1027458 Ontario Inc.

Official Plan Amendment and Zoning By-law Amendment

Shadow Impact Study
Banwell and McHugh Mixed Use Developments
Windsor, Ontario

April 2023 – Revised July 2023 – 22-5144

Table of Contents

Appendices

1.0 Introduction

Dillon Consulting Limited (Dillon) has prepared the following Shadow Impact Study, on behalf of our client, 1027458 Ontario Inc., (Applicant), to assess the potential impact of the shadows created by the proposed business office, respite home, and multiple dwelling residential development. The property is located north of the VIA Railway corridor along the west side Banwell Road, on the south and north sides of McHugh Street with the future extension of Leathorne Street bisecting the northern parcel, in the City of Windsor, herein referred to as the "Subject Sites".

The "Subject Sites" are recognized legally as three (3) separate parcels. Mixed use developments are proposed for each parcel and are proposed to be developed concurrently within the South Neighbourhood.

For purposes of this report, the parcels will be referred to as:

- North 'A' Site – the parcel located west of Banwell Road, north of the future extension of Leathorne Street;
- North 'B' Site - the parcel located west of Banwell Road, between the south side of the future extension of Leathorne Street and the north side of McHugh Street.
- South Site – the parcel located north of the VIA Railway corridor at the southwest corner of the Banwell Road and McHugh Street intersection.

The proposed mixed use developments on the "Subject Sites" are considered together, under one cover, in the following report.

As per the City of Windsor Official Plan – Chapter 8: Urban Design, Shadow Impact Studies may be required for medium, high, and very high-profile development proposals within the City of Windsor to evaluate the impact of the shadows cast by the development and to determine the appropriate design measures to reduce or mitigate any undesirable shadow conditions (City of Windsor Official Plan, Section 8.6.2.3).

The size, shape, and orientation of new buildings creates new shadows at different times of day and year that may limit penetration of direct sunlight into both public and private spaces. By analyzing the existing and proposed shadows of an area together, both incremental and cumulative shadow impacts can be evaluated. The purpose of the Shadow Impact Study is to encourage high-quality development that maintains adequate access to sunlight, for the enjoyment of public and private spaces, within the City of Windsor.

The Shadow Impact Study will consider: 1) The North 'A' Site, which is proposed to be developed with two (2) 6-storey residential buildings contain 78 units each, 2) The North 'B' Site, which is proposed to be developed with two (2) 6-storey residential building containing 78 units each and a 6-storey, 24 unit residential building, as well as 3) The South Site, which will include two (2) 10-storey, 120 Unit Residential

Buildings, an 8-storey, 96 Unit Residential Building, a 6-storey, 72 Unit Residential Building, a single storey Respite Home and a 2-storey Business Office. All the 3 development sites will accommodate a total of 744 Units, 2,359m^2 of commercial area, and 1100 surface parking spaces. Refer to Appendix A - Conceptual Development Plan.

This Shadow Impact Study has been prepared in support of the Official Plan Amendment and Zoning By-law Amendment applications, required to permit the proposed development.

1.1 Description of Site

The Subject Sites are located north of the VIA Railway corridor along the west side Banwell Road, on the south and north sides of McHugh Street with the future extension of Leathorne Street bisecting the northern parcel within the South Neighbourhood of the East Riverside Planning Area in the City of Windsor. These lands are legally described as:

North 'A' Site – Part of block 1 on Plan 12M-407 and Part of Lots 143 and 144, Concession 1 in the City of Windsor within the County of Essex
North 'B' Site – Part of block 7 on Plan 12M-407 and Part of Lots 143 and 144, Concession 1 in the City of Windsor within the County of Essex
South Site – Part of Blocks 8 and 9, Plan 12M-425 in the City of Windsor within the County of Essex.

The Subject Sites are composed of three (3) separate parcels, which are individually referred as the following: "North 'A Site" (1.43ha/3.54ac), "North 'B Site" (1.66ha/4.11ac) and "South Site" (5.35ha/13.23ac) for the purpose of this report. The total site area under application is 8.44 hectares (20.79 ac), having approximately 607.7 metres of fragmented of frontage on Banwell Road.

1.2 Proposed Development

The proposed development of the Subject Sites will include the construction of six (6), 6-storey multiple dwelling buildings, two (2) ten-storey multiple dwelling buildings and one (1) 8-storey multiple dwelling building for a total of 744 dwelling units. It will also include a 2-storey business office and a respite home for a total gross floor area of 2,360m^2. The proposed development will provide 1,100 surface parking spaces, which will be centrally located across the three parcels. For the residential land uses on the North 'A' Site, the development proposes a parking rate of 1.45 and on North 'B' Site, a parking rate of 1.50 parking spaces per dwelling unit is proposed. For the South site, a residential parking rate of 1.30 spaces per dwelling unit is proposed. For the business office, a parking rate of 3.4 spaces per 100m^2 is proposed, and a rate of 2.4 spaces per 100m^2 is proposed for the respite home.

Access to the Subject Sites will be provided from Leathorne Street to North 'A' Site and North 'B' Site. McHugh Street will provide access to North 'B' Site and the South Site. The Conceptual Development Plan

illustrates the proposed mixed use development on the site. Refer to Appendix A - Conceptual Development Plan.

2.0 Methodology

The Shadow Impact Study was prepared in accordance with the following methodology:

- Utilization of Google Sketch Up for the shadow simulations;
- Generation of the surrounding massing data from municipal Land Fabric data and by using municipal aerial imagery;
- Preparation of the preliminary massing of the proposed development using Google Sketch Up;
- Surrounding context building heights and proposed building heights were determined through standardized floor to floor heights:
    - Single storey: 4.5 metres;
    - Two storeys: 7.5 metres; and
    - Each storey of multiple dwelling buildings: 4.0m.

The shadow diagrams include the following features:

- The "Subject Sites" identified in a red outline with the proposed building footprint;
- Surrounding existing and approved building footprints;
- Underlying parcel fabric;
- Shadows from the proposed development are colour coded in a blue hue;
- Shadows from existing and approved buildings are colour coded in a grey hue; and
- All streets, blocks, open spaces, and existing building structures are shown to a distance that shows the shadow impacts during the requested times.

The shadow analysis and impact assessment are based on the following criteria:

- Impact on surrounding residential properties and the duration of shadows;
- Impact on the public realm;
- Impact on any parks and open spaces; and
- Impact on outdoor amenity areas of the proposed development.

2.1 Study Test Dates

The shadow impacts of the proposed residential development have been evaluated at the following dates:

- March 21st (Vernal Equinox);
- June 21st (Summer Solstice);
- September 21st (Autumnal Equinox); and
- December 21st (Winter Solstice).

The study test dates were selected to reflect the variety of shadow impacts that may occur within the year. The solstices, June 21st and December 21st, represent the seasonal extremes for each season. June

21st is the longest day of the year when the sun is at its highest and the shadows are the shortest, while December 21st is the shortest day of the year when the sun angle is at its lowest and the shadows are the longest.

2.2 Study Test Times

The shadow impacts of the proposed residential development have been evaluated at the following test times:

- 8:00 am
- 8:30 am
- 12:00 pm
- 3:00 pm
- 4:00 pm
- 5:00 pm
- 6:00 pm

Study test times may vary depending on the study test date. The study test times have been appropriately selected to evaluate the relevant shadow impacts at the selected time of year.

2.3 Time Zone

The Shadow Impact Study was prepared using the following time zone standards:

- Eastern Time Zone;
- Standard Time: Universal Time minus 5 hours (Winter Solstice – December 21st); and
- Daylight Saving Time: Universal Time minus 4 hours (Summer Solstice – June 21st, Autumnal Equinox – September 21st, and Vernal Equinox – March 21st).

3.0 Shadow Impact Analysis

3.1 March 21 Analysis

The shadow impacts of the proposed development on the surrounding area have been evaluated on March 21st using the study time intervals of 8:00 am through and up until 5:00 pm.

Sunrise on March 21st, 2023 occurs at approximately 7:30 am. The proposed shadows are anticipated to extend beyond the Subject Sites and into the existing residential areas to the west. The entire neighbourhood is under existing shadow cast from the existing structures at this time. As much of the area already experiences shadow coverage at this time, the proposed shadows should not have a significant impact on the overall net shadow coverage. By 9:00 am and through 10:00 am, the majority of the shadow impacts to the adjacent residential area are resolved, although there are some continued shadow impacts to the residential dwellings located along Chateau Avenue and Questa Drive.

Beginning at 11:00 am and continuing through the early hours of the afternoon, the proposed shadow impacts occur predominantly within the boundaries of each of the Subject Sites. During this time the proposed shadows mainly impact the parking areas with some effects to the public realm.

From 3:00 pm and into the evening hours, the proposed shadows shift and create impacts to the Banwell Road right-of-way. At 5:00 pm there are anticipated impacts to some of the rear yards of residential dwellings along Overland Street. These shadow impacts are not sustained in duration, as the sun begins to set.

In summary, the shadow impacts occurring on March 21st are not anticipated to have significant impacts on the surrounding neighbourhood. The shadow coverage affecting a number of nearby residential dwellings occurs during the morning hours between 9:00 am – 10:00 am. Although there are earlier shadow impacts anticipated at 8:00 am, there is existing shadow coverage at the time and, as a result, the net shadow impacts are not expected to increase by significant value. The anticipated shadow impacts to the public realm should have no negative impact on the user experience or the quality of life for existing and future residents as they do not occur for any prolonged amount of time.

Refer to Appendix B (Shadow Diagrams – March 21).

3.2 June 21 Analysis

The shadow impacts of the proposed development on the surrounding area have been evaluated on June 21st using the study time intervals of 7:00 am through and up until 6:00 pm.

At 7:00 am, the entire neighbourhood is under existing shadow cast from the existing structures. The only lots not presently impacted by existing shadow cast are the properties on the east side of Questa Drive and Chateau Avenue. The proposed shadows are anticipated to cause shadow coverage over the

residential dwellings along the east side of Questa Drive and Chateau Avenue. The shadow coverage is not significant as much of the area already experiences shadow coverage at this time and the shadows are is not sustained in duration. The shadow impacts are largely resolved by 8:00 am. As much of the area already experiences shadow coverage at this time, the proposed shadows should not have a significant impact on the overall net shadow coverage At 8:00 am, the proposed shadows continue to affect approximately four (4) of the residential dwellings along Chateau Avenue, as well as the rear yards of the residential properties located along the 2000 block of Questa Drive.

By 10:00 am the proposed shadow impacts are predominantly contained within the boundaries of each of the Subject Sites. This condition exists until approximately 3:00 pm, when the proposed shadows begin the shift and affect the Banwell Road right-of-way. The proposed shadows continue to affect the public realm during the evening hours, with some extending into the rear yards of the residential properties along Overland Street and the Banwell Community Church (2400 Banwell Road) property from 5:00pm to 6:00 pm.

In summary, the shadow impacts occurring on June 21st have little impact during the early morning hours, between 7:00 am and 8:00 am, following the sun rising at approximately 6:00 am. The shadow impacts as a result of the proposed development affect existing residential dwellings along Questa Drive and Chateau Avenue at 7:00 am. At this time, much of the existing neighbourhood already experiences existing shadow coverage. While the impacts at this time are more extensive, they are not sustained in duration for any prolonged amount of time and are not expected to have any significant impact to the quality of life for existing residents. By 8:00 am, the proposed shadows are largely reduced, with minimal shadow coverage of adjacent residential dwellings anticipated. Throughout the day, there are shadow impacts occurring to the proposed surface parking area. These impacts are not anticipated to affect the use or experience of these spaces and may contribute to an overall decrease in heat island effects as the surface pavement remains cooler.

Additionally, there are some shadow impacts anticipated to the public realm along Banwell Road in the evening hours. The impacts of the proposed shadow on the public realm are anticipated to occur for a short period of time, allowing for adequate sun coverage on affected pedestrian sidewalks and green spaces during the daytime.

Refer to Appendix C (Shadow Diagrams – June 21).

3.3 September 21 Analysis

The shadow impacts of the proposed development on the surrounding area have been evaluated on September 21st using the study time intervals of 8:00 am through and up until 5:00 pm.

The sun rises at approximately 7:18 am on September 21st, 2023. At 8:00 am, the neighbourhood is largely impacted by existing shadows from the existing dwellings. The proposed shadows extend west into the adjacent residential area. Although shadow coverage at this time affects many of the residential dwellings, the shadow impacts are not sustained in duration and are mostly resolved by 9:00 am. At 9:00 am, there

remains some impacts to a limited number of the residential dwellings along Chateau Avenue and Questa Drive.

For the remainder of the morning hours and into the afternoon hours, the proposed shadows are primarily contained within the Subject Sites, with some shadow coverage occurring to the public realm. At 3:00 pm, the proposed shadows extend into the Banwell Road right-of-way and begin to impact the adjacent residential and institutional properties to the east.

In summary, the shadow impacts occurring on September 21st have the most significant impact between 8:00 am and 9:00 am due to the impacts to the surrounding residential area. While there are additional shadow impacts as a result of the proposed development, there is already considerable existing shadow coverage at this time and the proposed development is not anticipated to have a significant negative contribution to the net shadow coverage. It is also noted that the shadow impacts at this time are not sustained in duration and are largely resolved within the hour.

The shadows impacts throughout the remainder of the day are mainly contained within the Subject Sites, affecting the surface parking areas. These shadow impacts are not anticipated to have any negative impact to the quality of the space or the user experience. The shadow coverage occurring the paved parking area may contribute positively to keeping the space cool and reducing heat island effects. While there are some impacts observed to the public realm during the afternoon and into the evening, they are anticipated to occur for a short period of time, with adequate sun coverage sustained on the affected pedestrian sidewalks and green spaces during the daytime. The proposed shadows are not expected to have any negative impacts on user experience or quality of life.

Refer to Appendix D (Shadow Diagrams – September 21).

3.4 December 21 Analysis

The shadow impacts of the proposed development on the surrounding area have been evaluated on December 21st using the study time intervals of 8:30 am through and up until 4:00 pm.

With sunrise not occurring until approximately 8:00 am, the simulated shadows observed at 8:30 am extend beyond the Subject Sites in a north westerly direction, shadowing a number of existing residential properties. The entire neighbourhood is under existing shadow cast from the existing structures at this time. As much of the area already experiences shadow coverage at this time, the proposed shadows should not have a significant impact on the overall net shadow coverage. These conditions are anticipated until approximately 10:00 am, at which time there are a limited number of properties affected by the anticipated shadows, which majority of the impacts affecting the proposed surface parking areas. Through the remainder of the morning hours and into the afternoon, the proposed shadows are contained within the Subject Sites, with some minor impacts to the public realm as the shadows extend into a section of McHugh Street and the Leathorne Street extension.

Beginning at 1:00 pm, the proposed shadows shift towards the east, causing moderate impacts to the Banwell Road right-of-way. These shadow impacts are sustained throughout the evening hours. At 3:00 pm, the shadow impacts extend further east, affecting a number of residential properties along Overland Street and the Banwell Community Church (2400 Banwell Road). At 4:00 pm, the shadow impacts continue to extend easterly, affecting more residential properties until sunset at approximately 5:00 pm.

In summary, the shadow impacts occurring on December 21st are the most significant and longest during the evening hours, impacting a number of residential properties located east of the Subject Sites, as well as the public realm. The prolonged impacts at this time of year are largely due to the low angle of the sun throughout the winter. The sun coverage experienced within the public realm and individual residential properties remains at an acceptable level.

Refer to Appendix E (Shadow Diagrams – December 21).

4.0 Summary

In summary, it is our opinion that shadow impacts from the proposed development are limited overall. Any shadow impacts occurring for extended periods of time on adjacent properties remains at an acceptable level. Access to sunlight during the daytime hours has been maintained in relation to the public realm, open space, existing and proposed residential properties, and proposed residential amenity areas. The proposed shadows have a limited level of impact for the following reasons:

- The neighbourhood currently experiences existing shadow cast from the existing structures in the morning hours. As much of the area already experiences shadow coverage at this time, the proposed shadows do not have a significant impact on the overall net shadow coverage;
- The majority of cumulative shadowing impacts are moderate and shorter in duration, with shadow impact falling primarily away from the nearby residential properties and contained within the Subject Sites;
- Any significant shadow impacts to the adjacent properties remains at an acceptable level. Access to sunlight during the daytime hours has been maintained in relation to the public realm and the neighbouring residential dwellings, institutional uses, and public realm;
- Of the shadowing impacts identified, the majority occur around sunrise or sunset, meaning that the neighbouring residents and future residents of the development will continue to retain adequate sunlight access while experiencing the public realm and private amenity spaces during the daytime and increasingly in the warmer months;
- There are no negative impacts anticipated to the function of the proposed development as a result of these shadows;
- The shadow impacts occurring to the Subject Sites largely affect the proposed surface parking area. The shadow coverage occurring to the surface parking area may be beneficial in assisting to mitigate any heat island effect by keeping asphalt temperatures cooler during the daytime hours; and
- The public realm is anticipated to experience some shadow coverage; however, the shadowing is limited in duration and by time of year. The affected rights-of-ways will maintain at least 50% sun coverage during the daytime hours. As such, it will not cause unreasonably negative impacts for, or deter from, the ability for community members to use the public realm in these particular areas.

4.1 Design Strategies for Shadow Mitigation

In an effort to reduce any potential negative shadow impacts, certain design strategies have been included such as:

- Building massing: Adjustments such as building setbacks from the property lines have been considered in an effort to consider an appropriate relationship with the pedestrian scale and to maintain an attractive streetscape;
- Building placement: The placement of the residential buildings on the Subject Sites has been designed to ensure that there is adequate space separation between the built forms which will allow sunlight to penetrate through and to the Subject Sites; and
- Building orientation: The proposed residential buildings are orientated in a manner that aims to reduce the significance and duration of the shadow impacts on the surrounding low profile residential properties.

Other design strategies may be considered at the Site Plan Control stage including, but not limited to, the following:

- Providing high quality landscape treatment such as decorative fencing, trees, and grassed areas to mitigate the perceived massing impacts of the built form;
- Including building stepbacks as the built form increases in height;
- Breaking up the mass horizontally and vertically through the creative incorporation of changes in materials and architectural features; and
- Incorporating windows and balconies on all elevations with creative balcony and floor plate design which includes strategically located unit/amenity area locations.

4.2 Conclusion

In conclusion, it is our opinion that as a result of the proposed development, the shadow impacts on the surrounding area have an overall limited level of impact and are acceptable. The shadow impacts occurring to nearby residential properties occur primarily in the morning hours, around sunrise, and are not prolonged in duration. Given that the proposed shadows are not sustained in duration, there are limited impacts anticipated as the level of sun coverage experienced at each individual property remains at an acceptable level during the daytime hours.

The shadow impacts that are anticipated to affect the public realm are not expected to cause any significant impact to the user experience. The proposed shadows primarily cause coverage along the Banwell Road right-of-way during the evening hours during all of the test dates. The proposed shadow impacts to the public realm are not expected to deter from the ability for community members to utilize the pedestrian sidewalks or cause any concerns for vehicular traffic.

The shadow impacts occurring within the Subject Sites predominantly affect the surface parking areas. These areas are intended to service vehicular traffic and the proposed shadows are not anticipated to

cause any safety or accessibility concerns. The shadow coverage occurring within these areas can be beneficial as the cooling of the paved parking areas may contribute to mitigating heat islands effects. There are some small shared outdoor amenity areas throughout the development that are affected at a number of study times. These spaces maintain adequate sun coverage during the daytime hours allowing future residential occupants to enjoy the outdoors.

DILLON CONSULTING LIMITED

Karl Tanner, MCIP RPP
Partner

DILLON CONSULTING LIMITED

Theresa O'Neill
Project Manager

Appendix A

Conceptual Development Plans

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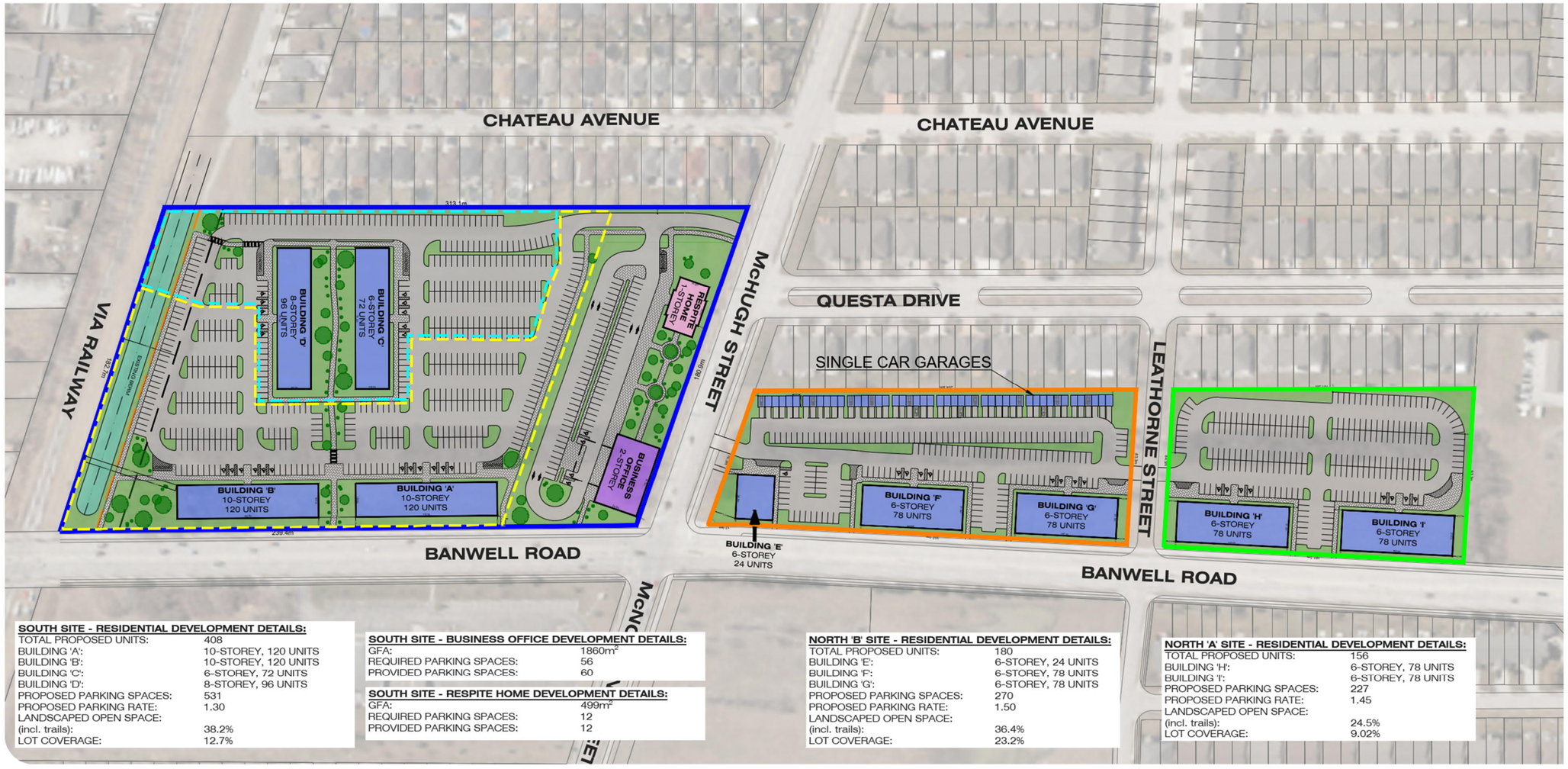
Figure 1: Concept Plan –



SOUTH SITE - RESIDENTIAL DEVELOPMENT DETAILS:

TOTAL PROPOSED UNITS:	408
BUILDING 'A':	10-STOREY, 120 UNITS
BUILDING 'B':	10-STOREY, 120 UNITS
BUILDING 'C':	6-STOREY, 72 UNITS
BUILDING 'D':	8-STOREY, 96 UNITS
PROPOSED PARKING SPACES:	531
PROPOSED PARKING RATE:	1.30
LANDSCAPED OPEN SPACE:	
(incl. trails):	38.2%
LOT COVERAGE:	12.7%

SOUTH SITE - BUSINESS OFFICE DEVELOPMENT DETAILS:

GFA:	1860m²
REQUIRED PARKING SPACES:	56
PROVIDED PARKING SPACES:	60

SOUTH SITE - RESPITE HOME DEVELOPMENT DETAILS:

GFA:	499m²
REQUIRED PARKING SPACES:	12
PROVIDED PARKING SPACES:	12

NORTH 'B' SITE - RESIDENTIAL DEVELOPMENT DETAILS:

TOTAL PROPOSED UNITS:	180
BUILDING 'E':	6-STOREY, 24 UNITS
BUILDING 'F':	6-STOREY, 78 UNITS
BUILDING 'G':	6-STOREY, 78 UNITS
PROPOSED PARKING SPACES:	270
PROPOSED PARKING RATE:	1.50
LANDSCAPED OPEN SPACE:	
(incl. trails):	36.4%
LOT COVERAGE:	23.2%

NORTH 'A' SITE - RESIDENTIAL DEVELOPMENT DETAILS:

TOTAL PROPOSED UNITS:	156
BUILDING 'H':	6-STOREY, 78 UNITS
BUILDING 'I':	6-STOREY, 78 UNITS
PROPOSED PARKING SPACES:	227
PROPOSED PARKING RATE:	1.45
LANDSCAPED OPEN SPACE:	
(incl. trails):	24.5%
LOT COVERAGE:	9.02%

1027458 ONTARIO LTD.
BANWELL AND McHUGH -
MIXED USE DEVELOPMENTS

CONCEPTUAL DEVELOPMENT PLAN
April 4, 2023

BANWELL AND McHUGH - SOUTH SITE (± 5.35 ha / 13.23 ac)
BANWELL AND McHUGH - NORTH 'A' SITE (±1.43 ha / 3.54 ac)
BANWELL AND McHUGH - NORTH 'B' SITE (±1.66 ha / 4.11 ac)
PROPOSED MULTI-UNIT RESIDENTIAL
PROPOSED LANDSCAPED OPEN SPACE
SOUTH SITE - PHASE 1
30m BUFFER FROM RAILWAY
EXTENT OF BERM
EXISTING BERM
PROPOSED BUSINESS OFFICES
PROPOSED RESPITE HOME
SOUTH SITE- PHASE 2

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PROJECT: 22-5144
STATUS: DRAFT
DATE: 04/03/2023

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Appendix B

Shadow Diagrams: March 21

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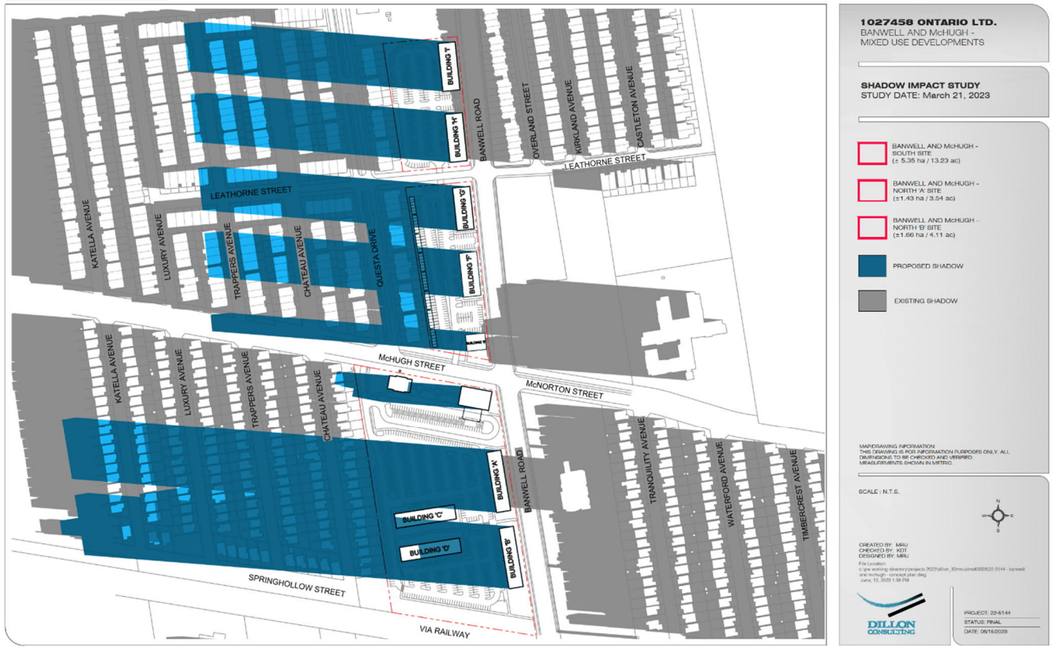
MARCH 21 - 8:00 AM



1027458 ONTARIO LTD.
BANWELL AND McHUGH - MIXED USE DEVELOPMENTS

SHADOW IMPACT STUDY
STUDY DATE: March 21, 2023

- BANWELL AND McHUGH - SOUTH SITE (± 5.35 ha / 13.23 ac)
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- PROPOSED SHADOW
- EXISTING SHADOW

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PROJECT: 22-5144
STATUS: FINAL
DATE: 06/15/2023

MARCH 21 - 12:00 PM

1027458 ONTARIO LTD.
BANWELL AND McHUGH - MIXED USE DEVELOPMENTS

SHADOW IMPACT STUDY
STUDY DATE: March 21, 2023

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PROJECT: 22-5144
STATUS: FINAL
DATE: 06/15/2023

MARCH 21 - 3:00 PM

1027458 ONTARIO LTD.
BANWELL AND McHUGH - MIXED USE DEVELOPMENTS

SHADOW IMPACT STUDY
STUDY DATE: March 21, 2023

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PROJECT: 22-5144
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DATE: 06/15/2023

MARCH 21 - 5:00 PM

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BANWELL AND McHUGH - MIXED USE DEVELOPMENTS

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STUDY DATE: March 21, 2023

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PROJECT: 22-5144
STATUS: FINAL
DATE: 06/15/2023

Appendix C

Shadow Diagrams: June 21

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JUNE 21 - 8:00 AM

1027458 ONTARIO LTD.
BANWELL AND McHUGH -
MIXED USE DEVELOPMENTS

SHADOW IMPACT STUDY
STUDY DATE: June 21, 2023

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PROJECT: 22-5144
STATUS: FINAL
DATE: 06/15/2023

JUNE 21 - 12:00 PM

1027458 ONTARIO LTD.
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- BANWELL AND McHUGH - NORTH 'B' SITE (±1.66 ha / 4.11 ac)
- PROPOSED SHADOW
- EXISTING SHADOW

MAP/DRAWING INFORMATION:
THIS DRAWING IS FOR INFORMATION PURPOSES ONLY. ALL DIMENSIONS TO BE CHECKED AND VERIFIED.
MEASUREMENTS SHOWN IN METRIC.

SCALE : N.T.S.

CREATED BY: MRJ
CHECKED BY: KDT
DESIGNED BY: MRJ

File Location:
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June, 15, 2023 1:58 PM

DILLON CONSULTING

PROJECT: 22-5144
STATUS: FINAL
DATE: 06/15/2023

JUNE 21 - 3:00 PM

1027458 ONTARIO LTD.
BANWELL AND McHUGH -
MIXED USE DEVELOPMENTS

SHADOW IMPACT STUDY
STUDY DATE: June 21, 2023

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June, 15, 2023 1:58 PM

DILLON CONSULTING

PROJECT: 22-5144
STATUS: FINAL
DATE: 06/15/2023

JUNE 21 - 6:00 PM

1027458 ONTARIO LTD.
BANWELL AND McHUGH -
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SHADOW IMPACT STUDY
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June, 15, 2023 1:58 PM

DILLON CONSULTING

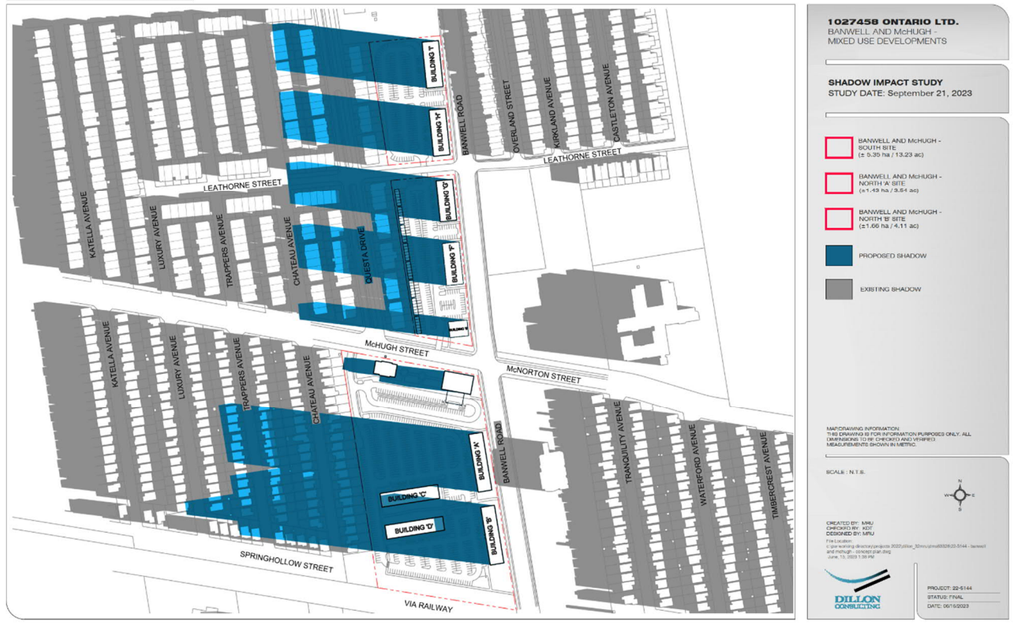
PROJECT: 22-5144
STATUS: FINAL
DATE: 06/15/2023

Appendix D

Shadow Diagrams: September 21

DILLON CONSULTING

SEPTEMBER 21 - 8:00 AM



SEPTEMBER 21 - 12:00 PM

SEPTEMBER 21 - 3:00 PM

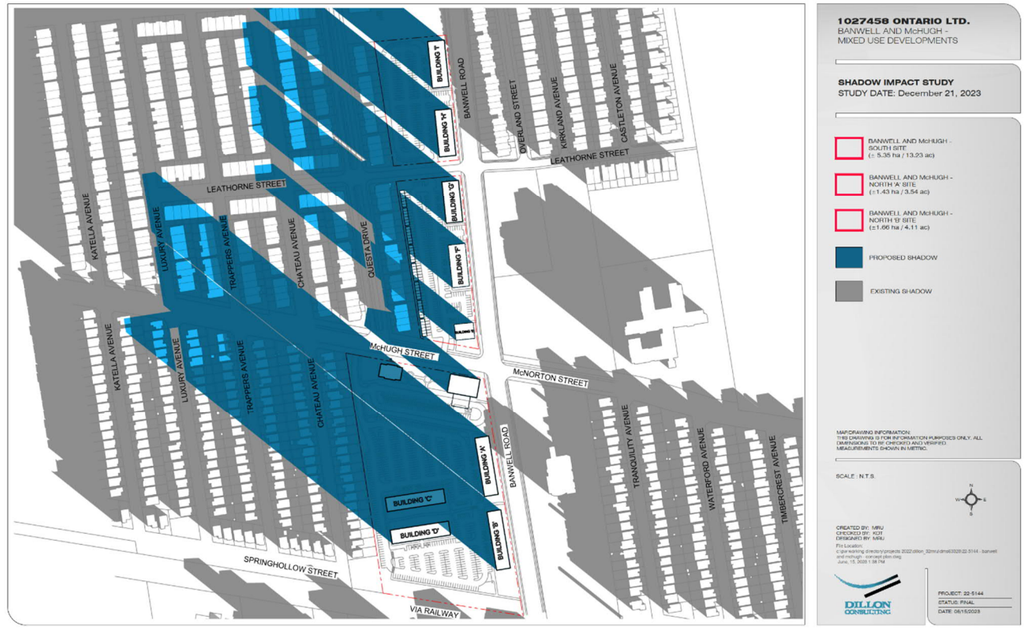
SEPTEMBER 21 - 5:00 PM

Appendix E

Shadow Diagrams: December 21

DILLON CONSULTING

DECEMBER 21 - 8:30 AM



1027458 ONTARIO LTD.
BANWELL AND McHUGH - MIXED USE DEVELOPMENTS

SHADOW IMPACT STUDY
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SCALE : N.T.S.

CREATED BY: MRJ
CHECKED BY: KDT
DESIGNED BY: MRJ

File Location:
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June, 15, 2023 1:58 PM

DILLON CONSULTING

PROJECT: 22-5144
STATUS: FINAL
DATE: 06/15/2023

DECEMBER 21 - 12:00 PM

1027458 ONTARIO LTD.
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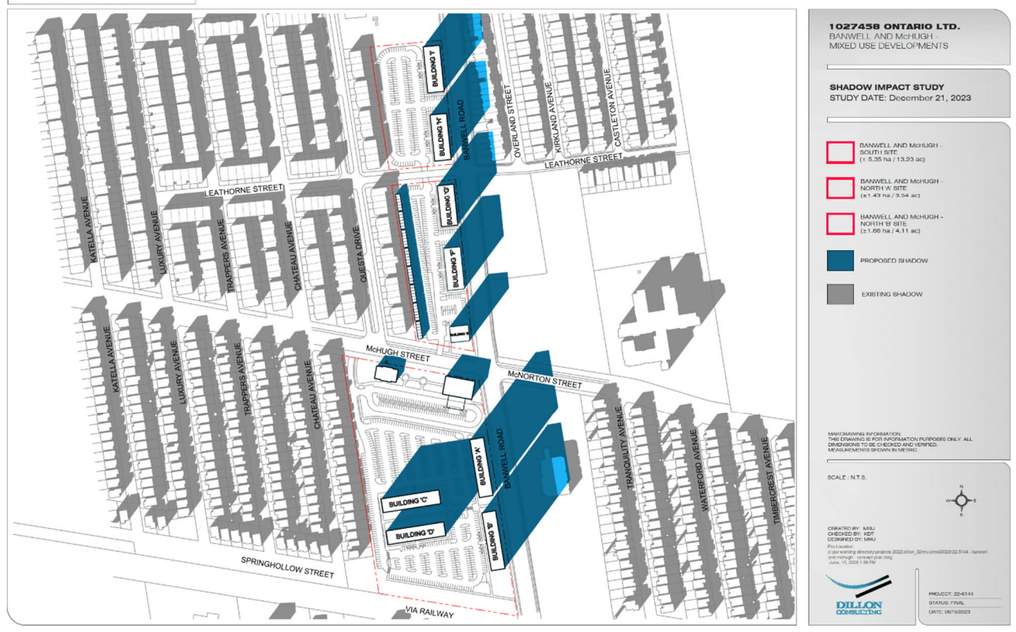
DESIGNED BY: MRJ

DILLON CONSULTING

PROJECT: 22-5144
STATUS: FINAL
DATE: 06/15/2023

DECEMBER 21 - 3:00 PM



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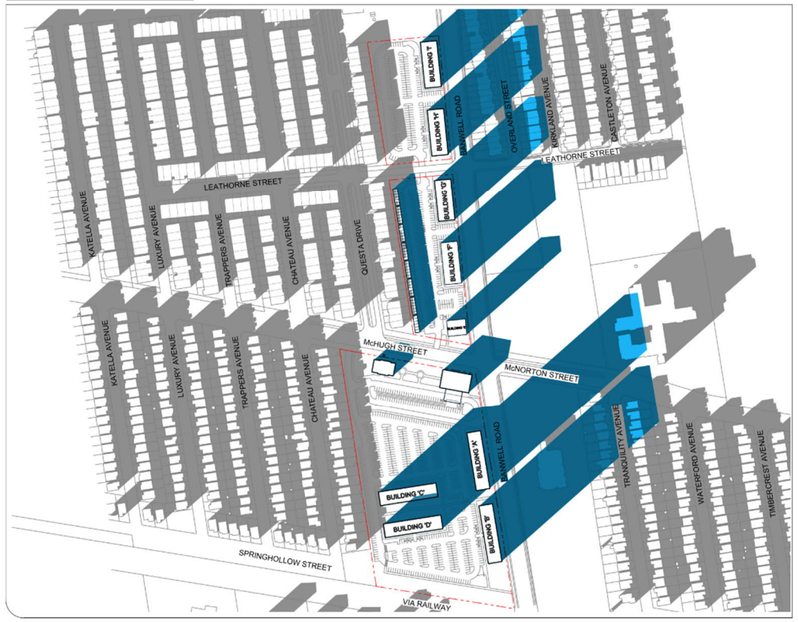
DECEMBER 21 - 4:00 PM



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