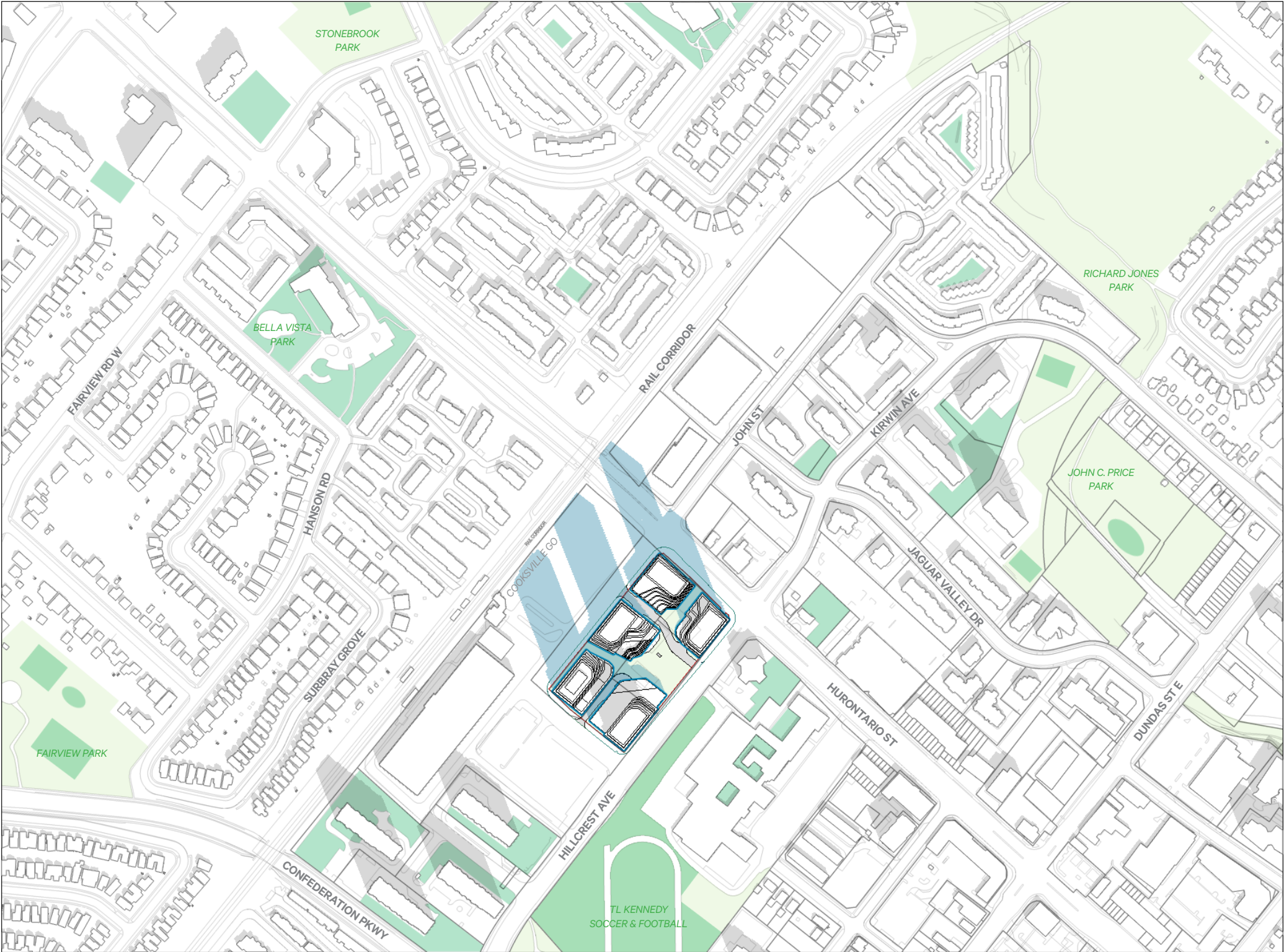
25 Hillcrest Ave & 3154 Hurontario St - Mississauga, ON



SUN / SHADOW ANALYSIS

Proposed Site Configuration - March / September 21st, 12:12 EST

25 Hillcrest Ave & 3154 Hurontario St - Mississauga, ON

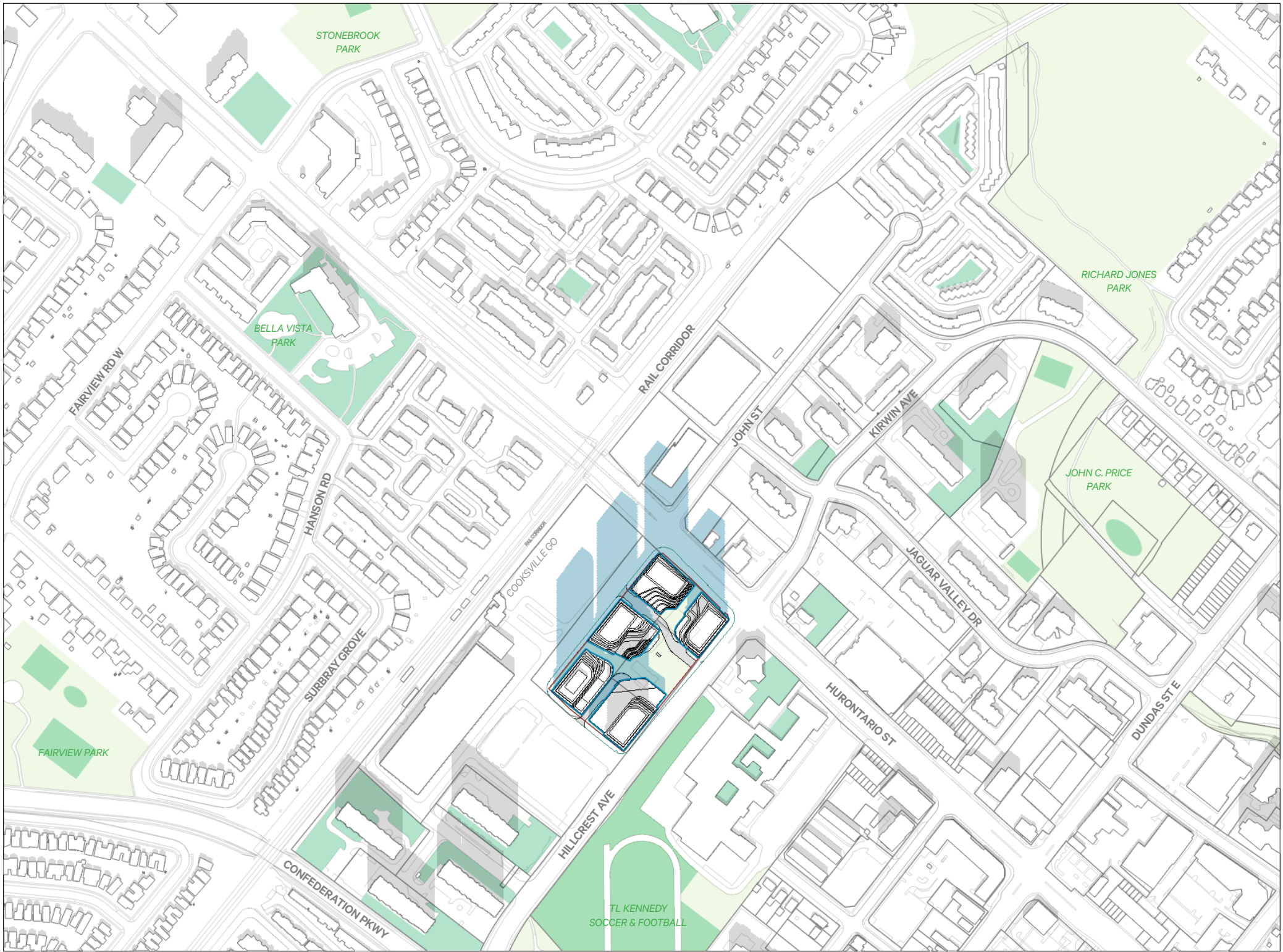


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SUN / SHADOW ANALYSIS

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25 Hillcrest Ave & 3154 Hurontario St - Mississauga, ON

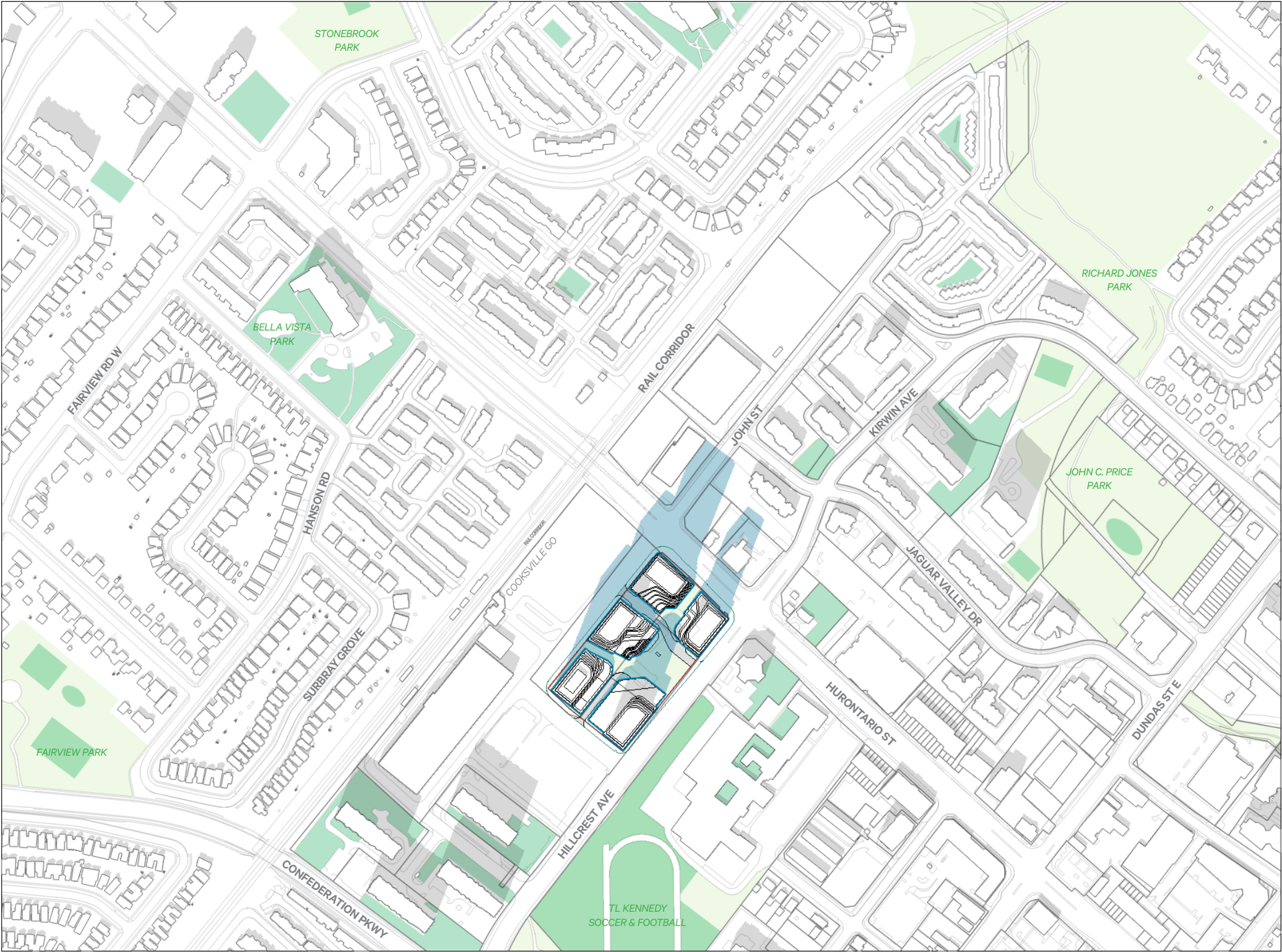


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SUN / SHADOW ANALYSIS

Proposed Site Configuration - March / September 21st, 14:12 EST

25 Hillcrest Ave & 3154 Hurontario St - Mississauga, ON

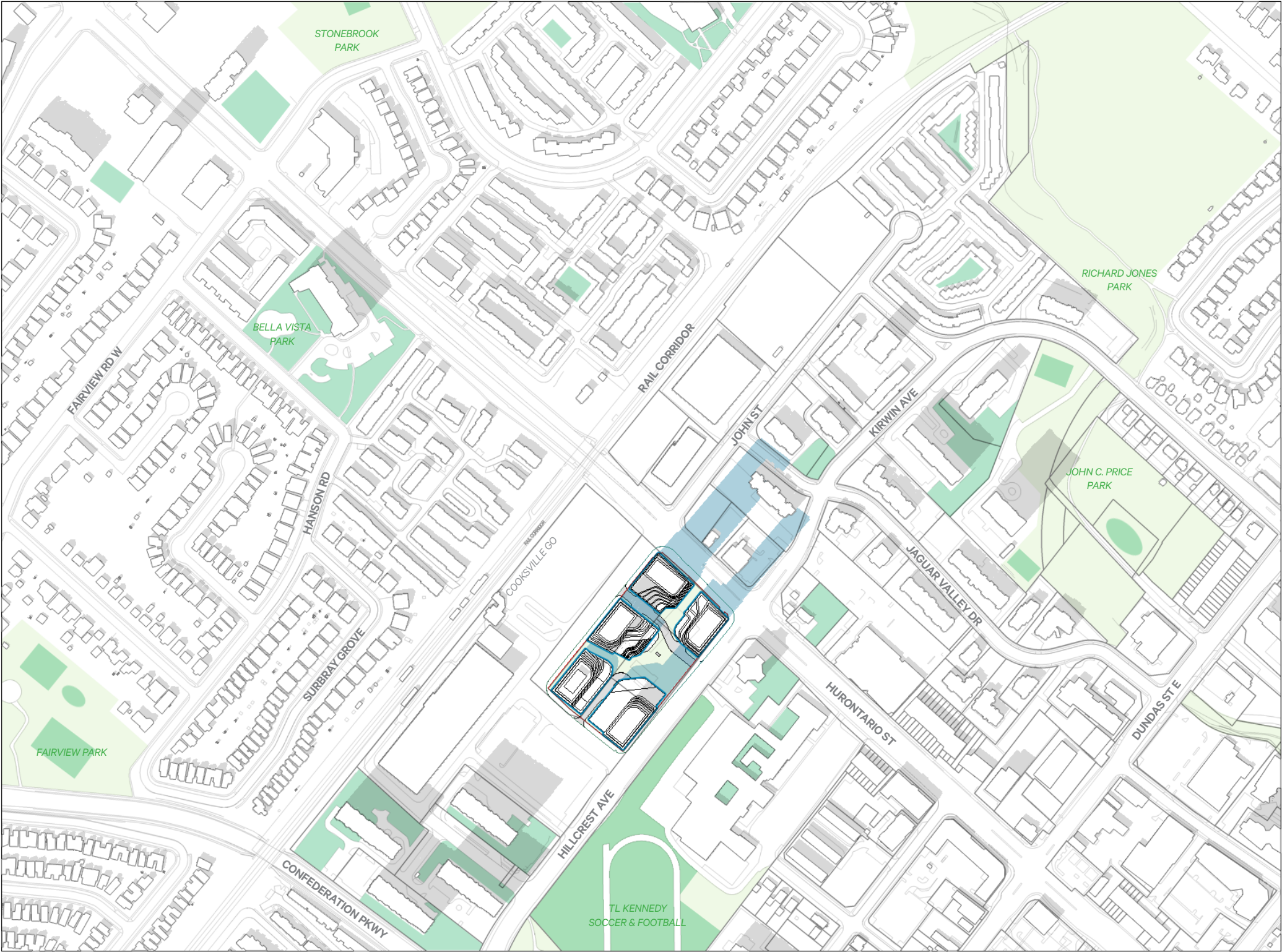


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Proposed Site Configuration - March / September 21st, 15:12 EST

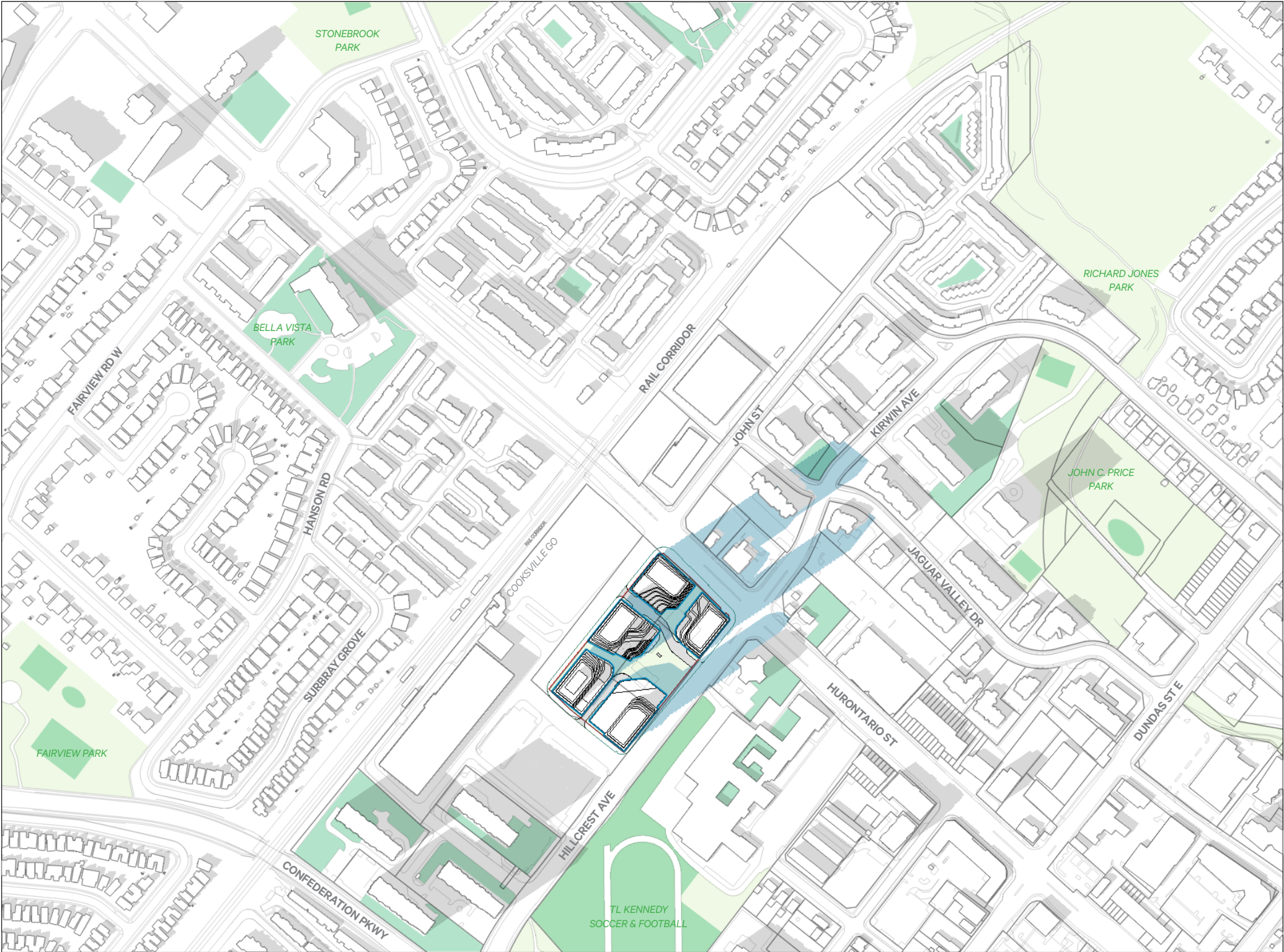
25 Hillcrest Ave & 3154 Hurontario St - Mississauga, ON



SUN / SHADOW ANALYSIS

Proposed Site Configuration - March / September 21st, 16:12 EST

25 Hillcrest Ave & 3154 Hurontario St - Mississauga, ON



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SUN / SHADOW ANALYSIS

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25 Hillcrest Ave & 3154 Hurontario St - Mississauga, ON

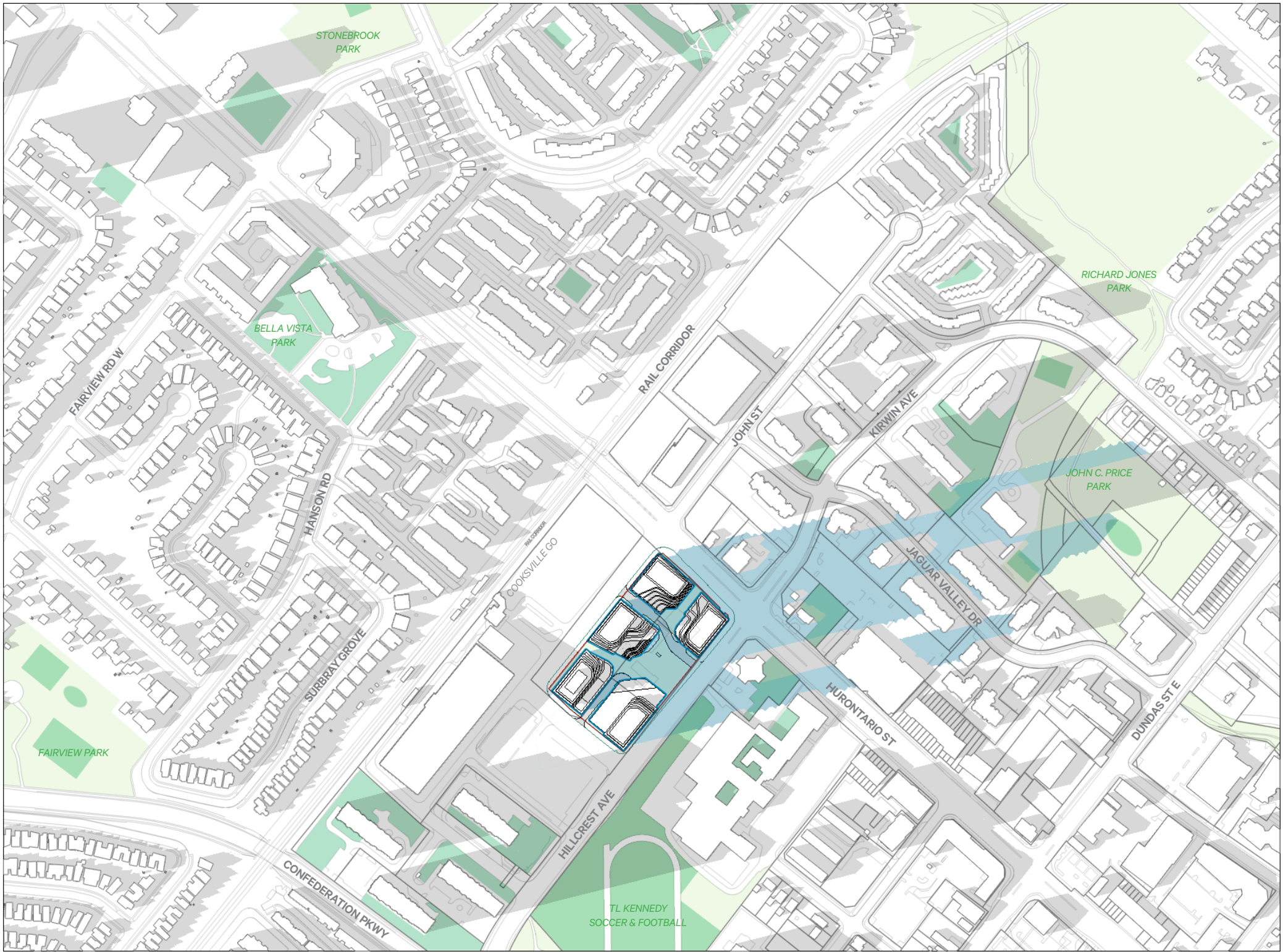


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SUN / SHADOW ANALYSIS

Proposed Site Configuration - March / September 21st, 17:48 EST

25 Hillcrest Ave & 3154 Hurontario St - Mississauga, ON



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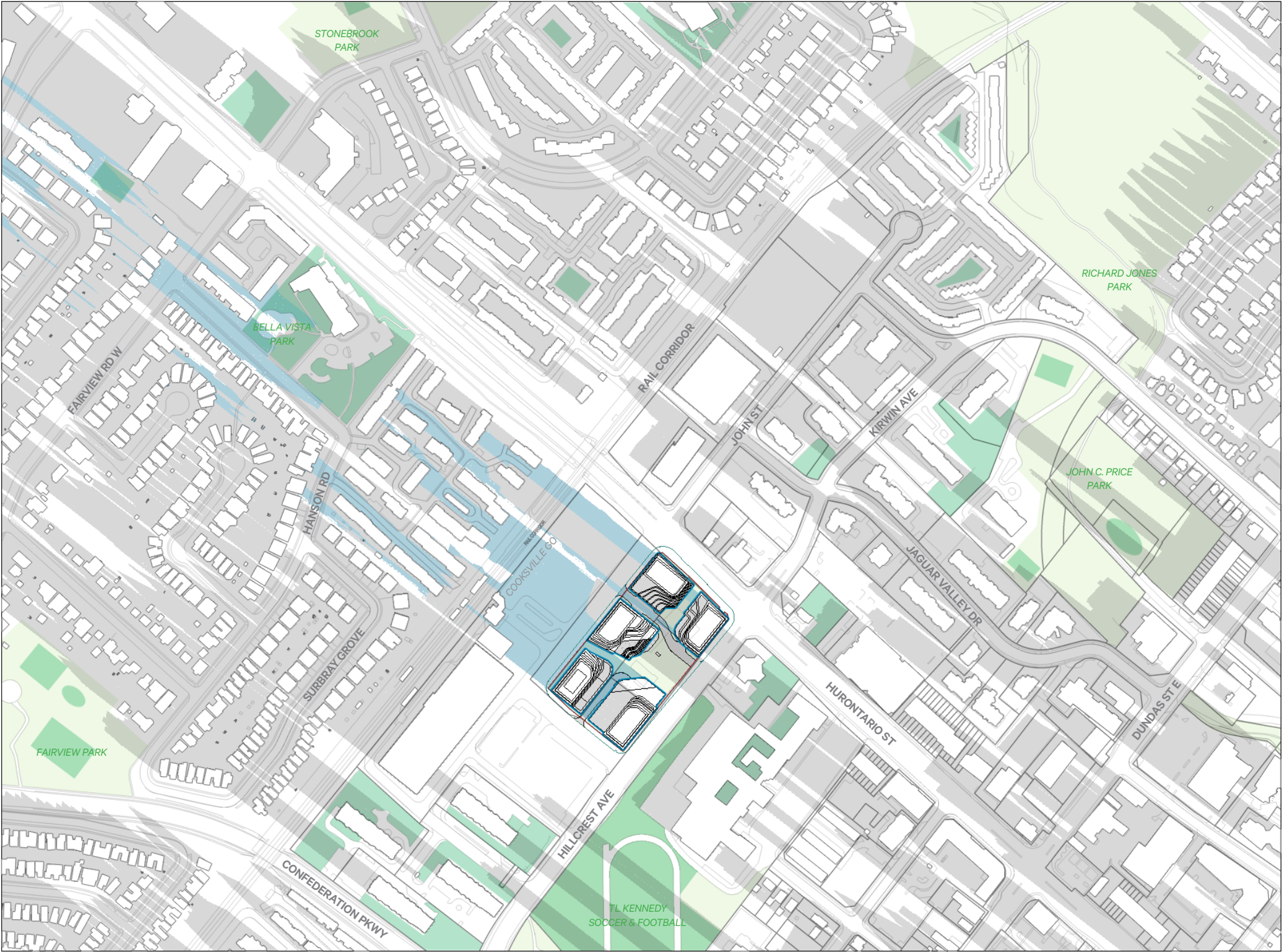
Shadow Studies

December 21st

SUN / SHADOW ANALYSIS

Proposed Site Configuration - December 21st, 9:19 EST

25 Hillcrest Ave & 3154 Hurontario St - Mississauga, ON

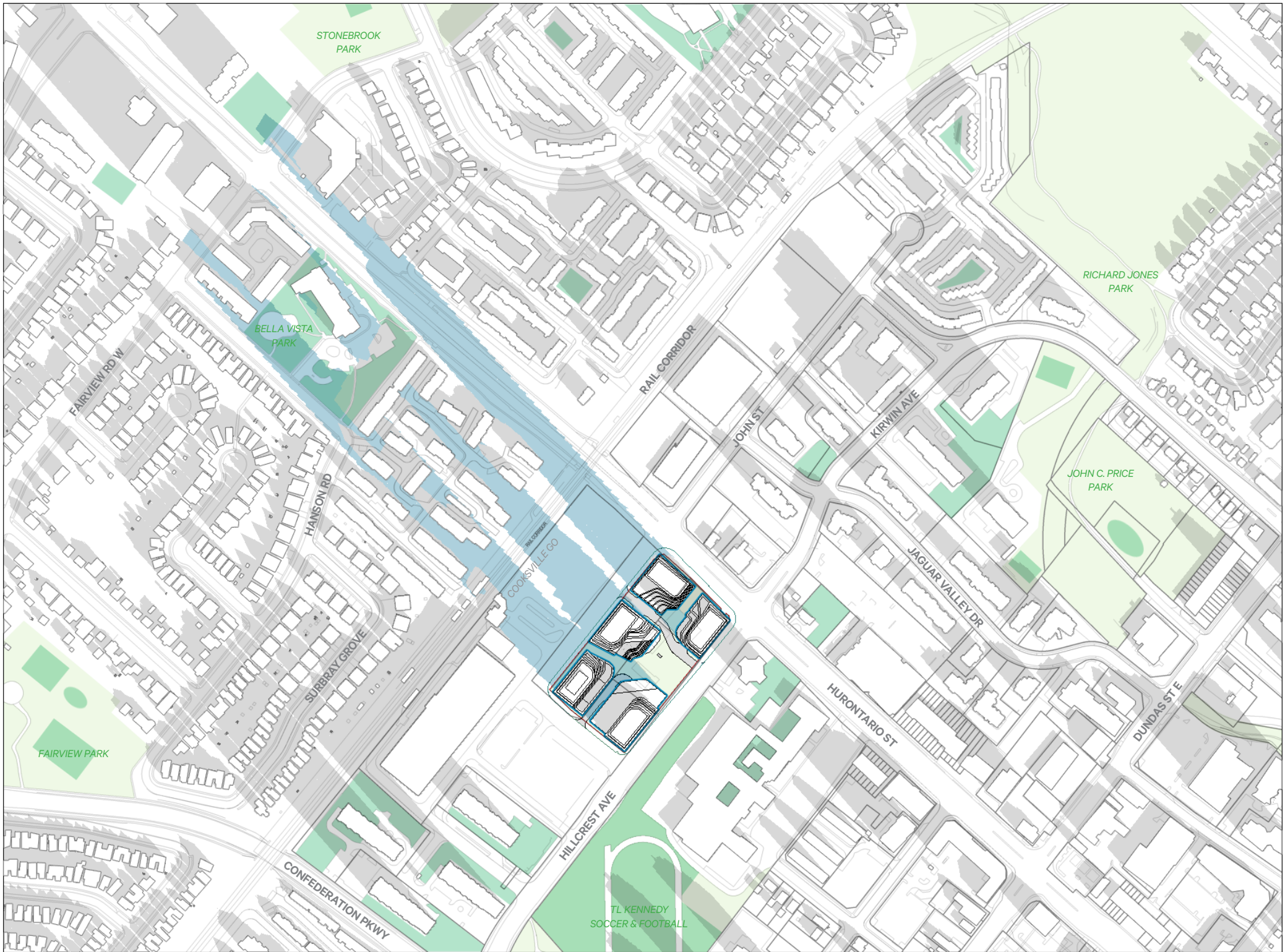


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SUN / SHADOW ANALYSIS

Proposed Site Configuration - December 21st, 10:17 EST

25 Hillcrest Ave & 3154 Hurontario St - Mississauga, ON

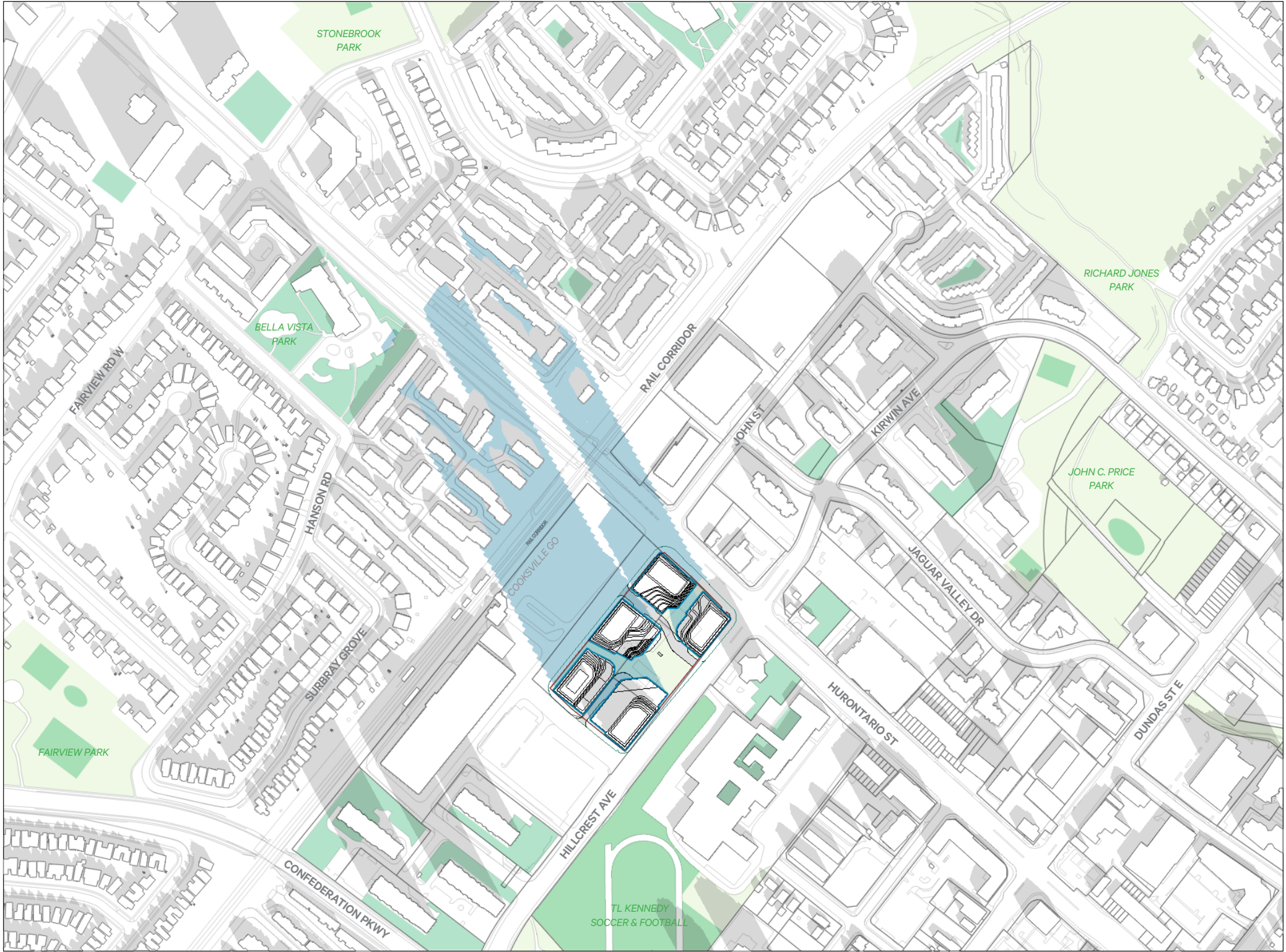


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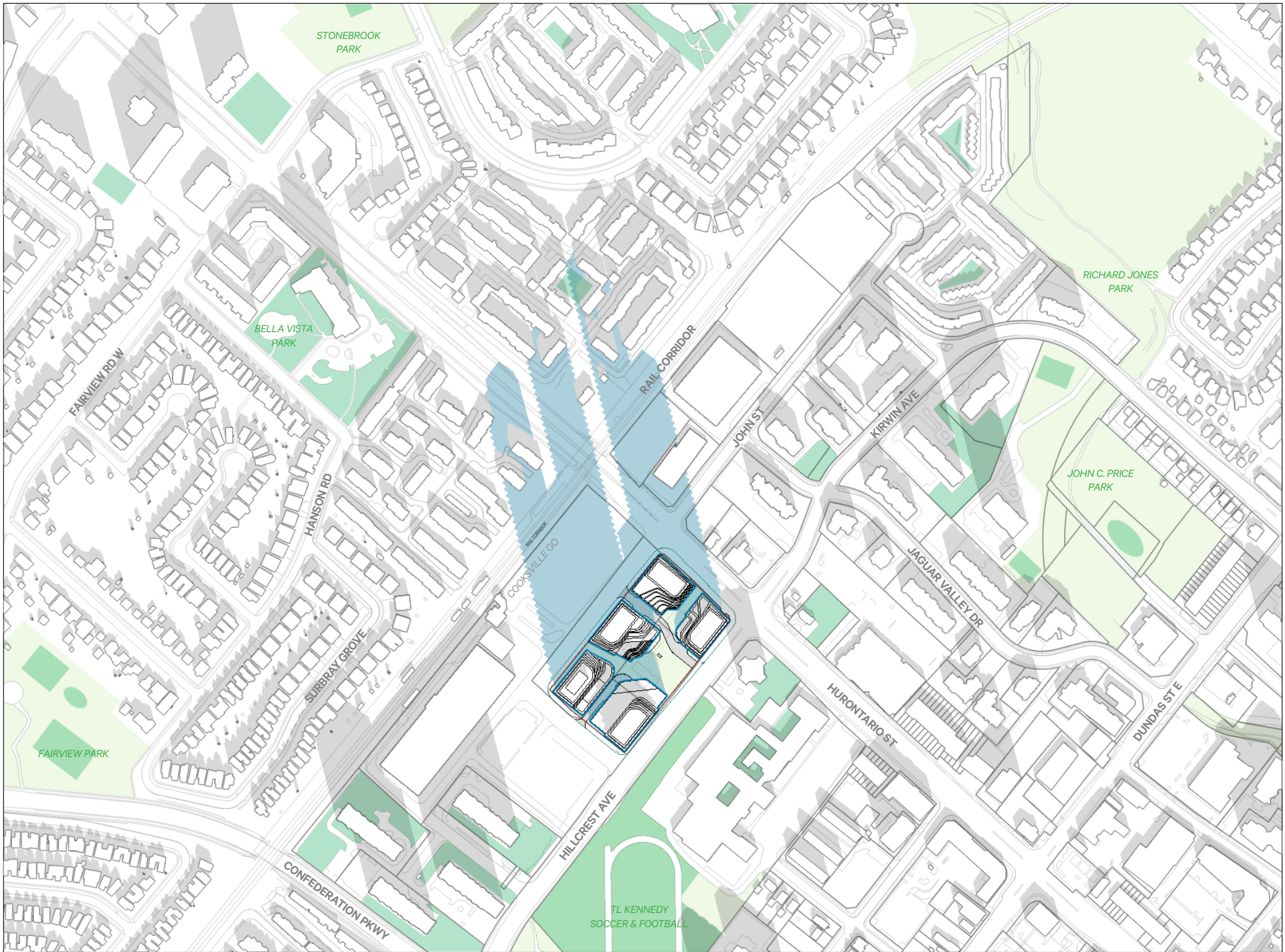


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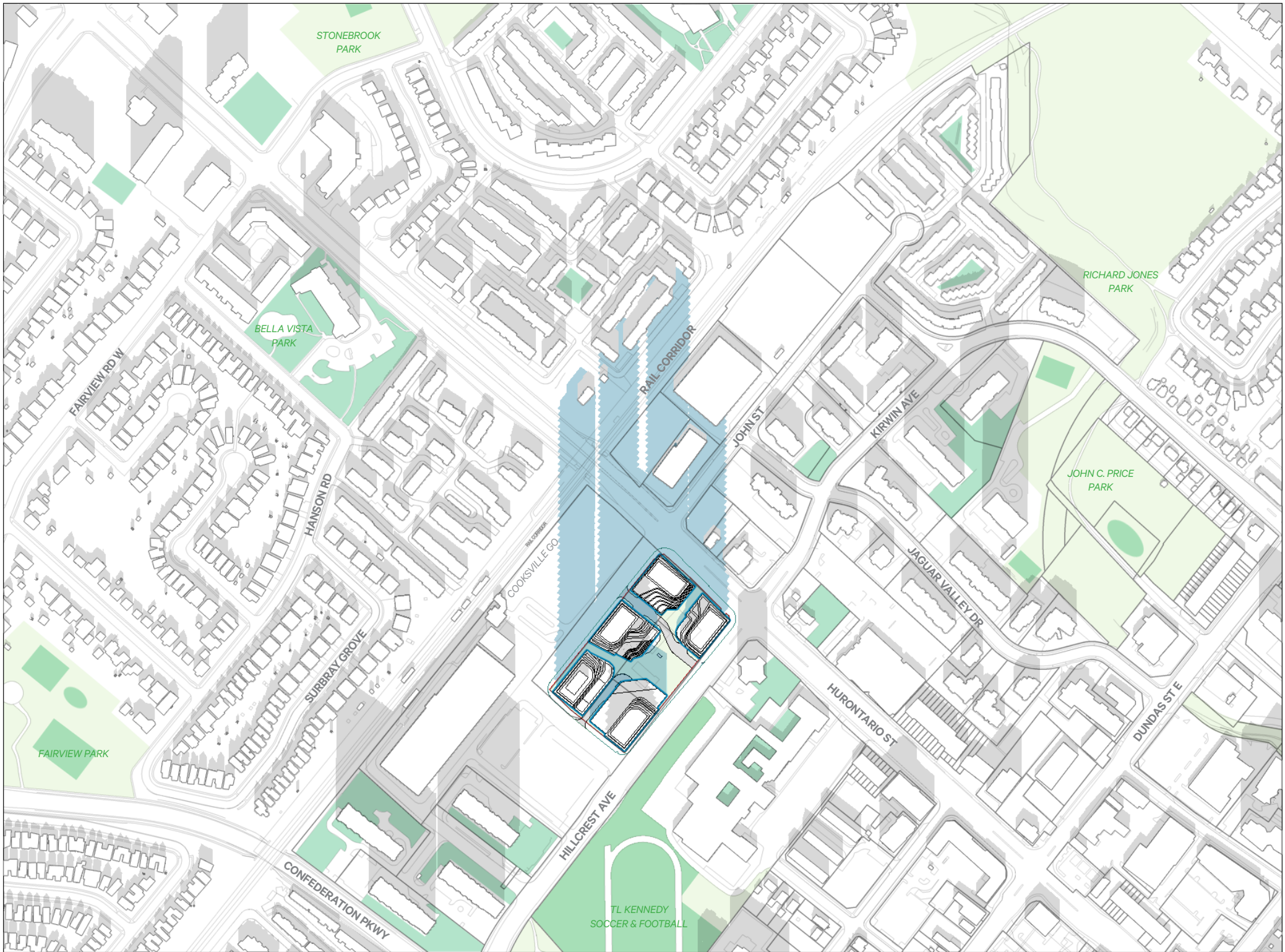
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SUN / SHADOW ANALYSIS

Proposed Site Configuration - December 21st, 13:17 EST

25 Hillcrest Ave & 3154 Hurontario St - Mississauga, ON

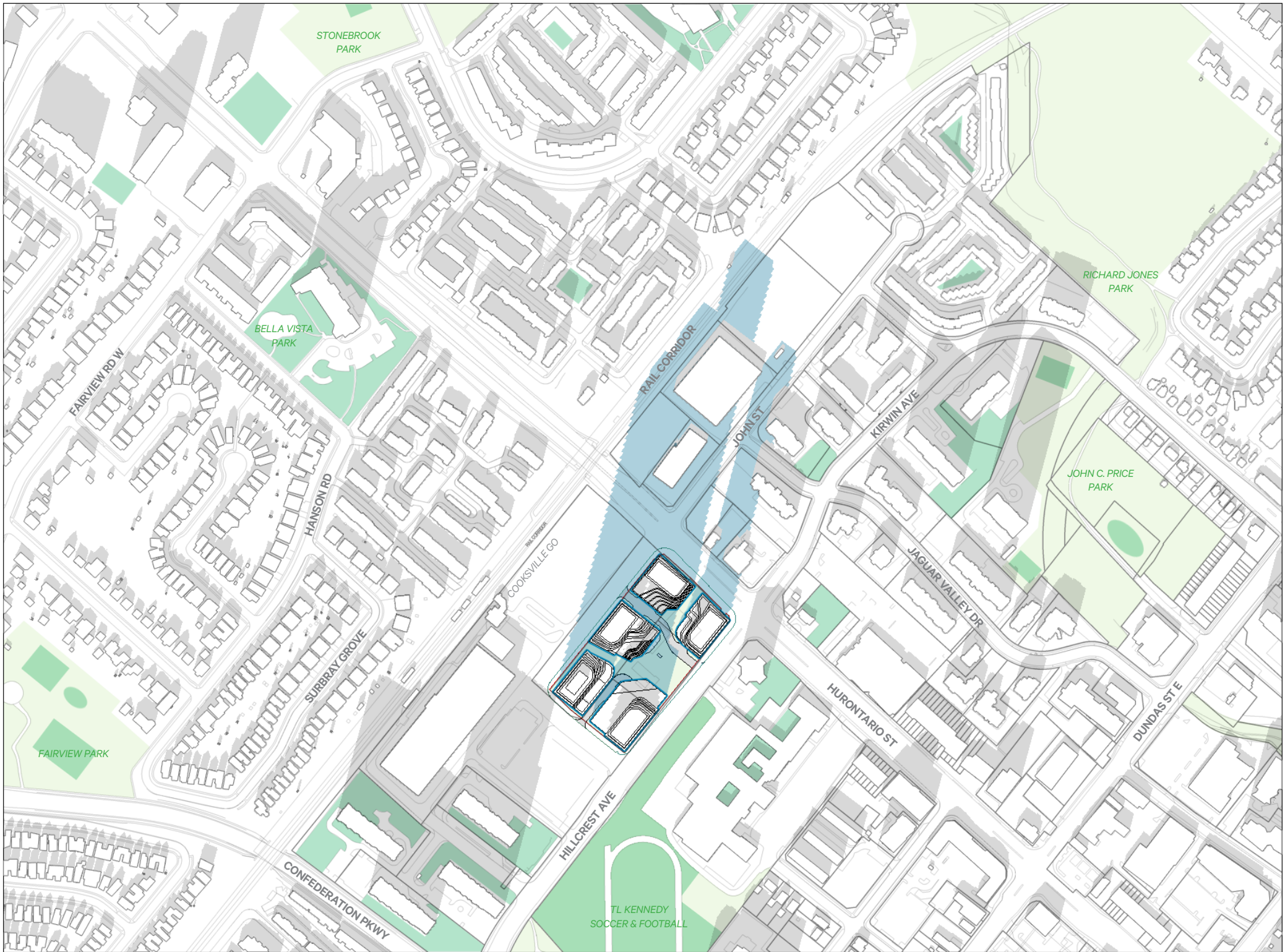


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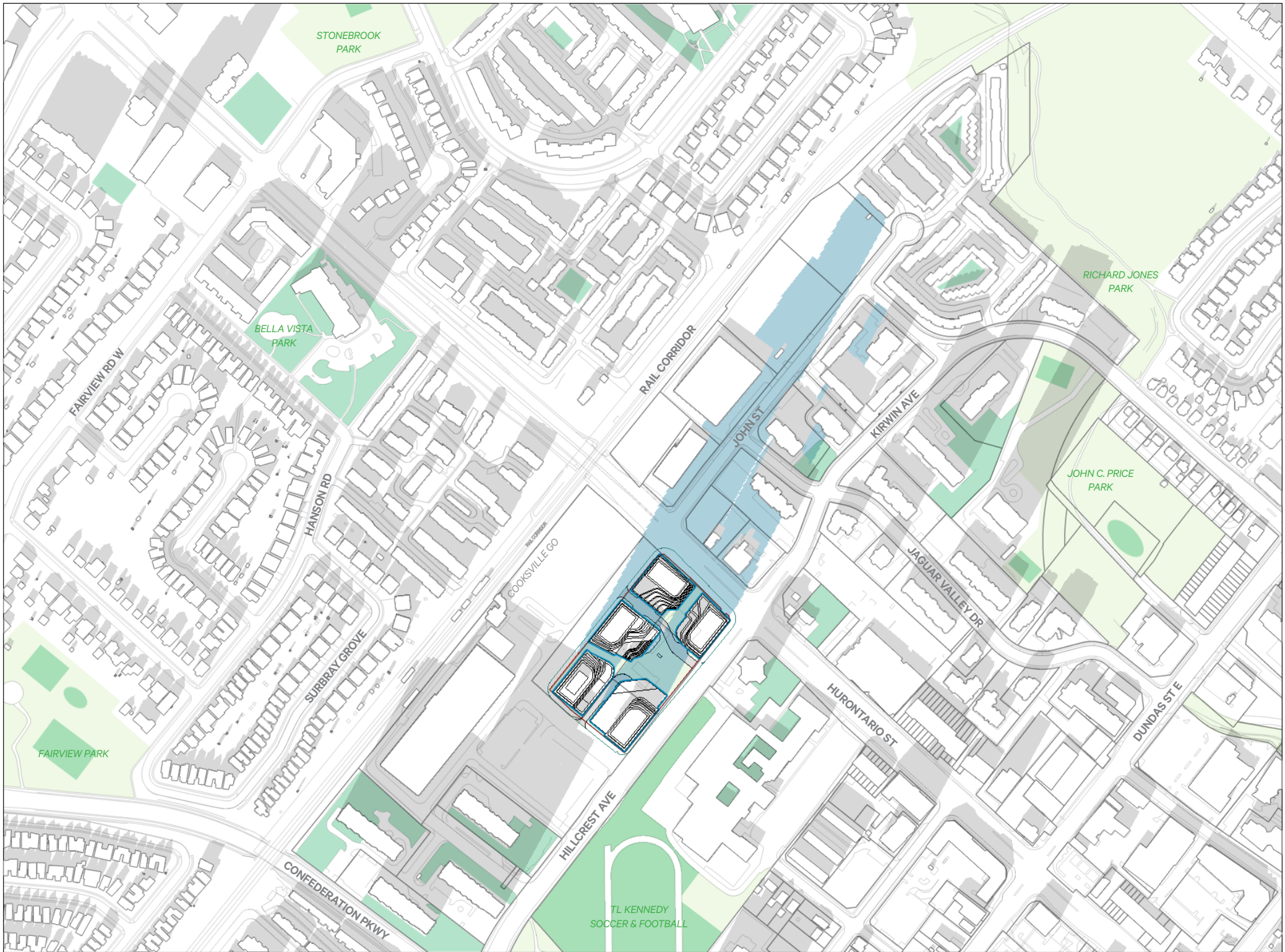
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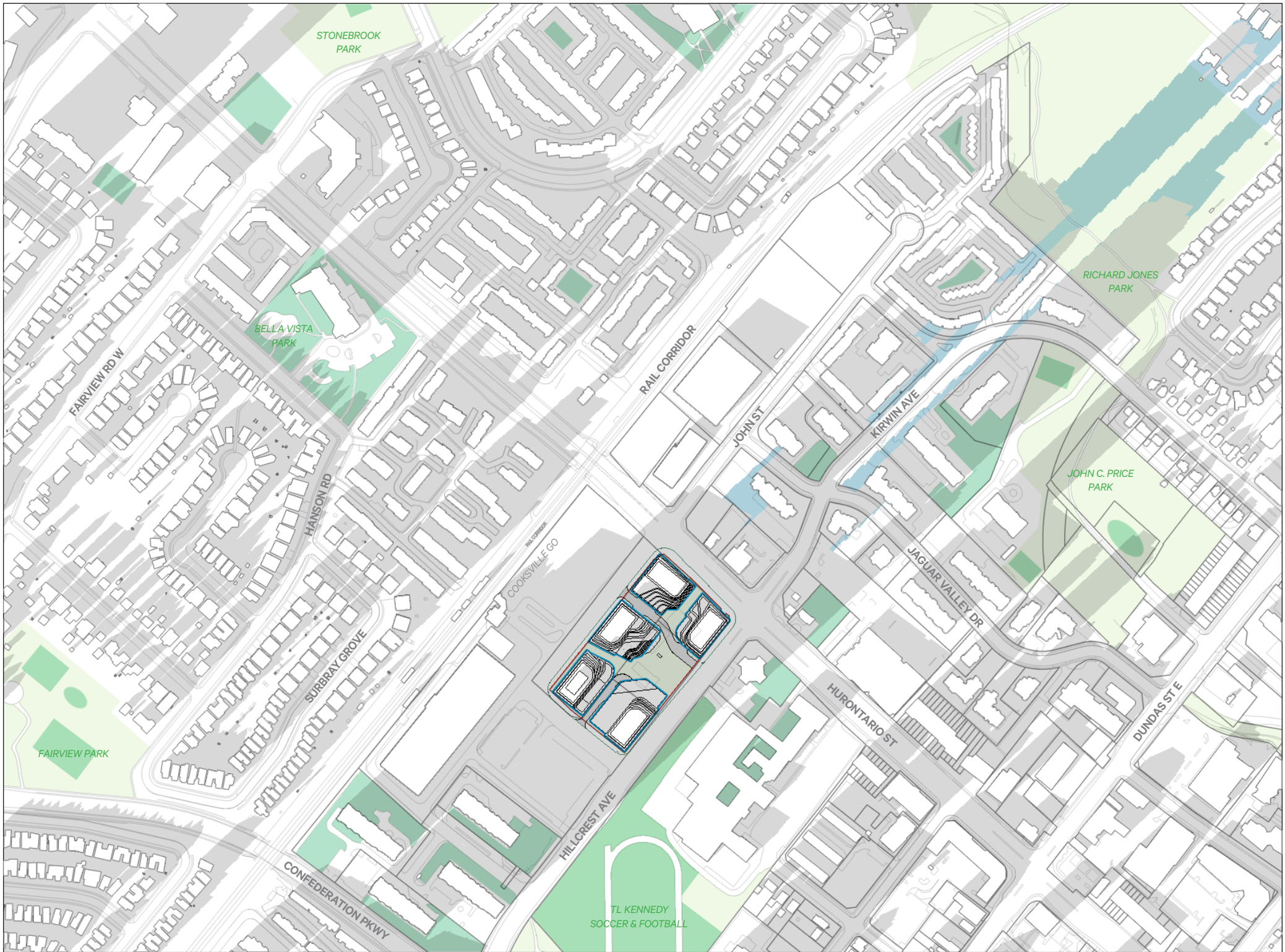
Proposed Site Configuration - December 21st, 15:15 EST
25 Hillcrest Ave & 3154 Hurontario St - Mississauga, ON



SUN / SHADOW ANALYSIS

Proposed Site Configuration - December 21st, 16:45 EST

25 Hillcrest Ave & 3154 Hurontario St - Mississauga, ON



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